

Regulation-by-Contract and Municipal Services: The Problem of Contractual Incompleteness

Chris Shugart

Independent Consultant

E-mail: chris@shgrt.com

Development Discussion Paper: 1998- 09

ABSTRACT

Two approaches to the economic regulation of utilities may be contrasted as ideal types: *regulation-by-contract*, which focuses on the terms of the agreement reached between the parties and relies on the judicial system to resolve disputes (and is typically used for public-private partnerships – PPPs), and *regulation-by-commission*, which depends heavily on discretionary authority given to a specialized regulator. Most of the drawbacks of regulation-by-contract stem from the inevitably incomplete nature of the contracts. Given asset specificity and the potential opportunism of the parties, unconstrained renegotiation between the parties in the face of changed conditions is an unreliable way of coping with contractual incompleteness.

This study begins by setting out a conceptual framework and assessing different ways of coping with contractual incompleteness. In the tradition of the new institutional (transaction cost) economics, the study uses two present-day case studies, involving municipal services, to explore whether the problems with regulation-by-contract are intrinsic to the approach or whether it failed in the past (e.g. in the U.S. in the late 19th and early 20th centuries) for reasons that can be avoided, at least in certain contexts. Both case studies involve privately constructed and operated municipal solid waste incineration plants: one in Lyon, France, and the other in Saugus, Massachusetts. An examination of the French system and the Lyon case study suggests that, regardless of formal aspects that are conducive to regulation-by-contract (a specialized administrative court system and a body of background rules that serve to fill gaps), the French system has functioned relatively smoothly mainly because of *extra-legal* (relational) norms and influences: a culture of “*délégation*” and deference has helped to solve the incomplete contracting problem. In contrast, the Massachusetts case highlights, in a non-relational context, the inadequacy of the ordinary court system and conventional arbitration in the U.S. (which lack appropriate background rules and specialized adjudicators) for tackling even simple regulatory issues.

The study also proposes ways to strengthen the regulation-by-contract approach for municipal services, involving a concession referee board that builds on the dispute review boards used with success in the construction industry and a comprehensive effort to develop a corpus of default legal rules.

Keywords: PPP, public private partnership, concession, contracting out, regulation-by-contract, regulation-by-commission, municipality services, utilities, incomplete contracts

JEL Classification: K23, L24, L51, L97, L98

CHAPTER 1

BACKGROUND AND OVERVIEW: FORMULATING THE ISSUES

1. INTRODUCTION

Provision of public infrastructure and services by means of long-term contracts with private-sector companies is being widely promoted today as an important way to meet the pressing needs of developing countries. A World Bank report (1994) devoted to the topic of infrastructure and development serves as witness to the growing popularity of this idea. This mode is seen as especially well-suited to services having strong natural monopoly characteristics, which greatly reduce the possibility of introducing competition in the usual sense to attain economic efficiency. In such cases, bidding for long-term contracts creates periodic competition *for* the market, as opposed to competition *in* the market (World Bank 1994: 55).

Another purported advantage for developing and transition countries that are just beginning to involve the private sector in public service provision is that long-term contracts (concession or leasing arrangements) ostensibly do not require the setting up of a comprehensive regulatory framework of institutions and rules: “These arrangements . . . do not require the establishment of independent regulatory bodies because regulatory procedures [and regulatory provisions in general] are specified in the underlying contract” (World Bank 1994: 10). This sentence constitutes the focal point of my dissertation.

The broad questions that this dissertation will address are these: To what extent can regulation by means of long-term contracts replace regulation by independent commissions in the provision of municipal services? *Can* such a contract contain adequate regulatory provisions? Under what conditions, if any, can regulation-by-contract perform well? How can it be strengthened?

These questions will be examined in the context of long-term contracts for local government services, such as water, wastewater, and solid waste. Regulation-by-contract is especially important for *local government* services for two interrelated reasons: first, because of administrative economies of scale, regulatory commissions at the local level may not be optimal; second, commission regulation of local government services by the national government can have drawbacks if it falls back into old habits of central command-and-control and undermines the benefits to be obtained from devolving local responsibilities to the local level.

The organization of the dissertation is as follows. Chapter 1 will present the basic concepts, review the literature, and identify the key issues. Chapter 2 will set out the conceptual framework and develop the ideas further. Chapter 3 provides background on the French system, and Chapter 4 presents a case study on an incineration plant in Lyon, France. Chapter 5 gives a case study on an incineration plant in Saugus, Massachusetts. Chapter 6 outlines a tentative reform proposal, in the light of the lessons learned. Finally, Chapter 7 offers concluding remarks and some further reflections on the distinction between regulation-by-contract and regulation-by-commission.

A word should be said about the selection of the case studies. Municipal waste incineration plants were taken as suitable examples especially because they are generally not considered to be “utilities” under state law in the U.S., and hence they do not fall under the authority of public utility commissions. This makes them a prime candidate for a “regulation-by-contract” approach in the U.S.

2. TWO REGULATORY APPROACHES

For purposes of this dissertation, we can distinguish between two ideal types of regulatory approach, two alternative modes of regulatory governance: *regulation-by-contract* and *regulation-by-commission*. The key feature of regulation-by-contract is that agreement is reached *ex ante* between the private company and the public entity on detailed rights, obligations, and conditions, and this agreement is what regulates the subsequent behavior of the company, with a view to reducing later regulatory discretion to a minimum. One underlying idea in regulation-by-contract is that *fairness* consists primarily in the respect of an initial agreement over terms by autonomous parties — an *ex ante* emphasis.

In contrast, the basic paradigm for regulation-by-commission is a broad regulatory *compact* that permits a regulator (often a regulatory commission) to order a wide range of modifications — in service provision, company practices, equipment, other inputs, etc. — so long as the regulator ensures that the company is “fairly” compensated, according to some more-or-less clearly defined standard.¹ In regulation-by-commission, *fairness*

¹ “At the risk of oversimplification, regulation may be described as a highly incomplete form of long-term contracting in which (1) the regulatee is assured an overall fair rate of return, in exchange for which (2) adaptations to changing circumstances are successively introduced without the costly haggling that attends

relates more to the regulator's treating the company appropriately (whatever this may mean) in the light of current circumstances — an ex post tendency.² Continual and flexible adjustment is seen as the norm.

Using concepts from industrial organization and transaction cost economics, regulation-by-commission may be viewed as similar in some ways to vertical integration. The way that the regulator treats a private company has something in common with the way that upper management treats the division of a company: price setting by the regulator to permit a “fair” return resembles management providing a budget sufficient for an internal company division to realize the annual goals that have been set for it. The economic literature that looks at conditions under which either contracting or vertical integration is to be preferred is therefore of interest in the present context. The transaction cost approach (see Williamson 1985; 1989) sees more of an advantage to vertical integration (internal organization, hierarchy) when the relevant assets are highly specific to the transaction, there is a high degree of uncertainty, and the type of transaction is likely to be recurrent. We will return to these themes many times in the course of this dissertation.

These two ideal types are extreme points on a continuum: actual regulatory regimes may — and often do — fall somewhere in between. A contract concluded in a legal environment that provides for a sophisticated monitoring and dispute resolution body

such changes when parties to the contract enjoy greater autonomy” (Williamson 1985: 347). But note that, given the definition of contractual incompleteness that I have adopted (see Chap. 2), the regulatory compact could be regarded instead as a fairly *complete* contract, albeit one in which one party (the regulator) is given full discretion to decide a wide range of issues.

whose responsibilities go far beyond the ordinary arbitration of disputes would lie somewhere in the middle of the continuum. A further possibility for confusion is that, depending on the legal system, the parties may agree by means of a *contract* to adopt a regime of regulation-by-commission.³ According to the definitions used here, this would not make it “regulation-by-contract.”

It should be pointed out, also, that the term “commission” in “regulation-by-commission” is not quite right: sometimes, as in the U.K. case, only one person occupies the position of “regulator” for each regulatory agency (see Smith 1997b). Since it is difficult to find a euphonious replacement, the term “regulation-by-commission” will be retained for convenience. But it should be born in mind that this is shorthand for: regulation by an administrative body with considerable discretionary powers and, generally, a supporting technical staff.

Five years ago, regulation-by-contract was making a resurgence, based to some extent on tales of its success in France and in systems inspired by the French model. The pendulum may now be swinging to the other side, especially for network utilities: around the world, development agencies and consultancy firms are working to set up discretionary “regulatory bodies” in conjunction with private-sector involvement in various utilities (see Smith 1996) — this time, in some cases inspired by the regulatory

² Price-cap regulation may resemble regulation-by-contract more than does standard rate-of-return regulation, but there is still a tendency towards continual (more precisely, periodic) adjustment on a partly ex post basis (see Liston 1993).

³ But note that, contrary to what is often thought, the U.K. system does not involve a *contract* with the company in the legal sense: it is a “license” or “appointment.” This is in effect a piece of *delegated legislation*: a unilateral administrative act.

offices in the U.K. Is it true, however, that regulation-by-contract is inherently flawed? What are its strengths and weaknesses, compared with regulation-by-commission?

3. FRANCHISE BIDDING: THE ECONOMIC LITERATURE

The current vogue for concession-type contracts for infrastructure-related services has some of its roots in a debate beginning in the 1960s in the economic literature. It will be useful to summarize some of these issues.

3.1 Why Regulate? Bidding for Natural Monopolies

Of all municipal services, networked services with costly, project-specific assets, such as water and wastewater services, show the strongest natural monopoly characteristics: with some exceptions, no combination of firms could produce the same output at a lower cost than a single firm (i.e. there is cost subadditivity). Moreover, the market is not contestable because of huge sunk costs. In general, therefore, the free market would not result in the optimal provision of such services. To put things simplistically (perhaps too simplistically), monopoly provision seems to be the only realistic alternative, and some sort of regulation is therefore necessary.⁴ The main reasons for regulating are: to prevent economic inefficiency due to the “wrong” quantity being produced and consumed; to maintain the optimal quality of services; to encourage least-cost technical solutions, and to prevent excessive transfers (monopoly profits) from consumers to the private company.⁵

⁴ With respect to the water and wastewater sector, while inset and cross-border competition may be of some value, using the network as a common carrier “is not likely to be a major feature of the water industry in the future” (Cowan 1997: 91). But see Cowen and Cowen (1997) for a radical proposal to lift all economic regulation from water supply in the developing-country context — even for the network.

⁵ This paragraph summarizes a large corpus of applied economics.

The need for regulation is strongest with regard to the networked parts of the systems, where there are clear economies of density. Some competition may be possible for the water production/treatment or wastewater processing parts of the system. My dissertation will not deal with possibilities for introducing competition, interesting though they may be. Instead, I will look at the problem of what to do about systems or parts of systems that clearly must continue as monopolies.

Harold Demsetz, in response to the growing criticism of regulation as practiced by public utility commissions, proposed in 1968 that monopoly pricing could be avoided by requiring firms to bid for natural monopoly franchises. Permanent rate regulation would therefore not be necessary. Demsetz' article touched off an active debate over the issue, involving Stigler, Posner, Telser, Williamson and others.⁶ One branch of the debate concerned the issue of optimal pricing; for example, it was pointed out by Telser (1969, and later papers) that such a bidding process would not result in marginal-cost pricing. I will not pursue this line of thought in my dissertation.

Discussion and criticism of the franchise-bidding idea has focused on two major areas: the bidding process itself and the conduct of the firm during the course of the contract. A number of problems arise that suggest that it cannot be taken for granted that initial bid selection will yield the optimal arrangement, especially when one realizes that not only price but also a vector-valued quality variable is involved in the question of what is optimal (see Waterson 1988).

⁶ See Schmalensee (1979, chap. 5) for a brief review of the debate up to 1978. See also Waterson (1988, chap. 6).

With regard to the behavior of the firm during the term of the franchise, the criticism of franchise bidding by Williamson (1976) and Goldberg (1976), set in the context of the idea of incomplete contracts, raised most of the issues that are still being debated. It will be worthwhile to briefly summarize the major points made by Williamson (adding ideas and giving my own interpretation in some places).

3.2 Williamson and Incomplete Contracts

Williamson's (1976) argument hinges on the idea that, in the face of uncertainty about the future, a long-term franchise contract for a utility service must of necessity be "incomplete," in the sense that it cannot possibly deal deterministically with all the events and conditions that might arise in the future.⁷ This incompleteness increases the risk of opportunism by the firm or the public authority in a number of ways.⁸ Because of the delays and expenses involved in litigation, the parties have a large margin of play before recourse to the courts is feasible to resolve differences. Depending on the balance of bargaining power, one party or the other may be able to have the terms renegotiated to its advantage.

Because an exhaustive list of contingent claim provisions is clearly not feasible, the contract will have to use various adjustment rules. But these will generally be complex and so will require specialized expertise for their application. For instance, one could use

⁷ As Schwartz (1992: 272) points out, a contract is "incomplete" either because it contains a true "gap" (i.e. some future state of the world is simply not covered by any of the contract provisions) or because it partitions future states too coarsely (i.e. a contract provision comes to be seen as inappropriate in some future state of affairs). I will refer to this distinction as that between *manifest* and *latent* incompleteness (see Chap. 2).

⁸ In the work referred to, Williamson stresses opportunism by the firm, but incompleteness can also favor the public authority, depending on who benefits from the status quo.

a “cost-plus” type of formula to determine the price of the service. But then one would need specialized auditing (and, I might add, provision for imprudent-cost disallowances) to deal with the incentive problem created by the formula. Enforcement of quality standards, too, would require expert monitoring and enforcement. Given the tendency of each party to try to manipulate the data in its favor, we would be back to the need for a highly specialized body, able to decipher the wily signals sent by the parties. A basic message of Williamson is that contract enforcement is likely to converge with classic regulation under these circumstances.

Williamson also looks at problems that would arise for recurrent short-term contracts. This is relevant for the case of long-term contracts, also because a “convenience termination” clause, permitting buy-back of facilities, is similar in effect: the ability to buy back the facilities and rebid the franchise raises the same issues. The major problem that Williamson cites for short-term contracts is that of equipment valuation. Determination of the “fair value” of the property, which, being project-specific, does not have an independent market value, involves complicated issues of depreciation, and so on — all very similar to rate-base valuations in the context of classic regulation.

Another issue is that of the optimal maintenance and replacement of equipment. In the early years of a *fixed price* long-term contract, the operator has the incentive to make the optimal tradeoff between maintenance and replacement because both of these costs are internalized. But as time goes on, it will be to the advantage of the operator to skimp on maintenance and let the plant become run down — so long as the operator does not intend to renew the contract. On the other hand, if prices are reset every few years according to

a rate-of-return concept, then the operator might have an incentive to spend too much on replacements since they enter into the rate base. In either case, it would seem inevitable that standards will have to be specified for maintenance and replacement, and the operator's performance in this respect will have to be monitored. Again, this diverges from the simple contractual idea in which one measures performance only by the *output* — the quantity and quality of the goods or services provided.

Williamson concludes by suggesting that the execution of a franchise contract in practice will converge with regulation and that, in fact, regulation could be described as a “highly incomplete form of long-term contracting” in which the firm is assured a fair rate of return regardless of various adaptations in service provision that will need to be made over the life of the contract.

One question suggested by Williamson's conclusion is whether it is likely that such a “contract” could be handled in the institutional context in which contracts are normally handled — i.e. a court system along with the usual forms of arbitration. Would one need a more developed regulatory apparatus, in fact if not in name?⁹ If so, regulation-by-commission would tend to supplant regulation-by-contract.

Williamson then goes on in the same article to apply his insights to a CATV franchise in Oakland, California, in which the contract unraveled over time, and concludes that it is not clear that franchise bidding for CATV would be superior to classic regulation by commission. Looking at the evidence up to 1978, Schmalensee (1979: 73) concluded:

⁹ In the context of cable television franchises: “[l]ocalities that attempt rate-base of return [sic] regulation are rare. Most simply require cable companies to get official approval before posting a rate increase. . . .

“franchise bidding is hardly a breakthrough in natural monopoly control technology. Under virtually any workable arrangement, some expert agency would be required to evaluate competing bids and to enforce the franchise contract. Further, if the franchise is relatively long term, detailed supervision and renegotiation of prices, more or less resembling conventional utility regulation, would be required.”

Since one of the most common areas in which municipal utilities have been handled as franchises in the U.S. is that of CATV, one would expect this area to have been examined by others. Zupan (1989), analyzing results from a survey of 66 cable systems and looking at other evidence, while agreeing that renegings and opportunism are common features of cable franchising experiences, finds that cable franchises have worked out better than in Williamson’s example. A major concern of Zupan is with pricing, and his study concludes that franchises appear to be successful at preventing monopoly pricing. He points out the influence of reputational concerns as a factor in restraining opportunism on the part of firms. He also emphasizes that the city’s monopsony power, given the nonsalvageable investments, makes it as capable of opportunism as the firm, and this creates a countervailing power.

An important factor in the CATV cases is certainly that market pressures are not absent: cable television faces competition from other means of transmission, and it is not a necessity as is water. The price elasticity of demand must therefore be greater than for water supply. Moreover, sewerage service is an even more extreme case since it is

Relatively few cities have the time, personnel and expertise for sophisticated rate analysis” (from an unpublished paper, quoted in Hazlett [1986: 1346n]).

required to be purchased. These issues are noted by Hazlett (1986) and Jacobson (1988; 1989b).

Hazlett (1986) raises another important drawback of franchising. (His purpose in the context of CATV is to argue for deregulation, but one could use the argument in the case of water or wastewater to argue for some form of classic regulation.) There are enormous costs involved in the bidding process: lobbying, advertising and publicity campaigns, post-selection haggling over contract terms, and so on. One could make the same point for the entire term of the contract. The cost of periodic bargaining and writing amendments to the contract or working out informal arrangements will often be very high.

3.3 Long-Term Supply Contracts

It is useful to look also at how the economic literature has analyzed long-term contracts in areas other than that of utility franchise bidding. In two articles, Joskow (1985; 1990) looks at coal supply arrangements for electric utilities. Because plant design and coal procurement strategies are closely linked and it is important for reasons of cost for a mine-mouth plant to be able to rely on supply from a particular mine, complex long-term contracts between utilities and coal suppliers are common. Joskow (1985) examines a sample of these contracts in a transaction-cost framework, inspired by the work of Williamson and others. He catalogues and discusses a number of techniques found in the contracts that deal with uncertainty about the future — in effect, by making the contracts less incomplete. These especially include various pricing formulas. One of his conclusions is noteworthy in its similarity to the conclusion reached by Williamson about franchise

bidding. Joskow (1985: 73) finds that in the contracts that used cost-plus pricing provisions:

. . . the utility frequently has the contractual right not only to audit the books and submit the reasonableness of costs incurred to arbitration, but also to approve mining plans, capital expenditures, and budgets. Indeed, the distinction between vertical integration and “contract” in several of these cost plus contracts becomes almost a matter of semantics rather than a sharp distinction . . .

In the 1990 article, Joskow focuses on the *performance* of coal-supply contracts, not just their provisions. He looks at the mid-1980s, a period in which the nominal and real market price of coal unexpectedly declined to an extent that was not tracked well by most of the contracts he considered.¹⁰ He examines whether adaptations were made to the contracts. If so, by what mechanisms? If not, what was the outcome — breach, litigation, etc.? He finds that while significant contractual breakdowns were not common, there was considerable price rigidity, increased haggling over contractual terms and renegotiation, and increased litigation.¹¹

It is interesting to note the differences between the conditions underlying long-term contracts for water and wastewater and the conditions described by Joskow — differences that would make contracting even more difficult. At least two stand out at first glance. First, the complexity of expected performance and the uncertainties are much greater with a networked service: the contract involves not only production, but also spatially organized distribution or collection. Second, there is no clear market price for

¹⁰ In 1994, it was estimated that the “stranded investment” represented by the present-value difference between long-term contract price and estimated market price amounted to \$10 billion for U.S. utilities: “. . . utility companies will come under growing pressure to renegotiate high-priced fuel-supply contracts” (Knutsen and Feiler 1994: 11f).

¹¹ See also Curtz (1995).

the service in question that can be used as a focal point in renegotiation.¹² Idiosyncratic conditions mean that even efficient production and treatment costs will vary greatly from city to city, not to speak of the network (distribution/collection) costs.

4. THE LEGAL PERSPECTIVE

In addition to the economic literature on incomplete contracting, which is more concerned with how actors respond in the face of the frequent impossibility of writing complete long-term contracts, there exists an academic literature that addresses more specifically legal aspects. The emphasis of this literature is on how the U.S. legal system deals or should deal with the problems of long-term, “relational,” contracts.¹³

This material is important for a study of regulation-by-contract because, in such an approach, it is the legal system that stands as the ultimate adjudicator and enforcer. If it is proposed that utilities should not be controlled by a specific regulatory commission but by long-term contracts instead, then we must understand how ordinary contracts are enforced. This involves two major topics: *First*, how are contracts enforced when the contract terms themselves, with a minimum of interpretation, are sufficient to determine the outcome? *Second*, what happens when there are substantial “gaps” in the contract, i.e. when the contract is incomplete?

¹² But note how difficult it has been even in the coal-supply contracts to make sure that “market price reopener” provisions define with sufficient precision what the appropriate market is for purposes of price revision (see Curtz 1995).

¹³ I am not suggesting that it is only lawyers who write about these aspects. There is a great deal of overlap and cross-referencing among the scholars in this area, whether they are lawyers or economists. Some authors consider themselves to be in the “law and economics” inter-disciplinary field. But note that Schwartz (1992), a law professor, believes that the legal and economic literatures on the subject of long-term incomplete contracts *should* overlap but do not.

4.1 The Uncertain Role of Law

Most economic literature seems to assume that a well-functioning legal system will act to enforce contractual terms when they are clear and applicable.¹⁴ Proponents of the contract approach to infrastructure provision in developing countries speak of the need for a legal system that “provides for clear and open enforcement of the terms of the contracts . . .” (World Bank 1994: 64). Ever since Macaulay’s (1963) classic article, however, at least legal sociologists and anthropologists have known that contract provisions, even when they exist, are often not referred to at all in the adjustment of business relations or in actual dispute resolution among firms. One of the reasons cited by Macaulay involves the fact that the parties may be involved in a series of continuing transactions, which can provide sufficient sanctions for good behavior, an insight that has a great deal of relevance in the context of long-term contracts for the provision and operation of infrastructure.

If one absorbs the lessons of this branch of research, one suspects that it may not be only the incompleteness of long-term contracts that opens the door to opportunism. Even well-specified contract provisions may never be applied in practice — and for more reasons than simply the cost of adjudication in the courts. I offer the following scenario as one possibility (based on informal discussions with practicing lawyers in this area): as the years go by in a long-term concession contract and conditions change, various contract provisions are seen to become inappropriate (regardless of whether the contract is “complete” — see Chapter 2)¹⁵ and new arrangements are worked out informally by the

¹⁴ “An implicit assumption of the economic paradigm of market exchange is the presence of a government to define property rights and enforce contracts” (Klein and Leffler 1981: 615).

¹⁵ E.g. both parties may agree that the original contract terms were precise and unambiguous but that new conditions have arisen which result in its being mutually beneficial to revise the terms.

parties. Now a dispute arises over one particular provision that is perfectly clear and apposite. But going to court would throw the whole contract into the arena: both parties might have numerous claims against one another if the original contract provisions were strictly applied; and the issue would arise as to whether a party's course of performance would imply a waiver of certain of his contractual rights. What in fact is the "agreement" now?¹⁶ Rather than entering into this tangled mess, the parties may decide on some *modus vivendi* — one that bears little relation to the written contract provision applicable to their present dispute. This idea reflects the not uncommon sentiment of parties to a long-term concession contract of the type we are considering that the first thing you should do after signing the contract is to put it away in the filing cabinet, leave it there, and get down to the give and take of real business.

This line of thought has profound implications for the idea of replacing regulation-by-commission by regulation-by-contract. It suggests that, regardless of whether a long-term contract is complete or incomplete, in the face of complex performance requirements and uncertain future conditions, the outcome may be determined more by the full range of factors that affect the bargaining power of each party over the term of the relationship than by promises set out within the four corners of a piece of paper.¹⁷ According to this view, the "contract" and episodes of actual or threatened litigation are just some of the

¹⁶ Macneil (1978: 874) discusses the question of whether the original arrangements or the adjusted arrangements should govern in such a case. He concludes that no comprehensive doctrinal structure has developed in U.S. law to answer the question.

¹⁷ And contractual promises that would have to be enforced in the courts may be less important than provisions that create mutual "hostages" at the moment of contract formation by greatly increasing the expected cost of a contract breach (see Williamson 1983) — e.g. a first-demand bank guarantee of performance.

many elements used in structuring the ongoing process of negotiations which never completely cease during the life of the relationship (see Crocker and Masten 1991: 72).

4.2 Long-Term Contracts

Macneil (1979) carefully analyzes contract planning and interpretation in traditional (i.e. “classical” and “neoclassical”) U.S. contract law in the light of the tension between the need for stability and the need to respond to change. Drafters of long-term, “relational” contracts use a variety of processes and techniques to create flexibility instead of either leaving outright gaps or filling them with rigid provisions that will become outdated. One example is use of a “standard” — e.g. a price index. Another is recourse to arbitration to resolve certain issues in the future. Nevertheless, Macneil stresses throughout this article the traditional reluctance of U.S. courts to enforce contractual relations in the face of excessive indefiniteness.

Moreover, traditional contract law is premised on the idea of a discrete transaction; it is not well-equipped to handle long-term continuing relationships. The basic paradigm for dispute resolution is “sharp in (by commencing suit) and sharp out (by judgment for defendant or collection of a money judgment by plaintiff)”; courts are reluctant to grant specific performance for complex contracts. Partly because of this, the law has seen the continuing spin-off of certain substantive areas out of ordinary contract law: e.g. corporate law and collective bargaining (and, though Macneil does not mention it, utility-regulation law).

Along the same lines, Scott (1987), beginning by noting that there is “widespread judicial confusion over the proper conditions for excusing or adjusting the obligations of

parties to long-term contracts,” goes into detail in analyzing how U.S. courts interpret contract provisions or fill more substantial gaps in long-term contracts, focusing especially on risk allocation. “By implying preformulated [common law] terms into the basic agreement, the law supplies useful standardized risk assignments.” For example, Scott notes a tendency toward the use of “binary strategies — those that allocate entire risk to one party or the other — over risk-sharing alternatives.” Binary risk allocation rules are easier to apply by the courts and may deter evasion better. But there is a drawback: “These customary allocations retard the parties’ ability to develop innovative risk-distribution schemes, despite new or emerging business needs.”

The reluctance of U.S. courts to restructure long-term contracts is exemplified by the case of *Alcoa v. Essex* in 1980.¹⁸ Goldberg (1985: 529) refers to this as “the only example of an American court revising the contract price in a long-term supply contract” (see also Scott 1987: 2011f.). Alcoa had a 20-year contract with Essex to process Essex’s alumina into aluminum. The contract price consisted of a fixed charge and a variable charge. The variable charge included components that were indexed to the wage rate and to the wholesale price index. In 1973, production costs rose dramatically because of fuel price increases, but the contractual indexing did not track this. Alcoa attempted to renegotiate the contract, but Essex would not agree. Finally, Alcoa refused to produce any more, and the dispute went to trial. The court reformed the contract, rewriting the price term to give Alcoa at least one cent per pound “profit.” What is especially interesting, from our perspective, is that the court had to force its rationale into the standard categories of contract law: the price index used by the parties was a “mutual

mistake” because it performed so poorly. But, as Goldberg (1985) notes: Are we so sure that there *was* a mistake *ex ante*?¹⁹

The question is quite important for our purposes. Renegotiation of price terms is a major issue in many long-term utility contracts. It will often happen that the price adjustment formula agreed on, the best one *ex ante*, will not track the operator’s costs well after many years. If it is clear that there was no mutual mistake at the inception of the contract, will the court be willing to fix a new base price and formula if the parties cannot agree? Many U.S. courts would consider this to be a “nonjusticiable” issue, a question of *interest* rather than of *rights*. In contrast, German courts, for instance, are more willing to revise price terms and “adapt” contracts in the light of unforeseen developments (see Dawson 1983).²⁰ But, even if a court were willing to decide the question, it is likely that the issues involved in rate setting are so specialized that it is not at all efficient to give these decisions to an ordinary judge who must educate himself about regulatory policy and practice at the beginning of the case.

Also of interest in the Alcoa case is the fact that the parties later agreed on a new arrangement and tossed away the judicially reformed contract (Dawson 1984: 35). Dawson, a law professor, is skeptical, in general, of the ability of judges to rewrite contracts: “Nothing in their prior training as lawyers or their experience in directing

¹⁸ Aluminum Co. of America v. Essex Group, Inc., 499 F. Supp. 53 (W. D. Pa. 1980).

¹⁹ In most legal systems, including the U.S., that is what matters — e.g. UNIDROIT Principles Art. 3.4: “Mistake is an erroneous assumption relating to facts or to law existing when the contract was concluded.”

²⁰ German courts felt compelled to fashion this new approach when dealing with contracts that had been thrown completely out of balance by the hyper-inflation of the 1920s.

litigation . . . will qualify them to invent viable new designs for disrupted enterprises . . .” (p. 37).

One conclusion that is suggested by this strand of literature is that neither the substantive law of contracts (in the U.S. at least) nor the ordinary court system is well-equipped to deal with the gap-filling that needs to take place in the execution of long-term contracts for many kinds of municipal services. The idea that these contracts can work well if only the judicial system can set clear rules of the game is too simplistic.

The question then naturally arises whether specialized mediation or arbitration could not serve the function. One could imagine a specialized “third-party intervenor,” operating on an ongoing basis — not just when disputes arise — authorized to investigate, inspect, discover facts, facilitate negotiations, and finally, if the parties cannot agree, to issue a binding and conclusive judgment, based on a set of substantive guiding principles included in the contract (see Scott 1987: 2049; Myers 1986). But then the question posed at the beginning of this chapter (section 1) resurfaces: Is it feasible to expect the *contract* to contain sufficient guidance for such a specialized third party?

If this is not feasible, we might then move toward the idea of a special utility-regulation law that would either set up a specialized administrative body or permit the selection by the parties of a special third-party intervenor to serve the same role. In any case, we have come a long way from a simple reliance on ordinary contract law. We will return to these issues in Chapter 6.

5. U.S. EXPERIENCE: 19TH AND EARLY 20TH CENTURIES

5.1 Municipal Franchises

The ideas outlined above about long-term contracting are given strong support in U.S. history. In the nineteenth and early twentieth centuries, it was quite common for U.S. cities to rely on the private sector for the provision of infrastructure and municipal utility services such as electricity, water, gas, trolleys, canals, and turnpikes by means of long-term “franchise” contracts that resemble in some ways the concession agreements and BOT (build-operate-transfer) contracts that are being concluded in many parts of the world today (for water, see e.g. Blake 1956: 63ff.). Financing was a primary motive, as it is today. The responsibilities for investment, operation, and maintenance of the system were given to a private company for 20–40 years or more in return for the right to charge users specified fees. This chapter in the story of economic regulation in the U.S. has just begun to be explored (see Jacobson 1988, 1989a, 1989b; Priest 1993; Troesken 1994).

In 1890, 57% of waterworks in the U.S. (1072 out of 1878 systems) were owned by private parties (Baker 1899). Franchises for sewer services were less common, evidently because of greater simplicity of operation (gravity flow), the importance of public health concerns, and the fact that free-market consumer demand for sewer services was not great. In 1902, it appears that only 47 cities and towns had granted sewerage franchises (Wilcox 1910: 451), and very little information existed about them.

There was growing dissatisfaction with the performance of these franchises in all sectors,²¹ many examples of which are found in the comprehensive treatise on the subject of municipal franchises written by Delos Wilcox (1910; 1911), a widely respected public utility expert of the time (see Nord 1975). For instance, according to Wilcox, the history of the Spring Valley Water Works in San Francisco “has been the story of one long fight” (Wilcox 1910: 425).²² And on and on. An engineer from that period wrote, after the fact: “The past history of public franchises granted by municipalities or other public authorities is largely a history of mistaken policy resulting in harm to one or the other party or, more often, to both parties of the contract” (Norton 1914: 135).

In general, complaints centered on lack of coverage, high prices, price discrimination, health aspects (water quality), and political corruption (see also Jacobson 1989a). Growing dissatisfaction with private-sector involvement led to a widespread municipalization of waterworks around the country. The percentage of publicly owned waterworks went from 6% in 1800 to 53% in 1896 (Keating 1989). By 1899, only nine of the fifty largest cities in the U.S. were dependent on private companies (Baker 1899); and most major cities owned and operated their water supply systems by 1915 (Baker 1915).

²¹ A typical example concerning water supply is found in a contemporary description of developments in Duluth, Minnesota: “. . . the record of the private company was one of poor service, extortionate and discriminating charges, an impure water supply . . . and a most corrupting influence in the political life of the community. The fight against the unsatisfactory and predatory private interest by the patriotic and more enlightened part of the community was a long and bitter one. The plant was finally municipalized in 1898 . . . Under the careless and insolent management of the private company, the water supply became contaminated and a deadly menace to the public health. Epidemics of disease were directly traced to the contaminated water supply, and this fact had much to do with the creation of the public sentiment which finally resulted in a purchase of the plant by the municipality. When first the plant was acquired from the private company it was in a run-down condition . . .” (Joerns 1907).

²² A detailed description of San Francisco’s experiences with water-supply franchises, with the same finding, is given in Jacobson (1988).

Corruption was widespread. The companies offered bribes and in some cases controlled municipal elections. Given the continuing dependence of the private company on the discretionary decisions of the municipality — on the outcome of bargaining — it is easy to understand how private operators would have wanted to secure the good graces of the municipality by all means.²³

There are many reasons why so many of these franchises worked so poorly. It is clear that lack of sophistication in drawing up good, far-seeing contracts was an important reason. Cities lacked any consistent or comprehensive public policy with regard to franchises and paid little attention to what other cities were doing (Wilcox 1910: 10). In fact, it was common for franchise agreements to be drafted by the interested companies themselves (Wilcox 1910: 8) — a tendency seen today, e.g. in central and eastern Europe. The companies also had better information at their disposal than did city officials.²⁴

The very word “franchise” indicates the spirit in which these grants were made, especially in the early years: the company was henceforth *free* to carry out its activities (see Friedman 1985: 179). There was little recognition at first of the growing monopolistic nature of the activities and of the abuses that this could lead to. In the early years, for instance, piped water supply faced competition from well and cistern water, even in fairly large cities (Wilcox 1910: 401), and coal gas from kerosene (Troesken 1994:

²³ There is a “strong temptation to keep [the city’s governmental machinery] subsidized and dominated in order to secure the numerous advantages arising from a friendly interpretation and administration of franchise provisions” (King 1921: 18).

²⁴ “These public officials have shared with the great majority of the business and professional men of the cities, profound incompetence for dealing with franchise questions from the standpoint of a consistent public policy. The corporations asking for franchises have had all the knowledge and experience of the business” (Wilcox 1910: 9).

58). Moreover, franchises were generally not exclusive in the beginning era (Behling 1938: 23).

The franchise agreements did not usually provide for supervision over accounting and financial matters. So “municipal authorities never really knew, except in the uncommon instances of detailed audits, whether the costs of service justified the price demands of the companies” (Troxel 1947: 63).

The “incomplete contracts” paradigm seems to fit well — even though it is not clear how much of the incompleteness was fundamental rather than simply a function of the times. Says a contemporaneous engineer, in criticizing these franchise agreements: “The parties . . . attempt to foresee and provide for all possible contingencies that may arise during the term specified in the franchise” (Norton 1914: 135). The initial terms fixed in the franchise contract became outdated as conditions changed, and the need for renegotiation would lead to conflict and often years of stalemate. Especially important was the need for the extension of water distribution systems to new areas as cities grew rapidly. Given the behavior of costs in water distribution systems, and the varying distribution of the population in a city, the incremental costs of new water sales were not necessarily constant, and so extensions might well justify rate increases. But by how much? Most franchises did not define a methodology and cost accounting system that could give an answer to the satisfaction of both parties.²⁵ The result was often that

²⁵ Rates were specified in a number of different ways. Sometimes a simple maximum price was fixed in the agreement; in other cases, more complicated provisions were used. In Denver the rates were to be “equivalent to the average rate prevailing in the cities of Chicago, St. Louis and Cincinnati for the same service” (quoted in Wilcox 1910: 442), but the company later announced that it was impossible to arrive at such rates, and the case went to court.

companies made the initial investment after receiving their franchise, but then were reluctant to extend the network to new areas, with the exception of low-cost areas where they could still make a profit.

Contracting was also more difficult because of the complexity of the desired output. Although public health concerns made water quality an important issue, and this would have been best protected, in the absence at that time of water-quality-testing technology²⁶ by control over the source and treatment process, the impression is that most franchise contracts did not try to fine-tune the technical aspects of water supply. Going further, one could argue that the more one departs from contracting on the basis of *output* characteristics, the less advantage there is to contracting out a public service.

The output was complex in another way because of the city's need for water to fight fires. This requirement was often expressed in loose terms. Furthermore, it was not realized in the beginning that this added objective would greatly increase costs for the water company because of the high peak capacity and high pressure needed. One way around this would have been to specify certain technical characteristics of the system — diameter of mains, storage capacity, etc. Monitoring by looking at final output — water available during a fire — might give good information only when it is too late. Another approach, used in a number of contracts, was to use water *pressure* in tertiary mains as a proxy.

In the perspective of later regulatory developments, price provisions such as that found in New Haven are particularly interesting (Wilcox 1910: 415). Rates to private consumers were to be readjusted by arbitration once every five years so as to give an 8% return on capital. (This did not keep the New Haven franchise from being one of the most criticized.) Jacobson (1989a) comments, in general, that franchise terms began to look more and more like rate-of-return regulation as time went on.

One cause of the failure of this approach may have been the difficulty of digesting all the details of a well-developed and sophisticated contract. The fate of a highly complicated and elaborate contract proposed for the Milwaukee Electric Railway and Light Company in 1925 illustrates this well. It was rejected by voters at a referendum “largely because the time was too short for an adequate explanation of its terms to the electorate. . . . [W]ith the general atmosphere of suspicion usually aroused when proposals of this kind come to a vote, the contract succumbed to a multiplicity of imagined objections” (Glaeser 1927: 732).

Another factor contributing to the long standoffs was the common problem of the valuation of assets upon termination of the franchise. Conflicts often arose over this issue.

The courts treated these franchises as essentially private contracts.²⁷ It was a long while before they came to the view that there was sufficient public interest involved in municipal services to justify public regulation outside the context of the franchise agreement — and in a way that might “impair” the contract (see King 1921: 8). As an example, consider the case of *Columbia Railway v. City of Columbus* (249 US 399), decided in 1919. A street railway company wanted to get out of a 25-year franchise agreement because of increased operating expenses due to the war, in particular higher wages fixed by the War Labor Board. The Supreme Court held that there was a binding contract between the company and the city and that there was no showing that the contract had become impossible to perform. In this case, typical of its kind, the franchise

²⁶ See Blake 1956: 248ff.

²⁷ This goes back to the case of *Trustees of Dartmouth College v. Woodward*, 4 Wheaton 518 (1819).

agreement is treated exactly the same as any contract between private persons. The public interest in assuring city transportation services is not even mentioned in passing.

The general impression is that the courts were not capable of dealing with the problems that arose in these franchises. Courts act only upon complaint; their proceedings are slow and expensive; they do not have trained staffs of engineers, accountants, and valuation experts; judges have very little training to help them deal with intricate public utility problems; and courts are not well-suited to play a quasi-legislative role in fixing rates and regulations for the future — a rule-making function (paraphrased from Trachsel 1947: 73; see also King 1921: 21f.).

As time went on, franchises became more complete: the franchise “evolved into an elaborate instrument designed to achieve by contract many of the ends sought today [i.e. in 1938] by regulation under commissions (Wilson *et al.* 1938: 27). But, as these commentators go on to say: “the more detailed a franchise becomes, the more fixed and inflexible become the relations between the city and the utility . . .” The problem arises because of the long-term nature of the contract and is similar to the problem faced by anyone who has had experience drafting legislation. Trying to make a statute more *complete* tends to make it inflexible and, given circumstances that are not foreseen now, could well produce absurd results in the future. The same is true for a long-term contract.

It still may be argued that the issue is not simply to make the contracts more complex by piling on more minute details; the challenge is to make them more complex in a way that builds in flexibility. For example: “sliding-scale” or “service-at-cost” provisions began to be incorporated into franchises as means by which rates would be

adjusted according to various characteristics of the company's performance — e.g. so as to yield an agreed rate of return. But the problems involved in adding complexity strengthen the argument for specialized regulatory institutions, given the limitations of the ordinary judicial system.

Indeed, we begin to see the development, within the context of a franchise agreement, of arbitration mechanisms as a way to fill contractual gaps (see e.g. Jacobson 1989a). The franchise contract would specify that certain issues were to be decided by arbitrators — e.g. the fair value of the facilities, rate adjustments, whether the supplied water was pure. This can be seen as a way to escape from the increasing detail of franchise agreements and as a transition to state-level commission regulation. Priest (1993) makes the latter point as a way of arguing against the simplistic private-interest explanation of the ascendance of regulatory commissions: the public utility commission is seen as just one further development in the complex and quite genuine problem of how to deal with natural monopolies.

Priest (1993: 321) states: “it is difficult to distinguish state regulatory commissions established between 1907 and 1922 — for example, from the board of arbitrators established in the 1891 New Haven water franchise . . .”, which had the task of readjusting rates every five years so as to give an 8% return on investments.²⁸ I would argue, however, that there is a significant difference: the New Haven arbitration board had a limited task within the narrow context of contract interpretation; it had no

²⁸ See Wilcox (1910: 415) for a full description, and note that it appears that this was in fact the 1901 franchise, not the one in 1891.

discretionary power, say, to disallow imprudent costs to curb the incentive of the firm to overcapitalize or goldplate, a power that PUCs have.

5.2 The Move to Independent Regulatory Commissions

The perceived failure of the franchise approach in the U.S. led in two directions: (1) toward municipal ownership and control and (2) toward the creation of the state-level public utility commission (PUC). As Nord (1975) shows, at first opinion was not unanimous that the best locus for such a PUC was at the state level; home rule proponents argued strongly for *municipal* regulation, believing that those closest to the problems would be better able and better motivated to deal with them. Advocates of the state-level PUC believed that at that level such an agency would be less political²⁹ and corrupt and that administrative economies of scale would permit the development of high-level expertise. “Across states and industries, utilities lobbied for state regulation because they saw it as one way to forestall the relatively hostile regulation of municipal authorities” (Troesken 1994: 73).³⁰ Moreover, state-level regulation could more easily deal with services that spilled over one municipality’s boundaries.

The first two states to adopt the PUC approach were Wisconsin and New York, both in 1907. Their statutes became models — especially the Wisconsin act — and by

²⁹ “When they were regulated commonly by local governments, the utility companies often were the ‘whipping boys’ of political campaigns. Candidates for local offices singled out the prospering utility firms for attacks” (Troxel 1947: 63).

³⁰ But note that at first, the companies were *opposed* to the idea of state regulation, which was being promoted by known Progressive reformers. Whatever the drawbacks were of dealing with local governments, utility companies at least had reached a certain *modus vivendi*. But they changed their minds when they began to see the advantages for them of state regulation: the possibility of “escape from the annoyance of local nagging and the immediate political pressure for lower rates” (Wilcox 1914: 74).

1920, more than two-thirds of the states had set up regulatory commissions (Phillips 1985: 116).³¹

What is especially important in the perspective of this dissertation is the conclusion that some form of permanent, specialized regulation was necessary to replace the “old system of haphazard regulation” by local governments under franchise contracts.³² If the problem had only been one of inadequate contract specification and bargaining, one would think that there would have been other solutions — e.g. creating a support service at the state level that would prepare guidelines, model contracts, specialized accounting systems, valuation methods, and provide negotiation support, etc. Or is it simply a historical quirk — an artifact of Progressive thinking — that this type of solution was not widely considered in the U.S.? For there were recognized authorities at the time, such as Delos Wilcox, who recommended that the state commissions play no more than an advisory and supportive role (see e.g. Wilcox 1924: 221ff.).

In the light of the theory of incomplete contracts, as outlined above and to be discussed in further detail in Chapter 2, one can see a decided advantage to the idea of the PUC — if not to the way that they developed as time went on. Franchises, taken as contracts, have limited flexibility. Beyond certain bounds, changing service requirements is difficult without renegotiating the contract. Courts are willing to fill contractual gaps

³¹ Once the state-level PUCs were created, in some cases it appears that even local governments were happy to be relieved of the problem. Balthasar Meyer, who was one of the foremost proponents of state regulation (see Nord 1975), offers an interesting reflection. According to Meyer (1911), the Wisconsin Public Utilities Law reserved to the cities extensive powers, including the power to contract with service-providers, subject to review by the PUC. “None of the cities in this state manifested a disposition to exercise these functions after the enactment of the utilities law . . . Again and again, the Commission has had occasion to suggest to municipal authorities that certain things regarding which they were complaining lay entirely within their own jurisdiction and the remedy in their own hands.”

only to a certain extent, because the underlying idea is that the intentions of the parties are what govern. The PUC, in contrast, is an administrative agency — albeit quasi-legislative and quasi-judicial — with broad discretionary authority to see that public utilities fulfill their obligations, the major ones being: (i) to serve all who apply for service; (ii) to provide safe and adequate service; (iii) to serve all customers on equal terms; and (iv) to charge a just and reasonable price (Phillips 1985: 106). The task becomes deciding what is in the balanced interest of all parties — customers, investors, the general public — as constrained by statute and case law, rather than deciding what was or would be the *intentions* of the parties, and so the problem of filling gaps disappears, though other problems may arise. Instead of having to conclude a contract with a public body, the privately owned company applies for a “certificate of public convenience and necessity.” Instead of a contract, there is a broad “regulatory compact” (see Swartwout 1992).

The issue is complex and deserves a comprehensive historical treatment — which this dissertation will not provide. There are several tantalizing indications, however, that one should not take the dramatic shift to PUCs in the U.S. as sufficient reason for a wholesale rejection of regulation-by-contract. First, commission regulation of *railroads* provided the archetype in the U.S.; in fact the influential Wisconsin Public Utility Law of 1907 acted to give the already existing Wisconsin *Railroad* Commission jurisdiction over various public utilities, and the commission continued to bear this name.³³ One could make the argument that the archetypal industry, railroads, was more in need of regulation-

³² The quotation is from Wilcox (1914: 74).

³³ As for the other influential state PUC set up in 1907, the one in New York, we note that the first item mentioned in the section of the law that describes the sectors to be covered is *railroads*.

by-commission than the typical municipal public utility — because of its sprawling, intercity network characteristics, hard-to-predict future development, and complex rate structures. Did the railroad model naturally but inappropriately bias the entire discussion towards regulation-by-commission?

Second, price inflation began to develop in the years before World War I and picked up in intensity during the War. But the maximum prices in franchise contracts were fixed in nominal terms; there were no automatic price escalation clauses at that time.³⁴ This led to intense pressure by companies to amend the contracts: “The extreme fluctuations in cost which resulted from the World War made the enforcement of contracts difficult and, in some cases, impossible either with or without bankruptcy” (Wilcox 1924: 220). Since, as we have noted above (section 5.1), the courts would not give relief, another solution had to be found — one that would protect the utilities by permitting prices that would assure them of a fair return.³⁵ But this is not a critique of regulation-by-contract per se — not now that sophisticated price indexes can be used in drafting the price terms in contracts.

5.3 Reflections on the U.S. Experience

The American experience points to an open question: Did municipal franchises perform so poorly: (1) because of insufficient expertise on the part of local governments, poor understanding of the interaction of technical and financial aspects and of future contingencies, poor contracting skills, and the absence of price indexation; (2) because of

³⁴ Some contracts, however, did set prices on the basis of an average of prices for similar services, for example, in other cities in the same region (see Wilcox 1910; 1911).

an ineffective court system that did not enforce even the basic contractual rules of the game and that was completely inept when it came to dealing with incomplete contracts with a distinct public-policy flavor; or (3) because of a more fundamental flaw in the very concept of regulation-by-contract? Were the contracts perhaps *inevitably* incomplete in crucial ways, ways that could not be remedied by better technical knowledge and contracting skills and more effective construction and enforcement by the courts? This dissertation will explore these questions further in the context of two case studies.

6. THE FRENCH EXPERIENCE: A PREVIEW

It is said that over 75% of the French population receives water from private companies and about 40% depends on sewerage services provided by private companies (Haarmeyer 1992b). These services are supplied by means of long-term contracts of a special kind, notably the *concession* and the *affermage*. The French model of private-sector participation has been widely advocated as a solution to the needs of other countries, especially developing countries. Promotional efforts have come from international institutions, such as the World Bank, and from the handful of large private companies that dominate the scene in France,³⁶ whose technical and managerial expertise in water and wastewater services is indisputable.

The French model was first used outside France in countries such as Côte d'Ivoire, Guinea, Macao, and Malaysia, and is now being adopted, in various modified versions, in many other countries. It is fair to say that the French example played an important role in

³⁵ The commissions were “besieged” by the utilities to increase rates in response to the inflation that occurred around the time of World War I (Richberg 1924: 67f.).

convincing policy makers and advisors that long-term contracts for municipal services could indeed work well.

Though there are a number of different forms of “delegating” local public services to private companies in France, the two most common, for water and sewerage services at least, are the concession (strictly speaking, “public service concession”) and the *affermage* — I will refer to both as “concessions” in the paragraphs that follow.³⁷ In these contracts, a private party takes on full responsibility for providing the municipal service in question for a number of years (perhaps 25–30 for the concession and 10–15 for the *affermage*) and in return is allowed to charge users a specified fee.

It is generally accepted that the concession system has worked fairly well in France to provide water and other services to many cities and towns.³⁸ There is no “public utility commission” that exercises on-going regulation of public utilities. Since at first glance the concession appears to be a type of long-term contract like the franchise in the U.S., a most important question is why local-public-service concessions appear to have worked reasonably well in France, while franchises worked out so poorly in the U.S.

³⁶ Compagnie Générale des Eaux and Lyonnaise des Eaux–Dumez together account for 58% of the French market (Haarmeyer 1992b).

³⁷ The main difference between the two forms (for our purposes) is that in the concession, the private party carries out the initial investments, while in the *affermage* the municipality takes on this responsibility. (Descriptions and legal analyses of these forms of delegating local public services are found in Auby and Ducos-Ader 1969, J.F. Auby 1982, Coudeville 1983, Dufau 1990, Llorens 1992, and J.-B. Auby 1994.) With a few exceptions, the concession and the *affermage* are governed by the same legal principles, and the *affermage* can really be considered simply as a variant of the concession (Llorens 1992: 46). Moreover, the distinction is becoming blurred since it has recently been accepted that the private party in an *affermage* may carry out investments in the form of *extensions* to the network.

³⁸ But there is growing dissatisfaction with some aspects of the system. Since the 1980s, a growing consumer movement in France has brought attention to the potential for lack of control over monopolistic price behavior (see, e.g., J.F. Auby 1982; Malye 1994). In recent years, accusations have abounded that the large French companies have made illegal political contributions in order to win contracts.

Discussions of the French concession in the U.S. non-academic professional literature tend to treat the concession as if it were an ordinary, private-law contract. In fact, it is not. Concessions fall under public or administrative law, and the concession agreement has even been referred to as the archetype of the administrative contract in France (Llorens 1992: 16). There is a special administrative court system, consisting of 26 administrative tribunals, with the *Conseil d'Etat* at the pinnacle. A well-developed body of law, elaborated almost entirely through *jurisprudence* (case law), rather than statutes, has arisen that concerns itself in general with administrative contracts and public services and in particular with public-service concessions.

What is important for our purposes is the emphasis throughout the law on the public interest and on a recognition that the concession needs to be flexible to be able to adapt to changing conditions. No pretense is made that the administrative judge (if the case comes before her) is merely interpreting the intention of the parties at the time they entered into the contract or discovering if there was some flaw in the agreement itself (cf. *Alcoa v. Essex*, section 4.2, above). The remedy is admittedly “extra-contractual”: the administrative judge “does not hesitate to go beyond the will of the parties in the interest of public service” (Richer 1991: 68).

The underlying objective is to keep the long-term relationship intact so that there is no interruption in the delivery of essential public services. The overarching principle is that many modifications can be made in the contractual terms for one reason or another so long as the concessionaire is appropriately remunerated. Although there are of course many differences (which will be brought out in Chapters 3 and 4), it is worth noting at

least a superficial similarity with the description offered by Williamson (1976: 91) of the basic regulatory compact in the U.S.: “(1) the regulatee is assured an overall fair rate of return, in exchange for which (2) adaptations to changing circumstances are successively introduced without the costly haggling that attends such changes when parties to the contract enjoy greater autonomy.”

In some ways, the system developed in France may be closer to the idea of regulation-by-commission than one often thinks; but the regulatory role, at least in theory, is played more by legal *rules* than by the *person* of the administrative judge. How well does this system perform? One of the goals of this dissertation will be to look more carefully at both the theory and the practice.

7. FORMULATING THE ISSUES AND DEFINING THE APPROACH

The overview presented in this introductory chapter has brought out the major issues that will be developed more fully in Chapter 2 and then explored further in the remaining chapters. Two ideal types of regulation are first defined (see section 2 of this chapter): regulation-by-contract and regulation-by-commission. The economic literature (section 3), emphasizing the incomplete nature of long-term contracts, suggests that regulation-by-contract will tend to converge with, or lead inexorably to, regulation-by-commission.

The legal literature (section 4) has much to say about how the substantive law of contracts and the judicial system, at least in the U.S., are ill-equipped to deal with problems that arise in many long-term contracts. This adds to the insights from the economic literature by suggesting that the institutional setting for the *function* involved in

regulation-by-commission (i.e. the “commission”)³⁹ is unlikely to be the ordinary judicial system, at least not in a direct way.⁴⁰ Another strand of the legal literature calls our attention to the extra-legal factors that can work to stabilize “relational” long-term contracts; and this is also addressed by economists who have looked at the impact of *reputation* in countering opportunism in a game-theoretic context.

All of these insights seem to be well-illustrated by the example of the rise and decline of franchise contracts in the U.S. (section 5). Yet the question remains whether it would have been possible to improve regulation-by-contract — or, more to the point, whether it would be possible to improve it in today’s context — rather than discard it in favor of the public utility commission. (In fact, we see a resurgence of regulation-by-contract for municipal services in the U.S. in the late 1990s.) Was the approach of regulation-by-contract *inherently* flawed, as some of the economic literature might suggest?

Before we examine these issues in depth in the following chapters, certain limitations of the approach taken in this dissertation should be mentioned. Both case studies concern *plants* as opposed to *networks*. There are several reasons why regulation-by-contract is not likely to work as well with networks as with plants: first, if the concessionaire steps into an existing system, there is likely to be greater uncertainty over the condition of underground networks than with plants;⁴¹ second, the spatial aspect makes unpredictable changes in requirements and conditions much more likely in the

³⁹ And again, let us note that the “commission” for present purposes could consist of just one person.

⁴⁰ One could always imagine a process of judicial appeal.

future. If we showed that regulation-by-contract does not work well even with plants, one could reasonably infer that it would work even more poorly with networks. But if we concluded that regulation-by-contract performs satisfactorily with respect to plants, we may have said little about its applicability to networks.

Another limitation to my approach is that I will not deal with problems that arise during the *bidding process* — although they are critical to the economic success of regulation-by-contract since the underlying theory involves competition for the market. One reason is simply to limit the scope of my dissertation. But another reason is that in a long-term contract (say, 20–30 years), events occurring over the course of the contract will usually be more important, in the final analysis, than the initial setup in determining the overall performance of the arrangement.

Finally, a word should be said on the approach taken in this dissertation to legal issues. From time to time, the legal rules of particular jurisdictions will be mentioned; French law, in particular, is discussed in some detail in Chapters 3 and 4. But, since this is not a dissertation in the field of law, it will often be sufficient to refer to *general* legal principles. For this purpose, I will sometimes cite the “Principles of International Commercial Contracts” that were issued by the International Institute for the Unification of Private Law (UNIDROIT) in 1994, drafted by a working group of scholars from all the major legal systems of the world (see UNIDROIT 1994).⁴² The intention of UNIDROIT was to promulgate a set of legal principles applicable to every kind of international commercial

⁴¹ Cf. Engel, et al. (1997: 5): “. . . franchising is preferred when the quality of assets is observable at a relatively low cost. Otherwise, a regulated utility is preferable.”

contract, including long-term concession agreements, and there is nothing about the Principles that prevents them from being applied to a purely domestic contract. They therefore constitute a convenient reference point.

⁴² Created in 1926 under the auspices of the League of Nations, UNIDROIT is now an independent international institution based in Rome, with 52 state members.

CHAPTER 2

CONCEPTUAL FRAMEWORK

1. INTRODUCTION

This chapter outlines a conceptual framework that will be used as a lens through which the case studies in the following chapters will be viewed. Since the notion of incomplete contracts plays such an important role in this dissertation, the chapter begins with basic concepts and definitions concerning this topic (section 2). An overview of the major strengths and weaknesses of regulation-by-contract then follows (section 3).

Since many of the weaknesses of regulation-by-contract flow from the incomplete nature of the contracts, it stands to reason that finding ways to reduce, or otherwise cope with, incompleteness can be of great benefit. So the last major section (section 4) catalogues and discusses the various ways of dealing with incompleteness in contracts.

The ideas in this chapter will be used as tools to better understand and assess the case studies that follow.

2. CONTRACTUAL INCOMPLETENESS: BASIC CONCEPTS

2.1 Incomplete Contracts

The issues I will deal with in this dissertation and the approach I will take fall most closely under what has come to be known as the “new institutional economics” or “transaction-cost economics,” and in particular, ideas concerning incomplete contracting, inspired to a large extent by the writings of Oliver Williamson. Joskow (1991: 67) goes so far as to say:

The evolution of the structure of the classical mid-twentieth century public utility, the regulatory environment in which it operates, and the pressures for change that it is now under are best understood through the lens of incomplete contracts.

Many of the problems with regulation-by-contract relate to the *incompleteness* of such contracts. Long-term contracts for municipal services are almost always incomplete in some ways — and some are inherently so. Different writers use the term in different ways. For purposes of this dissertation, I will define *contractual incompleteness* in contradistinction to the following heuristic definition of contractual completeness:

A contract may be said to be *complete* with respect to a particular aspect to the extent that any competent and informed adjudicator would reach the same conclusion as to the parties' rights and obligations in every conceivable state of the world, the adjudicator's conclusion being based solely on his or her assessment of what the parties have actually (subjectively) agreed in the contract.¹

Economists' definitions of contracts and contractual incompleteness generally ignore the question of *who* in fact is deciding what the contract means;² this is understandable in stylized contracts that are expressed entirely in formal terms; for there the meaning is self-evident to anyone schooled in this formal language. But in general, language is not self-interpreting. For that reason, I have chosen a behavioral definition — how hypothetical “competent and informed” adjudicators would behave — since my concern is with actual, primarily verbal contracts and with public policy.

Economists often use the term “incomplete contract” to refer to a contract that is not ex ante optimal in every conceivable state of the world, even if it does clearly specify

¹ A slightly different definition would move away from subjective intent and rely instead on the adjudicator's assessment of the meaning that the document would convey to a *reasonable* person having all the background knowledge which would reasonably have been available to the parties at the time of the contract. I have taken a purist stance in the definition in the text so that the adjudicator's “regulatory control” does not become mixed up with the determination of completeness (see section 2.3, below).

rights and obligations in every state. For example, the sales price may be adjusted *in steps* as a particular input variable changes, rather than being optimized on a continuous basis: the contract is said to be insufficiently state contingent and hence incomplete.³ This is not the way I will use the term.⁴

Going further, it may be that if conditions change, the parties will come to see that *both* can benefit if they modify the terms of the contract. That does not mean that the original contract was incomplete, so long as the original subjective agreement of the parties was not explicitly or implicitly contingent on conditions not changing in that particular way. In order to keep the contract simple (i.e. to avoid further transaction costs), the parties may decide — in a fully informed manner — to take the risk that the general terms will be applied in certain low-probability circumstances, even if these terms would not be the optimal ones under those circumstances.

Given the definition I am using, different degrees of completeness are possible. It is fair to say that it is rare for a contractual aspect to be fully complete since one can usually imagine *some* state of the world in which an adjudicator would no longer be quite

² For example: “A contract is a document that specifies the obligations of the parties, and the transfers that must be made under different contingencies” (Macho-Stadler and Pérez-Castrillo 1997: 20).

³ “Economics scholars . . . use the term ‘incomplete contracting’ to refer to contracts that fail to fully realize the potential gains from trade in all states of the world” (Ayres and Gertner 1992: 730). E.g., with respect to a wage contract: “A contract is defined as ‘complete’ if the wage is contingent on the level of profits, and ‘incomplete’ if the wage is insensitive to this level” (Spier 1992: 433).

⁴ I appear to be in good company. Cf. Hart (1987: 752): “. . . a complete contract means one that specifies each party’s obligations in every conceivable eventuality, rather than a contract that is fully contingent in the Arrow-Debreu sense.”

sure what the parties had intended. Also, there may be few cases in which *all* competent and informed adjudicators would agree.⁵

The term “adjudicator” as used in this dissertation means any third party who is given the responsibility of filling a contractual gap or deciding a dispute or issue in a way that is *binding* on the parties, as opposed to simply giving *recommendations* that may or may not be followed. The fact that the decision may be appealed to a higher level does not stop the issuer of the decision from being considered an adjudicator. Both a judge and an arbitrator would be considered adjudicators.

There are two different kinds of incompleteness. In the first, which I will call *manifest incompleteness*, it is quite clear that the contract does not precisely specify rights and obligations in all states of the world. Sometimes there is a blatant “gap.” In other cases, the problem is that vague terms such as “reasonable,” “best efforts,” or “good faith” are used — words with fuzzy definitional boundaries that could be interpreted in different ways by different adjudicators. One reason for adopting a behavioral definition of incompleteness is that such a phrase could come to have such a precise meaning as a term of art that any informed and competent adjudicator *would* in fact agree on its boundaries. (Suppose that in a particular trade, “reasonable notice” had indisputably come to mean “within three business days” just by custom.)

In the second kind of incompleteness — *latent incompleteness* — the contract appears, as it is expressed, to cover all states of the world. But if conditions change

⁵ The term “competent and informed adjudicators” could be defined further, of course. But it suffices for present purposes since we would surely want to aim for a dispute resolution system in which all adjudicators are (reasonably) competent and informed.

sufficiently, we may see that performance under such conditions was not what was contemplated by at least one party when the contract was concluded. Suppose that someone contracts to have a garage built on land that is located next to her house. Would she have signed the contract if it had explicitly stated that the garage should be built even if her house burned down first? For the homeowner, the agreement may have been conditional on a particular set of circumstances (e.g. that the house will still be there) even though this was not stated in the contract — and perhaps not even imagined by her when she signed the contract.

These two kinds of incompleteness can be illustrated by the two major kinds of difficulty found in long-term contracts for municipal services. First, it may be difficult to provide in the contract for all the possible modifications in service requirements that might occur during the term of the concession. For example, the Lyon incineration contract described in Chapter 4 provides that prices are open to reexamination and revision if the plant is modified in size or quality in a “substantial” way. The contract is *manifestly incomplete* in this respect because there is no precise rule in the contract that states how to derive the new price terms. It is also manifestly incomplete because the word “substantial” does not give a bright-line test for when the revision process would be triggered.

The second example concerns the *price indexation terms* in the contract. In some cases, no matter how carefully these terms are thought out, the price of one or more inputs may increase in such a dramatic and unexpected way that we can no longer be sure that performance under these conditions was what was contemplated by both parties when

the contract was concluded.⁶ The contract may read as if the price indexation terms apply unconditionally, no matter what happens to the actual input prices; and the incompleteness may therefore not be apparent. But if the parties in fact would not have agreed that the terms should apply in certain extreme, low-probability states of the world — if this question had been posed to them in concrete terms at the time — then the contract is *latently incomplete* in these respects.⁷

Another example of latent incompleteness was provided in the RESCO case study in Chapter 5. There, the written contract reads as if the risk of landfill-related changes in law is not borne by the communities and hence, by implication, must be borne by RESCO. But the perceived probability of such changes in law at the time the contract was concluded may have been so low (or nonexistent) that the parties did not think the issue was worth mentioning. Again, there is a strong argument that this is a case of latent incompleteness.

Incompleteness poses problems for regulation-by-contract. The presence of substantial incompleteness means that the parties may not have allocated all important risks through the contract. Uncertainty over how these risks will be allocated later on, by negotiations or by the decision of a third party, may lead to behavior by the parties that is not optimal *ex ante*.⁸ For example, the company may put a nonoptimal emphasis on recurrent costs rather than up-front investments to mitigate the impact of a future hold-up

⁶ This is to be distinguished — it is worth pointing out again — from a situation in which performance under those circumstances was contemplated originally and the risk assumed, but the parties now have the opportunity for joint gain by modifying the contract.

⁷ But note that it does not necessarily follow that courts should rewrite the contract to reflect what they think the parties *would have* agreed. That is a separate question. See Charny (1991).

problem. Moreover, the uncertainty may be so great that the parties decide not to enter into the contract at all — a complete forgoing of the potential gains from trade.

Furthermore, incompleteness tends to undermine one of the principal economic justifications for regulation-by-contract: the decentralized-economic-decision model (see section 3.1.1). Issues will be decided and risks will be allocated in ways that cannot reflect any bargain that the parties themselves actually concluded, since there was no subjective agreement *ex ante* over the aspects in question.⁹

In drafting their contract, either the parties must try to make it as complete as possible or they have to devise other ways of coping with incompleteness when it comes into play. Ultimately, it is the contract adjudicator (judge, arbitrator, or other third-party intervenor) who must fill the gap. The success of regulation-by-contract hinges to a large extent on how the problem of incompleteness is dealt with. More will be said about this in section 4.

2.2 Relational Contracts

Another term, used by legal scholars, that arises in this context is “relational contract.” There is no one clear meaning. Goetz and Scott (1981: 1091) state: “A contract is relational to the extent that the parties are incapable of reducing important terms of the arrangement to well-defined obligations.” I prefer to modify this definition

⁸ The economic literature on incomplete contracts shows that lack of *ex ante* optimality can result even if the parties *are* quite sure how risks will be allocated after the contract is signed and circumstances change (e.g. presume a 50:50 allocation of the *ex post* gains from trade). See, e.g., Hart (1995: 29ff.).

⁹ Cf. Charny (1991: 1817): “It is by no means clear that individuals should be bound to hypothetical — as contrasted to actual — contracts, or even that it is appropriate to call such hypothetical contracts ‘contracts’ at all. The autonomy- or rights-based arguments for promissory obligation do not readily extend to merely hypothetical agreements.”

slightly for purposes of this dissertation by adding “or choose not to reduce” after the phrase “are incapable of reducing.” The reason for this will be brought out clearly in Chapter 4, in which we see how one such contract in Lyon, France, has become less relational as time goes on.

Schwartz (1992: 271) adds that longevity is another characteristic of a relational contract. Moreover, there is often the idea that the parties develop particular norms and expectations as the contract moves along and that these help direct the evolution of the relationship (see, e.g., Macneil 1981; Schwartz 1992).

I will call a long-term contract *relational* if (a) it is manifestly incomplete in ways that affect important obligations of the parties and (b) extra-legal *norms* (such as deference) and extra-legal *influences* (such as reputation) play an important role in bringing stability over the course of performance.

2.3 The Activities of the Adjudicator

It is useful to distinguish two different activities that adjudicators engage in when they decide the legal consequences of a contract. The first is *contract interpretation*. In interpreting a contract, the adjudicator attempts to discover what the parties actually agreed, what they intended in fact. If the contract is incomplete, this will become apparent through the process of interpretation.

Adjudicators exercise what I will call *regulatory control* when they use rules and principles that go beyond what the parties have actually agreed. I will refer to the rules they use as *regulatory* or *extra-contractual* or *background rules*. The whole process of

determining the legally enforceable meaning of a contract — i.e. interpretation and regulatory control together — may be referred to as *construing* the contract.¹⁰

There are two kinds of regulatory rules: *default rules*, which come into play only if the parties have left a gap (silence, inconsistency, vagueness, etc.); and *mandatory rules*, which take precedence over the agreement itself, or which can even act to create a legal contract in the absence of an agreement *in fact*. It is important to note that an adjudicator may exercise regulatory control even if he concludes that the contract is in fact complete. The law might impose a mandatory rule that trumps the parties' own agreement on a particular matter. In France, for example, the basic rule for temporary cost sharing in the event of an unforeseeable, uncontrollable event is mandatory.

There is no sharp line between interpretation and regulatory control. It is not always clear, for example, when using one of the classical “canons of construction” whether the adjudicator believes that this is the best way to interpret the ordinary language used by the parties or whether he is imposing an extra-contractual rule to achieve other ends or simply to provide a standard treatment that will facilitate potential parties' ability to predict results — the “coordination” function. Adjudicators often struggle to hide regulatory control under the guise of mere interpretation.¹¹ Moreover, some commentators (e.g. those with a postmodern bent) would argue that *all* interpretation involves the social construction of meaning. Nevertheless, there are many instances in

¹⁰ This distinction between *interpretation* and *construction* is one made by such legal scholars as Corbin and Williston (see Farnsworth 1990: 237).

¹¹ “Although courts have sometimes endorsed this distinction [between interpretation and construction], they have more often ignored it by characterizing the process of construction as that of ‘interpretation’ in order to obscure the extent of their control over private agreement” (Farnsworth 1990: 237).

which we, in a more pragmatic frame of mind, would have little doubt in concluding that either interpretation or extra-contractual control predominates.

This distinction helps us better understand where problems might arise in regulation-by-contract — problems that we will explore further in the case studies. There are in fact two distinct types of problem. First, so long as the adjudicator stays close to the interpretive task, what is being enforced is the (presumably) bargained-for exchange of the parties. If we criticize regulation-by-contract in these circumstances, our critique goes straight to fundamentals: When is bargained-for exchange not the optimal way to allocate resources?¹²

The second type of problem arises when regulatory control has to be exercised by the adjudicator because of contractual incompleteness: the adjudicator has no choice but to apply rules and principles that go beyond the parties' meeting of the minds. Here the natural question is: What is the basis of these decisions, if not in the agreement itself? This dissertation will be concerned mainly with the second type of problem — regardless of the public policy importance of the first type — and we will look more closely at the issues in the case studies that follow.

3. STRENGTHS AND WEAKNESSES OF REGULATION-BY-CONTRACT

3.1 Strengths

The regulation-by-contract approach has a number of advantages over the typical regulation-by-commission solution. The major ones are summarized below.

¹² See in general Trebilcock (1993) for a thorough discussion of this question in the context of contracting. See also Epstein (1995: 71–90).

3.1.1 Decentralized, Market-Based Decision Making

In principle, a contract represents the particular preferences of the two parties. It sums up the terms of a bargained-for exchange; the parties themselves have decided how to allocate the various risks.. The decision-making is decentralized, rather than being the product of a central planner/regulator. Therefore, according to the standard theories of neo-classical economics, there is a greater likelihood that the arrangement will enhance general welfare. The superior informational advantages that the company might have over the public authority in one-to-one bargaining are counteracted by a bidding process, i.e. competition *for* the market.

This aspect is particularly important in the case of local-government services. There has been a world-wide tendency to devolve responsibility for these services away from the central government and to the local level. The danger of regulation-by-commission, with the commission located naturally at the central level (or, in any event, a more central level), is that the central body may well have a tendency to impose its own preferences on local governments; and the advantages of decentralized decision-making would therefore be lost.¹³ In deciding upon the best regulatory instrument, there is therefore an important distinction to be made between national government services and local government services. Regulation-by-contract has a special advantage for the latter. This consideration does not seem to have been sufficiently emphasized in the literature.

¹³ Williamson (1985: 328) aptly speaks of “the tendency for regulation, once put in place, to assert ancillary powers, thereby to expand its jurisdiction, often with dysfunctional consequences. Indeed, I conjecture that creeping ‘ancillariness’ is one of the more severe disabilities to which regulation is subject.”

3.1.2 No Need for Comprehensive Regulatory System

One of the major selling points for regulation-by-contract has been that a country can begin to involve the private sector in infrastructure provision even before it has set up the institutions required for comprehensive regulation-by-commission. Although this idea has sometimes been carried too far — *some* regulatory framework is necessary, as we shall see — there is a measure of truth to it. Setting up a competent, independent regulatory commission is not an easy matter.

3.1.3 Credible Commitment

One of the major challenges in inducing private companies to invest in regulated municipal services is to convince them that they will not be subject to opportunistic “creeping expropriation” resulting from the municipality’s reneging on agreed pricing arrangements. Provided that the country has a capable and independent judiciary and a strong tradition of the sanctity of contract, regulation-by-contract can increase the credibility of the municipality’s commitment — in comparison with a yet-untested regulatory commission with a broad mandate and highly discretionary powers. Concessionaires want to be assured that the rules will not change in midstream. The proviso, of course, is an important one. Moreover, the comfort applies only over those states of the world for which the contract is complete (see section 3.2.1).

High commitment value depends to a large extent on having resolved the important political issues. It is widely recognized that “economic” regulation is in fact a highly political process, with bargaining among various “stakeholders” over the division of rents being a prime concern. In regulation-by-commission, it is difficult not to let the

political aspect permeate the entire process at each decision node. Regulation-by-contract, in contrast, can permit a better separation of the political aspects from economic, technical, and financial concerns. The stakeholders can fight their political battles and reach agreement on the allocation of rents and risks at the time the contract is being negotiated. The contract can then be permitted to run its course. In principle, this should encourage greater economic efficiency because, before performance has started, the parties are bargaining behind a “veil of ignorance” — to some extent at least — and therefore they should focus more on how to increase the total size of the pie.¹⁴

Of course, the reality of regulation-by-contract may fall short of the ideal. Two problems in this context, are: First, will future stakeholders feel fully committed to the agreements reached by their predecessors? Second, will present stakeholders always accept the outcomes that are the result of their previous commitment to allocate *risks* in certain ways? At the time of contract formation, they may accept in principle that there is a 2% probability of a certain outcome occurring, but will they accept that outcome if it indeed occurs? We will return to this second problem in section 3.2.4.

3.1.4 High Incentive Power

A basic tradeoff of objectives in regulatory rate-setting, under asymmetry of information, is between productive efficiency and rent extraction.¹⁵ On the one hand, if prices are fixed at a certain level, or adjusted according to measures beyond the control of the firm, the firm has the optimal incentive to reduce costs because it is the residual cash-

¹⁴ The extensive literature on rules versus discretion in the context of macroeconomic policy is of relevance here. See, in general, Dixit (1997).

flow claimant and will retain whatever gains are realized.¹⁶ But then there is no ex post control over the profit that the firm will realize.¹⁷ Moreover, if the firm is risk averse, perceived high risk (which might well be the case especially in new contracts in a developing-country setting) will require adding a risk premium to the fixed price, thus increasing the mean realized returns.

In contrast, rate-setting based on cost-reimbursement rules of one sort or another, such as rate-of-return regulation, is able to prevent the firm from making excess profits but does little or nothing to encourage static or dynamic productive efficiency. Alternatively, one could base prices on some combination of the two extremes, in which case the fraction of the excess of actual costs over target costs that is absorbed by the firm is referred to as the “power” of the incentive scheme (see Laffont and Tirole 1993).¹⁸ A “sliding scale” regime is such an example, in which the allowable rate of return is adjusted upwards as cost savings are realized, but by an amount sufficient to give only a part of realized savings to the firm.

As soon as a price scheme relies at all on cost reimbursement, the information requirements become much more demanding, because the firm’s financial accounts have to

¹⁵ See Laffont and Tirole (1993) for a rich elaboration of how this tradeoff plays itself out in numerous variations.

¹⁶ But note that there may be a tendency of the firm to decrease quality if so doing would help it reduce costs; so monitoring and enforcement of service quality and of investments needed to maintain future quality is important.

¹⁷ These excess profits are often referred to as “information rents”: if the regulator had the same information as the firm, it could simply fix the price at the true minimum-cost level, there would be no excess profits, and the first-best policy would have been achieved (*first-best* presuming that for one reason or another the surplus is of greater welfare value if placed in the hands of ratepayers or taxpayers than in the hands of the firm — e.g. because the economic opportunity cost of public funds is greater than the market price).

be examined carefully (and perhaps the accounts of affiliated subcontractors, too, to avoid deceptive transfer pricing). These information requirements and the opportunity for manipulation become even greater when the cost of capital is one of the costs that must be reimbursed. Moreover, good technical judgment is necessary to decide if all costs were appropriate or “prudent.” Specialized agencies are much better equipped to handle such tasks. The courts, and lawyers drafting contracts, show a tendency to prefer more easily observable measures, such as price indices.¹⁹ It is easy to see how the use of informationally demanding, not easily observable or verifiable measures would often lead to disputes between the two parties and therefore would tend to be avoided in contract provisions.

Regulation-by-contract therefore lends itself to an approach in which prices are fixed ex ante (or linked to objective indexation), rather than being continually adjusted according to a cost-of-service rule. This gives a high incentive for productive efficiency, with positive benefits for general economic welfare. Competitive bidding for the selection of the concessionaire will tend to permit the extraction of expected rents ex ante, thus converting expected efficiency gains into benefits for the municipality or for consumers.

Another reason for its better efficiency effects has to do with the incremental nature of contract adjustments. It is more consistent with a contracting approach (in particular, a contracting approach based on a theory of party autonomy) to presume that

¹⁸ In this scheme, a fixed-price contract is said to have an incentive power of 1; a pure cost-reimbursement scheme an incentive power of 0.

¹⁹ In the context of retail leases, Schwartz (1992) points out: “contracts seldom condition on profits because profits are unobservable” and the same holds true in other contexts with respect to a party’s costs or to the demand facing it. Gross revenue, on the other hand, is a more easily observable measure.

the original contract represents a fair bargaining balance between the parties. Therefore, if equipment has to be modified later for reasons beyond the company's control, the adjustments made to the company's remuneration will most naturally be determined using an incremental, rather than global, analysis. So gains that the company has realized on the original contract by operating more efficiently than expected will continue to be realized even after the contract adjustment. This increases the strength of the incentives since the ratchet effect is not present or is greatly reduced, compared with a regime involving periodic *global* reviews of costs and revenues, more typical of regulation-by-commission.

3.2 Weaknesses

3.2.1 Incompleteness Leads to Uncertainty

It was noted above (section 3.1.3) that regulation-by-contract can increase the credibility of commitments insofar as (i.e. over the range in which) the contract is complete. But there is a sharp discontinuity when a gap in the contract appears; for here, as we shall see more clearly in later sections of this chapter, a great deal of uncertainty often reigns concerning how the gap will be filled. This is a peculiarity of regulation-by-contract — a split-personality disorder of sorts — and is one of the principal reasons why regulation-by-contract lost favor in the early twentieth century in the U.S. and Canada. It constitutes one of the strongest arguments for regulation-by-commission.

Contractual incompleteness seems naturally to tend to lead to another, related, problem: rent-seeking and corruption. The broader the contractual gap, when one appears, the more the company stands to gain from trying to influence city officials to

agree to a position favorable to the company.²⁰ Since there are no clear decision rules, companies may see it as essential to sway city officials to their side by effectively buying their loyalty. It is hardly coincidental that corruption tends to follow on the heels of regulation-by-contract at the local level, unless special measures are taken to combat it.

3.2.2 Attempts to Overcome Incompleteness May Limit Flexibility

One way to overcome incompleteness is to pack the contract with many state-contingent details. But when a particular state of the world arrives, it may not be quite the same in all important aspects as was envisaged; and the relevant contractual rights and obligations may therefore not be appropriate. The contractual mode tries to limit discretionary decisions; but it may be quite difficult to create a suitable flexibility of response without giving large scope to abstract and general standards (e.g. reasonableness, best efforts, good faith) that inevitably involve a high degree of discretion — that is, one can push rule-based flexibility only so far. But if these general standards are used, the incompleteness is brought back in.

3.2.3 Drawbacks of Highly Particularistic Approach

Regulation-by-contract is often highly particularistic: the parties may develop project-specific contractual arrangements quite unlike those found in other contracts for similar services. On the one hand, this is a strength of regulation-by-contract, as noted above (section 3.1.1). But it can have drawbacks also — another reason why the more uniform and bureaucratic approach of regulation-by-commission was adopted in the U.S. in the early 20th century, under the influence of the Progressive Movement.

²⁰ We are not even considering here the problems of corruption in the initial awarding of the concession.

Transaction costs can be high: it is time-consuming and costly to work out the details of complex, idiosyncratic contracts and then to renegotiate them or adjudicate them if the need arises. Both the Lyon and the RESCO case studies will illustrate this. In Lyon, six months were spent in negotiating damage provisions for shortfalls in the quantity of waste, a topic that had not been adequately covered in the initial contract, despite its complexity. In the RESCO case, the pre-trial discovery process cost about \$5 million for both sides together.

Another drawback may be encountered in the initial contract negotiations. Given the ad hoc nature of the contract, information asymmetry and the greater bargaining skills and resources of the private company will often result in a contract biased in favor of the company.

Given a custom-made contract, the adjudicator is likely to spend a great deal of time simply *interpreting* the intentions of the parties. The more complex the contract is, the more difficult this will often be, as we will see in the RESCO case (what did the parties mean by “effect”? by cost minimization?). If the contract requires so much work to extract its common meaning, it is likely that the detailed issues were not quite clear to the parties themselves at the time of contracting. Hence, the adjudicator’s search for the parties’ common intentions can easily become a quest for a will-o’-the-wisp. But the primacy of the parties’ intentions in regulation-by-contract compels the adjudicator to push this effort to the extreme. In regulation-by-commission, in contrast, the legal instrument is more often a “license” or the equivalent — a unilateral administrative act with a uniform interpretation for all instances.

Principal-agent problems may come to the fore in a particularized contract. There are several aspects to this. To what extent can city officials who are in office for just a few years truly represent the interests of the city's residents over 20–30 years? Bargained-for exchange by autonomous subjects may be welfare-enhancing, but in this case, who is really doing the bargaining? This may be a powerful argument in favor of regulation-by-commission, where institutional expertise has been developed that ensures a longer-term, policy-oriented perspective.

3.2.4 The Excess-Profit Problem

One problem that is strongly related to regulation-by-contract — but that does not necessarily derive from the incomplete nature of the contract (that is, not as I have defined incompleteness) — involves the variability of the private company's economic profits under a fixed-price regime. Regulation-by-contract lends itself to such regimes because of its tendency towards bright-line criteria and ex ante agreement on price terms.

Traditionally, the adjudicator is an expert in the law of contracts but not in technical or financial matters. As we will see in the RESCO case, determining in a court of law what costs are justifiable in a contract of this kind is not an easy matter; and courts — and hence lawyers who advise on and draft contracts — tend, if at all possible, to shy away from questions that would require considerable expert testimony to resolve. A sales price is easily verifiable in most instances; an underlying cost of production is not.

So with prices fixed in the contract (or rigidly linked to objective indices), the company's profits could vary enormously, depending on the underlying behavior of costs and revenue. The fact that the ex ante best-estimate expected level of profits for the

contract in question (or even the *ex post* mean value for the set of all contracts of this sort, if one could discover this) was normal does not speak to the issue of *perceived fairness*. Moreover, unanticipated productivity increases over the life of the concession may result in windfall gains to the concessionaire in a fixed-price contract. City residents may well object if they learn that the company is making what they consider to be excess profits at their expense — especially if there is the slightest deficiency in service quality. And opposition politicians can have a field day with such information.

The possibility that “excessive” profits will be generated creates a risk that city officials will fall under political pressure to renege on their commitment and decrease tariffs — or employ other measures similar in effect, such as a windfall profits tax (cf. the Labour government’s recent decision in the U.K.). This problem recurs again and again in the history of early municipal franchises in the U.S. and Canada.

Economists tend to separate efficiency effects from distributional effects and maintain, in the case of contracts, that distributional issues can be dealt with through the price mechanism (i.e. bargaining in the market) rather than by regulatory intervention in the contract. Two complications are introduced in the case of long-term concession-type contracts. First, because of risk, even if the price mechanism in competitive bidding can operate to achieve an acceptable distribution of rent in terms of *expected* values, the stochastic aspect will result in there being some cases in which actual quasi-rents are excessive and some in which they are insufficient.

Second, in a dynamic perspective, distributional issues cannot be so easily separated from efficiency ones. If rents are perceived by city officials or residents to be

excessive, the risk of contract rupture increases. Companies know this, and if this risk appears to them to be too great *ex ante*, they simply will not invest. If the city faces an investment constraint and will therefore not be able to provide needed services, we can see, in a dynamic perspective, that the distributional issue can have important indirect welfare consequences. So *perceived fairness* can affect the general welfare even if we use the Kaldor-Hicks efficiency criterion.

One can think of a number of ways to include a profit-sharing mechanism in the original contract — such as “sliding scale” arrangements — but these will require an expert analysis of accounting information to prevent the opportunistic manipulation of financial results by the company. And, no matter how one tries to develop a manual of completely objective rules to govern the preparation of the financial statements, it may be impossible to eliminate the need for ongoing discretionary judgments by an expert. As soon as the city is receiving a share of profits on a regular basis, there will be pressure by the city to increase its scrutiny to cover other accounting issues, such as reserve accounts, depreciation, and the distinction between maintenance and renewal. Finally, the city will have to look at the reasonableness of costs since the company will no longer have an incentive to make expenditures that are optimal from a joint perspective. Before long, we are approaching regulation-by-commission. The history of regulation-by-contract in the U.S. and Canada shows this pattern again and again (see e.g. Wilcox 1910, 1911; Jacobson 1988; Baldwin 1989).

4. METHODS FOR COPING WITH CONTRACTUAL INCOMPLETENESS

Since contractual incompleteness underlies many of the potential weaknesses of regulation-by-contract, it will be useful to look more closely at the types of methods used to deal with incompleteness before moving on to the case studies.

There are many ways to categorize these methods. The scheme that will be used here is the following:

1. Expressing the company's performance obligations in terms of clear, easily verifiable *outputs*
2. Making the contract more specific and detailed — i.e. more complete
3. Use of an objective standard or reference procedure
4. Renegotiation (both parties jointly fill gap)
5. One party fills gap
6. Third-party fills gap

4.1 Use of Output-Related Obligations

The public authority and users are ultimately interested in the *service* that the company will provide. For reasons of productive efficiency, therefore, the public authority in principle should not interfere on the input side (this means fewer constraints on the company's optimizing behavior) and should let the company produce the required service in any way that it sees fit. There are also good reasons for this policy recommendation from the perspective of incomplete contracting. For many types of service, changes in output requirements are likely to be less frequent and less extreme than changes in input requirements would be.

For a water supply system, for example, output requirements can be expressed by a handful of criteria: minimum water quality, pressure, and quality, and availability and continuity of service for all residents within the given geographical service area. There may be changes over time, of course — e.g. the national government may change the water quality standards. But one would expect many more changes in any set of *input* requirements that one could draw up at any given point in time — the layout of water mains, the capacity of treatment plants, the nature of the treatment process, the need for pressure boosters, etc.

As obvious as this principle might seem, for many reasons local authorities often insist on writing into such contracts various input characteristics that later have to be renegotiated. Sometimes it is the companies that press for input specifications that take precedence over service requirements — e.g. a five-year investment program that is the primary contractual obligation, regardless of what effect it has on service characteristics. This helps them reduce risk since they can more easily put a firm price on their obligations that way; but it opens the door to more frequent renegotiations. A cursory look at early contracts in the U.S. and Canada suggests that in many cases insufficient attention was given to the clear, precise definition of output requirements — e.g. adequacy of water pressure for fire-fighting. Measurement difficulties compounded the problems.

4.2 Greater Contractual Specificity

The most obvious way to reduce contractual incompleteness is to write more detailed, specific contracts. The historical record shows that a major weakness of regulation-by-contract in the U.S. in the early 20th century was that the contracts were

too simple: they were “relational” in ways that they did not need to be. This is a promising approach, but, as we shall see — immediately below and in the case studies — there will almost always remain a residue of incompleteness.

4.2.1 Adding State-Contingent Provisions

There are a number of different ways to write contracts that are more complete. One obvious way is to describe different sets of obligations and rights that are contingent on certain states of the world. For example, with respect to service modifications imposed by the municipality, one could try to specify in advance the likely modifications and set out the conditional rights and obligations of the parties that would take effect if a particular modification were required.

To be more specific, suppose that the parties to a wastewater treatment plant concession are unsure of how much wastewater there will be because of uncertainty over industrial growth and future industrial wastewater generation. The parties might have little difficulty in arriving at an acceptable pricing formula so long as there is no need to expand the capacity of the plant. Beyond that point, it would probably be to the benefit of both parties to account for capacity expansions in a special way. One could, for instance, provide a schedule specifying the incremental capacity charge to be paid for every 5% increase in capacity above the base level. Or, if it is a question of relatively smooth increases in scale, one could agree that the engineers would build up the incremental capacity charge by multiplying the quantities of material needed to expand the plant by the unit material prices given in the contract (appropriately indexed), and then one would use a specified capital recovery factor to arrive at a periodic increment in the service fee.

There are limits to this approach, however. *First*, the problem of transaction costs means that it will not be realistic to think of describing the consequences of contingencies unless the probability of their occurring is perceived to be great enough. One can get around this problem in some cases by describing obligations (e.g. payment obligations) in continuous, rather than discrete, terms by using a continuous mathematical function. A good general strategy would be to estimate the probabilities of different classes of events and to develop different contracting techniques for contingencies having different levels of probability.

Second, although this kind of differentiation does add flexibility, it is a highly constrained sort of flexibility — a *mechanical* flexibility: one can only sketch out the criteria that will trigger a particular set of contingent obligations; but in the actual changed state of the world, there might be unexpected developments that call into question the appropriateness of the contingent rules. There is a potential mismatch between an enormous number of continuous variables in the real world interacting in complex, and often nonlinear, ways and a contractual algorithm made of a handful of relatively simple rules interacting in relatively simple ways.

Drafters of legislation face this problem all the time and therefore often eschew highly specific statements in favor of more general ones. There is a certain sense in which adding complexity to a contract in a way that increases appropriate flexibility ultimately requires provision for a *discretionary* judgment. This is a problem for regulation-by-contract.

Moreover, the criteria for triggering the contingent rule may well be latently incomplete themselves. The RESCO case (Chapter 5) illustrates this particular point well. The contract is made more complete by describing what will happen if a change in law occurs that requires the modification of the facilities (early U.S. contracts would probably not have even addressed this issue); but the triggering criteria themselves turn out to be latently incomplete (do they include a landfill-related change in law?).

Third, as contractual complexity increases — e.g. if a series of detailed formulas have been used — the problem of bounded rationality is such that the parties may not fully grasp all the interrelations of terms and all their consequences. We will see an example of this in the RESCO case: it is unlikely that the parties had worked through all the implications of the tipping fee formulas. If the parties do not fully understand all the consequences, then in a fundamental sense the incompleteness of the contract has increased — since the meaning of a contract depends on what was in the parties' minds, not just what has been written down on a piece of paper.

4.2.2 Reducing Vagueness in Conditions

A term is *vague* insofar as the boundaries of its application are not clear. “Within five calendar days after the event” is fairly precise; “within a reasonable time after the event” is vague. Good contract drafting tries to reduce vague terms as much as possible, although there is often no realistic way to eliminate them completely from long-term contracts of the sort we have been considering.

A common problem arises when the vague terms used are those that belong particularly to the world of legal discourse. The contract for a wastewater treatment plant

in Auburn, Alabama, provides that the service charge “shall be increased, on a fair and reasonable basis . . . to equitably reflect the design and construction of the expansion or modification [of the facility] and the increased services . . .” This provides little practical guidance, and the legal-sounding jargon makes it an open invitation to litigation.

4.3 Objective Standard or Reference Procedure

Another way to make a contract more complete is to refer to an objective standard — even if the particular value is not known when the contract is concluded. The prime example in the contracts we have been considering is the use of indexation formulas that automatically adjust prices over time. Another good example — to be found in both the Lyon and RESCO cases — is a reference cost of capital to be used to determine how the investment cost of equipment modifications will be translated into a tariff increase. In the RESCO case, not only was a reference interest rate given, but a stipulated repayment schedule was provided as well.

A more complicated way of completing state-contingent terms in a contract is to specify a procedure that, when followed, will yield a unique value that will then be treated as if it were part of the contract. For example, the parties can specify that, whenever a modification of the facilities is requested by the municipality, the concessionaire will use a certain procedure involving open competitive bidding to select a contractor and fix the price for the required investment works.

Such provisions are sometimes found in long-term contracts, and they can be quite advantageous, but they rarely eliminate incompleteness altogether since the reference

procedure can rarely be described in a way that obviates the need for discretionary judgment.

4.4 Renegotiation (Both Parties Jointly Fill Gap)

4.4.1 Overview

In this section and in section 4.5, the parties themselves fill contractual gaps when they appear: either both parties or just one.

The most unconstrained form of *joint* gap-filling would consist of a description of the criteria that would trigger the process (e.g. a relevant change in law that requires additional investments) and then an adjuration along the lines that the parties should “negotiate in good faith to revise the terms of the contract.” The UNIDROIT Principles (Art. 6.2.3(1)), for example, provide: “In case of hardship the disadvantaged party is entitled to request renegotiations.” “Hardship,” as defined in Art. 6.2.2, exists when “the occurrence of events fundamentally alters the equilibrium of the contract either because the cost of a party’s performance has increased or because the value of the performance a party receives has diminished, and . . .” (several restrictive conditions follow).²¹ The implication is that the goal of the renegotiations is to restore the “equilibrium” of the contract.

Hardship clauses such as this are not uncommon in long-term contracts for the sale of goods. This is more or less Williamson’s “general-clause” solution to the problem, and as he points out, it would be satisfactory in the absence of either opportunism or asset specificity, or both (Williamson 1985: 66). In many long-term contracts for the sale of

goods that can be traded on the market, there are no transaction-specific assets to speak of. In the case of hardship that triggers a renegotiation clause, *contract repudiation* pure and simple is usually an alternative worth considering, and therefore the current market price of the good plays a large role in determining the reservation price of both parties in their renegotiations.

There is a salient difference, however, in the type of contract we are considering; and this relates to the relationship-specific nature of the assets. Where massive, sunk, project-specific assets are involved, the contract-repudiation alternative may not be feasible for at least one of the parties over a broad range of prices — and such a threat would therefore not be credible. This means that recourse to the adjudicator is the only realistic solution in the case of a stalemate; and if the costs of litigation are high and there is considerable uncertainty about the outcome, a huge wedge may be driven between the reservation prices of the two parties in the bargaining.

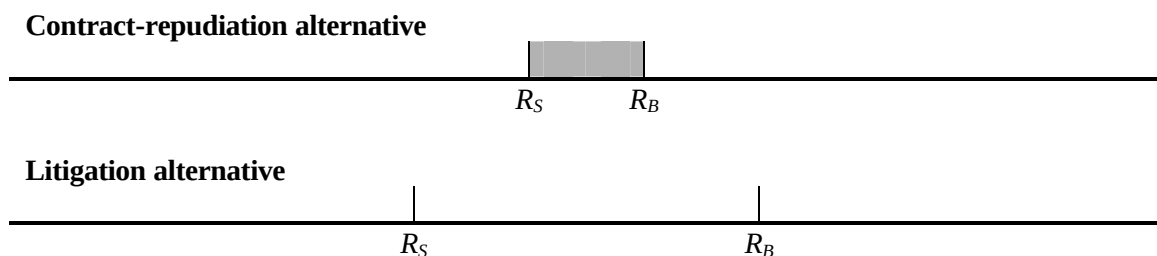
The crux of the matter consists in the quasi-rents that the company is receiving: the city can erode them by lowering the tariff, and it will still be to the company's net benefit to keep operating the facility because the opportunity cost of the assets to the company is zero. This is a variant of the classic hold-up problem — the most glaring reason why regulation-by-contract (or any regulatory regime, for that matter) can make private companies nervous in the face of massive relationship-specific assets.

²¹ Note also that negotiations in *good faith* are implied by the UNIDROIT Principles, since Art. 1.7 imposes, as a mandatory rule, a general duty of good faith and fair dealing throughout the life of the contract.

4.4.2 An Illustrative Model

The problem of renegotiation in a long-term concession-type contract is so important that it will be worthwhile exploring this in more detail by the use of a simple model.

First, we look at the case of a long-term sales contract, assumed to be governed by the UNIDROIT Principles, for the supply of a good in which there are no relationship-specific assets. Suppose that prices (and underlying costs) change to the seller's disadvantage to such an extent that there is no doubt that the court would find that "hardship" has indeed occurred, given all the circumstances.²² So the only question is how to modify the contract "with a view to restoring its equilibrium." The parties would prefer to resolve the issue without going to court. There are two possibilities for how their bargaining range will be determined: the contract-repudiation alternative or the litigation alternative. These may be shown as follows, where values increase moving along the line to the right and R_S and R_B are the reservation prices of seller and buyer:



This represents only one possible scenario, but it is a likely one. The contract-repudiation alternative is based on the current price for the good (spot or, more likely,

long-term contract price). If buyer and seller dropped the present contract and went their own way, they would face the market price — plus some transaction costs.

The court also is likely to look to the market price in adapting the contract to relieve the hardship. Legal fees (and other costs) and some uncertainty over the court's decision create the larger wedge between the reservation prices in the litigation alternative. (We presume here that the two parties have the same information and beliefs and that they are risk averse.) Given these two alternatives, what will be the effective bargaining range? Since each party would be better off repudiating the contract than going to court, the contract-repudiation alternative is the only one worth considering, and this determines the effective bargaining range (shown shaded).^{23,24}

The picture is quite different when we turn to the case of a typical public service concession with massive sunk costs and assets that are of no use to the concessionaire outside its relationship with the city. Suppose that, some time after the contract has been signed, new environmental laws require the plant (say, a wastewater treatment plant or a solid waste incinerator) to be upgraded. Suppose also that the contract is quite clear that the municipality must bear the burden of these “change-in-law” costs. The only question

²² “If . . . the performances are capable of precise measurement in monetary terms, an alteration amounting to 50% or more of the cost or the value of the performance is likely to amount to a ‘fundamental’ alteration” (UNIDROIT Principles, Comment to Art. 6.2.2).

²³ The analysis would of course be more complicated if it was not certain that the court would find that “hardship” existed. Then it might well turn out that the effective bargaining range would be determined by the litigation alternative.

²⁴ This statement presumes that each party is a fully autonomous actor. Principal-agent issues may complicate matters considerably. E.g. a regulated utility might go to court in such circumstances so that the regulator could not accuse it of having bargained imprudently (the underlying issue here being one of unobservable effort). This was one reason why U.S. electric utilities began to take their complaints against long-term coal suppliers to court rather than attempt to resolve them at the bargaining table (see Curtz 1995: 159).

is how to decide on the value of these recoverable costs and how they are to be passed on in the adjusted service fee. (This issue is similar to that faced in the RESCO case study in Chapter 5.)

The notation to be used is as follows. All values are in common terms with respect to time: i.e. all present values or all annualized values.

I	Sunk investment cost expended by company at start of contract (net of economic depreciation)
C	Avoidable recurrent cost of company (O&M, etc.), given original contract
P_o	Service fee paid to company by municipality under the original contract. $P_o = I + C$ (roughly speaking — and not necessarily defined this way in the contract)
M	Incremental cost of plant modification required by new environmental laws (investments and O&M)
B	Rebidding costs that would be incurred by municipality
L_S	Legal fees (and other costs) that would be paid by company (“seller”) if it went to court
L_B	Legal fees (and other costs) that would be paid by municipality (“buyer”) if it went to court
D_S	Difference between (i) $I+C+M$ and (ii) the <i>certainty equivalent</i> to the company of what the company would receive as a service fee if the case were decided by the court
D_B	Difference between (i) <i>certainty equivalent</i> to the municipality of what the municipality would pay as a service fee if the case were decided by the court and (ii) $I+C+M$
R_S	Company’s reservation price in bargaining over the contract revision
R_B	Municipality’s reservation price in bargaining over the contract revision

In many incomplete contracting models, the “hold-up problem” arises because either certain investments made by the vulnerable party or the quality of the product (or

some other critical aspect) is not *contractible* — i.e. not verifiable by the court.²⁵ So let us start by looking at the contract-repudiation scenario. To simplify the story, we assume that the municipality has legal title to all the assets and that the concessionaire has only a contractual right of use for the duration of the concession.

Under these circumstances — and presuming that recourse to the courts is not an option — the concessionaire would be willing to make the modification to the plant and continue operating it so long as the city pays it anything more than $C + M$ as a revised fee — this is its avoided cost if it walked away from the deal, leaving the assets in the municipality's hands. The city's reservation price is $C + M + B$.²⁶ The hold-up problem emerges clearly in the contract-repudiation scenario: the city has completely expropriated the quasi-rents, I .

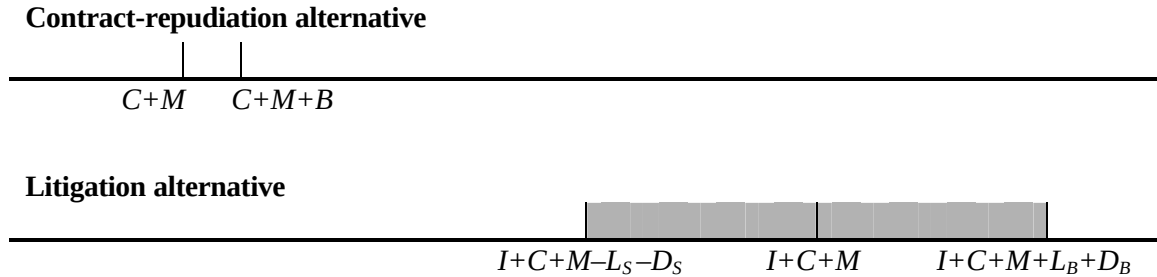
This scenario is unrealistic, however: the courts do matter. Let us presume that there are a number of ways that the court might approach the question of how to “adapt the contract with a view to restoring its equilibrium” (UNIDROIT Principles Art. 6.2.3) and that there is further uncertainty about the court's assessment of any values (especially if the approach it takes involves something other than the unquestioning reimbursement of actual costs). Presume also that the two parties, both of them risk averse, have the same information and (probabilistic) beliefs about how the court will rule²⁷ and that the

²⁵ These models often produce their impact by setting up a situation in which one party does not receive the full return on its investment because it is sunk and not contractible and therefore will not be not considered in the ex post bargaining over the total surplus.

²⁶ This assumes, for simplicity, that the municipality believes that a new concessionaire would have the same operating costs as the old one.

²⁷ In fact, the parties are likely to have differing perceptions about how the court will rule — and this might well drive them to take their case to court. See e.g. Miceli (1997: 157ff.).

expected value of the court's assessment is $I + C + M$. This situation could be represented as follows:



Because hold-up of the concessionaire would occur in the contract-repudiation alternative, the concessionaire would prefer to take its case to court. Thus the effective bargaining range is determined by the litigation alternative. This is the most striking difference between this scenario and the case of the simple long-term supply contract without relationship-specific sunk costs. The effective bargaining range here (shown shaded) is broader because the contract-repudiation alternative is out of the question.

The bargaining range of the litigation alternative is likely to be broader for further reasons also.²⁸ First, there is not likely to be any clear market price to serve as a reference value for the court; hence there is more uncertainty over how it will decide, and this increases D_S and D_B . Second, cases of this sort can be extremely complex and hence costly to litigate: this increases L_S and L_B .

Finally, we turn briefly to consider the effect of “convenience termination” or “buy-out” provisions. A potentially important consideration in determining the bargaining power of parties to a long-term contract is the power of one or the other to terminate the

contract at will and the conditions for such a termination. If the municipality can terminate at any time by paying an agreed sum and then grant the concession to another company, competition is introduced once again, and the current concessionaire will take account of this possibility in deciding how far it can go in trying to benefit from a price renegotiation.

More specifically, if the termination price that must be paid to the company by the municipality is fully determinable by the terms of the contract — e.g. it might even be set out as a schedule, year by year²⁹ — in principle, this should narrow the bargaining range and help the parties reach a negotiated solution since it provides a clear reservation value for that component and makes the market the relevant reference point for the costs of operation and maintenance, renewals, etc.

There are a number of potential problems, however, that prevent the buy-out approach from being the complete solution to our problem. First, it adds asymmetric risk for the concessionaire, and this will increase the service price: the municipality is much more likely to exercise the option to terminate when the concessionaire is making a surplus than when it is doing less well than it expected. Second, if in order to increase predictability, the termination price is calculated without regard to the condition of the assets, some target level of good maintenance must still be included as a condition, and this could easily lead to prolonged and contentious disputes and possibly monetary

²⁸ Again, for simplicity, I continue to assume that the two parties share the same information and beliefs. Whatever asymmetry of information exists is between the parties, on the one hand, and the court, on the other.

damages³⁰ — and so this works against the narrowing of the bargaining range.

Nevertheless, there is much to be said for including good convenience termination provisions in these contracts as a way to narrow the bargaining range in future renegotiations.

4.4.3 The Bargaining Range

When a contract is incomplete in the presence of asset-specificity and opportunism and the parties sit down to fill in a missing term, what matters, then, is the ex post bargaining power of the parties. This depends on the particular circumstances of the case. If the company complains that the city is not respecting the inflation-indexing of the tariff, the city has the advantage of the status quo. But if the city needs to have the company implement a modification of equipment to meet new national service standards, for which the city is responsible, the tables may be turned if the city is up against a tight deadline.

This broad negotiating range and the fact that the ultimate outcome is determined by a play of bargaining forces that may very well be unrelated to any ideas of economic efficiency or basic fairness constitute a severe critique of regulation-by-contract as it has traditionally been practiced. The way such contracts are typically drafted often seems to completely ignore this crucial problem.

²⁹ Or there could be an algorithm that applies a particular economic depreciation rate to each capital expenditure made by the concessionaire throughout the term of the concession, until termination, and then sums the undepreciated values.

³⁰ E.g. poor preventive maintenance by the concessionaire would shift future replacement investments closer to the present, and in principle the increase in the present value of these costs should be deducted from the termination price that the municipality pays to the concessionaire. But there would be a great deal of uncertainty in determining this value.

The picture may be somewhat different if negotiations are not completely unconstrained but instead some decision criteria are given in the contract — criteria that could be used by the adjudicator if the issue were to end up at that level for resolution. Loose criteria, such as the typical French-style ones, could be that the parties should strive to reestablish the contractual “balance” or “equilibrium” originally contemplated by the parties. This does not give much help for the adjudicator, though.³¹ We will see that in the Lyon contract (Chapter 4), there were many points at which price terms could be renegotiated, but little in the way of guidelines were provided: reopeners are broad and vague.

As we will see when we examine the French system (Chapter 3), decision criteria can effectively be written into the contract by background rules supplied by the legal system. This can reduce the transaction costs for the parties (or their lawyers) that would have to be expended in developing a comprehensive sets of rules themselves.

4.4.4 Constraining the Renegotiations

Guidelines for negotiations can be provided, and the criteria can be made more and more specific — and this is no doubt something to be recommended — but as long as meaningful negotiation is contemplated, contractual incompleteness will remain and this will translate itself into the need for discretion if the issue comes before the adjudicator. (It would be pointless, in other words, to speak of a need for *renegotiation* if the revision

³¹ And, when a modification to the project is required, a deeper issue is whether the attributes of “financial balance” (e.g. rate of return) in the original contract are the appropriate ones to use for the modification. (This issue will be discussed at some length in Chapter 3: Should one apply a general standard or a contract-specific standard?)

of contract terms operated deterministically — as in the application of a price indexation formula.)

As an example, consider some terms from a recent water/wastewater concession contract involving an international operator.³² The contract contains a typical clause stating, in effect, that if unforeseeable, uncontrollable circumstances arise that have a material adverse impact on one of the parties (the actual definition is somewhat more extended), then “the parties shall as soon as practicable enter into negotiations in good faith and in a spirit of mutual understanding and co-operation to deal with those circumstances” — a Williamsonian “general clause.” The contract then goes on to give several principles to be taken into account in these negotiations “to the extent necessary to deal with the circumstances.” Three of them are as follows, somewhat simplified in formulation:

1. The price should be adjusted in the same way as it would be if the service were supplied by “other operators . . . in a free market and competitive situation.”
2. Any adjustment in the price must not adversely affect the company’s ability to repay its loans or to meet the minimum debt service cover ratio set for it.
3. Subject to efficient operation and management, the company is entitled to receive a reasonable rate of return on its investment, “having regard to current market conditions and the additional risks, if any, being undertaken.”

Although these principles would give more guidance to an adjudicator than if nothing were said at all, their interpretation and interaction would not be straightforward.

Interpreting what is meant by “market prices,” for instance, has proved to be enormously difficult even in relatively simpler long-term contracts for the supply of goods. For example, litigation over renegotiation clauses in long-term coal-supply contracts in the U.S. has raised difficult questions about whether and how to adjust for *non-price terms* in contracts in the current “market” (using the spot price would not be an appropriate comparison), problems of possibly biased results from market surveys, and so on. And the interaction of the specific price reopener terms with broader hardship provisions sometimes found in these contracts has created additional headaches. (For several cases and discussion, see Curtz 1995.)

Since so much depends on bargaining forces, the extra-contractual environment is just as important — if not more so — than the contract itself. Comparative competition, reputational influences, pressure from influential third-parties, the taking of “hostages,” attempts to increase power through better information — all these are of prime importance, as we will see in the two case studies. This is one of the key conclusions, also, of the legal literature on relational contracts.

4.5 One Party Fills Gap

For certain contingencies, it can be specified in the contract that one of the parties has absolute or substantial discretion to determine the parties’ obligations and rights. Such an arrangement immediately raises the question of opportunism: Why should one party trust the other? There are a number of possible answers. The first is incentive compatibility: the incentives in the contract can sometimes be structured so that the party

³² These terms were given to me in confidence, and the identity of the contract cannot be disclosed.

with the right to decide will take decisions that will benefit both parties. One can view “ownership” rights along these lines: giving residual rights of control over an asset to one party in a contract eliminates incompleteness with respect to a potentially large set of decisions not otherwise dealt with in the contract (see Hart and Holmström 1987). For example, making a private service provider the residual cash flow claimant gives it the incentive for optimal maintenance of the plant if it is also given full control over operation, maintenance, and replacement of the assets. A whole class of decisions (how often to carry out different kinds of maintenance in different sorts of conditions, etc.) can be placed in the operator’s hands and a significant source of contractual incompleteness can be eliminated.

Another answer to the problem of opportunism is trust supported by factors outside the contract itself. As Kreps (1990: 113) puts it in the context of answering the question what makes up a corporate culture: “trust can encompass transactions that are hierarchical, where one party grants to the other the right to specify *ex post* just what the contract in fact calls for (always within limitations).” We are now in the realm of *relational* contracts.

Letting one party have substantial decision-making power over one aspect of the arrangement may not fully complete the contract, however, if the parties explicitly or tacitly agree that the party with discretion will refrain from using it in an egregiously unreasonable manner. In the most extreme form of cost-of-service contract, for example, in which the company substantiates its costs with proper invoices and the municipality is obligated to accept this as the new price, the company’s discretion over expenditures may

appear to be absolute. We move away from this extreme — and the incompleteness reappears — to the extent that the municipality has the right to challenge the presented costs, e.g. by claiming that they were not reasonable and not prudently incurred. And even if the parties did not have any such common idea in mind, the adjudicator will generally read in (as a default or even a mandatory rule) an implicit duty of good faith or reasonableness. The *UNDRIT Principles* (Art. 5.7(2)), for example, state: “Where the price is to be determined by one party and that determination is manifestly unreasonable, a reasonable price shall be substituted notwithstanding any contract term to the contrary.”

The general solution of unilateral gap filling will often involve a more complex interaction between the parties. Cost-based remuneration — e.g. cost-plus pricing — is a good example. There are several steps, with a different party taking the lead in each. First, the public authority unilaterally specifies the change in service required or the modification of equipment called for. Then the company presents its costs, substantiated by appropriate supporting documents. The great advantage of this approach is that it creates a seamlessly complete contract with respect to the pricing terms: whatever happens, the concessionaire is compensated for the costs it incurs in providing the specified service. This takes care at the same time of the problems of price adjustment and service modification, the two critical problems in the kind of contracts we are considering.

The severe drawback is that such an arrangement provides no incentives for economic efficiency in production. So the condition is generally added (explicitly or implicitly) that the presented costs must be reasonable or must have been prudently incurred — or something along these lines. And these inevitably vague terms once again

add a measure of incompleteness. The condition that RESCO “agrees that it will use its best efforts to minimize the total cost” of the required technical modification is in the same vein and led to years of wrangling and ultimately the need for resolution by arbitration, as we shall see in Chapter 5.

4.6 Third Party Fills Gap

The final means of dealing with contractual incompleteness is to designate a third party who will fill a specified class of contractual gaps when the need arises. From the legal point of view, there is generally a difference between (a) someone who acts on behalf of the parties and in effect simply is permitted to write a new term into the contract and (b) an officially recognized adjudicator (judge or arbitrator) who has the state-sanctioned authority to resolve a dispute between the parties, which may involve filling a contractual gap — in legal terms, “adapting” the contract. This difference — important though it may be in actual legal practice — will be ignored in most of this dissertation.

The importance of third-party intervention cannot be underestimated. As we have seen above, every other method, no matter how well it works, tends to leave a residue of incompleteness that ultimately ends up before the contract adjudicator. The important question then becomes: How should the adjudicator fill the gap? This must involve some *discretion* of course, since, if it were simply a question of applying a deterministic rule that is in the contract, there would be no incompleteness to begin with.³³

It seems, then — and this is the main conclusion of this chapter — that the weaknesses of regulation-by-contract that derive from contractual incompleteness cannot

be fully resolved unless one chooses the right kind of third-party intervenor: all the other solutions are partial. We will return to this point in Chapter 6.

³³ Note that the adjudicator may have other roles to perform also — e.g. ascertaining factual matters.

CHAPTER 3

A SELECTIVE INTRODUCTION TO THE DELEGATION OF LOCAL PUBLIC SERVICES TO THE PRIVATE SECTOR IN FRANCE

1. INTRODUCTION

The French system of “delegation” of local public services is worth studying because of the important role that regulation-by-contract has played for over a century. In addition, in the next chapter, a case study of one such contract is presented: a “concession” contract for a municipal waste incineration plant in Lyon. The present chapter provides an essential background for understanding the case study.

Local government units in France are free to enter into long-term “concession” contracts (or similar kinds of contracts) for a wide range of public services — essentially all those of a commercial or industrial nature and, in addition, some considered to be of an administrative or institutional nature. Alternatively, they may carry out these services on their own, without recourse to the private sector. To set the context, the following table illustrates the importance of the private provision of urban services in France, though it should be noted that data on the volume of local services provided by private companies is not very reliable (Raymundie 1995: 28).

Mode of Provision of Urban Services in France (1993)

(Covering *communes* with pop. greater than 2,000)

Service	Measure	Public operators	Private operators
Water supply: treatment and distribution	Pop.served	15%	85%
Wastewater collection and treatment	Pop.served	55%	45%
Solid waste collection	Num. of operators	45%	55%
Solid waste disposal	Num. of operators	10%	90%
District heating	Installed power	10%	90%
Urban public transport	Num. of networks	28%	72%

Note: For district heating and public transport, “public” includes public-private joint ventures

Source: Ministère de l’Équipement, des Transports et du Tourisme, *Chiffres-Clés*, March 1995

This chapter begins with a survey of those features of the French system of regulating municipal services that are most relevant to this dissertation, then turns to a deeper analysis of certain key issues, and finally concludes with a series of explanatory speculations. The French system has developed over many years and is quite complex. It has been necessary to greatly simplify the presentation of certain issues, especially legal issues: the presentation below by no means presents a comprehensive picture of French law relating to local public services. That is not its purpose.

2. FORMAL INSTITUTIONAL AND LEGAL FRAMEWORK

2.1 Origins

The modern public service concession has its origins in the public works concession, which existed under one name or another in France as early as the 16th century.¹ The State would allow a private party to construct public infrastructure — canal, bridge, aqueduct, etc. — and in return would give it the right to charge users. The

property was often given as a fief, but to all intents and purposes it was like the transfer of full property rights. “Concession” came close to meaning “cession.”² Making use of the infrastructure after construction was seen as a right more than a duty. The definition of the *public works concession* given in 1834 by Delalleau is worth quoting:³

. . . a contract by which one or several persons obligate themselves vis-à-vis the administration to carry out at their own expense and risk [*à leurs frais, risques et périls*] certain public works, in exchange for the enjoyment of a toll or other benefits specified in the concession act. [quoted in Blondeau (1933: 23f.)]

With various modifications, this definition was used again and again over the years and is close to standard definitions of the concession quoted even today.

Around the middle of the 19th century, the railroad had become the archetypal concession, and the emphasis began to shift to *operation* as well as construction. (What “operation” was really required for, e.g., a bridge?) With the completion of the major railway investments by the 1880s, the operation of a *public service* became the main objective of the concession, and the strong property right of the concessionaire evolved into a mere temporary right of possession. With the service itself taking on major importance, public authorities were no longer content to throw all risk onto concessionaires’ shoulders. During this period we see various mechanisms develop for the sharing of risk — e.g. loan guarantees by public authorities and various public subsidies. Curiously, the idea that the concessionaire bears the entire risk, deriving from the definition of the old public works concession, where it made good sense, has survived as a ritual incantation in modern definitions of the public service concession. For example:

¹ The following brief historical sketch is based mainly on Blondeau (1933: 4–88).

² Compare “franchise” and “free” in U.S. law (see Chap. 1).

“... to manage and operate a public service at its expense and risk [*à ses frais et risques*] ... (Auby and Ducos-Ader 1969: 230); “... operates a public service at its own risk [*à ses risques et périls*] ...” (Dufau 1990: 4). We will return to this point later on.

Public works and then public service concessions took on importance in the 19th and early 20th centuries also for a wide variety of municipal services: electricity, gas, public lighting, water supply, tramways, etc. They were effectively promoted by the principles of economic liberalism that characterized central government policy, which discouraged municipalities from carrying out activities of a commercial sort that private enterprises were capable of doing (see Auby 1982: 10ff.).

2.2 Public Service Concession

2.2.1 Administrative Law, Jurisprudence, and Doctrine

Contracts between public authorities and private-sector entities for the provision of public services fall under the rubric of *administrative contracts*, a distinct part of French administrative law. The French legal system is unusual, even among civil law countries, in the degree to which administrative contracts have a special status of their own.

Given the general reliance of Continental legal systems on written codes, it is worthy of note that almost the entire legal edifice relating to the private provision of local public services in France until very recently has been based on case law — the *jurisprudence* of the Conseil d’Etat.^{4,5} French jurisprudence has developed and elaborated

³ All translations from French in this chapter are my own, unless otherwise indicated.

⁴ In this dissertation, I will use the term “jurisprudence” according to French (and, in general, civil law) usage, meaning *case law*, rather than according to normal Anglo-American usage, meaning a philosophical approach to the study of law.

three core principles of public service law: continuity of service, equality of users (nondiscrimination), and continuing adaptation to circumstances (the latter following from the principle of continuity).

The Conseil d'Etat functions, among other things,⁶ as the supreme court of administrative law. The normal judiciary in France has been forbidden since 1790 to have jurisdiction over the government administration at any level — the French notion of the separation of executive and judicial powers. To control against the abuse of executive power, however, an organ of the executive itself — the Conseil d'Etat — functions as if it were a court of law (Nicholas 1992: 24f.; Brown and Garner 1983: 27ff.). It is a large body, not at all like the U.S. Supreme Court. In 1992 the Conseil d'Etat had 301 members, 197 of them active (Costa 1993: 71).

In addition to the Conseil d'Etat at the pinnacle, there are 26 administrative tribunals (excluding overseas jurisdictions), which serve as the first-level courts in the system, and since 1987, five administrative courts of appeal.

There are two other influences on administrative law, besides jurisprudence and the occasional pieces of relevant legislation — the latter having become more frequent in recent years. The first is “*doctrine*,” the writings of legal scholars and specialists; the second consists of the various circulars issued by national government departments (in French parlance, by the “Administration”). Since the decisions of the Conseil d'Etat — like those of the other French courts — are extremely terse, give little or no reasoning

⁵ The picture has changed dramatically in the last few years with the passage of seven laws from 1992 through 1995 touching on this area (see Fatôme 1996: 577).

behind the decisions, and do not refer to past cases, *doctrine* plays an important role in helping practitioners make sense out of the judgments, even though it must be said that the Conseil d'Etat is more pragmatic and less theoretical than the authors of doctrine (Robineau and Truchet 1994: 108).

2.2.2 Characteristics of the Public Service Concession

In the archetypal public service contract, the concession, a public authority enters into a long-term contract with another legal person, often a private-sector company, to carry out a public service. The concessionaire is responsible for the initial investment as well as for operation, maintenance, and asset renewal over the term of the contract. The concessionaire receives a remuneration that is established in the contract and that is not based on its actual (ex post) costs. The concessionaire is therefore the residual cash-flow claimant. In principle (in a static analysis), such an arrangement gives it the full incentive to reach the optimal level of technical efficiency since it can keep any savings it makes by such efficiency increases (see e.g. Laffont and Tirole 1993). As discussed in more detail below, a necessary legal condition for a concession to exist is that the principal part of the concessionaire's remuneration come from the fees that the concessionaire collects from users of the public service.

A variant of the concession is the *affermage*, in which the private company is not responsible for the initial investments in the physical system; either the assets already exist or the municipality undertakes these works. The private operator (*fermier*) is responsible for operation, maintenance, and renewal of certain categories of assets. In addition to its

⁶ Only one of the five sections of the Conseil d'Etat has a judicial function (the *section du contentieux*);

own remuneration, the operator collects a surcharge from users that it remits to the public authority and that serves to pay for the investments that the public authority has undertaken. The *affermage* became more popular for many local authorities after World War II and until the 1980s as the need for major new investments was reduced and as the State system of subsidized credit for municipalities took on importance.

A commonly used English translation of *affermage* is “lease contract.” This usage may be misleading and will not be followed here. In French law, the *affermage* does not consist of the actual leasing (*bail, location*, etc.) of the infrastructure coupled with a contract setting forth how the infrastructure is to be used in the public interest, though this is indeed one way that a synthetic equivalent might be constructed in other legal systems,⁷ and in fact such a combination is also used in France in some circumstances. The *fermier* has an intangible *personal* property right, similar to a patent or copyright (cf. CNC 1994: 17) and not the real property right of a leasehold. The closest equivalent in the U.S. legal system would be a franchise — more precisely, an “operating franchise.”

The basic legal principles governing the *affermage* are the same as those of the public service concession, and in recent years “hybrid” contracts have become more popular, in which the private company, though it does not carry out the initial investment, is made responsible for certain later investments. These days, both jurisprudence and doctrine are little concerned with distinguishing between concessions and *affermages*. One major concessionaire company writes: “[C]ontracts almost always have a mixed nature in practice, part *affermage* and part concession” (Lyonnaise des Eaux 1994: 845).

the others play an administrative and advisory role.

In fact the Conseil d’Etat on occasion has referred to what is strictly speaking a *fermier* as a “concessionaire.” I will follow this example. The terms “concession” and “concessionaire” as used in this and the next chapter will include the *affermage* and *fermier* unless there is a special reason for making a distinction.

In addition, to simplify the presentation, “public service concession” will usually be shortened to just “concession,” and “municipality” will usually be used loosely to refer to any local public authority.

2.2.3 Related Types of Contract

Although in the water supply and wastewater subsectors, the concession and *affermage* remain the most popular forms of private-sector involvement in public service provision, a number of other contractual forms exist, the most important being the *régie intéressée*, *gérance*, and the METP. The METP is exactly like a concession except that the concessionaire is remunerated directly by the municipality instead of by user fees; it will be considered in more detail in section 2.4.2. The *régie intéressée* and *gérance* both differ from the concession in that the operator is not the residual cash-flow claimant: both are forms of what we in the U.S. might call management or full service contracts in which the costs of the service itself are paid by the public authority and the operator receives a separate fee. In the *régie intéressée*, the operator’s net compensation is based on a percentage of sales revenue with various incentive payments and possibly some profit sharing. In the *gérance*, the operator is paid a fixed periodic payment or perhaps a two-

⁷ It is indeed the method used at present in the Czech Republic, for example.

part payment (one fixed and the other variable based on quantity); it may also include a productivity bonus of some kind.

2.3 Contract Classification

2.3.1 General

In studying the French approach, the Anglo-American lawyer is struck by what may seem to be a French obsession with trying to classify the various public service contracts into neat categories. This is an aspect of French legal theory that applies to all kinds of contract and has its roots in Roman law. The French judge and the Anglo-American judge will approach a contract very differently. For the French judge, the first task is to look for the telltale traits that will enable her to classify (*qualifier*) the contract into one of the conventional categories; the type of contract then brings with it a baggage of legally implied rules (both mandatory and non-mandatory).⁸ The Anglo-American judge, after making sure that there is indeed a valid contract, will tend to proceed right away in a more analytical way — sorting out what each party's rights and obligations are and how they interact, examining the various contractual conditions, and so on.⁹

Though it is indisputable that this preoccupation with contract classification can easily degenerate in doctrinal writings into an exasperating form of scholasticism, the approach has interesting consequences from the perspective of the theory of incomplete contracts. It permits contractual gaps to be filled by background rules that are specific to

⁸ In U.S. law, some kinds of contracts have been given a special status in a similar way — e.g. marriage, employment, or insurance contracts. But this is the exception.

⁹ But, in the area of municipal public service contracts, changes are taking place in France, and more and more “only the precise analysis of the detailed provisions [of the contract] permits an appreciation of the

the particular type of contract. It will therefore be worth looking at this approach more closely.

2.3.2 Delegation of Public Services

In French law, the most important categorization of contracts relating to local public services involves deciding whether the contract is a true *public service delegation* or merely the *procurement of a service*. This is a critical question because the selection of the private company in a true-delegation contract does not have to comply with the public procurement code. In fact, before 1993, a municipality had no obligation to use any kind of competitive bidding or comparative shopping in its choice of a private partner in a true-delegation contract (see section 2.4.1). Since 1993, the distinction between the requirements for *delegation* and *procurement* is less important, but it still exists.

2.4 Selection of Concessionaire

2.4.1 Traditional Rule

The traditional rule was that no competition or objective evaluation at all is required when a municipality enters into a public service concession agreement — encapsulated by the principles of “*intuitus personae*” (literally, looking at the person — i.e. it is the qualities of the service provider that matter) and freedom of choice (Raymundie 1995: 230ff.) The present-day rationale for these principles is not entirely clear, or more accurately, many different reasons are cited by commentators.

The reasons — at least some of them — are connected with an important criterion used for classifying a contract as a *concession*: namely, whether most of the remuneration

nature of the relations between the delegating community and the delegatee” (Limouzin-Lamothe 1996:

of the private company comes from user fees. According to the jurisprudence of the Conseil d'Etat, this is a necessary requirement for there to be a concession (or *affermage*).¹⁰ Moreover, the fact that the private company earns its revenue from the collection of user fees creates a strong presumption that the usual public procurement rules do not apply and that the municipality is free to grant the contract to the company it wishes — subject, after 1993 to the requirements of the Loi Sapin and related regulation (see section 2.4.4).

Why should this feature matter so much, and why should normal procurement rules not apply? Some possible reasons are as follows:

1. One reason cited is that it is not money from the public purse that is at stake, but payments from users (Raymundie 1995: 231). This reason might have merit if consumers could easily substitute other goods and services, i.e. if the price elasticity of demand were relatively high — high enough so that the opportunity for monopoly pricing were low. Then the market would regulate prices and quality. But this is not generally the case today.

There may be some historical truth, however, to this explanation; for most of the services started out in a more competitive environment.¹¹ So at the start, the fact that the concessionaire had to charge users for the service would have subjected the

576).

¹⁰ See, most recently, the case of *Préfets des Bouches-du-Rhône*, CE 15 April 1996. See also Delvolvé (1996: 681ff.).

¹¹ The early years of the Paris Water Company, founded in 1778, were difficult ones because “competition from the water carriers remained very strong”; “. . . in Paris of that time there were many sources of water for domestic use” (Goubert 1989: 173).

concessionaire to price control by the competitive market and would therefore have reduced the need for public procurement rules to prevent overcharging.

Apart from that possibility, it is difficult from a public policy perspective to see why a mayor should be more careful when he is using funds from the general budget than when he is committing consumers to pay user fees.

2. Another reason cited is that the very idea of a *public service* means that careful attention should be devoted to the choice of a concessionaire having the right qualifications to carry out this special mission (see e.g. Loosdregt 1990: 776ff.). One can think of many counterexamples, however; in fact, any service in a highly contestable market is a good example because, if the present concessionaire defaults, the municipality will suffer no great loss in having to find a new concessionaire to carry on the service, presuming that the contract has been drafted well.

But perhaps this explanation begins to move in the right direction. Let us take it further. Although the French literature does not look at the question in this way, one could assimilate this argument with the idea of incomplete contracting as follows: it is not just the terms of the present contract that count, but good judgment as to how the concessionaire will respond when various contingencies arise and the contract “opens up.” Subjective judgment in the choice of a concessionaire is important here.

Even admitting the existence of this problem, however, it may be that there are other means that could be used to achieve the desired goals — for example, a two-

stage bidding process involving the selection of a short-list of reliable companies by pre-qualification.

3. One of the reasons given is that greater care should be taken as to the choice of a particular concessionaire when it is compensated from fees that it collects from users because in these conditions it bears more risk, especially demand risk, and has direct contact with consumers. It is hard to see good economic reasoning behind this.¹²
4. A purely historical explanation is that, at the origin (i.e. in a public works concession), concessionaires were free to exploit the works and charge whatever the market would bear. In that case, bidding for the concession right would not make much sense, at least not in the absence of an initial concession fee to be paid by the winning bidder.
5. A related historical explanation starts with the fact that originally only “industrial and commercial,” as opposed to administrative, services could be delegated to concessionaires by public authorities. A common characteristic of such services is the fact that users pay for them; in economic terms, such services are *private goods*. Hence the requirement that a concession must involve user fees: this indicates that the service in question is indeed a commercial-type service (see Faisandier 1992).

¹² *First*, the issue of the concessionaire’s ability to bear various kinds of risk could well be dealt with in the pre-qualification procedures and in the evaluation of proposals. *Second*, the mode of remuneration has no necessary bearing on risk: there are concessions in which the municipality reduces the concessionaire’s risk by giving subsidies; and there are METPs in which the municipality pays a fixed price for each unit of service (e.g. for each ton of waste incinerated), like the “shadow tolls” in some U.K. roads projects, thus mimicking the receipts that the company would earn if it could bill users directly. (The same general point is emphatically made by Faisandier (1992), one of the only writers on the subject I have read who discusses in any concrete detail what the actual risks are that the concessionaire bears.)

Some authors are blunt enough to suggest that history is the *only* reason that remuneration from user fees is a necessary condition for a concession (see those cited in Raymundie 1995: 86). It is also interesting that concessionaire companies prefer to be paid directly from user fees.¹³ It is intriguing to note that the large concessionaire companies have been among those arguing against expanding the definition of delegated public services to include contracts in which municipality pays the company directly (METP contracts — see next section).¹⁴ One must also note, however, that politicians also often like it when the concessionaire bills and collects from users; that way, they can distance themselves from potentially unpopular price increases.

2.4.2 The Case of the METP and the Dangers of Legalism

The importance of the mode of remuneration is highlighted in the recent and ongoing debate in France over the public service contract known as the METP — literally, “public-works-enterprise procurement” (*marché d’entreprise de travaux publics*). In functional terms the METP is exactly like a concession except that the company is paid directly by the municipality rather than by collecting user fees. The Conseil d’Etat coined the term in 1963,¹⁵ but it is only in the 1990s that the METP has become somewhat of a vogue. Municipalities have found many situations in which they would benefit from

¹³ *First*, payment may be more secure if it does not depend on appropriations from the municipal budget. *Second*, payment from users favors a fixed *unit* tariff, rather than the combination of a capacity charge and a variable charge that becomes more feasible if it is one entity — the municipality — that makes the payment. This transfers commercial risk to the concessionaire, which, if managed properly by the concessionaire, is attractive because of its upside income potential. *Third*, billing and collection of users gives municipal service companies valuable access to a customer base which they can use for other municipal services (e.g. cable television).

¹⁴ “. . . water supply concessionaires, which do not want the traditional concession polluted with uncertain concepts, argue that the METP should not be assimilated with the delegation of a public service . . .” (Bernard and Wahl 1994: 22).

private financing and from dealings with a single private company in an integrated build-operate-maintain arrangement, but for which the collection of user fees by the company is considered not to be feasible or appropriate — e.g. prisons, public hospitals, school building rehabilitation, sports centers, street repair, wastewater treatment (see Raymundie 1995: 116).

There are three reasons for looking at the METP in the present context. The first is to illustrate how French jurisprudence regarding local public service delegation is caught in a morass of legalism and finds itself being overtaken by events. The second reason is that the Lyon case study in the next chapter involves an METP masquerading as a concession. Finally, the debate illustrates the weak influence of economic ideas on French jurisprudence and doctrine, due in part to the much tighter boundaries that exist in France between different academic disciplines.

French law needs to classify the METP properly to see whether the normal public procurement rules should apply. The Administration (Ministry of Interior) has made it clear that the METP is a form of public procurement and as such is subject to the public procurement code. The position of the Conseil d'Etat has been more ambiguous, a fact that has generated pages of commentary. It is generally accepted, however, that jurisprudence supports the Administration's view. The deciding factor is that the company is paid a "price" (*prix*) by the public authority; and this triggers the application of the public procurement code.^{16,17}

¹⁵ Ville de Colombes, CE 11 December 1963, Rec. p. 612.

¹⁶ See e.g. SA SOBEA, CE 14 October 1988, Req. no. 68.583–68.789.

Doctrine also generally appears to share the opinion that the METP should be considered a form of public procurement rather than public service delegation (Aguila 1995b: 44). Some writers, such as Raymundie (1995: 120–27), are disturbed by the complex and hybrid nature of the contract: the METP is really a public works construction contract joined to a service contract, and since it would be possible to conclude two separate contracts, there is “an absence of homogeneity.” Such concerns may seem strange to the Anglo-American lawyer not familiar with the French legal custom that always strives to classify contracts into distinct categories.

Other scholars and practitioners, however, have difficulty hiding their astonishment that the Conseil d’Etat can make so much of a simple difference in the way the company is compensated.¹⁸ What is the real difference between the concession and the METP? “[N]othing or almost nothing,” replies Professor Llorens (1992: 53) provocatively. Going even further, prominent lawyer Marie-Thérèse Sur (1992: 62) writes: “[t]he collection of fees directly from users is an outmoded criterion [for the concession].”¹⁹

¹⁷ In the *régie intéressée* and the *gérance*, which are not subject to the public procurement code, the company is paid by the municipality. The payment, however, is not technically a “price” since it is not intended to cover the cost of the service, which is borne directly by the municipality. (See Auby and Maugué 1994: 116; Aguila 1995b: 41.)

¹⁸ See, e.g., Terneyre (1996: 595f.), who points out also how this distinction flies in the face of the direction taken by EU law.

¹⁹ The Administration is in the process of preparing a law that would clarify the status of the METP, among other things. It is expected to take inspiration from the recommendations made by Bernard and Wahl (1994) in a report published by the Ministry of the Economy. They recommend treating that class of METPs that involve construction and then the *full operation* of a service (e.g. wastewater treatment plants, collection or disposal of solid waste) as a true public service delegation and hence not subject to the normal public procurement code. In contrast, those METPs that involve only construction and maintenance would be treated as a form of public procurement (pp. 22f.)

In a famous opinion (not part of a judgment) of the Conseil d’Etat in 1991, the same distinction was suggested — without stating however what consequences might follow — which has led to the current habit of referring to “true METPs” and “false METPs.” The Conseil d’Etat was referring to a series of ostensible METP contracts between the Region of Ile de France (in which Paris is located) and a number

The traditional contract categories are no longer being respected by parties in the field. Complex contractual constructions have begun to be crafted to meet specific needs, often involving more innovative financing mechanisms (see Limouzin-Lamothe 1996).²⁰ The response of jurisprudence has been mainly to retrench itself into a narrow legalistic view. “[T]he METP symbolizes the unfitness of the law of local public services to respond to the different concrete situations encountered by local municipalities” (Peyrical 1993: 46). This has a bearing on what elements of French law and practice one might consider transferring to other countries. We will return to this point later.

2.4.3 French Private-Sector Municipal Service Companies

To put the question of the choice of a concessionaire in context, we will now take a brief detour and look at the companies that actually serve the market for municipal services in France. The market is structured as a highly concentrated oligopoly — practically a duopoly. The two lead players are the Compagnie Générale des Eaux (CGE), said to have about half of the private water market, and Lyonnaise des Eaux (LdE), with about a third. The third in rank is the Société d’Aménagement Urbain et Rural (SAUR), a subsidiary of the huge construction company Bouygues. All three are among the very

of companies, involving the obligation to finance and undertake the rehabilitation of high school buildings and their subsequent maintenance during a ten-year period, in exchange for periodic payments over these ten years. The Conseil d’Etat stated tersely — and rather cryptically — that these were not METP contracts after all. Doctrine has tended to interpret this opinion as meaning that building maintenance is only ancillary to the true *public service*, which is the teaching of students. In other words, there is no true delegation of a public service. (See Raymundie 1995: 119f.; Aguila 1995a.)

²⁰ During the 1960s and 1970s, municipalities relied heavily for credit on the state development bank Caisse des Dépôts et Consignations (CDC) and its local branches, which provided loans at below-market rates. This made borrowing from private banks unnecessary. As CDC funds began to become more limited for municipal service projects for a number of reasons, including their preferred employment in social housing projects, municipalities have started shopping for credit, even making use of formal invitations to bid. This has led to an increasing sophistication of financial instruments. (See Masse 1990.)

largest private French companies; CGE is the third largest in terms of sales revenue. In 1993, CGE's total consolidated sales revenue was 148 billion francs and LdE's was 94 billion francs.

CGE was founded in 1853, inspired by the examples of private enterprises of the kind already in operation in Britain and the U.S. (Goubert 1986: 176); its first project was the water supply system in the city of Lyon, which went into operation as a concession in 1856.²¹ CGE went on to expand its operations in other areas, developing its network in the Paris region during 1860–1914. LdE was established in 1880 and began to develop its own activities throughout France and, to some extent, abroad (e.g. Barcelona). In the early years of this century, the two large companies shared the market with many local and regional companies (Goubert 1986: 181); these were to disappear or be absorbed into the two giants as the years went by. As for SAUR, established in the 1930s, it had to concentrate mainly on the more rural areas since the urbanized parts of the country had already been developed (Lorrain 1986: 101).

It is interesting to note that the success of the private companies' involvement in municipal services is due in part to central government policies that attempted to hold the power of local authorities in check: "The liberal context of weak local public intervention is particularly clear in France. Municipalism was largely kept under control by the Conseil d'Etat, protector of private initiative; public management infringed upon competition, distorted the laws of the market and, by principle, it fell to the private enterprises to

²¹ Despite the similarity of names, there is no connection between "Lyonnaise" in Lyonnaise des Eaux and the city of Lyon: The origin of LdE's name results from its having been founded by the bank Crédit Lyonnais.

intervene” (Raymundie 1995: 19; see also Schmidt 1990: 191f.). Moreover, local authorities were constrained to rely on the experts of the field services of the State and their corps of engineers (Barraqué 1990: 11). It is true that municipal socialism enjoyed considerable support in France in the late 19th and early 20th centuries, but it never got very far. In Britain, in contrast, the private water companies declined in importance in the second half of the 19th century under the influence of the municipal socialism movement (Goubert 1986: 180). Such analyses are intriguing because they suggest that private involvement in municipal services in France might well be viewed in terms of central-local power relations as well as, or perhaps even more than, in terms of the private-public dimension — especially given the central-level locus of the dominant companies.

The two giants, CGE and LdE, have diversified over time into other areas of municipal services — wastewater collection and treatment, solid waste management, district heating, public parking facilities, funeral parlors, etc. — a natural evolution in view of their strong presence at the local level and their direct relations with city officials and users, giving them political support and a ready-made customer base. They have also diversified through networks of subsidiaries into closely and not so closely related areas, such as construction, civil engineering, equipment supply, energy, communications, real estate development, and so on. LdE, in particular, has also actively moved into foreign markets, including the U.S. market: in 1994, 43% of the LdE group’s consolidated revenue came from foreign operations.

Given the strongly oligopolistic nature of the market, one may well wonder what kind of competition actually takes place among these mastodons. What kind of choice is

truly possible for municipalities? Surprisingly, the scholarly and professional literature in France pays scant attention to this issue. An exception, Jean-François Auby (1982: 49), states that competition in this market is “frequently illusory” and goes even further to assert that the companies have understandings between them to restrain competition. Suffice it to say that, given everything we know about oligopolies, it would be straining the imagination to believe that the two principal companies habitually engage in cut-throat competition with each other.

During the last few years, the companies have been under increasing attack in the press and in the courts for having made illegal payments — e.g. illegal campaign contributions — to local politicians in order to obtain contracts. A prominent case is that of Alain Carignon, former mayor of Grenoble, who was sentenced in 1995 to three years in jail for having accepted gifts from LdE in return for awarding them a water-supply contract. Similar incidents have taken place concerning CGE. For lack of solid evidence, no position is taken in this dissertation as to whether these are just isolated incidents or whether they represent the normal practice of the French municipal service companies. One could easily link this phenomenon to the problems of incomplete contracting by noting that, ethics aside, buying the loyalty of local decision makers would be an excellent way to ensure that the parties will be able to fill contractual gaps smoothly when the need arises, in the absence of higher-level stabilizing regulation. This line of thought, however, will not be pursued any further in this chapter.

2.4.4 Loi Sapin

In 1992, a government commission set up to look into the problem of political corruption issued two reports (“Bouchery Reports”). One clear finding was the pernicious effect of the opaque procedures used at the local level for the selection of concessionaires. “This situation can lead the municipality to conclude an economically unbalanced contract: excessive duration assuring the delegatee monopoly rents [*une rente de situation*], privileged attribution of works to the concessionaire or to the companies that control it; abnormal transfers of costs to the detriment of the user and the municipality” (Raymundie (1995: 247), quoting M. Durand summarizing the conclusions of the Bouchery Reports).

Shortly thereafter, new legislation was passed in France that substantially redefined the concept of *intuitus personae* as it applies to public service contracts. The keystone is the law of 29 January 1993, known as the “Anti-Corruption Law” or “Loi Sapin,” after the Minister of Economy who introduced the legislation. Several decrees and laws have followed, further developing the core provisions.²²

The Loi Sapin applies to “delegations” of public service — we will encounter this word again and again — without defining in any way what this means, perhaps implicitly relying on jurisprudence to supply an operative definition, which it has not done yet (see Terneyre 1996: 588). The law now requires municipalities to follow a multi-step procedure in their selection of a concessionaire.^{23,24} The basic procedure has similarities

²² One should not minimize the influence of the European Union (EU) on this growing tendency in France to open up the procedures for the selection of concessionaires. In keeping with the objective of promoting free movement of resources among member countries, an important goal of the EU law has been to encourage competition in place of state (and local government) protection of monopolies.

²³ Both “municipality” and “concessionaire” will be used in a loose, informal sense in the following paragraphs, with “concessionaire” meaning any kind of *delegatee*.

with a two-stage request-for-proposal process, with a first stage being used to select a short-list of qualified firms that are then permitted to submit detailed offers. Without entering into details — which involve a bid evaluation commission, deliberation by the municipal assembly at various stages, required waiting periods, etc. — we should note the emphasis placed in these procedures on *openness* (the municipality must publish a notice of its intention to delegate a public service and then review the qualifications of the respondents in order to select a short-list), *competition* (presentation of fully developed proposals by more than one firm), and *transparency* (presentation of various reports to the municipal assembly explaining the conclusions reached).

Yet the law is careful to preserve the core of the principle of *intuitus personae*. After examination of the offers, the executive officer or body is empowered to *freely negotiate* with one or more of the firms having made an offer and then to select the concessionaire. It appears that this freedom implies absolute discretion. One piece of evidence for this is that both legislative history and subsequent jurisprudence make it clear that the municipality is not under any obligation to explain to losing firms the reasons for their being rejected, even at the pre-qualification stage (Bernard and Wahl 1994: 11). The principle of free choice therefore seems to go beyond what is found in the restricted request-for-proposals process (*appel d'offres restreint*) of the French public procurement code.²⁵ What acts as a restraining force is an interesting twist with regard to transparency:

²⁴ The following discussion of the new procedures is taken largely from the Loi Sapin itself, Troger (1995: 24ff.), Raymundie (1995: 246ff.), Guibal and Rapp (1995: 322ff.), and Bernard and Wahl (1994: 2ff.).

²⁵ Guibal and Rapp (1995: 323) are of the opinion that the new procedure is essentially an *appel d'offre restreint*, but in any *appel d'offre* under the public procurement code, losing bidders have the right to be informed of the reasons for their rejection (see Guibal and Rapp 1995: 205), which suggests less than absolute discretion in the matter of choice. Note also that the public procurement code states that

the executive authority must transmit to the municipal assembly both (i) an account of its reasons for selecting its preferred firm and an explanation of the “economy of the contract” and (ii) the earlier report of the official evaluation commission (made up largely of elected officials), containing *its* recommendations. It is then for the assembly to ratify or reject the executive authority’s decision.

In short, it is apparent that the old-fashioned notion of *intuitus personae* had become an invitation for abuse, though to what extent is perhaps not clear. There are now new rules of the game.

2.5 Role of State Administration

2.5.1 Standard Contracts and Model Contracts

Central government departments (the “Administration”) have traditionally had two ways to influence the regulation of municipal services by contract. The first is by issuing standard contracts for various sectors; these were prepared by the Ministry of the Interior. In fact, a “concession act” strictly speaking consists of two parts: a *convention de concession*, which is a brief statement of the agreement of the two parties concerning the concession, and a detailed *cahier des charges*, attached to the *convention*, which sets out most of the rights, duties, and conditions. The standard instruments issued by the Ministry of Interior are actually standard *cahiers des charges*, but in this dissertation the term “concession contract” will generally be used loosely to mean either the full concession act or just the *cahier des charges*.

selection of the “most interesting offer” is to be made “taking into account various data, notably the professional and financial guarantees [qualifications, really] offered by each of the candidates and the implementation time.” No such language is found in the Loi Sapin. One could argue that the very fact

The first standard contract (*cahier des charges type*) for a municipal concession was issued in 1947 for water supply. Others were issued in the years that followed. They were developed in consultation with concerned parties. The force of the standard contract came from the approval power of the central government: before 1982, if a local public service contract was not in conformity with the relevant standard contract (providing one existed), the proposed contract would have to be approved by the Ministry of Interior before it could take effect (Auby 1982: 21), an understandably long procedure to be avoided if possible. With the decentralization of powers to the local level in 1982, these standard contracts were declared to be merely indicative models, to be followed or not, as the local authorities wish. They no longer have any obligatory force. It should be noted, however, that they continue to have a great deal of influence on the contracts proposed by either companies or municipalities.

2.5.2 Role of Prefect and Field Services

The second form of regulation was by the approval power of the prefect. There are three major territorial levels of administration in France below the central level: *région* (of which 22), *département* (96), and *commune* (36,500). The prefect is the central government's representative at the level of the *département*.²⁶ Until 1982, the prefect exercised the *tutelle administrative*, the power of ex ante approval over many decisions taken by the *commune*. Of interest to the present subject, the mayor of the *commune* was obligated to send every proposed concession contract and amendment to the prefect, and the contract would be valid only after the prefect's approval.

that the decision in the case of an *appel d'offre* must take into account anything at all moves it away from one of absolute discretion.

The prefect was advised by the field services of central government ministries at the level of the *département*. Of particular relevance in the present context are the *Direction départementale d'équipement*, DDE (departmental infrastructure services) and the *Direction départementale d'agriculture*, DDA (departmental agriculture services). These field services would also give direct technical assistance to local government bodies.

It would be interesting to know to what extent this arrangement helped municipalities in their negotiations and renegotiations with concessionaires. In interviews with a variety of participants and observers no consistent picture emerges, however, as to the actual impact of this system of ex ante prefectural approval and field service advice. It may be that the characteristics varied considerably from place to place. Nevertheless, one may hazard two tentative conclusions. First (and this is more in the way of a hypothesis), the arrangement, together with the required use of standard contracts, created institutional constraints that acted as a moderating influence and helped prevent outrageous behavior on the part of concessionaires (compare contracting-out in the U.S. in the early 20th century — see Chapter 1). Second, given the makeup of the personnel of the relevant field services, the problems to be dealt with were seen primarily as technical, engineering questions. Economic and financial questions were not given much importance.²⁷

2.5.3 Decentralization

France undertook a radical decentralization of administrative functions beginning with a framework law in 1982 (see in general Schmidt 1990). Most important for our

²⁶ Strictly speaking, *préfet de département*, since the regions have prefects also.

purposes is to note that the prefects' ex ante *tutelle* over the mayors was eliminated and was replaced by an ex post review of local government actions whose objective is simply to ensure conformity with the law.

As noted above, the standard contracts were made non-mandatory as part of the decentralization of responsibilities. The term “standard contract” will usually be used in this dissertation when reference is being made to the obligatory contracts up to 1982 and “model contract” for the contracts as they are now used in a non-mandatory way.

Along with local officials' greater power has come an increasing sense of accountability: they can no longer use the prefect as the scapegoat for their own decisions. They see themselves more and more as *managers*, making use of new administrative and financing techniques, hiring better qualified personnel, and looking with interest at management methods used in the private sector (Schmidt 1990: 344, 371f.). As we will see in the Lyon case study (Chapter 4), this has begun to change the way they relate to their concessionaires.

3. COPING WITH CONTRACTUAL INCOMPLETENESS

3.1 Introduction

Unless the public service in question is extremely simple, it is unlikely that a service contract can be implemented over the long term by referring solely to its explicit terms and the context of contract formation that indicates the parties' intentions. This dissertation argues that in a system of long-term municipal service contracting, what is just

²⁷ Part of this probably has to do, historically, with the low price of water and other municipal services. Much more attention was given to economic analysis and tariff structures with regard to, e.g., electricity, for which France's contribution is well-known (see Lyonnaise des Eaux 1994: 984).

as important as the terms of the contract are the methods used to deal with potential contractual incompleteness.

The following discussion will follow the taxonomy of methods outlined in Chapter 2 — highlighting the ones that seem most critical in this context. We begin by looking at an important way to make the contract more fully state-contingent: indexation of the price terms. We then move to the question of negotiations. Finally, we look at how the ultimate third party, the judge, analyzes the issues and takes decisions.

3.2 Background Rules

In Chapter 2 it was pointed out that adjudicators can exercise *extra-contractual* or *regulatory* control to fill “gaps” in contracts by using decision rules created by the law — statutory or case law, depending on the legal system and the circumstances. French law in the area of local public service delegation is replete with such background rules.

In particular, French administrative law has developed special rules to deal with three kinds of situations that often arise in long-term public service contracts:

1. *Fait du prince* — an action taken by the public authority (contracting party) that makes performance by the concessionaire more costly. A common example is the municipality’s requirement that the concessionaire modify the plant or equipment in some way, for instance in response to a growth in demand or a change in environmental standards.
2. *Sujétions imprévues* — material conditions that the concessionaire encounters that make performance more costly. The standard example is that of unexpected ground conditions in construction work. (Of course, the parties may have specified

in the contract who should bear the risk in such circumstances; in that case, the contractual terms would control.)

3. *Imprévision* — temporary difficulties typically brought on by an increase in the price of an input that clearly exceeds anything the parties expected at the time the contract was concluded and that is not adequately taken care of by the price indexation in the contract.

In the sections that follow, we will see what role is played by these background rules, especially (1) and (3).

3.3 Greater Contractual Specificity

3.3.1 Price Indexation

a) French Practice

Before considering mechanisms for dealing after the fact with contractual incompleteness, we will look at one important method for avoiding it: the indexation of prices in the contract. General inflation and differential price movements pose a great threat to the financial viability of a long-term contract, as early concessionaires learned to their chagrin in both France and the U.S. As a result of continuing expectations of inflation, systems of price indexation became more widespread.

Long-term contracts in the U.S. for municipal services (e.g. for wastewater treatment or solid waste incineration) generally make use of the consumer price index as the principal index for periodic price adjustments; energy or fuel price indices may also be included as factors. In Great Britain, there were discussions just before the setting up of Ofwat about whether it would be best to use tailor-made composite indices based on

industry costs or to adopt the retail price index for all firms. The retail price index was chosen because it was not as subject to influence by companies and because it is more easily understood by users and investors (Littlechild 1986; Armstrong *et al.* 1994: 168).

In France, in contrast, it is conventional to use composite indices built up from basic indices published by government organizations (INSEE in the Ministry of Finance, and the Ministry of Public Works) and industry associations (e.g. National Public Works Federation), some of which are themselves composite indices. In fact, French law expressly forbids the linking of any contract price to the consumer price index, to “the general level of prices or salaries,” or to “prices of goods or services having no relation to the objective of [the contract] or to the activity of one of the parties.”²⁸ The legislature’s intention appears to be to discourage the widespread and indiscriminate use of price indexation in contracts, which, through circular referencing, could lead to a spiraling inflation. An index must therefore be tailored to the particular situation, a solution that prevents the routine use of a standard formula.

The choice of particular indices in French public service contracts often seems to the uninitiated to be based on an arcane science. The basic method used, entirely reasonable, is to look at the cost structure of the concession and then to try to match it with appropriate indices and coefficients. But custom is said to enter into the picture also, as we shall see in the Lyon case study (Chapter 4).

The general model for the indexation used (my formulation) is:

²⁸ Ministry of Finance decree no. 58-1374 of 30 December 1958, article 79.

$$\frac{P_t}{P_o} = w_k + \sum_{i=1}^n w_i \frac{I_{i,t}}{I_{i,o}}, \text{ where } w_k + \sum_{i=1}^n w_i = 1$$

P is a component of the remuneration to be paid to the concessionaire; I_i is a price index of some sort (where there are n such indices); w_k and w_i are weights. The subscript o indicates the value at a base point in time (a “base value”) and the subscript t indicates a value at time t .

It is traditional and was formerly required by the Administration that local public service indexation formulas include a constant term in the formula (w_k in the formula given above), having a weight of, say, 10–15%. Municipalities are now free to use whatever formula they wish, but this practice has continued. Assuming a constant term of 15%, we then have, in general terms:

$$\text{Price Adjustment Factor} = 0.15 + (0.85 \times \text{Weighted Price Indices}),$$

where “Weighted Price Indices” is assumed to have a base value equal to 1 in this simplified formula. One reason commonly given for this practice — by the Administration among others — is that it accounts for and encourages productivity gains (see Troger 1995: 144), in a similar way as the “ X ” element in the well-known British formula “ $RPI - X$ ”, where RPI is the retail price index. The functional forms are different, but they are close approximations over a 30-year period for an inflation rate of, say, 3% per year. The 15% constant term (as shown above), given a 3% rate of inflation, is roughly equivalent to an X value equal to 0.32% in the British formula — i.e. to the assumption of a productivity gain of about 0.3% per year.

Another reason sometimes cited is that such a practice helps hold down general inflation. Regardless of the validity of this macroeconomic assertion, one could validly argue that it might be politically appealing to have local public service prices rise at a rate that is less than general price inflation.

One should be skeptical about a justification based on incentives for efficiency. This would make sense if the contract were of indefinite duration (as in the U.K., in effect) or if prices were set at the beginning or reset periodically on the basis of current costs. But with a concession of definite duration or one in which prices are renegotiated periodically without close reference to actual costs, the concessionaire can simply make sure each time that the base price (before indexation) is high enough to cover the erosion that is expected to occur over time due to the constant term in the indexation formula. In fact, the concessionaire *must* do this in the case of greenfield projects with well-defined technologies in which there is little room for productivity increases once the project-specific fixed investment is put in place. For example: Would it be reasonable to count on computerization further reducing the labor required for a brand-new incineration plant, which is already equipped at start-up with a computerized control system covering all major variables?

The thorniest problem is with *unanticipated* productivity increases that give a windfall gain to the concessionaire; and we will return to this in Chapter 6. Nevertheless, if productivity increases are expected in a particular sector or project, it is true that the constant term or the “ $-X$ ” term can help ensure a better match between the profile of the concessionaire’s revenues and costs, and this would normally benefit both parties.

b) Effectiveness of Indexation

It is an interesting question whether companies use the indexation provisions strategically and not just as a way to track their costs as closely as possible. Ginglinger (1990) found in a sample of concession contracts in the Paris region that the labor component was overrepresented in the formulas used. Given that labor costs increase faster than general inflation, this might show an attempt to squeeze the most out of the formula. On the basis of her analysis, Ginglinger surmised, however, that the companies might simply be trying to compensate for the dampening effect of the constant term (see above). The issue is further complicated since the concession's cost category "salaries" may not fully capture labor costs: there may be other labor components hidden in service purchases or subcontracts (e.g. transport) that are not accounted for by other elements of the indexation formula.

Another important question is how well the formulas hold up over time. Discussions with knowledgeable participants do not give a clear idea whether one would expect the price terms of a contract of, say, 20 years' duration to remain in effect over the entire period with typical indexation. Is this a risk that operators are prepared to bear, or do they count on periodic revisions of one sort or another, beyond the automatic adjustments of the indexation formula? It is difficult to find a good answer.

It should be noted, in any event, that the model contracts implicitly acknowledge that price indexation will not always track actual costs closely. As we will see below, a typical escape clause permits either party to ask for renegotiation of the price terms if the adjusted price diverges too far from the base value.

We will look in more detail at how some of the common indices perform in the Lyon case study (Chapter 4).

c) National Price Controls

A final note on the subject of indexation calls attention to the impact of central government intervention. Central government price controls were widespread in France during a period of fifty years: 1936–1986 (see Dumez and Jeunemaitre 1989; Franck 1957). If the final price of the public service to the user was set below the contractually agreed level, the concessionaire could always claim an indemnity from the municipality according to the legal theory of *imprévision* (see section 3.3.2). But price controls could work in another way also: the Administration had the power to fix the values of price indices used in the automatic price adjustment formulas in contracts, irrespective of the actual prices of the goods and services in the baskets on which the particular indices were based (de Laubadère *et al.* 1984: 364). Since the remuneration of the concessionaire continue to be based on user fees duly adjusted by the price indexation formula, there would be no legal grounds for complaint. The increases in the values of the indices commonly used were decided after discussions between the Administration and the concerned companies in Paris.

The upshot of this development is that, although we think of the “regulation” of local public service contracts as a largely local affair, the central government played a significant indirect role in price regulation during a large part of this century through its setting of the indices underlying tariff increases. Once again, the central government is

seen to have more regulatory importance than one might first think. This issue is passed over lightly in this dissertation, but it certainly merits further study.

3.3.2 Temporary Difficulties: *L'Imprévision*

One highly original feature of French administrative law is the theory of *imprévision*. It is highly developed and there are many nuances; this section will give only a brief overview (see e.g. de Laubadère *et al.* 1984: 596ff.; Coudeville 1983: 130ff.; Richer 1991: 66ff.).

In effect, the background legal rules concerning *imprévision* make the contract more specific about what to do when the concessionaire faces severe but temporary difficulties, typically, but not necessarily, when there has been a dramatic, unforeseeable, and uncontrollable price increase in one of its inputs. This is the kind of contingency that the parties themselves may tend to neglect when writing a contract — especially if their lawyers do not play a large role.

The famous case that lies at the origin of the rule, *Gaz de Bordeaux* in 1916, involved a gas distribution concessionaire that faced an enormous increase in the price of coal — fourfold in twenty months (Nicholas 1992: 209) — resulting from conditions during the First World War. Another application has been on the revenue side when national price controls have prevented user fees from being set at the contractual level (see section 3.3.1c)).

Since the parties would expect many prices to fluctuate or even to increase gradually over time, the resulting increase in the price of one of the concessionaire's inputs must clearly exceed the maximum limit (*prix-limite*) that would reasonably have been

envisaged by the parties when they concluded the contract, and the “economy” of the contract must be profoundly disturbed by the events. A period during which such a condition occurs is referred to as an “extra-contractual” period.

In such a case, the judge can require the public authority to assist the concessionaire financially during the period in order to prevent a breakdown in the public service. It is important to note, however, that this does not necessarily mean fully reestablishing the financial balance of the contract during this period. If the temporary period becomes permanent, the parties must either renegotiate the contract or terminate it.

The method of calculating the required indemnity has several interesting features (see de Laubadère *et al.* 1994: 615–23), and they are worth noting as a way of illustrating the level of detail found in the French background rules. First, the financial statement (relating only to activities covered by the contract) for the extra-contractual period must show an accounting loss — and this is the starting point in calculating the required indemnity — but if there was already a loss before the extra-contractual period began, then this must be deducted from the extra-contractual deficit to arrive at the needed compensation. The incremental/global issue (see section 3.4.5a)) is handled in a complex way: there must be an accounting loss — i.e. absolutely, not just relative to conditions in the previous accounting period — but the actual compensation is determined relative to any preexisting loss. Second, the “limit-price” that sets the threshold is used only to determine when the extra-contractual period begins and ends; the deficit is not calculated *relative* to the limit-price. Third, jurisprudence firmly holds that the concessionaire must

always bear some part of the extra-contractual “cost.” This share is determined by the judge if the parties do not agree, and it is generally around 10%.

The concept of *imprévision* in French administrative law is noteworthy as an effort to provide a solution to a typical problem of incompleteness that could easily arise in a long-term public service contract.²⁹ It has served as inspiration for legal reformers looking for a more nuanced mechanism than the traditional impossibility or *force majeure* concepts, which act to entirely excuse performance (see e.g. CECL 1995: 114). Note that in French law, *imprévision* comes into play even if the parties have included a hardship clause in their contract that contains other conditions; and leading doctrine is of the opinion that a party cannot waive this right in the contract — i.e. it is not a default rule but an imperative, immutable rule (de Laubadère *et al.* 1984: 600). It is quite clear that the judge is going beyond the contract and possibly beyond the intentions of the parties. The judge acts in a fully regulatory role.

²⁹ There are many important issues that I have ignored in this discussion. (1) Given that we all know that prices fluctuate and respond often dramatically to conditions of supply and demand, wouldn't the concessionaire have based its offer on subjective probabilistic distributions for all input prices, among other things, and wouldn't those distributions contain probabilities corresponding even to extreme events — i.e. wouldn't they have tails? So perhaps the contract is complete after all, and in that case, why should the judge interfere with the parties' intentions, with their own bargained risk allocation? (Cf. Gillette 1985.) (2) Even if one party fully and explicitly understands and accepts that it would be responsible for contract performance no matter what the price of its inputs turned out to be, might there be sound economic reasons for giving relief? If the municipality would have to deal with a contract default and then go out and search for a new concessionaire — which would face these same increased input prices and would therefore have to charge the municipality a higher service fee — it could avoid substantial transaction costs by simply increasing the price paid to the present concessionaire. These transaction costs might not be a loss to the municipality, depending on what it could claim as damages from the defaulting concessionaire, but they would be a loss from the economic point of view. Should the court perhaps intervene, especially when third-party beneficiaries — service users — are involved?

Presuming that the case can be made for judicial (or at least, third-party) intervention in cases like this,³⁰ there are at least three questions involved in such intervention. First, what is the price limit for the input beyond which it can be said that there was no meeting of the minds? Narasimhan (1986) takes the position that this is a matter of determining the parties' intentions. I would argue that in most cases one will find contractual incompleteness even as to the definition of these boundaries: so this would require an extra-contractual judicial intervention also. Second, there is the question of how to calculate the burden in monetary terms. Third, there is the question of how to divide the burden between the parties.

The second question raises the issue of how suitable a judicial body is for this kind of task. The French approach involves looking at the concessionaire's financial situation because it wants to give relief only in cases of absolute hardship, not just when a shortfall occurs relative to what the concessionaire might otherwise have gained. U.S. courts do not like to involve themselves in an examination of costs.³¹ The French administrative courts have one advantage in this respect. Their methods are more inquisitorial than adversary (though opposing positions are presented). The U.S. court would have to try to make sense of the two sides' tendentious expert opinions; the French court can order an *expertise* to be carried out for itself — this is less usual for the Conseil d'Etat, but quite

³⁰ Taking the opposite position, one could argue that in some cases greater economic efficiency would be achieved by strictly enforcing the terms of the contract in order to induce the concessionaire to put the issue on the negotiating table at the start so that the parties could work out a solution themselves that is more optimal. (Ayres and Gertner (1989: 91) refer to this as a "penalty" default rule.) On the other hand, "experience suggests that frequently the parties are not sufficiently sophisticated, or are too careless of their own interests, to do this; or they can insert clauses which do not cover every eventuality" (CECL 1995: 113).

common for the first-level court, the administrative tribunal (Brown and Garner 1983: 61). This makes its regulatory task easier by far.

3.4 Contract Renegotiation

In Chapter 2 it was pointed out that one of the most common — and problematic — ways for parties to deal with contractual incompleteness is to renegotiate their contract. It was also noted that background rules in the legal system or provisions in the contract itself can act to constrain the renegotiations. The French system provides a good example of both of these techniques.

3.4.1 Public Authority’s Power of Unilateral Modification

According to the basic regulatory principles of public service provision, the concessionaire has an obligation to continue to provide the public service in question and to adapt equipment and infrastructure to meet changing needs. Given its appreciation of these needs, the municipality has the right to impose on the concessionaire new service obligations. This is a mandatory legal rule and cannot be overridden by the explicit terms of the contract. Such a legal rule takes care of one side of the problem of contractual incompleteness. The contract may not say anything about what should happen to a wastewater treatment plant if the city population increases by 20%. No matter: the municipality has the power to require the concessionaire to expand the plant capacity. This element of the law shows clearly that the so-called public service contract goes beyond the nature of a *pure contract*: the law is not at all concerned here with whether

³¹ “Litigating cost accountings is difficult and expensive”; “. . . courts are unlikely to be good forums for the resolution of disputes about whether the costs of a particular business are or are not excessive” (Narasimhan 1986: 1164, 1149).

the concessionaire agreed that it would make whatever reasonable modifications are requested by the municipality.³² (In practice, the concessionaire understands this well enough, and so this assumption does indeed form part of the contract per se.)

This solution, however, does not respond to the other side of the question: How should the concessionaire's remuneration be adjusted in response to a change in service requirements? It is to this question, among other issues, that we now turn.

3.4.2 Renegotiation Clauses

The standard contracts issued by the Ministry of Interior and since 1982 considered only as non-mandatory models, recognize the incompleteness of contractual terms and include broad clauses that permit renegotiation of the price terms of the contract. The clauses typically contain conditions that permit either or one of the parties to call for renegotiation if the nature of the service changes substantially: if there is a substantial modification of the physical works or the technical processes; if the quantity of, say, wastewater varies by more than 20% from the base quantity; if the population varies by more than a certain amount; and so forth.

Looking in particular at the standard contracts for a water supply concession (issued in 1947), water supply *affermage* (1980), and sewerage system *affermage* (1981), we note that in addition to conditions relating to changes in the service or in specified cost elements, there are two very broad conditions that can trigger renegotiation: first, whenever the application of the tariff indexation formula results in a tariff that diverges by

³² French contract law is based squarely on the theory that contracts are binding because they are the expression of the autonomous wills of the parties (Nicholas 1992: 32) — i.e. contract as *promise* (see in general Fried 1981).

more than 50% from the base tariff (or the tariff at the last revision); second, after the first five years. (In the 1947 standard contract, the conditions are the same but the two values are left blank, to be agreed by the parties.)

The interesting thing about these renegotiation clauses is their cost-of-service flavor. In general, in a contract that contains a typical *hardship clause*, the parties remain locked into the agreed prices unless unforeseeable and unavoidable events occur that greatly perturb the financial consequences of the contract. It is considered good international practice to draft such clauses narrowly to prevent destabilizing the contract.³³ In the clauses found in the standard contracts mentioned above, the conditions referring to substantial changes in the service, etc., may meet this requirement. But the provision for renegotiation after five years is simply a tariff review, pure and simple; the aim is not necessarily to compensate for uncontrollable, unforeseeable changes. We note that the renegotiation clause begins as follows (in the two *affermage* standard contracts³⁴):

In order to take into account any changes [*l'évolution*] in economic and technical conditions and to ensure that the indexation formula represents actual costs well, the tariff level, on the one hand, and the composition of the adjustment formula . . . , on the other, shall be submitted to a review upon production by the [company] of necessary supporting documents, notably operating accounts, in the following cases: . . . [after which follow the various conditions].

Given this language, it is difficult to know how one would proceed in the five-year review except through a kind of global look at properly substantiated costs: there is no clear indication that one should make a distinction between cost changes within the company's control and those beyond it or of how one might go about separating these

³³ See e.g. Bell (1989: 205); CECL (1995: 112); Ghestin and Billiau (1990: 136); UNCITRAL (1988: 244); Yates (1990: 207).

elements if indeed such a distinction were to be made. In the case of a modification in the physical plant or in technical processes, it seems clear that the review should look at the company's costs, but would this review consider narrowly just the incremental impact of the modification, or would it, too, be a global cost review? This is not entirely clear.

It is no longer obligatory after 1982 for municipalities to use these standard contracts, but they continue to serve as models.³⁵ It is interesting also to look at a general contractual scheme for a concession proposed by Bureau Francis Lefebvre, one of the leading law firms in the area of local government contracts and publisher of the standard practitioners' guide on the subject, commonly used by local governments. The contractual scheme they suggest for the concession leaves no doubt about the cost-of-service orientation:

Notwithstanding application of the indexation formula, the [municipality] shall see to it that tariff increases permit the [financial] balance of the concessionaire's operations to be ensured in an effective manner, notably as a function of the evolution of operating costs and of the rate of service utilization. [Guibal and Rapp 1995: 586, clause 40.2]

They also include an additional condition in their suggested renegotiation clause: the "entirety of financial conditions" should be reviewed also ". . . in any other case of a kind that profoundly upsets [*boulverser*] the general economy of the contract" (Guibal and Rapp 1995: 574ff., article 43). This is a true hardship clause, and an extremely broad

³⁴ Article 40 in the water supply contract and Article 38 in the sewerage system contract.

³⁵ One interesting question is whether the rule in the non-mandatory model contract should necessarily be the same as the rule in the previous mandatory contract. One could argue that concessionaires' knowledge and sophistication in general being much greater than that of municipalities, the model contract should be designed to force concessionaires to propose and negotiate such tariff reviews if they really need them. Why give this to them at the outset? Moreover, the way that the concessionaire tries to negotiate around a model contract clause can reveal useful information about it to the municipality — i.e. in game-theoretic parlance, it can lead to a separating equilibrium rather than a pooling equilibrium.

one.³⁶ French local public service contracts therefore appear to be quite susceptible to renegotiation — and in particular, renegotiation on a cost-of-service basis. This is one way to deal with contractual incompleteness and it has a number of advantages, but it brings with it a new concern: opportunism on the part of the party with the stronger bargaining power. We will return to this issue.

It is also worth considering the condition according to which a revision can take place if the tariff indexation formula results in an adjusted tariff that diverges by more than 50% from the base tariff. Suppose that the formula is tracking costs perfectly, and that total costs are increasing at about the same rate as general inflation. At 3% per year, a tariff revision would be permissible after 14 years; at 2.5% after 17 years. This gives a fine opportunity for a cost-of-service readjustment part-way into the concession, and in preparation for it the savvy concessionaire might make sure that reported costs are made to look as high as accounting rules and custom will allow — the classic ratchet effect.

An important question is what should be done if the parties cannot reach agreement on a price revision in such circumstances. In all three of the standard contracts mentioned above, as well as in the contractual scheme suggested by Bureau Francis Lefebvre, the solution is to submit the issue to a three-member commission, one member being chosen by each party and the third member by the other two members. According to jurisprudence and doctrine, the conclusion of such a commission has no binding and

³⁶ Lawyers dealing with ordinary contracts generally recommend against such broad hardship clauses: “The use of open-ended and vague criteria (e.g., ‘changed circumstances’, ‘upsetting the initial equilibrium of the contract’, and ‘causing serious economic consequences’) to determine the application of the clause is to be avoided” (UNCITRAL 1988: 244).

final effect on the parties (de Laubadère *et al.* 1984: 929f.)³⁷ — and this is clearly stated in the Bureau Francis Lefebvre contractual scheme. Moreover, public bodies in France are not permitted to resolve a dispute by arbitration in the absence of specific legislation to this effect (p. 950). But the idea of having a neutral third party make a recommendation is still a valuable technique for two reasons: first, regardless of the judge's later attitude towards the commission's conclusion, the existence of an apparently neutral solution will often encourage parties to reach agreement; second, the judge might be expected to give credence to such a conclusion in the absence of good reasons not to do so (e.g. manifest error).

Despite the popularity of such expert-determination clauses in French local public service contracts, it appears that very few municipalities use them.

3.4.3 Regulatory Power of Public Authority

Given the principle of continuity of service, it is reasonable to think that some mechanism will be provided to decide the issue in the event that the two parties cannot reach agreement on a new price. In an ordinary, private contract the normal response in such a situation, if continuation of contractual performance according to the existing terms appears too onerous to one party, would be for that party to repudiate the contract and seek damages or try to excuse its nonperformance in a number of ways depending on the

³⁷ For example, an administrative tribunal rejected the conclusion of such a three-party commission after ordering an expert determination to verify its findings. The contract in question had contained provisions for price revisions stating that prices should be “in harmony” with the costs of the enterprise (the cost-of-service principle could hardly be made clearer here). New wastewater installations had been progressively put into service over the period 1979–1982. But the three-member commission looked only at costs incurred in 1982 in reaching its conclusion as to the revised price for the entire period. The expert appointed by the administrative tribunal found that the 1982 costs overstated annual costs over the whole

legal system (e.g. frustration, impossibility, force majeure). This will not do in a long-term public services contract, unless the obstacle is truly extreme and lasting. There must be some way for the contract to be adapted to new circumstances.

Given regulatory policy as it has evolved in the U.S., and more recently in the U.K., one question one might ask is whether the public authority in France has the power to readjust the contract price unilaterally; for this is the approach taken in the U.S. and the U.K. in regulation-by-commission (though not, as a rule, in regulation-by-contract).³⁸ If the answer is yes, the next question is what criterion of reasonableness should be applied by the public authority, if any. If the answer is no, the question becomes whether the *judge* can fix the price in the absence of the parties' agreement, and in that case the issue of a criterion applies as well. Note that these two possibilities are not equivalent even if the standard ultimately used is the same. A unilateral right of action by the municipality puts it in a much stronger position — the ball is always thrown into the concessionaire's court.

Over the years, there has been a doctrinal debate over what aspects of a concession contract are truly contractual and what aspects are regulatory in nature. Suffice it here to say that the consensus is that the concession contract has indeed a mixed nature but that jurisprudence considers tariffs to be a fully contractual matter as between municipality and concessionaire (Richer 1991: 74).

four-year period. (*Cour administrative d'appel de Bordeaux. Compagnie des eaux et de l'ozone*. 19 September 1989. No. 89BX00049.)

³⁸ One should not be misled by the requirement in the U.K. that the "Director" (i.e. the regulator) is able to modify the terms of the license only if the license holder consents. This is an *administrative* procedure, not the result of any contractual rights possessed by the license holder. At the next administrative level,

So we are left with the idea that the two parties must somehow agree on a new price — or one or the other will have to bring the case before the administrative judge. What are the factors that might push them to some agreement?

3.4.4 Bargaining Power of Parties

Two parties that are bargaining over a price in a competitive market can look to market prices as a benchmark. As discussed in Chapter 2, asset specificity, idiosyncratic investment needs, and opportunism by the parties make this process more difficult for the services we are considering: the bargaining range in renegotiations may be quite wide.³⁹

As noted above, scholars in the 1930s seemed quite concerned about the potential for monopoly abuse in relations between municipalities and concessionaires. It is true that French contract law is based on the idea of an *autonomy of wills* (Nicholas 1992: 32). But problems of differential bargaining power are readily discussed in France in connection with *private-law* contracts. Moreover, in discussions by private-law scholars about the

the Monopolies and Mergers Commission can indeed order the Director to make modifications to the license.

³⁹ Note further that competitive influences in renegotiations may be diminished because French law places certain restrictions on the ability of a municipality to terminate a concession contract at will. Concession contracts often contain clauses stating the right of the municipality to repurchase the concession and setting forth in detail the calculation of the repurchase price; and even if they are silent on this point, it is generally recognized that the public authority has this right (Coudeville 1983: 148; Richer 1996: 648). Usually the contract does not specify the reasons for which the municipality may terminate the concession, and while some authors (e.g. Jèze) believe that in such a case the municipality's power is absolute, the general view seems to be that the municipality cannot terminate the concession for any reason whatsoever if this is not expressly stated in the contract (see de Laubadère *et al.* 1984: 717). Repurchase must be for motives of the public interest, for example a reorganization of the particular service that involves plans for the municipality to take over provision itself.

Unacceptable reasons for termination include purely financial motives — e.g. the municipality's desire to deprive the concessionaire of a lucrative operation (Coudeville 1983: 147; Raymundie 1995: 300) or to *substitute a new concessionaire for the current one* (de Laubadère *et al.* 1984: 718). I could find no reference in jurisprudence or doctrine regarding a municipality that might decide to exercise its right to repurchase because it believed (and, let us add, had good reason to believe) that a concessionaire was

problems involved when a price term is not defined in an ordinary contract or when a long-term contract contains an open-ended hardship clause, one frequently sees references to the risk of stalemate and the danger that one party will be able to impose its will on the other. For example: “The amicable procedure of renegotiation risks degenerating immediately into a dispute” — referring to the disadvantages of hardship clauses (Ghestin and Billiau 1990: 137).

The picture is different when we turn to administrative contracts. In present-day doctrine — and implicitly in jurisprudence — one finds a peculiar silence on this subject. The issue of an imbalance in bargaining sometimes arises in discussions of the adhesion-contract nature of the concession agreement (before 1982), given the mandatory standard contracts, but here it often seems that the concessionaire might be the disadvantaged party. Can members of the Conseil d’Etat and scholars be blind to the power of the giant companies vis-à-vis local public authorities? It is rare to find a comment such as that made by Coudevylle (1983: 26) in noting how just a few companies, national in scope, have the entire market for water supply: “Most of the time contractual equality is therefore broken, all to the advantage of these companies, especially when the public authority is a rural town that does not have at its disposal the same means of negotiation.”

One possibility is that the jurists conclude that this danger is not real since a municipality, if it cannot reach agreement in a renegotiation, can always bring the case before the judge; and the administrative court system will then impose an equitable solution on the parties. Moreover, the way that the court is likely to dispose of a case is

making unreasonable demands during price renegotiations. I do not know whether municipalities ever subtly or openly threaten termination as a way to control concessionaires’ behavior during renegotiations.

one of the influences that determine the outcome of bargaining. We therefore turn to what the administrative judge would do if such a case comes before him.

3.4.5 The Criterion: “Financial Balance of the Contract”

a) Ultimate Power of the Administrative Court to Decide

If the parties cannot reach agreement in renegotiating the price terms of the concession contract, the judge has the power to readjust the concessionaire’s remuneration.⁴⁰

Looking at how the law would decide an issue is important even if the parties never go to court: if the parties knew with certainty what the judicial outcome would be and this were common knowledge between them, they would settle ahead of time to avoid litigation costs. As the degree of certainty diminishes, this statement becomes less absolute, but the tendency remains.

b) Possible Approaches in Applying the Criterion

Given the principle of continuity of the public service, one would expect the law to formulate a set of criteria to determine what is an acceptable adjustment to the concessionaire’s remuneration in the event of a contract modification: the question must surely arise if the parties themselves cannot agree. Jurisprudence has come up with a general rule, namely, that the “financial balance of the contract” (*équilibre financier du contrat* or *équation financière du contrat*) should be preserved. This principle applies

⁴⁰ To be more precise, it should be noted that the judge may not be able to readjust the user tariff; this may be the prerogative of the local authority. There appear to be differences in doctrine on this point: see de Laubadère *et al.* (1984: 361) (judge can readjust tariff); Coudevylle (1983: 76) (judge cannot). But in any case the judge has the power to require the municipality to pay an *indemnity* out of its budget to the

whenever a permanent adjustment to the contract is called for as a result of, say, a technical modification required by the municipality, unexpected material conditions, or, under some circumstances, a long-term change in costs. The term “financial balance of the contract” is often used in jurisprudence and doctrine without much or any further explanation, and it will take some digging to discover what it actually implies.

Before looking at what is meant by the term, we note three conceivable approaches (and there are certainly more) — not just in France but anywhere. In the discussion that follows, we focus mainly on the reestablishing of financial balance after a physical modification, but the general ideas have broader application, as noted at the end of the discussion.

Ap1 A general standard applied globally to the contract. In this approach, an absolute standard of when a contract is in “financial balance” — possibly based on a specified rate of return — is applied to the whole contract, including the new modification. This is in effect what U.S. rate-of-return regulation accomplishes. One consequence is that if the concessionaire is currently receiving too great a compensation (according to the general standard), it may receive very little extra, or none at all, for the modification. One would also want to distinguish between an ex ante evaluation, based on what could reasonably have been expected when the contract was concluded, and an ex post evaluation, in which actual costs are taken into consideration. U.S. regulation takes the ex post approach.

concessionaire to arrive at a fitting compensation to the concessionaire; and this is all that matters for present purposes.

Ap2 A general standard applied incrementally to the contract. Here, the existing contract effectively is disregarded, and the general standard is applied just to the incremental changes. For example, suppose that a higher smokestack is needed for a waste incinerator because of new environmental regulations. In determining the needed additional remuneration for the concessionaire, one would look only at the new investment and associated operating and maintenance costs; and one would apply the general standard (e.g. normal rate of return) just to these. The ex ante and ex post distinction would apply to this approach, also.

Ap3 A contract-specific standard. In this approach, one would look at the financial picture implicit in the original contract, seen from the perspective of the parties' reasonable expectations when the contract was concluded, and then one would apply this derived standard to the contract modification.⁴¹ Note that the global/incremental distinction is irrelevant since both would yield the same result for this approach. Also, this approach is by nature ex ante.

Note that both **Ap2** and **Ap3** are more straightforward if the only additional costs to be considered are recurrent. All one needs to do in that case is some simple arithmetic. (But the question remains: Who determines what costs are reasonable?) The main difficulty comes when there is a need to spread out investment costs over time.

⁴¹ This immediately raises the question of what standard one uses if the parties' expectations differed at the moment of contract conclusion; but I will ignore this problem here.

c) *The French Approach*

In a theory based on contract as a bargain between two autonomous persons, **Ap3** might seem most appropriate. But we have seen how concession contracts admit of both contractual and regulatory aspects. So what is the French approach? In earlier years some noted scholars strongly opted for something that was closer to **Ap1**. Gaston Jèze, whose treatise on administrative contracts in the 1930s was the first grand synthesis of the subject, showed an acute sense of the potential for monopoly pricing, warned against it continually, and resorted to language rare to find in modern doctrine: e.g. “users cannot put themselves at the mercy of the concessionaire” (1936: 545); if the public authority does not have the power to set tariffs, there will be a “subordination of the general interest of the country to the private interest of the concessionaire and even to its caprice” (p. 553). (Note that most of his examples were based on railroad concessions, then extremely important.) Profits must be limited, and the concessionaire’s remuneration must be reasonable and normal (p. 546). What is highly interesting is the great similarity of tone with writings in the U.S. during the early years of this century — which refer also to railroads.

This idea goes hand in hand with giving the public authority a *regulatory* power over tariffs; and Jèze was firm in declaring that this was not a contractual issue: tariffs “are not a bilateral manifestation of the wills of the administration and the concessionaire” (p. 550); “the tariff is essentially a unilateral act of the administration” (p. 554). Again, note the common spirit with the Granger Cases in the U.S., notably *Munn v. Illinois* in 1877, where the Supreme Court held that states have the authority to regulate railroad rates unilaterally, presumably in disregard of the terms of the state charters.

But there must be a standard of some sort; the public authority cannot have the discretion to set the remuneration (i.e. tariffs plus any indemnity) so low that it ruins the concessionaire. The standard advocated by Jèze involved assuring the concessionaire “the normal profit that had been envisaged [by the parties] at the moment of granting the concession” (p. 561): “. . . at the moment of [granting] the concession, the grantor [i.e. the public authority] formally promised the concessionaire a remuneration calculated in such a way as to give it a *normal profit*” (emphasis in original) (p. 560). Since Jèze has asserted that this is not a contractual issue, it is not clear why he refers to a “promise”; and this is certainly not meant to be taken as requiring such a promise *in fact*. It is more a construction of law: he appears to be saying that, given the public-service context, the concessionaire has no legitimate reason to expect more than a normal profit from the contract.

This identifies Jèze as adhering to **Ap1**: a general standard (namely, “normal profit,” whatever that may mean) applied globally to the contract. Moreover, it seems that he would adopt the ex post variant: he states that the public authority can reduce the tariff without providing any indemnity to the concessionaire if the tariff reduction acts only to lower an excessive profit being earned by the concessionaire (p. 560).

We appear not to be far from a regime of rate-of-return regulation. In contrast, however, to the enormous literature in the U.S. in these same years on how to calculate what a “normal profit” (or in U.S. terms, “fair return”) consists of, Jèze does not even bring up the issue of calculation.

For one reason or another, this path was not followed by French jurisprudence. As the result of a series of cases decided by the Conseil d'Etat culminating in the 1940s, it is now accepted that the tariff is a contractual element of the concession: "Between the municipality and the concessionaire . . . the tariff therefore has a completely contractual character." (Richer 1991: 74).⁴² Concerns about the great risk of monopoly abuse seem to have vanished into the air: the parties become the theoretical equal and autonomous entities idealized in French contract theory.

One might think that, as befitting a contractual context, the standard might now be seen in purely consensual terms: What did the parties have in mind? In the case of a contract that needs to be revised because of a new technical modification, we can conclude first of all that the financial balance of the existing contract should not be touched since agreement already exists on this — it is *presumed* to be in balance.⁴³ So **Ap1** is eliminated. But what standard is to be applied to the incremental project? The problem with **Ap3**, a contract-specific approach, is that while the parties certainly had a *price* in mind, when they negotiated the original contract they may have had no meeting of the minds at all on the question of the overall balance of the concessionaire's costs and benefits. One could imagine stories like this: the municipality might have been willing for the concessionaire to make a large profit on the initial deal because the price was still less than the avoided cost of the next-best alternative for the municipality; but this does not

⁴² De Laubadère *et al.* (1984: 330f.) state that while most authors (i.e. doctrine) still characterize the tariff as a regulatory element, jurisprudence in effect disagrees, holding that the public authority cannot unilaterally modify the tariff. See also Dufau (1990); Auby and Ducos-Ader (1969: 260).

⁴³ "[T]he theory of the autonomy of the will postulates . . . that a contract necessarily achieves a fair balance of the parties' interests . . ." (Nicholas 1992: 34). "[T]he financial balance of the contract is always deemed to exist at the beginning [of the contract]" (Fourcand 1983: 11).

necessarily mean that the municipality would envisage agreeing to a similar level of profit for later capital improvements. In any case, doctrine does not appear to have declared itself in favor of something like **Ap3**. In fact, the whole issue is generally passed over quickly in doctrine and jurisprudence with a ritualistic reference to “the financial balance of the contract.”

Nevertheless, let us search further for clarification. De Laubadère *et al.* (1983: 717) define financial balance as “the approximate relation, the ‘just equivalence [*équivalence honnête*],’ between costs and benefits that the concessionaire took into consideration . . . at the moment of contract conclusion . . .” But this certainly begs the question: for how do we know that the concessionaire had in mind any kind of “just equivalence” between costs and benefits? It may well have hoped to reap an enormous profit. So what do we have? A *general* standard or, in the alternative, some reference to what one or the other of the parties had in mind or should reasonably have had in mind? The locus classicus for the concept of the financial balance of the contract is a statement made by Léon Blum, the *commissaire du gouvernement* speaking on behalf of the public interest, in the case of *Compagnie générale française des tramways* in 1910, and it is still quoted and cited with approval (see de Laubadère 1993: 716f.).⁴⁴ It is worth quoting at length, and it should be noted that the context shows that Blum is making a prescriptive rather than a purely descriptive statement:

It is of the very essence of every concession contract to search for and realize, as far as possible, an equality between the benefits that are accorded to the concessionaire and the costs that are imposed on it. . . . The benefits and costs must balance so as to form the

⁴⁴ Given the laconic and not very informative style of the Conseil d’Etat’s decisions, the conclusions of the *commissaire du gouvernement* are often regarded as important expositions of the law (Brown and Garner 1983: 68).

counterpart of the probable profits and the foreseen losses. In every concession contract is implied, like a calculation, the just equivalence between what is accorded to the concessionaire and what is required of it. . . . It is what one calls financial and commercial equivalence, the financial equation of the concession contract.

This passage does not even hint at what the parties may have had in mind when the contract was concluded. As far as I can tell, therefore, the French approach in the case of a technical modification should be closest to **Ap2**: a general standard applied to the incremental project.⁴⁵ This is a presumably default rule. If the parties cannot agree on additional remuneration, the judge would use a general standard of reasonableness — an “equitable solution” as de Laubadère *et al.* put it (1993: 718).

What if, instead, the contract needs readjusting because, for example, the price of an important input has become greatly out of line with expectations in a way that the indexation formula cannot compensate for, and the parties cannot agree on a solution? What is the financial balance in that case? A narrowly incremental approach, one that compensates simply for the increase in that one input price, might be rejected because it ignores the stochastic play of other input prices, some of which may have varied in a way that is favorable to the concessionaire. Compensation only for the increase in an input price that goes beyond some reasonably expected range of variation may help resolve this problem with the incremental approach. But then what if two or more input prices are especially high but each does not quite exceed the agreed limit?

A global approach raises other questions. Should it take into account how much profit the concessionaire is making at that time due to all factors — both those within and

⁴⁵ Blum himself may have subscribed to **Ap1**, but we are concerned with the role played by Blum’s statement in current French law; and the presumption of an initial financial balance between autonomous

outside the concessionaire's control? The profit that, ex ante, one would have reasonably expected the concessionaire to be making? Should it use a general or contract-specific standard as to what constitutes the financial balance? The answer is not easy to discover. French doctrine does not appear to analyze these issues in any detail.

A final issue is whether the allocation of additional costs should be different depending on whether this is the result of an act of the municipality (e.g. instructions to expand a plant to meet increased needs) or the result of unforeseeable and unavoidable circumstances independent of both parties. There is a tendency in the context of private law contracts to advocate the sharing in some way of onerous costs caused by force majeure-type events: "a balanced contract [*contrat équilibré*] is one in which each party bears the consequences of its own nonperformance and in which the risks external to each party are equally divided . . ." (Ledouble 1980: 75). Or as Fried (1981: 70ff.) puts it: the sharing principle is particularly appropriate "to picking up after contractual accidents." As we will see below, French law does use a sharing rule for *temporary* difficulties not caused by either party. But it is not known whether this principle should extend to the contractual balance reestablished on a permanent basis if such temporary difficulties continue.

d) Depreciation Rules

Apart from the question of what costs to use, the actual calculation of financial balance should pose no fundamental problem unless fixed costs are involved. When there are investment costs that must be taken into consideration, the French approach relies on

contractual parties is so unshakable that we are forced to impose an incrementalist interpretation: we are

depreciation defined by accounting rules as a way of allocating these costs to particular time periods. This poses little problem because of the official nature of these accounting rules. One important difference between accounting standards in France and in the U.S. is the central place that the government holds in defining these standards in France (Pham 1995: 7ff.). The general accounting scheme is established by the National Accounting Council (*Conseil national de la comptabilité*) and is approved by the Ministry of Finance. In the U.S., companies use different depreciation rules for different purposes, and no one pretends that the rules required by the IRS for tax purposes reflect underlying economic values. In France, in contrast, a company may in many circumstances lose tax advantages if it does not use the same, required depreciation rules in both its normal accounting statements and its tax statements.

Depreciation is a non-cash expense and we usually think that its only effect on cash flow is by way of income tax. But in the case of a regulated company, depreciation can have another sort of cash flow effect if prices, as fixed by the regulator, are based on the results of accounting statements.

A special accounting regime for depreciation applies to public service concessionaire enterprises. The rules have been defined mainly by the general accounting scheme (*plan comptable général*) and administrative circulars (*instructions*) issued by the Ministry of Finance. The rules are complicated, but one basic objective is clear: the concessionaire should be able to expense over the period of the concession all its expenditures on fixed assets, both initial investments and renewals. This is accomplished by the action of three kinds of expenses — and all three can be, and usually are, used in

the context of a single concession contract: (1) depreciation of the initial investments (*amortissement de caducité*); (2) depreciation *in advance* of expected plant and equipment renewals, based on original cost (*amortissement technique*); and (3) a provision (*provision de renouvellement*) calculated to make up, over time, the difference between the total amount expensed through the *amortissement technique* and the forecast replacement cost. The concessionaire must calculate (2) based on normal depreciation rules, but it is free as to how it will allocate (1) over time, provided that the total value is expensed during the term of the concession. The concessionaire may use the straight-line method, a schedule that is close to its loan principal repayment schedule, a gradually increasing profile to match expected increasing revenues, or whatever it likes.

Now even if the entire pattern of its depreciation expenses were rigidly prescribed, it would still seem difficult to talk about “financial balance” by looking at just one year. Given that it has the freedom to decide how it will allocate the total *amortissement de caducité* to each year, the remark is even more pertinent. So how should the judge take the time pattern of financial results into consideration in determining the financial balance? I have not seen this discussed in doctrine.

e) The Question of Profit

The remaining question is how to deal with profit. Jurisprudence and doctrine appear to give very little thought to this, casually referring to “normal” or “legitimate” profit — seen in terms of a profit margin, not an accounting return on investment or

equity.⁴⁶ To the reader familiar with utility regulation in the U.S. (and now in the U.K.), this apparent nonchalance is startling. If an important goal of the concessionaire is to make profit — and this is not doubted — then one would think that it would be quite important to develop guidelines for determining a reasonable level of profit. We will return to this puzzle later in the chapter.

One question that we touched on in discussing depreciation policies is whether the financial balance of the contract is to be determined in a multi-year perspective or by looking at just one year's financial statements. The answer is not apparent from my reading of doctrine. Given the opinion of de Laubadère *et al.* (1983: 717), already quoted, that the financial balance consists of “the approximate relation . . . between costs and benefits that the concessionaire took into consideration . . . at the moment of contract conclusion . . .,” it is interesting to see what a major concessionaire company has to say about the issue. In a manual published by Lyonnaise des Eaux (1994: 967), one finds the following statement:

The financial balance of a water service is to be validly judged over a period of several years (e.g. the duration of an *affermage* contract), the costs at the beginning of the period being in general heavier (initial investments, need for working capital and start-up funds, small number of customers) and leading to a balance only with the growth in customers and of quantities sold. *The analysis of cumulative annual net cash flows (discounted) over this multi-year period will lead to a “net present value” that will be representative of the financial balance.* [emphasis added]

Language like this is foreign to the way that the French legal system and Administration conceptualize the issue. The terms “net present value” or “internal rate of

⁴⁶ Prof. J.-B. Auby, one of the foremost jurists in this area, has told me (discussion in Paris, July 1994) that he is not aware of any jurisprudence that links *l'équilibre financier* with notions of financial rate of return in any way.

return” are used rarely, if at all, in the legal literature on this subject.⁴⁷ Yet interviews with officials of Lyonnaise des Eaux confirm that the passage above indeed reflects how they approach the problem in their in-house analyses — in complete agreement with modern capital budgeting theory. If jurisprudence and doctrine were to be consistent with the statement in de Laubadère, shouldn’t they, too, begin to look at the problem from this perspective?

4. INFORMAL INSTITUTIONAL AND CULTURAL SETTING

4.1 The Concession in Practice

4.1.1 Price Setting and Revision

The foreign observer who studies the practice of French local public service concessions — at least before the late 1980s — with ideas of public procurement procedures and natural monopoly regulation in her mind will be confused at every turn. The proper frame of reference is instead closer to a private home owner who decides to have a new roof put on and haggles for a while with the contractor before agreeing on a price. After years during which public services were outside consideration of the consumer movement in France (see Auby 1982: 114), French consumers are coming round to a position that this might not be the most appropriate way for mayors to proceed, given that it is consumers’ money that is at stake. But at least this perspective permits an understanding of why the actors behave as they do.

⁴⁷ Note that in the contractual scheme suggested by Bureau Francis Lefebvre for a concession, one possible method for determining the repurchase price that must be paid in a convenience termination by the municipality consists in determining “the present value of annuities calculated according to the formula mentioned in [a certain] annex . . .” (Guibal and Rapp 1995: 597, clause 65.2).

It is of great interest to know exactly what happens during negotiations or renegotiations over the tariff level. With respect to the initial investment, *avoided cost* appears to play a large role: Can the concessionaire carry out the work and run the service for less than it would cost the municipality? Discussions with industry and municipal officials indicate that it was rare until recently for a municipality to carry out a developed cost-benefit analysis in preparation for negotiations with a concessionaire (perhaps excluding the larger cities). The process was often an informal and simple one, consisting of some rough calculations. In effect, the concessionaire's sales pitch for a water supply project might go along these lines: "If you were to do this yourself, your investment costs would be X and your loan terms from the national bank would be Y . Add on operating costs, divide by quantity, and this works out to a cost of C per cubic meter of water. Now we can do it for you for a lower price P per cubic meter."

With respect to price revisions during contract performance, it is said that these have very much of a cost-plus flavor: the concessionaire sets out what it will cost it to carry out the technical modification and then adds overhead and a profit margin. This serves as the starting point for discussions.

There can be no doubt that great disparities exist in the cost information at the disposal of the concessionaire company and the municipality. It is simply unrealistic to imagine that they are equal in any real sense at the negotiating table, unless the municipality has hired specialist consultants — and even then, it is a commonplace in the trade that a true operator has a much better sense of what an efficiently run plant costs to

build and run than even the best engineering consultant. Given the informational asymmetries, one might expect many disputes.⁴⁸ Has this occurred?

4.1.2 Recent Criticism

Criticism of French concession companies and arrangements has stepped up in recent years, and consumer groups have begun to go on the offensive. In a report on water and wastewater services issued by the French Auditor's Office (*Cours des Comptes*) in January 1997 (Cours des Comptes 1997), the Auditor notes that abuses are common in concession and *affermage* arrangements. Some of the common problems are: lack of clarity in the contracts concluded; unbalanced contracts to the detriment of the municipality; unreasonable price adjustment formulas; insufficient preliminary studies and deficient knowledge by the municipality of the physical system before signing the contract; slack or nonexistent auditing and monitoring of the private operator's activities by the municipality; uninformative reporting by operators; and lack of good information about ongoing costs, which puts municipalities at a disadvantage in negotiating contract amendments.

In general, the Auditor found a striking lack of transparency throughout the industry and concluded that in many cases it appears that private-sector participation actually prevents good information from reaching elected officials and consumers. The report concludes that municipalities need assistance to help them negotiate sound deals

⁴⁸ Suppose even that municipalities makes *unbiased* estimates of the concessionaire's costs (including normal profit). Then, in one-half of the cases they will find that concessionaires will refuse to come down to what the municipalities initially think is the right price (unless a concessionaire is willing to take a loss for one reason or another).

with the mammoth French utility companies, which are in a much stronger bargaining position.

4.1.3 The Puzzle

At this point, we are left with a puzzle. One might think that these contracts would break down frequently — that municipalities would feel at a disadvantage and that it would be difficult for the parties to reach agreement. Consider the following: information asymmetries are great, in part because market signals are weak owing to the idiosyncratic nature of investments; in addition, municipalities traditionally do not use outside consultants to help them in negotiations with concessionaires; with regard to technical modifications, it is often the municipality that needs these with some urgency, which puts it at a bargaining disadvantage; and finally, neither the contracts nor the law gives clear rules as to how to determine a new price. Yet, according to interviews, revisions are often requested by concessionaires and agreed by municipalities. Municipalities rarely think of challenging a concessionaire before an administrative tribunal, and use of a three-member price-revision commission is a method seldom resorted to.⁴⁹

Moreover, two pieces of evidence from the law itself suggest that the periodic process of contractual adaptation in general goes smoothly (at least until the present wave of dissatisfaction began). First, according to a view broadly in harmony with the “new institutional economics,” it is reasonable to think that the complexity of law in a particular

⁴⁹ Again, it needs to be stressed that the situation has begun to change dramatically in the last five years, under pressure from consumer groups.

domain develops in response to demand.⁵⁰ We noted the high level of detail in the theory of *imprévision*. It seems reasonable to surmise that temporary difficulties of an extreme kind and consequent requests for relief from concessionaires are likely to provoke disagreements between the parties that would push concessionaires to complain formally. It is understandable that a mass of legal rules would be developed as a result. But as for how to reestablish the financial balance of the contract on a permanent basis after a technical modification or a continuing cost increase takes place, the law consists only of a few general maxims.

Compare for a moment the elaborate development of the rules of rate of return regulation in the U.S. An intriguing question is why the criteria for the “financial balance” of the enterprise have been regarded so casually in France and, in contrast, elaborated with such obsession in the U.S. Since there are many differences between the two situations — including a complex of historical and cultural differences — it is risky to single out only one factor. The historical record in the U.S. shows clearly, however, that the elaboration of the rate of return doctrine arose in response to a heated and lengthy dispute between state and local public authorities, on the one hand, and companies, on the other, over the level and structure of public service rates. It is therefore quite reasonable to suppose that one answer to the question of why the issue is hardly considered in France, why the law seems to brush the issue aside with a few maxims, is that the parties rarely have had disputes about it; and for the answer to *why not?* we may have to look beyond the law.

⁵⁰ Cf. Libecap (1996), showing that mineral rights in the U.S. West became more precisely defined as the value of the resources increased.

The second piece of evidence from the law that supports this tentative conclusion consists in the renegotiation clauses that exist in the standard contracts. These are much broader than what most lawyers would feel comfortable with in *private-law* long-term contracts, even between reasonably equal parties. It is hardly likely that such open-ended clauses would have remained in the standard and model contracts for so long if the Administration saw that they destabilized the contracts — a point similar to that made by Joskow in the context of coal-supply contracts.⁵¹

To unravel the puzzle of what keeps the contracts together, we will take a detour and look at the peculiar way that these contracts are regarded in France — the underlying contractual culture. First however, we will explore an alternative explanation that depends on the influence of reputation.

4.1.4 Reputational Concerns

It seems clear that reputational concerns play an important role in moderating the concessionaire's final negotiating position in France. Word travels fast, and if a company is seen to be making outrageous demands, this will not encourage other municipalities to contract with it. The fact that the players in France are restricted to a handful of companies whose activities are national in scope — the most important by far being only two in number — may go far in explaining the greater moderation exhibited by the French companies compared with the U.S. companies at the turn of the century.

But the impact of reputational concerns must be seen in connection with the asymmetry of information between municipality and concessionaire. The concessionaire's

⁵¹ “[A long-term] coal contract would not contain a scheduled reopener provision if holdups associated

reputation will be harmed only if it is *perceived* as gouging the municipality. There is a broad price range for which observers on the outside may reasonably differ as to whether a price lying within the range is “fair” or not. Reputational concerns may set an upper limit to a price, but that limit will depend also on the readiness of the municipality to believe that a price proposed by the concessionaire is “unfair.”⁵²

The influence of reputation could be a sufficient solution to the puzzle noted above — why these contracts have not broken down more often. But there is another, more speculative, explanation worth exploring, to which we will now turn.

4.2 Modes of Governance

4.2.1 Role of Contracts

Written documents called “contracts” may serve different purposes. One influential theory of contracts stresses the idea that a contract involves a commitment. Not all written expressions of planned arrangements between two parties are contracts in this sense. People often draw up lists of things they have agreed upon simply as a way of making sure that there are no misunderstandings between them; they may have no intention of ever seeking to enforce such a list as if it were a contract. Two friends, for example, may write down the day and time they have agreed to go to a movie together, with the tacit understanding that either one can call it off or propose a change at any time. Such a memo, taken alone, would probably not be held to constitute a contract. But some purported contracts share many features with a simple writing like this. Consider a note

with sunk relationship-specific investments were thought to be severe” (Joskow 1990: 264).

⁵² In an article on commercial franchising in the U.S., Hadfield (1990: 978) notes the information problems in drawing an inference of opportunism. She points out the “great difficulties distinguishing

that states: “The price is to be P , but if either one of us proposes a change in the price, we will then agree on a new price.” If, for whatever reason, the two parties are convinced that they will have no problem in agreeing on a new price, they may not consider the note to be a binding promise at all as to price; they may treat it simply as an *aide-mémoire*. The promise, if any, is to continue transacting. If it turns out that they cannot agree and one party takes the other to court, the law may consider the note to be a contract and impose a duty of good faith bargaining or an implied condition that the new price would be “reasonable,” depending on the legal system. Or it may find that there was no contract at all.

The “note” quoted above makes fine sense so long as there is some extra-legal set of influences that make it likely that the two parties will indeed have no trouble maintaining their continuing agreement as to the price without actually fixing a specific price as a binding commitment. It is only when the extra-legal set of influences breaks down and the parties cannot agree that the statement may be thrown into the arena of the law and the statement that the parties made may possibly be construed as a contract. And it is at that point, once it is in the arena of the law, that the statement appears so inadequate as a contract that one wonders how the parties could possibly have agreed to it. But it may simply be a particular legal perspective that makes it seem that way.

My hypothesis is therefore that French local public service concession contracts participate strongly in what one might call the *aide-mémoire notion of a contract*. It is clear that there is an agreement as to continuity of service. But as to particular terms, the

opportunistic behavior from the plausible justifications franchisors can offer.” “Terminations [by franchisors] rarely result without hint of cause, pretext, or otherwise.”

writing is seen more as a reminder of an agreement valid for the moment than as an instrument that creates a long-term commitment. This may be to state the distinction in terms that are too strong, but such a formulation has merit as a way to shift our perspective.

It is difficult to escape the conclusion that forces outside the law work to hold these contracts together: the contracts are highly “relational” in the sense used in Chapter 2. This leads then to the next question: what are these other cultural and institutional forces — outside the law — that are less obvious but that have a powerful effect in maintaining the stability of the concession contracts? It is not the purpose of this dissertation to offer a fully substantiated answer. But it is worth hazarding a guess as to what these factors might be. The rest of this chapter is presented with the caveat that what is set forth are only conjectures.

4.2.2 Governance Cultures

A study by the French engineer-sociologist Philippe d'Iribarne (1989) sheds an important light on the issue at hand. D'Iribarne examines how cultural traits affect management styles by carefully analyzing the relations he finds among management and personnel in three factories: one in France, one in the U.S., and the last in the Netherlands. Modeling his approach on Montesquieu's effort to seek out the “spirit of the laws” animating three basic types of political structure, he identifies a central principle that underlies the management style in each factory and, presumably, in each country: for France it is *honor*; for the U.S. *contract*; and for the Netherlands *consensus*.

In France, according to d'Iribarne, every hierarchical relation is colored by the idea of the nobility of the superior relative to the subordinate. We can identify several interrelated clusters of values:

1. Professionals, e.g. engineers, have their own internal system of values and sense of duty, associated with membership in their professional group. "This sense of duty is not to be viewed as part of a perspective of contractual relations. It is a question rather of accomplishing duties that custom attaches to the particular category to which one belongs (the duties of one's estate)" (p. 27). Once good relations are established, people are ready even to go beyond the terms of their job descriptions if duty calls (p. 53). Moreover, if professionals and leaders are obeyed, it is not so much that they have *rights* by virtue of a contract, but that their station gives them a status that inspires deference.
2. People prefer to deal with differences by means of informal adjustments and tacit arrangements; and direct personal relations are the preferred means of achieving a harmony of interests.
3. There is a "duty of moderation, that allows people to work together, even if they are far from getting along well"; "a great sense of limits that should not be exceeded" (p. 31). D'Iribarne goes so far as to say that "the principle of moderation . . . appears to be one of the great regulators of French society . . ." (p. 19).

4. One should be allowed autonomy in one's work: "To monitor and oversee [*contrôler*⁵³] testifies to an offensive lack of confidence towards someone that one judges to be incapable on his own of fulfilling the duties of his 'estate'" (p. 46). A wall of opacity around activities helps shield against meddlesome supervision from outside. The U.S. idea that one sees one's role as being "accountable to" and "reporting to" another is not the French approach.
5. Regulating human relations by means of a detailed codification of rights and duties is viewed with repugnance; it smacks of the ignoble mentality of the trader. "The contractual approach models hierarchical relations on the relations between a client and a supplier" (p. 95); and this signals a servile attitude. Pursuing one's contractual rights to the very limit, splitting hairs and quibbling, appears vulgar.⁵⁴

Might these ideas be of help in understanding the relations between municipalities and concessionaires in France? Let us start by trying to tell the basic story within d'Iribarne's framework of ideas.

A municipality *delegates* the execution of a particular public service to a concessionaire, setting out the basic performance goals. The concessionaire views itself as having been entrusted with a "noble" mission that it will accomplish in accordance with its sense of professional pride and duty. Too close a focus on the details of the written contract would be viewed as forcing the relation into that of a mere "client and a supplier." Monitoring the concessionaire too closely would be to subject it to a servile status.

⁵³ "*Contrôler*" is one of those ambiguous words (with close variants in many European languages) that give headaches to translators of laws and contracts. The traditional meaning in French is close to *ex post verification* and does not imply any idea of directing the course of activities *ex ante*. But the latter meaning creeps in from time to time.

⁵⁴ To French scholar Lorrain (1993: 34), the detailed set of regulations and close supervision that typify Anglo-Saxon regulatory practice are a product of "a culture of distrust, of a negative relationship between the two parties." But this may not be the way it appears to Anglo-American actors themselves. They may feel more secure with the structure given to the relationship by the complex of rules.

At least at the level of ideology, the fit is quite good. Let us now look more closely at the two fundamental and reciprocal parts of the process: *first*, deference toward concessionaires on the part of the municipalities; *second*, a certain measure of self-control on the part of the concessionaires, without which the first part would lead to egregious abuse. Again, the reader should bear in mind that the following sections are in the nature of educated speculation.

4.2.3 Delegation and Deference

a) French Preoccupation with “Delegation”

Writers take pains to point out that the genius of the French method is that it involves the *delegation* of a local public service. “One cannot assimilate the concessionaire to an ordinary service provider, . . . its responsibilities are broader. . . . It is the extent of its mission that explains the peculiarity of its status” (Loosdregt 1990: 777). And again: “. . . the idea of public service delegation that is at the heart of the singular notion of the concession that we know” (Auby 1992: 101).

The term “delegation” of public service began to be used in the 1980s in doctrine and administrative texts. It was expressed in legislation for the first time in 1992 and, more well known, in the *Loi Sapin* in 1993. The Conseil d’Etat picked it up in 1994. It is clear, however, that the concept itself goes back a long way in French thinking on the subject.⁵⁵

But what exactly does the *delegation* of a local public service mean? So far, no law or jurisprudence sets forth the exact criteria that would give an answer, and doctrinal

⁵⁵ See, in general, Limouzin-Lamothe (1996: 572), Terneyre (1996: 588), and Delvolvé (1996: 675).

writings on the subject in the past few years give quite varied interpretations.⁵⁶ There seems to be a common opinion that there is indeed something quite special to the idea of “delegation,” and that it is different from simply purchasing a service, but the essence of the term is hard to capture, and at times one feels that it might well be metaphysical.

Nevertheless, one can discern two broad aspects. Near the end of his review of the issue, Raymundie (1995: 79f.) concludes:

The true delegatee in the final analysis is one who has freedom of initiative and maneuver for the entirety of the decisions needed for the functioning of the public service.

One aspect, then — the first part of the sentence above — focuses on the extent to which the public authority allows the company freedom of action, on the degree of autonomy of the company. A public authority must specify the *objectives* of the public service; but there is a great deal of variation in principle as to what kind of constraints, if any, it places on the *means* used by the company. The French idea of delegation therefore stresses that very few constraints are placed on the means: the contract is performance oriented.

Of course this is a matter of degree. The archetype of delegated local public service is the concession contract. Looking at the standard contract for water distribution (1961 version), we see indeed that the concessionaire’s obligations stress *output*: the quantity, quality, and pressure of the water to be supplied and maintenance of the system in good working order. But the concessionaire is not given complete freedom to choose the investments that it needs to be able to meet the output requirements: it is obligated to

⁵⁶ See, for example, Auby and Maugué (1994: 117); Guibal and Rapp (1995: 329); Terneyre (1996); Rapp (1996: 624ff.); Delvolvé (1996: 691).

construct the physical works in accordance with a project scheme attached to the contract that must “define and justify with precision the composition and layout of the different works, the nature, the quality of material to be used as well as the conditions for implementation of these works.” So the contract must specify very important aspects of the *means* to be used by the concessionaire to achieve the output goals. “Delegation” is certainly a matter of degree.

Linked to the emphasis on ends rather than means is the idea that the delegatee carries out its activities for its own account and therefore bears a large part of the risk — i.e. it is the residual claimant. Though the exact rationale is generally not made clear in doctrine, the idea does make good economic sense. Making the company the long-term residual claimant gives it an incentive to choose the best means to accomplish the objectives set for it. So the municipality can focus on the objectives and let the company choose the optimal means to achieve them.⁵⁷

The second aspect that one can see in the sentence quoted above from Raymundie (1995) (“entirety of the decisions needed”) is the idea that the contract in question must encompass all aspects of the public service: it must be broad in scope. The Conseil d’Etat certainly had something like this in mind in its opinion (*avis*) of 7 April 1987 (quoted in Raymundie 1995: 122): a contract by which an entrepreneur is given responsibility for

⁵⁷ One difficulty with this approach to “delegation” is that it would exclude two types of contract that are traditionally considered to be varieties of delegated public service: the *régie intéressée* and the *gérance* (cf. Auby and Maugué 1994: 118) because they are cost-of-service in nature. In these contracts, expenses are paid from the municipality’s budget and so the municipality would normally want to retain much more control over the company’s activities. Guibal and Rapp (1995: 332) try to get around this evident problem by creating two categories out of the group that is not subject to the usual public procurement code: a *public service contract*, involving true delegation; and *public service procurement*, the latter comprising

“the performance itself [*exécution même*] of a public service is not a public procurement [*marché*] and, in consequence, is not subject to the public procurement code.”⁵⁸ For example (my examples, not those of the Conseil d’Etat), a contract that involved only maintenance of a water pipe network or only meter reading would not qualify as a public service delegation: it would be a simple service contract. The idea in doctrine that delegation involves or tends to involve direct contract with users and the collection of fees from them could be seen as linked to this aspect — i.e. vertical integration all the way to the user.

The disadvantage of this approach is that it leads to inextricable semantic problems: Just what is an *entire* public service? Is solid waste handling one single service consisting of two parts, waste collection and waste disposal (not to speak of the possibly intermediate activity of waste processing)? Or is it really two public services? Is bulk water supply and distribution only half a public service or a whole public service all by itself?⁵⁹

Scholars recognize that this state of affairs is not satisfactory, but the discussion continues to remain at an abstract level making it quite difficult to reach any resolution.

the *régie intéressée* and the *gérance*. This approach does not seem to have been followed by others, however.

⁵⁸ Frankart (1990: 764) explains this sentence as follows: “. . . the contract must effectively delegate to the company the entirety of the tasks that make up the performance of the service and not just some of them.” Note, however, that this opinion of the Conseil d’Etat does not have the force of a published judgment (*arrêt*) in a case (see Llorens 1992: 55).

⁵⁹ One advantage of this approach, however, is that it could account for the *régie intéressée* and the *gérance*.

The issue of “delegation” has also figured in the confrontation between the efforts of the European Union (EU)⁶⁰ to introduce more competition into the public procurement of goods and services and the traditional French notion of *intuitus personae*.⁶¹ Beginning in the 1970s, the EU Council of Ministers has issued several directives on public procurement, drafted by the European Commission. These directives require varying degrees of publication, openness, and competition in procurement procedures (above certain monetary thresholds) — open, restricted, or negotiated procurement — even at the local-government level. They are first required to be implemented by the laws of member countries, though the degree to which this has happened in a manner true to the letter and spirit of the directives leaves much to be desired (Adler 1994).

A lively debate took place over the topic of public services, beginning in 1988. There was strong resistance on the part of some countries and organizations, including France, against the application of the EU Services Directive to the *delegation* of public services. One can understand this, given the French insistence that the delegation of a public service is something quite different from its mere procurement. But one has the impression that the European Commission simply does not see any difference in *essence* between the two.⁶²

⁶⁰ For simplicity, the abbreviation “EU” will be used here even with reference to the period of the European Community before the signing of the Maastricht Treaty in 1993.

⁶¹ See, e.g., Troger (1995: 118–33), Raymundie (1995: 192–229), Auby (1992), Folsom (1995: 184–190), and Adler (1994).

⁶² Beyond the questions of definition and principle in the debate on this issue lies a matter of practical consequence: the problem of effective reciprocity. The EU directives do not obligate a local government to go the private route. So if local public service concessions were opened up to intra-EU competition, those countries that do have a strong tradition of private-sector involvement in local public services, such as France, would face competition from foreign companies; whereas countries in which local public services are handled for the most part by local public entities, e.g. *Stadtwerke* in Germany, would in this

After the rejection of a number of drafts of a clause that would include public service concessions in the Services Directive, the effort was abandoned in 1991, and the Directive was issued in 1992 with no mention of public service concessions (see Arrowsmith 1996: 366). Instead, it was agreed to set up a “observation” group that would examine the issue and report back by the end of 1995. By September 1997, the group had not yet been set up, and no new drafts concerning concessions were under consideration. The issue thus rests unresolved in EU law and is likely to do so for some time.⁶³ As for France, happily “. . . French law has been able to adapt itself and has ‘resisted’ the temptation to confuse *genres* between public procurement contracts and contracts of public service delegation” (Raymundie 1995: 229).

b) Incomplete Contracting Perspective on Delegation

In the preceding section, we have looked at how important it is to the French that a concession involves a *delegation* rather than just the provision of a public service. When we view the question from the perspective of complete contracts, it is hard to see what all the fuss is about. The issue seems to boil down to the difference between a contract to supply a specified service and a contract to perform a specified activity. Since in the contracts we are looking at the *activity* in question results in, and is judged by, the *supply*

way be able to exclude foreign competition. This asymmetry of effect is the motivation for much of the debate on the French side, to such an extent that it is not clear how seriously, in this context, we should take some of the theoretical discussions that aim to distinguish delegation from procurement.

⁶³ A concession in which the facilities constructed by the concessionaire are to be returned to the municipality at the end of the term (as in most of the local public service concessions we are considering) might be considered by EU law to be a “public works concession” rather than a public service concession, and in that case, award of the concession would be covered by the Works Directive of 1993. But the requirements for this procurement are minimal and do not include competitive procedures of any kind, not even competitive negotiation (Arrowsmith 1996: 355, 357–359).

of a specified service to third parties, there seems to be no operational difference between the two notions. Perhaps the perspective of incomplete contracting can shed more light.

One way of dealing with contractual incompleteness, as noted in Chapter 2, is to designate one party whose right it is to fill a particular kind of contractual gap when it appears. One plausible hypothesis is that municipalities have been quite trusting toward concessionaires and for the most part have accepted the concessionaires' price proposals during renegotiations, perhaps after mild bargaining over certain points. Until recently, the price of water and wastewater services in France have been quite low, and if consumers did not complain, why should the mayor spend his time haggling with the concessionaire, since the money would not come out of the city budget in any case. Moreover, the municipality is usually in a very poor position to challenge the concessionaire's cost estimate, given its relative lack of expertise and experience.

Different metaphors and models can shape the way actors behave and expect others to behave. In France, there is frequent reference to the idea of a "*delegated* public service." In the U.S., due to the influence of economic thought and public policy studies, there is a tendency to look at the relationship of the regulator and the regulated entity as a *principal-agent* relationship. "Delegation" puts an emphasis on the idea of giving a certain freedom to the other party; whereas "principal-agent" conjures up the idea of the principal trying to get the agent to do what the principal wants—a constraint on freedom. "Delegate" stresses the fact that *A* must not meddle with the means that *B* uses, while "principal-agent" calls attention to the fact that *A* wants to realize certain ends through *B*. In fact, these are two aspects of the same process, and they can be modeled formally in

exactly the same way. But perhaps the use of different words to describe the process in the two countries is significant.

We may speculate that regardless of what formal legal jurisprudence and doctrine have to say, the idea of *delegation* creates a broad penumbra affecting attitudes and practices and according the concessionaire a kind of privileged independence.

“Delegating” involves putting responsibilities on someone else’s shoulders; perhaps it is not a difficult step to turn it into an attitude of letting the other do what he wants. In short, the idea of delegation serves as a vague overarching *principle* helping to fill contractual gaps when they appear. A concept that is puzzling from the perspective of complete contracts begins to make sense in a world of incomplete contracts.

There is support for this interpretation in the observations of French commentators. “For many local administrators, the concession, at the beginning of the century, was associated with the idea of abandon; even though this reflex is not completely extinguished today, for many, the concession no longer rhymes with the idea of abandon” (Auby 1982: 45). But Lorrain goes further:

[T]he culture of delegation itself contains the idea of transferring the problem to a specialist . . .

[P]ublic officials delegate the work so as not to have to deal with it. . . .

Unconsciously, delegation is synonymous with transfer. . . .

The officials are not fully acquainted with the details of the contracts signed by themselves or by their predecessors. They assess the quality of the management of the service by the public’s response. As long as individual complaints are not pouring onto their desks to criticise the service, it is considered to be running well, and the question of the profitability of the operation — so important for their Anglo-Saxon counterparts — becomes a secondary consideration. [Lorrain 1992: 90]

A “hands off” attitude pervades the *custom* of French concessions — regardless of the formal law on the subject. In short, there is reason to think that concessions have often been associated with a municipality’s ceding a great deal of responsibility and deferring to the concessionaire’s expertise, even on price matters — especially for smaller municipalities.

4.2.4 Professional Norms and Self-Regulation

The preceding section gives only one side of the picture, however. The next question raised is why concessionaires did not grossly abuse the position of trust accorded them. Despite recent criticism and revelations (see section 4.1.2), when one compares their behavior with what occurred in the early years of this century in the U.S., it seems clear that French concessionaires have indeed avoided outrageous behavior. This is not to say that they have not made substantial gains from their contracts; for lack of data, this dissertation takes no position about the extent to which French concessionaire companies might have managed to earn monopoly rents over the years. The point is simply that if they have been greedy, they have managed to keep their greed within bounds. A noted scholar of public services in France, Dominique Lorrain, does not even consider the idea that it is the municipalities that have regulated the concession companies, as the companies sometimes claim. According to Lorrain, the mode is self-regulation and self-limitation of monopoly power by the companies, which he believes is effective, at least to an important extent (Lorrain 1991: 107).

One could explain this self-control as entirely the result of reputational concerns. I would argue that this is not all: d'Iribarne's analysis has relevance, too.⁶⁴ There is a very strong sense of professional honor — quite special to France — which may well have a restraining influence. The other elements of d'Iribarne's analysis seem pertinent also. A brief account follows.

Strong social ties and a special culture permeate the upper ranks of the two main municipal service companies in France and link them with the central government and with broader public interest — some would say *State* interest — concerns. We see a self-conscious governing elite that transcends the public-private dichotomy. Suleiman (1978: 5), in a classic work, refers to that “incontestable phenomenon: the dominance and stability of France's governing elites and their institutions.”

The education of this elite is by way of the *grandes écoles* — in particular, the Ecole Polytechnique and the Ecole Nationale d'Administration (ENA). “France has one of the most clearly established mechanisms for the creation of its elites of any Western society” (Suleiman 1978: 17). Students in the *grandes écoles* are imbued with a sense of service for the State and loyalty to their peers: a recognized function of these schools is “their contribution to political stability and order” (p. 42). A career of State service in France is considered a prestigious path to follow. They are trained to be leaders. (Note that despite its characterization as an engineering school, Polytechnique stresses general analytic skills and does not attempt to produce narrow specialists.)

⁶⁴ These ideas can also be subsumed under reputational concerns if this is seen in a personal or social-group sense rather than in terms of company reputation. An explanation consistent with neoclassical microeconomics is not precluded if we shift focus to the managers' personal utility functions.

The best graduates of the *grandes écoles* normally enter one of the *grands corps* (sometimes after having gone through further schooling), elite organizations with public service responsibilities. For the graduate of Polytechnique, the most prestigious of the *corps* are the Corps des Mines and Corps des Ponts et Chaussées (the latter involving itself a great deal in civil works and most recently in urban development — see Thoenig 1987). For the ENA graduate, the best choices are Inspection des Finances, Conseil d’Etat, and Cour des Comptes. Many top central-government and parastatal posts are filled by members of the *grands corps*, each *corps* having an strong influence over a particular ministry, or public organization or sector.

What is especially interesting is the link between public and private sectors. After serving in the public sector for a few years, it has become more and more common for graduates of Polytechnique or ENA to leave it to enter private firms, a process referred to as *pantouflage*. This is not considered a radical departure, but a path that follows a natural continuity of purpose (Thoenig 1987: 21). A great number of prominent managers of large private businesses in France were formerly high-level civil servants (Suleiman 1978: 242).⁶⁵ Since members and former members of a particular *grande école* or *grand corps* often feel more of a bond with each other than they do to the particular organization

⁶⁵ The career of one of Lyonnaise des Eaux’ presidents, Albert Petsche, is a good, and not atypical, illustration. Graduate of Polytechnique and the Ecole des Ponts et Chaussées, Petsche afterwards received a law degree and then entered into the national civil service, working with municipal water services and public works for a number of years. When he became head of Lyonnaise des Eaux in 1896, it was, as one commentator has put it “to leave the service of the State, but not the public service”. The next president was Ernest Mercier, who took the reins in 1933. Graduate of Polytechnique also, Mercier worked with the Naval Ministry before moving to the private sector. Pierre Chaussade, president from 1970 to 1980, had been a central government prefect and then Secretary General of the government of Algeria before coming to the company.

in which they find themselves working, there is more and more a commitment to shared goals in the public and private sectors at the central level (p. 265).

The introduction to a recent collection of essays by members of a prestigious French study group set up to examine the future of public utility services in Europe calls attention to the different traditions among the countries of the European Union and the policies of the European Commission (Stoffaës 1994: 7–23). It is worth quoting at length from the final paragraphs of the introduction, even though they refer more particularly to public services at the State level:

The large French public service enterprises voluntarily call on engineer-economists — experts trained to make the link between economics and technical fields — to conceive their investments, their tariff systems and their strategic decisions. The French school of engineer-economists, coming notably from the Ecole Polytechnique and the technical corps of the State [e.g. corps des Mines and corps des Ponts et Chaussées] have distinguished themselves for many years in developing a scientific doctrine to guide the economic choices of public enterprises and the construction of infrastructure. [Stoffaës 1994: 21]

In this connection, we note that French doctrine in distinguishing between ordinary procurement and the delegation of a public service often speaks of the concessionaire as undertaking a “mission of public service” (e.g. Auby and Ducos-Ader 1969: 29f.). “[T]he engineers of private French companies have a competence and a certain work ethic that cannot be reduced to the defense of public or private monopoly interests” (Lorrain 1993: 39).

Within the same governing elite are the graduates of ENA, spread out in both public sector and private sector: e.g. Jérôme Monod, present head of Lyonnaise des Eaux (ENA, then Cour des Comptes); Jean-Marie Messier, CEO of Compagnie Générale des Eaux, (Polytechnique *and* ENA, Inspection des Finances). Recruitment of the greater part

of the membership of the Conseil d'Etat is from the top graduates of ENA. A smaller number (about one-third) of the members are designated by the government and include many elite political appointees — former ministers, etc. Costa (1993: 105) believes that it is generally agreed that the Conseil d'Etat is the “the greatest of the *grands corps*” — the “cream of the French civil service” (Brown and Garner 1983: 41). A movement toward the private sector is apparent also from the Conseil d'Etat. In 1992, 37 (12%) of its members were on extended leave — some or most of whom certainly in the private sector (this does not count those who have resigned) (Costa 1993: 71).

No implication is being made here of complicity or wrongdoing; it is simply being suggested that there is a certain harmony of interest: “. . . a certain common outlook and a mutual regard between the leaders in the business world and the top levels of the administration” (Brown and Garner 1983: 26).

None of this is solid proof of what Lorrain calls the “self-regulation” of the large French municipal service companies. But it lends some support to the idea. With strong informal ties between the State and industry at the top level, the distinction between regulation by the government and self-regulation becomes fuzzy.

The ideas above also apply to the other side — to the deference accorded to concessionaires. In a telling phrase, Suleiman (1978: 279) wrote in 1978 (but things have begun to change since then): “What the French elite has been able to do is to have its standards of competence accepted by society. The *grands écoles* and the *grands corps* not only create the elite, but set the conditions that determine the recognition of the elite”

(italics removed). In short, these elites have laid the very foundation for the *deference* that sustains them in power.

5. CONCLUSIONS

5.1 Underlying Features of the System

The economic and legal literature and the early experience in the U.S. of municipal franchises indicate the problems that can arise with regulation-by-contract. What factors, therefore, are responsible for its apparent success in France at the local government level — despite some shortcomings? The first observation that may be made is that the national government has played a much more active role in making the system work in France than either the federal or state did in the U.S.; this is, in effect, a *regulatory* role. One might even say that, while in the U.S., the PUC is said to play mixed legislative, administrative, and judicial roles, in France — before 1982 at least — some of these functions were dispersed among different institutions (though not with any neat one-to-one correspondence): an oversight ministry that wrote standard contracts; prefects and deconcentrated field services that intervened in a number of ways; and a system of administrative courts that adjudicated in case of disputes.

We have noted in Chapter 2 the important role played by the ultimate adjudicator in dealing with the inherent incompleteness of long-term contracts of this type. In contrast with the U.S. experience, the French system furnishes this adjudicator with a rich collection of specialized background rules — both mandatory and default — that help provide consistency and predictability.⁶⁶ And there can be no doubt that the use of

⁶⁶ Legislation since 1993 has created even more mandatory rules (see Delvolvé 1996: 688ff.).

standard contracts has helped maintain the stability of the system. The early historical record in the U.S., in contrast, points to the frequent practice of private companies' preparing grossly one-sided contracts and shoving them under the noses of naive or corrupt municipal officials. There was less risk of this happening in France.

Yet the evidence suggests that other forces are at play and that they probably even outweigh the impact of the formal legal system. In fact, the formal legal system has played a relatively minor role in bringing stability to the system, and city officials have played little attention to the formal document.⁶⁷ Chapter 2 presented several methods that can be used to deal with incompleteness. French concession contracts rely heavily on renegotiation as a method — formally at least. Chapter 2 suggested, however, that this method is often unstable because of the wide bargaining zone that characterizes renegotiations in the presence of relationship-specific assets. It is contended that, at an informal level, the French approach strongly subscribes to another method outlined in Chapter 2: in the face of incompleteness, *one* party has played the preponderant role in filling the gap; and this ends up creating much more of a cost-of-service result than one might expect. We note also that French concession contracts are highly *relational*: the delegation/deference of the local authorities to the concessionaire has been balanced (to some extent, at least) by an extra-legal self-regulation on the part of the concessionaires.

Because of the highly relational aspect to the contracts — in some ways, as we have noted, they are more like an aide-mémoire — this overview has not answered an

⁶⁷ One city official told me in a confidential interview that when he first arrived at his post, his staff had difficulty simply *locating* copies of the contracts — not to speak of having a good understanding of the city's rights and obligations under them.

important question: How great an effort would be required to create explicit, detailed rules to handle the most common problems of incompleteness in these contracts? The general French experience has not moved in that direction and so we do not know. But this may be changing; the Lyon case study will present an opportunity to return to this question.

5.2 How Exportable is the French Model?

French companies and the French government have promoted the French contracting model as one which other countries — e.g. developing and transition countries — can easily adopt. Developing and transition countries do have a lot to learn from the French approach, which has fully grasped that a contract of this kind is likely to be incomplete in many ways and that the law and the administrative courts have an important role to play in filling gaps and even, at times, in overriding the parties' intentions in the interest of public policy.

But if there is one thing that this review has emphasized, it is that the French model of public service contracting cannot simply be encompassed within the four corners of a written document, the concession contract itself — or even in enabling legislation at the national level. There should be no doubt that the contract itself is only one element in a vast and complex array of institutional forces that hold the system together. In particular, will the partial self-regulation by companies (and we are not just speaking of French companies), due to reputational concerns or to professional norms and social ties, be found in these other countries? We have no reason to think that this can be taken for granted.

CHAPTER 4

CASE STUDY: LYON, FRANCE

1. INTRODUCTION AND BACKGROUND

1.1 Purpose of Chapter

Chapter 3 has explored in general terms the French system of delegating responsibility for municipal services to private-sector companies, and a number of conclusions were drawn. The present chapter takes a detailed look at one case study, a thirty-year “concession” contract for the incineration of municipal waste in Lyon, France. The fact that the original contract, signed in 1985, was incomplete in significant ways is attested by the occurrence of five amendments in the space of ten years.

Looking at the Lyon case study can help us better understand the conditions under which regulation-by-contract can be made to work well — and also its limitations.

1.2 *Le Grand Lyon*¹

In 1966, four “urban communities” (*communautés urbaines*) were created by national law to permit a more coordinated management of certain urban functions. The four were Lyon, Bordeaux, Lille, and Strasbourg. (Since then, several other urban communities have been formed voluntarily.) Greater Lyon encompasses 55 communes.

¹ The *Communauté Urbaine de Lyon* was referred to unofficially as “*La Courly*” at the time the contract was signed, and this nickname is used in the contract itself. It was only in 1991 that the name “*Le Grand Lyon*” — i.e. Greater Lyon — was adopted officially, even though people outside the administration often continue to use the old term. For simplicity, Greater Lyon will often be referred to simply as “the City” in this paper. The *Commune de Lyon* will be referred to by using its full name, not just “Lyon.”

Covering 1.2 million inhabitants, with 422,000 in the single commune of Lyon alone, it is the second largest urban area in France in terms of population.

Greater Lyon is governed by a council representing the 55 constituent communes and a popularly elected president and executive committee, which meets about ten times a year. Its personnel consists of 5,200 employees. In 1995, the operating budget of Greater Lyon was FF 2.8 billion and the investment budget was FF 2.4 billion. The responsibilities of Greater Lyon, defined by law, include those that would naturally be expected to transcend the boundaries of the 55 communes: urban development and planning and provision of basic urban services — e.g. transportation, parking, road maintenance, water supply, wastewater collection, solid waste handling, fire fighting, cemeteries.

As is typical in France, many of these urban services are contracted out to private parties in one form or another. In order to coordinate its policies and activities in this area and to put greater emphasis on financial and economic aspects, a special Contracting-Out Department (*Service des gestions externes*) was set up in 1990 within the Direction of Finance. The department consists of a head of department, three main staff members, and administrative and accounting support. It is overseen by one of the elected Community vice-presidents. Its responsibilities involve analyzing proposed schemes for private sector involvement in urban services, negotiating contracts, monitoring financial progress, reviewing contract performance, and handling renegotiations and contract amendments. It carries out its work in close coordination with Greater Lyon's technical services. As will be seen in this chapter, the work and zeal of this department have given a new and much stronger voice to the municipality in its dealings with concessionaires.

1.3 Waste Collection

Household solid waste collection for the entire metropolitan area, totaling about 400,000 tons per year, is the responsibility of Greater Lyon. About half of the waste is collected by City personnel and the other half by five private companies, which have twice-renewable three-year contracts. The City imposes a tax (*taxe*) on residents, rather than a user charge (*redevance*), which, by law, would have to be more tightly related to the actual service provided to each user. Tax receipts flow into the treasury, and expenditures for waste collection and treatment, including payments to the concessionaire of the Lyon-Nord incineration plant, are made from the City's general budget. The level of the tax is periodically adjusted so that it roughly covers waste-related expenditures, but an exact correspondence is not required since there is no separate budget for this municipal service.

1.4 Incineration Plants

Lyon set up its first incineration plant in 1930, some time before many other cities in France. In 1960, the old plant was replaced by another. In the early 1980s, the capacity of the plant was about to be surpassed, and new environmental concerns and standards made it necessary to envisage a more sophisticated technology. After rejecting, for technical reasons, the possibility of upgrading the existing plant, it was decided to set up two new plants, one in the south of the urban community and the other in the north. This was considered to be the more cost-effective solution because it would permit district heating of a densely settled northern part of the metropolitan area and would decrease the cost of transporting waste. The southside plant, in Gerland, would be constructed through competitive bidding and run by the City itself, and the northside plant, in Rillieux-la-Pape,

would be handled through a concession with a private company. Both plants would yield thermal energy that would be recovered for use in the district heating systems of the city. The southside plant, with a capacity of 270,000 tons/year, went into service in January 1989 and the northside plant, with a capacity of 180,000 tons/year, in July of the same year.

In keeping with the law and custom of the times — *intuitus personae* and free choice² — no formal procurement procedure was followed in selecting the concessionaire. There is no record of any comparative shopping having been carried out. It was decided at the highest levels of the Greater Lyon government to conclude a contract with Cofreth, a company in the powerful Lyonnaise des Eaux group. City staff were instructed to work out the details, and a draft contract was approved by the Greater Lyon Council on 24 June 1985.

2. EVOLUTION OF CONTRACT

2.1 Introduction

Although in many ways the Lyon-Nord contract is representative of the French approach to local public service contracts, it should be noted that in some aspects the contract and its evolution in the amendments may not be typical. The degree of detail in the later amendments, beginning with Amendment No. 3, is quite unusual in France — at least until recent years. Smaller communities, which do not have specialized departments that deal with public service contracts and do not use outside consultants, usually play a

² See Chapter 3 for an explanation of the French approach.

more passive role and are more ready to accept the contracts proposed by concessionaires — usually containing just the very basics — without much modification.

From time to time in this chapter, reference will be made to two model contracts for municipal solid waste incineration issued by the Ministry of Interior: the first in 1972 (decree no. 72-677 of 27 June 1972) and the second in 1986 (circular no. 86-142 of 19 March 1986) — the term “Model Contracts” will be used to identify them. These are model contracts for the *service* of operation and maintenance — not model concession or *affermage* contracts. Nevertheless, many of their terms are relevant and have clearly influenced the Lyon contract. Especially interesting are some of the differences between the two model contracts. As noted in Chapter 3, all such contracts after 1982 are non-mandatory for local authorities.

So as not to break the flow of the chapter, the contract and its amendments will first be described without extensive commentary, which will be reserved for later sections.

2.2 Original Contract (September 1985)

2.2.1 Description of Contract Terms

The thirty-year “concession” contract was formally signed on 20 September 1985 between Greater Lyon (“*le Grand Lyon*,” as the *Communauté Urbaine de Lyon* is called — referred to often in this chapter as the “City”) and Cofreth.³ Cofreth is given the responsibility for the design, construction, operation, and renewal of the incineration plant,

³ The original contract and the amendments state that the contract is between (i) Greater Lyon (at that time “*La Courly*”) and (ii) Cofreth jointly with its special-purpose subsidiary company, to be set up or already set up, as the case may be. The name of this subsequently created special-purpose company is Valorly. The existence of Valorly is ignored in most of what follows, for the sake of simplicity, and the

capable of handling at least 180,000 tons of waste per year. Cofreth has the obligation to accept at least 180,000 tons per year. Cofreth is to sell the energy produced by the process to consumers of district heating in the communes of Rillieux-la-Pape and Caluire et Cuire, and to the national electricity company, EDF. The contract also includes the construction of a network of pipes for the district heating, but not the operation of the network, which was to be governed by a separate concession contract with the two communes, later reduced to just Rillieux-la-Pape. (A tripartite agreement — between Greater Lyon, the concessionaire, and Rillieux-la-Pape — was concluded in 1987 to formalize these details.)

Financing of the works is the responsibility of Cofreth, and the contract gives Cofreth the right to use a leasing arrangement with a “sofergie” (a credit institution specializing in lease financing for energy-related projects, instituted by law in 1980) to finance the project, with a payment schedule that implies an interest rate, *before* indexation of the payments, of 7.6%.⁴ Such authorization by the City was needed because a leasing arrangement involves a strong security interest of the lessor in the project assets, and this touches a fundamental interest of the City. (A three-way agreement was later entered into among the City, the concessionaire and the lessor.) The sofergie selected by Cofreth was Génécál, a member of the Société Générale group of companies.

contracting party is simply referred to as “Cofreth” — which, in any case, is the true deep pocket in the contract.

⁴ If indexation were to a general price index, then the figure given would be the *real* interest rate. But a different sort of indexation was used (to be discussed in more detail later), which, a priori, is not equivalent to general price inflation.

The pricing terms of the contract are relatively simple.⁵ There is in effect a fixed annual charge of FF 18.54 million and a variable charge based on the quantity of waste delivered to the plant, FF 22/ton, with a put-or-pay minimum of 180,000 tons, resulting in a total unit price of FF 125/ton for the minimum annual quantity.⁶ The fixed annual charge includes the lease payments, which will terminate after twenty years. Cofreth is permitted to treat waste received from other sources, and it is allowed to keep 20% of the gross receipts from this outside waste, the City's approval being needed for the price that Cofreth charges other sources. The contract also states (Art. 45(3)⁷) that the tariffs will be readjusted definitively no later than at the date of the start of construction works to take into account the quantity of waste, the updated investment costs, financing arrangements, and the sales price of the thermal energy.

The contract contains two detailed price adjustment formulas, involving six published price indices. One formula operates from 1 March 1985 to the commissioning of the plant, and the other picks up from that point on and adjusts the tariff every three months. These formulas were modified many times in the following years by contract

⁵ All contract prices in this paper are before VAT, unless otherwise indicated.

⁶ The question of how the two parties agreed on a price is of great interest, especially given the asymmetry of cost information in their possession. At the time the concession contract was being discussed and negotiated in 1985, the City had already carried out a study for the Lyon-Sud plant, which would be designed, built, and operated under the direct control of Greater Lyon. That study had yielded an estimate for the tipping fee (price per ton delivered to the plant) that would be necessary to cover all costs. This was the key focal point in negotiations over the Lyon-Nord contract. Essentially all that Cofreth had to do was set a unit price that was lower than the estimated price for Lyon-Sud, especially given the fact that one would expect a lower price at Lyon-Sud due to economies of scale (270,000 tons/year at Lyon-Sud compared with 180,000 at Lyon-Nord). There was therefore no great concern over the justification of the individual lines in Cofreth's indicative investment budget. The basic idea was: Would this be no more costly than if the City carried out the work and operations itself? If one shakes off the deep-seated American regulatory presumption that *fairness* depends on the level of profit earned by the company, one must admit that this avoided-cost notion of fairness should not be simply dismissed out of hand.

amendments. An appendix to this chapter describes the formulas and their modifications in detail.

The tipping fee to be paid by the City for incineration of the waste also takes into account the revenue that Cofreth will receive from users from the sale of thermal energy, supplemented in certain circumstances — when the *market* price of energy is comparatively low — by a subsidy from the City.⁸

The City may terminate the concession at will at any time after fifteen years by giving one year's notice and paying Cofreth “reasonable forecast profits” and, in certain circumstances, a sum equal to the undepreciated part of the plant assets (Art. 62).

The original contract contains several clauses that describe the reports that the concessionaire must submit to the City (Art. 49–53). Annual technical and financial reports must be submitted: a list of the minimum contents of the technical report is given; and, as for the financial report, it must present operating receipts and expenditures (in broad categories). The City can require the concessionaire to submit its full operating account if it wishes (pertaining to its activities in connection with the concession contract — costs being allocated to the different activities). The City has “the right to verify the

⁷ Article numbers refer to the “*Cahier des charges de concession annexé au traité de concession*,” unless otherwise noted.

⁸ The concessionaire's contractual compensation is based on a specified price P_C , which is indexed using the same formula as for the tipping fee. The concessionaire, however, is not permitted to charge more than a price P_U to users, where P_U , whose initial value is higher than P_C , is to be determined on a current basis by indexation to the market price of energy (no further precision is given in the original contract; this is remedied in the 1987 three-party agreement involving Rillieux-la-Pape). If $P_U < P_C$, Greater Lyon must make up the revenue difference from its general budget. If $P_U > P_C$, Greater Lyon has the right to set the price to users of district heating anywhere between P_C and P_U , and in that case, Greater Lyon will take the excess revenue.

information given in these documents” and can inspect the concessionaire’s own records — “all technical, accounting, and other documents necessary for the task.”

2.2.2 Renegotiation of Price Terms

The contract contains an important article (Art. 54) describing the conditions under which the price terms, or the indexation formulas, will be reexamined and possibly revised on the basis of justification provided by Cofreth. The clause is fairly typical of French concession contracts, but it is even broader than the clause in the Ministry of Interior’s Model Contracts. It is worth presenting the conditions in some detail, as they reveal the acknowledged incompleteness of the contract.⁹ In order to take into account changes in economic and technical conditions and to “ensure that the indexation formula is representative of actual costs,” the prices and the formula are open to reexamination and revision in the following cases:

- (1) if, during the course of a year, the quantity of waste incinerated is appreciably (“*sensiblement*”) less than 180,000 tons;
- (2) if there is a considerable (“*importante*”) variation in the energy content of the waste or “if a modification in technical and economic conditions, independent of the concessionaire, significantly affects the balance of the contract”;
- (3) if the adjusted unit price (after indexation) is more than 50% greater or less than the base price given in the contract or the price at the time of the last revision;

⁹ The contract is manifestly *incomplete* here in the sense that, under the specified conditions, the price terms of the contract may no longer apply, and there is no rule in the contract stating how to derive new price terms. Note also that the clauses cited are extremely *vague* about the boundaries of application of the existing price terms. Although philosophers may consider the distinction between vagueness and

- (4) if the plant is modified in size or quality in a “substantial” way;
- (5) if there is a considerable change (“*évolution importante*”) in regulations;
- (6) if there is a “significant” change in the taxes and fees that are paid by the concessionaire;
- (7) if the definition or context of a parameter in a price adjustment formula is modified or ceases to be published without being replaced;
- (8) “if economic or social conditions have modified the balance of the contract.”

It is not stated, however, that such conditions also give the *City* the right to call for a revision of contract terms. Note also that, with some inconsistency in spirit, Article 2 recites the canonic statement that the concessionaire undertakes its responsibilities entirely at its own risk (“*à ses risques et périls*”).

If the parties cannot agree on a revision, then the issue will be resolved by a three-member commission, one member being selected by the City, one by Cofreth, and the third by the other two members. If the two party-nominated members cannot agree on the third, the president of the Administrative Tribunal will designate the third member.

It is interesting to compare the two Model Contracts in this regard. The 1972 Model Contract gives several possibilities for price revision (Art. 16). One specifies that prices will be revised each year on the basis of actual costs for the preceding period. Another gives certain conditions that will allow revision of price terms: e.g. if any index value varies by as much as +100% or –50% of the base value. The 1986 Model lists

incompleteness to be controversial (see, e.g., Sainsbury 1995: 38), according to the definition of incompleteness given in Chap. 2, vagueness would be a form of contractual incompleteness.

several conditions for price revision that are typical in French concession and *affermage* contracts (these are alternatives, not conjunctive conditions): every five years; in case of substantial modification of the facilities; if the remuneration varies by more than 50% of the base value (or the value at the last revision); if reduction in work time necessitates the hiring of an additional work shift (Art. 17). But then the 1986 Model goes on to state that, with regard to new facilities (if a detailed price estimate is part of the contract), “the structure of the remuneration” is not subject to revision — and by “structure” it appears, from the rest of the clause, that what is meant are the quantity and quality characteristics of the various inputs used by the concessionaire. In other words, one can revise *unit prices* but not the *number* of personnel, *liters* of fuel, *quantities and types* of spare parts required, etc. In the 1986 Model Contract, the concessionaire is clearly assumed to take the risk involved in its specification of technical coefficients (input-output relationships). This added precision is worthy of note.

The contract also contains other reopeners that repeat or add to the conditions in Article 54:

- (1) If it is agreed to modernize the equipment at some point in the future, the terms of remuneration will be open to revision (Art. 13).
- (2) If there is a change in national emission standards, the parties will examine the incidence of the new standards on the “balance of the contract” (Art. 25); if new works are undertaken to bring the plant into conformity with regulations, the terms of remuneration are open to revision (Art. 17). This is broadly consistent with the 1972 Model Contract (expenses caused by regulations adopted after

contract effectiveness are the responsibility of the municipality — Art. 12).

There is an interesting complexity introduced in the 1986 Model Contract in this regard. There the following qualification is added: “...that part of the cost corresponding to an identical replacement [shall be] borne by the operator [i.e. in our case the concessionaire], with a possible deduction being made of any residual use value” (Art. 12). It is important to address this issue — the fact that if existing equipment is replaced by improved equipment, the concessionaire gains something by not having to replace the old equipment in the future as part of its normal responsibilities. This is a good example of the kind of things that are missing in the loose formulations used in the Lyon-Nord contract. (A more detailed examination of this issue is given in section 5.2, below.)

- (3) The prices in the contract “will be adjusted definitively no later than at the date of the start of [construction] works in order to take into account” any modifications in the quantity of waste, the cost of investments, financing terms, or the sales price of thermal energy to users of district heating network (based on agreements with the concerned communes) (Art. 45). This extremely broad cost-of-service adjustment or global “true-up” is not based on any clause contained in the Model Contracts.
- (4) All prices in the contract are established on the basis of “economic conditions” as of March 1985 (Art. 45). This is a verbatim copy of a provision in the 1972 Model Contract (Art. 13). This extremely vague provision does not appear to be

found in the 1986 Model Contract. Perhaps the considerable potential for abuse had been brought to the attention of the Ministry of the Interior.

The combined impact of these reopeners is to create a highly incomplete contract that would leave ample room for maneuver by a profit-maximizing concessionaire. It recalls the hypothesis in Chapter 3 that traditional French concession contracts strongly resemble aide-mémoires or memoranda of understanding in the way they function. What is missing in all these cases is some helpful sense of how one might go about setting new price terms in case of revision: some guidelines or even just basic principles. The issue is simpler for routine operating costs, even though there remains the problem of information asymmetry; but it becomes more complex for major overhauls or for capital improvements in which cost recovery is spread over time. No guidelines are given, for instance, as to what to use as the price of capital in such a case.

2.3 Amendment No. 1 (March 1987)¹⁰

In March 1987, Amendment No. 1 was signed. Reference is made in the amendment to the parties' agreement to definitively readjust the terms of the contract no later than the start of construction, given that original contract was established on the basis of technical and economic conditions known in March 1995.

The changes that have occurred and that require the amendment, including modification of the pricing terms in consequence, are the following:

¹⁰ Information on this and the following amendments comes, in the first place, from the amendments themselves. Additional information comes from associated documents (e.g. the record of the Greater Lyon city council's deliberations leading to approval of the amendment) and from discussions with city officials. Special documents or sources beyond these are indicated in footnotes.

- (1) In the contract it is stated that the needed land will be acquired by the concessionaire. It is now envisaged that the City will acquire the land itself (different land, in fact — previously in the possession of the military) and allow Cofreth to use it free of charge. Preparation costs for this land, however, will be somewhat greater than foreseen for the original land.
- (2) Certain architectural features are required for aesthetic reasons because of the visibility of the plant from the nearby autoroute. The contract (work plan in annex, 4.3) called for Cofreth to prepare an appropriate architectural plan and to submit it for the City's approval before proceeding with construction. This has now been done. The amendment does not make it clear why, if this was called for in the original contract with no mention at all of the need for a related price adjustment, the feature is now treated in the amendment as deserving of such an adjustment; but City staff relate that additional architectural changes were required.
- (3) New environmental regulations, dating from 1986, require a more intensive treatment of the acid fumes (e.g. HCl and HF) discharged by the incinerator. The original contract presumed dry scrubbing, based on environmental regulations from 1972 and 1976; this must now be modified to wet scrubbing.
- (4) By giving a guarantee of the lease payments to be paid by Cofreth to the sofergie, the City was able to obtain a reduction in the amount of the annual installment payment (of which there were twenty) from a sum equal to 10% of the total

disbursement value to one equal to 9.15% (resulting in an implicit interest rate, before indexation of payments, of 6.6%).¹¹

Modifications (1), (2), and (3) together, and perhaps some other minor changes, result in an increase in the estimated investment costs for the plant alone (not including the district heating network, to which there is no change) from FF 178 million to FF 224 million, and an increase in the net financing requirement (for the plant alone), taking into consideration expected investment grants, from FF 156 million to FF 201 million (in March 1985 prices). Modification (4) offsets this increase somewhat in the periodic charge. The overall impact on the price to be paid by the City is to take it from FF 125/ton to FF 140/ton (in March 1985 prices).

2.4 Amendment No. 2 (May 1989)

This amendment was concluded just before the start-up of the plant in July 1989. The express aim is to take into account the various unexpected events that have occurred during construction and the current financial situation. It is noteworthy that the “*Exposé*” at the beginning of the amendment recalls: “The parties agreed to definitively adjust [the terms of the contract and Amendment No. 1] no later than at the date of the commissioning of the plant.” Compare the language of Amendment No. 1, which stated that the “definitive” adjustment would take place before the *start of construction*. The explanation for this slippage in time is not given: the purported new “agreement” does not appear to be found in the previous contract documents. The true-up is a continuing one.

¹¹ It was later determined that the law does not allow local governments to guarantee payments that are not strictly speaking *debt service* payments (confirmed by the Administrative Tribunal of Bordeaux in 1992), but no change was made to the rate of 9.15%.

The new circumstances are given as follows:

- (1) For reasons beyond the control of the concessionaire, work was partially and then totally interrupted during February–April 1987. The various extra costs that this entailed amount to FF 2.8 million. In fact, land preparation had started in December 1986 at the new site, but administrative problems connected with the previous military possession of the land blocked further construction work. Cofreth's subcontractors demanded damages from Cofreth.
- (2) Cofreth proposed an improvement in the treatment capability for the incinerator fumes that would permit a minimum of 40% SO_x removal. This was considered a good deal because Cofreth was able to obtain a State grant to cover some of the costs. Additional cost to Cofreth: FF 2.3 million.
- (3) The City decided to request additional work on the northern facade for aesthetic reasons, including an impressive fresco designed by an artist chosen in a City competition. Additional cost: FF 660,000.
- (4) Subsidies to be received from national government agencies can now be defined precisely and will amount to only FF 9.0 million, instead of the FF 63 million estimated at the time of Amendment No. 1.

The effect on investment costs of points (1), (2), and (3) is shown in a table attached to the amendment. The cost of the plant (in March 1995 prices) is now FF 230 million, compared with FF 224 million at the time of Amendment No. 1. The impact of the increased investment costs (along with the decrease in subsidies, plus interest during

construction, etc.) on the contractual unit price is straightforward: the lease payments are simply increased proportionally.

Several other modifications are included in Amendment No. 2. One potentially significant one involves the tariff structure. As noted above, in the original contract (Art. 45 of the *Cahier des Charges*) compensation by the City is determined by a basic charge plus FF 22 for every ton of waste above 180,000 tons/yr delivered to the plant.

Amendment No. 2 changes this to a basic charge plus *or minus* FF 22 for every ton above *or below* 180,000 tons/year. In effect, this is now a classic two-part tariff: a fixed capacity charge independent of quantity and a variable charge equal to FF 22/ton. On its face, this change would appear to be in the City's favor: the put-or-pay condition has been removed.

This new clause, however, is followed in the amendment by another that contains a crucial ambiguity, one that was later interpreted by the concessionaire in a way adverse to the City's interest. It is stated that quantities delivered to the plant "and not incinerated by the concessionaire for reasons within its control [*de son fait*] will give rise to the same deduction of FF 22 per ton." On its face, this clause appears to be giving something to the City: Greater Lyon does not have to pay the variable charge for waste that Cofreth does not incinerate. But the concessionaire might go beyond this and argue that the effect of the clause is to *limit* to FF 22/ton its liability for damages in the case of partial nonperformance — i.e. it could argue that a further idea is implied by the clause, namely, that this will be the sole compensation payable to the City if Cofreth does not incinerate all the waste delivered. The City could respond, on the other hand, that the purpose of the

clause is only to state that the City may *immediately* deduct this sum from its payment to the concessionaire, not to create a limit to the damages it could ultimately recover.

2.5 Amendment No. 3 (February 1991)

The incineration plant began operation in July 1989. The context of this next amendment reflects that fact that the Contracting-Out Department (*Service des gestions externes*) had been set up in the Greater Lyon administration in 1990. For the first time, then, a specialized City department was responsible for analysis and negotiations. The more detailed and precise style of this amendment clearly reflects this development.

During the first year of operation, the plant was able to incinerate only 147,000 tons of waste, as opposed to the contractual requirement of 180,000. There was no dispute over the fact that this was the result of technical problems springing from the concessionaire's choice of equipment. One of the boilers had to be stopped frequently for cleaning owing to design or manufacturing defects by the equipment supplier (Cofreth has since taken this company to court). The question was how the remuneration to Cofreth should be modified to reflect its incomplete performance. Amendment No. 2 clearly states that the City is not obligated to pay the *variable* charge (FF 22 per ton at the base price level) for waste that is not incinerated. But the City's actual losses might well be greater than that since it then has to pay for an alternative means of disposing of the waste, which might involve a cost greater than FF 22 per ton. The City argued that the new term added by Amendment No. 2 should not be interpreted to limit its *damages* in the event of the concessionaire's nonperformance.

During the protracted discussions that followed, Cofreth had the advantage of the status quo: the City had an obligation to continue making payments (albeit with a reduced variable component) until a new agreement could be reached or until the administrative judge declared his judgment.¹² In this sense, it was the City that most felt the pressure to amend the contract. Nevertheless, after six months of intense negotiations, Cofreth agreed to include a penalty clause in the contract and, moreover, to make a payment to the City representing the retroactive application of this clause to the entire period during which less than 180,000 tons per year was incinerated. At no time did the City contemplate taking the case to court or even hinting to the concessionaire that it might do so.

Amendment No. 3 changes the structure of the pricing formula. The formula is now as follows:

$$P = RL + RF + (rp \times N) - RV + (rv \times N1) - (pé \times N2)$$

with the following notation (some clarification or elaboration having been added in certain places):

¹² In general, French contract law gives less encouragement to a party to exercise a remedy without prior recourse to a court (Nicholas 1992: 212ff.); and this is certainly true for a public entity. Under Anglo-American law, a party may feel more comfortable making its own calculation of damages for a breach by the other party and then offsetting this against the remuneration due to the other party — thus effectively putting the ball in the other party's court.

<i>P</i>	Base annual payment to be made by City (in October 1990 prices)
<i>RL</i>	Lease payments
	<u>Price component corresponding with:</u>
<i>RF</i>	Fixed costs
<i>rp</i>	Variable costs, per ton of waste
<i>RV</i>	Revenue from energy sales corresponding to 180,000 tons of waste (broken down further into components for district heating and sale of electricity)
<i>rv</i>	Average unit revenue from energy sales
<i>pé</i>	Penalty for not incinerating total quantity delivered, per ton of waste
<i>N</i>	Total quantity incinerated (in tons)
<i>N1</i>	Quantity not delivered by City, relative to 180,000 tons
<i>N2</i>	Quantity not incinerated, falling within Cofreth's responsibility

The four major changes are: (1) lease payments are now broken out as a separate element; (2) revenue from energy sales is explicitly taken into account; (3) a penalty is included in the event that Cofreth does not incinerate all the waste delivered to it by the City; and (4) an additional fee is to be paid to the City equal to one percent of gross receipts from the City. A minor change is the adoption of a new base date, October 1, 1990 (for use in applying the indexation formulas); and the amendment presents detailed calculations bringing the prices from the old base date to the new one. There is no change in the global price received by the concessionaire (taking into consideration receipts from the sale of thermal energy).

The unit penalty, *pé*, is set at FF 62 for every ton not incinerated. It is explained in the amendment that this is based on the cost to the City for alternative disposal of FF 132 per ton, reduced by the avoided variable charge (*rp*, then FF 70). The value of *pé* will be adjusted periodically in line with the cost to the City of disposing of waste that the

concessionaire should have, but did not, incinerate; the City will notify the concessionaire at the beginning of each semester of the value of *pé* to use during that semester.

A change is also made with respect to price indexation. Until this amendment, indexation was accomplished by one long formula. Now each separate price element (namely, *RL*, *RF*, *rp*, *RV*, and *rv*) is adjusted by using a separate indexation formula. This might be able to track costs more closely in some circumstances and in any case shows the structure of costs in a more transparent manner. (Price indexation in the contract will be looked at in more detail in a later section.)

2.6 Amendment No. 4 (May 1993)

The reasons for this amendment were as follows:

- (1) The main reason was a change in national environmental regulations in January 1991, requiring disposal in special industrial-waste landfills of the fly ash and the solid residue cakes from the filtration process (sealed in gunny sacks since these contain the toxic heavy metals from the municipal waste). The concessionaire notified the City of the need to modify the remuneration under the contract to provide for needed equipment for handling and packing these substances, for additional operation costs, and for the disposal fee itself at the special landfill (described further below).
- (2) A second reason was to include the local business tax, whose revenues go to Greater Lyon, as one of the taxes that the concessionaire has to bear at its own expense. The original contract required that the City would reimburse any such tax payments made by the concessionaire, and it was not expected that this would

have any real consequence because it was thought that the company would be exonerated from paying the tax. The exoneration had now been lifted for certain administrative reasons and, furthermore, the concessionaire company, Valorly, intended to diversify its activities beyond its contractual responsibilities toward Greater Lyon. All in all, it came to be seen as more convenient to consider this as an expense to be borne directly by the company, even if the company's remuneration would be adjusted to track any changes in the tax.¹³ The base values of RL , RF , and rp (see Amendment No. 3) were therefore adjusted to include a base level of the tax, and new elements were included in the indexation formulas to account for changes in the tax rate.

- (3) Finally, Cofreth had merged with another company, Ufiner, and it was necessary to amend the contract so that the new company, Ufiner-Cofreth, would take the place of the old in the contract.

Compensation to Ufiner-Cofreth for the modification in the service due to the environmental regulatory changes is handled in the amendment on an entirely incremental basis, in keeping with the spirit of disaggregation initiated in Amendment No. 3. A new component is added to the compensation set forth in the last amendment (see section 2.5):

$$RLr + RFr + (rpr \times N),$$

¹³ Though this is not stated in the documents, discussions with City officials suggest that the main reason for eliminating the direct reimbursement of the local business tax, and in effect burying it within the pricing formulas, was political. City residents may not understand that, given the bilateral monopoly power to fix the service price, it is simply a question of money going from one pocket of the City to another; and so excusing the concessionaire from paying the tax or directly reimbursing it may give the inaccurate impression that a special favor is being accorded to the concessionaire.

where RLr is the stipulated financing charge for the new investment, a constant annual annuity (with no indexation) for five years at an interest rate of 13%. (Financing is by the concessionaire, in whatever way it wishes.) RFr relates to fixed costs, including provisions for equipment renewal; and rpr relates to variable costs. RFr is indexed in the same way as the indexation of the fixed price element in Amendment No. 3; the indexation for rpr puts a heavy weight on an index of the discharge price (tipping fee) that the concessionaire will have to pay at the special industrial-waste landfill.¹⁴

This amendment contains an annex justifying the prices, in which the major components of the investment and operating costs are identified and valued separately and in some cases explicitly built up from basic quantities and engineering input-output coefficients (quantity of ash produced from one ton of waste, and so on). Seven pages alone are devoted to deriving the adjustments needed to include the local business tax in the concessionaire's compensation and indexation formulas. This is the first time this kind of detail is seen in the contract documents.

2.7 Amendment No. 5 (July 1995)

The main reason for this amendment is, once again, the need for technical modifications to meet environmental regulations — this time requiring filters to increase the removal of particulates from the stack fumes, the deadline for conformity with these regulations being December 1996. Another reason is to replace Ufiner-Cofreth by the new companies Elyo and Elyo Centre-Est (collectively referred to as “Elyo” in the sections that follow) that have succeeded to Ufiner-Cofreth. (Elyo is the parent company

¹⁴ This tipping fee at the special landfill is not handled on a pass-through basis because the concessionaire

and Elyo Centre-Est is the operative regional subsidiary; both are in the Lyonnaise des Eaux Group.)

In fact, discussions over the amendment were initiated by the concessionaire with the intention of adding a third furnace to the plant, which the company felt would soon be necessary. The City believed that this modification was premature, but agreed that the amendment was needed for the other reasons given above.

The financial terms are more sophisticated than elsewhere in the contract and are worth describing in some detail. They represent the kind of conditions likely to be found more often in the future in French municipal service agreements. It is interesting to note that the basic concepts were proposed by the Greater Lyon Contracting-Out Department and were then further developed by the two parties together. The City also hired a banker to advise on some of the details of the financial arrangement — the first time a financial advisor appears on the scene in this contract.

The needed investments will be carried out by Elyo for the fixed, unindexed, lump-sum price of FF 19.85 million (including financing costs during construction). The investments will be financed by the concessionaire through a leasing arrangement with a *sofergie* over a period of thirteen years. The City will determine no later than three months before the commissioning of the new equipment whether it wishes the interest rate to be fixed or floating. When the City makes its decision, the applicable financing rate will be set at an appropriate, specified reference rate (PIBOR or French Treasury note rate, as the case may be) plus a credit margin capped at 120 basis points; and the lease payment

would then have no incentive to optimize the quantity of fly ash produced in the treatment process.

(debt service) annuities will be determined in consequence. If a floating rate is chosen, the City may, at any time in the future with appropriate notice, change the mode to a fixed rate, based on the reference rate effective at the time.

For the floating rate, the structure of the principal repayments, set out in a table, is such that the full annuity payment will increase every year by roughly 3% (the exact rate of increase depending on the exact interest rate — not yet known). For a fixed interest rate, the classic annuity formula is given, modified to give a 3% annual increase in the payment amounts.

Notwithstanding the arrangements described above, if the concessionaire manages to obtain financing that is more advantageous than the specified rates, the City will pay only the actual financing charge.

Since the financing of these new investments is entirely independent of the existing financing costs, to account for this in the payment formula, a new element is added, RLc , namely, lease payments (debt service) calculated as indicated above.¹⁵ But the operation and maintenance of this new equipment does not necessarily involve activities or costs that are separate from those of the existing system. Therefore, the existing values of RF and rp (from the last amendment) are *revised* instead of adding new, additional elements. Detailed explanations of the changes are given in an annex to the amendment.

3. PRICE INDEXATION

The indexation formulas used in the Lyon-Nord contract and its amendments are described in detail in the appendix to this chapter. This section will highlight some of the

major features (and in doing so may pass over some of the differences found in the various amendments, all of which are spelled out in the appendix).

Looking at indexation in French concession contracts is important: the business of choosing indices for adjustment formulas gives the appearance of a specialized science or art. The cynical economist may wonder whether the sophisticated players, the big municipal service companies, use the arcane intricacies of the indices as a way to boost their profits. Though it is widely reported that concessionaires tend to overweight the wage element in indices (see also Ginglinger 1990) since wages tend to increase more rapidly than the other elements in the cost basket, it is not known to what extent the composite indices are being used strategically. It may very well be that concessionaires are simply trying to track their costs as well as possible.

3.1 Origin of Indices Used

The major national indices that are used in the Lyon contract, published by the Ministry of Finance, are the following:

<i>PsdC</i>	Miscellaneous products and services, category C (<i>Produits et services divers C</i>). A composite index covering prices for construction (7%), equipment and tools (35%), energy (11%), paper and cardboard (11%), chemical products (12%), and others. This is one of a group of five composite indices that were created in the 1960s for specific sectors but that are now used more generally. <i>PsdC</i> was initially created to be representative of the electronic and radio-electric equipment sector.
<i>S</i>	Salaries for building and civil works. A general index for salaries in the construction business, used in the official civil works composite indices.
<i>BT40</i>	A composite investment-cost index for non-electric central heating installations. It is made up 40% of labor and 43% of equipment and material, a large part of which depends heavily on ferrous and non-ferrous metals (e.g. tubes, radiators,

¹⁵ This description ignores an additional adjustment to account for the impact of the local business tax.

furnaces).

Tma An index for the factory-gate price of rolled 3-mm sheet iron for general construction use.

One notable feature of the contract is that the lease payments are indexed 55% to *PsdC* and 45% to *BT40*. It may seem odd that what is effectively debt service should be indexed in this complicated way. One might expect indexing to general price inflation or adjustment by a pre-determined growth rate, as in Amendment No. 5. The explanation given by the City's engineering consultant is that this was a common practice of the sofergies which permitted a uniform indexation of the entire price — capital and operating components together. A district heating concessionaire in this way could simplify matters and use a single, simple indexation formula for the entire user charge. If the real interest rate for the lease annuities is adjusted taking into consideration the expected change in this composite index, such a method would not be expected to result in any greater or lesser benefit to the sofergie than a simpler inflation indexing (but increased volatility could be an issue). In fact, the particular index used for the lease payments increased by an annualized 2.9% over the period from October 1990 to July 1995, compared with 2.2% for the consumer price index. The nominal interest rate charged up to July 1995 therefore amounted to 9.7% (the rate before indexation being 6.6%). It should be noted, however, that some City officials are skeptical about the rationale for the use of this indexation approach and do not think that it was a sound practice.

Another important index type used for Lyon-Nord contains three of the national indices listed above. This is used for both the fixed and variable components of the operating charge (with some modifications). For the fixed component (*RF*) the weights

are (ignoring the fixed term, to be discussed below): 0.45 *S* ; 0.25 *BT40* ; 0.30 *PsdC*. The logic behind the formula is that *BT40* , a construction index including material very similar to what is needed in an incineration plant, covers heavy maintenance and renewals; *S* covers labor costs; and *PsdC* is a catch-all covering miscellaneous goods and services. (To be more accurate, we should note that *Tma* was used instead of *BT40* for this purpose until Amendment No. 3.)

In addition to national indices, in later amendments three indices were included for prices that are the very prices that must be paid by the concessionaire (rather than a proxy): prices for water (used in scrubbing the fumes); the disposal fee at the special, required site; and the local business tax rate.

It is interesting to compare the indexation in the two Model Contracts. Apart from some minor details that differ, the one major difference in both contracts is the use of *PsdC* in the fixed part of the operating charge but *PsdB* in the variable part. As noted above, *PsdC* was originally conceived to be representative of goods and services required in the electronic and radio-electric industries. In contrast, *PsdB* originally was representative of defense procurement. The composition of these two indices is shown in the table on the next page (listing only those elements that account for more than 5% of at least one of the two indices):¹⁶

It is not immediately apparent why *PsdB* would be better suited to the variable-cost component and *PsdC* to the fixed-cost component of the operation and maintenance of an incineration plant. It is true that the use of energy and the deterioration of

equipment and tools might be more strongly related to the quantity of waste processed. But, on the other side, shouldn't the use of chemical products be related in the same way? Even officials of the concessionaire company, Valorly, could not see any clear rationale for the approach of the Model Contracts. Custom seems to be the most likely explanation.

Constituent	<i>PsdB</i>	<i>PsdC</i>
Energy	12.8	10.9
Material	–	5.2
Transport	5.9	5.6
Construction	9.1	7.2
Equipment and tools	45.5	34.6
Paper and cardboard	5.1	11.2
Chemical products, etc.	5.4	11.9
Services	6.4	–
Other	9.8	13.4
<i>Total</i>	100.0	100.0

Finally, it should be pointed out that all the indexation formulas for operation and maintenance costs (but not for financing costs) incorporate the customary constant term (see Chapter 3) — here with a weight of 15%.

3.2 Behavior of the Indices

The following figures show how the indices and adjustment formulas have performed over time.

¹⁶ Source: *Moniteur*, 7 July 1995, p. 285, citing the *Bulletin officiel de la concurrence, consommation, répression des fraudes*, no. 15, 10 Sept. 1993.

Figure 1

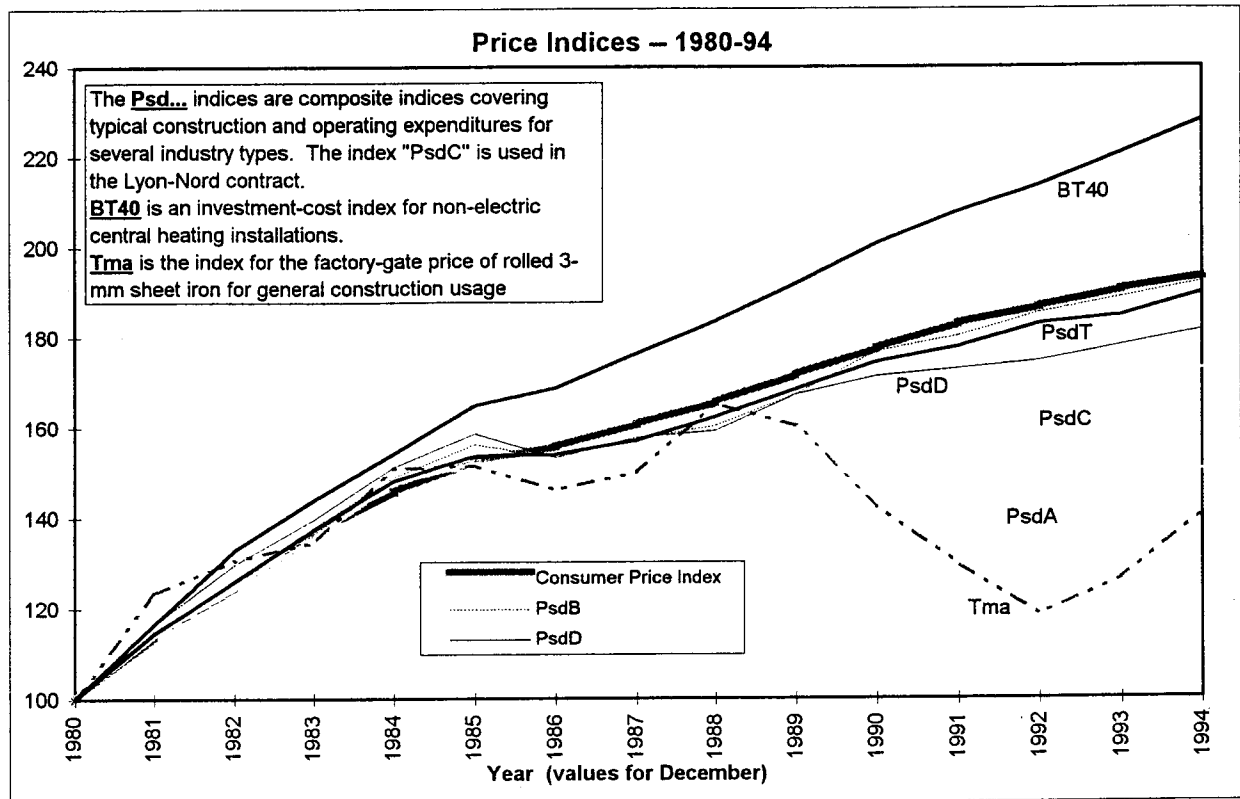


Figure 1 shows a striking change beginning around 1986: the various indices begin to diverge widely from the consumer price index, the *Tma* and *Psd* indices falling below and *BT40* rising above. Several forces are at work here. First, general price controls were in effect in France up to 1986. Second, the price of petroleum fuel and other derived products dropped rapidly and dramatically, beginning in 1985. Though the correlation is not perfect, it may be significant that the proportion of "energy" making up *PsdA* is the greatest while that for *PsdT* is the least. The explanation for the greater increase in *BT40* is not readily apparent.

Looking at the different behaviors of $PsdC$ and $PsdB$ makes one realize that the choice of index can have significant consequences. The concessionaire would have been better off had it followed the Model Contracts and used $PsdB$ for the variable price component. But it might not have known this because of the price controls then in effect. More generally, back in 1985, how did the concessionaire expect the indices to behave in the future? We simply do not know.

Another observation concerns Tma . In Amendment No. 3, signed in 1991, Tma , used for the fixed and variable operation and maintenance price components, was replaced by $BT40$ at the concessionaire's initiative. Given the continuous slide in the value of Tma from 1988 to 1992 (see Figure 1), one can easily see why the concessionaire was worried. A more important question is whether Tma or $BT40$ more truly tracks the behavior of the costs incurred in the maintenance of the plant.

Figure 2

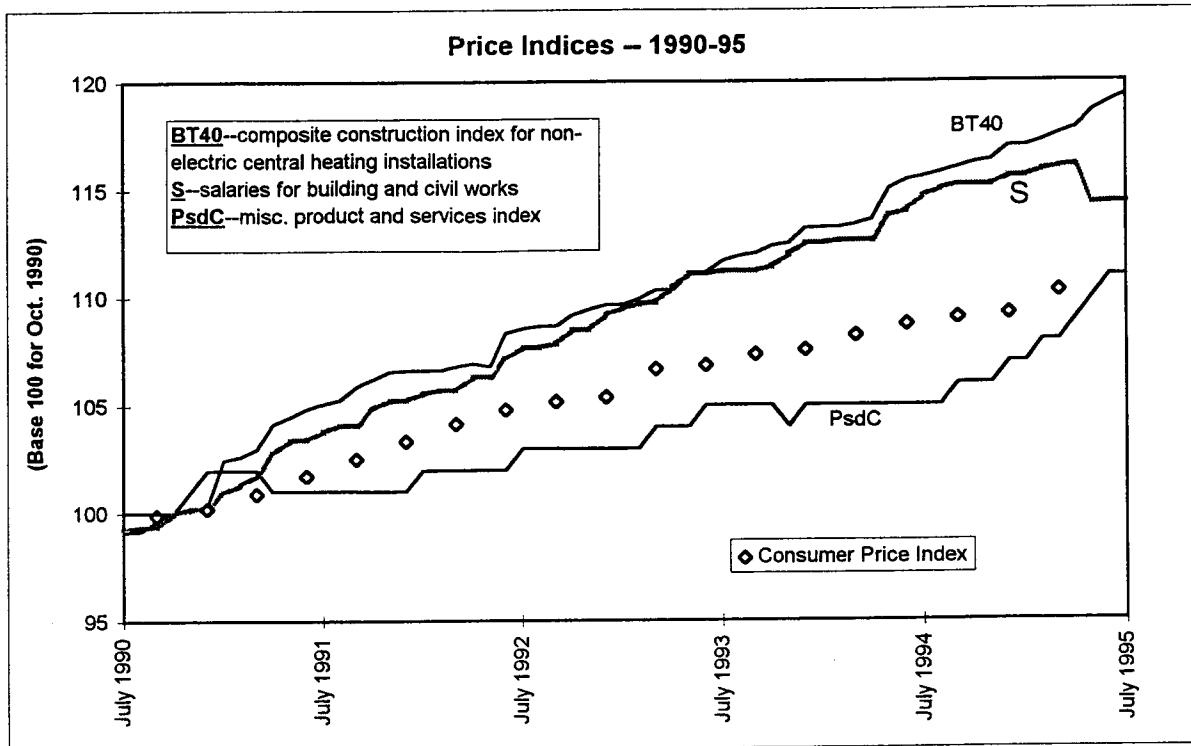
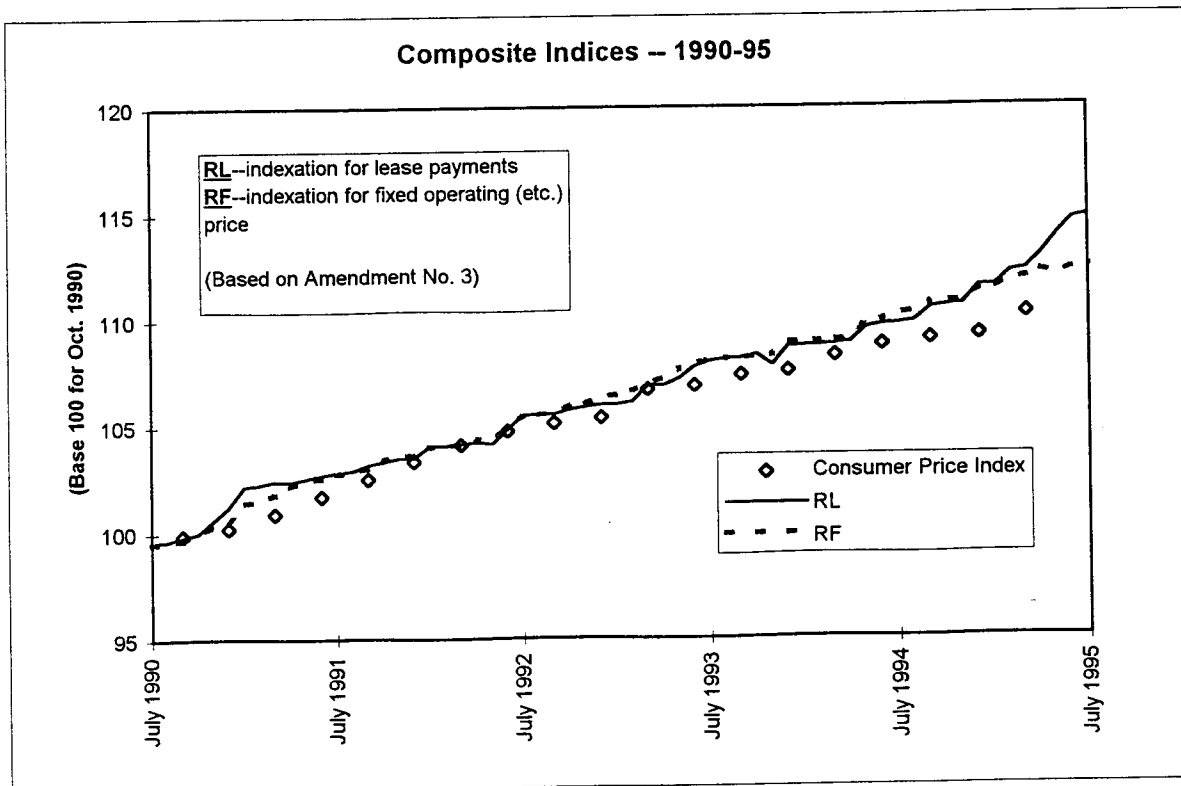


Figure 3



Turning to Figures 2 and 3, we can see what the effect is of the price adjustment formulas actually used in the contract (actually, those used in Amendment No. 3). The composition of the two price adjustment formulas is as follows (see appendix for more detail):

Official index	Proportion used in price adjustment formula (Amendment No. 3)	
	<i>RL</i> (lease payments)	<i>RF</i> (fixed O&M price component)
<i>BT40</i>	0.45	0.21
<i>S</i>	–	0.38
<i>PsdC</i>	0.55	0.26
(Constant term)	–	0.15
<i>Total</i>	1.00	1.00

The results show in the figure are striking: both the index for the lease payments and the index for the fixed price component of operation costs have managed to combine the official indices in ways that make the final result come very close to the consumer price index — and this, despite the 15% constant term in the formula applying to *RF*, which would tend to stabilize that composite index. One explanation is simply that the indices were constructed to reflect the expected cost behavior of waste incineration services and that this happens to be about the same as for the average consumer good and service.

4. STYLES AND FORMS OF CONTRACT

With the evolution of the contract having been described, we can now turn our attention to some of the themes brought out in Chapters 1–3: What do we learn about regulation-by-contract from the Lyon experience?

4.1 Changes in Contract Style

4.1.1 Contract Drafting

One of the observations made in Chapter 1 about the early U.S. experience was that regulation-by-contract failed in some — and probably many — cases because contracts were not drafted competently. What do we see in the Lyon case? This section looks at this question.

The City through its zealous Contracting-Out Department has played a more active, informed role in contract drafting as the years have gone by. The major role in drafting the original contract and Amendments Nos. 1 and 2 was taken by the concessionaire, though outside lawyers did assist the City with the original contract and the City's technical services did considerable adjusting of the technical sections. Amendment No. 3 was the first to be negotiated after the Greater Lyon Contracting-Out Department was established in 1990. For the first time, the City administration had a specialized department whose responsibilities specifically included negotiation of such contracts and amendments. The City took the lead in developing Amendment No. 3, with an engineer consultant preparing the first draft, and negotiated it intensely for six months. The input of the City was once again considerable in Amendments Nos. 4 and 5. For Amendment No. 5, the concessionaire came to the City with the first draft, which

primarily involved the installation of a third furnace to increase the capacity of the plant. But the City rejected this idea as premature and then proceeded to do a major rewriting of the entire proposed amendment.

The Contracting-Out Department has made use of some outside consultants in its negotiation and oversight activities. An engineering consultant on retainer to the City played an important advisory role concerning the technical details of Amendments Nos. 3, 4, and 5. A bank was used to give advice for financing aspects of No. 5. Since outside lawyers are not used and Greater Lyon's internal legal department does not play a role, there is no *specialized* legal review of the contract instruments, although some staff in the Contracting-Out Department have had legal training. This lack of emphasis on input from the legal profession is typical of even many private businesses in France in their contracting activities, and it is not clear that the parties are any worse off because of it.

In sum, over the course of the contract so far, the City has made use of more specialized input in drafting amendments.

4.1.2 Greater Contractual Specificity

The question of finding an appropriate form and style for a long-term services contract is an critical one. In Chapter 2, it was noted that one of the main ways to deal with contractual incompleteness is to specify terms — especially contingent terms — with more precision. The Lyon case can help us resolve a question that came up — implicitly at least — in Chapter 3: Are the French contracts relational because “the parties are

incapable of reducing important terms of the arrangement to well-defined obligations”¹⁷, or because the parties have *chosen* not to do so? The Lyon experience strongly supports the conclusion that these contracts can be made much more complete than the traditional models.

The progressive change in contract style in the Lyon contract is apparent as one moves from the original contract through the amendments, one by one. One sees more and more specificity and precision as the contract evolves: the contract becomes more *complete* and more conducive to easy renegotiation later. It is clear, moreover, that the initiative in this regard was taken by the City.

One reason for more specificity in a contract is to reduce incompleteness. Another reason for greater precision is to make a finer allocation of risks, within the context of a complete contract. A good example of this is the qualification made in the 1986 Model Contract about legitimate grounds for price revisions (see section 2.2.2). There, in effect the *price* and the *quantity* aspects of increased concessionaire costs were partitioned and it was implied that only a change in a price aspect constituted a legitimate reason for revision of the service fee. This tends to prevent allocating to the municipality the risk of decisions more likely to be within the control of the concessionaire — a wise move from the perspective of economic efficiency.

It is often stated that contracts in civil law countries, such as France, tend to be less detailed because the parties rely on the background of default rules provided by the

¹⁷ The quote is from Goetz and Scott (1981: 1091), who are discussing general concepts and are not referring at all to French contracts.

Civil Code (see e.g. Nicholas 1992: 56–57).¹⁸ Regardless of the truth of this contention, it appears that this is not the reason for the lack of specificity in the original Lyon-Nord contract. It is quite rare in France that a local government and a concessionaire take a dispute to the administrative tribunal. If a case ends up there, it is more likely instead that a consumer brought it. In the Lyon case, interviews show that the parties have never had any intention that the judge would fill gaps in their contract, and there is no indication even that the law, as an ultimate reference point, had much or any influence over the conduct of their bilateral negotiations in an effort to resolve a dispute.¹⁹ In the Lyon-Nord contract, the parties were never even bothered by the fact that their “concession contract” did not involve a true concession at all (see below, section 4.2.1). Interviews with both parties bring out clearly that during the protracted negotiations over the insufficiency of treatment in 1989–90, there was never the slightest idea that the parties might end up in front of the administrative tribunal, and they were entirely unconcerned with what the decision of the judge (or the Conseil d’Etat) might be if they should bring the case before him. They were negotiating according to their own notions of fairness.

¹⁸ This is at most only a partial explanation. The civil codes in these countries state the law in terse and general terms; in themselves they hardly constitute more of a deterministic gap-filler than does case precedent in common law countries — and perhaps less. To a large extent, it must therefore be the judge’s interpretation that is being relied upon; and there is no reason to think that this operates in a more predictable way than the judge’s determination in a common law country. Both rely heavily on the fabric of past cases; but the judge in most civil law countries generally does not acknowledge this. More to the point is the common-law tendency to leave case precedents in raw form, emphasizing facts, rather than inferring rules of greater generality. In consequence, contract drafters in common law countries tend to use *specific* sentences and clauses that have passed the test of precedent to give the effect they desire, and this can lead to a highly detailed contract (see, in general, Merryman 1969).

¹⁹ The second half of the sentence is important, because, in game-theoretic parlance, the solution to a game can depend on payoffs of strategy combinations that are off the equilibrium path: parties may intend never to end up in court, yet what the court’s decision would be can influence their bilateral negotiations (see Baird *et al.* 1994: 116).

Now one could argue that the parties' conception of justice has been influenced by the default rules of French administrative-law jurisprudence and that this is the reason why the original contract was so incomplete in many ways. There may be some truth to this, but it is suggested here that there are two main reasons for the lack of specificity in the original Lyon-Nord contract — and that this is common to many French municipal concession-type contracts. First, the City did not consider itself to be on an equal level of technical expertise or bargaining power with the concessionaire; to a large extent, it put its trust in the decency and good faith of the company and implicitly accorded it great discretionary power — which is not to say that all City staff held this opinion personally.

A look at how the price terms in the amendments were negotiated sheds some light on this. One might think that some standard involving efficient and prudently incurred cost would be natural. The concessionaire, however, provided very little detail to enable the City's engineers to verify the proposed prices — at least in the early amendments. City engineers complained about this. For example, with respect to Amendment No. 1, involving additional costs because of land conditions at the new site, architectural changes, and a required change in the treatment process for acid fumes from a dry to a wet method, Cofreth provided only a very broad breakdown of these costs. In an internal memorandum to another Greater Lyon department, dated 30 January 1987, a City engineer stated:

The proposed breakdown [in the concessionaire's proposal for Amendment No. 1], although it may shed light on the nature of the additional costs, does not in fact constitute a justification, which, to be proper, would require an in-depth examination of quantities, unit prices, and technical specifications. I am therefore unable to give a well-supported opinion on this matter.

Viewed in terms of the theory of incomplete contracts and the conceptual scheme outlined in Chapter 2, one could say that there was an implicit agreement that the *concessionnaire* would take the first step to fill in missing details if needed, and a strong presumption in favor of the concessionaire's point of view. As noted in Chapter 3, this accords well with the idea of *delegation* inherent in the French system: the municipality takes its hands off to a large extent and trusts in the delegatee to use its best judgment. This point of view has undergone a major shift, however, since the creation of the Contracting-Out Department.

4.2 Delegation vs. Public Procurement

Chapter 3 discussed the French tendency towards highly *relational* contracts in the area of municipal service contracts (using the term broadly) and the link between “delegation” and the relational quality. What do we see in the Lyon case?

4.2.1 Contract Classification

The Lyon-Nord contract purports to be a “concession” contract.²⁰ As discussed in Chapter 3, one basic legal requirement for a concession in France is that the concessionaire must be compensated principally from payments received from users of the service (“user” here excluding the municipality itself). In the Lyon-Nord contract, it is quite clear that users do not pay anything directly; the concessionaire is remunerated by Greater Lyon. There is therefore little doubt that, if the contract were ever to come before an administrative judge, it would not be considered to involve a concession at all. In fact, it fits the requirements of another form of administrative contract, the *marché*

d'entreprise de travaux publics — the METP. Whatever controversy over the METP there may be at present (see Chapter 3), there is no doubt that a contract that is in every respect like a concession contract except for the fact that the concessionaire is paid by the public authority instead of by users should be classified as an METP (see Raymundie 1995: 115ff.); and this was well-known in 1985 when the Lyon-Nord contract was signed.²¹ It is therefore a noteworthy commentary on the divergence between theory and practice in France that the prefect made no objection to the contract when it was submitted for his ex post review.

It is a matter of some interest, then, why the parties decided to give the contract the inaccurate label “concession.” One might argue that since the law concerning METP contracts is unclear, it is best not to use the term; but this argument is easily dismissed since we know that the court would disregard the label “concession” and immediately reclassify the contract as an METP in any case. One reason for the concession label is probably that the City preferred to select the concessionaire freely, without having to follow the public procurement rules, and it was not clear at that time what the requirements of the METP were in this regard. Another important reason, according to Greater Lyon staff who were involved in the discussions and negotiations during the beginning stages, was that Cofreth wanted to use the term “concession” presumably because the label tends to justify giving the concessionaire greater independence and subjecting it to less scrutiny. In other words, as pointed out in Chapter 3, “concession”

²⁰ Actually, as is customary, the instrument consists of a brief “*traité de concession*” followed by a more detailed “*cahier des charges*.”

²¹ I will continue, speaking loosely, to use the term “concessionaire” even when referring to the private company in an METP contract.

invokes that magic word “delegation,” with its broad penumbra of customary connotations.

We recall that in France there is a distinction in legal thought between the *delegation* and the *procurement* of a public service. We note that public procurement usually involves the detailed examination of a price proposal, comparison with other proposals, payment on the basis of detailed invoices, etc., whereas a concession has traditionally involved a simple agreement on a particular unit price (e.g. francs per cubic meter of water), with the reasoning behind this price often remaining completely opaque. The Lyon case supports the idea advanced in Chapter 3 that, regardless of formal legal thought on the subject, the idea of a *concession*, until fairly recently at least, has carried with it, in what could be called *folk-legal thought*, a sense of giving the concessionaire great leeway in how it carries out its business, how it determines its prices, and so on.

It should be emphasized that this does not necessarily correspond strictly to formal legal jurisprudence or doctrine. For example: though public procurement rules requiring competitive offers did not need to be followed for concessions before 1993, such procedures were certainly not *prohibited* by law; in other words, there was no legal reason preventing a municipality from choosing a concessionaire by as rigorous a competitive procedure as it wished.²² Needless to say, the large national municipal service companies probably did not go out of their way to clear this point up for local communities.

²² Raymundie (1995: 237) refers to this mistaken idea that concessions necessarily involve a lack of competition as a “regrettable confusion.” In fact, the law before 1993 simply gave local authorities great *freedom of choice* with regard to the selection of concessionaires.

4.2.2 Rigidity of Contract Forms

The investment costs in Amendment No. 4 — equipment for handling and packing residue — amount to only FF 529,000. The amendment provides for financing by the concessionaire over five years at an interest rate of 13%. It may well be asked why the City did not decide to pay for these investments at once, obtaining a loan on its own, perhaps after requiring the concessionaire to present offers from several contractors or suppliers. The answer goes back to the discussion in Chapter 3 concerning the nature of a contract for the delegation of a public service and the tendency in French law to avoid “hybrid” contracts that destroy “homogeneity” and that do not fit neatly into one particular category. In the *delegation* of a public service, the City is not purchasing equipment or even a service. If the City were to pay for the new equipment in one lump sum or on the basis of invoices, the concessionaire might be seen as acting as an ordinary contractor and the City’s payment viewed as what is legally referred to as a “price” (*prix*). This would raise two questions: First, would this subject the City to the public procurement code? Second, could such a mechanism be included within a concession contract without disqualifying the whole contract?

Ignoring the actual legal issues, it is worthwhile to attempt to sharpen the issue from a public policy perspective. It is difficult in this case to see why payment by lump sum or on the basis of an invoice in itself might matter. The City’s engineers have carefully reviewed, negotiated, and approved the actual investment components, their impact on operating costs, and the concessionaire’s estimated cost for each element. If there is something here that is inconsistent with the conventional idea of a delegated service (and there may or may not be), it is *this*. The fact of payment in one lump sum or

on the basis of substantiated costs is surely of little importance. Also, if there are good public policy reasons to justify competitive bidding in such a case (or some weaker form of competition, such as consultation), then these reasons should hold regardless of how the City pays for the investments.

Just as important as the formal legal rules (whatever they may be in this case) is the customary sense of what a *concession* involves and what it cannot involve. A common practice in long-term U.S. service contracts is to require “cost substantiation” in certain cases, e.g. for pass-through costs; often this involves submission of a paid invoice to show the costs incurred. In the case of Lyon-Nord, the concessionaire’s investments take place in a black box from the City’s point of view. Moreover, City staff believe that it would probably not be legitimate even for the parties to agree in the contract that the concessionaire must carry out certain purchases in a particular way — e.g. by some form of competitive bidding or limited shopping. Again, the issue is informally and loosely linked to the idea that the public authority is *delegating* a public service function rather than buying a service. It is suggested here that this rigidity of contractual forms may prevent the concession from being easily adapted to changing and varied circumstances.

5. INCREMENTAL CONTRACT ADJUSTMENTS

5.1 What Basis: Incremental or Global?

The Lyon case brings out one of the most salient differences in principle between regulation-by-contract and regulation-by-commission. In an ideal form of regulation-by-contract, it is natural to resort to an *incremental* process to adjust the price terms in the face of various contingencies: the original deal is not called into question because it is

presumed to be the result of a bargained-for exchange, and any eligible *changes* in service or technical requirements are analyzed to determine the incremental impact on the price to be paid. This method has high-powered incentive properties: if handled properly, there is no claw-back of profits made on the original deal and hence no ratchet effect. But the method cannot work well if major and complex adjustments are required frequently.

In contrast, regulation-by-commission tends towards global reviews. There is a well-known drawback, of course. If the entire price must be placed under review whenever a contractual adjustment involving price terms becomes necessary, this mode of regulation can easily deteriorate into a form of cost-plus pricing. An important question — one that has implications for the feasibility of regulation-by-contract — is whether one can effectively isolate the cost elements required for a particular adjustment and restrict negotiation to these new elements only, leaving the existing elements untouched, and therefore preserving their incentive power.²³ In other words, can one truly work just at the margin?

There is no doubt that a great deal of care must be taken for this to work well. It is considered common knowledge in France among practitioners in this field that contract amendments are routinely used by concessionaires as opportunities to make *global* price adjustments — regardless of whether the amendment purports to make such an adjustment. For this reason, concessionaires delight in any vaguely specified reopener

²³ The term “incentive power” here has the meaning given used in Laffont and Tirole (1993): a fixed-price contract has an incentive power of 1; a pure cost-reimbursement scheme has an incentive power of 0.

clauses.²⁴ This practice is greatly facilitated when the cost elements underlying the contract price are not given in detail in the contract (or in associated documents).²⁵ Suppose that the global price is broken down into five *broad* categories, *A* through *E*. The concessionaire may come to the municipality during the project development phase and state that several new elements (or modifications) within category *A* are necessary due to circumstances beyond its control, or that it highly recommends that these new elements be added for laudable reasons. The municipality may have assumed that such elements were already included in *A*, or then again it may never have given the matter any thought at all. The modifications are then agreed on and the price for *A* is changed. Now it may in fact be that the concessionaire had already included these elements in sub-price *A*, in its own books. But who knows, since the breakdown in the contract is not sufficiently fine. This is a classic maneuver in the performance of French concessions.

Amendments Nos. 1 and 2 could have been used along these lines. For example, adjusting for land acquisition costs would be relatively easy if this item had been explicitly identified in the price breakdown.²⁶ It was not so identified *in the contract*. The City's records at present do not contain other documents that give this breakdown (but such

²⁴ We should not forget that in other circumstances or other administrative cultures, the public authority may be the party that opportunistically attempts to benefit the most from vaguely specified reopener clauses.

²⁵ When a "contract" is referred to in this chapter, the reference is also to all attachments that are an integral part of the contract.

²⁶ This statement should be qualified somewhat. A scheming concessionaire might distort an itemized unit price *upwards* if it thinks that there is a greater chance that the corresponding contractual quantity will be increased later during renegotiations or *downwards* if it thinks that contractual modifications involving decreases in quantity are more likely. This is analogous to the problem of "unbalanced bidding," well known in the literature (see e.g. Stark 1974). So the qualification to be made is to say that the adjustment would be unproblematic presuming that the concessionaire had no strong reason at the time of contract signing to expect the quantity to be modified upwards or downwards later on.

documents may have existed at the time). There are no records of calculations carried out to adjust the investment costs for the other modifications in this amendment either (but again, such documentation may have once existed).

As the amendments proceeded, the breakdown of costs becomes finer. In Amendment No. 4, for example, it was necessary to add a price element for the required new way of handling and discharging the residue cakes and fly ash. An annex to the amendment builds up these costs piece by piece. The problem is that the new way of handling and discharge replaces the old way, and so what must be added are only the *incremental* costs. Amendment No. 3 had taken the step, for the first time, of showing how the prices are built up. Subprices were given for the removal of bottom ash, metal pieces, fly ash, and residue cakes. It was then relatively easy in Amendment No. 4 to refer to these old price elements and deduct them from the new *total* handling and disposal cost to arrive at the incremental value (*rpr*). One lesson to be drawn from this is that an incremental approach can work well only if the contract contains enough detail about estimated costs — even if the concessionaire is not going to be paid on this basis in normal circumstances.

In the process of beginning negotiations for a third furnace (put in abeyance at that time), the City and its consultant were able to break out the proposed cost into about 80 different items, starting from the 5–10 items in the concessionaire’s first proposal.

Concessionaire companies are in general not happy with the tendency of more sophisticated municipalities to demand a finer breakdown of costs. The more price elements there are, the more room for disagreement there is: the municipality will go over

costs with a fine-tooth comb, requiring justification each time that a price element appears too high. Some other, more neutral, observers also believe that municipalities' preoccupation with a mass of cost details does not further the broad objectives of the concession relationship. There is a danger that the relationship begins to be dominated by a nit-picking mentality. One small change in Amendment No. 5, for instance, was the inclusion at the concessionaire's insistence of FF 112,000 per year in the fixed annual price component to cover added labor costs for more intensive clearing of the waste receiving area arising from new (1992) worker safety regulations. There appears to be no doubt that the concessionaire was entitled to such an adjustment. But it is easy to see how this approach might degenerate into a tussle of legalistic demands — what Lorrain (1993) has characterized as the Anglo-Saxon regulatory mode (see Chapter 3).

The Contracting-Out Department is not completely satisfied with the piecemeal, incremental approach — it becomes too complex and detailed — and is searching for a more comprehensive measure of the “financial balance of the contract.” It is interesting to speculate whether they will ultimately find themselves adopting some variant of a cost-of-service approach — perhaps with long regulatory lags, along British lines.

This is not a critique of regulation-by-contract per se. But it does highlight one of the critical criteria: the more frequently one expects contract modifications to take place, the less well-suited is regulation-by-contract.

5.2 Example: Upgrading the Plant

As noted above, one must have good cost information in the contract for the incremental-adjustment approach to be able to work well. But that is not sufficient. As

any student of cost-benefit analysis knows, it is not always self-evident how to carry out an incremental analysis. One needs rules derived from a theory — or at least from a set of fundamental principles. It is unusual for contracting parties to think of putting these in the contract itself. The following example illustrates this point.

As noted above (section 2.2.2), the original contract contains a number of conditions concerning contract modification. They are essentially unconstrained *reopeners*: such events require that the remuneration to the concessionaire be reexamined for possible revision. And, as noted above, there are no guidelines as to the rules one might use for such revisions. In this section, we will pursue the point that the appropriate rules are not self-evident. We begin with a stylized example that paves the way to a critical examination of a provision in Amendment No. 4 of the Lyon-Nord contract.

First, consider the following hypothetical example:

There is an unanticipated change in emission standards, and it becomes necessary to take out one component of the plant and replace it with an improved version that removes more pollutants and so is able to meet the new standards. The old component, installed five years ago, would have to be replaced after five more years at a cost of 100, and this was the concessionaire's responsibility. The new component costs 150 and will not have to be replaced during the term of the concession.

The burden of this change is to be borne by the municipality — suppose that this much is clear. But what is the burden? The concessionaire has certainly gained something by being able to *avoid* the future cost of replacing the original component. If the concessionaire's cost of capital (i.e. the appropriate discount rate) is 12%, we would deduct the *present value* relating to the 100 (what the concessionaire would have had to pay to replace the component) from the price that the municipality must pay now. So the price the municipality should pay amounts to 150 *less* 56.7 (since $100 \div (1.12)^5 = 56.7$)

— i.e. it should pay 93.3.²⁷ Under modified circumstances, one might want to adjust the calculation. For instance, suppose that the concessionaire is constrained by the contract to create a cash reserve fund for future replacements and that it can earn interest on this money at 6% per annum. If it has already been placing 7.59 in the fund each year (an annuity payment that will amount to 100 after 10 years at 6%), a total of 42.8 has accumulated over five years. If the concessionaire can avoid the future replacement obligation, this 42.8 is immediately available. In addition, the stream of 7.59 each year for five more years will also be available, and the present value of this stream, at the concessionaire's discount rate, 12%, is 27.3. Adding the two together gives the benefit to the concessionaire in these circumstances, namely 70.1. So the municipality should pay only 79.9 for the new component under these conditions.

The reason for going into this detail is to illustrate the importance of setting down the rules of the game and sufficient information ahead of time in a long-term contract. Just what are the assumptions that should be made? The basic approach used above is the accepted methodology in economics and modern finance: comparing discounted cash flows with and without a specified event. But the other assumptions are open to discussion. At a minimum we need the following information — preferably in the original contract to avoid later disputes: (1) an indicative equipment replacement schedule; (2) an agreed method for determining the replacement cost, which might require knowing the original investment cost of just that component; (3) a stipulated cost of capital or some kind of benchmark to use as the discount rate; and (4) any assumptions about constraints

²⁷ We assume that differences in operating and maintenance costs are adjusted for elsewhere, and we are ignoring the possible resale value of the old component or its parts.

on cash flows that would require something like the more complicated calculation given above.

Moreover, one cannot even assume that the same methodological principles will be accepted by both parties. Consider the applicable clause of the 1986 Model Contract. As noted above, this clause (Art. 12) states:

Expenses that result from works serving to bring the facilities into conformity with technical and administrative regulations published after the date that the operator takes over the facilities shall be borne by the municipality, that part of the cost corresponding to an identical replacement being borne by the operator, with a deduction being made of any residual use value.²⁸

This passage is open to different interpretations. (Several Greater Lyon staff that I informally polled came up with a number of plausible different views.) According to the City's engineering consultant, who has had to work with this sort of clause, and according to the most reliable City staff views, it means that, if the concessionaire makes an accounting provision of 10 each year over the life of the component (going back to the opening example), then that part of the replacement value that has not yet been provided for (i.e. 60 after four years, 50 after five years, etc.) should be subtracted from the replacement value to arrive at the net gain to the concessionaire of no longer having to replace the item. This is equivalent to saying that the concessionaire's net gain is equal to the cumulative accounting provisions already made.

Regardless of whether this is what the Model Contract means, it is said to be what was intended in Art. 9 of Amendment No. 4 of the Lyon-Nord contract:

²⁸ The passage is worth quoting in the French original to strive for a maximum of clarity: "Les dépenses qui pourraient être entraînées par des travaux de mise en conformité de l'installation avec les règlements techniques et administratifs publiés postérieurement à la date de la prise en charge de l'installation seront

In the event that equipment for the pretreatment [of fly ash] is installed, the parties agree to take into consideration any unused [accounting] provisions relating to the handling and bagging equipment, in establishing new financial conditions.

(The handling and bagging equipment will no longer be needed if the pretreatment equipment is installed.)

One might hope for a little more clarity in a contractual clause; nevertheless the basic drift is clear. But this linear accounting approach has no relation to the discounted cash flow approach outlined above and would yield different results.²⁹ The two lessons from this discussion are: first, the issue of equipment modification is extremely important in a long-term contract of this kind, and sufficiently detailed rules should ideally be set out in the original contract; second (though this conclusion has not been proven here), only a discounted cash flow methodology can deal with these issues in an consistent and sound way. But this leads to a further issue: Is it realistic to think of packing all the needed rules into the contract, or do we need *extra-contractual* or *background* rules (see Chapter 2), developed in the context of a specialized regulatory system? We will return to this question in Chapter 6.

5.3 Further Examples of Incremental Cost Adjustments

A significant problem in the Lyon-Nord contract and its amendments involves the inclusion of additional costs for contingencies, profit, and so on. These costs raise special

à la charge de la collectivité, la part du coût correspondant à un renouvellement à l'identique étant à la charge de l'exploitant, déduction faite éventuellement de la valeur d'usage résiduelle.”

²⁹ It also seems to lead to conclusions that are *intuitively* wrong, regardless of the underlying theory. Suppose that the new equipment is installed on Day One, before any provisions have taken place relating to the old type of equipment, and that the new equipment will not need to be replaced during the term of the concession. Certainly the concessionaire has gained something by being able to avoid future costs; but the accounting method given in the 1986 Model Contract and in Amendment No. 4 implies that the municipality would pay the entire cost of the new equipment. This cannot be right.

questions when trying to make *incremental* contractual adjustments. In some cases, the approaches taken in the Lyon amendments do not seem appropriate in the context of a monopoly public service contract. It may be that Lyon failed to get the best deal in its renegotiations because of the way that various incremental adjustments were handled.

5.3.1 Physical Contingencies

It is common in construction contracts to add on a certain percentage to the item “total estimated cost” (10–15% is typical) to provide for “physical contingencies” (as opposed to price contingencies — i.e. expected inflation). It is not always clear what the rationale is behind this practice. Sometimes the idea appears to be that the “total estimated cost” is based on engineers’ estimates, that there are almost always additional costs due to non-textbook conditions, and that the provision for contingencies represents, roughly speaking, the *expected value* of these additional costs. In other cases, it appears that the item “total estimated cost” is already the expected value, as it would be if it were determined from the actual costs of similar projects, and that the provision for contingencies enables the budgeting of sufficient funds to cover, with a high probability, the *entirety* of costs, no matter what happens (i.e. that the overall total, including provision for contingencies, is greater than the expected value and is based on an intuition about the statistical variance of costs). The second approach might be one used by a public agency that is budgeting funds for a project, where what is aimed for is a reasonable upper limit to costs.

To give the concessionaire the benefit of the doubt, let us suppose here that it is the first description that applies to the use of the term in the Lyon-Nord contract and

amendments. In the cost breakdown given in an annex to Amendment No. 4, in which total estimated investment costs equal FF 481,000, an additional 10% (FF 48,100) is included for “contingencies, miscellaneous.”³⁰ But is this justified? There are four investment items: strengthening of silo supports; associated civil works; bagging machine and associated equipment; handling equipment; finishing work (for aesthetic reasons). According to the City’s outside engineer, this is quite a straightforward job. The only contingency he could think of was the possibility that an extra supporting strut might be needed. Suppose that the subjective probability of this occurring is 0.25. The contingency provision should then be FF 4,355 ($= 0.25 \times 17,420$), about one-tenth of the actual provision.

The issue is not of much importance in this example since the monetary amounts are small. But it is the principle that is important, and it could lead to serious disputes during the negotiation of substantial amendments. How, then, could the concessionaire respond? Its argument might be that it is not an efficient way to proceed to try to estimate (in a probabilistic sense, as above) the contingencies in each particular case. Instead, the concessionaire might wish to adopt a rule, based on its overall experience, that permits adding 10% in each case. For this particular amendment the concessionaire would come out ahead; for more complicated works, involving more things that could go wrong, the concessionaire might end up spending more than the 10%. In sum, things would be expected to even out in the long run.

³⁰ It is said (in discussions with participants) that the “miscellaneous” part covers such things as the supervision of works. In the case of Amendment No. 4, the concessionaire did this itself; and so the discussion of *overhead* in the next section would apply.

So the concessionaire might want to adopt a *general rule* for this long-term relationship for purposes of administrative expediency. This seems reasonable.³¹ But no such rule was agreed in the original contract. Proposing such a rule now might seem opportunistic to the City. (If we imagine that the particular investment was of much greater value, this statement becomes more plausible.) The best solution might therefore be to think carefully ahead of time and put all of this in the original contract. But how much can one pack into the original contract? We arrive again and again at the same question, one that springs from the notion of incomplete contracting.

5.3.2 Overhead Costs

Another extra cost is overhead. The method used in Amendment No. 4 is to look back to Amendment No. 3 to see the overall percentage allocated to overhead. “Overhead” amounted to 10.8% of estimated total costs at that point. This rate is then applied to the additional costs due to the change in the residue handling and disposal method in Amendment No. 4 and is then added to the fixed and proportional charges, RFr and rpr . In Amendment No. 4, incremental overhead is fixed in this way at about FF 554,000 per year. Discussions with staff and consultants indicate that “overhead” here includes such things as administrative staff (secretary, accountant — but not management level staff, who are on a separate line), technical assistance provided by the parent

³¹ One could imagine other reasonable rules: for instance, there might be several classes of projects, each one having its own stipulated contingency percentage. (E.g., projects involving ground preparation and foundation work might be considered riskier because of unknown ground conditions.)

company,³² and miscellaneous supplies and services (but not insurance, which is listed separately).

The method used here resembles how some companies, selling goods on the market, price a new product, using rule-of-thumb rates for overhead and profit margin that effectively allocate these two items over all sales. But Amendment No. 4 does not involve a new product being offered on the market. Since a price component for overhead costs for the entire plant is already included in the price already being paid by the City, the appropriate question is whether there are any truly *incremental* overhead costs that result from this new handling and disposal method. Will there be any *additional* expenditures on secretarial or accounting work?³³ On technical assistance provided by headquarters? It is a general phenomenon in the economics of the firm — deriving from administrative economies of scale — that marginal overhead rates for expansions of technical activities are much lower than the average overhead rate on the starting business. This is not reflected in the approach taken in Amendment No. 4. Moreover, even as a method of allocating overhead, the approach used here (as a percentage of other costs) does not seem the best, given that in this amendment about 65% of additional periodic costs is for the disposal fee that must be paid at the special landfill. Whether this fee is high or low is of little consequence for *actual* overhead expenditures.

³² In addition to *technical* assistance in the strict sense of the term, all but the most basic accounting work is handled by the parent company.

³³ Note well that the question is not whether the secretary will do significantly more work (even though it is hardly likely that she will in this case) since she was already being paid a full-time salary before, and she will continue to be paid a full-time salary after. If the concessionaire (quite hypothetically) were to insist on allocating some of the secretary's time to work involving the new activities, then the *existing* payment for overhead should be reduced because less of the secretary's time should now be allocated to the existing activities. The result would be the same: no net change.

5.3.3 Profit and Risk Margin

The question of the “margin” is also problematic. As with overhead, the percentage allocated to “margin and risks” in Amendment No. 3, namely 7.5% of periodic costs, is applied to the costs in Amendment No. 4. If it is thought of as *profit* in the conventional sense — related to a return on equity capital — it is double counting to put it in at all; for the concessionaire is already receiving a return of 13% on funds invested, according the agreed pricing formula. Now the amount of this “margin” each year, through the remaining 26 years of the concession, is FF 426,000 (in October 1990 prices); but the total investment costs amount to only FF 529,000. So, in addition, this is a most exaggerated form of double counting — equivalent to a real internal rate of return of 81%.

Again, note the difference between this situation and one in which a new product is offered on the market. In the latter case, the purchaser pays a single price for the product — and that price must cover financing costs in addition to material and labor, and so on. The purchaser does not pay a financing charge in addition to the price, as the City does here.

The only possible justification for the margin relates to the added risk that the new, additional operating costs might entail. Since the indexation formula will not exactly track the new costs, the new activities add some volatility to the concessionaire’s net income. One could argue that compensation for this is provided by adding a margin to costs. There are two problems with such an argument. First, the financing rate charged by the concessionaire, 13%, is higher than a low-risk (prime) borrowing rate; so it seems that a risk premium has already been included. Second, and more important, the new disposal costs account for about 65% of the additional periodic costs (before overhead). But the

price index used for this cost element involves no risk at all for the concessionaire since it is the disposal price itself that is used as the index — not a proxy. The added 7.5% margin is therefore giving the concessionaire a nice extra payment of FF 426,000 per year (in October 1990 prices) — but for what, we are not exactly sure.

5.4 Cost of Capital

The cost of capital is one of the major issues that arises in price regulation of almost any kind, and an extensive literature has been devoted to it in the U.S. (see, e.g., Morin 1994) and, increasingly, in the U.K (see, e.g. Ofwat 1991 and Alexander *et al.* 1996). This is not the place to review this literature. The reason for raising the issue here is to highlight certain aspects that take on importance in the context of *incremental* contract adjustments.

5.4.1 The Lyon-Nord Contract and Its Amendments

In the “lump-sum” style of contract negotiation — typified by the original contract — there may be no great need to be concerned with the cost of capital per se. Likewise, if the periodic service fee is determined through a process of competitive bidding, it can usually be presumed that the price of capital has been driven down near to the market price; and so there is no need to give it special attention.³⁴ But whenever the price to be paid to the concessionaire is determined by beginning with an estimate of *investment costs* and then applying some financing function, one cannot avoid making assumptions about the cost of capital.

³⁴ One might want to qualify this statement by saying that in the evaluation of bids, it is advisable (and is in fact standard practice) to make assumptions about the concessionaire’s cost of capital to see if the proposed pricing is reasonably *achievable*. But it should not be a direct criterion in the evaluation.

This approach — starting the process with an estimate of investment costs — progressively becomes the explicit paradigm in the Lyon-Nord contract for handling contract modifications involving a change in investments. In the original contract, the emphasis is on the periodic payment to be made by the City and on the unit price per ton of waste. The contract itself states, in effect, that it is the business of the concessionaire (*“son affaire”*) how it finances the works (Art. 34). Investment costs are indicated in global terms in an annex, and lease payments are based explicitly on these costs. But no great scrutiny was given to these by the City in contract negotiations; what mattered most was the final price per ton. In Amendment No. 1, the impact of all the modifications on global investment costs is indicated, but there is no itemization. In these two cases, it would not make sense to give much thought to the appropriate cost of capital: what the City pays in the end is the periodic charge; if investment costs are not carefully scrutinized in the first place, then it would be a waste of effort to focus on getting the price of capital right.

In Amendment No. 2, the breakdown of additional costs is not given in the amendment itself, but it is given in the record of the deliberations of the Greater Lyon Council. Since these additional costs are handled by increasing the lease payments proportionally, the price of capital is implicitly 6.6% *plus* expected indexation of the lease payments.³⁵ But there is no discussion of this, and in fact even the 6.6% figure is not explicitly stated in the contract; one has to calculate it based on the agreed annuity schedule. We can surmise that the appropriate cost of capital was not a particular concern at that time.

Amendment No. 3 does not involve any new costs, but the idea, for the first time, of separating out the capital charge into a separate and identified element in the pricing formula has a rhetorical significance of some importance and sets the stage for a more highly disaggregated approach to capital costs in future amendments.

In Amendment No. 4, the additional investments needed for the handling of solid residues are broken down into six costed categories, and the capital charge (constant annuity payments over five years) is calculated using an interest rate of 13%, explicitly noted in an annex to the amendment, based on the financing that the concessionaire will receive for the investments. In Amendment No. 5, there are five categories, and the financing rate is pegged to conventional benchmark interest rates, adding a maximum credit margin of 120 basis points. With these two amendments, we have reached the stage where it becomes more meaningful to talk of an appropriate cost of capital.

5.4.2 Determining the Incremental Price of Capital

In Amendment No. 5, the price of capital was negotiated on the basis of the financing that the concessionaire was expected to receive for those particular investments. This raises two questions in the more general context of regulation-by-contract. First, would this be a good rule to include in the original contract to make it more complete — to avoid having to negotiate about this later on? Second, in the absence of any such rule in the original contract but supposing that the contract contained a typical “hardship”

³⁵ This 6.6% might be the expected *real* interest rate, but we do not know this a priori (see section 3).

provision, would this be a reasonable approach for restoring the “equilibrium” of the contract?³⁶

Let us turn back to the Lyon-Nord example. The first point to note is that the parent company, Elyo, is jointly responsible as a contracting party, in addition to the special-purpose company that has been set up, Valorly. So we are in effect speaking of an incremental investment project to be realized by Elyo. The financial literature on capital budgeting is directly in point: regardless of how the firm decides to finance a particular project, we should use the firm’s weighted average cost of capital adjusted for the risk level of the particular project.^{37,38}

This reasoning would not change even if the loan were obtained by Valorly itself, not Elyo. The investment and its associated operating costs will generally involve added risk: the incremental contractual payments received by the company may not exactly match the incremental costs. The added risk affects cash outflows and falls on the equity holder, Elyo. It may therefore be quite reasonable for the concessionaire when it obtains a

³⁶ See, e.g., hardship provisions of UNIDROIT Principles (Arts. 6.2.2 and 6.2.3).

³⁷ One way of expressing the reason is to say that, over time, the firm will seek to maintain a target debt-equity ratio (at least, according to the static tradeoff theory). Even if it should decide to finance a particular small investment (like that involved in Amendment No. 4) with a loan, it cannot keep financing all its future investments that way, and it is the average cost of capital over the next substantial increment of funding that should be used as the benchmark.

³⁸ According to the classical view, when speaking of risk we should consider only systematic (undiversifiable) risk, not unique (diversifiable) risk — considering the “market” as a whole. For a number of reasons, we will pass over this distinction in most of the discussion (except for its relevance at the level of the local enterprise), the most important reason relating to the importance given within such a firm to how each decentralized unit performs; top decision-makers do not ignore (i.e. diversify away) unique risk when giving praise or blame to their personnel.

local bank loan to require from the City a return (or interest rate) that is higher than the loan rate. It all depends on the incremental risk involved in the particular new project.³⁹

Support for the approach outlined above is found by looking at the financing in the original contract, or more precisely, up through Amendment No. 2. The entire financing is by debt (more precisely, a debt-like capital lease); there is no equity contribution by the parent company. If one looked at the financing arrangement given for this project, one might be tempted to use just the debt interest rate as the price of capital. But the underlying project risk has not disappeared, and the commercial lender will not charge the normal loan interest rate unless loan repayments are guaranteed in some way. The parent company provides this guarantee: there is some probability that cash flow will not cover operating costs and debt service in a given year, and in that case the parent will be obliged to inject equity capital to make up the deficit. In the case of Lyon-Nord, this may not be just hypothetical: because of equipment problems, not all the waste could be processed for the first two years of operations, and the concessionaire had to pay a penalty and may well have needed funds from the parent company for this purpose.⁴⁰

³⁹ There are some cases in which there would be no significant risk at all: consider an aesthetic improvement (e.g. erection of a statue involving no incremental operating or maintenance costs) to be carried out by a subcontractor for a nonrevisable lump-sum price. In that case, one could argue that there is no reason why the price of capital should be anything more than the risk-free interest rate. (But the final price to be paid by the municipality might be the same because one would expect the *subcontractor's* price to include a compensating risk premium.)

⁴⁰ The following table illustrates the idea.

Source of capital	Internal rate of return	Cash flow in Year Zero	Expected value of net cash flow each year for ten following years
-------------------	-------------------------	------------------------	---

Turning to Amendment No. 4, we note therefore that one possible way for the City to determine if 13% appears to be a reasonable rate for the price of capital would be to look carefully at the financial risk involved in the investments and their associated operating costs. How does the expected variance of the return to this particular investment (a value that might be estimated by Monte Carlo simulation) compare with the variance of the return to Elyo's investments as a whole, which could be estimated using stock market information and financial statements? Phrasing the problem in this way suggests that the proposed solution may be unworkable. Practicality might call for a *standard* real rate to be applied each time the concessionaire undertakes additional investments — a rate that might not apply, strictly speaking, in each case but that would be expected to average out to be an appropriate rate. And it would be preferable to

[1]	Debt	8%	−100	14.90
	Equity	–	–	2.80
[2]	Total	12%	−100	17.70
[3]	Debt	8%	−80	11.92
	Equity	26%	−20	5.78

Even though the entire project cost in [1] is covered by debt, it would not be correct to use just the cost of debt capital as the overall cost of capital. At least part of the residual cash flow going to the equity holder is compensation that is justified for assuming the role of guarantor, given a risky cash flow. But we cannot determine from [1] whether the estimated amount, 2.80, represents a normal compensation. Suppose, however, that we have already determined that for a project exhibiting this kind of risk, the overall cost of capital is 12%. We can see in [2] whether this is the rate we obtain. (It is.)

This illustration of course does not prove that the suggested approach is correct, but it does show that, without it, we are at an impasse. Note in addition that [2] can apply also to a more conventional financing arrangement, [3]. Since the rate required by the equity holder will depend on the financial leverage (debt-equity ratio), it is simpler to start from [2], which will be more stable than the equity rate in [3] would be if we changed the debt-equity ratio.

specify this rate in the original contract — in terms of a reference rate, such as LIBOR or PIBOR.⁴¹

Two qualification should be noted. First, if the financing is fully *nonrecourse* (i.e. there is no guarantee of payment of debt service or operating costs beyond the cash flow generated by the single-purpose company), then one would expect the appropriate price of capital to be based entirely on the characteristics of the single-purpose company, not the parent firm.⁴² This would require a different form of analysis. Second, an adjustment should be made if the concessionaire is able to obtain subsidized financing — e.g. because of the relation of the project to the municipality. This non-market rate should be taken into consideration in determining the justified price of capital.

In sum, we see that the problem of determining a reasonable price of capital for an incremental investment is not so simple. And this is only one part of the task of reestablishing the financial equilibrium of the contract after the imposition of a new investment. It would help if a set of rules or principles were set out in the *original* contract to deal with this. It would help, also, if the law provided special default rules and

⁴¹ But does this approach make sense completely? Adjusting the price of capital for the *technical* characteristics of each particular project would clearly seem to be impractical, and these prices might be expected to average out over many such projects. Furthermore, the incremental risk of a new project depends on its interaction with existing costs and revenues in the concession: risk can be diversified, there can be positive or negative covariances, etc. But different *contractual arrangements* should probably be taken into account — e.g. the case of transferring all construction risk to a subcontractor, as mentioned above. So one could argue that the standard rate should be adjusted if there were a change in risk characteristics due to a change in contractual (or regulatory) arrangements affecting risk — e.g. indexation provisions.

⁴² But, even in the absence of a formal guarantee, for reputational reasons the parent company might well envisage injecting additional capital if this should turn out to be the only way to prevent the bankruptcy of the special-purpose company.

principles that would come into play if the parties failed to make things explicit and precise enough in the contract itself (more on that in Chapter 6).

6. ASSESSMENT OF REGULATORY PERFORMANCE

6.1 Cost Comparison of Two Plants

Greater Lyon carried out a detailed study in early 1994 to compare the cost of incinerating waste in its own plant (Lyon-Sud) and in the concessionaire's plant (Lyon-Nord). The comparison is not an easy one to make, especially because the Lyon-Sud operation is run as a city *service*, without a separate account of its own, and so information on costs must be pieced together, after appropriate allocation, from a number of sources. Moreover, a number of adjustments had to be made to take into account differences in financing costs (the opportunity cost of public funds had to be imputed for Lyon-Sud), tax treatment, and so forth. From the economist's point of view, the major weakness of the study is its "snapshot" view in one year only, relying on accounting techniques, albeit with dexterity and imaginativeness, to allocate costs properly over time; the economist (an American one at least) would have preferred an analysis based on discounted cash flows and capital recovery factors.

Be that as it may, the results are of great interest. Excluding tax, the price per ton of waste is the same for both plants: FF 319. Since Lyon-Nord has a furnace capacity of 180,000 tons/year and Lyon-Sud 270,000 tons/year, and one would expect some economies of scale (not in the combustion process itself since the equipment is modular, but in other aspects), the *scale-adjusted* price would be lower for Lyon-Nord, the concession. The study made a reasonable attempt to estimate what the price would be if

Lyon-Nord had three furnaces and processed 270,000 tons also, and the result was FF 280 per ton. Given the many problems posed by the cost comparison, however, a prudent conclusion would be limited to the statement that there is no evidence that the adjusted price charged by the concessionaire is higher than the cost to the City in processing waste at its own plant, Lyon-Sud. But that is an significant conclusion in its own right.

6.2 Performance Checklist

Regulatory performance can be evaluated on a number of different dimensions. One possible schema that covers the most important aspects is given below.

- (1) Productive efficiency. The fact that prices are fixed in the contract (subject to indexation) creates a powerful incentive for productive efficiency since the concessionaire (or more precisely, its parent company) can retain the full amount of any cost reductions at the margin. Since contract amendments have not involved a review and resetting of the overall price but for the most part have been incremental in nature, one would not expect the prospect of contract modification to have diminished the concessionaire's efforts to attain maximum productive efficiency. This aspect of regulation-by-contract is one of its greatest virtues and represents an important achievement of the French approach. The results of the comparison of Lyon-Nord and Lyon-Sud support the conclusion that investment and operations are at an efficient level.
- (2) Pricing flexibility and allocative efficiency. The advantage of having the City pay the concessionaire instead of allowing the concessionaire to bill individual users directly, as in the classic French concession, is that the important issue of

allocative efficiency in consumption is separated from the issue of how best to remunerate the concessionaire. The City, for instance, could adjust the tax it charges to account for environmental externalities or to create the optimal incentives to reduce solid waste generation or to increase recycling. With respect to Lyon-Nord, therefore, this dimension does not apply.

- (3) Quality of service. Waste incineration is a service for which quality characteristics can be, and are, very precisely defined and monitored: emissions must meet certain objective standards and solid residues must be disposed of in certain ways. (Compare the more difficult problems of defining and monitoring quality in, say, urban transport). The potential quality problem associated generally with price caps, as noted in the literature — i.e. with prices fixed, the company has everything to gain by skimping on quality — is therefore not a concern in the case of Lyon-Nord.
- (4) Incentives for innovation. (This is the efficiency and quality aspects seen in a dynamic perspective.) The City would have little reason to object, though it must be consulted, if the concessionaire wanted to replace certain equipment with a more modern type, provided that the terms of remuneration remained the same. But one can imagine conditions, more pronounced as the term of the concession advances, in which a particular capital improvement might be cost-effective in the long run — and hence cost-effective for the City — but not so over the remaining years of the concession. The contract leaves open the possibility that the parties will renegotiate the terms of payment in such a case. This essentially

cost-plus provision should give ample incentives for the concessionaire to modernize its plant from time to time, especially since every contract amendment presents a tacit opportunity to readjust contract terms globally in a more favorable way.

- (5) Fairness of pricing (extent of monopoly rents, fairness as between different customers or products). In the case of Lyon-Nord, we are concerned only with the question of the fairness of the overall price, since it is the City that bills the final consumers of the service. There are a number of ways to judge the “fairness” of a price, and what the best way is depends on the perceptions of concerned parties in Lyon — residents, politicians, etc. The price could be perceived as fair so long as it is no higher than what the City would have had to pay if it had not delegated the service to a concessionaire. Alternatively, the existence of excess profits in itself (i.e. profit beyond what an actor in the competitive market would expect), regardless of the price, could be perceived as an unfair result.⁴³ The City’s comparative study demonstrates that the price paid to Valorly is fair in the first sense of the term. With respect to profits, it is not easy to make a judgment. Valorly could be *much* more efficient than Lyon-Sud and therefore could be earning substantial rents even while keeping the price at a comparable level. Or it could be earning just a normal (or possibly sub-normal) rate of return on its investments. We cannot tell from the available evidence.

⁴³ The circumstances that led to the conventional regulatory approach in the U.S. (rate-of-return regulation) — the influence of the Granger Movement, etc. — involved a confrontational and moralistic attitude that put an emphasis on *excess profit* as the major evil to be eradicated by proper regulation.

- (6) Administrative efficiency and feasibility. Considerable time was spent in the negotiations over each amendment. Whether this is more or less than what might have been spent in an alternative regulatory regime (e.g. permanent commission and periodic rate reviews) is difficult to say.

7. DISCUSSION

7.1 Importance of Future Changes

The Lyon-Nord contract highlights the central argument that is made against regulation-by-contract: in a long-term services contract, there will be many unanticipated changes in conditions and requirements, and it is impossible for a contract to provide for all these contingencies. In the space of ten years, the Lyon contract had to be amended five times. Many of the adjustments were related to changes in environmental regulations, but not all. The Lyon contract shows the wide variety of other reasons why future adjustments may be needed: changes in assumptions (method for acquiring land); changes in miscellaneous technical requirements (facade work); rectifying contractual gaps (original lack of penalty clause); changes in available subsidies; changes in tax rules; and so on. This case study shows how unlikely it is that a long-term services contract — certainly one involving environmental services — can remain for years just as it was concluded. Therefore, the parties must think hard about mechanisms for change management before signing the original contract.

7.2 Relational Contracting

In Chapter 2, it was pointed out that, according to Goetz and Scott (1981: 1091), “A contract is relational to the extent that the parties are incapable of reducing important

terms of the arrangement to well-defined obligations.” It was then noted that one should perhaps change that to: . . . are incapable of reducing *or choose not to reduce* . . . The Lyon case study demonstrates clearly that there was nothing inherent about the technical or economic characteristics of the service system that required the original contract to be so incomplete in important ways. For we see this incompleteness being progressively reduced in the subsequent amendments.

The original contract is pervaded by the sense that it is just the starting framework for a thirty-year partnership and that the parties will have no difficulty in sitting down from time to time to modify terms and adjust prices in a rational and trusting atmosphere. The contract is riddled with incompleteness. Though this is just a single case, it certainly supports the hypothesis outlined in Chapter 3 that the traditional French concession contract should be thought of more as a framework contract or memorandum of understanding than as a set of rigidly binding long-term mutual commitments. Some participants in the process in Lyon have the distinct sense that the written contract was ancillary to the underlying relationship — something imposed by the Administration and by legal custom, an aide-mémoire of sorts, but not the essence of the deal.

As we have seen, the later amendments take a much different view. Detailed contract terms take on a heightened importance. I would argue that the evolution seen in the Lyon-Nord contract and its amendments may well be a harbinger of a new approach that will progressively take hold throughout France. In the continuing aftermath of the 1982 decentralization, municipalities in France more and more feel their autonomy vis-à-vis central authorities and their accountability to residents. Recognizing that they cannot

rely simply on a *relationship* with the huge municipal service companies, they are taking their contracts more seriously and treating them more as the means of achieving — rather than being simply the reflection — of a fruitful partnership. Greater Lyon is certainly more advanced in this way than many other communes in France that at present are still proceeding in the traditional manner. But this will almost certainly change in the years ahead.

7.3 Rules for Contract Modification

The Lyon-Nord experience shows that an important aspect of a long-term contract for municipal services involves how it deals with future technical modifications. The common practice in France is to include *unconstrained reopeners*: it is simply stated that, under certain circumstances, the parties will renegotiate technical and price terms.⁴⁴ The background rule provided by French administrative law, the oft-cited criterion of the “financial balance of the contract” is of little help to the parties: first, because it deals only vaguely with how to spread investment costs over time; second, because it does not confront the complexities of incremental analysis; and third, because it seems to assume that an appropriate “cost” is something that all can agree upon. In fact, the surest way to know if the “financial balance” has been restored is to ask whether both parties are satisfied — but then you don’t need the criterion in the first place.

It has been brought out at a number of points in this chapter how the adoption of a set of rules at the start of the contract applicable to future modifications could help the

⁴⁴ See, e.g., the guideline concession contract prepared by the law firm Bureau Francis Lefebvre, well-known for their work in this area in France. It includes as a catch-all possibility a clause that reopens the

parties reach a solution and could discourage opportunistic maneuvering during the renegotiation process. Such rules should cover: how future modifications will be procured and priced; what price of capital and financing rules to use; how to deal with differences in incremental risk; how to treat future renewal expenditures (and the problem of avoided cost); what the impact on overhead allowance will be; and so on. This chapter has also stressed the importance of including sufficiently disaggregated cost information in the original contract as a way of facilitating later renegotiations.

One obstacle standing in the way of the creation of sound change-management rules in the French context comes from the tight disciplinary boundaries in France and the lack of economic input into the law of concessions. Up to now, the French experience with municipal concessions has been dominated by an engineering and administrative culture. The input of the legal profession is next in importance. In contrast, there has been little influence from economists and financial specialists (modern finance, not accounting).

Many of the rules that should be adopted to handle future contractual events such as the carrying out of a technical modification depend on a proper *valuation* of the event to the concessionaire. If, for example, we want to know what a public authority should pay for a particular modification (one not foreseen in the contract), we may have to consider how the concessionaire might benefit from such a modification — e.g. by not having to replace the old equipment. Economics and modern finance theory have applied

entirety of financial conditions “in any other case likely to upset the general economy [*économie générale*] of the contract” (Guibal and Rapp 1995: 583, Art. 43).

themselves to exactly that sort of question and it is from these disciplines that one should derive the required rules.⁴⁵

The Lyon case study indicates how complex an adequate set of *change-management rules* would be and suggests that it might be far from efficient for parties to create and write down these rules *de novo* every time they conclude a contract. We can see a useful role for extra-contractual *default rules*, created by law. We will return to this insight in Chapter 6.

7.4 Reflections on the Incremental Approach

The *incremental approach* exemplified by the Lyon-Nord contract, in which the price modifications engendered by each new set of changes in requirements are added in layers to the initial price terms, is a promising one with good incentive properties. As was noted above (section 5.1), this is one salient difference between regulation-by-contract and regulation-by-commission, as they are normally practiced. Yet the approach is not without problems. First, if a new component or sub-system is not simply added onto the existing system but also replaces certain features of the existing system, calculating the incremental impact may present both methodological and practical difficulties. Second, as layer upon layer is added, the formula for the concessionaire's remuneration may become quite complicated — witness the evolving formulas given in the appendix to this chapter. These formulas are not *conceptually* complex, and if each term makes sense, the whole

⁴⁵ Analysis based on accounting principles, rather than discounted cash-flow concepts, seems to have a particularly strong hold on the French civil service at all levels — though it is fair to say that France is not alone in this. One important difference between accounting standards in France and in the U.S. is the central place that the government holds in defining these standards in France (Pham 1995: 7ff.). More use will have to be made of analytical approaches inspired by economics and basic modern finance theory

thing should make sense also. But there may be political difficulties in some settings in convincing decision-makers to pay on the basis of what strikes them as a non-intuitive black-box formula.

The incremental approach is one that might have been unworkable twenty years ago because of the number of detailed calculations that one has to go through. With the ubiquity of personal computers, this problem is removed. It could be argued that custom in the drafting of contracts for long-term concession-type contracts — and not just in France — has hardly begun to catch up with the possibilities inherent in the new information technology.

The real test would be with networks. The incremental method appears to be well-suited for projects involving *plants*: water treatment plants, incineration plants, etc. But it is not clear that it would work well for *network* systems under conditions that involve frequent physical changes outside the scope of the concessionaire's agreed responsibilities. Would it be feasible to handle each extension or modification of a piece of the network on an incremental basis, ending up with scores of separate price and indexation terms? Perhaps with the aid of the computer, this would be feasible. Perhaps, for instance, one could create a workable system in which the concessionaire's evolving capital charge is based on computations involving every single asset accounted for individually. And why not? Computerized inventory systems work on just as detailed a basis.

if these long-term contracts are to serve as sound regulatory instruments, attempting to mimic the market outcome in a natural monopoly context.

8. CONCLUSIONS

One of the striking lessons of this case, due in large part to the environmental aspects, is how difficult it is to write a complete contract for something that seems as simple as an incineration plant — and a project that does not involve a network of underground pipes. Devising sound ways to deal with future changes should be a priority focus in drafting contracts of this kind.

We see in the Lyon case that changes are dealt with in a way that is not too far from our ideas of cost-of-service regulation. The different twist in this French system of regulation-by-contract is that adjustments are made on an *ex ante* and *incremental* basis: in principle, this gives the approach better incentive properties.

After surveying the early U.S. experiment in municipal franchise contracts in Chapter 1, the apparent success of municipal concessions in France stood out as a puzzle. Chapter 3 suggested that the reasons for this relative success lay both in certain features of the formal legal and administrative systems and in an extra-legal culture of delegation/deference to the concessionaire. In the Lyon-Nord contract, the formal legal system plays very little, if any, role at all — even as a threat hanging in the background of negotiations. The informal, cultural aspect — delegation and deference — seems to dominate.

The picture changes, however, as the years go by. Beginning with Amendment No. 3 in 1991, after the creation of the Contracting-Out Department, the bargaining over each amendment becomes more serious — and this is apparent from the approach taken in the resulting amendments. Reputational concerns would seem to be important in driving

the concessionaire to reach agreement on each amendment: a publicized dispute with a community like Greater Lyon is clearly something to be avoided.

So, beginning with Amendment No. 3, the Lyon case does give us an example of regulation-by-contract that works and seems to avoid some of the problems seen in the early U.S. experience, and whose lessons might have applicability outside the peculiar culture of traditional French municipal concessions. Publicity — always an implicit threat — and reputation are key ingredients to how the problem of contractual incompleteness has been solved during periodic renegotiations. Nevertheless, it may be hard to achieve the same results in another cultural setting.

LYON-NORD WASTE INCINERATION CONTRACT: Detailed Description of Pricing and Indexation

INTRODUCTION

The pricing and indexation provisions of the Lyon-Nord contract are quite detailed. To include a full description in the main part of the chapter would clutter the text. The details are presented in this appendix, to be used as a reference for the reader when needed.

To simplify the presentation in the pages that follow, certain aspects of the pricing and indexation will be disregarded. In particular, the penalty sections of the formulas will be disregarded and, in some cases, the variable components also — i.e. it will be assumed that 180,000 tons of waste are delivered and incinerated each year. Also, all prices are given before VAT.

In some cases, the symbols or the presentation is slightly different from that in the contract documents themselves.

NOTATION AND BRIEF DESCRIPTION OF INDICES

PsdC, *S*, *BT40*, and *Tma* are official national indices published in the *Bulletin officiel de la concurrence, de la consommation et de la répression des fraudes* (BOCCRF) and are prepared by the Ministry of Finance.

<i>PsdC</i>	Miscellaneous products and services, category C (<i>Produits et services divers C</i>) A composite index covering prices for construction (7%), equipment and tools (35%), energy (11%), paper and cardboard (11%), chemical products (12%), and others. This is one of a group of five composite indices that were created in the 1960s for specific sectors but that are now used more generally. <i>PsdC</i> was initially created to be representative of the electronic and radio-electric equipment sector.
<i>S</i>	Salaries for building and civil works. A general index for salaries in the construction business, used in the official civil works composite indices.
<i>BT40</i>	A composite investment-cost index for non-electric central heating installations. It is made up 40% of labor and 43% of equipment and material, a large part of which depends heavily on ferrous and non-ferrous metals (e.g. tubes, radiators, furnaces).
<i>Tma</i>	A price index for rolled 3-mm sheet iron for general construction usage.

<i>El</i>	An index used in the original contract in a minor way but not defined there. It appears that this was meant to be the official index for the sales price for medium-tension electricity, <i>EL</i> .
<i>E</i>	Price of piped water (FF/cubic meter) for the Lyon-Nord plant.
<i>MED1</i>	Tipping fee (FF/ton) for discharge of fly ash and residue cakes (containing heavy metals) at “class 1” disposal sites.
<i>Ev</i>	A weighted average of various sales prices of electricity sold by the national electricity company, EDF.
<i>PVA</i>	The percentage of value added used in the calculation of the local business tax (fixed officially at the State level).

The subscript *o* indicates a base value at a date indicated in the sections that follow. The subscript *t* indicates the latest value of an index known at the date an adjustment is to be made to the price.

ORIGINAL CONTRACT

The base price is set at FF 22.5 million per year (1 March 1985), payable monthly. The price is indexed in two stages. From 1 March 1985 until start-up of the plant, an formula for “updating” (“*actualisation*”) of the price is to be used. Then, from that point on, a slightly different “indexation” formula takes effect.

The price runs for 30 years from plant start-up, but the part corresponding to the lease payments (about FF 10 million) will stop after 20 years.

Price Updating

The adjustment factor from 1 March 1985 until plant start-up is as follows:

$$0.48 \left(0.55 \frac{PsdC_o}{PsdC_{oo}} + 0.20 \frac{S_o}{S_{oo}} + 0.25 \frac{BT40_o}{BT40_{oo}} \right) + 0.52 \left(0.45 \frac{S_o}{S_{oo}} + 0.25 \frac{Tma_o}{Tma_{oo}} + 0.30 \frac{PsdC_o}{PsdC_{oo}} \right) \quad \ll 1 \gg$$

where the subscript *oo* indicates the latest value of the index known on 1 March 1985, and the subscript *o* indicates the latest value to be known at the date of plant start-up.

The first of the two major additive terms is meant to correspond to the lease payment, and the second major term to operating, maintenance and renewal costs — after pro rata deduction of the revenues that the concessionaire is expected receive from the sale of thermal energy and electricity.

Indexation

From the start-up date on, for the 30 years of the concession, price adjustments are to take place every three months according to the following formula:

$$0.48 \left(0.55 \frac{PsdC_t}{PsdC_o} + 0.20 \frac{S_t}{S_o} + 0.25 \frac{BT40_t}{BT40_o} \right) + 0.52 \left[0.15 + 0.85 \left(0.45 \frac{S_t}{S_o} + 0.02 \frac{El_t}{El_o} + 0.23 \frac{Tma_t}{Tma_o} + 0.30 \frac{PsdC_t}{PsdC_o} \right) \right] \quad \ll 2 \gg$$

The lease payments will run for only 20 years. Though this is not stated explicitly in the contract, one would presume therefore that the first major indexation term would be dropped after the end of the lease payments.

Comments

- The reason for the constant term (0.15) in the indexation formula, not present in the updating formula, is explained in Chapter 3.
- The relatively high coefficient for the price index for sheet iron, *Tma*, during the *operating period* is said to be due to the high level of repair and renewal required for the furnaces and other parts of an incineration plant.

AMENDMENT NO. 1

Only minor changes are involved in this amendment: a change in the price and some readjustments of the indexation formulas. The base price has now been increased to FF 25.2 million (still 1 March 1985).

Price Updating

The construction-period price adjustment formula is:

$$0.465 \left(0.55 \frac{PsdC_o}{PsdC_{oo}} + 0.45 \frac{BT40_o}{BT40_{oo}} \right) + 0.535 \left(0.45 \frac{S_o}{S_{oo}} + 0.25 \frac{Tma_o}{Tma_{oo}} + 0.30 \frac{PsdC_o}{PsdC_{oo}} \right) \quad \ll 3 \gg$$

Indexation

The adjustment formula to take effect once the plant has begun operations is:

$$0.465 \left(0.55 \frac{PsdC_t}{PsdC_o} + 0.45 \frac{BT40_t}{BT40_o} \right) + 0.535 \left[0.15 + 0.85 \left(0.45 \frac{S_t}{S_o} + 0.25 \frac{Tma_t}{Tma_o} + 0.30 \frac{PsdC_t}{PsdC_o} \right) \right] \quad \ll 4 \gg$$

Comments

- In both formulas, the term in parentheses following “0.465” is the definitive indexation formula for the lease payments, based on the agreement with Génecal; this had not been fixed at the time of the original contract. The base annual lease payment equals 46.5% of the total annual (base-level) receipts in the pro forma operating financial statement attached to the amendment.

AMENDMENT NO. 2

The only changes here are in the base price and in the coefficients applicable to the two major terms of the formula. The base price is now FF 31,150,900 (same base date: 1 March 1985).

Price Updating

Adjustment factor:

$$0.521 \left(0.55 \frac{PsdC_o}{PsdC_{oo}} + 0.45 \frac{BT40_o}{BT40_{oo}} \right) + 0.479 \left(0.45 \frac{S_o}{S_{oo}} + 0.25 \frac{Tma_o}{Tma_{oo}} + 0.30 \frac{PsdC_o}{PsdC_{oo}} \right) \quad \ll 5 \gg$$

Indexation

Adjustment factor:

$$0.521 \left(0.55 \frac{PsdC_t}{PsdC_o} + 0.45 \frac{BT40_t}{BT40_o} \right) + 0.479 \left[0.15 + 0.85 \left(0.45 \frac{S_t}{S_o} + 0.25 \frac{Tma_t}{Tma_o} + 0.30 \frac{PsdC_t}{PsdC_o} \right) \right] \quad \ll 6 \gg$$

Comments

- The change in the two major coefficients reflects the increased investments and hence increased lease payments, which now equal 52.1% of planned receipts (at base-level prices).

AMENDMENT NO. 3**Pricing**

Amendment No. 3 initiates a major change in the way pricing and indexation are presented, breaking the price down into its constituent parts — the basic “building blocks.” The price is now expressed as follows (ignoring the penalty sections — i.e. assuming that 180,000 tons are delivered and incinerated):

$$P = RL + RF + (rp \times N) - RV,$$

«7»

where P is the annual price to be paid to the concessionaire, RL is the lease payment (to continue only 20 years after start-up of the plant), RF relates to fixed operating, maintenance, and renewal costs, rp relates to variable costs, N is the number of tons of waste incinerated per year (assumed here to be 180,000), and RV is a fixed component accounting for receipts that the concessionaire earns from sales of thermal energy and electricity.

The base date is fixed in this amendment at 1 October 1990 (to which the subscript o will henceforth refer). The old and new base values of the various items are as follows (in FF):

Item (structure given in Amendment No. 3)	Amendment No. 2 Base: March 1985 (corresponding values)	Amendment No. 3 Base: Oct. 1990	No. 3/ No. 2
[1] RL_o	29,430,500	34,273,000	1.16
[2] RF_o		18,344,000	
[3] rp_o		70	
[4] $rp_o \times 180,000$		12,600,000	
[5] = [2]+[4]	27,054,300	30,944,000	1.14
[6] RV_o	25,333,900	15,243,348	0.60
[7] = [1]+[5]–[6]	31,150,900	49,973,652	1.60

The value of P_o is therefore FF 49.97 million. This is a 60% increase over the base value in Amendment No. 2. This amendment did not introduce any new costs: the purpose was not to change the amount of the payments due to the concessionaire, but simply to restructure the formulas in the interest of greater clarity. The amendment contains detailed calculations bringing the price components from the old base date to the new. Given general price inflation, the increases for items [1] and [5] in the table are what one might expect: 2.8% and 2.4%, respectively, on an annualized basis. The great increase in price to the City comes from the 40% *decrease* in the stipulated receipts from energy sales — see [6]. The reason for this has to do with the agreement between Greater Lyon and the commune of Rillieux-la-Pape concerning the pricing of the thermal energy for the district heating system. For present purposes, it is sufficient to note only that this extra revenue being paid by the City to the concessionaire serves to make up a reduction in revenue received from users of the heating network; it does not go ultimately to the concessionaire.

Indexation

Since operations have already begun, there is no need for a “price updating” formula, as used in previous schemes; one proceeds directly to indexation. Having broken the price down into several distinct elements in «7», the amendment carries this approach to its natural conclusion and indexes each element separately. Although this is just a matter of presentation, it avoids having to embed terms within other terms and hence makes the formulas more easily understandable. It also avoids having to adjust coefficients whenever technical modifications are made that change the various price elements.

The indexation formulas are as follows:

$$RL_t = RL_o \left(0.55 \frac{PsdC_t}{PsdC_o} + 0.45 \frac{BT40_t}{BT40_o} \right) \quad \ll 8 \gg$$

$$RF_t = RF_o \left[0.15 + 0.85 \left(0.45 \frac{S_t}{S_o} + 0.25 \frac{BT40_t}{BT40_o} + 0.30 \frac{PsdC_t}{PsdC_o} \right) \right] \quad \ll 9 \gg$$

$$rp_t = rp_o \left[0.15 + 0.85 \left(0.40 \frac{S_t}{S_o} + 0.20 \frac{E_t}{E_o} + 0.15 \frac{BT40_t}{BT40_o} + 0.25 \frac{PsdC_t}{PsdC_o} \right) \right] \quad \ll 10 \gg$$

$$RV_t = (R1 \times 111,560) + EL_o \frac{Ev_t}{Ev_o} \quad \ll 11 \gg$$

Equation «11» requires further explanation. $R1$ is the average unit price (in FF per MWh) charged by the concessionaire to consumers of thermal energy; this price is regulated by a three-way agreement among the City, the concessionaire, and the commune receiving the heat. EL_o represents the base level of receipts from sales of electricity to the national electricity company, EDF, and equals FF 3,940,699 per year. EDF’s purchase price is fixed by statute and is pegged to the electricity *sales* price; hence the appropriateness of the index Ev (see notation section at beginning of this annex).

Comments

- At the initiative of the concessionaire, Tma has been replaced by $BT40$ in the formulas for RF_t and rp_t . The figure in the main text of the chapter shows that Tma was on a decline at that point.
- The use of separate indices for fixed operating costs and variable operating costs makes good sense in principle since the two categories are generally made up of quite different elements. Since little variation from 180,000 tons/year is expected in

the Lyon-Nord concession, this approach may not make a large difference here, but it could have a significant impact if large fluctuations in quantity were expected.

AMENDMENT NO. 4

Pricing

This amendment uses an entirely incremental approach to the pricing of the financing charge and operating costs resulting from the new investments. Equation «7» is effectively replaced by:

$$P = (RL + R Lr) + (RF + R Fr) + [(rp + rpr) \times N] - RV, \quad \text{«12»}$$

where RLr , $R Fr$, and rpr are the financing charge (for five years only), the fixed operating price, and the variable operating price corresponding to the new investments.

The base prices are as follows, in FF (1 October 1990):

RLr_o	150,437
$R Fr_o$	169,227
rpr_o	32.97

Indexation

The financing charge, RLr , is a constant annuity payment over five years; so no indexation is required. The indexation formula for $R Fr$ is the same as for RF in the last amendment (see «9»). A new indexation formula is introduced, however, with respect to rpr :

$$rpr_t = rpr_o \left[0.15 + 0.85 \left(0.15 \frac{S_t}{S_o} + 0.15 \frac{PsdC_t}{PsdC_o} + 0.70 \frac{MED1_t}{MED1_o} \right) \right] \quad \text{«13»}$$

The tipping fee at the landfill where the fly ash and filtration cakes containing heavy metals must now be disposed of is quite high ($MED1_o = \text{FF } 700/\text{ton}$), and this is completely beyond the control of the concessionaire. The concessionaire's remuneration will now adjust automatically if the tipping fee changes. But note that this is not a pass-through cost. The implicit coefficient linking tons of input waste and kilograms of output fly ash and filtration cakes does not change. There is no adjustment in remuneration if the quantity of these residues changes, given a fixed quantity of solid waste incinerated. This gives the concessionaire a good incentive not to produce excessive quantities of these residues; if it did, it would have to pay the difference.

This amendment also involves a change in the way that the local business tax (*tax professionnelle*), a tax based partly on value added, is handled. It will henceforth be paid

by the concessionaire as one of its own expenses, and this requires an increase in the base prices to keep the concessionaire in the same position as before. Also, since the rate is beyond the control of the concessionaire, an adjustment will need to be made if the rate changes, and this is accomplished by adding a term to the indexation formulas. On the basis of detailed calculations, equations «8», «9», and «10» are therefore replaced by the following:

$$RL_t = RL_o \left(0.53 \frac{PsdC_t}{PsdC_o} + 0.44 \frac{BT40_t}{BT40_o} + 0.03 \frac{PVA_t}{PVA_o} \right) \quad \text{«14»}$$

$$RF_t = RF_o \left[0.15 + 0.85 \left(0.45 \frac{S_t}{S_o} + 0.24 \frac{BT40_t}{BT40_o} + 0.29 \frac{PsdC_t}{PsdC_o} + 0.02 \frac{PVA_t}{PVA_o} \right) \right] \quad \text{«15»}$$

$$rp_t = rp_o \left[0.15 + 0.85 \left(0.40 \frac{S_t}{S_o} + 0.19 \frac{E_t}{E_o} + 0.15 \frac{BT40_t}{BT40_o} + 0.25 \frac{PsdC_t}{PsdC_o} + 0.01 \frac{PVA_t}{PVA_o} \right) \right] \quad \text{«16»}$$

where PVA_o equals 3.5%.

The base prices are adjusted as follows to take into account the new arrangement for the local business tax:

RL_o	35,472,555
RF_o	19,048,416
rp_o	70.511

It is stated in the amendment that the impact of the new investments and associated costs on the local business tax is so small that it can be neglected; that is why the indexation for RLr , RFr , and rpr does not include any PVA terms.

AMENDMENT NO. 5

Pricing

To take into account the new investments required for more intensive particulate removal, a new financing charge is added, RLc . Equation «12» now effectively becomes:

$$P = (RL + RLr + RLc) + (RF + RFr) + [(rp + rpr) \times N] - RV, \quad \text{«17»}$$

were $RLc = Lc(1 + PVA)$.

L_c is the actual annual financing charge (over 13 years), determined by the financing terms of the amendment (see main chapter text). To this is added the local business tax on this component of value added.

Adjustments are made to the base values for the fixed and variable price to take into consideration the impact of the investments and other changes (increased safety measures) on the concessionaire's costs. The new base values (still relative to 1 October 1990) are:

RF_0	19,171,972
rp_0	72.114

Indexation

One advantage of having disaggregated the price formula in Amendment No. 3 is that less fiddling will be needed with indexation formulas. In this amendment, there is no need to adjust the formulas. They will be applied to the base values, adjusted in some cases by this amendment; and then the final price will be determined by re-aggregating the elements using «17».

CHAPTER 5

CASE STUDY:

THE RESCO PLANT — SAUGUS, MASSACHUSETTS

1. INTRODUCTION AND BACKGROUND

1.1 Purpose of Chapter

This chapter looks at the experience of a group of communities in the Boston, Massachusetts, area in developing and implementing long-term contracts for municipal solid waste incineration. Their experience was one of the first of its kind — if not the very first — in the U.S.

1.2 Municipal Solid Waste Incineration

Until the 1970s, there was little planning of solid waste management at any level of government in the U.S. (see, in general, Pfeffer 1992; Reitze and Davis 1993). Open dumps and ocean dumping were common ways of disposing of municipal solid waste (MSW). A few municipal incinerators had been used since the late 19th century. During the 1960s, open dumps began to be converted into sanitary landfills, involving strict requirements for soil cover and leachate control. On-site incineration became popular in the 1960s for apartment buildings and commercial facilities, but the low combustion temperatures resulted in massive air pollution.

A wave of regulatory legislation began in the 1970s, beginning at the federal level with the Clean Air Act of 1970, which by restricting uncontrolled burning encouraged local governments to set up incineration plants, and the 1976 Resource Conservation and

Recovery Act. More interest developed in modern incineration plants in the 1970s as environmental standards applying to landfills began to be tightened, thus driving up prices for landfill disposal.¹ Poor technology led to disappointing results at first, but performance improved greatly with the introduction of European designs and methods.

This, very briefly, is the broad context in which the Massachusetts communities decided to enter into a long-term contract with RESCO for incineration disposal of their MSW.

1.3 Public Utility Context

As described in Chapter 1, many cities in the U.S. in the late 19th and early 20th centuries made use of long-term contracts with private companies — franchise contracts² — for the provision of a wide range of municipal services. One of the factors leading up to the creation of state-level public utility commissions was the growing recognition of the weaknesses of regulation by law courts on the basis of ordinary contract law. As noted, for example, in a 1912 work commissioned by the National Municipal League, regulation by the judicial system was inadequate because it dealt only with past offenses and did not set a direction for the future, because it was too slow and expensive, and, most important, because courts “do not possess the data, the special training, nor the aptitude required for passing upon such problems” (King 1912: 191).

¹ Because of bad connotations associated with the older term “incineration,” it has become common to use other terms for modern incineration plants — e.g. “combustion” facilities, or “waste-to-energy” facilities when usable energy is produced. They still involve incineration, however.

² Traditionally, the distinguishing characteristic of a franchise is that the company charges users directly rather than receiving its compensation from the municipality, very much like the *concession* in French administrative law.

Regulatory functions concerning *public utilities* were taken away from the courts in the early 20th century, for the first level of review at least. No completely consistent and exhaustive analytic definition of “public utility” is possible under U.S. state or federal law. The category has evolved over time, differs from state to state, and is in a way a grab-bag of economic activities, all “affected with the public interest” in some sense, and all involving one or more of the following features, the more the better: natural monopoly characteristics, essential commodities, transportation or distribution networks, direct sales to the public.

What is interesting from our present perspective is that certain essential municipal activities that are in some respects like utilities fall through the cracks of utilities law and, when they are provided by private companies by long-term arrangements, do not come within the purview of the state public utilities commissions and are regulated under ordinary contract law in the courts, as in the early 20th century.

We may question whether municipal solid waste disposal services are in need of any economic regulation today; free competition in the market might be optimal. We look at this question further in Appendix 1, and some answers are suggested there. In the main text of the chapter, however, we will bracket the issue and consider some of the implications of the RESCO experience for the regulation-by-contract approach wherever it is clearly applicable — e.g. certainly water and wastewater services. There may be lessons to be learned.

2. A QUICK LOOK AT THE MARKET AND THE INDUSTRY

2.1 Waste Flows

It is not easy to find data on solid waste management in Massachusetts from the 1970s. Accounts from that period suggest that the market was not very well developed: high transport costs relative to disposal costs meant that most solid waste stayed close to its point of origin.

Information on municipal solid waste in Massachusetts for 1994 is given in the following table. “Municipal solid waste” (MSW) is defined here as consisting of solid waste from residential, commercial, and institutional sources.³

Municipal Solid Waste Management in Massachusetts, 1994 (thousand tons)	
Generated in state	7,050
Net imports	330
Total	7,380
Recycled and composted	2,160
Disposal by:	
Landfills	1,900
Combustion	3,320
Total	7,380

Source: MSWMP 1995: 21

A major development in the last few years has been the growing percentage of MSW generated within the state that is recycled or composted. The percentage stood at

³ “Non-MSW” is defined in the Massachusetts Solid Waste Master Plan as construction and demolition debris, residuals from water and wastewater treatment (sludges and biosolids), industrial wastes (presumably meaning *process* waste), and wastes generated by public works departments (MSWMP 1995: 21).

31% in 1995, compared with 10% in 1990. The state's goal is to recycle or compost 46% by the year 2000 (see MSWMP 1995).

Although there were 109 active landfills across the state in 1994, the top five accounted for 48% of all solid waste disposed of in landfills. There were nine combustion facilities operating in the state in 1994. The top five, accounting for 85% of total tonnage, are shown in the following table.

**Massachusetts Solid Waste Combustion Facilities:
Waste Accepted in 1994**

Facility Name	Location	Approx. Distance from RESCO Comm'ties (miles)	Waste Accepted (thousand tons)
Semass Partnership	Rochester	75	959
Ogden Martin / Haverill	Haverill	< 25	550
Wheelabrator / Millbury	Millbury	60	479
Wheelabrator / NESWC	North Andover	< 25	424
Wheelabrator / Saugus	Saugus	---	420
Total, five above			2,831
Total, all nine in state			3,337

Note: Figures include all solid waste, not just municipal solid waste.
Source (except for distances): MSWMP-A 1995: G-1.

Mention should also be made of the Wheelabrator plant in Concord, NH, located about 90 miles from the RESCO communities.

The plant that is the subject of this chapter, the RESCO plant in Saugus, accounted for 13% of the total solid waste incinerated in the state in 1994. When asked which other disposal facilities were considered to be the most significant competitors of RESCO, the

plant manager named the four other combustion facilities listed in the table above and three landfills: Plainville (469,329 tons accepted in 1994), Fall River (337,835 tons) and the huge landfill in Rochester, New Hampshire. Plainville and Fall River are the two top landfills (in terms of 1994 quantity) in Massachusetts (MSWMP-A 1995: F-2, F-3).

2.2 Price Determination

Spot market prices for solid waste disposal (tipping fees) have risen from about \$4–5 per ton at the time the RESCO contract was being negotiated in 1974–75 to \$45–50 at the RESCO plant in Saugus in June 1996. Prices are not controlled directly, but the market is regulated by means of permits issued by the state Department of Environmental Protection (DEP). Given the state's commitment to increased recycling, DEP is careful not to allow excess capacity in landfills or combustion facilities (see MSWMP 1995). Since the late 1980s, there has been a moratorium on permits for new incineration facilities. In its planning for future needs, DEP expects the existing incineration facilities in the state to operate at full capacity, with landfills being used to absorb residual demand for waste disposal. Data from 1993 show that the incineration plants have in fact been operating near full capacity (DEP 1993).

This is what one would expect, given the production functions for incineration plants and landfills. The marginal cost of operating a waste incineration plant will generally be lower than the marginal cost of operating and incrementally expanding a landfill: for a landfill, capital development works take place progressively, as new capacity

is needed.⁴ Therefore, in a mixed system where there is a constraint on aggregate incineration capacity, the existing incineration plants would end up running at full capacity, and the residual demand for disposal services would be met by in-state landfills and by exports of waste. The spot price would be set by the landfill marginal (or rather, incremental) cost curve. This market pricing process is complicated at the present time by the state's landfill permitting policy, where, for each landfill, quotas are set that determine the quantity of waste it can accept.⁵

DEP is explicit about its goal of not allowing excess landfill capacity to develop because that would create a disincentive for the waste reduction and diversion programs. But it is not clear what impact DEP's rationing of landfill services has on the tipping fee — in other words, what the tipping fee would be if DEP did not restrict the development of new landfill capacity. (The Division of Solid Waste Management states that there are no economists working in their office.)

3. FIRST RESCO CONTRACT: 1975

3.1 Origin of Contract

Since the 1950s, Saugus and nearby communities had been using an open dump located in Saugus and owned by Martin DeMatteo, a general contractor, to dispose of their residential solid waste. In view of pressure from the Town of Saugus, the state, and the general public to close the dump, which bore little resemblance to a modern sanitary

⁴ "Landfilling costs are difficult to come by because construction often continues throughout the life of the landfill, instead of being completed at the beginning of operations. Capital costs are, therefore, often mixed with operating costs" (Kreith 1994: 1.20).

⁵ The quotas were previously in the form of daily permit limits, but DEP has begun to issue annual capacity limits to allow operators to deal with seasonal peaks without causing excessive price volatility.

landfill, the communities knew that they would have to find an alternative. DeMatteo then approached them in 1973 or 1974 with the idea of their contracting with his company to provide disposal at a waste-to-energy incineration plant to be built at the site of the existing dump, with the plant to be financed by tax-exempt industrial development revenue bonds to be issued by the Town of Saugus, the host community.⁶

The idea was attractive to the communities since they saw landfills being closed down throughout the state. Another appealing feature was that energy prices were high at that time, and the nearby General Electric plant in Lynn, Massachusetts, was in the market for an alternative energy source. The idea was that the waste incineration plant could produce steam to be sold to GE.

The Mayor of Malden was instrumental in organizing a number of communities, and a committee was formed to negotiate a contract with DeMatteo. Negotiations proceeded between the communities and their attorneys on one side, with the Mayor of Malden taking a lead role, and DeMatteo and Wheelabrator and their attorneys on the other. DeMatteo had joined forces with Wheelabrator: DeMatteo was to be responsible for operation of the facility and Wheelabrator for engineering and construction work. A representative of the Metropolitan Area Planning Council (MAPC), the regional planning agency for the Greater Boston area, also took part in the negotiations. MAPC played an important coordinating role, acting as secretariat and managing funds to pay consultants and attorneys.⁷

⁶ Pursuant to M.G.L. chap 40D.

⁷ The MAPC representative later became City Clerk of Revere and continued his involvement in the project in its later stages.

At that time, there were no examples to go by: the Saugus plant would turn out to be the first successful waste-to-energy facility for municipal solid waste in the U.S.;⁸ and DeMatteo had no experience with any aspect of waste incineration. The Mayor of Malden had in the past used the services of the Mitre Corporation, a systems engineering company located in Bedford, Mass., whose two largest clients are the U.S. Department of Defense and the Federal Aviation Administration. Mitre works only with public-sector clients, and it had a reputation for impartiality. Mitre was brought in jointly by the communities and DeMatteo to give advice on demand forecasts, a reasonable tipping fee, and on certain contractual details, such as price indexation and the change-in-law cost-pass-through clauses. Mitre submitted a report, and it was on this basis that the base tipping fee of \$13 per ton was finally agreed.

Participants remember the first draft of the contract being put on the table by DeMatteo and Wheelabrator, but a number of modifications were made in subsequent negotiations. The major concern of the parties at that time was to fix the starting tipping fee. Participants do not remember being particularly concerned about the possibility of a change in law that would affect the plant — it was considered to be state of the art at that time — though a provision was put in the contract to deal with the issue.

In 1975, seven of the communities signed contracts with the Refuse Energy Systems Company (RESCO), a joint venture between DeMatteo and Wheelabrator, on substantially the same terms.⁹ Even though the tipping fee for landfill disposal at that time

⁸ As of 1996, Wheelabrator operated 15 such plants throughout the country.

⁹ The original contracting communities were Chelsea, Everett, Malden, Melrose, Revere, Saugus, and Winthrop.

was \$4–6 per ton and the starting tipping fee in the RESCO contract was \$13,¹⁰ the communities believed that incineration with energy recovery would be in their long-run advantage because of increased environmental standards and rising landfill prices in the land-scarce New England states.

Other communities in the area joined in during the next few years and concluded contracts with RESCO, most for 20 years also. Within a few years, RESCO had agreements with 22 communities.

Although they do not constitute part of the service agreement with the communities, RESCO's arrangements for the sale of energy are worthy of note since the pricing formula in the contracts with the communities did not involve any adjustment for the price of energy — RESCO bore the entire risk: RESCO concluded a 30-year contract with GE for the sale of steam at the same time as the service agreements, and in this contract the price of steam was indexed to the price of fuel oil. This should be considered a major negotiating success from the communities' point of view, given the subsequent fall in the price of energy from its high level in 1975.

As energy prices fell, the GE contract became less favorable to RESCO. But because of a reduction in activity at the GE plant and GE's own energy conservation efforts, it also became advantageous for GE to seek to modify the contract with RESCO. In fact, the contract was terminated by mutual agreement in 1984 as part of a deal that involved RESCO's purchase of turbine generators manufactured by GE to enable RESCO to produce electricity in-house. In 1985, RESCO entered into a 30-year contract with the

¹⁰ Compare municipal waste disposal costs for municipal facilities in New York City and Philadelphia in

New England Power Company for the sale of electricity, and it currently produces 36 MW of power.

3.2 Overview of Rights and Obligations

Although all the long-term contracts that RESCO entered into with the communities are identical or quite similar, the description in the following sections refers specifically to the contract between RESCO and the Town of Saugus. After the overview, certain parts of the contract will be discussed in more detail.

The written agreement is relatively short and simple: 26 double-space pages. The core provisions of the agreement are straightforward. RESCO is obligated to accept all acceptable waste delivered by the Town and, in exchange, the Town will pay RESCO an indexed price per ton in monthly payments. “Additional payments” are due if the waste delivered exceeds or falls short of a specified, moving benchmark by a certain percentage. If RESCO cannot dispose of acceptable waste delivered by the Town for one reason or another (excepting force majeure), it will make alternative arrangements for the disposal of the waste and will reimburse the Town for any additional costs involved.

Under the agreement, RESCO has the right to accept waste from other sources, provided that this does not prevent it from fulfilling its obligations to the Town. The contract also contains a most-favored-customer clause: RESCO agrees that it will not charge any other municipality less than the price being paid by the Town.

The agreement contains an extensive section dealing with the allocation of costs in the event of a change in law that makes it necessary to modify the facility. Also included

1971–72: \$4 per ton for landfills and \$7–8 for incineration (Kontuly 1974: 21).

are usual provisions dealing with force majeure, assignments, termination in case of default, etc. The term of the contract is 20 years.

3.3 Pricing

3.3.1 Notation for Both Contracts

The notation that will be used in this chapter is given below. To simplify the presentation, the notation covers both the 1975 and 1995 contracts. (Not all the variables given below are used in the 1975 contract.) It should be noted that the contracts themselves do not contain any equations or symbols (not even $+$, $-$, $\times$, or $\div$), reflecting an old legal tradition that eschews such devices and instead prefers lengthy verbal descriptions of mathematical operations.¹¹

Names with capitalized first letters are taken verbatim from the contracts, and the symbolic definitions given below correspond to the verbal definitions in the contracts. Each of the variables below can bear a subscript ($t = 0, 1, \dots$) indicating the applicable year.

<i>P</i>	Tipping fee (price in \$/ton) paid for every ton of waste delivered by Saugus and accepted by RESCO
<i>Q</i>	Annual quantity of waste (in tons) delivered by Saugus and accepted by RESCO (“Facility Tonnage”)
<i>B</i>	“Base Tonnage”. See text below for definition.
<i>R</i>	Actual quantity of waste that Saugus recycles in a given year (“Recycled Tonnage”)

¹¹ “Although it is common to prescribe computations in terms of mathematical formulas, it is often easier and clearer to use the ‘cookbook’ approach, that is, to list in chronological order the steps leading to the intended result” (Dickerson 1986: 202). It is a question of psychological interest whether the non-mathematically inclined can better grasp the sometimes complicated relationships among the variables if they are presented in verbal, rather than symbolic, terms. I would hazard a guess that most mathematically inclined readers cannot.

- R^e Saugus's reasonable estimate (made at the beginning of the year) of the quantity of waste that will be recycled in the current year
- RS "Recycling Shortage" = $R_{t-1} - R_t$ (but only if positive)
- ARI "Anticipated Recycling Increase" = $R^e_t - R_{t-1}$ (but only if positive)
- $AcRI$ "Actual Recycling Increase" = $R_t - ARI_t - R_{t-1}$ (but only if positive)
- $$= \begin{cases} R_t - R_{t-1} & \text{if } R^e_t \leq R_{t-1} \\ R_t - R^e_t & \text{if } R^e_t > R_{t-1} \end{cases}$$
- WI Official wage index, published by the U.S. Department of Labor. In the 1975 contract, Area Wage Survey of Boston Metropolitan Area (replaced by Employment Cost Index in the last few years of the contract, when the Area Wage Survey ceased being published). In the 1995 contract, Employment Cost Index for the Northeast Region
- RET Total annual real estate taxes levied on the facility and on the associated landfill used for ash residue (but the only increases in assessment value, relative to the base year, that are to be considered for this calculation are those arising from alterations or additions required to comply with changes in law)

Note that the names given to some of the variables may be misleading. For example, since Anticipated Recycling Increase equals $R^e_t - R_{t-1}$, one might expect Actual Recycling Increase to equal $R_t - R_{t-1}$. Indeed it does; but only if $R^e_t \leq R_{t-1}$. If, on the other hand, $R^e_t > R_{t-1}$, then the Actual Recycling Increase equals $R_t - R^e_t$, i.e. the amount by which the actual quantity recycled exceeds the quantity estimated at the beginning of the year — a kind of error term.¹²

3.3.2 Price Terms: 1975 Contract

In the 1975 contract, the tipping fee before any adjustments (P_o) is set at \$13 per ton of solid waste. The verbal description of the adjustments to be made to the tipping fee on an annual basis can be expressed as follows (after simplification):

¹² I could not determine whether this peculiar definition is intentional or the result of a mistake of some kind — even a typographical error.

$$P_t = P_o \left(0.3 + 0.5 \frac{WI_t}{WI_o} + 0.2 \frac{RET_t}{RET_o} \right) \quad \ll 1 \gg$$

To be more precise, each of the two escalators applies only if there has been an *increase* (or no change) relative to the base year. If there is a decrease (i.e. if $INDEX_t < INDEX_o$), then in effect a value of 1 is used in place of the relevant quotient. This condition is not of great importance; it was probably included because it makes the verbal description of the calculations more straightforward; moreover the likelihood of the price level falling is not great.

The reason for the fixed factor, namely 0.3, is that the formula includes all cost components together, and the debt service that must be paid by RESCO is fixed in nominal terms.

It is more usual these days in the U.S. in contracts of this sort to use the CPI rather than a wage index as the primary escalator. But the contract negotiators believed that a wage index would track the company's recurrent costs better than the CPI. In fact, an examination of the two indices shows that they have behaved almost identically over the years in question.

In addition to the basic tipping fee, there are two kinds of additional fees that may be charged if the quantity of waste delivered diverges too far on the high or low sides. The calculation of these additional fees requires the definition of a new term, the "Base Tonnage", B :

$$B_t = \max(Q_{t-1}, 0.95B_{t-1}) \quad \ll 2 \gg$$

The Base Tonnage is the benchmark against which positive or negative deviations in quantity are measured. If the quantity of waste delivered by the Town were to decrease, RESCO would have to go out and expand its share of the commercial market, and this might take time. So the benchmark is dampened on the way down: the Base Tonnage can fall no more than 5% in any one year.

No additional fee is due so long as the quantity of waste stays within a band defined by $\pm 10\%$ of the Base Tonnage. The *upside* additional payment (i.e. the payment due if the quantity of waste rises above the band) is: $0.15P_t \times (Q_t - 1.1B_t)$ if and only if $Q_t > 1.1B_t$. Presumably, RESCO might have to arrange for the disposal of some of the waste of its other customers — those with contracts — at another site in order to accommodate the Town's increased deliveries, and this might involve transport costs. In addition, there is a probability that the spot market price will be higher than the contractual price, and this is RESCO's opportunity cost at the margin.

The downside additional payment is: $P_t \times (0.9B_t - Q_t)$ if and only if $Q_t < 0.9B_t$. Here, the full tipping fee is charged for shortfalls below 90% of the Base Tonnage. In effect, there is a *moving* put-or-pay requirement: the benchmark quantity is not fixed in advance but is equal to the Base Tonnage, which may vary from year to year. In principle, the limit on annual decreases in the Base Tonnage and the put-or-pay requirement together should place a large part of the risk of a continuing pattern of decreased waste delivery on the Town. In fact, RESCO has never invoked its right to these additional payments.

It is important to note that, at least for Saugus, there is no direct connection between the payments made by the Town to RESCO and the payments made by residents for solid waste services. In fact, there is no separate user fee or tax surcharge for solid waste services. Residents implicitly pay for this by way of the property tax, but there is no segregated enterprise fund.¹³

3.4 Local Tax

Host-community benefits are a normal part of the conclusion of a siting deal for a waste-processing facility. In a series of agreements over the years, RESCO and the Town of Saugus fixed the real estate tax payments that RESCO would make to the Town, based on a stipulated initial property valuation, indexed to inflation and to be increased in the event of capital improvements.¹⁴

The amount at stake is considerable: in fiscal 1993, for example, the tax bill was at least \$1.8 million, more than five times what Saugus paid to RESCO for waste disposal. Over the years, there have been a number of disagreements and new agreements over this matter; these are not of direct concern for this chapter. The important point for present purposes is that its status as host community and the associated tax provisions set the Town of Saugus apart from the other communities to some extent. For the other

¹³ From a regulatory perspective, this may be seen to greatly reduce the efficiency effects of contract design or performance (i.e. allocative efficiency in consumption).

¹⁴ Tax payments or “in lieu” payments for waste-to-energy facilities are more commonly calculated as a function of facility use — either on a per-ton-of-waste basis or as a percentage of gross revenue (see White, et al. 1990). On July 15, 1975, ten days after the signing of the RESCO contract, a statute was signed into law in Massachusetts that required a resource recovery facility operator to pay to the host community a tax of \$1 per ton of waste processed, “in lieu of all taxes, fees, charges, or assessments imposed by the city or town . . .” (M.G.L. chap. 16, sec. 24A). This was less advantageous than the agreement that Saugus was negotiating with RESCO, and so Saugus managed to have a special exception enacted to let the Town continue with its own, special tax agreement with RESCO.

communities, capital improvements required by a change in law have only a negative fiscal effect, by way of the *RET* factor (see section 3.3.2, equation «1»). For Saugus, there is also a positive effect in that real estate tax payments are increased. The other communities therefore have often been wary of the potential mixed interests of Saugus with regard to RESCO.

3.5 Change-in-Law Risk

3.5.1 Compensation under the Contract

The following description is based on my own naïve (plain-meaning) reading of the contract, ignoring the issues brought up in the later dispute. Some of the statements below were called into question by RESCO's attorneys and by the judge. More discussion will follow in later sections.

The 1975 contract (clause 5.6) explicitly addresses the question of how to account for a change in law requiring an “alteration or addition to the Facility” in the remuneration due from the Town to RESCO. There are two separate aspects: (i) the capital charge resulting from the alteration based on its costs and (ii) the “effect” of the alteration “upon Company’s per ton cost of accepting and disposing waste at the Facility,” apart from the capital cost.¹⁵ A calculation is to be made year by year so that Saugus pays a pro rata share of the total additional costs, based on its contribution to the total quantity of waste processed by RESCO.

¹⁵ Since this detail will become important later in the story, it is worth noting the exact language here: “. . . (in calculating such effect the cost of the alteration or addition shall not be taken into account . . .).”

a) *Capital Charge*

With respect to the capital charge, the approach is part ex post and part stipulated. The *cost* to be used is the actual cost incurred by RESCO — capital expenditures — but RESCO “agrees that it will use its best efforts to minimize the total cost of such alterations or additions.” (Note the *incompleteness* of this specification because of vagueness — a point to which we will return.) The capital charge itself is to be determined by using a financing algorithm stipulated in the contract, regardless of how RESCO actually finances the works: the algorithm calls for constant annuity payments at the current prime lending rate calculated over a period of five years or the remaining term of the contract, whichever is greater. But, presumably, if the contract had less than five more years to run, payments would extend only over the remaining years of the contract, even though they had been calculated on the basis of a five-year annuity term.

We should note in passing that this provision would in some circumstances require the Town to pay the full amount of its pro rata share of capital costs even though the useful life of the assets in question might extend far beyond the end of the contract. We will return to this point later.

b) *The “Effect” of the Alteration*

With respect to the second part of the compensation, the contract does not give a good definition of “effect.” We might presume that it would include any increase in operating or maintenance costs, though it is strange that the contract does not mention these important items explicitly. It does explicitly include any increase in real estate taxes due to an increase in the assessed value of the facility. Also, the language makes it clear

that part of the “effect” might be to the benefit of the Town if the alteration were to increase the capacity of the plant, thus presumably enabling RESCO to spread its fixed costs over a larger quantity of waste.

Community representatives who participated in the negotiations say that they wanted to emphasize the positive impact for the communities and downplay any possible negative effect; and RESCO did not insist on putting in language that would make it clear that incremental operation and maintenance (O&M) cost would be included. Perhaps RESCO’s attorneys felt confident that “effect” would ultimately be interpreted reasonably to include incremental O&M, as indeed it was so interpreted in the arbitration. But this is jumping ahead in the story.

3.5.2 Dispute Resolution Provision

A special dispute resolution mechanism is included in the contract to handle disagreements over the “effect” of the plant modification on the company’s costs:

If the Municipality disputes Company’s statement as to the effect of such alteration or addition upon Company’s per ton cost of accepting and disposing of waste at the Facility, the Municipality shall have the right to insist upon an independent determination of such effect to be made by The Mitre Corporation, or if The Mitre Corporation is unable to undertake the task of making such determination, by a third party or company mutually agreed upon by Company and the Municipality. The determination of The Mitre Corporation or such third party or company as to such effect shall be binding upon Company and the Municipality.

Given the complexity and technical nature of such an “effect,” it makes good sense to have provided a special way for disputes over this issue to be resolved, without having to throw the contract into court. The Mitre Corporation was selected because it had played an important role in the development of the contract in 1974–75 (see section 3.1). Note that the provision has no further import if Mitre is unable to undertake the task: if

the parties are able to agree on another third party to help them resolve a dispute concerning the “effect,” they can do so without need of this provision; if they cannot, then this provision cannot compel them to do so. Note also that the Municipality has the right but not the obligation to invoke this clause. If it wants, it should be able to have the dispute resolved by the court instead.

3.6 Contract History up to Scrubber Dispute

In 1978, Wheelabrator took over from DeMatteo as operator within the joint venture. In 1991, DeMatteo dropped out entirely from the arrangement, leaving Wheelabrator Energy Systems as the sole contracting party.

Until the scrubber dispute arose, all reports indicate that RESCO and the communities enjoyed excellent relations, with no complaints on either side. The main function of the contract was to determine how the tipping fee should increase over time. Apparently, no one referred to the written contract for any other reason.

It is noteworthy that not once did RESCO charge a community the additional fee specified in the contract for over- or under-tonnage: they would simply notify the community, reserving the right to charge in the future. It is true that divergences from planned tonnage were generally not great, but the early 1990s saw a decrease of 10–15% in curbside collections due to a depressed economy and to increased recycling activity. RESCO was able to make up the deficit on the spot market, but all the same they did have contractual rights that they decided not to exercise. Good relations with the towns were obviously a more important consideration.

To prepare the way for the presentation of the scrubber dispute in the next section, the following table gives the tonnage of waste delivered to the RESCO facilities by the concerned communities during that period.

Solid Waste Delivered to RESCO by the 13 Communities in 1991		
Community	Tonnage	Percentage of total^(a)
Beverly	17425	4.1%
Chelsea	16768	3.9%
Everett	20996	4.9%
Lynn	37289	8.7%
Malden	25227	5.9%
Melrose	12615	3.0%
Reading	8746	2.1%
Revere	29344	6.9%
Saugus	15382	3.6%
Stoneham	10209	2.4%
Swampscott	6253	1.5%
Wakefield	9792	2.3%
Winthrop	10114	2.4%
TOTAL	220160	51.6%

Note: (a) This is the percentage of the grand total of waste incinerated by RESCO, including waste from other communities and commercial waste.

Source: RESCO Complaint in Civil Action No. 92-721, March 2, 1992.

4. THE SCRUBBER DISPUTE

A description of the entire incident will be presented first, with minimal commentary, and then certain issues will be discussed in greater depth.

4.1 Description of Events

4.1.1 Initial Moves

In December 1987, the Massachusetts legislature passed the 1987 Solid Waste Act, which included a requirement that acid gas scrubbers be installed on solid waste incinerators to reduce hydrochloric acid gas and particulate emissions in stack discharges.¹⁶ As required in the contract, RESCO informed the communities in January 1988 about the implications of the new law and gave them an estimate of the cost of the modifications and of the impact on their tipping fee.

In January 1990, RESCO notified the 13 communities with which it had long-term contracts that the required construction work would be completed in December and that RESCO intended to bill them their proportionate share according to the pass-through provisions of the contracts; and in February, RESCO held an open meeting to discuss the law and the cost impact on the communities. The total amount that RESCO would pay was estimated at \$132 million. This included \$83m for capital charges, and operation and maintenance costs related to the acid gas scrubbers for the remaining years of the contracts

The cost estimate given to the communities also included \$49m relating to the landfill used by RESCO for disposal of the incinerator ash — about 350 tons of ash per day. In 1987–88, DEP had issued ash management and disposal policy statements that required that all incinerator ash be disposed of as solid waste in dedicated sites with DEP-approved

¹⁶ Chap. 584 of the Acts of 1987, codified in Mass. Gen. Laws, chap. 21H, sec. 6. This section requires the installation of “acid gas scrubbers, or such technology providing equal or greater protection to the public health and environment, as determined by the department [Mass. DEP] in manner and time.”

leachate control systems.¹⁷ A series of consent orders by DEP culminated in permission to RESCO to continue using the existing landfill (the “old Saugus dump”) if certain improvements were made. RESCO included these site development and closure costs along with the scrubber retrofit costs.

It is clear that it was necessary for RESCO to make these improvements to the landfill, but, if one restricts oneself to the plain language of the contract, there is little doubt that RESCO bears the risk of such costs. The cost pass-through applies only to “an alteration or addition to the Facility,” and “Facility” is defined as the solid waste incineration facility, including the land on which the facility sits, and all buildings and equipment located on the land. Yet RESCO decided to include the landfill-related costs in the estimate given to the communities.

The estimated percentage of the total costs that would have to be reimbursed by the 13 communities, based on their share of total waste treated by the plant, was 60%. The overall impact of the pass-through costs would have been to raise the effective tipping fee of the communities from the \$23 per ton then in effect to about \$103. RESCO offered the communities three alternatives: (1) they could pay the pass-through costs as specified in the contract; (2) they could terminate their contracts then and there, without further payments; or (3) they could sign new contracts for fifteen years at a starting tipping fee of \$79.50 per ton.

¹⁷ The new landfill standards were sufficiently stringent to comply with the later U.S. Supreme Court ruling that incinerator ash is not exempted from regulation as a hazardous waste under federal laws (*City of Chicago v. Environmental Defense Fund*, 114 S.Ct. 1588 (1994)).

The communities were not expecting this added burden. The 1987 legislation that mandated the tightened environmental standards, the Solid Waste Act, had also included a provision stating that affected municipalities “shall be eligible to receive annual or one-time reimbursement from the Commonwealth for such attributable costs [i.e. attributable to the installation of acid gas scrubbers], as determined by the Secretary of Administration and Finance.”¹⁸ As it stands, the passage is little more than a statement of legislative intent. In 1988, the Secretary of Administration and Finance proposed a two-pronged approach for “allaying the capital costs . . . and the extraordinary one-time operating costs . . .” — an approach that involved tax-exempt financing for the direct capital costs and fiscal relief for extraordinary operating costs caused by the down-time of the facility during installation.¹⁹ As noted by the State Auditor, who also remarked that the issue was outside his authority: “Although such assistance [the assistance proposed by the Secretary] would mitigate the cost impact of the scrubbers, it does not appear to satisfy the intent of the provisions of the Solid Waste Act calling for state reimbursement . . .”²⁰ (Finally, to jump ahead to 1994, after the conclusion of the arbitration, the state legislature did vote to reimburse the communities \$3.75 million of the RESCO pass-through costs, compared with the \$35 million that the communities felt they deserved.)

Quite soon after they became aware of the increased costs that they would have to pay, the communities in February 1990 decided to retain counsel. According to Richard

¹⁸ Section 49 of chapter 584 of the Acts of 1987.

¹⁹ Letter from Secretary Frank T. Keefe to Senator Walter J. Boverini and Representative Steven Angelo, April 12, 1988.

²⁰ Letter from the Joseph DeNucci, State Auditor, to Norman Hansen, Saugus Town Manager, June 21, 1988.

Boutiette, then Director of Public Works for the Town of Wakefield, there was no suggestion at that point that the costs estimated by RESCO were improper or excessive. Legal counsel was hired “[b]ecause we knew the costs were going to be considerable and we, just as when we initially formed the consortium [of communities], we wanted to be sure that they were reasonable.”²¹ Observers from other countries, not familiar with American ways, might find it peculiar that the communities would initially hire *lawyers* to help them determine if the costs were reasonable. But among these lawyers was one who had been involved in the original contract negotiations in 1974–75. The communities viewed him as a natural member of the team. The record makes it clear, moreover, that, at that point at least, the communities’ attorneys viewed their role as one of helping to negotiate a mutually satisfactory solution, not as a mandate to go to battle.

In March 1990, the communities, working closely with their lawyers, hired the engineering consulting firm Camp, Dresser & McKee (CDM) to review the costs and to advise on their appropriateness. CDM concluded that RESCO had chosen the potentially most costly technology — spray dry absorber with a baghouse and replacement of the stack — to meet the requirements of the law. CDM suggested that dry sorbent injection with certain enhancements (e.g. fabric filter baghouse) would be able to meet the emission requirements at a cost nearly \$20m less than the \$38m claimed by RESCO for these components.

In response to the three alternatives that RESCO had proposed in January, six of the communities decided to walk away and make other arrangements for their waste. The

²¹ Deposition of Richard Boutiette, Jan. 16, 1991, p. 33 (Civil Action No. 90-3632, Mass. Superior Court,

others chose to stay with the existing contract and continue negotiations over the pass-through costs.

Discussions continued between RESCO and the remaining 13 communities.²² In May 1990, they notified RESCO that they rejected the cost recovery claims as presented by the company. The communities' lawyers then shifted attention from the issue of appropriate technology to the question of cost substantiation and requested copies of purchase orders, contracts, and so on, from RESCO. RESCO resisted responding to all of the requests. Tension began to mount in the summer of 1990, and litigation seemed imminent.

4.1.2 The Communities Sue RESCO

After calling a press conference in late November, the 13 communities filed suit on December 4, 1990 against RESCO and its various affiliated companies in the state Superior Court (Essex Division, located in Salem, Mass.).²³ The communities alleged, among other things, that RESCO had breached the contracts "by seeking to pass on to the municipalities excessive, unreasonable and improper costs which are unrelated to any changes in local, state or federal law, ordinance or regulation."²⁴ In particular (but note that not all of the following details are contained in the complaint itself):

Essex Division).

²² The towns or cities of: Beverly, Chelsea, Everett, Lynn, Malden, Melrose, Reading, Revere, Saugus, Stoneham, Swampscott, Wakefield, and Winthrop.

²³ Civil Action No. 90-3632. The other defendants, besides RESCO itself, included Wheelabrator North Shore, Wheelabrator Saugus, Wheelabrator Environmental Systems, and Wheelabrator Technologies. To keep things simple, only the name "RESCO" will be used in the sections that follow.

²⁴ Complaint, Dec. 4, 1990, p. 9 (Civil Action No. 90-3632).

1. RESCO had failed to use its best efforts to minimize costs (as required by the contract). First, RESCO selected expensive, state-of-the-art dry scrubber and baghouse technology that exceeded the new regulatory requirements, as interpreted by DEP. (Use of a dry sorbent injection combined with wet scrubbers would have been more cost-effective.) Second, RESCO did not competitively bid the required works: instead, the work was carried out by affiliated companies.
2. RESCO is attempting to pass on costs not subject to reimbursement, namely, costs associated with the operation and closure of the old Saugus dump. The contract limits pass-through costs to alterations or additions to the *facility*.

In sum, the communities asserted that RESCO was entitled to reimbursement of costs relating only to the installation of acid gas scrubbers “minimally necessary” to meet the requirements of the new law.

RESCO took the approach in its response that the communities were simply trying to shirk their contractual duties; RESCO called attention to the communities’ “reckless and irresponsible course of ignoring their legal obligations and concealing from the citizens of the Communities the fiscal reality of the cost of the State Mandated Facility Modifications and that their municipal budgets must be adjusted or their revenues must be reallocated to fund the Communities’ pro rata share of that cost.”²⁵

Obviously, the case would turn in large part on a number of quite complicated factual issues: What was the least-cost technical solution to meet the new requirements? What would have been the lowest reasonable cost to implement this solution? The

communities' lawyers now began an extensive discovery process, interspersed with various procedural wrangles and posturing on both sides, that lasted the entire year of 1991. The information requested covered such things as the following, where they related to the capital improvement projects in question: all contracts, purchase orders, and invoices; all tenders, requests for quotations; all documents referring to any communications between any of the communities and RESCO; technical analyses, reports, engineering plans. By April, RESCO had delivered about 100,000 pages of documents as well as responses to various interrogatories. More requests followed.

In November 1991, the communities' lawyers argued that they needed to probe more deeply to go beyond documents between RESCO (or, more precisely, Wheelabrator Technologies) and its contractors.²⁶ Since the contractors chosen were corporate affiliates, the transfer prices shown in invoices might not represent true costs. They also needed documents from the wholly owned subsidiaries (e.g. Rust International, Pullman Power Products, and Wheelabrator Air Pollution Control). In early 1992, the communities hired Ernst & Young to conduct a financial analysis of books, records, and other documents of certain of the subsidiary companies. Teams from Ernst & Young went off to Birmingham and Pittsburgh to gather information. They found that overhead and profit in the amounts invoiced amounted to 42% of cost, compared with an industry norm of 15%.²⁷

²⁵ Answer and counterclaim, Jan. 8, 1991, p. 3.

²⁶ Memorandum of Law in Support of Plaintiffs' Motions to Compel Production of Documents and Answers to Interrogatories, Nov. 27, 1991.

²⁷ Affidavit of Lynda Harbold, May 21, 1992, p. 3 (Civil Action No. 92-721). This refers to the discovery carried out in connection with Civil Action No. 90-3632.

At the end of 1991, on December 18, the parties held a settlement conference, and concluded that major differences remained in their positions. At that point, it looked as if a trial was inevitable, and steps were taken toward planning a pre-trial conference for early 1992.

4.1.3 RESCO Sues the Communities

In the meantime, around April 1, 1991, RESCO completed the construction and installation work relating to the new scrubbers. The contract specifies that RESCO will begin to bill the communities for eligible capital works — those resulting from a change in law — within thirty days after the end of each calendar year. So on January 30, 1992, RESCO sent each of the 13 communities a bill showing how much they owed for 1991. Total capital costs, plus imputed financing during construction, amounted to \$66.9 million for the plant and \$33.9m for the ash disposal site development and closure work. The required payment for 1991 (April–December only) was \$18.8m — based on equal monthly annuity payments calculated over 60 months at an annual interest rate of 9% (prime rate), as called for in the contract. Incremental operation and maintenance (O&M) costs during April–December 1991 for the plant were \$0.94m and for ash disposal \$1.07m. Thus the total billable cost for 1991 was \$20.8m. The 13 communities were responsible for 51.6% of the tonnage of waste delivered to the plant, so their pro rata share of costs for 1991 amounted to \$10.8 million.

Nine of the communities made small partial payments, totaling \$1.7m, around the end of February. Four of the nine attached similar cover letters explaining that they had referred the bill to their attorneys, that their payment was based on their own estimate of

reasonable capital costs for the scrubber retrofit only, namely, \$28.75m (compared with the \$66.9m claimed by RESCO for plant-related costs), and that they were not responsible for costs connected with the landfill or ash disposal or with incremental O&M. In addition, they contended that there would be substantial operating savings that should be credited to the communities, but that according to the terms of the contract, they would not withhold these amounts pending resolution of the dispute.

On March 3, 1992, RESCO filed suit against the 13 communities.²⁸ RESCO claimed that the communities had breached the contract by failing to pay their bills in full within 30 days, as required. RESCO contended that the contract required the communities to pay the bills *first* and then to submit the dispute to a third party for binding resolution. In their response, the communities argued that the “pay-first” provision applied only to the operating-cost component of the change-in-law costs, not to the capital costs; and they had adhered strictly to this distinction when they made their payments to RESCO.

In its complaint, RESCO asked the court for a judgment on the pleadings. After various other motions and counter-claims, Superior Court Judge John Ronan handed down a judgment on April 23, 1992. The judge ruled that the communities must pay the full amount demanded by RESCO, and then, if they wish, they may dispute this sum by recourse to the contractual procedure of “independent third party determination” involving the Mitre Corporation or some other third party (described in section 3.5.2).

The communities appealed the ruling, but the Appeals Court on June 3, in a one-paragraph order, upheld the lower court’s decision and ordered the communities to pay

²⁸ Civil Action No. 92-721, Mass. Superior Court, Essex Division.

the full amount billed to them by July 2. Having spent more than a year preparing for trial in connection with the first action, the parties now shifted their sights and moved towards arbitration of the dispute.

4.1.4 Arbitration

In his ruling of April 23, 1992, Judge Ronan stated that the municipalities had the right to request independent third party determination of the reasonableness of the payments they must make to RESCO, according to the terms of the contract.²⁹ It was discovered that the Mitre Corporation was no longer in a position to play the role set out for it in the contract — it was no longer actively involved in solid waste management issues — and so the parties and their attorneys searched for other solutions.

It was decided by mutual agreement to arbitrate the dispute before a retired Superior Court judge who was active in the field of alternative dispute resolution. Arbitration began in April 1993.

On April 23, 1993, the arbitrator issued a decision on four preliminary matters. On June 2, he ruled on the question of whether increased operating costs were eligible for reimbursement. The Final Award was issued on November 9, 1993. A summary of the major findings and rulings is as follows:

- **Issue No. 1.** Given the state of the market, the availability of qualified vendors and suppliers, time constraints, and other factors, RESCO's decision to contract with its

²⁹ One might ask why the communities had not invoked the alternative dispute resolution clause (see main text sections 3.5.1b) and 3.5.2) in the first place. The reason is that, according to their understanding of the clause, it applied only to the strictly defined "effect" of the alteration and not to the capital expenditures themselves. See Appendix 3.

own subsidiaries and affiliates rather than resort to competitive bidding represented an “exercise of sound judgment” likely to produce the “most cost-effective result.”

- **Issue No. 2.** RESCO did not fail to use its best efforts to minimize costs by selecting a more expensive technology (spray dry absorbers). Use of dry sorbent injection, though in technical compliance with the law, would not have been approved by DEP (in the opinion of the arbitrator).
- **Issue No. 3.** Some of the cost items (e.g. roofing, re-siding, repainting) were not required by a change in law and therefore should not be passed on to the communities. (This resulted in \$3.7m being deducted from total capital costs, in addition to \$5.1m in non-includable items conceded by RESCO sometime after the communities brought suit.)
- **Issue No. 4.** Costs relating to ash disposal, according to the contract, are not to be passed through to the communities. (About \$33.9m in total capital costs to be eliminated as a result.)
- **Issue No. 5.** The contract does require the communities to reimburse RESCO for incremental operating and maintenance costs.
- **Issue No. 6A.** The sum of \$4.75m is to be deducted from the retrofit project capital costs. (The award does not give any further explanation.)
- **Issue No. 6B.** The contract allows RESCO to bill the communities for “reasonable profit” earned by RESCO’s affiliates that carried out work in the retrofit project.

In sum (including various adjustments not noted above), the total billable capital costs now amounted to \$57.8m, compared with the \$100.8m presented by RESCO when they brought suit against the communities in March 1992.³⁰

5. SECOND CONTRACT: 1995

5.1 Development and Terms

5.1.1 Contract Development

After the conclusion of the arbitration and the ending of the dispute between RESCO and the communities, negotiations proceeded with RESCO in early 1994 along two fronts for a contract to begin when the old one was scheduled to end, in mid-1995. First, negotiations and comparative shopping started on behalf of a group of communities, represented by the Boston law firm that had handled the dispute. In November 1994, twelve of the communities jointly issued a Request for Proposals for waste disposal services.³¹ At least four offers were received, including a favorable one from RESCO. Talks with RESCO continued.

Believing that this avenue was not likely to lead to a fruitful outcome, Saugus pushed ahead independently, with lawyers of its own, and soon had reached agreement on a draft contract. RESCO then offered this contract to the other communities on what has been characterized as a take-it-or-leave-it basis. Concluding that they had no better alternative, the communities accepted. One can surmise that at this point in time the

³⁰ These figures are given before amortization and before the communities' pro rata share is calculated, based on waste tonnage (47% for 1992 and 43% for 1993).

³¹ Beverly, Chelsea, Everett, Malden, Melrose, Reading, Revere, Saugus, Stoneham, Swampscott, Wakefield, and Winthrop. The City of Lynn dropped out of the consortium in October 1994. Lynn's

market for solid waste had developed in such a way (see Appendix 1) that a salient market price range brought the parties' reservation prices close together.

In December, the communities agreed to a contract with RESCO for an initial (indexed) tipping fee of \$56. The contract is very much like the previous one, except for provisions concerning pricing, change-in-law risk, and dispute resolution. These will be discussed in turn. In addition, the term of the contract is 15 years, with an option for the communities to extend for an additional 5 years. The contract was signed on May 9, 1995.

5.1.2 Price Terms

In the 1995 contract, the basic tipping fee for the base year (1995), P_o , is set at \$56 per ton of waste. The escalation formula can now be expressed as follows (see notation in section 3.3.1, above, and cf. «1»):

$$P_t = P_o \left(0.05 + 0.75 \frac{WI_t}{WI_o} + 0.20 \frac{RET_t}{RET_o} \right) \quad \ll 3 \gg$$

There are two changes, apart from the value of P_o . First, the fixed element has decreased from 0.3 to 0.05, with a concomitant increase in the weighting of the wage index from 0.5 to 0.75. The reasoning is that debt service, fixed in nominal terms, has finished by now.

Second, the wage index itself has changed: instead of the Area Wage Survey for the Boston Metropolitan Area, which was no longer being published, the Employment

current contract with RESCO was due to terminate later, in June 1999, and it decided that its interests were different from those of the remaining 12 communities.

Cost Index for the Northeast Region is now used (both published by the U.S. Department of Labor).

The additional fees for deviations in the quantity of waste delivered are calculated in a different way in the 1995 contract. The aim, as stated in the contract is “to reflect Company’s and Municipality’s support of Recycling while also recognizing the Company’s commitment to the Municipality to reserve the capacity necessary for the disposal of the Municipality’s Acceptable Waste at the Facility” (5.5(g)). The 1987 Massachusetts Solid Waste Act states that solid waste contracts may include provisions requiring the delivery of minimum quantities, “provided, however, that such provisions do not result in the imposition of a contract penalty for municipal participation in a commonwealth approved program of residential source separation of recyclable materials, . . .”³² To comply with this law, the 1995 contract includes terms that aim to prevent the Town from being obligated to make additional payments to RESCO based on shortfalls in waste delivery due to increased recycling.

During January of each year, the Town will inform RESCO of the actual quantity of waste that it has recycled during the preceding year and the “Anticipated Recycling Increase” for the current year, i.e., an estimate based on its reasonable expectations (see notation, section 3.3.1, above). The Base Tonnage to be used as the benchmark is now the following (except for the first year, for which a numerical value is specified):

$$B_t = \max(Q_{t-1}, 0.95Q_{t-2}) - ARI \quad \ll 4 \gg$$

Given the definition of ARI , this may be written as:

$$B_t = \max(Q_{t-1}, 0.95Q_{t-2}) - \max(R_t^e - R_{t-1}, 0) \quad \text{«5»}$$

The contract describes (entirely in verbal terms) the upside additional payment as follows (cf. 1975 contract):

$$0.15P_t \times [Q_t - 1.1(B_t + RS_t)], \quad \text{iff } Q_t > 1.1(B_t + RS_t) \quad \text{«6»}$$

The downside additional payment is as follows (ignoring some contingent elements that are not important for present purposes):

$$P_t \times (0.9B_t - Q_t - AcRI_t), \quad \text{iff } Q_t + AcRI_t < 0.9B_t \quad \text{«7»}$$

To see what «6» and «7» imply, we will need to look at a number of different cases to account for the fact that each of *ARI*, *RS*, and *AcRI* is operative only if its value is positive. This analysis is developed in Appendix 2. A number of puzzling features emerge from the analysis. For example, it is demonstrated that under certain conditions, the Town would be rewarded for giving an inflated estimate of the quantity of waste to be recycled in a given year, regardless of what the actual quantity turned out to be. In short, the general direction of these pricing provisions makes sense, but some of the specific details appear confusing, and the rationale for various terms remains unclear.

The parties would probably respond that none of this matters at all: RESCO never required the additional payments under the 1975 contract, and there is no reason to think that it would do so under the 1995 contract. This may be true. Yet seasoned contract

³² Mass. General Laws, chap. 44, sec. 28C(g).

lawyers can describe many cases in which a provision thought to be completely unimportant has taken on new life after the occurrence of an unexpected event.

5.1.3 Change-in-Law Risk

A major change in the 1995 contract concerns the stipulated financing algorithm to be used in the case of a technical modification to the facilities made necessary by a change in law. As noted above (see section 3.5.1), the 1975 provision would require in some circumstances that the communities pay the full amount of a capital improvement,³³ even though its useful life would extend far beyond the remaining term of the contract. The 1995 contract changes the wording substantially: the capital charge is now to be calculated using an amortization period equal to (i) the “class life” of the asset, as specified in the Internal Revenue Code or (ii) the remaining term of the contract, whichever is greater. This is a major improvement over the 1975 contract.

Another change is the explicit mention, in at least two places, that no change-in-law costs related in any way to RESCO’s disposal of the ash residue will be passed on to the Town.

5.1.4 Dispute Resolution

The dispute resolution section of the contract has also changed a great deal. There are now several different forms of non-judicial dispute resolution or prevention:

1. If the Town disputes any aspect of the change-in-law provisions of the contract (i.e. anything relating to section 5.6 of the contract), it has the right to have the matter decided by a Neutral Expert, and this decision will be binding, final, and enforceable

in court pursuant to the Massachusetts law governing arbitration proceedings (Mass. Gen. Laws, chap. 251). The Neutral Expert is to conduct a hearing, but formal rules of evidence will not apply. If the parties cannot agree on the Neutral Expert, the “CPR Institute for Dispute Resolution” will select a Neutral Expert.

2. Before the Neutral Expert issues his/her report, the parties will agree upon an Independent Auditor, who, within 60 days after completion of the works, will verify the actual amounts expended by RESCO for the technical alteration. In no circumstances will the Town be obligated to pay more than the actual expenditures.
3. Any other dispute will be finally settled by arbitration conducted in accordance with CPR Rules for Non-Administered Arbitration of Business Disputes, with the arbitrator being appointed by the CPR. The amount to be awarded for each claim will be determined by a process of final offer arbitration, in which the arbitrator will be constrained to select one or the other of the parties’ last offers with respect to the particular claim, the offers being finalized before the arbitration hearings begin.

The CPR Institute for Dispute Resolution (founded in 1979 as the Center for Public Resources/CPR Legal Program), located in New York City, is a respected nonprofit institution that promotes alternative dispute resolution methods in the U.S. The CPR developed its Rules for Non-Administrated Arbitration of Business Disputes in 1989.³⁴

³³ More precisely: their pro rata share of the full amount, based on tonnage of waste.

³⁴ “Non-administered” means that the role of CPR, apart from the fact that its rules are used, is limited to assisting with the appointment of the arbitrator if the parties provide for that. “Administered arbitration” involves the administering entity much more in managing the proceedings.

5.2 Similarities with the First Contract: What Happened?

One surprising feature of the 1995 contract is that it reproduces word for word many of the passages that caused so much difficulty in the legal action that RESCO took against the communities in March 1992 to compel payment of their bills. The payment-first provision is still there, word for word: “Notwithstanding . . . any dispute regarding the effect . . .” The parenthetical qualification of “effect” remains, word-for-word: “in calculating such effect, . . .” Given the great disadvantage in having to pay a bill while the amount is being disputed, one would think that, finally, the troublesome word “effect” would have been defined more clearly — but no clarification is made. It therefore still remains unclear also whether incremental O&M costs are to be passed on to the communities, though the communities would be hard put to argue that they intended that the passage should not cover O&M costs, given that the arbitrator in 1993 decided on the basis of identical wording that O&M costs were included in the previous contract.

Just as distressing is the fact that no greater precision is brought to the question of cost minimization. What does the concept mean in operational, verifiable terms? Nothing is done in the new contract to give guidance to the Neutral Expert in his determination of “whether the proposed additions or alterations are required in order to comply with the Change of Law” and whether RESCO has used “its best efforts to minimize the total cost of any such alterations or additions.” To take one example: How should one approach the problem of transfer pricing among affiliated companies? To take another: Should capital costs be minimized or should the whole-life costs of the incremental investment be minimized? Of course, it is surely impossible to define these concepts in a way that eliminates all vagueness and ambiguity: disputes will still arise. But the free play in the

definitions could be tightened up, which would reduce the scope for disputes and give guidance to the dispute handler.

And nothing is said about how costs are to be verified — an issue that provoked so much disagreement in the scrubber dispute. Many contracts of this kind in the U.S. include a lengthy definition of what cost substantiation means whenever the contract calls for it. In the 1995 RESCO contract, it is not even stated that RESCO must substantiate pass-through costs in any way (though this could be presumed).

Why has so much of section 5.6 of the 1995 contract simply been lifted from the 1975 contract? In the first place, RESCO was now in much more of a position to impose its terms, and leaving these 1975 words in place would work to RESCO's benefit. But that cannot be the whole story; for it would have been even better for RESCO to clarify these messy terms. We will return to this puzzle below (section 6.4.1).

6. DISCUSSION OF THE RESCO CASE

6.1 Factors Militating Against Successful Negotiation of a Solution

Both parties agree that relations between RESCO and the communities had been exemplary up to the time of the scrubber dispute. They had built up a solid, trusting relationship. It was considered to be a model public-private partnership. One wonders, then, why the scrubber issue could have escalated into a full-blown conflict, requiring two legal actions and an arbitration proceeding for resolution. Why couldn't the parties have negotiated their way to an agreement? The following sections explore some of the reasons.

The question is especially important in the context of regulation-by-contract since parties to long-term contracts like this often believe that they will easily be able to resolve such matters later by amicable negotiations with their “partner.” Many of the municipal-level contracts being concluded around the world at the present time implicitly (and imprudently?) subscribe to this assumption. The RESCO case might give them cause to think again.

6.1.1 Differing Perceptions of Litigation Outcome

When contract provisions relating to a particular state of affairs are so clear and specific that the parties have no doubt how a court would rule if they litigated,³⁵ there is no point in spending any more money on lawyers, and so reasonable parties should settle outside of court.³⁶ When there is uncertainty about how the court would rule, optimism on the part of *both* parties about their respective chances of succeeding, based on differing perceptions, can lead them to proceed to adjudication. As we have seen, critical sections of the RESCO contract were riddled with vagueness and ambiguity. Each side came to hope that it had more to gain by pursuing the case all the way to the courthouse than by splitting the difference in some way through negotiations.

To take just one example, we note that one of the incidents that finally pushed the parties to litigation was RESCO’s refusal to turn over certain documents, such as certain contracts it had entered into for the scrubber-related works, to the communities’ lawyers. The RESCO contract could have given detailed guidelines as to how RESCO’s costs would

³⁵ And, we should add, if this is *common knowledge* between the parties, in the game-theoretic sense.

³⁶ On these points, see Miceli (1997: 158). Note that this is not a *sufficient* condition for settlement because the parties may simply not be able to reach agreement on how to divide the surplus.

have to be substantiated to the communities. Instead, not a word was said on this subject. So each party felt that the other was acting unreasonably. We see, then, that under certain circumstances, contractual incompleteness can induce parties not to settle.

6.1.2 Hidden Agenda

One possibility (not confirmed) is that RESCO hoped to bring the existing contract to an end or to renegotiate it on a new basis and that the change-in-law issue was merely a pretext. In the discussion above of the market for solid waste (section 2.2), it was noted that the spot price had risen dramatically over the years. DEP reported the spot price in the geographical area to be in the range of \$35–55 per ton in 1993 (DEP 1993). But the adjusted tipping fee based on the contracts was only \$23 in 1992. It would therefore have been to RESCO's advantage to be able to get out of the existing contracts, without being held at fault, and then to negotiate new contracts under current bargaining conditions. This was in fact the basis of one of the counts in the communities' complaint against RESCO in December 1990: "RESCO has notified the communities of its intent to pass on outrageously high and inflated costs so as to induce the communities to terminate the advantageous Service Agreements currently priced below the market rate at \$23 per ton, or to enter into new contracts at substantially higher rates."³⁷

Although this is the kind of maneuver that parties commonly use in long-term contracts, it would be speculation to suggest that this was in fact an element of RESCO's motivation. All the same, it is interesting to look more closely at the problem. The difficulty is that since the market price is driven by current supply and demand, there is no

³⁷ Complaint, p. 12 (Civil Action No. 90-3632).

reason why it should correspond to the escalated contract price at any point in time. The profile of the contractual tipping fee may be such that RESCO would receive at least a normal return over the entire course of the contract, but, since the past is sunk, the contract will become unfavorable to RESCO ex post whenever the current and expected future spot price is significantly above the contractual price.

In the 1975 contract, the tipping fee was only 50% indexed to a wage index. A large part of costs in the early years of the contract were made up of debt service payments fixed in nominal terms: this explains the relatively large fixed component of the contractual tipping fee. In discounted cash flow terms, a company could receive the same return by starting out at a low price level and escalating at 100% of the CPI or by starting out at a higher price and not escalating as fast. There is an important difference, however. The more the return is front-loaded (i.e. comes in the early years — the case where the price starts out higher), the stronger the incentive will be for the company to find a way to terminate the contract in later years — supposing that the contract price is lower than the market price at that time.³⁸ In 1975, the communities may have thought that they had an advantageous contract because the tipping fee would rise only half as fast as inflation, but this arrangement probably created more pressure for a rupture in later years.³⁹

We should note how this explanation is linked to the development of deeper market for solid waste disposal in the years since the contract was concluded. The

³⁸ Termination would have to take place without running a great risk that the other party would sue for damages. But a party is often able to induce a mutually agreed termination without acting so egregiously that it runs the risk of a law suit — the distinction in contract theory between *observable* and *verifiable* (or *contractible*) events is relevant here.

relationship-specific quality of the facility had greatly diminished over time: to a considerable extent (though probably not fully), RESCO would be able to substitute waste from other sources. The more that RESCO was assured of being able to find sufficient quantities of other waste on the market, the more powerfully the market price would have functioned as its opportunity cost, driving it to seek renegotiation or contract rupture.

6.1.3 Perception of Bad Faith

When one party is thought to be behaving in bad faith, amicable resolution of a dispute is much less likely: the issue turns into one of high principle. For several reasons, a number of community officials soon came to think that RESCO was not behaving in good faith, that this was not just a friendly disagreement over appropriate technology or procurement methods. This had two main aspects.

A contrived change in law? It was Representative Steven Angelo of Saugus, chairman of the Mass. House Natural Resources Committee, who had filed the legislation in 1987 that required the installation of acid gas scrubbers. A number of community officials suspected that RESCO had been influential in obtaining passage of the legislation. With just a few more years to go in its contract with the communities, it would certainly have been to RESCO's advantage to be able to upgrade its facility at that time and pass the costs on to the communities. Moreover, the Town of Saugus had something to gain through an increase in the real estate tax payments that it could receive from RESCO due to the capital improvements to the facilities. No opinion is ventured in this dissertation as to whether there is any merit to these charges. The important point for our purposes is

³⁹ This is akin to the insight in the economic literature on contracting that there will be increasing

simply that these lingering suspicions played a major role in souring relations between RESCO and certain community representatives.

Landfill-related costs: more bad faith? Whatever the parties intended when the 1975 contract was negotiated, or whatever at least *RESCO* had “in mind,” *RESCO* and its attorneys must have realized later that they had made a serious error in 1975 by signing a contract whose language, on its face, fairly clearly did not allocate to the communities the risk of a change in law concerning ash disposal or the landfill. Once the dispute started, it was a foregone conclusion that *RESCO*’s attempt to have the communities pay the landfill-related costs would be characterized as evidence of bad faith — clear disregard of the written words in the contract — regardless of what it really was.⁴⁰

6.1.4 Local Political Factors

It is clear that local politics played a role in polarizing the parties’ positions and pushing the communities’ to treat the issue as a full-blown dispute. Several aspects will be singled out, involving the need of local politicians to find a way to deflect possible criticism from themselves.

First, communities had expected the state government to pay at least the major part — if not all — of the costs resulting from a change in law. The state had reneged. Community officials and politicians were shocked by the onerous pass-through

pressure to renegotiate a long-term contract as the optimal *ex ante* and *ex post* solutions diverge.

⁴⁰ Given that virtually all such contracts nowadays (and at least since the late 1980s) expressly include ash-disposal costs in the change-in-law clause, it could be that *RESCO* was at first simply acting in accordance with the industry’s normal practice, without paying much attention to the words of its old contract with the communities.

obligations; they knew that it would not be easy to explain these to residents. Under such circumstances, it is always useful to find someone else to point the finger at.

Second, adding to the feeling of community officials that they might be subject to criticism might have been the suspicion that they or their predecessors had not cut the best deal by agreeing in the contract to amortization of the change-in-law costs over such a short period of time — five years as it turned out. All those involved agree that it was the high annual cost to the communities that was so politically disturbing, even more than the total amount that would be due.

Third, regardless of the cause of the disagreement, if community officials had negotiated a compromise deal with RESCO to resolve the dispute, they would have been subject to criticism later on that they could have done better if they had stood on their rights and gone to court. They wanted to be safe. In the U.S., getting lawyers involved and suing the other party is not a bad way to demonstrate that one is doing the most one can to rectify a bad situation.

6.2 Problems with Cost-Based Adjustments in Regulation-by-Contract

6.2.1 Residual Incompleteness

In terms of the conceptual framework set out in Chapter 2, the RESCO case provides an excellent example of trying to deal with contractual incompleteness by letting one party fill in a particular gap when it appears. In this case, the gap consists of the costs required to modify the plant, unknown when the contract was signed. As noted in Chapter 2, however, it is rare to find a regime of regulation-by-contract that allows the regulated company simply to submit its actual costs, no questions asked. So in the RESCO

case, the contract called for RESCO to “use its best efforts to minimize the total cost” of the alteration or addition required by the change in law (see section 3.5.1, above). The complete lack of guidance in the contract as to what this might mean in practice was without doubt a major factor contributing to the dispute. The first question that would suggest itself to an engineer or an economist is whether the value to be minimized covers capital costs alone or “whole-life” costs (i.e. investment costs and the present value of incremental recurrent costs).

The next question would be: From whose perspective should this cost minimization be carried out? In a question-and-answer note prepared by one of the communities, it is stated:⁴¹

While the choice to use a more expensive technology designed to meet pollution control requirements into the 21st Century may have been a sound business decision for RESCO, that is not the point. RESCO, not the communities, owns the plant, so their interests differ: RESCO may want to protect its long-term investment by installing equipment that exceeds present standards, while the communities’ only responsibility is to pay to meet those standards that will be in effect for the next three years — i.e., the length of time remaining on their contracts. Since RESCO opted for more expensive equipment than was required, it — not the communities — should pay the difference.

This passage raises the important question whether “total cost” means cost from the overall company perspective or from the narrower perspective of the communities. We do not know; and in fact the parties negotiating the contract probably never really thought this issue through.

⁴¹ Attached to a memorandum from John Henry, City Clerk of Revere, to the RESCO Community Representatives, November 12, 1993.

6.2.2 Perverse Incentives as Provocation for Dispute

There is a deeper problem of differing perspectives: there is a sense in which the contract created perverse incentives for RESCO. To see this, we should first recall how capital costs were to be allocated to the communities. This involved amortizing the capital costs by calculating constant annuity payments over five years or the remaining term of the contract, whichever was greater. In the present case, the calculation would be carried out for a 60-month term, and then the communities (more precisely, most of them)⁴² would make the required installments that fell due over the remaining term of the contract, 4¼ years.

From a perspective of basic fairness, this provision might be said to put an inordinate burden on the communities. If the risk of finding new revenue sources when the 1975 contract came to an end was to be borne by RESCO (and this might involve concluding new contracts with the same communities), then the capital charge paid by the communities during the 1975 contract period should be based on some notion of levelized capital recovery *only* over the remaining term of the agreement. Suppose that the additions to the plant have a useful economic life of 20 years, but there are only 4¼ years left in the contract. It would seem fair to calculate capital charge installments over all 20 years and then to have the contracting communities pay the installments that fall due over the remaining 4¼ years of their contracts. RESCO would then have to recoup the remainder from the customers it picked up at the end of the present contract. The provision in the 1975 contract, however, would require the communities to pay a

⁴² Not all had contracts that ended in July 1995.

substantial part of the cost of the improvements (more precisely, of the communities' tonnage-pro-rata share of the cost) over 4¼ years, regardless of the useful economic life.

It is not clear what the rationale was at the time of negotiations in 1974–75. The potential for the spot market or for other waste contracts was not as certain. It may be that the communities' representatives believed that the market price at which RESCO would be able to fill up the dedicated capacity once the communities' contracts were finished would not likely be high enough to compensate RESCO sufficiently for capital expenditures made in response to a change in law. In that case — to the extent that the facilities were in effect permanently dedicated — it would have made sense that RESCO should be compensated in full for such expenditures during the contract period with the communities. But by the 1990s, market conditions had changed.

We now shift our focus from fairness to economic efficiency. What might be the impact of these contractual provisions on RESCO's investment decisions, and in particular on what cost-minimization might imply? The best way to ensure that a firm has the incentive to invest and operate efficiently is to subject it to competition. One might wonder, then, why it would not have been in RESCO's own interest to invest and operate in the least-cost way, since more than half of its sales are made on the free market. The problem is that complications often arise when some of a firm's activities are regulated and others are not (cf. Armstrong, et al. 1994: 125–133). This is what happened with the RESCO contract. Since the prices that RESCO faces on the market (spot market and short-term contracts) are independent of the costs RESCO incurs, to maximize its profits RESCO should choose the investment package that, for the same output, minimizes that part of its

costs that it cannot recover from the communities by way of the pass-through provisions (let's call these "residual costs"). The essential point is that this does not necessarily mean minimizing the costs that it allocates to the communities.

We could probably come up with *some* formula for allocating costs such that minimizing the residual costs would necessarily result in minimizing the pass-through costs also. If this were the case, the communities might not need to police RESCO's investment choices: incentive compatibility would have been achieved.⁴³ But the contract called for a different sort of allocation. The communities bear a pro rata share of investment costs with respect to the total quantity of waste delivered to the plant (by all sources of waste) over the next few years, but not with respect to the total quantity to be delivered over the entire useful life of the investments.⁴⁴

There are certainly a number of different technical solutions to the scrubber problem, involving different combinations and trade-offs among fixed assets, maintenance, overhauls, replacements, and operating material. On a discounted cash flow basis, the share of up-front fixed asset costs allocated to the communities is greater than the share of the other costs, since (i) the communities must pay for such a large part of the total of these costs over the 4¼ years remaining in the contract and (ii) maintenance,

⁴³ In theory, one form of incentive-compatible contract in this context would provide that *all* the projected incremental costs over the entire economic life of the new assets related to a qualifying change in law would be allocated on a discounted basis to the *total* quantity of waste projected over the same period. The communities would then pay this "average incremental cost" (as it is known) per ton of waste. This should entirely eliminate the perverse incentives to use inappropriate technical solutions (allocative inefficiency in production) and considerably eliminate the incentive to "goldplate." (But not entirely: since cost savings are shared between the communities and RESCO, RESCO's "effort" to reduce costs would be less than optimal.) In practice, problems of information asymmetry and verifiability would certainly require modifications to the method given above. But it would be a good start.

⁴⁴ More precisely, the *discounted* value of the future quantity.

replacements, and operating activities extend beyond the remaining term of the contract. So it is quite conceivable that RESCO could minimize *residual costs* — and hence maximize total profits — by choosing a technical solution that was biased towards initial capital costs. In effect, RESCO received a subsidy on the initial investments just as if the investment cost it faced had been reduced. When the price of one factor of production is reduced relative to the others, the firm will reoptimize (isocost line rotating around the isoquant curve) and choose a technical solution involving a greater proportion of the cheaper input.

Many community officials are still convinced, based on the opinion of the engineering experts they hired, that RESCO chose a “Cadillac” of a technical solution. If this means making investments that involve reduced requirements for maintenance, later overhauls, replacements, and operating material, such a decision would make perfect sense, given the incentives provided by the contract. In fact, if RESCO did not make *some* attempt to do this, I would argue that its shareholders would have had reason to be unhappy. One moral of the story might be this: if you choose private-sector involvement because you like the way the private sector responds to price incentives, then don’t blame the private company if the contract gets the incentives wrong. But we have the benefit of hindsight: when the contract was signed, future market conditions were not known, and so this may have seemed to be the best way of specifying the change-in-law obligations of the parties.

6.3 The Judicial System as Adjudicator

In Chapter 2, it was pointed out that, no matter what efforts the parties themselves make to anticipate or cope with contractual incompleteness, ultimately a great deal depends on the third-party contract adjudicator. The natural (or shall we say, default) adjudicator in regulation-by-contract is often the ordinary judicial system; this is the case in the U.S. (though not in France — see Chapters 3 and 4). How well does the judicial system perform in the RESCO case? The following sections will look at this question.

6.3.1 The Question of Relevant Expertise

a) Cost Estimation and Minimization

When it comes to resolving complex contractual disputes, the judicial system in some ways resembles a computer booted up with just its operating system: it has to be laboriously programmed for each specific application. The RESCO case provides many examples. The depositions taken show how the kind of knowledge that a specialized regulatory agency would have in house must be constructed painstakingly from scratch. Two excerpts will serve as an illustrations. In the first example, an attorney for RESCO is questioning the Director of Public Works of the Town of Wakefield:⁴⁵

Q. What is the basis for the allegation by the town of Wakefield that the defendants did not use their best efforts to minimize the costs of the modifications to the RESCO facility?

A. They did not use the competitive bidding process, for one.

Q. What is the basis for the allegation that a competitive bidding process would have resulted in lower costs?

A. It always has for the community.

⁴⁵ Deposition of Richard Boutiette, January 16, 1991, pp. 104–105 (part of official court record, Civil Action No. 90-3632). Objections entered by deponent's attorney are omitted from the passage quoted above.

Q. Anything else?

A. There are some questions about which costs should be included as pass-thru costs.

Q. Focusing solely on the bidding issue, is there anything else, other than the general experience of the town, that is the basis for the allegation that a competitive bidding process would have resulted in lower costs?

A. It always has for the community.

One can envisage the jury faced with a parade of expert witnesses presenting theoretical and econometric evidence on both sides of this issue. The process would have to be repeated for each case: the judicial system has no institutional memory for factual information — only for the legal consequences of certain factual patterns.

In the second example, an attorney for RESCO grills an engineer from Camp, Dresser & McKee (CDM) about how the consulting firm estimated RESCO's incremental operating costs.⁴⁶

Q. How do you go about estimating lime consumption?

A. I recall that lime consumption was based on an estimate of usage [sic] per ton of refuse processed.

Q. How did you derive that?

A. Based on vender [sic] proposal bids for other projects.

Q. Did that exist in the CDM files that you cannot remember now, is that correct?

A. That exists in most past through [pass through] type contracts, yes.

Q. And how did you determine the actual number, did you look at CDM files or somebody else's [sic] files?

A. We used CDM files.

Q. Do you remember which files?

A. I don't recall.

Q. Is there any records [sic] of which files you looked at?

A. There are several service agreements that we probably referred to.

Q. I understand there are service agreements, but can you identify, is there any records [sic] to which service agreements you in fact consulted?

⁴⁶ Deposition of Anthony Michael LoRe [sic], Feb. 28, 1991, pp. 46–48 (Civil Action No. 90-3632).

- A. I don't recall the specific ones.
- Q. I know you can't recall them here, but my question to you which is a different one is, is there any record that exists anywhere of which service agreements you consulted?
- A. I am not sure.
- Q. Is there any way of reproducing your analysis, would anyone ever be able to retrace the steps you took in reaching this conclusion?
- A. I think so.
- Q. How would they know which service contracts to look at?
- A. They could go to our files and pull out various service agreements or proposals. There is [sic] probably five to ten different projects.
- Q. And do they all have exactly the same number for useage [sic] per ton of refuse for lime?
- A. No.
- Q. So how would they be able to tell which ones were the ones that you looked at?
- A. I don't recall the exact number. It was probably either the upper end of the range or the middle of the range.
- Q. That may be, but that was not the question. The question is, how could a person trying to reproduce your analysis identify which service contracts you consulted to come to your conclusion if there is such a way?
- A. I don't know.

It would be a daunting task to try to reconstruct in this ad hoc way the expertise of a regulatory agency. The stock of knowledge and experience that a specialized agency would develop over years must be absorbed anew for each case — in the free-for-all of the biased experts provided by each party.

The RESCO case is a good illustration of the point made by many observers: courts are simply not the right forum for making complex technical and economic judgments after the fact about costs incurred by the regulated company — e.g. whether they fall at some sort of “minimum” level. This conclusion has serious consequences for ideas of introducing profit-and-loss sharing into long-term service contracts, instead of pure

indexed prices. It will be difficult in cases of loss to avoid considering whether the costs incurred were reasonable or prudent; and this is likely to lead to a judicial morass.

6.3.2 Obsession with Interpretation in Regulation-by-Contract

a) The Fiction of Complete Contracts

Since the foundation of a contract consists in the common intentions of the parties, courts focus their attention on interpreting the meaning of the contract set before them. It has been widely noted that courts — in the U.S. at least — strive to rationalize their decisions in terms of what the parties have ostensibly agreed. Because of this, they tend to push the interpretive task to the extreme and are reluctant to admit that the contract might simply be incomplete in that particular respect.

The RESCO case provides several telling examples of a court's preoccupation with interpreting what the parties might have meant by the words in the contract. A prime example is the phrase "the effect of such alteration or addition upon Company's per ton cost of accepting and disposing of waste at the Facility." During the dispute, the parties offered different opinions as to what they meant by this phrase in different contexts and what the implications were, in the context of the entire contract. (To give the full flavor of this debate, it is set out in more detail in Appendix 3.) Looking at the issue from a public policy perspective, it is not clear that there is much benefit to be gained by trying to squeeze additional meaning from these words (except benefit for the lawyers). And yet this is the normal mode in which courts will operate.

Just as important, we see in Appendix 3 that underlying the judge's "interpretation" was a strong predisposition to view the issue through a certain lens and to

rule in a particular way. The problem is not that judges must sometimes rely on their intuition but that their intuition is often untrained in regulatory matters.

b) Ash Disposal: Where Did Minds Meet?

The issue of the landfill-related costs offers a fine illustration of how a contract can be incomplete in a *latent* sense (see definition given in Chapter 2) and how courts and arbitrators are not well-suited for dealing with this.

It is not an easy matter to properly interpret the provision of the 1975 contract that describes change-in-law pass-through costs as being those that involve an alteration or addition to the *incineration facility*. To be sure, there is the classical canon of construction: to state one thing is to exclude the others. But did the parties truly *intend* to allocate the risk of landfill-related alterations to RESCO? Or did they not have any intention at all in this regard because they did not believe that there was any change-in-law risk worth considering here? Put another way, was it the intention of the parties — if indeed there was a meeting of the minds at all — that costs arising *only* from a specified kind of change in law, a change involving an alteration of the incineration facility, would be passed on to the communities? Or did the parties mean rather that costs arising from a change in law requiring the alteration of *any* of the physical assets involved in performing the service would be passed on — and the specific change in law that was mentioned is the only relevant one that the parties could think of when they signed the contract?⁴⁷

⁴⁷ The parties might have chosen to go beyond a general reference to change-in-law risk and to qualify it by requiring that it apply to an alteration or addition to the *facility* because there are many kinds of change in law that they did *not* want to include — e.g. a change in law involving income tax. There is surely some truth to the canon that to state one thing is to exclude the others, but the exclusion operates only over things that the parties believe to be worth considering.

Discussions with some of the members of the team that negotiated the original 1975 contract suggest that neither party imagined that ash disposal could become a problem in the future. Professionals at that time were focusing on issues concerning the disposal of ordinary MSW and the conversion of open refuse dumps into sanitary landfills; this was the emphasis in the 1976 Federal Resource Conservation and Recovery Act (RCRA). Perhaps few were worrying that there might be a significant likelihood that the disposal of clean, odorless incinerator ash would also be subject to more costly regulations in the future. At least one participant in the RESCO contract negotiations recalls the satisfaction all parties had in contemplating that in the future the only thing that would need to be dumped in the old Saugus landfill was an “inert material” — the incinerator ash.⁴⁸ There was also much talk at that time of RESCO being able to sell the ash for use in construction work or for roads.

We should note, however, that one participant in the contract negotiations, a member of the Mitre consultancy team, recalls that the communities quite intentionally did not want to have anything to do with costs related to landfills: the old DeMatteo dump had been the subject of numerous problems and legal violations; and the communities wanted to make it clear that all of this risk would be RESCO's.⁴⁹ But this interpretation does not entirely invalidate the preceding one; for the communities may have been thinking

⁴⁸ But, to take the opposite position, note that a 1973 textbook states: “incinerator residue must be treated in the same way as any other solid waste material going into a landfill. The residue may contain soluble constituents, both organic and inorganic, and therefore must be protected from any leaching action.” Again: fly ash “must be disposed of very carefully under standard landfill operating procedures” (Hagerty, et al. 1973: 159). Given the intense attention being given at that time to landfill conditions, wouldn't Wheelabrator engineers have been aware of this risk?

⁴⁹ Telephone interview with Ahti Autio, former Mitre employee (October 15, 1997).

of the costs of past and existing violations relating to the old dump, not the fact that *incinerator ash* might be the subject of future regulations.

Suppose for purposes of argument that the parties in fact had *no* intention whatsoever concerning landfill-related change-in-law costs. Suppose one could prove this from evidence of the pre-contractual negotiations. Where would that leave the contract? One possibility, often adopted by courts (and sometimes criticized — see e.g. Fried 1981: 64ff.), would be to let the loss lie where it falls, on RESCO's side. Another possibility would be to carry out a thought experiment and make a judgment as to what the parties would have intended had they believed that landfill-related changes in law could conceivably take place. Reasoning along these lines, one might begin by noting that the parties allocated to the communities all change-in-law risks perceived to be relevant. If landfill-related risks had been perceived as significant, wouldn't they, too, have been allocated to the communities? If not, one might ask: Why not? What was the difference? It is hard to find a convincing reason for why they would have been treated any differently.

As a number of writers have pointed out, the adjudicator in such a case will in fact often be forced to leave the parties' intentions behind and reason from more fundamental principles — economic efficiency, distributive justice, or whatever. But the judicial system, and arbitration that is strongly inspired by the judicial system, in dealing with an ordinary contract is loathe to admit that it is going beyond the intention of parties. This leads to an unfortunate outcome in the case of contractual incompleteness: the adjudicator plays a game of pretending that she is interpreting the parties' intentions and may believe this herself; but the actual reasoning behind the decision remains opaque (see,

in general, Solan 1993). We can see this in the RESCO case with respect to the landfill issue. The arbitrator's final award states: "I find and rule that Section 5.6 of the several Service Agreements, properly interpreted, does not permit a 'pass-through' to the Communities of [ash-disposal costs related to the development or closure of the landfill]." The contract happily gives an answer to every question — of course. There is no need to discuss public policy.

6.3.3 The Role of Public Policy

The RESCO case illustrates what many legal scholars have remarked: judges do their best to avoid having to fall back on principles of public policy to fill gaps in a contract when the parties' intentions cannot be deciphered.⁵⁰ One can make a strong argument, however, that in long-term contracts for public services, public policy issues can hardly be avoided as a way of filling gaps, first, because the contracts are likely to be seriously incomplete, and second, because the whole idea of the parties' "intentions" becomes murky. The parties are corporate persons, not individuals. In truth (apart from legal presumption), does the contract reveal the intention of the signatories or that of the negotiators? The signatory as opposed to *his* principals, if any? Going further, one might even ask if one should always care about the meeting of minds of city officials and company executives who have been out of office for years.

From an economic public policy perspective, an important reason why the parties' promises should be respected in a contract of the kind we are considering is to induce the

⁵⁰ Note that grounding a decision on public policy considerations is different from filling in a missing contractual term by imagining what the actual parties or reasonable parties probably would have intended

parties to carry out the desired transactions. A complete contract which the parties believe will be enforced will result in *ex ante* optimal investments — i.e. from the perspective of a cost-benefit analysis carried out before the venture starts. Incomplete contracts are more problematic, for one reason or another. But if we look at the question in this way, we can draw the following conclusion: if there exists an *ex post* mechanism that results in something close to *ex ante* optimality, then it may be just as acceptable if not more so to use this rather than to try to decipher the parties' initial intentions and extrapolate them to quite different circumstances. The alternative mechanism might consist, for example, in the *ex post* application of certain principles of risk allocation.

To take the ash-disposal issue discussed above (section 6.3.2b)), shouldn't one at least consider, in such cases of incompleteness, the idea that if risks have not truly been allocated *ex ante*, then they should be allocated *ex post* to the party best able to bear them — e.g. by various adjustments or simply by diversification (cf. Posner and Rosenfield 1977)? In effect, we are speaking of a more pronounced *regulatory* regime of one sort or another.

6.3.4 Is Arbitration the Answer?

The major victory for the communities in the RESCO case resulted from the arbitrator's apparent acceptance of the plain language of the contract, which limits cost pass-throughs to changes in law that affect the incineration facility and associated buildings and equipment and the land on which they lie. The true regulatory question, whether RESCO used the least-cost solution to meet the new requirements — the question

if they had had to deal with the question (see Murray 1990: 438). Judges are more likely to engage in the

that had provoked one year of expensive discovery proceedings — was disposed of easily by deciding in RESCO’s favor. The arbitrator was able to sidestep the regulatory complexities completely. He was presented with a case that was amenable to the kind of solution most arbitrators quite understandably like: find a plausible way to give something to both parties without having to delve into murky legal or factual questions.

The arbitrator’s award in this case does little to guide the parties in the future if they are faced with another complicated cost-pass-through situation. The arbitrator, like the court, does not have a rule-making function.⁵¹ It was not in his terms of reference to lay out clearly for the future how one should determine whether costs have been “minimized.”

6.4 Improving the Contract to Reduce Incompleteness

6.4.1 Possible Motives for Leaving Certain Aspects Incomplete

It is quite puzzling, as remarked in section 5.2, that the parties did so little to rectify crucial problems of contractual language when they drafted the 1995 agreement. For example: Why didn’t they make it clear whether incremental O&M costs are or are not to be borne by the communities? The question of why people do not write complete contracts has been addressed in the economic literature,⁵² and it is generally noted that it is

latter sort of activity.

⁵¹ A remark that a judge makes that is not essential to the determination of the case before her is considered “obiter dictum” and has no binding force.

⁵² The questions one asks depend on the assumptions one starts with. Economists start off from the theoretical concept of the fully state-contingent Arrow-Debreu contract; hence they naturally ask why people don’t behave that way in the real world. Lawyers and judges, who have to deal all the time with written agreements that set out rights, obligations, and conditions in only the foggiest of terms, would never think to ask such a question. They find it more unusual when they come across a contract with a *high* degree of completeness, and they presume that this has most likely been achieved only through the efforts and prodding of lawyers — not of the parties themselves.

costly to search out and think through the consequences of all possible contingencies or to write down contractual terms covering these contingencies in a verifiable, enforceable way. But this narrow transaction-cost explanation does not help much in answering why the parties did not specify who will pick up the tab for O&M. It would have taken one sentence to close the issue.

It is useful to offer a few hypotheses, even though they are little more than speculation. To the extent that parties have strong motives to leave certain contractual aspects incomplete, the rationale for regulation-by-contract would appear to be undermined.

One reason — well understood by lawyers — is that parties often know that the only way they will be able to agree is by *not* addressing certain issues, even if one could quite easily formulate a deterministic rule to meet the contingency in question. The parties may be willing to keep silent and rely on later bilateral negotiations or let the court take a decision if the contingency comes to pass. This might be because the parties are over-optimistic about their future bargaining strength or about how the court would later rule.⁵³ Recent literature does indeed show a bias towards “self-serving” assessments of fairness in certain bargaining situations (see Babcock and Loewenstein 1997). Such a systematic psychological bias towards over-optimism might well constitute a serious defect in the

⁵³ Insight into this phenomenon may be gained by trying to understand why it would not generally be acceptable to the parties to include a contract provision that said in effect: “If there is a question as to whether incremental O&M costs will be borne by the communities, it shall be decided by the toss of a coin” (or some other randomizing procedure in which the probability is different from 0.5). What is probably going on is a case of mutually inconsistent subjective probabilities: each party thinks that it has more than a 0.5 probability of winning. Hence the sum of the *expected* net gains from the contract is greater than it would be if the parties wrote an explicit rule to determine the issue.

regulation-by-contract approach and might justify intervention by a higher-level public authority — e.g. in the form of background legal rules.

Other motives for wanting to maintain incompleteness involve complex principal-agent issues. The lawyers and negotiators are agents of city and company staff, who are agents of top city and company executives, who are agents of the city council and the company board of directors, who are agents of city voters and company shareholders. It is no wonder that all of this is usually ignored in formal modeling of incomplete contracts, but we have to consider it in the present context.

We would want to consider two types of phenomena. First, agents at some level might behave paternalistically: they might be fully aware of the implications of the words they are using and believe that the contract terms are in the best interest of their principals, and they might also believe that the only way their principals, or other influential third parties, will agree is if the principals do *not* fully understand the implications of the written words. Hiding the true meaning, even at the risk of incompleteness, might seem to be the best solution. Leaving certain things vague can facilitate acceptance of the contract and make it less apparent that a particular provision might actually favor the other side.

Second, the agents at some level might well be behaving in a self-interested way that does not further the objectives of the principals. Agents themselves — on both sides — will often benefit most by ensuring that the deal is simply *completed*, even if they know that problems are likely to crop up later, once they personally have disappeared from the

scene.⁵⁴ This may be one of the principal reasons why long-term contracts often remain so incomplete in ways that later appear so obvious. It is odd that this reason has not been acknowledged and explored more in the academic literature.

Discussions with community participants in the RESCO case suggest that politics and rhetoric played a prominent role in the dispute itself and in the negotiations over the new contract. The communities' representatives were playing to a gallery of third parties all along the way. What effect all of this had on the crucial wording of the 1995 contract is hard to say.

6.4.2 Effect of Greater Detail on Contractual Completeness

The present case throws light on the problem of contractual incompleteness and on the manifest-latent distinction and in yet another way. The transaction-cost literature in economics emphasizes *cost* as a barrier to the writing of complete contracts: costs of thinking far ahead and planning, costs of negotiating, costs of writing provisions in a way that can be enforced (see Hart 1995: 23). The focus in the economic literature is usually on the *written* contract; incompleteness arises when the *document* is silent or ambiguous about the parties' obligations in some state of the world (see e.g. Hadfield 1994 for a discussion of this point).⁵⁵

One might think, then, that a set of highly state-contingent pricing rules would move the contract toward greater completeness. One might think that if payment

⁵⁴ In comparing regulation-by-contract with regulation-by-commission, one would want to go further and ask if the same problem is likely to arise in decision-making by regulatory commissions. If not, why not?

⁵⁵ There are problems enough in trying to model all that goes on with incomplete contracts without complicating matters further by positing a divergence between what the parties write down and what they have in their minds. This would open the Pandora's box of bounded rationality.

obligations can be expressed in complete, formal mathematical terms, all the better. But the present case — and especially the analysis in Appendix 2 — raises the troubling question whether great formal complexity necessarily removes incompleteness. Suppose, as in the present case, that the parties agree to use a complicated algorithm for pricing. Can it truly be said that they *intended* all the formal consequences of that algorithm? In the present case, was there truly a meeting of the minds over the relationships among variables described in Cases U1–U4 and D1–D4 in Appendix 2? Over the fact that in some circumstances the Town could benefit simply by giving an exaggerated estimate of recycling? Almost certainly not. And it does indeed matter what was in the parties’ minds: for it is on this basis that the bargain is usually struck.^{56,57}

This discussion has ramifications for the contracting approach to municipal service regulation. Pricing and liquidated damage (or penalty) formulas often become quite complex in long-term contracts (see the Lyon case, Chapter 4, in which the formulas became more complicated as time went on). Given problems of bounded rationality, it is possible that the parties will not grasp the implications of all the terms. It may become apparent, for example, that the contract contains highly perverse incentives, not known at the beginning. So we see that the attempt to remedy incompleteness by *writing* finely differentiated state-contingent terms may not solve the underlying problem.

⁵⁶ In economic terms, one would say that the ability of voluntary exchange through contracts to maximize welfare depends (among other things) on the parties’ beliefs and preferences when they sign the contract, *not* on what happens to be written on the page — though we hope there will be a strong connection between the two.

⁵⁷ One exception might be where the parties (or their computers) carry out detailed calculations and arrive at expected values of costs and benefits. In that case, they are in some sense taking into consideration the application of the pricing rules for all contingencies. But this is not how contracts are usually concluded.

7. CONCLUSIONS

The RESCO case highlights typical problems with regulation-by-contract in a legal system, like that of the U.S., that treats these contracts as it would treat *any* contract between two parties that have the requisite contracting capacity. Under such conditions, regulation-by-contract appears to score poorly. In contrast, as we have seen, the French approach gives a special status to contracts of this sort and provides a background of regulatory rules, in effect.

Another difference between the RESCO case and the *traditional* French system is that there was no reluctance to litigate on the part of the RESCO communities. A typical French city would surely have made a greater effort to reach agreement through negotiation; whether the solution reached would have been reasonably favorable to the city is another question. For city officials in Massachusetts, taking a strong stand against the private company would be likely to bring political benefits; this would not be true in the past for French city officials, though the mood is changing very rapidly as consumer groups lead the way.

The case shows that writing good contracts of this sort — trying to look ahead twenty years, sort out possible perverse incentives, and so on — is not an easy matter, even for sophisticated parties. In particular, in the RESCO case, the structure of the industry changed over the years, and contract provisions that may have made good sense when the contract was signed — namely, the amortization provisions for recovery of change-in-law costs — turned out to be inappropriate, and even provocative, under the new conditions.

We also see the dangers of leaving important contractual conditions vague and inserting simple price-adjustment clauses, and then relying on the parties' good will to reach a mutually satisfactory solution when the need arises. As theory would predict, this can be a recipe for trouble. Simple clauses and vague standards can, under certain conditions, *encourage* disputes and litigation, rather than facilitate good-faith adaptation of the contract.

The RESCO case gives us an excellent example of what happens when the ordinary court system, and then conventional arbitration, has to tackle a complex *regulatory* issue, involving a determination of the least-cost technical solution, various accounting issues (e.g. transfer pricing), and procurement methods. It is seen that the common contract-law fallback standard, "best efforts,"⁵⁸ simply is not up to the measure of this task. The "best efforts" standard may often work well for problems encountered in ordinary commercial contracts, but it lacks the precision needed for this regulatory context.

Finally, this case study throws into stark relief the complicated principal-agent relationships that can underlie contract formation and renegotiation. As a way of reflecting the preferences of the ultimate principals — city residents and company shareholders — the virtues of regulation-by-contract pale somewhat in this light.

In sum, the RESCO case describes what can happen in one extreme form of regulation-by-contract — in which a regulatory framework does not exist and extra-contractual rules are kept at a minimum. (Some contrasts with the Lyon case will be brought out in Chapter 7.) It will be argued in the next chapter, however, that the

weaknesses that are seen in the RESCO case may be able to be remedied without going all the way to the opposite extreme of regulation-by-commission.

⁵⁸ Meaning basically: *reasonable efforts, given the circumstances* — which is not much more of a help in operationalizing the concept (see UNIDROIT Principles Art. 5.4(2)).

Why Regulate Municipal Solid Waste Disposal?

Is There a Natural Monopoly?

In analyzing whether a particular industry should be regulated as a natural monopoly, it is useful to imagine what would happen if it were *not* so regulated — if buying and selling were left to the free market. One critical aspect for municipal solid waste (MSW) is the cost of transporting waste. If transport costs were insignificant, there would be little justification for economic regulation. (Note that we are concerned here with *economic*, not environmental regulation.) Entrepreneurs of landfills or incineration plants in deciding whether to invest would make their calculations of prospective profitability based on the demand facing them from a deep market, just as most industrial firms do; and they would not require special long-term commitments from neighboring communities. Communities, on their side, would face a more uniform market price, determined by aggregate supply and demand in the national market, and they would have less reason to enter into long-term contracts for the supply of disposal services.

There are at least two reasons why this picture may not be accurate. First, transport costs may still be relatively high compared with tipping fees. This would tend to insulate one geographical part of the market from another and might even allow spatial monopolistic pricing in the absence of regulation — i.e. it could lead to circumstances in which a firm could increase its profit by continuing to raise its price unilaterally up to a certain point. Under these circumstances, the natural-monopoly rationale for price regulation would be the same — though not as strong — as for, say, a wastewater treatment plant, where the cost of transporting wastewater from one service area to another is prohibitive. (Considering also market power possibly gained through implicit price collusion would strengthen this rationale.)

Transport costs have been falling, however, and it is no longer clear to what extent this factor can legitimately justify economic regulation. Gómez-Ibáñez, Meyer, and Luberoff (1992) cite the feasibility of transporting waste to more distant facilities at a relatively low cost, roughly one dollar per ton-mile, as arguing against the need for regulation of tipping fees. Furthermore, the development of transfer stations, where waste can be loaded onto large trailers for a more efficient long haul, is said to be able to reduce transport costs for this leg of the journey to as low as \$0.10–0.15 per ton-mile.

One hypothesis that will play a role in understanding the RESCO contracts is that market conditions in 1975, when the first contract was signed, were very different from those in 1995, the date of the second contract. The market for solid waste was much less developed in 1975, and transport costs were relatively higher. A facility would have viewed itself then as much more strongly *dedicated* to surrounding communities. Today, with more facilities available and the increased role of transfer stations, the market is much more competitive.

The second possible justification for price regulation as a monopoly is that the market is riddled with nonprice barriers to trade — “flow control” measures imposed by host communities typically providing that all waste generated within the particular jurisdiction must be delivered to a designated facility or site (Petersen and Abramowitz 1995). These measures tend to exacerbate the spatial segmentation of the market and hence the potential for monopolistic pricing on the part of one facility that finds itself in a relatively isolated geographical pocket. (In fact, haulers for years have challenged flow control ordinances because tipping fees at the mandatory sites were often higher than at other sites.) The U.S. Supreme Court in 1994 went far in pulling out the legal foundation from under flow-control ordinances in the *Carbone* case,¹ but flow control per se is still quite alive and is likely to remain so for some time: more recent cases decided by the Second Circuit Court of Appeals have held that flow control is permissible if accomplished by means of *contracts* with collectors rather than city ordinances that apply to firms in the free market, since in the contracting case, the municipality, according to legal theory, is acting as a “market participant” rather than a “market regulator.”²

This is a classic “second best” problem: if a market is already distorted, introducing a compensating distortion may lead to the most efficient *feasible* solution.

What Role for Long-Term Contracts?

One could make the argument that, under present conditions, municipal solid waste transportation and disposal should be handled by the competitive market and do not require economic regulation as a natural monopoly. Would this mean that disposal facilities should be set up on a strictly merchant basis and that communities should buy disposal services on the spot market or by short-term contracts? Possibly. But entirely apart from considerations of natural monopoly and relationship-specific investments, there may be other kinds of advantages for one or both parties in entering into a long-term contract. It is easy to see why communities would like a long-term contract: there is the advantage of having a predictable expenditure stream that can be better matched with tax revenues. But there must also be certain benefits for the disposal firm, or at least the disadvantages cannot be great; for otherwise a long-term contract could be obtained by the communities only by paying a high premium.³

Long-term contracts give incinerator operators predictability of price and security of demand. In addition, another possibility for why long-term contracts might be attractive to incineration firms is based on the discussion above of what is driving spot

¹ C&A Carbone, Inc. v. Town of Clarksville, N.Y., 114 S.Ct. 1677 (1994).

² USA Recycling, Inc. v. Town of Babylon, 66 F.3d 1272 (2d Cir. 1995); SSC Corp. v. Smithtown, 66 F.3d 502 (2d Cir. 1995).

³ E.g. if communities enter into long-term contracts to avoid what they perceive to be a substantial risk of ever-increasing tipping fees, one should ask why it is that the disposal firms agree to such contracts without adding a high premium — unless their forecast of future price movements is different.

tipping fees at the present time in Massachusetts. With incineration plants operating at full capacity and with no expansion in capacity permitted, spot prices are being determined by incremental landfill costs, landfill capacity regulation by DEP (driven largely by the politics of recycling), and by export and transport prices. Under these conditions, an appropriately indexed long-term contract price may better match incineration firms' own, fairly predictable capital and operating and maintenance costs than would the spot market or short-term contract price.

Analysis of Pricing Terms in 1995 RESCO Contract

This appendix gives a detailed analysis of the pricing provisions of the 1995 contract. The notation is the same as in the main text; it is repeated here for convenience.

<i>P</i>	Tipping fee (price in \$/ton) paid for every ton of waste delivered by Saugus and accepted by RESCO
<i>Q</i>	Annual quantity of waste (in tons) delivered by Saugus and accepted by RESCO (“Facility Tonnage”)
<i>B</i>	“Base Tonnage”. See text below for definition.
<i>R</i>	Actual quantity of waste that Saugus recycles in a given year (“Recycled Tonnage”)
<i>R^e</i>	Saugus’s reasonable estimate (made at the beginning of the year) of the quantity of waste that will be recycled in the current year
<i>RS</i>	“Recycling Shortage” = $R_{t-1} - R_t$ (but only if positive)
<i>ARI</i>	“Anticipated Recycling Increase” = $R_t^e - R_{t-1}$ (but only if positive)
<i>AcRI</i>	“Actual Recycling Increase” = $R_t - ARI_t - R_{t-1}$ (but only if positive) $= \begin{cases} R_t - R_{t-1} & \text{if } R_t^e \leq R_{t-1} \\ R_t - R_t^e & \text{if } R_t^e > R_{t-1} \end{cases}$
<i>WI</i>	Official wage index, published by the U.S. Department of Labor. In first contract, Area Wage Survey of Boston Metropolitan Area. In second contract, Employment Cost Index for the Northeast Region
<i>RET</i>	Total annual real estate taxes levied on the facility and on the associated landfill used for ash residue (but the only increases in assessment value, relative to the base year, that are to be considered for this calculation are those arising from alterations or additions required to comply with changes in law)

The Base Tonnage to be used as the benchmark is as follows (except for the first year, for which a numerical value is specified):

$$B_t = \max(Q_{t-1}, 0.95Q_{t-2}) - ARI \quad \ll 4 \gg^1$$

¹ The numbering of equations continues from the main text. The first few equations are repeated to provide continuity.

Given the definition of ARI , this may be written as:

$$B_t = \max(Q_{t-1}, 0.95Q_{t-2}) - \max(R_t^e - R_{t-1}, 0) \quad \ll 5 \gg$$

The contract describes (entirely in verbal terms) the upside additional payment as follows (cf. 1975 contract):

$$0.15P_t \times [Q_t - 1.1(B_t + RS_t)], \quad \text{iff } Q_t > 1.1(B_t + RS_t) \quad \ll 6 \gg$$

The downside additional payment is as follows (ignoring some contingent elements that are not important for present purposes):

$$P_t \times (0.9B_t - Q_t - AcRI_t), \quad \text{iff } Q_t + AcRI_t < 0.9B_t \quad \ll 7 \gg$$

To see what «6» and «7» imply, we will need to look at a number of different cases to account for the fact that each of ARI , RS , and $AcRI$ is operative only if its value is positive. To simplify the discussion that follows, I will assume for the rest of this section that $Q_{t-1} \geq 0.95Q_{t-2}$ and therefore that $B_t = Q_{t-1} - ARI$.

To introduce the analysis, it will be helpful to think more about the underlying concern: the avoidance of any penalty for shortfalls in waste due to increased recycling by the Town. One simple and broad way to accomplish this would be to consider only the *sum* of Q and R in setting the benchmark and in looking at each year's performance. If the total residential solid waste generated in the Town remained the same in a given year, then if R increased, Q must have decreased by the same amount. Focusing, then, on the single value $Q + R$ would make the additional payments neutral with respect to any tradeoff between Q and R . One could therefore express the downside additional payment quantity term like this (operative only where positive):² $0.9(Q_{t-1} + R_{t-1}) - (Q_t + R_t)$. Here, there would be no additional payment so long as the total waste *generated* remained within the specified limits.

An additional question is how to deal with the estimates of recycling made by the Town at the beginning of the year, R^e . One could argue that RESCO should be able to rely on these estimates in its planning for the year. Without going into further detail now, we note simply that R^e could play some role in the calculation of additional payments to be incurred by the Town.

Let us now define "correction term" to be the result of subtracting $Q_t - 1.1Q_{t-1}$ from the upside additional payment quantity term or of subtracting $0.9Q_{t-1} - Q_t$ from the downside additional payment quantity term. (The two expressions just given are taken from the 1975 contract, using a simplified ARI term.) The *correction term* therefore

² It will be simpler from this point on to ignore the price terms in the additional payment formulas («6» and «7») and to consider only quantities. The comparisons remain the same.

gives us the *extra* quantity term (positive or negative) required because of the recycling issue. In the *broad and simple* approach given above, where we have expressed the downside additional payment quantity term as $0.9(Q_{t-1} + R_{t-1}) - (Q_t + R_t)$, the correction term equals $0.9R_{t-1} - R_t$. The coefficients on the variables (0.9, 1, or 1.1) are not so important; they depend on how one sets up the threshold condition. What is important is to see — more or less — what we would reasonably expect the correction terms to look like:

Indicative upside correction term:

$$R_t - R_{t-1} \quad \text{or} \quad R_t^e - R_{t-1} \quad \ll 8 \gg$$

Indicative downside correction term:³

$$R_{t-1} - R_t \quad \text{or} \quad R_{t-1} - R_t^e \quad \ll 9 \gg$$

The alternative of R^e is given for the reason noted above; but no attempt is made here to sharpen our understanding of when R and when R^e should be used.

What the indicative correction terms do is this: since the additional payment term is calculated (more or less) on the basis of changes in the quantity *delivered* from one year to the next, the way to correct it so that it reflects changes in the quantity *generated* is to add or subtract changes from one year to the next in the quantity *recycled*.

Thus armed, we are now ready to examine the different cases of «6» and «7» to see what approach to the question the 1995 contract takes. In the cases that follow, the “conditions” given in each follow in a straightforward way from the definitions of *ARI*, *RS*, and *AcRI*.

- - - - -

Case U1: ARI&RS⁴

Conditions:

$$R_t^e > R_{t-1} > R_t$$

Estimated recycling is greater than last year’s actual recycling, but this year’s actual recycling turns out to be less than last year’s.

Upside additional payment quantity term:

³ Note that the downside quantity term is expressed in positive terms in «7». So a negative correction term reduces the additional payment that has to be made.

⁴ The abbreviated case name means that both *ARI* and *RS* are operative — i.e. the expressions have positive values. Cases beginning with “U” involve the upside additional payment quantity term.

$$Q_t - 1.1Q_{t-1} - 1.1(2R_{t-1} - R_t - R_t^e)$$

Correction term: $1.1(R_t + R_t^e - 2R_{t-1})$

Remarks:

Either $R_t - R_{t-1}$ or $R_t^e - R_{t-1}$ would make sense as a proper correction term (see «8») (we could also imagine a weighted average of some kind); but here, we have both added together. We cannot tell if the correction term is positive or negative. The rationale for this term is not apparent; two of the arguments seem superfluous. At least we can conclude that this case is probably not a likely one.

Case U2: not-ARI&RS⁵

Conditions: $R_t^e \leq R_{t-1}$ and $R_t < R_{t-1}$

Upside additional payment quantity term:

$$Q_t - 1.1Q_{t-1} - 1.1R_{t-1} + 1.1R_t$$

Correction term: $1.1(R_t - R_{t-1})$

Remarks:

This is in line with the indicative upside correction term, «8». The correction term is negative. The Town does not pay an upside additional payment to the extent that the excess tonnage delivered is due to decreased recycling.

Case U3: ARI¬-RS

Conditions: $R_t^e > R_{t-1}$ and $R_t \geq R_{t-1}$

Upside additional payment quantity term:

$$Q_t - 1.1Q_{t-1} + 1.1(R_t^e - R_{t-1})$$

Correction term: $1.1(R_t^e - R_{t-1})$

Remarks:

This is in line with «8». The correction term is positive. But it is not immediately apparent why the Town should gain in Case U2 based on R_t , while it loses in Case U3 based on the estimated measure, R_t^e .

⁵ “Not-ARI” means that ARI is not operative since the expression would have a non-positive value.

Case U4: not-ARI¬-RSConditions:

$$R_t^e \leq R_{t-1} \leq R_t$$

Upside additional payment quantity term:

$$Q_t - 1.1Q_{t-1}$$

Correction term: noneRemarks:

One could possibly construct a plausible explanation, but if it were not completely consistent with the other cases, it might sound ad hoc.

Case D1:⁶ ARI&AcRIConditions:

$$R_t > R_t^e > R_{t-1}$$

This is an important case — one that could well occur: both estimated and actual recycling have increased relative to the preceding year, but the estimate falls short of the actual.

Downside additional payment quantity term:

$$0.9Q_{t-1} - Q_t + 0.9(R_{t-1} - R_t^e) - R_t + R_t^e$$

Correction term:

$$0.9R_{t-1} - R_t + 0.1R_t^e$$

Remarks:

In this critical case, the downside additional payment must be reduced because the recycled quantity has increased. The correction term is negative and is close to «9», but it is not clear why, in effect, a weighted average of R_{t-1} and R_t^e should be used in place of R_{t-1} . Although the correction is based primarily on the actual quantity recycled, it is oddly offset in part by the *estimated* recycling quantity. It is not certain that this would comply with the legal requirement that no penalty or fee should be imposed as a result of a municipal recycling program; for in this case, there is a small penalty imposed if the estimate is lower than the actual quantity.⁷

⁶ Cases beginning with “D” refer to the downside additional payment.

⁷ In November 1995, motivated by a condition that had been laid down by the Saugus Town Meeting, the parties were considering the adoption of an amendment to the 1995 agreement that stated in part: “. . . the Tipping Contract shall be interpreted so as to prevent the imposition of any penalties, fees, fines or assessments for any amount of previously unspecified yearly tonnage reduction that occurs as a result of a

Case D2: not-ARI&AcRI

Conditions: $R_t^e \leq R_{t-1} < R_t$

Downside additional payment quantity term:

$$0.9Q_{t-1} - Q_t - R_t + R_{t-1}$$

Correction term: $R_{t-1} - R_t$

Remarks:

The correction term is negative and is the same as given in «9». Note that here, it depends entirely on the *actual* quantity recycled.

Case D3: ARI¬-AcRI

Conditions: $R_t^e > R_{t-1}$ and $R_t^e \geq R_t$

This is another important case: the Town estimates that recycling will increase over last year, and the estimate turns out to exceed (or just equal) actual recycling for the current year.

Downside additional payment quantity term:

$$0.9Q_{t-1} - Q_t + 0.9(R_{t-1} - R_t^e)$$

Correction term: $0.9(R_{t-1} - R_t^e)$

Remarks:

The correction term, negative, is roughly in line with «9». But note that the correction here is based on the *estimated* quantity to be recycled. It is not clear why the measure used (estimated or actual) should change from case to case.

Case D4: not-ARI¬-AcRI

Conditions: $R_t^e \leq R_{t-1}$ and $R_t \leq R_{t-1}$

Downside additional payment quantity term:

$$0.9Q_{t-1} - Q_t$$

Correction term: none

municipal recycling program.” One wonders what a court would have made of this amendment, which was never signed, read in conjunction with the provisions in the original agreement.

Remarks:

Recycling has not increased over the previous year. So one can understand why no correction may be called for.

- - - - -

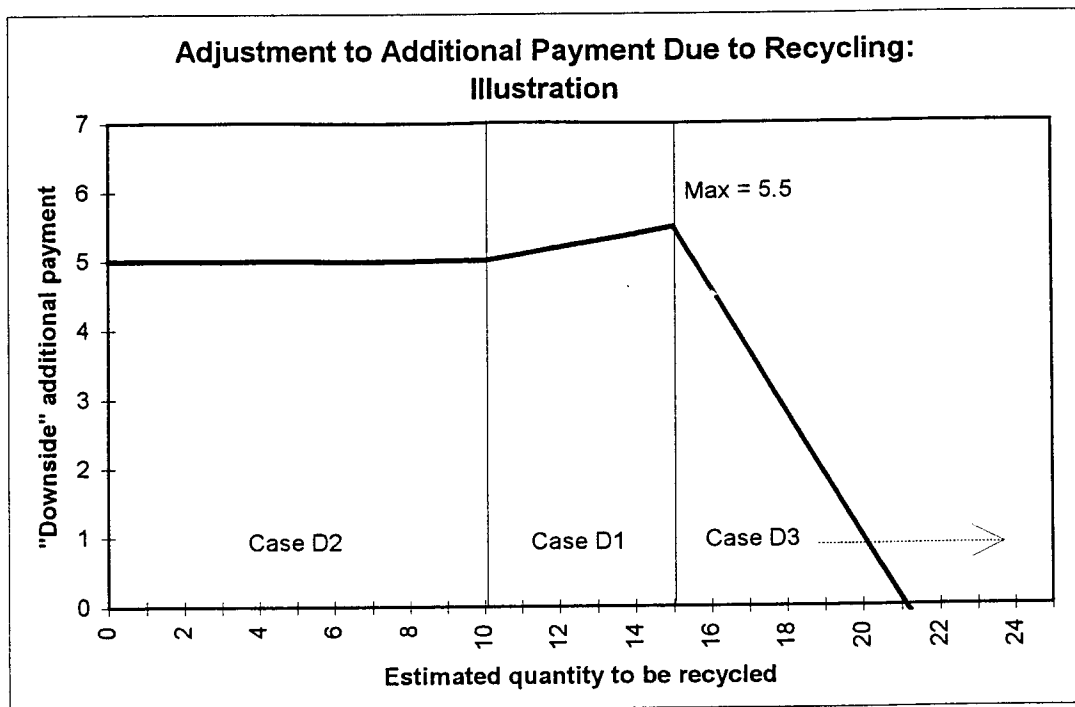
Up to now, we have not paid attention to the question whether it is more appropriate for R_t^e or R_t to be used. Without pursuing this issue in depth, it will be useful to give a worked example to suggest that there may be problems with the way the rules have been formulated in the contract. In this example, the following values are assumed (in arbitrary units):

$$\begin{aligned} Q_{t-1} &= 100 \\ Q_t &= 80 \\ R_{t-1} &= 10 \\ R_t &= 15 \\ P_t &= 1 \end{aligned}$$

The total quantity of waste generated has decreased by 15 units (from 110 to 95) — this is something that could arise from waste reduction at the source. Recycling has increased by 5 units; so the total tonnage delivered to RESCO has decreased by 20.

Keeping these variables constant, we now see what happens as R_t^e is allowed to vary — i.e. we look at the results for different estimates of recycling made by the Town at the beginning of the year.

Figure 1



The results are surprising: the Town pays a lower additional payment to RESCO the more its initial estimate differs from the actual recycled quantity, 15. *The Town is rewarded for giving an inaccurate estimate in either direction*; and the reward here is much greater if it gives a highly exaggerated estimate — e.g. 20 instead of 15. The explanation is related to how the term R_t^e figures in the expressions for the additional payment in the various cases. One might ask why it is that the estimated quantity is used at all in determining the downside additional payment.

Note that if the estimate of recycling is too great, the Town could run into problems on the upside. The correction term in Case U3 is based on R_t^e , not R_t . So if the estimate is very high compared with the previous year's actual recycling, an *upside* additional payment could result. But the way the threshold is fixed gives a band of freedom: in the present example, the Case U3 upside additional payment would not take effect until R_t^e reached 37.3.

Judge Ronan's Interpretation of the "Effect" Provisions

This appendix illustrates two of the weaknesses of the regulation-by-contract approach: first, that a concern with uncovering the parties' common intentions can degenerate into a fruitless search for a clear meaning behind an incomplete contract; and second, that many ordinary judges have an untrained intuition when it comes to *regulatory* issues.

The narrow legal case of *RESCO v. the communities* dealt with the issue of whether the communities should pay in full and then possibly collect damages, or pay in part and then possibly pay an additional amount, depending on the outcome of the trial. Although this issue is hardly the central feature of this case study, it is important since it helps us understand how the judicial system sometimes deals with the interpretation of a contract. Can this legal action tell us anything of interest about the regulation-by-contract approach?

The entire issue rests upon what is meant by the "effect" of the "alteration or addition to the Facility" caused by the change in law, as the term is used in clause 5.6 of the 1975 contract. This is because both the pay-first provision and the third-party-determination provision apply only to the "effect," whatever this may be:

Notwithstanding any decrease which may be projected or any dispute regarding the **effect** of such alteration or addition upon Company's per ton cost of accepting and disposing of waste at the Facility, the Municipality shall be obligated to pay to Company a portion of the payments deemed to be made by the Company during any calendar year to finance the cost of such alteration or addition. [Emphasis added.]

.

If the Municipality disputes Company's statement as to the **effect** of such alteration or addition upon Company's per ton cost of accepting and disposing of waste at the Facility, the Municipality shall have the right to insist upon an independent determination of such **effect** to be made by The Mitre Corporation, or if The Mitre Corporation is unable to undertake the task of making such determination, by a third party or company mutually agreed upon by Company and the Municipality. [Emphasis added.]

The word "effect" is used seven times in clause 5.6, and from the context, one can hardly avoid the conclusion that it is being used in the same way in each instance. It is worth quoting a few key words from each occurrence in clause 5.6 to make this clearer (emphasis added):

1. ". . . Company shall give notice to the Municipality within thirty (30) days . . . stating its estimate of the total cost of the alteration or addition; the yearly payments deemed pursuant to this Section to be made by the Company to finance such cost; . . . and the projected **effect** of such alteration or addition upon Company's per ton cost of accepting and disposing of waste at the Facility . . ."
2. [follows without a break from 1] ". . . (in calculating such **effect** the cost of the alteration or addition shall not be taken into account but any increased Real Estate

Taxes . . . and any increase in the capacity of the Facility resulting from such alteration or addition shall be taken into account).”

3. “ Notwithstanding . . . any dispute regarding the **effect** of such alteration or addition upon Company’s per ton of accepting and disposing of waste at the Facility, the Municipality shall be obligated to pay to the Company [the appropriate capital recovery charge].”
4. “If the **effect** of any such alteration or addition is projected to result in a decrease in the Company’s per ton cost of accepting and disposing of waste . . .”
5. “. . . Company’s statement as to the **effect** of such alteration or addition upon Company’s per ton cost of accepting and disposing of waste . . .”
6. “. . . independent determination of such **effect** . . .”
7. “The determination . . . as to such **effect** shall be binding . . .”

The language used — the repetition of “alteration or addition”, the use of the phrase “such effect” — makes it unlikely that the author intended to use the word “effect” in different ways in this clause. Immediately after the first instance, a qualification and clarification are given (see 2) that helps us understand what is meant or not meant by “effect.” Can there be much doubt that this partial definition is meant to apply also to the following instances of the word (3–7)? This is much like referring to “Tony” in a conversation and immediately giving some additional facts so that the listener knows which Tony is being referred to, and then continuing to use “Tony,” without further qualification, for the rest of the conversation.

It is likely that anyone familiar with government regulation of services or industries or public procurement practices would immediately arrive at a plausible and convincing way of interpreting and explaining these parts of clause 5.6. There are two cost components referred to in the contract: (i) capital expenditures and, by way of a stipulated financing function, a monthly capital charge; and (ii) incremental recurrent (e.g. operating) costs. Determining the incremental impact — the “effect” — of the capital improvements on *recurrent* costs and revenues could be a complicated and highly technical matter, and so a mechanism of third-party expert determination is included for resolution of any disputes over this aspect. Moreover, if there is a dispute over this issue, the communities are obligated to go ahead and pay their portion of the *capital charge* — i.e. the portion about which there is no dispute — in the meantime. A dispute over this highly technical matter should not be used by the communities to hold up *all* payments. According to this reading of the contract, which I would argue is certainly a reasonable one, there is no requirement for the communities to pay the capital charge demanded by RESCO if this payment is itself in dispute. Moreover, there is nothing in the contract that refers to resolution by the Mitre corporation of disputes over capital expenditures.

The communities' lawyers in their response to RESCO's complaint explain this clearly in painstaking detail.¹ In sum: "the Communities have no contract obligation to pay capital costs that they in good faith dispute pending adjudication of the matter" and "the Communities are under no obligation to arbitrate disputes pertaining to capital costs" (p. 20). This memorandum also includes an affidavit of one of the lawyers who developed the initial contract in 1974–75, along with a copy of "Draft #3" of the contract, dated January 8, 1975. This draft of the contract refers only to the "cost" of an addition or alteration to the facility and to how this cost will be passed on to the communities. In this draft, there is no mention of the "effect," no mention of third-party expert determination, and no mention of a pay-first obligation pending dispute resolution. These ideas were added at a later stage. So, if the language of the written contract itself is not convincing enough, one can refer to extrinsic evidence of how the party's intentions developed, which also supports the communities' position.

RESCO's lawyers respond by attacking the communities' "tortured interpretation of the Service Agreements."² They then give their own interpretation in a flurry of legal sophistry. Focusing on "per ton cost" rather than "effect," they would like us to believe that the phrase "effect of such alteration or addition upon Company's per ton cost of accepting and disposing of waste" has one meaning when used in occurrence (1), above, but another meaning in (3), (4), (5), (6), and (7). In other words, the clarification or qualification of that phrase given in (2) applies only to the use of the term in (1) — nowhere else. Elsewhere, it means *all* components that go into the per ton cost of accepting waste, including the capital cost. As they put it, in a rather tortured sentence: "The parenthetical limitation [occurrence 2] on per ton cost in the notice clause [occurrence 1] would not be necessary if capital costs were not subsumed within that clause absent the parenthetical" (p. 16). As part of their further argument, they remark that it is significant that the parties did not generalize the application of (2) by using a phrase such as "hereinafter" or "for purposes of this Section." Of course, one could take just the opposite position, arguing that neither did the parties *narrow* the application of (2) by including a phrase such as "for this purpose only."

They then invoke one of the classical canons of legal construction, the "last antecedent rule": a modifying clause ordinarily applies just to the immediately preceding antecedent, unless the context requires otherwise. Without going into the reasons why they have surely misapplied the "rule" here, we should note that there is another classical canon right on point: "The same language used repeatedly in the same connection is presumed to bear the same meaning . . ." (Llewellyn 1950).

¹ Communities' Memorandum in Opposition to RESCO's Motion for Judgment on Pleadings and in Support of the Communities' Motion to Dismiss RESCO's Complaint", March 23, 1992.

² Plaintiff's Memorandum in Support of Opposition to Defendants' Motion to Dismiss Plaintiff's Complaint and Response to Defendants' Opposition to Plaintiff's Motion for Judgment on the Pleadings, April 7, 1992, p. 13.

All of this is the normal rhetoric of lawyers. Faced with this sort of argumentation, how should the judge decide? In the present case, Judge Ronan was being asked for a judgment on the pleadings. According to law, this should be granted only if the judge finds that the pleadings present no genuine issue as to a material *fact* — in other words, in this case, that the contract terms, on their face, *unquestionably* support RESCO's position. But can we doubt that, at the very least, the contract was ambiguous? One could hardly maintain that the position taken by RESCO's attorneys was the only interpretation reasonably possible. Otherwise, why would RESCO's attorneys need to spend pages of a "careful analysis of . . . text, structure, and policy" arguing in favor of their position? Judge Ronan was clearly in error. How could he have made such a mistake?

The Legal Realist movement in the U.S. in the period between the two world wars took a skeptical view toward the possibility of deciding cases on the basis of syllogistic, non-discretionary rules. Instead, decisions were said to be based on judges' intuitions, their hunches, their personalities, their biases (see Fisher et al. 1993: 164ff.). The Legal Realists would have relished this case.

In the RESCO case, we gain some insight into Judge Ronan's reasoning from proceedings that were held about a month after the court's judgment had been handed down to determine whether an appeal would be allowed on this issue.³ During these proceedings, the lawyers and the judge spent quite some time discussing the problems of interpreting the contract. The communities' attorney stressed that the issue was complicated, and he showed concern that the judge might not have looked at the affidavit of one member of the initial negotiating team that shed light on the parties' original intentions.⁴

Judge Ronan explained to them the way he analyzed at the issue. He knows how municipalities operate: ". . . I as a country lawyer would have occasion from time to time to be asked by a town or city to take on some matter" (p. 29). He believes that one has to be careful dealing with cities and towns: they often try to get out of their obligations. A private company contracting with them would do well to treat them the way a Chinese laundry deals with customers: in the judge's own words, "no tickee, no shirtee" (p. 30). So, according to the Judge, it stands to reason that RESCO might well have insisted on including the pay-first provision in the contract.

Later on in the proceeding, the judge comes out with his gut feeling about the matter: ". . . these communities really seek to avoid, evade, and escape their written

³ Transcript of proceedings before Judge Ronan, May 21, 1992, in official court records for Civil Action No. 92-721.

⁴ The judge was free to consider documents presented by the parties outside the pleadings. This would have transformed the motion into one for summary judgment instead of judgment on the pleadings, with no real change in substance or effect.

agreement to pay and arbitrate; and the plaintiff has performed in reliance upon those promises of these communities, and has expended millions of dollars” (p. 59).

The problem would not be completely solved if judges were to come out and admit that they often must apply their own principles of public policy or fairness in contract cases. The problem is not that the adjudicator uses his discretion, but that there is no coherent regulatory policy underlying this discretion. The judicial system — and conventional arbitration, which resembles the judicial system in many ways — has no special technical or policy-oriented expertise of its own. In the U.S., it relies principally on expert witnesses provided by the parties.⁵

In the case of a contract that is incomplete with regard to an aspect touching on the dispute, judges really have no choice but to go beyond the parties’ agreements — unless the law provides a default rule. The issue then is not whether adjudicators should use their intuition in deciding cases of this kind, but it is rather whether their intuition is well trained. To return to Judge Ronan’s decision, few if any experienced regulators of public utilities in this country would deny that firms regulated under a cost-of-service regime have a tendency not to perform at a technically minimum cost level.⁶ The regulator knows that this generally has nothing to do with falsifying invoices or intentional dishonesty. It is simply the result of the particular incentives acting on the decisions of normal business people. An experienced regulator would therefore be quite sympathetic to the communities’ desire not to pay until the cost issue was clarified. In fact, he would probably approach the case with a rebuttable presumption in his own mind that RESCO did not minimize costs (why should they?). Moreover, a regulator would pay even more careful attention when contracts between a regulated firm and affiliated companies are involved.⁷ Judge Ronan, in contrast, seems to treat this as a normal case of one party failing to respect a bargained-for price. Yet in this case there was no bargained-for price: RESCO simply presented the communities with its costs. Judge Ronan was using the wrong model.

⁵ Courts may employ independent experts in some instances, but in any event the examination and cross-examination will still proceed one witness at a time. Some arbitrators examine both parties’ expert witnesses at the same time in order to iron out discrepancies on the spot. See Groton (1992).

⁶ To take one example almost at random, in a recent article examining a new trend in U.S. utility rate regulation, “Performance-Based Ratemaking” (PBR), the author tosses out, almost as if no one would disagree: “The basic premise motivating PBR . . . is that under traditional, cost-plus, rate base regulation . . . utility managers not only fail to minimize costs but also attempt to conceal the firm’s true minimum cost curve” (Navarro 1996: 108).

⁷ Regulatory commissions look carefully at such contracts (see Phillips 1985: 267).

CHAPTER 6

IMPROVING REGULATION-BY-CONTRACT: IDEAS FOR REFORM

1. INTRODUCTION

The present chapter builds on the findings of Chapters 3–5 by addressing some of the major weaknesses of regulation-by-contract and proposing ways to strengthen this approach as it applies to municipal services in developing and transition countries. There are two major aspects to be considered: organizations and procedures (section 2) and rules (section 3).¹ Finally, a proposal for a comprehensive support system is sketched out (section 4).

Although this dissertation does not address the issue directly, there seems little doubt that regulation-by-contract is not well-suited for all kinds of utility-type services. This question will be discussed in the next chapter. For purposes of the present chapter, it will be assumed that a decision has already been taken as to which services or projects are amenable to this approach, which ones are more suitable for regulation-by-commission, and which should be left to the competitive market.

The recommendations made in this chapter are tentative and exploratory. No suggestion is being made that the system proposed here is ready to be implemented *as is* in any country; among other things, the scheme would have to be carefully tailored to the

¹ The word “rules,” as used in this chapter, usually refers to a broad category containing rules, principles, standards, etc., that constrain the adjudicator’s discretion in some way. In particular, I am not using “rules” in the narrower sense that relates to the “rules versus standards” issue found in the legal literature, where a “rule” is so tightly expressed that it permits very little discretion.

particular country's *institutional endowment* (see Guasch and Spiller 1996: 14ff.). The purpose is rather to reflect on the preceding chapters and to stimulate thought.

Finally, it should be noted that no attempt will be made to address the *technical* legal aspects of setting up an alternative mechanism — the detailed legal engineering. In particular, whether or not the proposed mechanism would be considered to be a form of *arbitration* under the laws of a particular country, thus triggering that country's arbitration rules, will not be considered here. In the same spirit, no attention will be given to the detailed *organizational* design of the system — e.g. the administrative locus, composition, and internal organization of the proposed government agency. This is not the purpose of this chapter.

2. A SPECIALIZED THIRD-PARTY INTERVENOR

One lesson that follows from the preceding chapters is that, no matter how much care the parties themselves take to deal with contractual incompleteness, it is essential to have a third-party adjudicator² or referee capable of delivering expert decisions imbued with public-policy considerations and viewed by both parties — and, just as important, by consumers — as having legitimacy.

The starting position in this chapter — a working assumption, not a final conclusion — is as follows:

² It is worth noting again (see Chapter 2) that the term “adjudicator,” as used in this dissertation, means any third party who is given the responsibility of filling a contractual gap or deciding a dispute or issue in a way that is *binding* on the parties, as opposed to simply giving *recommendations* that may or may not be followed.

- *Something more* is needed than the ordinary court system or conventional arbitration.³ These mechanisms are not well-suited for complex long-term contracts in which the probability of frequent adjustment, revision, and renegotiation is high, where quick and inexpensive resolution of disputes is essential, and where an important goal is to enable the parties to resolve their differences and get back to work together rather than to terminate the contract and award damages.
- *Something less* is needed than regulation by a permanent, broad-mandate, highly discretionary, proactive regulatory body set up at the local or national level (like Ofwat in the U.K.). The adjudicator's discretion should be more highly constrained than that of the regulator in most forms of regulation-by-commission.

2.1 Capsule Summary of Weaknesses of Judicial System

A number of U.S. writers in the early 20th century pointed out reasons why the ordinary court system is not well suited to play the role of adjudicator in a regime of regulation-by-contract (see e.g. King 1912). It will be useful to summarize these reasons here, before moving on. All of the following points are well illustrated in the RESCO case study (Chapter 5), in which it was apparent that the judge was quite happy to find a way to get the case out of the judicial system and into the arbitrator's hands. The points apply with full force to the U.S. legal system, and some of the points (1, 3, 4, 6) apply also to

³ This is certainly true of the ordinary court system in the U.S. and even of the administrative court system in France (though with certain qualifications). There is little doubt that it applies also to the official court systems in most other legal systems and countries.

the French system to a considerable extent. There is little doubt that the points apply to the legal systems in many other countries, too.

1. The judicial system lacks the requisite expertise for information gathering and analysis.
2. It shows a reluctance to admit the existence of contractual incompleteness (especially latent incompleteness), tries to avoid filling gaps itself, tends to clothe its own extra-contractual interventions as if they were merely interpretation, and favors bright line tests and binary solutions.
3. It does not have a strong and appropriate public policy background to be able to supply the most appropriate regulatory rules, especially in cases where the parties cannot agree during renegotiations.
4. It is time-consuming and costly.
5. It is not oriented towards dealing with long-term relationships, where one important goal is to work out an arrangement that will keep the parties together.
6. It focuses on past offenses and is not concerned with laying down rules to be followed in future dealings between the parties.⁴

⁴ Compare the reason given by Delos Wilcox (1911: 743) for why state utility commissions should review rate cases before recourse is had to the courts: “. . . an appeal from the local authorities directly to the courts would not give an opportunity for the development of a consistent theory of rate-making for the state at large . . .”

2.2 Alternative Trends: Expert Forums

The proposal made here builds on recent trends in the use of private *experts* as third-party adjudicators or intervenors and the use of informal procedures. Two trends described here are “expert determination” and “dispute review boards.”

“*Expert determination*” is the term used in English law to refer to a wide variety of methods for the binding resolution of contractual issues or disputes by a third party who is not acting as an official *arbitrator* (see in general Kendall 1996). In principle, expert determination is usually designed to give a conclusive and final decision, but it will still be subject to limited review by a court, the scope of which will depend on national law.

Two common threads link the different varieties of expert determination. First, the adjudicator uses his own technical expertise, instead of, or in addition to, relying on other experts. Second, the mechanism is purely contractual: it depends entirely on what the parties have agreed; it is as if the third party were simply writing an amendment to the principals’ contract. As such, this method is particularly appealing if the goal is to give the parties the freedom to decide how and by whom contractual gaps will be filled; it corresponds well with a justification for contracts that is based on decentralized decision making by economic actors and with the “private-ordering” model for dispute resolution.

Expert determination is used a great deal when the issues are primarily technical or involve questions of valuation or complex calculations involving expert judgment (e.g. valuation of a company’s stock). It has been used for the periodic readjustment of prices in long-term commodity contracts. All of this makes it an interesting model for our

purposes since in many cases of the kind we are considering, there is no disagreement over issues of law. For example, in the Lyon case, almost all issues to be negotiated involved cost estimation; it was quite clear that the city had to bear the burden, whatever it was.

Dispute review boards (DRBs) began to be used in the U.S. in the 1960s for large, complex construction projects (see in general Matyas et al. 1996). They are considered to be quite successful in dealing with disputes and are becoming widespread in many parts of the world. Typically, a DRB consists of three independent, neutral persons — usually having technical expertise — chosen by the parties at the start of the contract. The DRB makes visits to the job site every few months, regardless of the occurrence of a dispute. When a dispute does occur, the DRB conducts informal job-site hearings and then issues written recommendations, together with any explanations, which are usually not binding but are admissible as evidence in any later proceedings. (If they were binding and final, the DRB could be considered as a specialized form of expert determination.) Experience has shown that most DRB decisions are adopted by the parties without the need for litigation or arbitration.

The DRB makes its decisions on the basis of the contract, applicable law, and all the facts and circumstances of the case. Most of the disputes brought before DRBs have a high factual, as opposed to legal, content. Construction contracts that have been carefully drafted (which one might expect for large, complex projects) show a high degree of completeness. Disputes often turn mainly on factual determinations, where it is relatively clear what the contract requires and what the legal consequences will be once the answer is discovered. E.g.: Did the owner's construction plan show all the reinforcing bars that

would reasonably be needed by the contractor to carry out the intended works? Did the contractor obtain the written approval of the engineer before installing certain materials? (See Matyas 1996: 146, 150.) Where interpretation of the contract is not straightforward, the rules and techniques used for ordinary contracts will generally suffice.

Looking at the two types of alternative dispute resolution sketched above, we see several desirable features for the type of third-party intervention most suitable for regulation-by-contract:

1. The DRB has an ongoing responsibility that begins even before there is a dispute and continues throughout the life of the contract. This can provide necessary continuity for regulation-by-contract.
2. The procedures are inquisitorial and investigative in nature, rather than adversarial, and are highly informal. Time and cost are greatly reduced, and there is less tendency for positions to become highly polarized. This is important where the aim is to continue with a long-term relationship.
3. The referee herself, or the tribunal, possesses relevant technical (or financial, or economic) expertise. This is certainly important for regulation-by-contract, where much of the work by the third party concerning renegotiation episodes will involve technical, economic, and financial questions — and where there may be little disagreement over the legal issues.

In fact, one can see how third parties inspired by these institutions could address all the weaknesses of the judicial system listed in section 2.1, with the possible exception of point 3, the need for a stronger public policy input — an issue we will consider later.

2.3 A Proposed Forum: The Concession Referee Board (CRB)

The DRB provides a good base for us to work from. It would have to be modified to function well during the operational phase of a concession as well as the construction phase — e.g. in the case of a BOT project — and this might involve choosing different profiles of experts to serve on the board for the two phases. To distinguish the proposed forum from the typical DRB, let's call it a “concession referee board” — CRB.

Most construction DRBs achieve their results by issuing nothing stronger than non-binding recommendations; the parties usually decide that, given the continuing nature of their relationship, it is in their benefit to reach a quick agreement and get on with work. It is proposed that this approach be adopted for the CRB during an initial period. This has three advantages. *First*, as a purely advisory forum, the CRB will be easier to implement legally in many countries: there will be no potential issue of having to reconcile it with the country's arbitration laws. *Second*, it will be easier to have the new forum accepted by policy-makers, politicians, and the parties themselves if it is not binding and final; one can argue that nothing is lost by the experiment since any party can always go on and sue in court — just as before. *Third*, the mechanism can be refined and any “bugs” eliminated while it still has only advisory force; no major policy disasters can occur.

If the CRB approach works well, the CRBs' recommendations appear sound, few parties go on to courts or conventional arbitration, and for those that do, the final adjudicator generally supports the CRB's recommendations — under these conditions, the CRB could continue to function on a purely advisory basis. If, on the other hand, after a trial period, the approach is evaluated positively and CRBs' recommendations appear sound, but either (a) many parties decide to go on to the final adjudicator (court or

arbitrator) or (b) for those that do, the adjudicator's decision often goes against the CRB's recommendations — if this is the outcome, then it would be wise to consider strengthening the force of the CRB's decisions.

There are a number of ways to bolster the CRB's decisions; most involve either shifting the burden of proof or changing the scope or evidentiary standard for the next level of review. One possibility, for example, would be to permit the court to overturn the decision of the CRB and render a contrary judgment only if the challenge were supported by "compelling evidence," or a similar standard — in other words, to give the CRB the benefit of the doubt. A solution that would strengthen the decisions of the CRB even more would be to permit appeal to the regular court system (or conventional arbitration) only on limited grounds of fraud, evident bias, or *obvious* error (fundamental mistake) in construing the contract or in applying the law, an error that is apparent without the need for extrinsic evidence — e.g. clearly applying the wrong rule, not just applying the right rule in the wrong way. If the CRB's decision were overturned, the case would be remanded to the CRB with instructions. Any of these departures from a straightforward *de novo* hearing by the officially recognized adjudicator at the level above the CRB, however, might in some countries require fundamental legislative re-engineering to avoid preempting basic powers possessed by the official adjudicator.

Another way to strengthen the weight of the CRB's conclusions would involve constraining the nature of the adjudicator's decision, rather than tinkering with the burden of proof or the scope or evidentiary standard for that level of review. *Final offer arbitration* comes to mind as an intriguing possibility for the next, and final, level of

review: the CRB's conclusion would very likely serve as a strong focal point for the parties and the arbitrator. It would tend to decrease the variance of the parties' subjective probability distributions concerning the arbitrator's preferred solution, and it might therefore help to ensure convergence to the CRB's conclusion.⁵

In any case, some form of appeal to a more conventional and generally accepted adjudicator (official court system or conventional arbitration) would be advisable. At stake is the regulation of a public utility, or something close to that, not just the resolution of an entirely private dispute: questions of procedural fairness in an administrative setting become relevant.

Another important issue to deal with is how the members of the CRB would be selected. It is proposed that there be a process of pre-qualification of candidates in order to strengthen the legitimacy of the CRB institution. If the parties are free to pick anyone as a CRB member, with, say, the two party-nominated members choosing the third, there is always the risk that highly partisan advocates will be chosen rather than unbiased, neutral experts. Sophisticated repeat players in huge international construction contracts may well understand that, viewed *ex ante*, they are likely to benefit more if they choose someone who is truly neutral; but it is not so clear that local governments and typical concessionaire companies will generally think this way.

⁵ One theoretical problem with final offer arbitration is that, for many plausible types of probability distribution, it turns out that the *loss* in potential payoff as a party moves towards the median of its subjective probability distribution for the arbitrator's preferred solution outweighs the *gain* in the probability that the arbitrator will select that party's offer, thus pushing the parties apart rather than making them converge. The more peaked is the subjective probability distribution, the less likely is it that this undesirable outcome would occur. (See Brams, et al. 1991.)

So an “appointing authority” is needed, whose main task would be to draw up a short-list of eligible (expert, impartial, judicious, pragmatic) candidates for the CRB. The question of who this appointing authority should be leads to the next section, where it is proposed that private organizations can play this role, with the state entering the picture *perhaps* to license these private organization and *certainly* to serve as the default appointing authority.

2.4 Private or State-Administered Proceedings?

The idea of a decentralized, private system of adjudication for regulation-by-contract is appealing. Respected institutions — e.g. professional associations or joint industry-municipal groups — could offer their services, and the parties could choose the one they prefer and write its name into their contract. This is often done today with conventional arbitration (see the RESCO case (Chapter 5), where the CPR Institute was designated as the supporting institution for arbitration in the second contract). The private organization would play two roles: first, as the appointing authority to pre-qualify the CRB members; second, to provide rules for and administer the CRB proceedings.

Arbitration is generally a private affair. In the case of regulation-by-contract, there would be a public policy interest in requiring CRBs to state the reasoning behind their awards and to publish the results. How else could parties judge whether they want to use a particular organization?

The national government would have to play a role. First, the government would need to set up the overarching framework for the CRB system — the enabling legislation or regulations — (though this would not be necessary for the simple ad hoc use of a CRB

in the context of a specific contract). Second, if the CRBs' decisions were given more force than that of mere recommendations, the government might well want to license the administering organizations to bolster the legitimacy of the system. Third, it would be good for the government to offer its own services as an appointing and administering authority, if the parties wished; this would be especially important if the parties failed to specify a valid private organization or if, for any reason, the one they chose could no longer serve in that capacity.

3. DEVELOPING NEEDED BACKGROUND RULES AND STANDARDS

3.1 Rationale

This dissertation has focused on the problems caused by contractual incompleteness in long-term contracts. It has been argued that background rules and standards are needed to fill contractual gaps. One may ask why explicit background rules are needed at all if a competent third party is chosen — such as would be found in a well-designed CRB system. The answer is that this is the way to increase the predictability of decisions and hence instill confidence in the system; otherwise, it will remain dependent on the personality of the third party in any particular case. So the CRB system would need background rules to function well.

3.2 Existing Rules

Chapters 3–5 have looked at some of the existing background rules that might apply to regulation-by-contract as practiced by the judicial system. Before moving on, it will be useful to survey briefly two other possible sources for these rules: customary rules

for international commercial arbitration; and the growing body of specialized “concession” or “BOT” laws.

3.2.1 Lex Mercatoria

A body of customary rules are said to be evolving in international commercial arbitration awards — the “lex mercatoria.” They are discussed by certain legal scholars because some commentators believe that they could constitute a sound basis for resolving such disputes, rather than the application of the laws of a particular country (see in general Carbonneau 1990). This particular use of these rules is not our concern here. What is interesting is to see what kind of rules they are: Could they usefully serve as the background rules needed for regulation-by-contract?

The “rules” of the lex mercatoria are really just broad principles. There is no authoritative, generally accepted statement of these principles, but a number of authors have attempted to distill some of the major ones (see, e.g., the discussion in Lowenfeld 1990, esp. at pp. 54–55). Most of them deal with the general issues that typically arise in commercial contracts — the kinds of issues that contract law is concerned about. A few examples: “No party can be allowed by its own act to bring about a non-performance of a condition precedent to its own obligation.” “A party must act promptly to enforce its rights, on pain of losing them by waiver.” “Failure by one party to respond to a letter written to it by the other is regarded as evidence of assent to its terms.”

More to the point for our purposes, one of the principles cited by Lowenfeld (1990: 54f.) deals with the question of renegotiation. It is a default rule: “If unforeseen difficulties intervene in the performance of a contract, the parties should negotiate in good

faith to over come [sic] them, even if the contract contains no revision clause.” Classical contract law tends towards a binary solution in the face of an unforeseen, uncontrollable event: as Lowenfeld notes, the party is either fully discharged from its obligation or it is fully liable. In contrast, in *lex mercatoria* there appears to be a different tendency: to postpone performance or to apportion losses. Given the diversity of commercial contracts and arbitration cases, it is hardly reasonable to expect a synthesis of emerging principles to go much beyond that. Yet, given the importance of the issue in regulation-by-contract, such principles by themselves hardly give sufficient guidance to arbitrators or a sufficient sense of predictability and consistency to potential parties.

What are the principles that govern how contracts are to be revised or adapted? The details depend on particular cases, of course, but as a general principle, we cannot find much more than an attempt to reach an “equitable contractual balance” that serves the “business efficiency” of the parties’ relationship (see Nassar 1994: 237ff.). “Sharing” becomes a dominant theme (Nassar 1994: 23).

It does not seem, therefore, that the *lex mercatoria* will be of much help for the needs of regulation-by-contract.

3.2.2 Special “Concession” Legislation

Given the current popularity of various forms of concessions and BOT arrangements, many countries in recent years have adopted special laws to serve as a

framework for these activities.⁶ Do these laws provide adequate background rules for a sound system of regulation-by-contract?

In general, these laws are especially concerned with the procedures that public authorities must follow to grant a concession to a private company (e.g. procurement procedures and approvals), with the contents of the concession agreement (i.e. at the very least, the topics that should be covered), and with certain critical, sometimes politically sensitive, rights and obligations that the concessionaire will have. It is often not clear from these laws, however, if these statutory rights and obligations are to be considered mandatory or default.

With respect to one of the main concerns of this dissertation — namely, the problem of contractual incompleteness — most of these laws take a cavalier attitude. It is not uncommon for them to specify that the written agreement between the government authority and the concessionaire must provide mechanisms for the revision of tariffs or must provide for relations between the parties in the event of unforeseen circumstances. Although this is useful, it is hardly sufficient, for as we have noted, the contract itself is generally not capable of containing all the rules needed to complete the contract adequately.

It is noteworthy how similar the provisions for local-level concessions are to those governing national-level concessions in these laws. Instead of “prime minister,” we read “mayor”; instead of “national assembly,” we read “city council.” Too much in these laws reads as if the parties are of equal bargaining power and sophistication. This may be more

⁶ The following is based on internal documents from the UNCITRAL Expert Group that is working on a

true for projects at the national level: when the central government decides to grant a concession for a utility service such as power or telecoms, it can pour a vast amount of money into preliminary studies, advisors, task groups, the creation of special regulatory bodies, and so on. There is little recognition in present laws that the problems are vastly different with most municipalities. When a local government comes up against a large private utility company, we are confronted with a highly asymmetrical bargaining situation.

As for force majeure or hardship or “change of circumstances” provisions, most of the laws do not go much beyond setting out the general principles often found in ordinary contract law — e.g. that an event of force majeure will excuse or suspend the obligations of the affected party — or simply requiring that the contract deal with the issue. There are exceptions, however. Colombia, for example, provides that the administration may unilaterally modify the contract for reasons of public interest, but in that case, the company is entitled to be compensated for any additional costs, and (especially important from our perspective) later regulations will “provide the procedures for ascertaining and liquidating such costs, . . .”⁷ All too often, however, the stated criterion strikes that familiar tune: restoring the “balance of the economic assumptions that presided over the signature of the contract”⁸ or the “initial financial and economic equilibrium.”⁹ Sometimes all that is said is that the contract “may, in the case of substantial changes in the circumstances, be amended upon the initiative” of the company.¹⁰

legislative guide for BOTs.

⁷ Ley 19 de 1982 (22 Jan. 1982), art. 6.

⁸ Spain: Decreto 923/1965 (8 April 1965), art. 74.

⁹ Brazil: Lei No. 8.987 (13 Feb. 1995), art. 9, para. 2.

¹⁰ Slovenia: Public Trading Services Act, 1993, art. 39.

3.3 Types of Rules

We can classify the types of rules that might be needed into four categories:

(a) *mandatory contract rules* that cannot be overridden by the parties; (b) *default contract rules* that come into play only if the actual contract terms are silent, vague, or ambiguous regarding the issue; (c) *contract information requirements* that specify the factual information about the project that must be contained in the contract for it to be considered valid; and (d) *non-mandatory guidelines* that simply provide the parties with suggestions.

More will be said below about the subject matter of desired background contract rules. One question to address at the outset, however, is whether and in what circumstances *mandatory* rules should ever be used in regulation-by-contract. What is the justification for such paternalism? Why not let the parties decide for themselves? One can think of several reasons for using mandatory background rules to prevent egregious injustice or inefficiency:

1. The fact that city officials have short terms in office compared with the duration of a long-term contract in regulation-by-contract increases the possibility that they will not sufficiently take into account the long-term interest of residents.
2. The economics and incentive effects in long-term contracts are often complex and subtle. City officials and their lawyers may not fully understand them. For example, the usefulness during later renegotiations of a contract provision that permits the city to terminate the contract “at will” in exchange for a fully determinable payment may not be sufficiently appreciated by the parties. And non-experts often see no problem in simply stating that city must pay the “fair value” of

the plant and equipment, not realizing that in a regulated industry with sunk costs, valuation is a thorny question, the answer depending ultimately on how the user charge is going to be set in the future. One could argue that in an area as important as this, some well-placed mandatory, as well as default, rules might be beneficial.

On the other hand, one could take the common position that, in a case of poor information, the best solution is to provide more information — e.g. annotated guidelines and training courses — rather than mandatory regulations.

In general, one can say that default rules should be used for the most part, but in some cases mandatory rules might be warranted.

A word should also be said about *contract information requirements*. There is no doubt that the process of adjusting the contract in the face of various contingencies would be greatly aided if the contract already contained certain kinds of detailed information — e.g. information about costs. The background rules can best be applied only if sufficiently detailed information is contained in the original contract. For example, just to deal with the question of avoided replacement cost, one would want to see, at a minimum, an indicative equipment replacement schedule and the original investment cost of the component in question. The parties themselves might not think of putting this kind of detail in the contract.

To solve this problem, the company could be obligated at the time of bidding to place in escrow all the documentary information that it used in preparing its bid — itemized costs, copies of quotations, consultants' reports, etc. These documents could then be examined by the parties and by the CRB in any case in which it became necessary

to adjust the price in response to a change in equipment or process (cf. Matyas et al. 1996: 157ff.).¹¹ Such a requirement might have facilitated the renegotiation episodes in the Lyon case, for instance, where it was necessary to estimate the incremental impact of various changes on operating costs.

The idea of information requirements raises the question of whether the contract should need to be approved by a government agency before it can enter into effect. We will return to this point later.

3.4 Subject Matter of Rules

Before considering who should write the rules, it will be good to look at several categories of issues that typically arise in contracts of this sort and discuss what kinds of rules are needed. As we have noted, the two major occurrences of incompleteness in the contracts we have been considering concern: (a) dealing with changes in service requirements that result in changes in the company's costs, and (b) needed readjustments to the price terms of the contract (especially, the price indexation formula) due to changes in the prices of the company's inputs. We will therefore begin with these items and then move on to other issues that were brought out in the case studies.

3.4.1 Modifications to Plant or Equipment

As we have seen from the case studies, contracts often give very little guidance as to how the impact of a change in plant or equipment on price should be determined. If

¹¹ Of course, one has to be aware of the company's possible strategic manipulation of the information it provides.

regulation-by-contract is to be effective, the adjudicator should have rules and standards that he can apply if needed.

The common problems of incompleteness that affect ordinary contracts are different from those typically affecting long-term contracts for the regulation of monopoly services. As the scholarly literature shows, a principal concern in ordinary contracts is a gap regarding the allocation of a particular risk. The question then becomes: Who should bear this risk? This is indeed a concern with respect to revisions of price indexation formulas. But with respect to revisions dealing with changes in service requirements or modifications in equipment, the gross allocation of risk is often quite clear: i.e. there may be no disagreement that the municipality will have to bear the cost of a certain change in service — as in both the Lyon and RESCO cases. This practically goes without saying if the change in service has been ordered by the municipality, as opposed to having been caused by an event outside the control of both parties. Here, the issue of risk allocation is often one of fine tuning: What does it mean in precise, operational terms for the municipality to “bear the costs” of the change? Fine tuning becomes important in regulation-by-contract because of the frequency with which such issues will arise and the long-term nature of the contract. In ordinary commercial contracts, in which a typical pattern is for one dramatic episode to occur leading the parties, if all else fails, to go to court, the fine tuning is not so important; instead, determining the gross allocation of risk is the main concern.

Presuming that the method to be used is based on incremental costs and revenues (i.e. there is no global review of the entire revised contract),¹² one can break down the required process into several steps:

1. The municipality specifies the change in service output that is desired.
2. A determination is made of the changes in the company's inputs (investments, O&M, etc.) that will be needed. This should be the *least-cost* solution; and exactly what this means (e.g. from whose perspective? over what time period?) and how it will be determined must be made clear.
3. The incremental costs associated with the change are estimated (presuming that the method of price adjustment is ex ante and not ex post — and this would need to be specified, too). It must be specified how the estimate is to be made. Account must be taken, also, of all costs that can now be *avoided* by the company.
4. Finally, a financing algorithm is needed to translate investment costs into a periodic payment or a unit price.

The case studies have suggested just how complicated and hardly self-evident some of these issues can be. For example, referring to (3), we note that the Lyon contract (Amendment No. 4) contained a clause stating in effect that the parties should take into account the costs avoided by the company in not having to replace the original equipment if upgraded equipment were to be installed, since the new equipment would make replacement of the original equipment unnecessary. This is a good principle that is seldom set out explicitly in such contracts. Moreover, as noted in Chapter 4, the calculations can

¹² And this assumption itself would need to be the subject of a background rule.

be carried out in different ways: for instance, one could use accounting conventions or discounted cash flow techniques. The rules should make this clear.

3.4.2 Specification and Adjustment of Indexation Formulas

The second major area of concern in regulation-by-contract (for long-term contracts) is with the price indexation formula. We have seen, especially in the Lyon study, just how complicated these formulas can be. A perennial question in regulation-by-contract is whether one can expect such a set of formulas to be acceptable to the company for the 20–30 years needed — without the company’s adding an enormous risk premium to the price. Obviously, the answer depends on industry practices and the behavior of costs, given the type of industry, the country, and so on. The Lyon contract gives ample room for a revision of the indexation formula; in contrast, the RESCO contract makes no provision whatsoever for this.

In many legal systems, there is a concern that, even if the contract is written as if the indexation formula applies absolutely, the adjudicator may find a way to “adapt” the contract to prevent extreme hardship to the company. Since the parties know that this possibility exists, the company can exert pressure on the municipality to revise the formula if conditions change dramatically. Moreover, if the contract is awarded through competitive bidding, the uncertainty over if, when, and how the indexation formula might be revised in the future may affect different bidders’ prices in different ways, thus confusing the municipality’s evaluation of the offers.¹³

¹³ Some observers in the international market, for instance, are convinced that certain water and wastewater companies believe that a way can always be found to revise prices later on, and this induces them to bid lower than they otherwise would — “lowballing.” But the municipality may be evaluating the

Assuming here that the parties want to leave the door open for a possible revision of the indexation formula in case it diverges far from actual costs — if only to preempt a court’s later intervention in the matter — the question becomes how to control the criteria and the method of revision to prevent having to rely on unconstrained bargaining.

Suppose that the parties do not refer at all to these details in the contract — or do so only in cursory terms. There might be an advantage to having background rules that address these issues. There are many different approaches that could be followed. One possible set of rules — given for purposes of illustration — would be as follows:

1. A detailed cost analysis is submitted by the company, substantiated by the company’s records and adequate supporting documents.
2. A “reference cost” is calculated, in which all quantities remain the same as in the estimate attached to the contract and in which only the *prices* of inputs are updated. This is an idea taken from one of the French model contracts mentioned in the Lyon case study — i.e. only input *price* risk is passed on to the municipality, not input quantity risk.
3. As a trigger condition for a revision to take place, the reference cost of carrying out the activities in question must be least *X%* greater than the actual payments received according to the current pricing formula.
4. If a new kind of input is used by the company (in which case there is no contractual *quantity* to refer to), the revised cost element corresponding to that input will be based on an assumption of efficient operator performance in accordance with best

bids as if prices will not be revised; and other bidders may make this assumption also in submitting their

industry practices and not take into account any increase in cost caused by the company's failure to comply with the terms of the contract or by higher current operating or maintenance costs due to inadequate maintenance in the past.

One could treat these rules as default rules, to be brought into play if, say, the parties simply write into their contract a general hardship clause relating to the price indexation formula. But note that there is a contract information requirement also: point (2) refers to an estimated bill of quantities to be attached to the contract. This is a good example of how different types of rules might interact.

There is no doubt that this particular set of rules would provoke considerable discussion among experts and would certainly have to be modified and refined before it would be acceptable. Point (4), for example, might cause concern. The reason for including it is that, if a particular input became very costly because of a price rise, the company might substitute another, cheaper input. It would not make sense, then, to compensate the company as if it were still using the more expensive input. In some cases, however, the company might in consequence have to alter the quantities of *other* inputs to compensate for use of the new input. But according to (4), this would not be reflected in the price revision. So some modification to the formulation given above would surely be necessary.

This illustrates well that no matter how detailed such rules become, there will always be aspects for which the adjudicator will have to exercise discretion — and, let us hope, *educated* discretion. General principles — e.g. those that bring in the whole

offers.

intellectual baggage of a particular discipline — can help here: e.g. “in determining *Y*, generally accepted principles of discounted cash flow analysis and modern-finance techniques of capital budgeting shall be used” (and one could go on to cite several standard textbooks). Discretion will not have been eliminated by this method, but its scope can be greatly constrained by the background rules and principles.

In addition to the question whether there should be background rules regarding the revision of indexation formulas, one could ask whether there would be benefit in having rules for the *composition* of indexation formulas. In France, the model contracts and national law serve (or in the past have served) this function to some extent. For example, should certain kinds of price indices be barred from use in regulation-by-contract? What if the weight on a particular index plainly bears no relation to the weight of the corresponding cost component in the total of costs that the formula purportedly is intended to track? It may be that non-mandatory guidelines are most suitable for handling issues of this sort.

3.4.3 Price of Capital

Given the growing interconnection of world capital markets and the standardization of benchmark interest rates, such as the various U.S. Treasury rates or LIBOR, there is hardly any excuse today for a long-term municipal service contract not to contain a reference rate, a credit or risk margin, and a financing function that will apply in case of any unplanned capital expenditures whose cost is to be passed on to the municipality or to consumers. Both the RESCO and Lyon contracts (Amendment No. 5) use this method.

It may be, however, that some parties will leave this value open, to be decided in future negotiations. Or, even if a reference rate is specified, one could argue that the rate is conditional on relevant features of the contract remaining unchanged. As the discussion in the Lyon case study suggested, if because of reasons related to unusual technical features or to different arrangements for risk sharing, the risk characteristics of the incremental project were sufficiently different from what might have been contemplated in the original contract, one might contend that the reference financing rate should be modified. In either one of these cases, it would be useful for the adjudicator to have background rules, based perhaps on modern finance theory.

The background rules should not attempt to fine tune this aspect, however. The first goal should be to *identify* the issue and encourage the parties to address it in their contract (i.e. to contract around the background rule); the second goal should be to provide a roughly reasonable value in case the parties do not address it.¹⁴

3.4.4 Overhead Cost

Most contracts do not go into great detail in describing what considerations should go into the renegotiation of all components of a price. The Lyon study pointed out the fallacy of using the original percentage allocated to the overhead of the project company as the rate to be applied for an incremental project. The question has to be decided by an incremental analysis: Just what are the expected *incremental* overhead costs? Once

¹⁴ For instance, we would expect that, in a new concession with a novice municipality, the risk as perceived by the concessionaire (and hence the required return on equity) might decrease over time, if all went well. It would probably not be advisable, however, for the background rule to try to capture such a highly idiosyncratic aspect. The parties would simply have to make do with a rougher rule if they failed to deal with this in their contract.

again, it would be helpful to have background rules to help fill in contractual gaps in this area.

3.4.5 Risk Allocation

In much of the discussion up to now of the impact of modifications to plant and equipment, we have been presuming that the question of who should bear this cost is quite clear. In fact, as the RESCO case brought out in dramatic detail, there is often disagreement over how various risks are to be allocated. There may be clarity over certain well-specified kinds of risks, but this leaves a large set of events and circumstances for which various kinds of argument by analogy could be made on one side or the other — even before the problem of latent incompleteness is considered.

Both legal and law-and-economics writings have pondered over the normative issue of how the legal system should allocate risk in contracts under various circumstances, in the absence of a clear agreement by the parties. This is not the place to review this corpus of literature. The point to be made here is simply that appropriate background rules could be developed to deal with the types of problems that arise in regulation-by-contract, just as French law has developed an unequal sharing rule (typically 90:10) to handle temporary hardship faced by a concessionaire due to unforeseeable circumstances beyond its control — the theory of *imprévision*. The rules could be more specialized and differentiated than, say, a simple sharing rule that splits unallocated risks 50:50, a rule discussed by Fried (1981: 70f.) in the context of contracts in general.

Following Posner and Rosenfield (1977), the rules that are developed might allocate a particular risk to the party best able to control or bear it — *on a case by case*

basis. In principle, one could imagine quite sophisticated decisions being made by an adjudicator using accepted economic theory — e.g. concerning diversification of risk. For instance, in the event of an unexpected and extreme increase in the price of one of the specialized material inputs used by a company, if the price rise affects many of the company's operations, located in different cities, one could make a good argument for allocating most or all of the cost to users, since the service in question will normally make up only a small part of their consumption basket. If the concessionaire company were to bear the risk, this might cause its bankruptcy, and there may be high costs associated with that outcome. But one might reach quite a different conclusion if the unexpected event were something that had a broad impact on one community but only an isolated effect on the company's overall operations — e.g. damage from localized flooding. In that case, it might be more efficient for the company to bear the cost rather than users. For the company, such a risk is diversifiable.

Despite the attractiveness of such policy decisions from an economic point of view, taking such a decision might require a costly study of each particular set of circumstances. It may be that simpler rules of thumb would be better, as in some other areas of economic regulation — e.g. in U.S. anti-trust regulation, the distinction between bright line (“per se”) tests and the “rule of reason” standard. Given that expenditures for municipal services occupy a relatively small percentage of the average household's budget, one can see why it is usually the municipality or users that should bear most of the risk of unexpected events. But requiring the company — as a general rule, even if it may not fit every case — to take a small percentage of these costs is a good way to deal with the moral hazard problem inherent in the unobservability (or at least unverifiability) of actions

or omissions by the company that increase the probability or cost of such purportedly uncontrollable events. There is merit to the French *imprévision* approach.

A more recent view, inspired by game theory, is that greater benefits can often be obtained if default rules serve to induce the parties to contract around them, instead of their remaining silent or fudging the issues (see Ayres and Gertner 1989). For example, a statute could state that all risks that are not explicitly described and allocated in the contract will be borne by the company, and that any ambiguity or vagueness in this regard will be construed against the company. Given the greater information possessed by the company and its greater skills in drafting contracts, such a rule would encourage companies to enter into considerable detail and precision in describing in the contract any risks that are to be passed on to the municipality. And the municipality would learn a great deal about the company's perception of conditions and of its own ability to estimate parameters and to control events by the proposals that it put forward.

As an example of this approach, let us look again at price indexation formulas and at whether they can be revised in exceptional circumstances. Under many systems of contract law, this possibility would exist. According to a restatement of general principles of European contract law, "If . . . performance of the contract becomes excessively onerous because of a change of circumstances, the parties are bound to enter into negotiations with a view to adapting the contract or terminating it, provided that: . . . (c) the risk of the change of circumstances is not one which, according to the contract, the party affected should reasonably be required to bear" (CECL 1995: Article 2.117). The issue dealt with in (c) would leave a considerable amount of discretion to the adjudicator

in deciding whether the presence of a particular price indexation formula in a contract implies that all residual risk should be borne by the company, no matter how onerous. In the context of regulation-by-contract, one approach would be to provide more guidance to the adjudicator on this matter by giving her more detailed rules.

But what if, instead, the law were quite clear in stating that a price indexation formula included in a municipal service contract, in the absence of any express qualification or exception, creates a conclusive presumption that the company has agreed to bear the entire residual risk of input price changes, regardless of how onerous performance becomes because of a change of conditions. Now companies would think more carefully about what exceptions they would like to see put into the contract, and they would have to raise these issues with the municipality. Moreover, there would be a greater chance that the bid prices for such a contract would be based on common assumptions about whether an indexation formula would be taken at face value over the course of the contract.

3.5 Who Should Develop the Rules?

Where should the needed background rules come from? In France, until quite recently, the rules emerged entirely by way of common law: the *jurisprudence* of the Conseil d'Etat, synthesized and annotated by scholarly commentary (*doctrine*).

Those advocating the use of private arbitration, or privately administered CRBs, to resolve disputes in regulation-by-contract might tend to favor the gradual evolution of customary ways of handling various issues — a type of *lex mercatoria* specialized for this purpose (cf. section 3.2.1). But this would probably not give the needed predictability to

create sufficient confidence in the system; and confusion would likely result if each administering organization were required to prepare explicit guidelines on these methodological issues.

There is another important reason why non-judicial dispute handlers, such as the CRBs, are not well placed to develop optimal rules in the course of dealing with problems they encounter in their work. To be optimal, the rules should be developed *ex ante*, not just when a dispute arises. If a rule is developed *ex post* by an adjudicator who is concerned only with the outcome in the particular case before her, the incentive effect of the rule on the performance of *other* contracts will not be considered. If a party knows in advance that the tribunal is likely to adapt the contract later to eliminate hardship, how great an incentive will it have to reduce the probability of such circumstances and to mitigate the severity of their impact? There is a moral hazard problem: sorting out *ex post* what was reasonably controllable by a party is no easy task for a tribunal. Moreover, a party will tend to reduce the effort spent at the contract-drafting stage in identifying and allocating future risks if it believes that it is likely to get a better deal by remaining silent.¹⁵ In attaining the right balance between writing rigid rules and allowing more discretionary flexibility, one must deal with the tradeoff between creating incentive effects for the future and attaining the best outcome, *ex post*, in a particular case. An adjudicator from outside the official judicial system (e.g. a private arbitrator or CRB member) is more likely to give

¹⁵ These are some of the reasons put forward by defenders of the classical view of contracts as bargains whose integrity must be respected, even if hardship on one party is the outcome (see in general Fried 1981).

too little weight to the broader incentive effects of rules and decisions: institutionally, he does not internalize the benefits.¹⁶

It seems inescapable, therefore, that the national government should have an important role to play in developing the basic rules and principles. Following the general pattern in other areas of regulation, the best approach would probably be a layered one: a general statute on top, followed by more detailed regulations issued by a specialized governmental body, and finally a “common law” that would evolve out of the decisions of adjudicators in their efforts to fill inevitable gaps in the statutes and regulations. Bringing these ideas together with the CRB concept outlined above (section 2.3), we would want each CRB to be free to give its own reasonable interpretation to the regulations. The private administering organizations might have different approaches: some might give their CRBs complete freedom of interpretation (subject of course to the official regulations); others might decide to operationalize the regulations in the form of internal guidelines that the CRBs under their administration would be expected to follow — perhaps a detailed cookbook-type manual containing general principles, specific rules, and lots of worked examples.

Since no set of written regulations can yield a determinate rule for every situation, each administering organization or each particular CRB might, in effect, develop its own customary law and its own style of decision-making, which the others would not be obliged to follow — i.e. an interstitial “common law,” but without *stare decisis*. The

¹⁶ This may be one reason why the *lex mercatoria*, distilled from arbitration proceedings, tends to favor rules involving *sharing* in the case of hardship, compared with a more rigid binary treatment by the official legal systems of many countries.

concerned government agency (or ad hoc commission) would study these developments and from time to time would revise the regulations to incorporate improvements — an evolving “restatement” or codification of the CRB case law, or in some instances, a modification or rejection of it.

Finally, we should mention one further role that could be played by a body at the national level. As mentioned earlier (Chapter 2), unanticipated productivity increases over the long term may well result in windfall gains to the concessionaire in a system of regulation-by-contract. One possible idea is that the concessionaire’s remuneration should be “rebased” periodically (say, every five years) in a forward-looking manner to take into account increases in productivity in the particular industry, given the characteristics of the service system.¹⁷ Such an adjustment would be accepted by both parties only if it were carried out by a high-level expert body. In effect, this would be a periodically convened regulatory commission with a very narrow mandate. The determination of the commission would enter into the contract as a special mandatory background rule.

3.6 Contract Clearance

As described above (section 3.3), it would be helpful for later negotiations if the original contract contained detailed information of the right kind about costs and other parameters. One way to achieve this would be simply to urge local governments to include this information — urging them by means of training sessions, non-mandatory guidelines, etc. Another way would be to require that these contracts be cleared by the

¹⁷ E.g., if new technology has made it possible to dramatically reduce the cost of removing phosphorus from wastewater, one must take into consideration how much this function accounts for the total costs of the service system — and the system may not even involve phosphorus removal.

concerned government agency before they can go into effect. Such an *ex ante* review process should focus on making sure that all essential items have been included in the contract — a checklist approach — rather than on the substance of the contract terms. In some countries, however, it may be unrealistic to imagine that a government agency carrying out such a review process would not end up raising a score of meddlesome objections or trying to rewrite the contract for the parties. In that case, it would be better to forgo the possible benefits of a light-handed clearance process and rely instead on education and exhortation.

4. THE NEED FOR A COMPREHENSIVE SUPPORT SYSTEM

This chapter contends that many of the problems seen in regulation-by-contract could be remedied by an adequate *support system* set up by the national government.¹⁸ There is a strong public-good aspect to many features of the contracting process, from the initial competitive bidding procedure, to the written contract itself, and then to the process of renegotiation when the contract reopens. Nonrivalrous benefit can be obtained by many parties by costly efforts expended by *one agency* to develop rules, techniques, and documents. In particular, it is unrealistic to expect the parties themselves to spend a sufficient amount of time and cost to think through all contingencies and detailed rules for handling them.

A government that takes seriously the problems of regulation-by-contract for local government services would want to develop a comprehensive support system. What

¹⁸ Bearing in mind also that not all service systems may be suitable for a regime of regulation-by-contract, as will be discussed more fully in the concluding chapter.

might the different components of such a system be? We have already looked at them piece by piece. Now we can summarize the scheme:

1. A basic enabling act at the national level.
2. A special-purpose government agency charged with:
 - a. developing detailed regulations (the *background rules*, most of which would be non-mandatory);¹⁹
 - b. developing non-mandatory *guidelines* and possibly model contracts — or at least various model contract clauses to suit different purposes;
 - c. developing ways to improve the quantity, quality, comparability, and effectiveness of information obtained about the performance of companies and contracts (involving accounting conventions, forms, reporting requirements, publicity, benchmarking, etc.);²⁰
 - d. developing other supporting material, such as guidelines for local governments for the selection and management of consultants and lawyers;
 - e. carrying out workshops for local government officials;
 - f. (possibly) reviewing in advance and giving clearance to all contracts within its jurisdiction (see section 3.6);

¹⁹ One possibility would be for the rules to be developed and periodically revised by an ad hoc blue-ribbon committee of distinguished practitioners and scholars, rather than by the agency itself (and therefore this comment applies to (f) also).

²⁰ An important reason for central-level involvement concerns disparities in information about costs. The large concessionaire company groups have the possibility of exchanging goods and services among subsidiaries at transfer prices that may not represent those of the free market. It is quite difficult for a single municipality to sort this out in studying just the financial statements of its own concessionaire. Monitoring, reporting, and analysis at a higher level would be useful.

- g. studying the recommendations/decisions issued by the CRBs (private and government-run) with a view to improving the official regulations;
 - h. commissioning studies and holding conferences periodically with a view to elaborating or revising rules, guidelines, etc.
3. A basic framework for *concession referee boards* (CRBs) that would deal with these contracts. In essence, private organizations (e.g. municipal, trade, or professional associations) would be permitted to offer their services as CRBs, using their own procedures. Parties would choose a CRB when they signed the contract, and if they did not specify one, the government-run CRB would be the default forum. The CRBs would have to follow the official background rules in construing the contracts. The CRB would be obliged to set out the reasoning behind its recommendations, and these would be published. Publication is important if the background rules are to be progressively improved and if potential parties are to be able to judge the quality of different CRBs.
 4. A government-operated CRB (a special administrative forum) to be used as one of the alternatives to be selected by the parties, or as a default choice if the parties do not name one of the private administering organizations.
 5. The parties would have recourse to a *de novo* hearing or a more limited appeal, as the case may be, by the normal dispute-resolution forum in that country — courts or arbitration.

As noted at the beginning of this chapter, no pretense is being made here that the system, as described above, is ready to be implemented. The organizational requirements

of this ideal-type model might be daunting for any government, especially one in a developing country. Nevertheless, in a number of countries, national governments are taking a hard look at what is happening with urban water and wastewater systems where responsibilities have been devolved to local governments and the local governments in turn are now delegating responsibilities to private operators through long-term contracts. Some national governments are contemplating the establishment of regulatory commissions that would oversee all these local utility companies. It is useful to bear in mind that there may be attractive alternatives and that these may be no more costly for the government to set up and run — especially since the model described here involves decentralization to private organizations of part of the regulatory function itself.

CHAPTER 7

CONCLUSIONS AND REFLECTIONS: CONTRACTS VERSUS COMMISSIONS

1. INTRODUCTION

This dissertation has presented two contemporary case studies to explore whether the problems seen in regulation-by-contract for municipal services are intrinsic to the approach itself, or whether regulation-by-contract failed in the past for reasons that can be avoided. We have seen how difficult it is to write a complete long-term contract for a typical public service, even for something as simple as a municipal waste incinerator.

A focus on the problem of contractual incompleteness, along with insights gained from the historical record and from the two case studies, led to suggestions for a reform program, outlined in Chapter 6.

This chapter — the concluding one — steps back from the details, reflects on what we have learned, and then attempts to place the subject in a larger historical context.

2. U.S.-FRENCH COMPARISONS

Neither the French nor the U.S. approach gives a completely satisfactory solution to the problems related to contractual incompleteness. The major difference between the U.S. and the French systems, as brought out in Chapter 3, is the reliance of the French system on extra-legal norms and custom to stabilize the contract and to prevent a strong sense of deference to the company from leading to gross abuse. The judicial system does not seem to play a predominant role. A number of other comparisons can be drawn, and

thinking about these can help us clarify our ideas about the strengths and weaknesses of regulation-by-contract in general and about ways to improve it.

1. Locus of regulatory functions. France does not have a distinct regulatory body responsible for managing or supervising regulation-by-contract for municipal services. Yet, even apart from extra-legal norms, regulation of a diffuse sort is present, dispersed among several organizations and institutions: model contracts issued by the Ministry of Interior; a distinct system of administrative courts with a well-developed jurisprudence and doctrine; until 1982, intervention by prefects and deconcentrated administrative field services; and finally, informal linkages between the state and companies at the level of the elite administrative corps.

In contrast, in the U.S., there is much more of a void when it comes to an institutional support system for regulation-by-contract for municipal services. Since the beginnings of the movement for regulation-by-commission, the focal point has been on regulating “utilities,” and regulatory effort shifted in this direction. In most if not all states, a privately run wastewater treatment plant or a waste-to-energy plant that is remunerated directly by the municipality would not be classified as a utility — despite any natural monopoly characteristics. The result is that, until recently at least, regulation-by-contract, in that old American tradition, has been considered to function like any other private contract. The past few years have seen more of an effort to provide special procurement regulations for these contracts,¹ but the full problem of regulation-by-contract has hardly begun to be confronted.

¹ For a recent example, see California Government Code, sections 5956–5956.10, added in 1996.

We have seen in the RESCO case the confusion that this can cause. With no support from relevant extra-contractual rules or regulatory institutions and with no help from a rich stabilizing custom in this area, we have the sense of a process gone somewhat out of control.

2. Formalistic nature of French legal approach. The French system involves a number of discrete contract types, each linked in the past to particular model contracts and each with its own bundle of characteristics. The advantage of this is that the *type* (e.g. “concession” or “METP”), once it has been determined by the adjudicator, will trigger a particular set of regulatory control rules. This can be of great advantage in filling gaps. In the last few years, there has been a great deal of criticism of the rigid, static nature of contract types in France. It is said, with justification, that the real needs of the parties and the conditions they find themselves in today have rendered the conventional types obsolete. Nevertheless, the idea of contract types per se may still have some merit and should be explored further in the context of the support system outlined in Chapter 6.

In the U.S., in contrast, each contract of the kind we are considering is a creature *sui generis*, shaped by all the various obligations, rights, and conditions found in it. In general, the background rules of ordinary contract law are atomistic, each applying to one, often highly technical, aspect of the overall contract.

3. Different approaches to cost-based pricing. Surprisingly, despite the fixed, indexed prices in the contracts, the French system has a strong cost-of-service flavor. This is realized not by an automatic cost-plus or rate-of-return pricing mechanism — or, to any great extent, by the intervention of the administrative judge — but by the ease with which

the price terms of the contract can be renegotiated and by the customary principle according to which the parties, in their negotiations, will orient their arguments around what the cost of the modification is likely to be for the concessionaire.

The striking difference, however, is that the French concession approach prefers *ex ante* negotiated adjustments while the American approach has a strong bias in favor of *ex post* cost-of-service adjustments. This topic would merit an entire study in the comparative history of economic ideas. Suffice it here to draw attention to the differing conceptions of *fairness*. The U.S. regulatory style focuses more on what the company is getting in its assessment of the fairness of an arrangement. Excess profits are therefore *ipso facto* an indication that something is awry; and the issue takes on an almost moralistic tone. The French style (at least traditionally) pays more attention to what the public entity or consumers are getting: this can be determined *ex ante* in a fixed-price regime and involves ideas of avoided cost (what the city would have to pay otherwise).

We can reflect further and remark that, at the formal level, the French approach is closer in spirit to an ideal *contractual* paradigm (autonomous entities arriving at a bargained-for exchange), while the U.S. approach shows the influence of a *property* paradigm (owning the assets gives the company the right to a certain rate of return). In fact, when the present regulation-by-commission model was being worked out in the early years of the 20th century, the U.S. Supreme Court toyed with both ideas but finally came down firmly for the property theory (for a fascinating look at this debate, see Henderson 1920).

One large difference in the consequences of the two systems is that the French approach has created an environment in which French municipal service companies over the years have had a powerful incentive to innovate and increase productive efficiency, since once the price is set after each renegotiation, the company is the residual cash-flow claimant until another revision is needed — and perhaps even beyond that, if the revisions affect only *incremental* costs and revenues. This difference has become apparent in watching the performance of French versus U.S. water and wastewater companies in the international market in the past ten years.

3. UNBUNDLING REGULATORY FUNCTIONS

In this concluding chapter, it is appropriate to move to a higher perspective and look once again at the two approaches: regulation-by-contract and regulation-by-commission. In Chapter 2, the basic characteristics of both approaches were outlined and the strengths and weaknesses of regulation-by-contract were discussed. It was pointed out that one of the comparative strengths of regulation-by-contract is its greater ability to separate out political concerns from other, more technical, considerations. We can say more about this now in the light of the suggested regulatory system in Chapter 6 — presented there as a way of illustrating the themes of this dissertation.

In the proposed system of regulation-by-contract — and probably in *any* sound, workable system of regulation-by-contract — we see a clear unbundling of different functions and an assignment to different organizations or processes. *Political concerns* are first dealt with by the parties in their negotiation of the contract, and the outcome is formalized in the contract terms. During the course of performance, political factors are

dealt with by the municipality alone: for instance, lobbying to extend the network into a new section of town; public pressure to increase service quality or to change the tariff *structure*. The municipality first decides on the needed changes to the service, and then the *contract* is used to specify the algorithm or principles that will transform these changes into a new tariff level.

Because of contractual incompleteness, a new third-party intervenor was proposed: the *concession referee board* (CRB), which, in addition to dealing with more run-of-the-mill contractual disputes, serves as an “organic” substitute for the illusive fully *deterministic* (contractually complete) algorithm that could transform any specified service changes into a new tariff level. The important point is that the CRB does not consider political issues: these have first been resolved by the municipality, with public input as necessary. This means that consumers and other stakeholder groups do not have to (in fact, should not) be given the opportunity to present their views before the CRB — a contrast with growing practice for regulatory commissions.

The contract has to be drafted in a way that is consistent with and that facilitates this separation of functions. For example, the issue of tariff *structure*, as opposed to tariff level, might be left to the municipality if it were felt that the company would not have the right incentives to adopt the socially optimal structure. In that case, the contract could contain a principle of *projected net cash flow neutrality* (with risk adjustment, as appropriate) to govern how the tariff level should be readjusted after any change in the tariff structure ordered by the municipality; and this principle could be fleshed out with some operational rules.

There is yet another unbundling, this time regarding the functions of the third-party intervenor. The CRBs deal with specific cases using background rules, but the rules themselves are developed and periodically revised by another entity (an agency or ad hoc commission) — a separation of powers in which the *legislative* function is performed by the rule-making commission and the *judicial*, and perhaps *executive*, functions by the CRB.² This is a useful separation: the rules are made by an entity that has a policy interest in their effect on all such contracts, present and future — including ex ante incentive effects — while decisions are reached on each specific case by an entity that has an intimate understanding of the particular contract, the relevant facts, the course of performance, and the parties' relationship. So we have an unbundling of the political and the technical ("technical" in the broadest sense), and then, within the technical, an unbundling of rule making and rule application.

Compare this with regulation-by-commission. Although there is no single model, a typical regulatory commission encompasses most of these different functions within itself. Certainly rule making (interpreting and elaborating on the basic enabling legislation) and case-by-case determination are generally carried out by the same commission,³ and the interaction — and possibly tension — between the two will often be hidden away within the walls of the organization.

² Though the line cannot be drawn with precision, one might say that the CRB exercises a *judicial* function when it decides a conventional contractual dispute (a "rights" dispute) and more of an *executive* function when, if the parties cannot reach agreement, it specifies a new tariff level after a change in service requirements (an "interest" dispute).

³ This is the U.S. administrative agency model.

The question of political influence is more complicated. There is no doubt that regulatory commissions deal with public policy issues all the time — e.g. access rules and tariff structures. Although the view is often taken that *politics* (to be distinguished from public policy concerns) should not be allowed to interfere in the actions of a regulatory commission,⁴ it is often very difficult to prevent this in practice, as may be witnessed by the history of utility regulation in the U.S. (see, e.g., McCraw 1984: 63) and the more recent experience in the U.K. If the commission issues opinions or decisions about investment programs, service coverage, and the like, then political considerations are virtually inescapable. And the very fact that some sort of influence must be exercised over regulators so that they are ultimately *politically accountable* makes it more difficult to seal them off from shorter-term political influences.

In contrast, one great advantage of regulation-by-contract is that it makes it easier to disentangle the political (both policy and short-term politics) from the technical. Since political or regulatory risk is the critical element in a prospective private company's analysis of the costs and benefits of investing and operating in a regulated environment, regulation-by-contract has much to offer. One limitation of regulation-by-contract, however, is that the separation of the political from the technical may not always be feasible; in that case regulation-by-contract will probably not be appropriate. This issue will be explored further in the next section.

⁴ E.g., referring to the regulatory agency for the water and sewerage sector in Chile: "Setting a natural monopoly price is essentially an economic decision, . . . only technical aspects should be considered leaving aside political considerations" (Sánchez and Sanhueza 1997: 11).

4. WHEN REGULATION-BY-CONTRACT MAY NOT BE APPROPRIATE

A caveat was put forward at the beginning of Chapter 6: the reform program suggested in that chapter should apply only to those services appropriately handled by regulation-by-contract. We now return to that issue and ask: What are the main conditions under which a particular service is probably *not* well suited for regulation-by-contract? Under those conditions, a form of regulation-by-commission may be the only realistic alternative — or public ownership and control.

(1) Considerable *uncertainty* regarding conditions present at the time of contract signing. There are likely to be difficulties using regulation-by-contract if information about important initial conditions is poor — e.g. information about the present condition of the assets and about key input parameters (demand, technical performance of the existing system, revenue collection efficiency, etc.). This lack of information will not usually prevent the writing of a tight, reasonably complete contract; the problem is rather that an enormous amount of risk has been created because uncertainty over initial conditions translates itself into uncertainty about the work that will need to be carried out by the company during the course of the contract. So, in the first place, the price paid for the service will reflect a high risk premium; and second, there will be a greater chance of either contract rupture or dispute (if the company guessed wrong and it ends up hurting) or public outcry over “excessive” profits (if the company gambled well and its returns are greater than expected).

In some sectors, such as water and wastewater, greenfield projects would be more suitable because there are no existing assets that could bring uncertainty. But in other

sectors, e.g. tollroads, upgrading existing assets would usually be less risky than constructing new ones because traffic levels are already apparent and construction problems are already better understood.

Where existing assets come under the company's responsibility, *plants* are often more suitable than underground *networks*, because it is more difficult to determine the condition of the network assets — and in some cities, it is difficult even to know exactly *what* lies buried.

There are ways to get around the problem of poor information about initial conditions — e.g. the use of algorithms for readjusting the tariff level as a function of better information gained during a trial period after start-up. But this may lead to a contract that is too complex and unwieldy, especially if a number of variables are involved.

(II) High likelihood of *unpredictable changes* in the future that will require frequent or complex modifications to the company's rights or obligations. This is a problem about uncertainty that affects the future, not the present. A salient example these days (seen in both case studies) involves environmental regulations. When emission standards change, the company's remuneration will normally have to be readjusted to compensate for upgrading the plant; and it is difficult to provide for this in the initial contract in a completely deterministic way. The contract should of course contain *change mechanisms*, with the most specificity being devoted to the types of change that have the highest expected-value impact. But if, at the outset, it seems likely that *change*, of the eligible sort, will be a permanent and dominant feature of the relationship, it may be that regulation-by-contract is not well suited.

Category (II) encompasses many different cases and it could be subdivided in different ways. One useful taxonomy might be as follows:

(IIA) Each change in itself is relatively simple and could be adequately handled in an incremental fashion, amenable to regulation-by-contract, but there are so many of them that the cumulative effect begins to become unwieldy.

(IIB) The changes are complex or have complex effects, and it is difficult to specify ahead of time just how such changes or effects should be analyzed and what the decision-rules should be for modifying the company's concrete rights or obligations.

The Lyon case, with its layering of change upon change, if carried even further might fall under (IIA), as might some network systems that will require many small investments over time in response to spatial shifts in demand that are hard to predict.

Also in that category would be certain cases in which the company's obligations, for one reason or another, must be expressed to a large extent in terms of inputs rather than outputs; for there is a greater likelihood that input specifications will change more over time than output requirements. For instance, one can define fairly well the desired *outputs* for a water supply system in terms that will not change too much: availability, quality, and pressure, with respect to each customer — that pretty much does it. There may be many changes over time, however, in the *inputs* needed to achieve those targets (plants, storage tanks, pumps, water mains) as the system grows or is rehabilitated.⁵

⁵ Note that there is another type of case in which the company's obligations are indeed expressed in terms of outputs, but because of the nature of the service (e.g. education, perhaps), it is difficult to arrive at objective and easily verifiable output measures. In that case the contract may be fatally incomplete. This is a different problem altogether from (I) or (II).

Category (IIB) includes a wide variety of cases; and it is especially in (IIB) that it might become difficult to disentangle the political from the technical — a necessary condition for regulation-by-contract, as we have noted above.

One type of (IIB) case would be where service provision takes place in an environment of regulated competition, rather than monopoly. The regulatory framework for the service would need to deal with issues of industry structure, competition, access pricing, etc. If these issues were still in flux, any long-term contract might well become radically outmoded before its term is up.⁶ In some sectors (e.g. power and telecoms), future changes in the overall regulatory framework and in industry conditions are likely to be considerable. Regulation-by-contract is probably not suitable for these sectors — except for well-defined and -demarcated components of the entire service system (e.g. independent power producers, mobile telephone companies). But this also suggests that regulation-by-contract may become more and more relevant as regulated industries are unbundled: various pieces of the unbundled package may be quite amenable to this mode of regulation.

Also falling under (IIB) might be cases in which the nature or the conditions of service or the underlying technology change considerably over time. In such cases, it may be difficult for the contract to contain precise rules for altering the terms and conditions. There might be no way to avoid recourse to the discretion of a regulator.

⁶ We saw a glimpse of this in the RESCO case, where changes in market structure (growth in competitive market demand) meant that the formula chosen in the contract for passing on change-in-law costs to the communities was perceived as unfair.

An important feature of most, if not all, of the cases in which regulation-by-contract is not suitable is that adjustments will take place by means of *global*, rather than *incremental*, reviews — since incremental adjustments become unwieldy or unfeasible. This requires a sophistication of regulatory expertise and a store of knowledge that will probably need a permanent, specialized body and a regulator with considerable discretion, pulling with it an admixture of political considerations.

The boundaries are not fixed, however. Given the advantages of regulation-by-contract, a useful exercise for policy makers who are designing a regulatory approach would be to do their best to see if they can formulate the issues in a way that makes regulation-by-contract feasible.

5. THE U.S. EXPERIENCE REVISITED: THE ROLE OF IDEOLOGY

Chapter 1 raised the question of why the regulation-by-contract approach was virtually abandoned in the U.S. in the early years of this century — to be replaced, at the state level, by the public utility commission (PUC) — and it was suggested that purely historical reasons may have played a significant role. It is interesting, for example, that one of the people who understood the U.S. experience with municipal franchises best of all, Delos Wilcox (1911: 743–745; 1924), recommended in the early years of the century a system that bears resemblance to the suggestions made in Chapter 6. Believing that more control should be kept at the local level, he bucked the then dominant trend and argued in favor of utility rates being determined by *contracts* between local governments and utility companies — as they had been under the old franchise system. But, according to Wilcox, the state did have an important role to play with regard to *information* — e.g. the

development of standard accounting principles and forms and reporting requirements. Moreover, the parties should have the right to have any dispute reviewed by a state utility commission acting in a purely advisory capacity (like the CRB proposed in Chapter 6) to “investigate the matter, make its recommendations and use its good offices to bring about a proper adjustment” (1924: 221). Formal appeal would then be to the courts. Wilcox asserted that the trend towards state control had gone too far (pp. 222f.):

It is theoretically and practically absurd to give a remote centralized authority like a state commission exclusive power to prescribe standards of service or special service requirements for the hundreds of separate local communities of a great state like Pennsylvania.

As we near the end of this dissertation, let us look once more at this question. In short: Why the PUC? Why not try to *strengthen* regulation-by-contract, as Wilcox proposed and as I have suggested in Chapter 6, by creating various supporting institutions?

Of course, there are situations in which regulation-by-contract is not appropriate (see section 4). But I suggest that this is not the whole story. Part of the answer lies in spirit of the times, the regnant ideology strongly related to the Progressive Movement. It was believed that the regulation of monopoly should be carried out by the benevolent professional administrator and the newly empowered *expert*. Direct government intervention was the solution to society’s problems. In an influential book in 1914, Walter Lippmann launched an attack on Woodrow Wilson’s “New Freedom,” which he described as “. . . a vigorous restatement of the traditional American utopia in which justice is to be attained by the balance of self-interest” (1914: 168). Instead:

We can no longer treat life as something that has trickled down to us. We have to deal with it deliberately, devise its social organization, alter its tools, formulate its method, educate and control it.

An emphasis was put on the scientific spirit and mastery over unruly social and economic forces: “Whatever the reformer’s specialty, his program relied ultimately upon administration” (Wiebe 1967: 169).

As a classic historical study of the Progressive Movement puts it (Wiebe 1967: 160f.):

Trained, professional servants would staff a government broadly and continuously involved in society’s operations. In order to meet problems as they arose, these officials should hold flexible mandates, ones that perforce would blur the conventional distinctions among executive, legislative, and judiciary.

.

The [new political] theory’s advocates were convinced that the process of becoming an expert, of immersing oneself in the scientific method, eradicated petty passions and narrow ambitions, just as it removed faults in reasoning. The product was the perfect bureaucrat, whose flawlessly wired inner box guaranteed precisely accurate responses within his specialty. The latitude he enjoyed in the administration existed only because no one could predict the course of a fluid society and the expert would require a freedom sufficient to follow it.

These passages mesh perfectly with the idea of the regulatory commission: they suggest its rationale (a fluxing society requiring continuous adjustment) and justify the discretion to be given to it (the enlightened bureaucrat acting in society’s best interest). The dangers of market failure had been learned, but not those of *regulatory* failure; and regulators’ motives were not yet seen as anything but the reflection of a benign social welfare function. It is no wonder, then, that this solution was preferred to one which would aim merely to provide a supporting framework within which decentralized bargaining and decision making could take place in the context of a contract — permitting

a *channeling* rather than a *mastery* over the forces of self-interest. It is only in recent years that regulation-by-contract is being given a fair chance once again in the U.S.

6. CONCLUDING THOUGHTS

Has any national government ever undertaken a serious effort to build a sound and comprehensive framework for regulation-by-contract for municipal services, a framework that explicitly confronts the problem of contractual incompleteness and the renegotiation problem and that does not shy away from giving a strong and well-supported public-policy role to the contract adjudicator? There are movements in this direction, especially in some countries in Latin America — e.g. Chile. But these efforts are not yet widespread.

The U.S. could have moved in this direction, given the prevalence of regulation-by-contract in the past, but for a number of reasons, as we have seen, the tide turned towards a regulation-by-commission approach. If as much thought and discussion went into the problems of regulation-by-contract in the U.S. during the period 1880–1940 as it did into the intricacies of rate-of-return regulation, we might have a remarkable body of rules and methods to work with today. But this path was not taken.

In France, regulation-by-contract developed into a widespread system that has had considerable success, but the problem of incompleteness has been virtually ignored by tacitly relying on norms and forces outside the legal system to stabilize the contracts.

Regulation-by-contract seems eminently suitable for many local government services, such as water, wastewater, district heating, and solid waste, where there are clear advantages in placing the main policy responsibility on local officials and in keeping the

central government at an arm's length. It is thus in harmony with the world-wide movement towards devolution of local responsibilities to local governments.⁷

The regulation-by-contract approach, this dissertation contends, has great promise despite some limitations; and it has just begun to be explored in a well-managed, coherent, sophisticated way in developing and transition countries.

⁷ Another way to think about it would be like this. If one pictured all possible regulatory arrangements arrayed along a continuum between two ideal points, pure regulation-by-contract and pure regulation-by-commission, the *optimal* arrangement for a given service system would be closer to regulation-by-contract in the case of a service under the responsibility of a local government (as opposed to the national government), *ceteris paribus*, because of the likelihood and welfare cost of inappropriate national government control and meddling in *local* affairs if a national regulatory body were to be given responsibility.

REFERENCES

- Adler, Andrea. 1994. "The Utilities Directive — A Giant Step Down the Long and Winding Road Toward Opening Public Procurement Markets in the EC." *Boston College Intl. & Comp. Law Rev.* 17 (1): 111–125.
- Aghion, P., M. Dewatripont, and P. Rey. 1990. "On Renegotiation Design." *European Economic Review* 34: 322–329.
- Aguila, Yann, *et al.* 1995a. *Guide juridique et pratique du marché d'entreprise de travaux publics*. Paris: Édition Formation Entreprise.
- Aguila, Yann. 1995b. "Notion et régime juridique du METP." In Aguila 1995a.
- Alexander, Ian, Colin Mayer and Helen Weeds. 1996. *Regulatory Structure and Risk and Infrastructure Firms: An International Comparison*. World Bank Private Sector Development Program. Policy Research Working Paper No. 1698. Washington, DC: World Bank.
- Allison, James E. 1914a. "Depreciation." *Annals of the American Academy of Political and Social Science* (issue entitled "State Regulation of Public Utilities") 53 (142): 198–213.
- _____. 1914b. "Rate of Return." *Annals of the American Academy of Political and Social Science* (issue entitled "State Regulation of Public Utilities") 53 (142): 172–77.
- Armstrong, Mark *et al.* 1994. *Regulatory Reform: Economic Analysis and the British Experience*. Cambridge, Mass.: MIT Press.
- Armstrong, Mark, Simon Cowan, and John Vickers. 1994. *Regulatory Reform: Economic Analysis and British Experience*. Cambridge, MA: MIT Press.
- Arrowsmith, Sue. 1996. *The Law of Public and Utilities Procurement*. London: Sweet & Maxwell.
- Auby, Jean-Bernard and Christine Maugué. 1994. "Les contrats de délégation de service public." *La semaine juridique (JCP)*, Éd. G, no. 9: 115–122.
- Auby, Jean-Bernard. 1992. "Perspectives d'évolution de la concession de service public." In *La concession de service public face au droit communautaire*. Collection Droit public. Paris: Sirey.
- Auby, Jean-François. 1982. *Les services publics locaux*. (Que sais-je?) Paris: PUF.
- Auby, Jean-Marie and Robert Ducos-Ader. 1969. *Grands services publics et entreprises nationales*. Vol. 1. Paris: PUF.

- Ayres, Ian and Robert Gertner. 1989. "Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules." *Yale Law Journal* 99: 87–130.
- _____. 1992. "Strategic Contractual Inefficiency and the Optimal Choice of Legal Rules." *Yale Law Journal* 101 (4): 729–773.
- Babcock, Linda and George Loewenstein. 1997. "Explaining Bargaining Impasse: The Role of Self-Serving Biases." *Journal of Economic Perspectives* 11 (1): 109–126.
- Bac, Mehmet. 1993. "Opportunism and the Dynamics of Incomplete Contracts." *International Economic Review* 34 (3): 663–683.
- Baird, Douglas G., Robert H. Gertner, and Randal C. Picker. 1994. *Game Theory and the Law*. Cambridge, Mass.: Harvard U. Press.
- Baker, M. N. 1899. "Water-Works." In Edward W. Bemis, ed., *Municipal Monopolies*. New York: Thomas Y. Crowell & Co.
- Baker, M. N. 1915. "Municipal Ownership and Operation of Water Works." *Annals of the Am. Acad. of Pol. and Soc. Science* 57 (Jan.): 279–281.
- Baldwin, John R. 1989. *Regulatory Failure and Renewal: The Evolution of the Natural Monopoly Contract*. Ottawa: Economic Council of Canada.
- Baron, David P. 1989. "Design of Regulatory Mechanisms and Institutions." In R. Schmalensee and R. D. Willig, eds., *Handbook of Industrial Organization*. Vol. 2. Amsterdam: North-Holland.
- Baron, David P. and Raymond R. DeBondt. 1981. "On the Design of Regulatory Price Adjustment Mechanisms." *Journal of Economic Theory* 24: 70–94.
- Barraqué, Bernard. 1990. "Pour une histoire des services urbains." *Economie et humanisme* (no. 312, March-April): 6–15.
- Beede, David and David Bloom. 1995. "Economics of the Generation and Management of Municipal Solid Waste." *NBER Working Paper Series*: No. 5116. Cambridge, MA: National Bureau of Economic Research.
- Behling, Burton N. 1938. *Competition and Monopoly in Public Utility Industries*. Urbana, Ill.: Univ. of Ill. Press.
- Bernard, Jean-René and Thierry Wahl. 1994. "Note de synthèse sur les conditions d'application des dispositions de la loi du 29 janvier 1993 relatives aux délégations de services publics et sur la procédure des marchés d'entreprise de travaux publics (M.E.T.P.)." Paris: Inspection Générale des Finances, Ministère de l'Économie.

- Blake, Nelson Manfred. 1956. *Water for the Cities: A History of the Urban Water Supply Problem in the United States*. Syracuse, N.Y.: Syracuse University Press.
- Blondeau, Ange. 1933. *La concession de service public*. Paris: Dalloz.
- Bolton, Patrick. 1990. "Renegotiation and the Dynamics of Contract Design." *European Economic Review* 34: 303–310.
- Bonbright, James C., et al. 1988. *Principles of Public Utility Rates*. 2nd ed. Arlington, Va: Public Utility Reports, Inc.
- Bradburd, Ralph. 1992. "Privatization of Natural Monopoly Public Enterprises: The Regulation Issue." Policy Research Working Paper, Public Sector Management and Private Sector Development, Country Economics Department, WPS 864, April. Washington, D.C.: World Bank.
- Brams, Steven J., D. Marc Kilgour, and Samuel Merrill III. 1991. "Arbitration Procedures." In H. Peyton Young, ed., *Negotiation Analysis*. Ann Arbor: University of Michigan Press.
- Brown, Lionel Neville and J. F. Garner. 1983. *French Administrative Law*. London: Butterworths.
- Buck, Solon Justus. 1913. *The Granger Movement*. Cambridge, Ma.: Harvard Univ. Press.
- Cairo, Patrick R. 1991. "Delegated Municipal Services for the Water Supply Industry in France." Paper presented at the 1991 Annual Conference of the Canadian Water and Wastewater Association, 3–5 November, Montreal, Quebec. (Cairo was Environmental Director for Lyonnaise des Eaux–Dumez.)
- Carbonneau, Thomas E., ed. 1990. *Lex Mercatoria and Arbitration: A Discussion of the New Law Merchant*. Dobbs Ferry, NY: Transnational Juris Publications.
- [CECL] Commission on European Contract Law. 1995. *The Principles of European Contract Law. Part I: Performance, Non-Performance and Remedies*. Ed. by Ole Lando and Hugh Beale. Dordrecht: Martinus Nijhoff.
- Charny, David. 1991. "Hypothetical Bargains: The Normative Structure of Contract Interpretation." *Michigan Law Review* 89 (7): 1815–1879.
- Chung, Tai-Yeong. "Incomplete Contracts, Specific Investments, and Risk Sharing." 1991. *Review of Economic Studies* 58: 1031–42.
- Cissé, Amadou. 1991. "An Investigation of the Structure and Practices of Regulation of Public Utilities in the U.S. and Other Industrialized Countries: Some Lessons for Latin

- America and the Caribbean Region. Mimeo. LATIE. Washington, D.C.: World Bank.
- Clemens, Eli Winston. 1950. *Economics and Public Utilities*. New York: Appleton-Century-Crofts.
- [CNC] Conseil national de la comptabilité. 1994. "Rapport sur les orientations générales en matière de comptabilité des entreprises concessionnaires." Prepared by the Concessions Commission of the CNC.
- Coudeville, Andrée. 1983. *Les concessions de service public des collectivités locales*. Paris: Sirey.
- Cour des Comptes. 1997. *La gestion des services publics locaux d'eau et d'assainissement*. Report to the President of the Republic, January. Paris: Direction des journaux officiels.
- Cowan, Simon. 1997. "Competition in the Water Industry." *Oxford Review of Economic Policy* 13 (1): 83–92.
- Cowen, Penelope Brook and Tyler Cowen. 1997. *Unregulated Privatization for Natural Monopolies: A Proposal for Water Policy in the Developing World*. Draft, 5 May. Processed.
- Crew, Michael and Paul R. Kleindorfer. 1996. "Incentive Regulation in the United Kingdom and the United States: Some Lessons." *Journal of Regulatory Economics* 9: 211–225.
- Crocker, Keith J. and Scott E. Masten. 1991. "Pretia ex Machina? Prices and Process in Long-Term Contracts." *Journal of Law and Economics* 34: 69–99.
- Curtz, Chauncey S. R. 1995. "Market Price Reopeners in Long-Term Coal Supply Contracts: The Lessons of Recent Litigation and Arbitration." *Eastern Mineral Law Institute* (Proceedings of the Fifteenth Annual) 15: 156–207.
- d'Iribarne, Philippe. 1989. *La Logique de l'honneur: Gestion des entreprises et traditions nationales*. Paris: Seuil.
- Dawson, John P. 1983. "Judicial Review of Frustrated Contracts: Germany." *Boston Univ. Law Rev.* 63 (5): 1039–1098.
- _____. 1984. "Judicial Review of Frustrated Contracts: The United States." *Boston Univ. Law Rev.* 64 (1): 1–38.
- Delvolvé, Pierre. 1996. "Les contradictions de la délégation de service public." *L'Actualité juridique – Droit administratif (AJDA)*, no. 9 (20 Sept.): 675–691.

- Demsetz, Harold. 1968. "Why Regulate Utilities?" *Journal of Law and Economics* 11: 55–65.
- [DEP] Massachusetts Department of Environmental Protection. 1993. *General Information on Operating Solid Waste Combustion Facilities in Massachusetts*. Prepared by the Division of Solid Waste Management. Boston.
- Dickerson, Reed. 1986. *The Fundamentals of Legal Drafting*. 2nd edition. Boston: Little, Brown and Company.
- Dixit, Avinash K. 1997. *The Making of Economic Policy: A Transaction-Cost Politics Perspective*. Cambridge, MA: MIT Press.
- Dufau, Jean. 1990. "Concessions de service public." *Juris-classeurs, Administratif*, Fascicule 530. Paris.
- Dumez, Hervé and Alain Jeunemaitre. 1989. *Diriger l'économie: l'Etat et les prix en France (1936–1986)*. Paris: Éditions L'Harmattan.
- Engel, Eduardo, Ronald Fischer, and Alexander Galetovic. 1997. *Revenue Based Auctions and the Unbundling of Infrastructure Franchises*. May 22. Paper prepared for the Conference on Alternatives to Traditional BOTs for Financing Infrastructure Projects, sponsored by the Inter-American Development Bank, held in Washington, DC, on June 3.
- Epstein, Richard A. 1995. *Simple Rules for a Complex World*. Cambridge, MA: Harvard University Press.
- Farnsworth, E. Allan. 1990. *Farnsworth on Contracts*. Vol. II. Boston: Little, Brown.
- Fatôme, Etienne. 1996. "Le nouveau cadre légal." *L'Actualité juridique – Droit administratif (AJDA)*, no. 9 (20 Sept.): 577–580.
- Fisher, William W., Morton J. Horowitz, and Thomas A. Reed, eds. 1993. *American Legal Realism*. New York: Oxford University Press.
- Folsom, Ralph H. 1995. *European Union Law in a Nutshell*. 2nd edition. St. Paul, Minn.: West.
- Fourcand, Serge. 1983. *Le principe de l'équilibre financier dans le cadre de l'activité contractuelle de l'État*. Port-au-Prince: Éditions Plein Sud.
- Franck, Louis. 1957. *Les prix*. (Que sais-je? No. 762) Paris: PUF.
- Frankart, Georges. 1990. "Services publics locaux: le bilan des récentes évolutions." *L'Actualité juridique: Droit administratif* (20 November).

- Fried, Charles. 1981. *Contract as Promise: A Theory of Contractual Obligation*. Cambridge, MA: Harvard U. Press.
- Friedman, Lawrence. 1985. *A History of American Law*. New York: Simon & Schuster.
- Fuller, George W. 1914. "Elements to Be Considered in Fixing Water Rates." *Annals of the American Academy of Political and Social Science* (issue entitled "State Regulation of Public Utilities") 53 (142): 251–61.
- Furubotn, Eirik G. and Rudolf Richter. 1991. *The New Institutional Economics*. College Station, Texas: Texas A&M Univ. Press.
- Gellhorn, Ernest and Richard J. Pierce, Jr. 1987. *Regulated Industries in a Nutshell*. St. Paul, Minn.: West Publishing Co.
- Ghestin, Jacques and Marc Billiau. 1990. *Le prix dans les contrats de longue durée*. Paris: L.G.D.J.
- Gillette, Clayton P. 1985. "Commercial Rationality and the Duty to Adjust Long-Term Contracts." *Minn. Law Review* 69: 521–85.
- Ginglinger, Edith. 1990. "Contrats de concession et comportements des opérateurs privés de services publics locaux." In *Performances des services publics locaux*. Paris: Litec.
- Glaeser, Martin G. 1927. *Outlines of Public Utility Economics*. New York: Macmillan.
- _____. 1957. *Public Utilities in American Capitalism*. New York: Macmillan.
- Goetz, Charles J. and Robert E. Scott. 1981. "Principles of Relational Contracts." *Virginia Law Review* 67: 1089–1150.
- Goldberg, Victor P. 1976. "Regulation and Administered Contracts." *Bell Journal of Economics* 7: 426–448.
- _____. 1977. "Competitive Bidding and the Production of Precontract Information." *Bell Journal of Economics* 8: 250–261.
- _____. 1985. "Price Adjustment in Long-Term Contracts." *Wisconsin Law Rev.* 1985: 527–544.
- Goldin, Claudia and Gary D. Libecap, eds. 1994. *The Regulated Economy: A Historical Approach to Political Economy*. Chicago: U. Chicago Press.
- Gómez-Ibáñez, Jose A., John R. Meyer, and David E. Luberoff. 1992. "Solid Waste Disposal: Public or Private?" *Chemtech*. February: 78–85.

- Gómez-Ibáñez, Jose A. and John R. Meyer. 1993. *Going Private: The International Experience with Transport Privatization*. Washington, DC: Brookings Institution.
- Goubert, Jean-Pierre. [1986] 1989. *The Conquest of Water: The Advent of Health in the Industrial Age*. (Translated from French.) Oxford: Policy Press, Basil Blackwell.
- _____. 1988. "The Development of Water and Sewerage Systems in France, 1850–1950." In Joel A. Tarr and Gabriel Dupuy, eds., *Technology and the Rise of the Networked City in Europe and America*. Philadelphia: Temple Univ. Press.
- Greenstein, Shane. 1993. "Procedural Rules and Procurement Regulations: Complexity Creates Trade-offs." *Journal of Law, Economics & Organization* 9 (1): 159–180.
- Groton, James P. "Using ADR Methods to Solve the Dilemma When Experts Collide." *Arbitration Journal* 47 (4): 56–57.
- Gruhl, Edwin. 1914. "Recent Tendencies in Valuations for Rate-Making Purposes." *Annals of the American Academy of Political and Social Science* (issue entitled "State Regulation of Public Utilities") 53 (142): 219–37.
- Guibal, Michel and Lucien Rapp. 1995. *Contrats des collectivités locales*. (In collaboration with Bureau Francis Lefebvre.) Levallois: Éditions Francis Lefebvre.
- Guillerme, André. 1988. "The Genesis of Water Supply, Distribution, and Sewerage Systems in France, 1800–1850." In Joel A. Tarr and Gabriel Dupuy, eds., *Technology and the Rise of the Networked City in Europe and America*. Philadelphia: Temple Univ. Press.
- Haarmeyer, David. 1992a. "Environmental Infrastructure Privatization: An Evolving Public-Private Partnership." Working paper. Mimeo. Los Angeles, Ca.: Reason Foundation.
- Haarmeyer, David. 1992b. "Privatizing Infrastructure: Options for Municipal Water-Supply Systems." Policy Insight No. 151. Los Angeles, Ca.: Reason Foundation.
- Hadfield, Gillian K. 1994. "Judicial Competence and the Interpretation of Incomplete Contracts." *Journal of Legal Studies* 23: 159–84.
- Hagerty, D. Joseph, Joseph L. Pavoni, and John E. Heer, Jr. 1973. *Solid Waste Management*. New York: Van Nostrand Reinhold.
- Harris, Donald and Denis Tallon, eds. 1989. *Contract Law Today: Anglo-French Comparisons*. Oxford: Clarendon Press.
- Hart, Oliver. 1987. "Incomplete contracts." Entry in *The New Palgrave: A Dictionary of Economics*. Vol. 2. London: Macmillan.

- _____. 1995. *Firms, Contracts, and Financial Structure*. Oxford: Clarendon Press.
- Hart, Oliver and Bengt Holmström. 1987. "The Theory of Contracts." In *Advances in Economic Theory: Fifth World Congress*. Cambridge, England: Cambridge Univ. Press.
- Hart, Oliver and John Moore. 1988. "Incomplete Contracts and Renegotiation." *Econometrica* 56 (4): 755–85.
- Hazlett, Thomas W. 1986. "Private Monopoly and the Public Interest: An Economic Analysis of the Cable Television Franchise." *Univ. of Penn. Law Rev.* 134: 1335–1409.
- Henderson, Gerard C. 1920. "Railway Valuation and the Courts." *Harvard Law Review* 33: 902–928, 1031–1057.
- Huleatt-James, Mark and Nicholas Gould. 1996. *International Commercial Arbitration: A Handbook*. London: Lovell White Durrant.
- Jacobson, Charles David. 1988. *Water Works, Electric Utilities, and Cable Television: Contrasting Historical Patterns of Ownership and Regulation*. Dissertation, Carnegie Mellon University.
- _____. 1989a. "Private Firms and Public Goods: An Historical Perspective on Contracting Out for Public Services." In "Public-Private Partnerships: Privatization in Historical Perspective." *Essays in Public Works History* no. 16 (Dec.): 48–77.
- _____. 1989b. "Same Game, Different Players: Problems in Urban Public Utility Regulation, 1850–1987." *Urban Studies* 26: 13–31.
- Jèze, Gaston. 1936. *Les principes généraux du droit administratif: Théorie générale des contrats de l'administration*. 3rd Ed. Paris: Librairie générale de droit & de jurisprudence.
- Joerns, W. G. 1907. "Duluth." In "The Relation of the Municipality to the Water Supply." *Annals of the Am. Acad. of Pol. and Soc. Science* 30 (3): 590–592.
- Joskow, Paul L. 1985. "Vertical Integration and Long-Term Contracts: The Case of Coal-Burning Electric Generating Plants." *Journal of Law, Economics, and Organization* 1 (1): 33–80.
- _____. 1990. "The Performance of Long-Term Contracts: Further Evidence from Coal Markets." *Rand Journal of Economics* 21 (2): 251–274.
- _____. 1991. "The Role of Transaction Cost Economics in Antitrust and Public Utility Regulatory Policies." *Journal of Law, Economics, and Organization* 7: 53–83.

- Kahn, Alfred E. [1970–71] 1988. *The Economics of Regulation: Principles and Institutions*. Cambridge, Mass.: MIT Press.
- Keating, Ann Durkin. 1989. “Public-Private Partnerships in Public Works: A Bibliographic Essay.” In “Public-Private Partnerships: Privatization in Historical Perspective.” *Essays in Public Works History* no. 16 (Dec.): 78–108.
- Kendall, John. 1996. *Expert Determination*. 2nd edition. London: FT Law & Tax.
- King, Clyde Lyndon, ed. 1921. *The Regulation of Municipal Utilities*. National Municipal League Series. New York: D. Appleton.
- _____. 1912. “The Need for Public Utility Commissions.” In Clyde Lyndon King, ed., *The Regulation of Municipal Utilities*. New York: D. Appleton and Co.
- Klein, Benjamin and Keith B. Leffler. 1981. “The Role of Market Forces in Assuring Contractual Performance.” *Journal of Political Economy* 89 (4): 615–641.
- Klein, Benjamin. 1985. “Self-Enforcing Contracts.” *Journal of Institutional and Theoretical Economics* 141: 594–600.
- Knutsen, Kent S. and Thomas E. Feiler. 1994. “Utility Coal-Supply Contracts Could Strand Billions.” *Public Utilities Fortnightly* 132 (no. 17, Sept. 15): 11–12.
- Kontuly, Thomas. 1974. “Production Functions for Solid Waste Disposal.” Working Paper. Philadelphia: Regional Science Research Institute.
- Kreith, Frank, ed. 1994. *Handbook of Solid Waste Management*. New York: McGraw-Hill.
- Kreps, David M. 1990a. “Corporate Culture and Economic Theory.” In James E. Alt and Kenneth A. Shepsle, eds., *Perspectives on Positive Political Economy*. Cambridge, U.K.: Cambridge Univ. Press.
- _____. 1990b. *Game Theory and Economic Modelling*. Oxford: Oxford Univ. Press.
- Laffont, Jean-Jacques and Jean Tirole. 1993. *A Theory of Incentives in Procurement and Regulation*. Cambridge, Mass.: MIT Press.
- Laubadère, André de, Franck Moderne and Pierre Delvolvé. 1983. *Traité des contrats administratifs*. Volume 1. Paris: Librairie générale de droit et de jurisprudence.
- Laubadère, André de, Franck Moderne and Pierre Delvolvé. 1984. *Traité des contrats administratifs*. Volume 2. Paris: Librairie générale de droit et de jurisprudence.
- Ledouble, Dominique. 1980. *L’entreprise et le contrat*. Paris: Librairies Techniques.

- Libecap, Gary D. 1996. "Economic Variables and the Development of the Law: The Case of Western Mineral Rights." In Lee J. Alston, et al., eds., *Empirical Studies in Institutional Change*. Cambridge, U.K.: Cambridge University Press. (First appeared in 1978.)
- Limouzin-Lamothe, Philippe. 1996. "La pratique de la délégation de service public." *L'Actualité juridique – Droit administratif (AJDA)*, no. 9 (20 Sept.): 572–576.
- Lippmann, Walter. [1914] 1961. *Drift and Mastery*. Englewood Cliffs, NJ: Prentice-Hall.
- Liston, Catherine. 1993. "Price-Cap Versus Rate-of-Return Regulation." *Journal of Regulatory Economics* 5: 25–48.
- Littlechild, S. C. 1986. "Economic Regulation of Privatised Water Authorities." Report submitted to the Department of the Environment. U.K.: HMSO.
- Llewellyn, Karl N. 1950. "Remarks on the Theory of Appellate Decision and the Rules or Canons About How Statutes Are to Be Construed." *Vanderbilt Law Review* 3: 401–406.
- Llorens, François. 1992. "La définition actuelle de la concession de service public en droit interne." In *La concession de service public face au droit communautaire*. Collection Droit public. Paris: Sirey.
- Loosdregt, Henri-B. 1990. "Services publics locaux: l'exemple de l'eau." *L'Actualité juridique: Droit administratif* (20 November).
- Lorrain, Dominique. 1986. "L'industrie des réseaux urbains en France." *Revue d'économie régionale et urbaine* (no. 1): 95–110.
- _____. 1991. "Public Goods and Private Operators in France." In Richard Batley and Gerry Stoker, eds., *Local Government in Europe: Trends and Developments*. New York: St. Martin's.
- _____. 1992. "The French Model of Urban Services." *West European Politics* (London) 15 (2): 77–92.
- _____. 1993. "Après la décentralisation: L'action publique flexible." *Sociologie du travail*, no. 3: 285–307.
- _____. 1993. "Les services urbains, le marché et les politiques." In Claude Martinand, ed., *L'expérience française du financement privé des équipements publics*. Paris: Economica.
- _____. 1994. "L'oligopole compétitif: la régulation des réseaux technique urbains." *Annales des mines*. (October): 85–90.

- _____. 1994. "Urban Services, the Market and Politics." In *Private Financing of Public Infrastructure*. Paris: Ministry of Public Works, Transportation and Tourism, Economic and International Affairs Department (DAEI).
- Lowenfeld, Andreas F. 1990. "Lex Mercatoria: An Arbitrator's View." In Carbonneau 1990.
- Lyonnaise des Eaux. 1994. *Mémento du gestionnaire de l'alimentation en eau et de l'assainissement*. Prepared under the direction of François Valiron. Vol. 3: *Administration; cas spécifiques; monographies*. Paris: Lavoisier.
- Macaulay, Stewart. 1963. "Non-Contractual Relations in Business: A Preliminary Study." *American Sociological Rev.* 28: 55–67.
- Macho-Stadler, Inés and David Pérez-Castrillo. 1997. *An Introduction to the Economics of Information: Incentives & Contracts*. Oxford: Oxford University Press.
- Macneil, Ian R. 1979. "Contracts: Adjustment of Long-Term Economic Relations Under Classical, Neoclassical, and Relational Contract Law." *Northwestern Univ. Law Rev.* 72 (6): 854–905.
- _____. 1981. "Economic Analysis of Contractual Relations: Its Shortfalls and the Need for a 'Rich Classificatory Apparatus.'" *Northwestern Univ. Law Rev.* 75 (6): 1018–1063.
- _____. 1983. "Values in Contract: Internal and External." *Northwestern Univ. Law Review* 78 (2): 340–418.
- Malys, François. 1994. "L'eau: Le nouvel impôt." *50 millions de consommateurs*, no. 275, July/Aug.: 10–11.
- Masse, Georges. 1990. "Un banquier face au financement des services urbains." *Economie et humanisme* (no. 312, March-April): 67–82.
- Matyas, Robert M., et al. 1996. *Construction Dispute Review Board Manual*. New York: McGraw-Hill.
- McCraw, Thomas K. 1984. *Prophets of Regulation*. Cambridge, MA: Harvard University Press.
- McKendrick, Ewan, ed. 1991. *Force Majeure and Frustration of Contract*. London: Lloyd's of London Press.
- McLoughlin, James J. 1907. "New Orleans." In "The Relation of the Municipality to the Water Supply." *Annals of the Am. Acad. of Pol. and Soc. Science* 30 (3): 580–581.

- Mercurio, Nicholas and Steven G. Medema. 1997. *Economics and the Law: From Posner to Post-Modernism*. Princeton, NJ: Princeton University Press.
- Merryman, John Henry. 1969. *The Civil Law Tradition*. Stanford: Stanford University Press.
- Meyer, Balthasar H. 1911. "Central Utilities Commissions and Home Rule." *Am. Political Science Rev.* 5:374–393.
- Miceli, Thomas J. 1997. *Economics of the Law: Torts, Contracts, Property, Litigation*. Oxford: Oxford University Press.
- Milgrom, Paul and John Roberts. 1990. "Bargaining Costs, Influence Costs, and the Organization of Economic Activity." In James E. Alt and Kenneth A. Shepsle, eds., *Perspectives on Positive Political Economy*. Cambridge, U.K.: Cambridge Univ. Press.
- Morin, Roger A. 1994. *Regulatory Finance: Utilities' Cost of Capital*. Arlington, Va.: Public Utilities Reports, Inc.
- [MSWMP] Commonwealth of Massachusetts. 1995. *Massachusetts Solid Waste Master Plan: 1995 Update*. Boston: Division of Solid Waste Management of the Department of Environmental Protection.
- [MSWMP-A] Commonwealth of Massachusetts. 1995. *Massachusetts Solid Waste Master Plan: 1995 Update. Appendices*. Boston: Division of Solid Waste Management of the Department of Environmental Protection.
- Murray, John Edward, Jr. 1990. *Murray on Contracts*. 3rd ed. Charlottesville, VA: Michie.
- Myers, James J. 1986. "Why Conventional Arbitration Is Not Effective in Complex Long-Term Contracts." Paper presented at the International Symposium on the Complex Long-Term Contract, Heidelberg, Germany, 2–3 October.
- Narasimhan, Subha. 1986. "Of Expectations, Incomplete Contracting, and the Bargain Principle." *California Law Review* 74 (4): 1123–1202.
- Nassar, Nagla. 1994. *Sanctity of Contracts Revisited: A Study in the Theory and Practice of Long-Term International Commercial Transactions*. Dordrecht, Netherlands: Martinus Nijhoff.
- Navarro, Peter. 1996. "The Simple Analytics of Performance-Based Ratemaking: A Guide for the PBR Regulator." *Yale Journal on Regulation* 13 (1): 105–161.
- Nicholas, Barry. 1992. *The French Law of Contract*. Second Ed. Oxford: Clarendon Press.

- Nord, David. 1975. "The Experts Versus the Experts: Conflicting Philosophies of Municipal Utility Regulation in the Progressive Era." *Wisconsin Magazine of History* 58 (3): 219–236.
- Norton, William J. 1914. "Effects of the Indeterminate Franchise under State Regulation." *Annals of the American Academy of Political and Social Science* (issue entitled "State Regulation of Public Utilities") 53 (142): 135–147.
- [NTIA] National Telecommunications and Information Administration. 1987. *NTIA Regulatory Alternatives Report*. NTIA Report No. 87-222. Washington: U.S. Dept. of Commerce.
- Ofwat (Office of Water Services). 1991. "Cost of Capital: A Consultation Paper." Vols. 1 and 2. Birmingham, England.
- _____. 1993. "Setting Price Limits for Water and Sewerage Services." Birmingham, England.
- _____. 1994. *Future Charges for Water and Sewerage Services: The Outcome of the Periodic Review*. Birmingham: Ofwat.
- _____. 1997. *The Proposed Framework and Approach to the 1999 Periodic Review: A Consultation Paper*. Birmingham: Ofwat.
- Palay, Thomas M. 1985. "A Contract Does Not a Contract Make." (Comment on Goldberg 1985.) *Wisconsin Law Rev.* 1985: 561–564.
- Peter, Wolfgang. 1986. *Arbitration and Renegotiation of International Investment Agreements*. Dordrecht: Martinus Nijhoff (Kluwer Academic Publishers Group).
- Petersen, Eric S. and David N. Abramowitz. 1995. "Municipal Solid Waste Flow Control in the Post-Carbone World." *Fordham Urban Law Journal* 22 (2): 361–416.
- Peyrical, Jean-Marc. 1993. "Marché d'entreprise de travaux publics: le retard du droit sur la pratique." *Le Moniteur* (October 1993).
- Pfeffer, John T. 1992. *Solid Waste Management Engineering*. Englewood Cliffs, NJ: Prentice Hall.
- Pham, Dang. 1995. *Comprendre les états financiers anglo-saxons*. Paris: Dalloz.
- Phillips, Charles F., Jr. 1985. *The Regulation of Public Utilities: Theory and Practice*. Arlington, Va.: Public Utilities Reports.
- Posner, Richard A. and Andrew M. Rosenfield. 1977. "Impossibility and Related Doctrines in Contract Law: An Economic Analysis." *Journal of Legal Studies* 6 (1): 83–118.

- Priest, George L. 1993. "The Origins of Utility Regulation and the 'Theories of Regulation' Debate." *Journal of Law and Economics* 36 (April): 289–329.
- Rapp, Lucien. 1996. "Les marchés et conventions complexes." *L'Actualité juridique – Droit administratif (AJDA)*, no. 9 (20 Sept.): 616–626.
- Raymundie, Olivier. 1995. *Gestion déléguée des services publics en France et en Europe*. Paris: Moniteur.
- Reitze, Arnold W., Jr. and Andrew N. Davis. 1993. "Regulating Municipal Solid Waste Incinerators under the Clean Air Act: History, Technology and Risks." *Boston College Environmental Affairs Law Review* 21 (1): 1–88.
- Richberg, Donald R. 1924. "Major Problems Presented to State Commissions." In Morris L. Cooke, ed., *Public Utility Regulation*. New York: Ronald Press Co.
- Richer, Laurent. 1991. *Les contrats administratifs*. Paris: Dalloz.
- _____. 1996. "La fin de la convention de délégation." *L'Actualité juridique – Droit administratif (AJDA)*, no. 9 (20 Sept.): 648–653.
- Robineau, Yves and Didier Truchet. 1994. *Le Conseil d'Etat*. (Que sais-je? No. 2855.) Paris: PUF.
- Rose-Ackermann, Susan. 1992. *Rethinking the Progressive Agenda: The Reform of the American Regulatory State*. New York: Free Press.
- Sainsbury, R.M. 1995. *Paradoxes*. 2nd edition. Cambridge, UK: Cambridge University Press.
- Saltiel, David M. and Steven N. Avruch. 1986. "A Review of State Privatization Statutes." *The Privatization Review* (Fall): 30–49.
- Sánchez, José Miguel and Ricardo Sanhueza. 1997. *Autonomy and Regulation in the Chilean Water and Sewerage Sector: An Institutional Evaluation*. Preliminary draft. Processed.
- Sappington, David E. M. 1991. "Incentives in Principal-Agent Relationships." *Journal of Economic Perspectives* 5 (2): 45–66.
- Schenker, Urs. 1985. *Adjustment of Long-Term Contracts by Arbitration*. Master of Law thesis. Harvard Law School. Cambridge, Mass.
- Schmalensee, Richard. 1979. *The Control of Natural Monopolies*. Lexington, Mass.: D.C. Heath.
- Schmidt, Vivien A. 1990. *Democratizing France: The Political and Administrative History of Decentralization*. Cambridge, UK: Cambridge U. Press.

- Schwartz, Alan. 1976. "Sales Law and Inflation." *So. Cal. Law Review* 50: 1–25.
- _____. 1992. "Relational Contracts in the Courts: An Analysis of Incomplete Agreements and Judicial Strategies." *Journal of Legal Studies* 21: 271–318.
- Scott, Robert E. 1987. "Conflict and Cooperation in Long-Term Contracts." *California Law Rev.* 75: 2005–2054.
- Sharfman, I. Leo. 1914. "Commission Regulation of Public Utilities: A Survey of Legislation." *Annals of the American Academy of Political and Social Science* (issue entitled "State Regulation of Public Utilities") 53 (142): 1–18.
- Sharkey, William W. 1982. *The Theory of Natural Monopoly*. Cambridge, U.K.: Cambridge Univ. Press.
- Siegel, Stephen A. 1984. "Understanding the *Lochner* Era: Lessons from the Controversy over Railroad and Utility Rate Regulation." *Virginia Law Review* 70 (2): 187–263.
- Smith, Warrick. 1996. "Utility Regulators: Creating Agencies in Reforming and Developing Countries." Paper presented at the Expert Group Meeting of the International Forum for Utility Regulation in June 1996. Washington: World Bank.
- Smith, Warrick. 1997a. "Utility Regulators — The Independence Debate." *Public Policy for the Private Sector*. Note No. 127, October. Washington: World Bank.
- _____. 1997b. "Utility Regulators — Decisionmaking, Structures, Resources, and Start-up Strategy." *Public Policy for the Private Sector*. Note No. 129, October. Washington: World Bank.
- Solan, Lawrence M. 1993. *The Language of Judges*. Chicago: University of Chicago Press.
- Spier, Kathryn E. 1992. "Incomplete Contracts and Signalling." *Rand Journal of Economics* 23(3): 432–443.
- Spulber, Nicolas and Asghar Sabbaghi. 1994. *Economics of Water Resources: From Regulation to Privatization*. Boston: Kluwer.
- Stark, Robert M. 1974. "Unbalanced Highway Contract Tendering." *Operational Research Quarterly* 25: 373–388.
- Stevens, Don Lorenzo. 1918. *A Bibliography of Municipal Utility Regulation and Municipal Ownership*. Cambridge, MA: Harvard University Press.
- Stoffaës, Christian, ed. 1994. *L'Europe à l'épreuve de l'intérêt général*. Paris: ASPEurope Editions.

- Suleiman, Ezra N. 1978. *Elites in French Society: The Politics of Survival*. Princeton: Princeton Univ. Press.
- Sur, Marie-Thérèse. 1992. "Concession: un contrat négociable." *Le Moniteur* (25 September).
- Swartwout, Robert L. 1992. "Current Utility Regulatory Practice from a Historical Perspective." *Natural Resources Journal* 32 (2): 289–343.
- Telser, L. G. 1969. "On the Regulation of Industry: A Note." *Journal of Political Economy* 77: 937–52.
- Terneyre, Philippe. 1996. "La notion de convention de délégation, éléments constitutifs et tentative de délimitation sommaire." *L'Actualité juridique – Droit administratif (AJDA)*, no. 9 (20 Sept.): 588–596.
- Thompson, Howard E. 1991. *Regulatory Finance: Financial Foundations of Rate of Return Regulation*. Boston: Kluwer.
- Trachsel, Herman H. 1947. *Public Utility Regulation*. Chicago: Richard D. Irwin.
- Train, Kenneth E. 1991. *Optimal Regulation: The Economic Theory of Natural Monopoly*. Cambridge, Mass.: MIT Press.
- Trebilcock, Michael J. 1993. *The Limits of Freedom of Contract*. Cambridge, MA: Harvard Univ. Press.
- Troesken, Werner. 1994. "The Institutional Antecedents of State Utility Regulation: The Chicago Gas Industry, 1860 to 1913." In Goldin and Libecap (1994).
- Troger, François. 1995. *Services publics: faire ou déléguer?* Paris: Vuibert.
- Troxel, Emery. 1947. *Economics of Public Utilities*. New York: Rinehart.
- [UNCITRAL] United Nations Commission on International Trade Law. 1988. *Legal Guide on Drawing Up International Contracts for the Construction of Industrial Works*. New York: UN.
- [UNIDROIT] International Institute for the Unification of Private Law. 1994. *Principles of International Commercial Contracts*. Rome: International Institute for the Unification of Private Law.
- Vickers, John and George Yarrow. 1988. *Privatization: An Economic Analysis*. Cambridge, Mass.: MIT Press.
- Walker, Jane. 1993. *Preparing for Private Sector Participation in the Provision of Water Supply and Sanitation Services*. WASH (Water and Sanitation for Health)

Technical Report No. 84. Prepared for Office of Health, Bureau for Research and Development, USAID, Washington, D.C.

Waterson, Michael. 1988. *Regulation of the Firm and Natural Monopoly*. Oxford: Basil Blackwell.

White, Allen L, et al. 1990. "Host Community Benefits." *Solid Waste & Power*. April: 52–58.

Whitten, Robert H. 1914. "Certain Principles of Valuation in Rate Cases." *Annals of the American Academy of Political and Social Science* (issue entitled "State Regulation of Public Utilities") 53 (142): 182–97.

Wiebe, Robert. 1967. *The Search for Order: 1877–1920*. New York: Hill and Wang.

Wilcox, Delos F. 1910. *Municipal Franchises*. Vol. 1. Rochester, N.Y.: Gervaise Press.

_____. 1911. *Municipal Franchises*. Vol. 2. Rochester, N.Y.: Gervaise Press.

_____. 1914. "Effects of State Regulation upon the Municipal Ownership Movement." *Annals of the American Academy of Political and Social Science* (issue entitled "State Regulation of Public Utilities") 53 (142): 71–84.

_____. 1921. "Elements of a Constructive Franchise Policy." In King (1921).

_____. 1924. "Cooperation Between State and Local Authorities." In Morris L. Cooke, ed., *Public Utility Regulation*. New York: Ronald Press Co.

Williamson, Oliver E. 1976. "Franchise Bidding for Natural Monopolies — In General and with Respect to CATV." *Bell Journal of Economics* 7: 73–104.

_____. 1979. "Transaction-Cost Economics: The Governance of Contractual Relations." *Journal of Law and Economics* 22 (1): 233–261.

_____. 1983. "Credible Commitments: Using Hostages to Support Exchange." *American Economic Rev.* 73 (4): 519–540.

_____. 1985. *The Economic Institutions of Capitalism*. New York: Free Press.

_____. 1989. "Transaction Cost Economics." In Richard Schmalensee and Robert Willig, eds., *Handbook of Industrial Organization*. Volume 1. Amsterdam: North-Holland (Elsevier Science).

_____. 1996. *The Mechanisms of Governance*. Oxford: Oxford University Press.

Wilson, G. Lloyd, James M. Herring, and Roland B. Eutsler. 1938. *Public Utility Regulation*. New York: McGraw-Hill.

World Bank. 1994. *World Development Report 1994: Infrastructure for Development*. New York: Oxford Univ. Press.

Yates, David. 1990. "Drafting Force Majeure and Related Clauses." *Journal of Contract Law* 3 (1): 186–213.

Zupan, Mark A. 1989. "The Efficacy of Franchise Bidding Schemes in the Case of Cable Television: Some Systematic Evidence." *Journal of Law and Economics* 32: 401–441.