

Efficiency of Pension Funds Management in OECD Countries: Registered Retirement Savings Plan in Canada

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ABSTRACT

Pension funds collect and invest the money contributed by the employer or the employee, postponing a part of the employee's total compensation during the working years until retirement. While performing this function, an important issue that deserves special attention is the efficiency of managing these funds. Administrative costs affect this efficiency because every dollar uneconomically spent on administration is a dollar which could possibly go to plant participants. Investigation made in this thesis on the available studies concerning the efficiency of administering pension funds in the OECD area revealed that based on the experience of selected OECD countries and Chile, the cost of managing the retirement funds depends on the structure of the pension scheme. Decentralized pension funds characterized by a high level of services and high marketing costs report higher administrative expenses as compared to centrally managed pension funds which provide a lower level of services incurring very low or no marketing costs at all. Also, this thesis evaluates the efficiency of administering the retirement savings in Canada under the RRSP scheme provided that the account is invested in GICs. The research concludes that all the RRSP administrators obtain large benefits from accessing these long-term funds since they offer identical interest rates on GICs within the RRSP and outside it without imposing any administrative fee on their customers. This zero-level of fees does not have any impact on the future amount of pension benefits.

Keywords: pension funds, efficiency, administration, administrative costs, RRSP.

JEL Classifications: H55, H75, J26, J32

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CHAPTER 1

INTRODUCTION

Retirement income is an extremely important component of every person's life as he or she moves towards the lower end of his or her life-cycle. Any stable source of income upon retirement provides financial security and prevents destitution at old age, when people are not able to work and contribute to the economy any longer.

In order to attain the goals of insuring against the poverty at old age and to maintain a given standard of living comparable to the one before retirement, countries around the world employ different measures. In general, these measures involve the establishment of pension entities that can be categorized as follows: social security or welfare systems through which government provides minimum protection of the standard of living at retirement; privately arranged pension schemes in which participation is compulsory for all the working force and; voluntary private savings which benefit those individuals who want to replace part of their social security benefits with those from personal pension plans.

The ageing of the population, defined as the increase in average age accompanied by low fertility rates, has imposed new challenges to all OECD countries regarding the financial sustainability of pay-as-you-go pension schemes. These demographic trends have put constant pressure on governments to reform their existing pension systems in order to insure a safe source of income to future pensioners. One of the proposals is to introduce mandatory individual accounts which may be administered by private pension funds or by the government. However, in choosing between these two different organizational structures,

the efficiency of managing retirement funds is a crucial issue. The most important determinant of this efficiency is the administrative cost incurred when running the pension scheme. These costs are defined as the amount of resources exhausted as the collection of contributions takes place, as these contributions are invested in the capital market, as the necessary record-keeping is maintained, account statements are sent to the covered workers and regulatory compliance is fulfilled, as pension eligibility is determined and pension payments are initiated and in some cases as marketing tools like advertisement and sale representatives are employed in order to reach specific costumers. These costs deserve special attention because they affect the value of the assets accumulated in the accounts of the pensioners as well as they may elevate the fiscal expenditures of the government. Therefore, they should reflect the true economic value of the resources used in order to avoid the unnecessary spending of resources in administration, money which could instead go to plant contributors.

This thesis aims to investigate the efficiency of managing retirement funds in the OECD area based on the information regarding the level of administrative costs incurred by the pension funds in these countries. In addition, this research will evaluate the efficiency of pension fund management in Canada under the Registered Retirement Savings Plan (RRSP) design. Furthermore, the study will try to identify if there is any difference in the level of effectiveness provided to customers by banks as compared to other non-bank RRSP administrators provided that the RRSP account is invested in Guaranteed Investment Certificates (GICs).

The outline of the study follows this order. Chapter Two presents a general overview of the structure of retirement systems across OECD countries according to the World Bank and the OECD. Moreover, it compares on a cross-country basis certain pension parameters such as retirement age, replacement rates and indexation of pension benefits. It also discusses the importance of the pension funds for the economy and their growth during the last years. Chapter Three shifts the attention to the administrative costs

incurred when managing the pension funds. It starts with explaining the administrative tasks implemented in a pension system which are basically the source of administrative costs, continues with explaining what administrative costs are, why are they important to be taken into consideration, what are its main determinants and evaluates the administrative costs in the OECD area under different organizational structures. Chapter Four provides an overview of the retirement system that is in place in Canada. Then Chapter Five evaluates the efficiency of managing RRSPs by banks as compared with the effectiveness of managing these funds by other non-bank financial institutions and the conclusions of the overall study are stated in the last chapter.

CHAPTER 2

BACKGROUND

2.1 The Structure of Pension Systems in OECD Countries

Provision of income at retirement is a very important task that affects the well being of individuals in the society as they move towards the lower end of their life cycle. In many countries, pension systems are the social institutions responsible for providing retirement benefits to the elderly.

According to OECD (2005:16) “Pension programmes have two main objectives. The first is redistribution of income towards low-income pensioners and prevention of destitution in old age. The second is helping workers maintain living standards during retirement by replacing income from work at an adequate level”. Having these goals in mind, income provision at retirement would seem to be basically the same task in any country. Yet in practice it is a very difficult and challenging process.

As a matter of fact, countries around the world employ different approaches in order to meet these goals with resulting discrepancy in the combination of public and private pension provision, in the functions of various tiers of pension coverage (basic protection and supplementary benefits), in administrative arrangements and in sources of pension funding (ILO,1989).

These variations in the structure of pension systems make it very difficult to evaluate and compare the retirement systems across countries. However, focusing on their structure, World Bank and OECD have categorized the pension systems in a consistent way in order to facilitate this comparison.

2.1.1 World Bank Classification of Pension Systems

In most countries pension provision takes place through a combination of unfunded public schemes, publicly mandated contributory schemes and voluntary private-retirement savings (Carmichael and Palacios, 2004). This is commonly referred to as the classical three-pillar taxonomy of pension systems, which was recommended by the World Bank in 1994 (Willmore and Bertucci, 1999). The first pillar is made up of state pension schemes, whereas the second and third pillars are comprised of occupational schemes and personal pension plans accordingly.

The *first Pillar* is a mandatory system that is related to varying degrees to earnings and aims to replace some portion of pre-retirement income at post working age (Holzmann at al, 2005). It is the basic state scheme which provides the safety net¹ for the post working generation. Pay-as-you-go pension schemes, where tax revenues from current workers are used to pay for current retirees as well as all publicly managed schemes with mandatory participation, classify under this pillar.

The *second Pillar* includes privately managed mandatory saving systems generally linked to employment or exercise of a profession and participation to these schemes is restricted to workers employed in particular sectors, industries, professions or companies (Eurostat, 2003).² In general, these schemes are funded, which means that the liabilities of the pension plan will be financed by using the accumulated assets from contributions and investments.

¹ It provides the safety net because this pension scheme has the power to tax, transfer and index.

² For a detailed description of this pillar see Holzmann at al (2005), Clark (2000), Hemming (1998) and Eurostat (2003).

The *third Pillar* consists of private retirement saving plans in which involvement is not compulsory (Willmore and Bertucci, 1999). Individuals that desire to replace part of their social security benefits with those from personal pension plans are most likely to participate in these plans (OECD, 2005).

Holzmann at al (2005), in a report prepared for the World Bank discuss that recently the World Bank has proposed a multipillar pension structure reflecting its perspective for pension reform in order to meet the multiple objectives of pension systems and to respond more efficiently to the economic, political and demographic trends. In addition to the three-pillar pension structure advocated in 1994, two other pillars (a zero and fourth pillar) are introduced.

The *zero Pillar* pension system does not have a contributory nature and it aims to insure a minimum level of protection for the elderly through a universal flat benefit, where individuals receive a given amount of money based only on age and residency criteria (Holzmann at al, 2005).

Finally, the *fourth Pillar* includes the social security in a wider context taking into account access to health care, family support and housing.³

The following table summarizes and compares the characteristics of each pillar discussed above.

Table 2.1 Multipillar Pension Taxonomy

Pillar	Characteristics	Participation	Funding or Collateral
0	“Basic” or “social pension,” at least social assistance (universal or means tested)	Universal or residual	Budget or general revenues
1	Public pension plan, publicly managed (defined benefit or notional defined contribution)	Mandated	Contributions, perhaps with some financial reserves
2	Occupational or personal pension plans (fully funded defined benefit or fully funded defined contribution)	Mandated	Financial assets

³ For more information see Holzmann at al (2005).

3	Occupational or personal pension plans (fully funded defined benefit or fully funded defined contribution)	Voluntary	Financial assets
4	Access to informal support (family), other formal social programs (health care) and other individual financial and nonfinancial assets (homeownership)	Voluntary	Financial and nonfinancial assets

Source: Holzmann et al (2005).

Focusing on the structure of the relationship between the three pillars, Clark (2000) argues that there are wide variations between the Anglo American countries, Latin America and much of the continental Europe. For example, he discusses that in Netherlands and Switzerland there is a close relationship between the first and the second pillar where income at retirement is provided through a mixture of state-funded social security and mandatory participation of sponsored pension plans. By contrast, in Anglo American countries workers may be required to choose between the first and the second Pillar, implying a clear distinction between the two pension systems.⁴

2.1.2 OECD Classification of Pension Systems

The OECD classification of pension systems⁵ avoids the notion of pillars altogether⁶, aiming for a global taxonomy of pension plans, pension funds and pension entities that is eloquent and reliable over a large number of countries with different retirement-income systems in place (OECD, 2004).

⁴ Clark (2000) argues that Anglo-American countries do not fully fund social security pension provisions, but they rely upon the full funding of pension fund obligations under the second pillar. By contrast, European countries tend to rely upon unfunded social security which comprises the first pillar.

⁵ This section draws heavily on OECD (2005), Pensions at a Glance Public Policies across OECD Countries.

⁶ According to OECD, the classical three pillar classification by the World Bank is a prescriptive rather than a descriptive classification. In addition, the 'zero pillar' is very similar to the first pillar.

According to the OECD (2005), focusing on the role and objectives of each component of the pension system, every retirement income system is composed of three tiers. Redistributive part comprises the first tier, whereas the insurance pension provision and voluntary provision represent the second and third tier respectively. The first and the second tier are mandatory while the third tier, as its name implies, is voluntary.⁷

Redistributive Pensions

Pension schemes are often referred to as redistributive mechanisms for transferring funds from well-to-do to the poorer segments of the society (Muralidhar, 2001). These redistributive components are designed to provide the safety net for all citizens by insuring that the post working generation achieves some absolute minimum standard of living (OECD, 2005). This implies that these pensions are publicly provided and participation to these schemes is mandatory. Every country in the OECD area has safety net provisions for its citizens with the purpose of preventing poverty among the old people (OECD, 2005).

According to the OECD (2005), redistributive schemes are composed of four different pension types: basic pension schemes, targeted retirement income plans, minimum pensions and social insurance.

In *basic pension plans* pensioners are entitled to benefits which may be either flat rate, meaning that every retiree is subject to an equal amount of benefits, or determined by the number of working years. Entitlement to this pension does not change even when retirees have other sources of income.

Targeted plans cover particular schemes for retired people that are resource-tested. Under such plans benefits can be: pension income tested, broader income tested or broader means tested.⁸ The underlying

⁷ The following discussion regarding the main types of redistributive pensions is adopted from OECD (2005).

logic behind such schemes is that poorer pensioners are entitled to higher benefits whereas the better-off pensioners are entitled to a lower level of benefits.

Minimum pensions, as its name implies, aims at preventing the pension level to fall below a specific minimum level. In general, retirees are entitled to this benefit if they have contributed to the pension scheme for a minimum number of years.

Social assistance refers to general social-assistance programmes that are in place for the whole population, but cover old population as well. This is the case in those countries where there is not a specific targeted pension programme for old people.

Table 2.2 summarizes the structure of pension systems in each OECD country based on the classification made above.

Table 2.2: Structure of Pension Systems in OECD Countries

Tier: function	First tier: universal coverage, redistributive				Second tier: mandatory insurance		
Provision	Public				Public	Private	
Type	Social assistance	Targeted	Basic	Minimum	Type	DB	DC
Australia		√					√
Austria		√			DB		
Belgium		√		√	DB		
Canada		√	√		DB		
Czech Republic	√		√	√	DB		
Denmark		√	√		DB/DC		√
Finland		√			DB		
France		√		√	DB+points		
Germany	√				Points		
Greece		√		√	DB		
Hungary				√	DB		√
Iceland		√				√	

⁸ In pension income tested schemes the value of benefits depends only on the level of pension income a retiree receives. Broader income tested programme reduces the benefits to a pensioner if he or she has other income from savings whereas in broader means tested programmes the pension reduction takes into account income as well as assets.

Ireland		√	√				
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Table 2.2 Structure of Pension Systems in OECD Countries (Continues)

Tier: function	First tier: universal coverage, redistributive				Second tier: mandatory insurance		
Provision	Public				Public	Private	
Type	Social assistance	Targeted	Basic	Minimum	Type	DB	DC
Japan			√		DB		
Korea			√		DB		
Italy	√				Notional ac		
Luxembourg	√		√	√	DB		
Mexico		√					√
Netherlands	√		√			√	
New Zealand			√				
Norway		√	√		Points		
Poland				√	Notional ac		√
Portugal		√		√	DB		
Slovak Republic				√	Points		
Spain				√	DB		
Sweden		√			Notional ac	√	√
Switzerland		√		√	DB	Defined credit	
Turkey		√		√	DB		
United Kingdom		√	√	√	DB		
United States		√			DB		

Source: OECD (2005).

2.1.2.2 Insurance Pensions

Insurance pension schemes are mandatory, aiming to insure that old people have a sufficient replacement rate (retirement income as a proportion of earnings before retirement) when retired, not just a poverty-preventing absolute standard of living (OECD, 2005). As Bodie (1989) has pointed out, the existence of pension savings can be explained in the light of insuring: against the risk of an inadequate replacement

rate; the possibility that the retirees will outlive their savings; the likelihood that invested assets will perform poorly and; the risk that the purchasing power of pension savings will be eroded by the inflation.⁹

The most popular forms of insurance pension provision are: defined benefit plans, defined contribution plans and earning related schemes.

Firstly, a *defined benefit plan* focuses on the flow of benefits that pensioners are entitled to after retirement (Bodie et al 1985). Under this plan, the employer is obliged to provide a precise annual retirement benefit for its employees based on a formula that incorporates the individual earnings of the employee while working or years of service (Davis, 2000).¹⁰ In this context, defined benefit schemes insure to plan members a stable replacement rate upon retirement.¹¹

Hemming (1998) argues that in pay-as-you-go pension schemes, the income risk is borne by the workers who must pay the contributions necessary to finance the defined benefit pensions while in case of a funded defined benefit pension plan, the risk of poor investment performance is borne by the government or employers, depending on who the sponsor is .

⁹ These are referred to as replacement rate inadequacy, longevity, investment risk and inflation risk respectively. For a full discussion of these risks see Bodie (1998).

¹⁰ Some defined benefit formulas take into consideration the social security benefits to which an employee is entitled. These are called integrated plans.

¹¹ There are some concerns regarding the promised future benefits. For example, are the benefits indexed in order to protect the real value of future pension entitlements? According to Bodie (1989), social security and public pensions plans offer insurance against inflation, while majority of private pension schemes do not offer inflation protection.

The cost of defined benefit plans is difficult to calculate and requires the service of professional actuaries. However, it is possible to calculate it based on financial assumptions regarding the retirement age, life expectancy of plan members and the expected return from the plan's investments (CBO, 2004).

In OECD countries defined benefit plans are the most common form of public pension insurance provision as demonstrated by the Table 2.2. Also, referring to the same table, it is important to mention that among OECD countries only Ireland and New Zealand do not have any form of compulsory insurance pension provision as a component of their public pension system.

Secondly, a *defined contribution plan* focuses on the value of assets rather than the flow of benefits to pensioners (Bodie, 1989). In this type of pension provision the employer, the employee or both make regular, specific contributions into the employee's retirement account in return for future pension benefits that depends on the investment performance of the accumulated contributions in each account (Bodie et al, 1985). As a result, two individual making the same contributions may be subject to different benefit entitlements depending on the investment performance of the retirement savings in each account (Muralidhar, 2001). The pension benefits can be withdrawn in the form of a single lump-sum payment or alternatively in the form of an annuity depending on financial needs of the pensioners. It is important to notice that unlike defined benefit plans, in defined contribution plans the risk of poor investment performance is transferred to employees (Hemming, 1998).

Contributions may be expressed as a percentage of earnings. For example, in Australia employers must pay 9 percent of each employee earnings into their pension account. In Poland, the contribution rate is 7.3 percent of earnings while in Sweden the contribution rate is 2.55 percent of earnings for compulsory programmes whereas for occupational plans it is 2 percent (OECD, 2005).¹² Generally, employees have

the right to choose how to invest the funds. However, in most cases investment is limited to bonds, stocks and money market instruments as indicated by the pension's plan investment policy (Bodie et al, 1995).

Among the OECD countries, Australia has the largest compulsory defined contribution pension scheme (OECD, 2005).¹³

Finally, in some countries *earning-related schemes* are another component of insurance pension provisions. As its name implies, in these plans the amount of pension benefits is related to the level of earnings during working years. The benefit formula may link the benefits to average earnings, best year's earnings or last few years earnings (OECD, 2005). It consists of earning related defined benefit schemes, points systems and notional accounts.

In French occupational plans and the German, Norwegian and Slovak public schemes, employees earn pension points derived from their individual earnings for each contributing year. Upon retirement, the sum of pension points is multiplied by a pension-point value in order to translate them into a regular stream of pension entitlements (OECD, 2005). These systems are called *points systems*.

Another earning related pension scheme is the *notional account system* (unfunded defined contribution programs). As Stanko (2003) has pointed out, under such system each individual account is accredited with some hypothetical points to represent contributions paid by the insured. The points are subject to an implicit rate of interest or growth rate decided by the government regulations. However, these accounts do not maintain real investments like bonds, stocks or other securities. Due to this, the implicit

¹² Access to such plans is linked to an employment relationship between the plan member and the plan sponsor. Occupational plans may be established by employers or industry associations.

¹³ Based on the source of finance or the way in which assets are held, there are five types of defined contribution plans. These are: saving and thrift plans, profit-sharing programs, money purchase pension plans, employee stock ownership/stock bonus plans and 401(k) plans. For a detailed explanation of each type refer to Mitchell (1999).

rate of interest is just a notional amount (Feldstein and Liebman, 2001). At retirement, participants of these schemes can draw an annuity based on this accumulation, again reflecting the nominal rate of growth. Examples of this scheme can be found in Italy, Sweden and Poland.

2.1.3 Comparison of Different Pension Parameters in OECD Pension Systems

This section seeks to assess and compare several pension parameters that indicate to what extent are the OECD countries achieving the goals of the pension system in terms of providing to all qualifying individuals continuous, adequate income which is not eroded by the inflation. In general, cross-national comparative studies regarding the relative generosity of pension systems use the replacement rates as the most appropriate measure of the benefit's level (Whiteford, 1995). Also, adjusting the pension benefits for the effect of inflation is particularly relevant in this cross-country evaluation indicating what measures OECD countries take in order to protect the value of pension benefits from the inflation. In addition, the pension eligibility age across OECD countries will be compared.

2.1.3.1 Retirement Age

The retirement age is defined as the age from which the individual is entitled to pension benefits (OECD, 2005). Majority of OECD countries have a pension eligibility age of 65 years for men. The exceptions to this are France, Turkey and Korea where the retirement age is 60. Also, Norway, Iceland and USA have a retirement age that exceeds the OECD average by 2 years. In some countries such as Austria, Poland, Switzerland, and Turkey women are subject to a lower retirement age as compared to men.

Table 2.3 shows the retirement age for men and women in selected OECD countries.

The retirement age is important because it affects the labor supply and in the context of ageing populations the standard of living for the post working generation will depend to a high degree from the average retirement age. A low retirement age accompanied with a rise in life expectancy implies a longer period of time for making pension payments. According to the OECD (2005), in countries like Turkey, France and Korea where the retirement age is 60 years, a pension paid to men costs 17.5 percent more than the same benefit paid by countries where the retirement age is 65 years.¹⁴

Table 2.3 Retirement Age for Selected OECD Countries¹⁵

Country	Men	Women
Austria	65	60
Belgium	65	65
Canada	65	65
France	60	60
Hungary	62	62
Iceland	67	67
Ireland	66	66
Japan	65	65
Korea	60	60
Norway	67	67
Poland	65	60
Turkey	60	58
Switzerland	65	64
United States	67	67

Source: OECD (2005)

¹⁴ In this context, increasing the standard retirement age is one of the possible ways to respond the challenges imposed by increasing trends in life expectancy accompanied by low fertility rates. A higher retirement age implies a shorter period for making future pension payments. In addition, the number of working people will increase, which means that contributions to unfunded schemes will rise.

¹⁵ Australia, Belgium, Canada, Czech Republic, Finland, Germany, Greece, Ireland, Italy, Japan, Korea, Luxembourg, Netherlands, Portugal, Spain, Sweden, Switzerland and United States offer early retirement pensions permitting people to retire early. Among these countries only Czech Republic and Switzerland have different early retirement age for men and women.

2.1.3.2 Replacement Rates

The replacement rate of a pension system is the ratio of an individual's pension benefits in a given time period to the amount of income the person was earning just before retirement (Whiteford, 1995). In other words, it explains what percentage of earnings is replaced by pension benefits. It is a good indicator of the insurance role of a pension system because it shows to what degree the retirement system aims to maintain the previous standard of living of an employee moving from work to retirement (OECD, 2005). In addition, as Whiteford (1995) discusses, replacement rates can be used as an indicator of work discouragement effects of benefit systems.

Other things being equal, the more generous a pension system is, the higher the incentive to retire early.¹⁶ For instance, Gruber (1997) argues that one of the possible reasons that explains the decline in labor force participation in Canada from 1960 to 1993 is the increased generosity of the income support programs for senior Canadians throughout these years.

Replacement Rates are expressed in terms of gross and net retirement income.

Gross replacement rate refers to the gross amount of pension benefits as a percentage of gross earnings prior to retirement. It does not adjust for any tax or social security contribution paid by the pensioner.

An OECD comparison of gross replacement rates in the OECD area revealed wide variation of gross replacement rates for an average earner¹⁷, ranging from 30 percent in Ireland to 101 percent in

¹⁶ See Feldstein and Liebman (2001).

¹⁷ The average earner is defined as a full career worker who earns exactly the amount of average earnings. Low and high earners are full career employees who earn half and twice average earnings respectively.

Luxembourg. The OECD average at this earning level is equal to 57 percent as shown by the Figure 2.1 below (OECD, 2005).

Pensioners in countries such as Turkey, Greece, Spain, Italy, Austria and Hungary receive generous pensions having a gross replacement rate of more than 75 percent. In contrast, New Zealand, United Kingdom, Mexico and Ireland have the lowest gross replacement rate at average earnings. The reason behind such low replacement rates can be partly explained by the structure of pension systems in these countries. For example, Ireland has the lowest replacement rate because it does not have an earning related pension scheme. As demonstrated in the Table 2.1, it has just basic and targeted (means tested) pension provisions.¹⁸ As Whiteford (1995) argues, means tested benefits may be less redistributive because mean testing is associated with lower levels of benefits.

The minimum gross replacement rate for low earners in OECD countries is 39.1 percent in Mexico. At the top is again Luxembourg where the low earners are subject to pension entitlements that are worth 15 percent more than their earnings prior to retirement (Refer to Figure 2.1). The OECD average is relatively high at this earning level, amounting to almost 73 percent. However, the earning levels for the low earning workers are relatively low which implies that these percentages are not as significant as they would be in the case of relatively high earners.

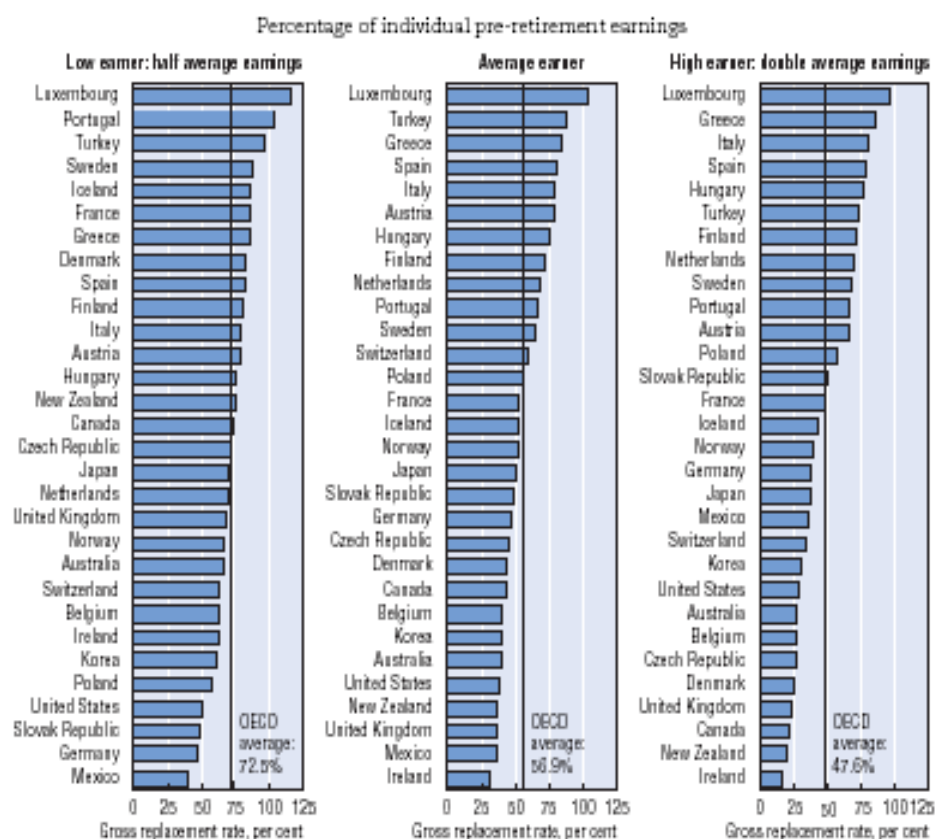
For high earners, gross replacement rates appear to be high in Luxembourg, Greece, Italy, Hungary, Netherlands and Sweden among other countries. On the other hand, Ireland and New Zealand have the

¹⁸ See OECD (2005), to have more detailed information regarding the structure of pension systems in all OECD countries.

lowest net replacement rates for this category. As previously mentioned, this is due to the fact that Ireland and New Zealand offer flat rate pensions not related to the level of earnings.

It is important to note that when compared to low and average level of earnings, gross replacement rate for high earners in Canada is very low. The reason behind such low replacement rates is that Canada applies a ceiling on the amount of earnings used to calculate both contributions and pension benefits that pensioners are entitled to (OECD, 2005).

Figure 2.1 Gross Replacement Rates in OECD Countries at Different Earning Levels



Source: OECD (2005).

It is worth mentioning that the cross-country discrepancy in replacement rates is not determined by the structure of the pension systems only. These differences may also arise due to the fact that different

countries do not have the same philosophy regarding the aim of their pension system. For instance, both Germany and United States have pay-as-you-go pension schemes which cover a large proportion of the labor force in both countries. However, even though these systems have similar structures they have dissimilar objectives. In Germany, public pensions are designed to provide a greater correlation between lifetime earnings and retirement income whereas in United States the leading aim for the social security system is prevention of poverty at old age, insuring a minimum standard of living. As a result, public pensions in Germany are more generous as compared to the US pensions, particularly for high earners.¹⁹

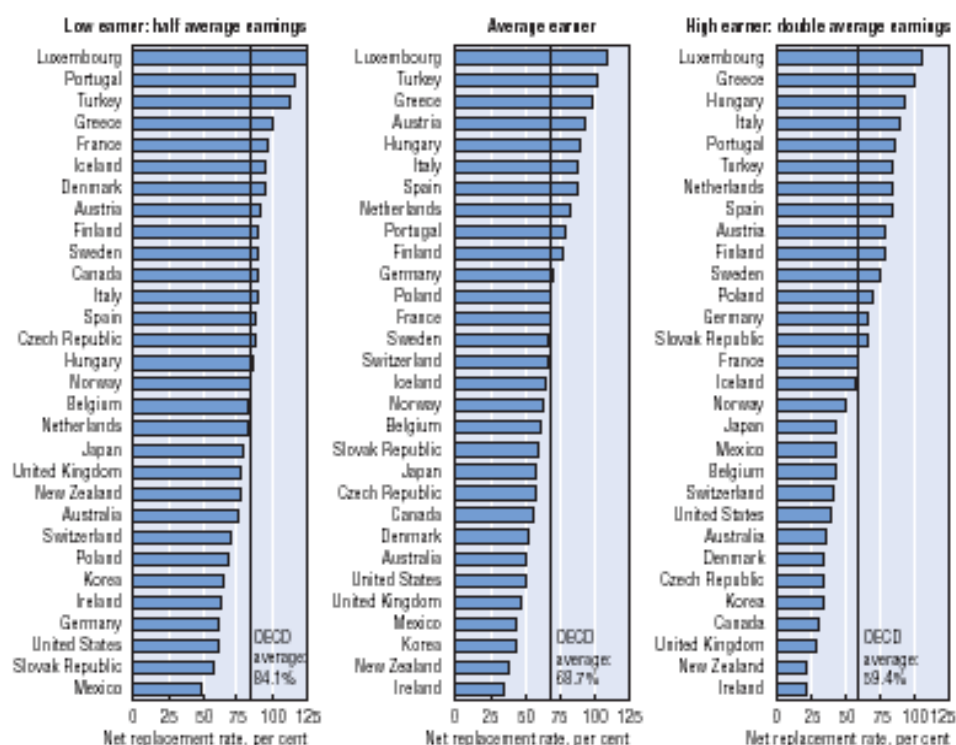
Figure 2.2 below shows *net replacement rates* across OECD countries by level of individual earnings. There are wide variations among OECD countries regarding the extent to which pension benefits (net of taxes and social contributions) replace income earned during employment (net of taxes and any social contributions).

Considering the average level of individual earnings, which is the most appropriate indicator for pension analysis, the average net replacement rate for the OECD countries is 68.7 percent, which is 22 percent higher than gross replacement rates on average (OECD, 2005). Apart from this, the pattern of replacement rates across countries is different on a net basis as compared to gross levels. For example, Germany, Belgium and France have higher net replacement rates as compared to gross rates because of favorable treatment of pension income and pensioners in the context of pension income tax or social security contributions (OECD, 2005).²⁰

¹⁹ This discussion is adopted from Kinsella and Gist (1995).

²⁰ See Keeney and Whitehouse (2002) for a detailed discussion of the role of tax systems in old-age support.

Figure 2.2 Net Replacement Rates in OECD Countries at Different Earning Levels



Source: OECD (2005).

2.1.3.3 Indexation of Pension Benefits

Indexation is another important issue that should be paid attention to when designing a pension system. It refers to the policy in place for the inflation adjustment of pension payments from the point of claim of benefits onwards OECD (2005). A reasonable indexation scheme would consider the periodical adjustment of pension benefits either to price level or to wages. However, there is a difference between

the two.²¹ The price level indexation aims to protect the pensioners from the adverse affects of inflation, guaranteeing a real pension benefit upon retirement whereas the wage indexation insures the real well being of pensioners, meaning a standard of living which goes in line with that of the workers (Summers, 1992).

The recent OECD study of public pension policies reveals that the majority of countries in the OECD area provide indexation of pension benefits to prices. This is due to the fact that the wages have grown faster than the prices during the 1980's and 1990's implying that the indexation to prices is less costly (OECD, 2005). Table 2.4 below summarizes the procedures of pension payment indexation in all the OECD countries.

Table 2.4 Indexation of Pension Payments by Country and Scheme

Percentage of total adjustment linked to prices or earnings

	Scheme	Prices	Earnings	Other/notes
Australia	Targeted Defined contribution		100	Individual Choice
Austria	Earnings-related			Discretionary; prices assumed in modeling
Belgium	Social assistance Minimum Pension Earnings-related	100 100 100		Price index excludes alcohol, cigarettes and fuel; increases only if inflation exceeds 2%
Canada	Targeted Basic Earnings-related	100 100 100		
Czech Republic	Basic Earnings-related Minimum	67 67 100	33 33	Adjustment to prices plus increases of at least one third of real wage growth
Denmark	Targeted Basic ATP Defined contribution		100 100	Discretionary Periodic bonuses
Finland	Basic Earnings-related	100 80	20	
France	Targeted Minimum Earnings-related Occupational	100 100 100	100	No automatic procedure but recent practice
Germany	Social assistance Earnings-related		100	Discretionary Wages net of pension contributions
Greece	Minimum		100	

²¹ See Summers (1992).

	Targeted Earnings-related			Discretionary Discretionary
Hungary	Minimum Earnings-related Defined contribution	50 50 50	50 50 50	

Table 2.4 Indexation of Pension Payments by Country and Scheme (Continues)

	Scheme	Prices	Earnings	Other/notes
Iceland	Targeted Occupational	 100	100	In line with public-sector pay Minimum legal uprating
Ireland	Targeted Basic pension		100 100	
Italy	Social assistance Earnings-related	75-100		Discretionary Increase between full and 75% price indexation depending on pension level
Japan	Basic Earnings-related	100 100		
Korea	Earnings-related	100		
Luxembourg	Social assistance Basic Minimum Earnings-related		100 100 100	Discretionary At least prices with extra increase related to earnings growth
Mexico	Minimum Defined contribution	100 100		Equal to real value of minimum wage for 1997 Individuals can also choose gradual withdrawal
Netherlands	Basic Occupational		100 100	Net minimum wage No legal requirement but customary
New Zealand	Basic		100	
Norway	Targeted Basic Earnings-related		100 100 100	
Poland	Minimum Defined contribution	80 100	20	
Portugal	Targeted Minimum Earnings-related	 100	100	Discretionary increases; recently above prices Minimum wage net of contributions
Slovak Republic	Earnings-related	50	50	
Spain	Earnings-related	100		
Sweden	Targeted Earnings-related Occupational	100	 100	Gross earnings less “growth norm” of 1.6%
Switzerland	Targeted Earnings-related Occupational	50 50	50 50	Discretionary
Turkey	Targeted Earnings-related	100 100		
United Kingdom	Targeted			Prices or more; up to wages if possible given financial situation

	Basic	100		
	Earnings-related	100		
United States	Targeted	100		
	Earnings-related	100		

Source: OECD (2005).

2.2 Pension Funds in OECD Countries

In the context of aging populations, pension funds industry has gained popularity particularly because of their role in insuring the retirement income as well as the great impact that they have on the whole economy. This section will focus on explaining what pension funds are, what are the recent trends regarding the growth of pension funds and why are they important.

2.2.1 Pension Funds

The *raison d'être* of pension funds is to collect, pool, and invest funds contributed by sponsors and beneficiaries to provide for the future pension entitlements of beneficiaries (Davis, 2000). As Bodie (1989:5) has stated “through a combination of employer and employee contributions part of the employee’s total compensation during the working years is deferred until retirement”. Upon retirement the benefits can be withdrawn at once, in the form of lump sum, or in the form of annuity provided by insurance companies or other financial intermediaries.

One of the most essential characteristics of pension funds is that they have long term liabilities. This is due to the fact that an early withdrawal of accumulated funds in the accounts is usually forbidden. The qualifying individuals are subject to pension entitlements only after reaching the standard retirement age.²²

There are two basic types of pension funds: defined benefit and defined contribution plans. As argued, the main difference between the defined benefit and defined contribution plan is that the former insures a fixed rate of return to pensioners, whereas the latter insures a fixed rate of contribution into the fund with rates of returns that depend on the performance of the invested assets. If a financial intermediary runs a defined contribution pension fund, the assets of the pension scheme will by definition cover the pension liability whereas in case of a defined benefit pension scheme, at minimum the assets of pension fund should be sufficient to cover the pension liability that has been accumulated according to the rules of the scheme (Hemming, 1998).

Defined contribution pension plans have grown significantly in recent years reflecting the employer's tendency to minimize the risk of insuring a fixed benefit as well as the employer's desire to transfer funds easily between employers (Davis, 2003).²³ This trend is spread throughout most of the OECD countries. The pension funds in Czech Republic, Hungary, Italy, Poland, Portugal, the Slovak Republic and Spain are all largely supporting defined contribution pension arrangements. Also, in the United States by 1997 the defined contributions plans had surpassed the defined benefit plans by assets under management (OECD, 2005).²⁴

Pension funds can be internally or externally managed. Chan-Lau (2004) argues that in general, pension funds trustees tend to rely heavily on external consultants regarding the asset allocation and on external asset managers for security selection. He further explains that the dependence on third parties is due to

²² There are some cases in which the withdrawals can be made before reaching the retirement age such as disability or early retirement provisions in some countries.

²³ See Ross and Wills (2002), for a detailed discussion of shift from defined benefit to defined contribution retirement plans.

²⁴ See OECD (2005), Pension Market in Focus, Table 5, pp.8.

the fact that the fund trustee's lack the skills of investment expertise.²⁵ In continental European countries, asset management of funds is delegated to banks which have key relationship with the company who sponsors the pension fund. This is especially the case in Germany.

2.2.2 Rapid Growth of Pension Funds

Over the past decade the bulk of growth in pension fund industry has been very rapid in the OECD area. This growth is fueled mainly by the demographic trends taking place in these countries. The rapid ageing of populations, namely the increase in life expectancy accompanied by low fertility rates, in the context of generous pay as you go schemes with unchanged retirement age will put a pressure on governments around the world to reform their pension system, with a possibility of switching to funded pension schemes in the future (Visco, 2005).²⁶

A report to G-10 deputies emphasizes that occupational and other types of pension funds have expanded in terms of assets under management, especially in United Kingdom, United States, Canada, the Netherlands and Switzerland. Indeed, pension funds rank among the largest institutional investors representing one half or more of institutionally held assets in the Netherlands and Switzerland, more than one third in the United States and the United Kingdom and about one fifth in Japan (Visco, 2005).²⁷

²⁵ Chan-Lau also argues that external management of pension funds may result in herding behavior.

²⁶ This is due to the fact there will be a rising trend in dependency ratios (ratio of pensioners to active working population). Given that PAYG systems in some countries are very generous, it will be very difficult to pay the promised benefit to retirees in the future because the number of working people will decrease and the taxes collected will not be sufficient to cover the liabilities owed to the future pensioners. See Visco (2005) and Davis (2003).

²⁷ See Visco (2005), Table 1.3, pp. 15.

Chan-Law (2004) argues that the data gathered and analyzed by the OECD show that pension fund assets in six²⁸ of the largest non-emerging OECD countries amounted to \$8.5 trillion in 2001. More than 90 percent of these assets were concentrated in three countries: the United States (75 percent), the United Kingdom (11 percent), and Japan (8 percent). This implies that expansion in the size of the pension funds is not homogenous across OECD countries. Referring to Table 2.4 below, it is evident that the rate of increase in pension funds assets in Germany and other countries such as Italy and Japan is significantly lower as compared to Anglo-American countries. Pension funds assets in these countries account for less than 20 percent of the GDP, while in Netherlands, Switzerland, United Kingdom, and United States pension assets represent more than 60 percent of the GDP (IMF, 2004). As Bonoli (2000) discusses, this trend may be explained by the fact that in countries such as Germany, Sweden and France social policies are widely admired and contribute to the structure of national identities.

2.2.3 Importance of Pension Funds

Since the Second World War pension funds have become very important institutions in terms of providing retirement income to the post working generation throughout the world. As argued, currently pension funds are the most significant form of multiplying pension contributions worldwide (Monkiewicz, 2004).

Table 2.5 Pension Funds Assets Under Management in Selected Mature Markets (in US\$ billion)

		1994	1995	1996	1997	1998	1999	2000	2001
Canada	AUM % of GDP	207.2 37.7	229.8 38.7	254.9 41.7	272.1 44.1	283.7 47.5	313.9 46.2	342.6 48.3	330.9 48.2
Germany	AUM % of GDP	55.5 2.5	65.3 2.7	64.8 2.8	60.5 3.0	69.3 3.1	63.3 3.2	62.2 3.3	60.5 3.3
Italy	AUM	35.5	39.0	39.2	34.4	38.7	51.3	48.8	47.3

²⁸ These countries include Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.

	% of GDP	3.5	3.5	3.2	3.0	3.1	4.6	4.5	4.4
Japan	AUM % of GDP	672.4 13.6	735.1 15.2	663.3 15.00	623.9 15.5	722.2 16.2	723.9 18.5	825.8 18.5	710.7 18.5
United Kingdom	AUM % of GDP	660.5 62.0	759.7 68.2	893.2 69.0	1058.4 78.9	1136.5 79.3	1281.5 87.8	1116.3 78.7	954.0 66.4
United States	AUM % of GDP	3547.9 50.3	4226.7 57.1	4745.7 60.7	5563.6 66.9	6231.9 71.0	6857.3 73.9	6805.0 69.3	6351.3 63.0
Total	AUM % of GDP	5298.3 31.5	6183.8 35.4	6792.8 38.4	7757.4 44.4	8631.5 46.0	9651.4 49.5	9353.9 48.3	8595.6 45.3

Source: Chan-Lau (2004).

In addition to providing retirement income security to plan participants Bodie (1989) argues that pension funds contribute to national savings; have a profound effect on capital markets and security prices; are an important element in corporate finance; are a device for evading or at least deferring tax payments; affect employee turnover, work effort and the timing of retirement.

Firstly, the importance of pension savings has increased significantly in the recent years, particularly as populations mature. As Visco (2005) states” demographic developments coupled with the growing need to provide for retirement privately will probably prompt an increase in the flow of savings and the stock of savings directed to fund retirement”. This may be accompanied by an increase in national saving rates in the future.

Secondly, the fact that pension funds manage a large and growing amount of funds implies that their investment behavior have an important impact on the stability of financial markets. In this context, Bodie (1989) argues that the crash of the stock market in October 1987 may have been aggravated by the hedging strategies employed by pension fund managers.

Pension funds own a large proportion of financial assets. By the end of 2001, pension funds in United States and United Kingdom held 20 and 18 percent, respectively, of total domestic equity market capitalization. In the same time they held domestic bonds equivalent to 11 and 9 percent, correspondingly, of total domestic bond market capitalization (IMF, 2004). Pension fund consultants and market analysts increasingly believe that a change in regulatory and accounting standards could generate a significant reallocation of assets from equities to bonds, as sponsor companies aim to reduce funding risk and accounting volatility (IMF, 2004). An immediate reallocation of the pension fund's assets may have a significant impact on financial markets and security prices in the short run given that they own a considerable amount of financial securities.

Thirdly, the long-term, constant flow nature of pension fund's liabilities plays an important role in corporate financing. These funds are invested in the capital market buying securities such as stocks and bonds, which serve as a source of funds from companies as well as governments in cases when these funds are invested in treasury securities.

Fourthly, pension funds are a device for deferring tax payments because of favorable tax treatment in regard to contributions and income earned from the pension fund's investments. According to IMF (2004) the tax treatment of pension funds in most OECD countries is as follows:

Contributions by employees into approved pension schemes are made before tax and contribution by employers are deductible from employer's earnings. Usually the total deductible contributions are limited to a given percentage of employee's income.

Income generated by accepted pension funds from their investments is exempted from tax.

Pension Income received by individuals is normally subject to tax on the same basis as wages. In addition, early distributions are subject to additional taxes.

As Bodie (1989) discusses, these tax advantages were the main reasons for the prevalence of employer-sponsored pension plans as a form of saving across countries.

Finally, employer-sponsored pension funds affect the employee turnover rate as well as the work effort. Other thing being equal, the higher the pension benefit provided by the employer-sponsored scheme, the higher is the worker's commitment to the company and the lower the employee turnover rate. Furthermore, the generosity level of pension payments may affect the decision of individuals whether to keep working or retire before the pension eligibility age.

CHAPTER 3

EFFICIENCY OF PENSION FUND ADMINISTRATION IN OECD COUNTRIES

3.1 Administrative Tasks in a Pension System

The process of pension system administration is basically the same across different retirement systems, irrespective of the structure formation and the type of working force that they cover. This is explained by the fact that the procedure of running any pension system involves certain essential tasks to be accomplished in order for the system to achieve its basic purposes. These tasks are: collection and processing, management of investments, record-keeping and reporting, calculation and payment of benefits and in some cases marketing and sales.²⁹ Identification of these functions is very important in the context of evaluating the efficiency of pension fund management across countries.

3.1.1 Collection and Processing

First of all, there must be a system in place in order to collect the contributions or taxes from working people. After collection, the contributions together with the relevant information that determines the amount of benefits at retirement are transferred to either a private system, which invests these contributions in various assets, or public pensions such as social security in which taxes collected are used to pay the current pensioners, on a pay-as-you-go basis (CBO, 2004).

Rofman and Demarco (1999) discuss that the administrative load in collecting and processing the contributions depends to a certain extent on the structure of the benefits and the way they are financed.

²⁹ For a detailed description of administrative tasks in implementing individual accounts see Diamond (1999).

This is due to the fact that these characteristics of the pension system determine the amount of information to be collected and transferred. For instance, a defined benefit pay-as-you-go scheme, where the amount of each worker's contributions and individual earnings constitute the only information to be collected, is less costly from the administrative point of view than a defined contributions pay-as-you-go scheme (notional accounts) where the amount of information is more detailed including the choice of investment funds.³⁰ Furthermore, the consequences of any possible error or late collection and transmission of relevant information are more severe in case of a defined contribution plan. This is because the collected funds under such schemes are invested and the less efficient the collection and processing of contributions, the higher the lost return from delayed investment.

The collection procedure can be either centralized or decentralized. Under a *centralized system* a public agency collects the contributions and distributes them to different agencies or funds³¹ whereas in a *decentralized system*, collection is the responsibility of each agency or pension entity, eliminating the clearing house that exists between the contributors and the pension fund (Rofman and Demarco, 1999).

Table 3.1 demonstrates and compares the two systems in terms of economies of scale, efficiency, timing of handling the collection, costs, financing and transparency among the others.

Table 3.1 Comparison of Alternative Collection Systems

Criterion	Centralized	Decentralized
Economies of scale	High	Duplication of Costs
Efficiency	Traditional agencies often inefficient	New organizations with up-to-date technology can be more efficient

³⁰ The economist Rofman, in a presentation for the World Bank has ranked the complexity of managing the collection process as follows: the less complex scheme is defined benefit PAYG scheme, then is the defined benefit fully funded scheme, the complexity increases when the first two schemes are compared to defined contributions PAYG pension plans and the most complex scheme is defined contribution fully funded pension plan. This presentation is available at <http://info.worldbank.org/etools/docs/library/142184/DL%2DAdmin%2DRofman.pdf>

³¹ To do this accurately, the agency needs to identify each individual worker and the amount contributed.

Timing	Lags possible	Practically instantaneous
Control mechanisms	Simple	Complex
Cross controls	Taxation, other contributions	None
Incentives	Fiscal	Profitability
Enforcement power	Absolute	Indirect or non-existent
Costs	Economies of scale but monopoly	Competition but diseconomies of scale
Financing	State or pension funds (but pricing problems)	Pension funds
Transparency	Sharing information reduces corruption risk	Potential for inappropriate use of privileged information

Source: Rofman and Demarco (1999).

Barrand et al (2004), in a study conducted for the IMF, argue that there are two fundamental administrative forms prevailing in case of public pension institutions: a full-service social insurance institution model where the main functions such as collection of contributions and payment of benefits, are administered by the pension institution and another so called benefit payment model where the collection process is handled by the tax collecting agencies, while the payment of benefits is made by social institutions.

Table 3.2 classifies some selected OECD countries based on the type of collection agency in place for collecting contributions in case of the public pension systems.

Table 3.2 Main Types of Collection Agencies for Public Pension Systems in Selected OECD Countries

Tax Collection Agencies	Social Security Organizations
Australia	Austria
Canada	Belgium
Finland	Czech Republic
Hungary	France
Iceland	Germany
Ireland	Greece
New Zealand	Japan
Netherlands	Mexico
Norway	Poland
Sweden	Portugal
United Kingdom	Korea
United States	Slovak Republic
	Switzerland

Source: Derived from Barrand et al (2004).

3.1.2 Management of Investments

After the collection and processing of contributions is completed the next important task of a pension system is to manage the investments³². It refers to the activities that a pension fund must undertake in order to invest the collected contributions in the capital market. This task is particularly important for private pension funds where the contributions are allocated across different types of assets, reflecting the particular choice of the covered workers. In contrast, public pay-as-you-go schemes rely on contributions as a source of funds to pay the current retirees or in case of excess to fund the government debt.

³² For a detailed analysis regarding the investment process of pension funds see Davis (2002).

This section builds on the discussion of Mitchell (2002) according to which the pension manager should choose among various strategies in order to attain the specific pension fund's investment objectives.

These strategies are:

- Diversification: Pension funds are likely to hold a range of assets in order to meet risk-return as well as liquidity needs.
- Active versus passive management: Active management implies a high turnover rate (because of recurrent trading) in order to achieve high returns that exceed the market, at the cost of higher fees. By contrast, passive management tends to follow the performance of the market, such as investing in an indexed portfolio, for example S&P 500, in return for low fees and lower risk.
- In-house versus outsourced investment: the funds may be invested by the in-house staff, which is the plan's sponsor personnel, or the investment service can be contracted out, giving the right to manage the assets of the pension fund to external money managers or financial institutions.
- Asset allocation: refers to the process of choosing the assets classes to invest the funds. Plan assets may be portioned across cash, fixed-income securities and equities.
- Choice of sector: Pension fund managers should be aware of and manage the asset allocation across industries as well as separate international versus domestic investments.

3.1.3 Record-keeping and Reporting

The third key function of a pension system is record-keeping and reporting. The record-keeping task in case of a public pension fund (pay-as-you-go scheme) refers to the process of keeping records regarding the contributions that each worker makes to the retirement account as well as earning records on all

covered workers. On the other hand, in a private pension system, in addition to the before mentioned tasks there is a need for recording the account balance, variations in asset allocations, transfer of account balance to other funds and the necessary adjustments that should be made in cases when errors are made when recording the level of contributions or earnings (Hart et al, 2001).

Similar to the collection process, the record-keeping and reporting function of the pension system can be centralized. For instance, in Sweden the mandatory private pension funds use the service of a clearinghouse, which is a central government agency, in order to collect the contributions as well as to perform the record-keeping function. By contrast, in United Kingdom the voluntary private pension funds use a centralized method for collecting the contributions from the participants, but the record-keeping is decentralized, meaning that this function is performed by each pension fund on its own (Thompson, 1999).

The accuracy of the record-keeping is particularly important. This is due to the fact that the benefit level of the pensioners will depend to a high degree on these records. Moreover, it is costly for the pension provider to correct the data record errors.

The administrative burden of a pension fund is further enhanced by the so called reporting function. It refers to the procedures that a pension funds should have in place in order to communicate information to participants regarding the account balance and other relevant notifications. Also, the pension fund is responsible to submit annual reports to the supervisory or monitoring entities in the specific country. For example, in Australia all the pension plans having more than five members are regulated by the Australian Prudential Regulatory Authority (APRA) and should submit annual reports to this entity containing information on plan and sponsor type, assets under management, asset allocation, details on plan governance, outsourcing features and other administrative aspects (Mitchell and Bateman, 2003).

3.1.4 Calculation and Payment of Benefits

The fourth responsibility of a pension fund is calculation (the method) and payment (time) of benefits. Upon retirement, when the employees become eligible to receive their pension, the benefit entitlements must be calculated and benefit payments should start. The benefits formula for the social security system takes into account a number of factors including earning history, marital status, age, and anticipated wages and salaries for the coming year (Genetski, 1999).

The payout option that retirees choose (lump-sum versus annuity) has particular insinuations regarding the tasks as well as the cost incurred in drawing down the pension benefits.

Poterba and Warshawsky (1999) argue that in general, the defined contribution pension plans do not specify the payout option at retirement while defined benefit plans, offered by private companies or government, offer to retirees the option to draw down the benefit in the form of a mandatory life annuity.³³

As CBO (2004) suggests, due to the fact that retired workers rely heavily on their pension income, speedy calculations and payments on the right time are considered critical to a well-functioning, efficient retirement system.

3.1.5 Marketing and Sales

The last task that may be implemented by a pension system is marketing and sales. In general, this function is undertaken by private pension funds which use the advertisement and the sale representatives

³³ See Poterba and Warshawsky (1999) for a detailed discussion of annuity provision and its cost implications for the pension funds.

as a possible way to communicate and sell their financial products to costumers. Latin American countries which have mandatory private pension schemes, consume a great amount of resources on marketing activities and sale commissions (Devesa-Carpio and Vidal-Melia, 2002)

As James at al (2001) discusses, marketing activities usually go together with active management, since they are used in order to sell the skills of a particular asset manager.

3.2 Administrative Costs

Administrative costs in a pension system can be defined as the amount of resources exhausted while managing the pension entity in order to provide the financial services promised to its participants (Mitchell, 1996). These costs arise as the collection of contributions takes place, as these contributions are invested in the capital market, as the necessary record-keeping is maintained, account statements are send to the covered workers and regulatory compliance is fulfilled, as pension payment eligibility is determined and pension payments are initiated, and in some cases as marketing tools like advertisement and sale representatives are employed in order to reach specific customers. These costs are system build costs and for the purpose of this study they refer to the cost incurred by the pension provider institutions. On the other hand, administrative charges/fees refer to costs that contributors pay to their pension providers for maintaining and managing their assets or accounts (Dobronogov and Murthi, 2005).

Administrative costs can be measured in various ways. One of the possible measures is to express these expenses as a percentage of assets under management. John and Davis (1998) argue that this measure is considered the best as it reflects the manner that investment management fees are usually levied and spreads out the costs over the whole investment. In addition, it may work as an incentive for the investment managers to increase the amount of assets under management (Chlon, 2002). However, from the contributor's point of view they grow as the account size increases over time and it implies a cross-

subsidization of large account holders to small account owners. This measure is popular among pension funds in Europe and United States. Another possible way of expressing the administrative costs is as a percentage of annual contributions. In general, pension funds in Latin American countries where mandatory private pensions are common, charge the administrative fees to individual account holders as a proportion of contributions. The drawback of this method is that it does not motivate pension managers to achieve better performance as compared to the previous measure. Finally, administrative costs can be expressed as cost per participant, where the cost of performing the administrative tasks is allocated among all participants, or as percentage of benefits paid. The later measure is often used to evaluate the administrative costs incurred by the social security system since it is an unfunded (pay-as-you-go) system and computing the administrative costs as a percentage of assets is meaningless (Mitchell, 1996). Nevertheless, this measure tends to be lower in countries where the public pension schemes are more generous. Consequently, there is not a perfect measure of administrative costs since as discussed, all the methods may be biased against specific determinants of pension benefits or participants.

Administrative costs deserve special attention because of several reasons. They determine to a high degree the efficiency of managing the funds of the pension because as Hoexter (1984:134) had pointed out "literally every dollar which is unnecessarily or uneconomically expended on administration is a dollar which could otherwise go to the plan participants". Furthermore, these costs determine the level of charges levied on the pension participants. Other things being equal, the higher the administrative costs a pension system incurs, the higher the charges that the covered workers have to pay. As a result, the level of benefit entitlements for the retirees provided by pension funds may be reduced. James et al (2001) in a study conducted for the World Bank estimated that a 1 percent annual fee diminished the value of retirement accumulations for a life time contributor by 20 percent. Similarly, Table 3.3 demonstrates how the level and types of administrative fees affect the real value of the individual account at retirement according to Diamond (1999).

As Mitchell (1996) argues, given that one of the basic purposes of the pension funds is to provide retirement income security to the elderly, administrative costs should reflect the true economic value of the recourses used in order not to erode the assets accumulated in the accounts of the pensioners (Mitchell, 1996).

Apart from the effect that administrative expenses have on the pensioner's realized net return, as Whitehouse (2000) has pointed out, higher administrative costs accompanied with low net returns can raise the expenditures of the governments on guarantees. This is explained by the fact that some governments offer mean-tested programs as implicit guarantee or explicit guarantees of the amount of pension benefits in case of private pensions. The number of people entitled to these programs will increase in cases when administrative costs reach high levels since it implies a low net return. Moreover, James (2004) argues that high administrative costs can raise the fiscal expenditures of the government. This is in the case of public pension plans, where the amount of the pension benefit is usually defined. The higher the level of administrative costs in running the public pension system, the higher is the burden on government to cover these expenses.

Table 3.3 Decline in Value of Accounts Due to Fees after a 40-Year Work Career

Type and level of fees	Percentage decline in account value due to fees
Front – load fees (percent of new contributions) of:	
1 percent	1 %
10 percent	10 %
20 percent	20 %
Annual management fees (percent of account balance) of:	
0.1 percent	2.2 %
0.5 percent	10.5 %
1.0 percent	19.6 %

Note: Assuming real wage growth of 2.1 percent and a real annual return on investment of 4 percent. With a larger difference between the rate of return and the wage growth rate, the charge ratio with annual management fees is slightly larger, and conversely.

Source: Diamond (1999).

Lastly, as Mitchell (1999) and Whitehouse (2000) confer, pension administrative expenses require particular attention because if they reach high level, low wage workers will be induced to evade the pension system. This is mainly attributable to the fact that high administrative costs accompanied by high charges may discourage worker's participation in a pension plan as they will consider the contributions merely as a tax rather than savings.

3.3 Determinants of Administrative Costs in Pension Funds

Since the administrative costs play a very important role in determining the overall efficiency of a pension fund, this section seeks to assess and explain the factors that determine the level of these costs in a pension scheme. The survey of the available studies concerning the administrative costs of the pension systems indicates that these costs vary across countries and pension structures.

Focusing on the structural design of pension schemes, the cost of running public pension schemes across countries will be assessed first and afterwards the cost efficiency of managing both mandatory and voluntary individual accounts will be further evaluated.

3.3.1 Administrative Costs of Public Pension Funds

Efficiency of public pension schemes is discussed separately from private pension plans because as James (2004) argues, public plans do not report the whole administrative costs incurred while providing pension benefits when compared to private plans. In this context, Mitchell (1996) discusses that administrative costs under such a system do not reflect the true economic scarcity values due to the fact that majority

of governmentally-administered social security schemes use public buildings and land and in some cases government sponsored agencies may acquire the mail and telephone services at a subsidized rate. Also, she further discusses that in many countries government contracts to install computer systems are granted on a non-competitive basis and depreciation together with fringe benefits do not appear on a government agency's budget.

Similarly, as previously discussed, the collection task of public schemes in OECD countries is performed by a centralized governmental agency, such as a tax collection or social security agency, which entails lower costs as compared with private pension funds, where this activity is carried out on a decentralized, individual basis. The centralized method of collection saves a great amount of expenditures to the pension entity as it benefits from economies of scale resulting from processing a large amount of funds collected on group rather than individual basis (James et al, 2001).

Taking into consideration these facts, we can expect the reported administrative costs of publicly run pension schemes to be lower than expenses of private pension funds which do not benefit from these subsidized rates. Furthermore, as Boadway and Cuff (2003) have pointed out, a single publicly managed pension system may achieve possible costs savings due to economies of scale and lower advertising, marketing and coordination costs.³⁴

³⁴ Also, Estelle James (2004) has discussed in one of her presentations for the World Bank that private plans are more costly to administer as compared to public schemes because they offer investment service to its participants, whereas public plans, usually pay-as-you-go, do not incur investment expenses. In addition, private funds have more incentive to provide better service, which implies higher cost of offering these services. This presentation is available at

<http://info.worldbank.org/etools/docs/library/142181/DL%2DAdmin%207%2DJames.pdf>

Table 3.3 displays how the administrative costs of providing pension benefits under the social security system vary among OECD countries. As demonstrated, the administrative costs range from 1 percent of benefit payments in Norway to 6.72 percent in Greece. The OECD average is around 3 percent.³⁵

James (2004) argues that usually, more developed countries report lower administrative costs due to the fact that they offer high quality services in terms of better records, less error, faster calculation and initiation of benefits given that they have more capital and educated labor.

Table 3.4 Administrative Costs in Selected OECD Countries as Percentage of Social Security Benefit Expenditures³⁶

Country	Adm. Costs as a Percentage of Social Security Benefit Expenditures
Australia	1.22
Austria	2.48
Belgium	5.55
Canada	2.80
Denmark	2.98
Finland	3.36
France	4.18
Germany	2.86
Greece	6.72
Iceland	1.71
Ireland	4.88
Italy	2.20
Japan	1.79
Luxembourg	2.74
Netherlands	3.10
New Zealand	2.42
Norway	1.00
Portugal	4.86
Spain	2.81
Sweden	4.24
Switzerland	3.04

³⁵ However, we should be aware of the fact that administrative costs reported in Table 3.3 do not represent the expenses related to pensions only in all cases. In addition, the level of costs expressed as a percentage of benefits depends on the generosity of the pension system in every particular country.

³⁶ As the author of the source states, the data may not reflect expenditures on pensions only. In some cases additional functions of social security such as the provision of health services are included.

Turkey	2.62
United Kingdom	3.10
United States	3.28
OECD Mean	3.12
Std. dev.	1.28

Source: Derived from Mitchell (1996)

By contrast, the administrative burden on the less developed countries is higher as they have access to a less advanced technology and rely on unskilled labor. In addition, Mitchell (1996) explains part of these variations in social security administrative costs by the fact that retirement systems across countries have different objectives regarding the combination of benefits tied to need versus benefits tied to contributions. Furthermore, she argues that the degree to which public plans are governmentally or privately managed differs across nations.

In most countries, the administrative expenses of running public pension schemes have declined over the time. For instance, social security administrative costs in the United States have decreased significantly during the last decades. In 1940, when the system started to payout benefits the administrative cost amounted to 74 percent of all Old-Age and Survivors' Insurance (OASI) benefits paid, in 1945 it declined to 9.8 percent and today these costs make up only 0.64 percent of benefit payment from the OASI trust fund (John and Davis, 1998).³⁷ One of the possible reasons explaining this trend may be attributed to the fact that as the public pensions mature, they expand in size and fixed costs are distributed among a greater number of contributors implying a lower cost per participant. Similarly, Estrin (1998) argues that since 1970's the cost/benefit ratio has been declining in most developed countries because of government austerity programs that have contributed to administrative costs reduction; a rising trend in total benefit

³⁷ Also, Mitchell (1996) has demonstrated in her study that the administrative costs of running the social security in United States has declined from 11.1percent in 1980 to 0.7percent in 1991.

expenditures and; a greater use of computers and advanced technology for the processing of contributions and benefits resulting in higher efficiency.

3.3.2 Administrative Costs of Individual Accounts

Population ageing accompanied by low fertility rates have imposed new challenges to all OECD countries regarding the financial sustainability of pay-as-you-go pension schemes. These demographic trends have put constant pressure on governments to reform their existing pension systems in order to insure a safe source of income to the future pensioners. One of the proposals is the establishment of mandatory individual accounts as a substitute for pay-as-you go pension schemes (for countries where this form of pension provision does not exist). These accounts may be administered by private pension funds or alternatively by the government.

This section focuses on assessing the cost efficiency of these two account types based on the experience of some OECD countries and Chile which have employed individual pension accounts as part of their retirement systems.

3.3.2.1 Determinants of Administrative Costs in Individual Accounts

The total costs of administering an individual account are determined by: start-up costs, record-keeping and communication costs, investment costs, customer acquisition costs and legal/regulatory costs.³⁸

³⁸ See James et al (2001), Murthi et al (1999), Diamond (1999) and Chlon (2002).

Start-up costs are the costs that the pension entity incurs when setting up the institution such as the cost of land, buildings, equipments, personnel as well as marketing and advertising expenses used to attract customers (Dobronogov and Murthi, 2005).

Record-keeping and communication costs include the cost of the information technology used by the system for handling the record-keeping and reporting task. Hence, these costs are determined by the technology acquired by the pension fund to manage the records and transfer the information (James et al, 2001).

Investment costs arise as accumulated assets are invested in the capital market. These costs depend on the amount of funds under management as well as the investment strategy (Mitchell, 2002). In general, active management costs more than passive management because it involves active trading of various securities, resulting in high brokerage and transaction fees.

Customer acquisition costs or marketing costs arise due to marketing, advertising and sale commissions incurred in the process of acquiring more customers (Murthi et al, 1999).

Legal/Regulatory costs are determined by existing regulation in the particular country where the pension fund operates and they consist of costs of guarantees, costs of using central collector and cost of supervision (Chlon, 2002).

Considering each of these costs James et al (2001) discuss that:

- Start-up costs constitute a large share of total costs in the early years of pension fund's existence because of new IT system, staff employed before revenues, marketing to attract new clients and no scale economies.

- Cost per account starts at relatively low levels and increases as average account size grows, mainly because of rising investment or marketing expenditures.
- Costs as a percentage of assets appear to be high in the beginning and decrease as the account size grows due to fixed record-keeping and reporting costs per account and economies of scale.
- Record-keeping and communication costs dominate at the beginning, but in the long run their impact on net return decreases because at this stage investment and marketing costs constitute the larger portion of total costs.
- The higher the contribution rate is, the faster the assets will grow in size. This implies a lower cost as percentage of assets.
- An expensive investment and marketing strategy raises the cost as percentage of assets and leads to faster growth of cost per account.

3.3.2.2 Administrative Costs of the Individual Accounts in Institutional and Retail Markets

After having identified the main factors that determine the level of administrative costs in individual account pension schemes, it is important to assess the role that these determinants play under different organizational structures based on the experience of selected OECD countries and Chile.

Majority of studies concerning the cost efficiency of individual retirement accounts have been focused on assessing the level of administrative costs under two alternative forms of organization. The first alternative consists of saving and investing the contributions through a centralized, institutional mechanism, while the second approach is to invest through a decentralized, retail market. According to

James et al (2001), in the first case the entry and price is bargained on a group basis with workers choice restricted by the group choice whereas in the second case every worker has the right to choose his own pension provider, entry is subject to regulation and prices are determined by the pension fund on an individual basis. As James (2001) has discussed in a seminar held in Budapest, among the OECD countries, industry pension funds in Australia³⁹, Sweden, Thrift Saving Plans (TSP) and pension funds in United States employ the institutional approach, whereas Poland, Hungary, United Kingdom and mutual funds in United States rely on the retail market for administering the individual accounts.⁴⁰

To evaluate the administrative costs of the retail market, information from Poland and United Kingdom will be used. In addition, we will take into consideration the private pension funds in Chile since it has the longest experience in the mandatory private pension system and may provide some insights regarding the administrative costs incurred by this system through the time.

Compulsory private pensions in Poland and voluntary private pensions in United Kingdom use a centralized approach for collecting the contributions but a decentralized method for record-keeping and fund management (Dobronogov and Murthi, 2005, Murthi et al 1999). On the other hand private pension plans in Chile are managed on a decentralized basis, meaning that the collection, record-keeping and the investment of funds is made by the pension company (Thompson 1999).

A recent study by Dobronogov and Murthi (2005) shows that administrative fees in private pensions in Poland and Chile have reduced the value of assets at retirement by 15.2 (decreased from 17.1 percent in 2001) and 15.6 percent respectively.⁴¹ James (2001) argues that for Chile these costs have decreased from

³⁹ For evaluating the administrative costs of private pension plans in Australia see Mitchell and Bateman (2003).

⁴⁰ Chile was the first country to implement the mandatory individual account as part of its mandatory pension system in 1981. Over the time other Latin American countries have followed its example.

9 percent (as percentage of assets) when the system was first implemented to 1.1 percent, while for Poland, the average administrative costs amount to 0.88 percent of assets (Chlon, 2002). In case of the United Kingdom, administrative costs appear to be relatively higher when compared with Poland and Chile. These costs constitute 2.05 percent of assets (Furman, 2005).⁴² According to Murthi et al (1999) these costs reduce the value of an individual account by more than 40 percent as compared with its no-cost level. The administrative costs are higher in United Kingdom because this private pension scheme offers a wider range of individual choices in terms of selecting from a large pool of private pension providers and investment vehicles (Thompson 1999). In addition, costs that arise as a result of switching pension providers contribute by 15 percent (out of 40 percent) in the reduction of accumulated savings at retirement (Weller, 2001).

In order to evaluate whether these costs are high or low we should compare them with the level of expenses incurred by the institutional market and if there is any possible variation, try to identify the sources. For this purpose the centralized mandatory private pension system in Sweden and TSP in United States will be evaluated.

Sweden is the only OECD country that has introduced mandatory individual accounts as part of its social security system. It adopted this new mandatory pension tier in late 1990's, which tries to balance cost-lowering centralized administration with a wide range of fund choice for individual contributors (Weaver 2005). 2.5 percent of the contributions go to a central governmental agency and then are allocated to different mutual funds reflecting the preference of workers (James, 2001)⁴³. According to Weaver (2005),

⁴¹ In case of Poland, calculations are based on data from 2004, while in case of Chile this value reflects the data in 1999. For more details see Dobrogonov and Murthi 2005, Table 4:38.

⁴² See Furman (2005), Table 1, pp.3 for a detailed analysis of the impact of various organizational structures on the administrative costs on an annual basis as well as total costs.

⁴³ The workers can choose among more than 600 fund options. See Weaver (2002).

in 2002 the cost of administering the individual accounts by the central agency was 0.3 percent of the total assets in the account. In addition, he shows that individual managers charged a fee of 0.44 percent in the same year. Similarly, Furman (2005) found that these costs amount to approximately 0.78 percent of assets on an annual basis. James (2004) argues that in the long-run the costs incurred by this system will amount to approximately 0.5 percent of the assets' value.

Another model of centralized institutional account is the TSP in United States. Similar to the social security, the TSP is a large scale centrally organized system in which the function of collecting and processing contributions is divided between the agency employing a worker and the Federal Retirement Thrift Investment Board (FRTIB). It is available for federal government workers in United States and offers to the contributors a choice among five investment funds (CBO, 2004). Mainly these funds track the performance of the broad market. Annual overhead fees amount to almost 0.1 percent of the value of the assets under management (Thompson 1999 and James et al 2001).

As illustrated above, the findings regarding the level of administrative costs across two different forms of organization, suggest that the institutional market provides substantial cost savings as compared with the retail market. This is attributable to various factors.

Firstly, James (2004) argues that institutional arrangement require less excess capacity at start-up as compared with the retail market. As Dobronogov and Murthi (2005) discuss, start-up expenses in the retail market are very high when the system is set up, which results in losses for the private pension companies in their early years of operations. They show that in Poland in 1999 (when the system started to be implemented) all pension funds had losses, in 2000 one out of 20 pension companies made profit whereas in 2001 five out of 18 pension funds realized positive net returns. In other words, because of high start up costs private pension funds operate at loss during the early years of operation.

Secondly, it is often argued that centralized collection and record-keeping reduces administrative costs. This is because if all the paperwork related to maintenance of individual accounts is centralized, this function is performed more efficiently than if performed individually by each fund (Thompson, 1999). In addition, James et al (2001) discuss that centralized collection and record-keeping have various cost advantages: collection of contributions through an existing tax collecting agency avoids the need of setting up a new collection system, implying low start-up costs; centralized record-keeping facilitates economies of scale⁴⁴; and it provides a basic level of services without competitive pressure to upgrade to a more costly level. Also, the Swedish case shows that centralized administration facilitates the process of making broad fund choice and there is possibility for negotiating reductions in management fees by fund providers (Weaver, 2005).

Thirdly, institutional markets incur low marketing costs as compared to retail counterparts. Dobronogov and Murthi (2005) explain the low level of marketing expenses incurred by the institutional arrangements in the light of centralized collection and record-keeping. They argue that centralized collection and record-keeping reduce the marketing cost because of two main reasons: 1) under a central collection agency the employers do not know which funds the workers subscribe to, thus reducing the possibility that pension funds may try to market themselves via employers, and 2) the existence of a central record-keeping agency does not allow the pension funds to know the individual details of their client base, reducing the incentives for marketing and advertising.

Marketing costs deserve special attention in the case of mandatory private pension funds because they are considerably high. In Chile for instance, in 2000 marketing costs made up 40 percent of total administrative costs (Devesa-Carpio and Vidal-Melia, 2002). Similarly, James (2004) argues that 50 percent

⁴⁴ See Whitehouse (2000) and Mitchell (1999).

of total expenses in the early years of some private systems such as Chile and Poland results from sales commissions. This high level of marketing and commission expenses arise because of various reasons: the service is mandatory; workers have difficulty in differentiating the product quality among different pension providers; and there is a low price elasticity in demand, which implies that the most profitable strategy of pension administrators is not price reduction, but the usage of sale representatives in order to maintain or increase the market share (Mastrangelo, 1999).

Lastly, institutional markets incur lower investment expenses. This is due to the fact that usually, they adopt a passive investment strategy with restricted choice among different investment opportunities. For instance, TSP in United States allow the participants to choose among five different investment funds: an equity fund that seeks to match the S&P 500 stock index; an equity fund that aims to match the Wilshire 4500 index of small-capitalization corporations; an equity fund that seeks to match the EAFE index of 21 stock markets in foreign countries; a bond fund that aims to attain the returns of a broad index of fixed income securities (both government and private securities); and a fund composed of non-marketable government securities (CBO, 2004). This portfolio composition explains to some degree the low administration costs incurred by the TSP.

James (2001) has estimated the long run costs of asset management in United States under the institutional and the retail market structures for both passive and active investment strategies as demonstrated by the Table 2.3 below. She has found that the cost of passive asset management ranges from 4-8 basis points for the institutional market to 11 basis points for the retail market. Also, the cost of active asset management ranges from 35 to 65 basis points in case of the institutional market while for the retail market it amounts to 65 points. As noticed, the costs of passive investment are significantly lower when compared with the costs of active management in both organizational forms. However, the institutional market manages the assets at a lower cost in both cases.

Table 2.3 also shows how the level of marketing, record-keeping and other costs depends on the investment strategy and the institutional structure of the pension scheme. Focusing on the total amount of administrative costs in each case James (2001) has demonstrated that in the long run the retail market can administer its funds at a cost almost twice as high as the institutional market, assuming that they employ the same investment strategy.⁴⁵

These were the main differences regarding the administrative costs in managing the individual accounts under the retail and the institutional markets. It is important to mention that this comparison was focused on administrative costs only without taking into consideration other factors such as the rate of return.

Table 3.5 Long Run Costs of Retail and Institutional Markets in United States (in basis points)

	Retail		Institutional	
	Passive	Active	Passive	Active
Asset Management	11	64	4-8	35-65
Marketing	3	65	1	5
R & C	5	12	9	9
Other	13	8	6	6
Total Costs	32	150	14-18	49-79
\$ cost per \$25,000account	80	375	35-45	122-197

Source: James (2001).

⁴⁵ For a detailed analysis of this issue See James et al (2001).

CHAPTER 4

OVERVIEW OF REGISTERED RETIREMENT SAVINGS PLAN AND OTHER RETIREMENT PROGRAMS IN CANADA

4.1 The Pension System in Canada

As already discussed, majority of countries either have or are headed towards retirement income systems that are composed of three main elements: 1) programs that insure a minimum income level to the elderly 2) contributory programs that provide retirement income based on different measures of previous earnings or pension contributions and 3) programs that encourage voluntary participation by individual workers and their employers (Thompson, 2001). Canada relies on a retirement income system composed of both a publicly administered pension program, whose main objective is to provide income security and a given level of income replacement for the elderly, and a privately administered one in which participation is voluntary. The first program includes the Old Age Security System (OAS) and the Canada/Quebec Pension Plan (CPP/QPP), while the privately administered program is made up of Registered Pension Plans (RPP) and Registered Retirement Savings Plan (RRSP).

Throughout this section, the overall characteristics of each pension program will be assessed. Special attention will be paid to the Registered Retirement Savings Plan (RRSP), which will be the focus of the study later on.

4.1.1 The Old Age Security System (OAS)

The Old Age Security System (OAS) is the oldest and the basic constituent of the income retirement system in Canada. It came into existence in 1952, replacing the provincial means-tested old age benefit system that was in place since 1927.⁴⁶ This program is funded on a pay-as-you-go basis from the general tax revenues of the Canadian government. It is a universal, flat rate pension that since 1989 has become an income-tested program. Beginning in 1989, all Canadian pensioners, who have income levels above a threshold amount, are obliged to pay a surtax of 15 percent on the amount above the threshold, with upper limit being the full amount of OAS benefits (Baldwin, 2004).⁴⁷ In other words, OAS pension benefits to wealthier retirees are reduced as their income from other sources increases above a specified level. For example, for the year 2005, pensioners with individual income level that exceeds CAD 60,806 must repay part or the entire OAS pension amount while, the full OAS pension is eliminated when the pensioner has a net income of CAD 98,850 or above (Social Development Canada, 2005).

Canadian seniors should satisfy certain conditions so that they become eligible for OAS pension entitlements. At least, 10 years of residency in Canada, after reaching age 18 is required in order to be subject to these benefits starting from the age of 65 and above. The current monthly amount of the pension provided by the OAS is equal to CAD 476.97 (Tomagno, 2005). Since 1972, pension benefits are adjusted quarterly to the Consumer Price Index (CPI) in order to protect against any possible increase in the cost of living.

⁴⁶ The information regarding the Old Age Security System is obtained from Social Development Canada available at <http://www.sdc.gc.ca/en/isp/oas/oasoverview.shtml>

⁴⁷ This provision is officially known as the repayment or the recovery tax. Also it is often referred to as the clawback.

The OAS program is administered by the Income Security Program Branch. It manages the program through regional offices which are situated in every province and territory of the country.

The OAS program, in addition to the OAS pension described above, includes two other components: the Guaranteed Income Supplement (GIS) and the Spouse's Allowance (SPA).

The GIS was introduced in 1967, and is a means-tested monthly benefit, available to all pensioners who receive full or partial OAS pension and their income levels are particularly low. Unlike OAS pensions, the benefits from the GIS program are not taxable. According to Social Development Canada (2005), the average monthly benefit that this program offers to the eligible individuals amounts to around CAD 384.

The SPA is an income-tested program, which was introduced in 1975 and pays a monthly allowance to the 60-64 year old spouses or common-law partners of OAS pensioners, or to widows or widowers (Gruber, 1997). Once the recipient becomes eligible for receiving OAS pension, (that is after the age of 65) the allowance stops. Similar to the GIS, these benefits are not considered as taxable income. The average monthly allowance amounts to around CAD 333 (Social Development Canada, 2005)

This brief overview of the main characteristics of the OAS program suggests that this program is primarily targeted at lower income Canadian elderly, and together with the other component of the public pensions (CPP), it supplies a considerable degree of income replacement for pensioners at the lower end of the income scale (Pension Investment Association of Canada, 2001). In this context, Pozzebon (2004) argues that the nature of public pensions in Canada is highly progressive due to the fact that it favors the low income earners. However, this income-tested progressive program has some shortcomings. According to IMF (2004), there are three main criticisms concerning the OAS program: 1) OAS benefits are tested against personal income only 2) the progressive nature of old-age income tax credit imply large marginal

disincentives to work and 3) the existence of a large number of benefits and tax credits with different clawback rates, is considered as awkward for pensioners and complex in terms of managing the program.

Regarding the administrative costs incurred by this system, Tomagno (2005) discusses that they amount to 0.9 percent of the annual benefits paid. He further argues that these costs are kept at low levels because annual reapplications for GIS and SPA are handled automatically using income data gathered by the income tax system. In other words, centralized collection and record-keeping contributes to low costs in managing the OAS system.

4.1.2 Canada and Quebec Pension Plans (CPP/QPP)

CPP and QPP represent the largest components of the income security system in Canada (Gruber, 1997). Both programs were established in 1966 and the first is administered by Canada while the second is administered separately by the province of Quebec. These programs are mandatory, contributory social insurance schemes, which provide retirement benefits to all employed or self employed people who contribute to these plans (Tomagno, 2005).⁴⁸ The contributory nature of these plans means that, all costs incurred by the plan are covered by the contributions made by employees, employers or self-employed workers, and the revenue generated from investing these funds (Social Development Canada, 2005). Given that the CPP and QPP have similar characteristics, the following discussion will focus on CPP only because it covers more people.

According to the Pension Investment Association of Canada (2001), CPP is a defined benefit plan, which is administered by the government and it provides 25 percent income replacement on earnings up to the average wage. This upper limit on the level of earnings is referred to as the Year's Maximum Pensionable

⁴⁸ In addition to the retirement pension, CPP provides disability and survivor benefits.

Earnings (YMPE), which is adjusted in line with the increase in average wage, and for the year 2005 it was equal to CAD 41,100 (Social Development Canada, 2005). The contribution rate is equal to 9.9 percent of earnings subject to contributions and in the case of an employed individual this amount of contribution is shared between the employer and the worker (4.95 percent each), while the self-employed persons have to pay the entire contribution by themselves (Tomagno, 2005). The level of benefits that pensioners are entitled to at retirement depends on the amount of contributions and for how long the person has contributed to the CPP. The normal retirement age for CPP is 65 years. However, the benefits can be received as early as by age of 60, subject to a 6 percent annual deduction in the benefit level, or as late as 70, subject to a 6 percent increase in the amount of pension benefit entitlement (Pozzebon, 2004). The average monthly pension amounts to around CAD 460. CPP pension payments are adjusted for inflation and are taxable.

Many of the features that the CPP has today reflect the pension reform that was implemented by the federal government in collaboration with provinces in 1998.⁴⁹ According to Pesando (2001), the most significant reforms consisted of: 1) a sharp increase in the contribution rate of the employers or self-employed individuals, from 5.85 percent in 1997 to 9.9 percent starting from 2003 and onwards, which is expected to rise the reserve fund up to covering five years worth of benefits by 2010 and 2) the establishment of an independent CPP Investment Board whose main purpose is to invest in marketable securities, including stocks, in order to attain a high rate of return on the CPP fund. In addition, a modest benefit reduction was undertaken regarding the pensionable earnings, maximum amount of death benefits and eligibility for disability benefits, which were expected to reduce benefit payments by 2 percent when first implemented (Pesando, 2001 and IMF, 2004).⁵⁰ Pozzebon (2004) argues that these

⁴⁹ See IMF (2004).

⁵⁰ For a detailed analysis regarding the economic arguments for such reforms, see Pesando (2001).

reforms, aimed at achieving partial funding of the plan, are viewed as positive in the light of ensuring long-term viability for the plan. However, she further discusses that in cases when the rate of return from the invested funds is not as projected, it may put an upward pressure on contribution rates, currently set at 9.9 percent.

The administrative costs of the CPP amount to about 1.7 percent of the annual benefits paid (Treasury Board of Canada Secretariat, 2004). Tomagno (2005) argues that these costs are higher than the administrative costs incurred by the OAS system because of two main reasons: firstly, due to its contributory nature, additional resources are used up while collecting and processing the contributions and secondly, it pays disability benefits for which the cost of determining eligibility per beneficiary is much higher than for retirement benefits.

4.1.3 Registered Pension Plans (RPP)

RPPs often referred to as employer pension plans or workplace plans, differ from the OAS system and the CPP/QPP because they are privately arranged and in case of nonpublic companies are voluntary. These schemes are defined as retirement benefit programs, which are provided voluntarily by employers or by unions in both the public and private sectors of the economy (Statistics Canada, 2003). For government employees these plans are often established by law, while private employers are not legally obliged to offer these schemes to its employees.⁵¹ However, in most cases these plans are established with the purpose of maintaining and motivating the current workers or because of the pressures by trade unions (Baldwin, 2004). The most important characteristic of this plan type is that savings are tax-assisted, meaning that contributions are tax deductible and the earned investment income is not taxed. In order to

⁵¹ According to IMF (2004), 89 percent of public employees are members of an RPP whereas for the private sector only 30 percent of workers are covered by an RPP.

obtain tax exemption, any RPP must meet the requirements for registration under the Income Tax Act (ITA) (Statistics Canada, 2003). This is the reason why these plans are called “registered”. However, the tax advantage applies only when the money goes into the plan, whereas the pension benefits withdrawn at retirement are fully taxed. Regarding the inflation protection, some plans provide full or partial indexation of benefits to inflation, some others provide discretionary adjustments from time to time to keep track of inflation, while many others do not provide inflation protection at all (Human Resources Development Canada, 2001).

These plans can be either defined benefit or defined contribution. In general, the defined benefit types of pension plans are more popular in terms of both membership and assets. According to the Pension Investment Association of Canada (2001), in 1998 about 85 percent of Canadian RPP members and 95 percent of RPP assets were in defined benefit plans. Nevertheless, the recent trends show a movement towards defined contribution plans. As Fried (2001) has argued, this tendency is due to the fact that the defined contribution plan is more convenient for the employees who change jobs frequently and because workers and people in general are becoming more comfortable with the idea of managing their own financial assets and investing in stocks.

Another trend regarding the RPPs is that the coverage rate is decreasing through the years. In 1992, about 45 percent of paid workers were members of an RPP, while in the year 2000 the coverage rate decreased to almost 40 percent (Pension Investment Association of Canada, 2001 and Human Resources Development of Canada 2001). According to Pozzebon (2004) and Pension Investment Association of Canada (2001), this is because of: increased self-employment and employment growth in industries with comparatively low pension coverage; decline in unionization; and high pension administrative and financial costs in the context of increasing global competition.

Baldwin (2004) argues that workplace plans have some weaknesses with regard to delivering retirement income. These are:

- Traditionally, employed women have been less likely to participate in these plans as compared to men (in 1992 only 42 percent of working women participated in a RPP as compared to 48 percent for working men).
- The possibility for someone to participate in these plans depends on various social and economic characteristics such as income, educational level and size of employer. In addition, union membership plays an important role with union members having a higher participation rate in these schemes.
- Only a limited number of pensioners have their pension benefits adjusted for inflation; and
- Defined contribution plans expose the pension members to a high degree of uncertainty regarding the basic amount of retirement benefits that they will receive in the future.

4.1.4 Registered Retirement Savings Plan (RRSP)

In addition to the OAS program, CPP/QPP and RPPs Canadians have another alternative to choose, which will help them build up retirement income to replace a part of their pre-retirement earnings. This option is mainly aimed at encouraging individuals to save for their retirement and it is called Registered Retirement Savings Plan (RRSP).

The RRSP saving program was established in 1957, in order to give a possibility to non participants in employer –sponsored RPPs (which were gaining popularity during the 50's) to be subject of tax advantages on saving for future retirement (Fougere, 2002). Together with RPPs discussed above, RRSPs

are part of the private, non-governmental portion of the retirement income savings system in Canada (Clements et al, 1999).

They are individual, defined contribution pension schemes, issued by many types of financial institutions such as banks, credit unions, trust companies, insurance companies, mutual fund companies and investment dealers (Pension Investment Association of Canada, 2001). Each issuer offers diverse investment options for the funds and the growth rates, terms, conditions and fees vary among different providers (Credit Union Central of Canada, 2004). Apart from individual RRSPs there are also the so called group RRSPs, which are basically “pooled” individual RRSPs in which employers facilitate access by underwriting administrative charges and subtracting worker contributions directly from the payroll similar to the RPP (Pozzebon, 2004).

Canadians are eligible to contribute to RRSPs until age 69 provided that they have earned income in the preceding year (Clements et al, 1999).⁵² Contributions made into the saving plan are tax deductible and the income earned from investment is tax sheltered (Credit Union Central of Canada, 2004). However, similar to RPPs, taxes are only deferred not eliminated because the pension withdrawn upon retirement is fully taxable.

The RRSP System offers two special provisions: 1) carry-forward provision, which permits Canadians to carry forward indefinitely the unused contribution room and 2) spousal plans, which allows one spouse to contribute to the other’s RRSP and claim the deduction, permitting common-law partners to divide their income during retirement by dividing their pension savings during their working lives (Clements et al, 1999). It benefits the couples by lowering the overall amount of taxes paid if the spouses are in different

⁵² For detailed information regarding what sources of income qualify as “earned income”, see Credit Union Central of Canada (2004).

tax brackets facilitating income splitting which refers to the transferring of money to a lower income-earning spouse so that in the future the income is taxed at a lower rate.

Concerns regarding the possibility that higher income earners may avoid too much tax on contributions as well as the federal government fiscal difficulties, resulted in limits on the level of contributions an individual can make under an RRSP plan (Robson, 2001). The maximum contribution is limited to 18 percent of the contributor's earnings, subject to an annual ceiling, which for the year 2005 is equal to CAD 16,500 (Tomagno, 2005). It is important to mention that this contribution ceiling has been revised several times through the past years. For example, from 1997 to 2002 the maximum contribution was fixed at CAD 13,500; in 2003 it was CAD 14,500; in 2004 it was CAD 15,500 and; in 2005 is equal to CAD 16,500 (Credit Union Central of Canada).⁵³ An individual who has joined a company RPP, where the combined contribution of the employer and the worker is less than this amount, can then use the remaining of the limit to contribute to an RRSP (Fried and Arnaboldi, 2002). Furthermore, an individual can have as many plans as he or she wants within this limit.

Regarding the profile of the RRSP contributors, it is often argued that high income individuals are more likely to contribute to RRSPs. Indeed, as Baldwin (2004) has pointed out, their use is strongly and positively related to levels of income. He argues that, in 1997 three out of four tax filers with income levels above \$60,000 contributed to the RRSP while the proportion of individuals with income levels between \$20,000 and \$30,000 contributing to this plan was only 40 percent. Similarly, Fougere (2002) demonstrates in his study that for the year 1997 about 17 percent of all contributions were made by individuals with income below \$30,000, compared with 45 percent for individuals with income levels between \$30,000 and \$60,000. According to IMF (2004), this trend is mainly due to the fact that public retirement benefits are

⁵³ See Fougere (2002).

sharply reduced for income levels above the low-income threshold. In other words, wealthy individuals should rely on individual pension arrangement apart from public pension provisions in order to maintain the pre-retirement standard of living. In addition to level of income, Fougere (2002) and Frenken (1990) demonstrate that individuals aged between 45-54 years, make the highest contributions to the RRSP.⁵⁴

Fried and Arnaboldi (2002) discuss that RRSP can be best described as a general saving plan, rather than a retirement plan by itself because owners of an RRSP can withdraw their funds at any time subject to income taxes on the amount withdrawn.⁵⁵ Therefore, as Mintz and Wilson (2002:2) have pointed out “the RRSP system has provided an opportunity for Canadians to average, on a limited basis, their tax base over their lifetime”.

Another important feature regarding the withdrawal of funds from an RRSP is the so called home buyers` and the life learning plan. The first plan allows the owner of a registered saving plan to withdraw a given amount of money (up to \$20,000) and use it for buying a house whereas the second plan allows withdrawal of funds for the purpose of financing education or training programs for the owner or his/her common law partner (Canada Revenue Agency, 2005).

Upon retirement, pensioners can choose among different alternatives for withdrawing their benefits. They can: withdraw the money at once (subject to income tax at the time of withdrawal), purchase an annuity (taxes are paid in each year the payments are received) or they can be transferred to a Registered Retirement Income Fund (RRIF), which is similar to an RRSP from the point of view that earnings from

⁵⁴ See Fougere (2002), Table 2, pp.529

⁵⁵ A locked-in RRSP does not allow individuals to withdraw their funds at any time.

investments remain tax-sheltered until they are withdrawn, but there should be a minimum amount withdrawn each year subject to income tax (Tomagno, 2005).

According to Credit Union Central of Canada (2004) there are three kinds of individual RRSPs accessible:

Firstly, deposit types are the most widespread plans offering saving accounts, time deposits or guaranteed investment certificates. The interest rate on these saving instruments may be fixed, flexible or indexed. Secondly, mutual funds are another category of individual RRSP available to Canadians. The most familiar types of mutual funds are: money market funds, which invest in short-term securities such as treasury bills and government or corporate notes; income funds, investing in longer term bonds and mortgages; equity funds, investing mainly in Canadian stocks and; balanced funds which combine all the aforementioned investment options. Finally, an individual can invest in a wide range of possible investments through a self-directed plan, administered by a trustee, exerting more control over the assets in his or her portfolio. These plans are significant for those individuals who want to maximize their investment return by choosing among a wide variety of investment opportunities. It is important to note that the RRSP holders were not allowed to hold more than 30 percent foreign property in their account. However, since the year 2005 this requirement is eliminated, allowing the RRSP holders to own as much foreign investments in their portfolio as they desire (Social Development Canada, 2005).

Wilson and Murphy (1997), demonstrate in their study that even though deposits, including Guaranteed Investment Certificates (GIC), are the largest component of the RRSP portfolios, there is a growing tendency for individuals to invest in mutual funds. For example, in 1983 deposits accounted for almost 74 percent of RRSP assets and mutual funds around 8 percent. In 1996 deposits have decreased to 50 percent whereas mutual funds have increased to around 34 percent. They identify this trend as the move from

money market funds toward longer term assets implying a growing demand for long term securities such as equities.

These were the main characteristics of the RRSP. It is worth mentioning that these features are among the main determinants for the increased amount of contributions into this form of retirement saving, through the years. As Frenken (1990) argues, after a slow start when the RRSP was first introduced, total amount of contributions have amplified from less than \$140 million in 1968 to more than \$9 billion in 1987. Also, Wilson and Murphy (1997) discuss that in 1983 RRSP assets amounted to 3 percent of the households net worth, while in 1996 this share has increased to 8.7 percent implying that the relative importance of the RRSP accounts have increased through the time. This growth is explained by various reasons. Frenken (1990) argues that RRSP contributions have increased because individuals are more conscious regarding the need to save for retirement, incentives to make the most use of tax-sheltered opportunities have increased, participation in the labor force by women is higher and as argued, contribution ceilings through time have increased. Furthermore, labor market development such as rising self-employment and small business employment together with an increasing number of individuals supplementing RPP savings with RPP savings are important factors that partly explain the increasing contributions in RRSP accounts (Pension Investment Association of Canada, 2001). Finally, Fougere (2002) has found from his study that the baby boom shock has been highly responsible for the hasty growth of RRSP savings since mid-1970.

CHAPTER 5

EFFICIENCY OF MANAGING REGISTERED RETIREMENT SAVINGS PLAN (RRSP) IN CANADA

5.1 Aim of the Study

The aim of this study is to evaluate and analyze the efficiency of managing retirement savings in Canada under the RRSP pension scheme since the effectiveness of administering these funds is a very important issue. As it was stated earlier, it affects all the individuals who contribute to the pension scheme, the financial institutions which administer the retirement savings and the government.

The study is focused on analyzing and comparing how effective are the financial institutions that operate in Canada such as banks, credit unions, life insurance companies and other intermediaries, in administering the RRSP. It also aims to identify if there is any possible variation in the level of efficiency with regard to managing the customers' retirement savings by banks as compared to non-bank pension fund administrators provided that the RRSP funds are invested in GICs.

5.2 Research Methodology

This research will be based on secondary data analysis, comparing the interest rates that various pension fund administrators offer on GICs (an investment option that offers a guaranteed rate of return for a specified period of time) within the RRSP and outside this scheme. The comparison will be based on rates offered for one, two, three, four and five years GICs. These rates will be assessed and examined in order to be aware of the difference, if there is any, between the interest rates available on GICs outside the RRSP and the rates of interest offered on the same investment alternative under the RRSP account.

Furthermore, this evaluation will give some insights regarding which financial institutions offer the same interest for both types of GICs and which offer dissimilar rates, indicating the level of efficiency in each case.

The secondary data is obtained from various sources such as media and the announced GICs rates in the financial institutions' websites as of December 15, 2005. The number of institutions that will be considered for investigation is forty six. Thirteen of these are banks, while the rest (33) are financial institutions such as credit unions, trust companies, life insurance companies, and other financial intermediaries which proffer to administer RRSPs as part of their financial services menu. The choice of these institutions, the rates of which will be analyzed, is based on convenient sampling. In other words, the sample includes those RRSP administrators for which there was accessible data to compare the GICs rates offered inside the RRSP and outside it.

5.3 Comparison of the GICs Rates

Throughout this section, the interest rates offered on GICs within and outside the RRSP will be compared. Firstly, the rates offered by banks will be assessed and analyzed and then the same analysis will be performed for GICs rates offered by non-bank financial institutions. As already mentioned, this analyze will be separate for banks and non-bank institutions in order to be aware if there is any difference concerning the level of pension fund management efficiency in each case. The examination will be based on interest rates for one, two, three, four and five year GICs.

5.3.1 GICs and RRSP Rates for Banks

Financial liberalization has introduced new financial institutions in the existing financial system, such as credit unions, trust companies and others which have taken away some part of the banks' market share

by offering similar services. However, still banks continue to be among the most popular financial intermediaries that serve to people's needs by various means. In addition to the traditional banking services, banks which operate in Canada offer also the service of administering RRSP accounts on behalf of those individuals who desire to save for their own retirement. They offer a specified variety of investment options within the RRSP account that customers can choose to have in their portfolio. Among the possible range of investment choices, GIC can be a possible alternative to be taken into consideration. In general, GICs offered by banks are in the form of deposits that guarantee a specific level of interest for the given maturity levels which usually ranges from 1 to 7 years. The Canadian Deposit Insurance Corporation (CDIC) insures these deposits up to \$60,000 as specified by the legislation. As discussed in chapter four, GICs are among the most popular free risk investment vehicles that individuals who own an RRSP have in their portfolio.

Table 5.1 below demonstrates the level of interest rates offered on one, two, three, four and five year GICs by a selected sample of 13 banks.

Table 5.1 GICs Rates for Banks

Institution	(\$) Min	Year 1	Year 2	Year 3	Year 4	Year 5
Alterna Bank	500	2.15	2.80	2.45	3.35	2.90
Bank of Montreal	1000	2.15	2.35	2.45	2.60	2.90
Bank of Nova Scotia	1000	2.15	2.35	2.45	2.60	2.90
CIBC	1000	2.15	2.35	2.45	2.60	2.90
Citizens Bank	5000	3.55	3.60	3.65	3.75	3.80
HSBC Bank Canada	1000	2.25	2.45	2.55	2.70	3.00
ICICI Bank Canada	1000	3.60	3.75	3.85	3.90	4.00
ING Direct	0	3.50	3.60	3.70	3.80	3.90
Laurentian Bank	1000	2.15	2.35	2.45	2.60	2.90
National Bank	1000	2.15	2.35	2.45	2.60	2.90
NBG Bank	1000	2.15	2.35	2.45	2.60	2.90
Pacific & Western Bank	1000	3.70	3.75	3.40	3.50	3.50
Royal Bank	500	2.15	2.35	2.45	2.60	2.90

Source: CANOE Money (December 15, 2005).

In order to translate these rates in right signals regarding the efficiency of managing RRSPs by banks, they are compared with the rates of interest offered by the same banks, on the same investment vehicle (GICs) within the RRSP account as shown by Table 5.2.

Table 5.2 RRSP Rates for Banks

Institution	(\$) Min	Year 1	Year 2	Year 3	Year 4	Year 5
Alterna Bank	500	2.15	2.80	2.45	3.35	2.90
Bank of Montreal	1000	2.15	2.35	2.45	2.60	2.90
Bank of Nova Scotia	1000	2.15	2.35	2.45	2.60	2.90
CIBC	500	2.15	2.35	2.45	2.60	2.90
Citizens Bank	5000	3.55	3.60	3.65	3.75	3.80
HSBC Bank Canada	500	2.25	2.45	2.55	2.70	3.00
ICICI Bank Canada	1000	3.60	3.75	3.85	3.90	4.00
ING Direct	0	3.50	3.60	3.70	3.80	3.90
Laurentian Bank	1000	2.15	2.35	2.45	2.60	2.90
National Bank	500	2.15	2.35	2.45	2.60	2.90
NBG Bank	500	2.15	2.35	2.45	2.60	2.90
Pacific & Western Bank	1000	3.60	3.65	3.30	3.40	3.40
Royal Bank	500	2.15	2.35	2.45	2.60	2.90

Source: CANOE Money (December 15, 2005).

A simple comparison of the interest rates presented in the two tables above shows that almost all the banks in this sample offer exactly the same interest rates on their GICs be it within the RRSP or outside it. The exception to this is the Pacific & Western Bank which bids different rates of interest for all the maturity levels taken into consideration. The name of the bank and respective interest rates which are bold in the tables above indicate that this plan administrator offers different GICs and RRSP rates.

The fact that almost all the banks in this sample offer identical rates of interest on GICs within and outside the RRSP suggests that they benefit from having access to such long-term, stable source of funds. They offer equal rates of interest despite the fact that the management of the RRSP accounts requires certain additional administrative tasks to be accomplished as compared to similar investment vehicles outside the umbrella of the RRSP. These additional tasks include: determination of eligibility to contribute to the

RRSP scheme, collection of contributions, record-keeping and communication of relevant information to clients, keeping track of the unused contribution rooms and in some cases customer education. In other words, they are disposed to do this additional administration without penalizing the customers with a lower interest rate as compared to the identical investment outside the RRSP. Before reaching into conclusions regarding how efficient are banks in managing RRSP funds as compared to other plan administrators, it is necessary and more rational to evaluate the interest rates that non-bank financial institutions offer on the same investment alternative (GICs).

5.3.2 GICs and RRSP Rates for Non-bank Financial Institutions

The RRSP is often seen as a desirable investment vehicle by all the financial institutions. This is due to the fact that it is a source of long term money for the intermediaries which administer these funds. Therefore, except banks, who need long term money in their balance sheet as a source of long term investment or liquidity, there are competitors such as credit unions, trust companies, life insurance corporations and other financial organizational structures which aggressively compete with each other for accessing these funds. However, the important issue that deserves special attention is how efficient are these institutions in managing the retirement funds that they obtain.

As in the case of banks, the tool that will be used to evaluate the efficiency of RRSP fund management by non-bank financial institutions is the assessment of GICs interest rates inside and outside the RRSP accounts. Tables 5.3 and 5.4 below demonstrate the interest rate variation among different service providers.

Surprisingly, the comparison of these rates reveals that like banks, almost all the non-bank RRSP administrators taken into consideration offer precisely the same rates of interest on these investment options. The only institutions that diverge from this tendency are the Parama Credit Union, (which offers dissimilar rates for all maturity levels except three year GIC) the Great West Life insurance company

(which bids different rates of interest for all maturity levels except one year GIC) and the Home Trust Company (which bids different interest rate just for the one year GIC).

The result of this comparison implies that similar to banks, these financial institutions value the benefits from issuing GICs under the RRSP umbrella since they do not penalize the RRSP account holders with a lower interest rate, to cover the additional administrative costs that take place when managing the RRSP accounts. These advantages arise mainly due to the long-term nature of the retirement funds that are deposited with the plan administrator. Also, it helps these institutions to obtain a portfolio risk reduction benefit in cases when the rate of interest earned in this investment is guaranteed by the government.

Table 5.3 GICs Rates for Non-bank Financial Institutions

Institution	(\$) Min	Year 1	Year 2	Year 3	Year 4	Year 5
Achieva Financial	1000	3.60	3.75	3.95	4.30	4.45
Alterna Savings & C.U	500	2.15	2.80	2.45	2.60	2.90
ATB Financial	1000	2.15	2.35	2.45	2.60	2.90
Caisses Desjardins	1000	2.15	2.35	2.45	2.60	2.90
Canada Life	1000	2.62	2.62	2.88	3.00	3.12
Canadian Western Trust	5000	2.40	2.60	2.70	2.85	3.15
Capital City Savings C.U	1000	2.15	2.35	2.45	2.60	2.90
Coast Capital Savings C.U	1000	1.70	2.00	2.25	2.40	2.75
Comtech Credit Union	15000	3.50	3.10	3.15	3.40	4.10
Concentra Financial	1000	2.15	2.35	2.45	2.60	2.90
Desjardins Fin. Security	500	3.25	3.35	3.45	3.50	3.55
Duca Fin. Service C.U.	1000	3.30	3.40	3.50	3.65	3.85
Effort Trust	5000	3.50	3.50	3.50	3.50	4.00
Empire Life	500	2.88	3.00	3.12	3.25	3.38
Equitable Life	500	2.70	2.75	2.90	3.00	3.15
Great West Life	500	2.88	2.88	3.12	3.25	3.38
Home Trust Company	5000	3.85	3.95	4.00	4.05	4.16
Italian Cdn. Savings C.U.	1000	3.00	3.20	3.30	3.40	3.50
Maple Trust	5000	3.85	3.95	4.05	4.10	4.15
Meridian Credit Union	1000	2.15	2.35	2.45	2.60	2.90
Mrs Trust	2500	3.38	3.50	3.75	3.75	3.95
National Life	500	2.70	2.75	2.85	3.25	3.35
Outlook Financial	1000	3.40	3.60	3.85	4.20	4.30
Pace Savings and C.U	1000	2.15	2.35	2.45	2.60	2.90
Parama Credit Union	1000	3.00	3.25	3.50	3.60	3.75
Prospera Credit Union	500	2.15	2.35	2.45	2.60	2.90
RBC Insurance	5000	0.90	1.30	1.55	1.80	2.10
Resmor Trust Company	1000	3.80	3.35	3.70	3.70	3.75
So-Use Credit Union	1000	2.15	2.35	3.55	2.70	2.90

Standard Life	1000	3.05	3.10	3.25	3.30	3.40
Steinbach Credit Union	500	2.80	3.25	3.35	3.85	4.00
Transamerica Life	1000	2.30	2.50	2.65	2.85	3.00
Virtual one C.U.	1000	2.05	2.25	4.05	3.70	3.75

Source: CANOE Money (December15, 2005).

Table 5.4 RRSP Rates for Non-bank Financial Institutions

Institution	(\$) Min	Year 1	Year 2	Year 3	Year 4	Year 5
Achieva Financial	500	3.60	3.75	3.95	4.30	4.45
Alterna Savings & C.U	500	2.15	2.80	2.45	2.60	2.90
ATB Financial	500	2.15	2.35	2.45	2.60	2.90
Caisses Desjardins	1000	2.15	2.35	2.45	2.60	2.90
Canada Life	1000	2.62	2.62	2.88	3.00	3.12
Canadian Western Trust	5000	2.40	2.60	2.70	2.85	3.15
Capital City Savings C.U	500	2.15	2.35	2.45	2.60	2.90
Coast Capital Savings C.U	1000	1.70	2.00	2.25	2.40	2.75
Comtech Credit Union	15000	3.50	3.10	3.15	3.40	4.10
Concentra Financial	1000	2.15	2.35	2.45	2.60	2.90
Desjardins Fin. Security	500	3.25	3.35	3.45	3.50	3.55
Duca Fin. Service C.U.	1000	3.30	3.40	3.50	3.65	3.85
Effort Trust	1000	3.50	3.50	3.50	3.50	4.00
Empire Life	50000	2.88	3.00	3.12	3.25	3.38
Equitable Life	500	2.70	2.75	2.90	3.00	3.15
Great West Life	500	2.88	2.75	3.00	3.12	3.25
Home Trust Company	1000	3.65	3.95	4.00	4.05	4.16
Italian Cdn. Savings C.U.	1000	3.00	3.20	3.30	3.40	3.50
Maple Trust	1000	3.85	3.95	4.05	4.10	4.15
Meridian Credit Union	1000	2.15	2.35	2.45	2.60	2.90
Mrs Trust	2500	3.38	3.50	3.75	3.75	3.95
National Life	500	2.70	2.75	2.85	3.25	3.35
Outlook Financial	1000	3.40	3.60	3.85	4.20	4.30
Pace Savings and C.U	1000	2.15	2.35	2.45	2.60	2.90
Parama Credit Union	50	3.30	3.40	3.50	3.75	4.00
Prospera Credit Union	500	2.15	2.35	2.45	2.60	2.90
RBC Insurance	500	0.90	1.30	1.55	1.80	2.10
Resmor Trust Company	1000	3.80	3.35	3.70	3.70	3.75
So-Use Credit Union	0	2.15	2.35	3.55	2.70	2.90
Standard Life	25000	3.05	3.10	3.25	3.30	3.40
Steinbach Credit Union	500	2.80	3.25	3.35	3.85	4.00
Transamerica Life	1000	2.30	2.50	2.65	2.85	3.00
Virtual one C.U.	1000	2.05	2.25	4.05	3.70	3.75

Source: CANOE Money (December15, 2005).

5.3.3 Results of the Study

The evaluation and the comparison of GICs and RRSP rates for both banks and non-bank financial institutions revealed some new insights regarding the efficiency of managing the registered retirement savings plan in Canada.

Considering the level of interest rates offered on GICs within and outside the RRSP by banks and other non-bank financial institutions the most important points that can be drawn from the above comparisons are summarized below.

Firstly, almost all the banks taken into consideration for this study offered exactly the same level of interest rates on GICs within the RRSP account as compared to the rates of interest offered on the same investment option outside the RRSP. Based on this interest rate comparison (without taking into consideration the level of administrative fees charged on the customers) it means that banks benefit from having these funds in their balance sheet given that they do not offer a lower interest rate on GICs within the RRSP in order to compensate them for the additional administration that the RRSP accounts demand. The main reason explaining this fact is that banks are in need of accessing long-term, stable funds primarily to facilitate their Asset and Liability Management (ALM) process, since they have the tendency to acquire short-term funds (mainly deposits) to finance their long-term investments (mainly loans). Funds deposited for retirement purposes serve better than any other source of funds as the basis for long-term investments or for meeting the liquidity needs of the bank. The desirability for accessing these funds as a mean of reducing the portfolio and liquidity risks motivates the banks to do the additional administration at no extra cost for the clients.

Secondly, other pension fund administrators such as credit unions, life insurance and trust companies manage the RRSP accounts as efficiently as banks. Apart from having access to long-term funds these

institutions enjoy also the benefits of portfolio risk reduction in the form of owning low risk assets in their portfolio. In contrast to banks which mainly offer this investment option in the form of deposits, non-bank RRSP administrators tend to offer to their customers GICs which have a guaranteed rate of return from the government.

It is important to note that we would expect non-bank institutions to have less interest in these funds given that as compared to banks they have more access to long-term sources of funds. Furthermore, non-bank financial institutions are less regulated than banks and may use other means to raise long-standing funds, such as issuing bonds or other securities in the financial market. However, the comparison of the rates above revealed that these intermediaries are as motivated as banks to manage these funds efficiently enabling the RRSP customers to generate the same return they would get by investing in the identical financial asset outside the RRSP.

Finally, the fact that all the RRSP administrators in Canada offer the same interest rates on the GICs within and outside the RRSP is a prove of what an efficient system of pension fund management the Canadians have put together in the design of the RRSP pension scheme. The benefits that these institutions get, in the form of risk reduction, from having a large amount of RRSP funds is sufficient to offset all the additional administration costs that arise from managing these accounts as compared to other investments outside this scheme.

Furthermore, the information obtained from the websites of the plan administrators as well as the direct contacts through e-mails with the majority of these institutions revealed that usually the financial institutions do not charge any administrative fees at all to the RRSP account holders who invest in GICs. Since this type of investment does not require active management as compared to a self-directed RRSP, the desirability for these funds motivates the pension plan administrators to not impose any charge on

their customers who choose to invest their retirement funds in a financial instrument that guarantees the rate of return as well as the principal for a specified time period (GICs). The absence of administrative fees also implies that the government's requirements on the regulations of these funds are well designed from the aspect of minimizing the compliance costs that these institutions face.

As discussed in chapter three, different studies regarding the estimation of the effect that administrative fees have on the final accumulation of the funds in each pensioner's account has demonstrated that 1 percent level of administrative fees (expressed as percentage of the value of the assets) reduce the value of an account by roughly 20 percent in real term values. In other words, the amount of benefits that the pensioners are entitled to in the future will be reduced by 20 percent if the administrative charges amount to 1 percent of the asset's value in the pensioner's account. Also, it was discussed that the level of administrative costs incurred by pension funds in countries that employ the retail approach (such as Chile) have a diminishing effect of more than 15 percent on the accumulated value of the individual account. Based on this estimation it can be concluded that a zero level of administrative fees imposed on RRSP account holders who invest in GICs, does not have any exhausting effect on the value of the accumulated assets. In other words, if a Canadian senior chooses to invest his or her registered retirement savings in GICs he or she can benefit from not paying any administrative fee which if existed may reduce the value of the pension payments by more than 15 percent in real term values as compared with other countries around the world who employ the individual account pension structure. However, we should take into consideration the fact that the GICs yield a lower rate of return as compared to other possible investment options due to its low risk guaranteed rate of return feature.

CHAPTER 6

CONCLUSIONS

Nowadays, the most prevailing trend in the OECD countries is that population is ageing and this tendency is accompanied by low fertility rates. These demographic trends have important implications on the financial stability of pay-as-you-go pension schemes which are in place as part of the government program in these countries to provide financial security to current retirees based on the contributions made by present workers. Many people argue that the ageing tendency over the next years will question the financial sustainability of these pension schemes. They discuss that workers should have their individual accounts in order to provide financial security for themselves after leaving the labor force. In other words, each individual should bear the responsibility of saving for his/her own retirement. This is the case in Chile, which is the first country that has completely replaced the social security system with private provision for retirement income.

The main concern that arises when discussing the replacement of the social security system with individual accounts is the level of administrative costs. These costs determine to a high degree the value of the assets in each account. For example, researches have shown that 1 percent annual fee reduces the value of retirement accumulations for a life time contributor by almost 20 percent in real term values. In addition to the effect that these costs have on the value of the account, they may put an upward pressure on the government expenditures on guarantees.

Investigation of the available studies regarding the level of administrative costs incurred by public pension funds as compared to private schemes in OECD countries revealed that it is very difficult to compare the costs of these two organizational structures. This is due to the fact that public plans do not report the whole administrative costs incurred while providing pension benefits to contributors when compared to

private plans. In general, governmentally-administered social security schemes report lower costs because majority of public schemes use public buildings and land. In addition, the collection task of public schemes in OECD countries is performed by a centralized government agency which entails lower costs as compared to private pension funds where this function is carried on a decentralized, individual basis. Also, public pension funds incur lower administrative costs due to the economies of scale from managing a large amount of funds which flow on a group rather than individual basis.

It is worth mentioning that the cost of administering public pension plans has declined through the time. As the public pension funds mature, they grow in size and fixed costs are allocated among a larger number of contributors, causing the cost per participants to decrease. Furthermore, government austerity programs, the rising trend in benefit expenditures and greater use of computers and advanced technology has contributed to a decreasing trend in administrative cost when running the public pension plans.

The efficiency of managing individual accounts has received particular research attentions as countries evaluate the possible ways of dealing with the challenges imposed by the ageing population. These studies are focused on comparing the administrative costs of individual accounts managed by the government (centralized) as compared to the costs incurred when these accounts are privately managed by the pension funds (decentralized).

Evaluation of administrative costs incurred under different pension arrangements across countries such as Chile, United Kingdom and Poland which employ the decentralized approach and the United States (TSP) together with Sweden which employ the centralized approach, revealed that the level of these costs depends on the organizational structure of the pension entity which determines the level of services offered. The main determinants of these costs are: start up costs, record-keeping and communication costs, investment costs, marketing costs and legal costs.

Focusing on the level of administrative costs incurred by the decentralized, retail market, researches shows that in Chile these costs have decreased from 9 percent, expressed as percentage of assets, in the beginning when the system was first introduced to 1.1 percent now. In Poland the administrative expenses amount to 0.88 percent of assets, while in United Kingdom these costs are relatively higher, amounting to 2.05 percent of assets. On the other hand, the level of administrative costs in case of centralized, institutional approach, represented by TSP in United States and Sweden, appear to be 0.1 percent and 0.78 percent of assets under management respectively. These levels of administrative costs reduce the pensions by more than 15 percent (40 percent in case of voluntary pension schemes in UK) as in the case of Chile which represents the retail market whereas in case of the institutional market the pensions are reduced by less than 10 percent in real terms.

These comparisons based on the experiences of several OECD countries together with Chile, which has more familiarity regarding the operation of decentralized private funds, revealed that the level of administrative expenses is higher under the retail market approach as compared to the institutional approach. The main factors that drive these costs up in case of the decentralized approach as compared with the centralized arrangement are: high start-up costs, decentralized collection or record-keeping, high customer acquisition costs and high investment expenses as a result of active investment strategy accompanied with a wide range of investment options. Therefore, the experience of the aforementioned countries which employ these two approaches, suggests that the administrative costs incurred by the retail market are higher than the level of these expenses incurred by the institutional markets. However, as the experience of Chile (which is the country that relies on retail market pension provision for more than twenty five years) shows, the administrative costs of running these pension schemes have decreased over time.

Apart from investigating the administrative costs of running different pension schemes in OECD countries as the major determinant of the pension fund management effectiveness, the other main objective of this research was to evaluate how efficient are the financial institutions that operate in Canada while managing the retirement savings under the RRSP pension scheme. Also, the study aimed to examine whether there is any discrepancy among the plan administrators regarding the level of effectiveness in managing these funds on behalf of their clients.

The comparison of the GICs rates within and outside the RRSP offered by 13 banks and 33 non-bank financial institutions, which were taken into consideration for the purpose of this study, revealed that almost all these RRSP administrators offered exactly the same rates of interest within and outside the RRSP account. In other words, these institutions do not penalize the RRSP customers with a lower interest rate given that the management of the RRSP account requires additional administrative tasks to be accomplished by the pension manager as compared to the GICs offered outside the RRSP umbrella. This means that these RRSP administrators are disposed to perform the supplementary administration at no extra cost for the client in the form of earning a lower interest rate. Furthermore, the level of administrative fees that these institutions impose on the RRSP account holders who invest in GICs is zero. This zero level of administrative charges can be partly explained by the fact that this type of investment does not require too much involvement with regard to administration as compared to a self-directed RRSP which implies an active investment strategy.

The nil level of administrative fees has a very important implication concerning the amount of pension payments that the retired are subject to in the future. In this context, the amount of pension benefits for a Canadian senior who has invested in a GIC within the RRSP account will not be affected by the depleting nature of the administrative fees. Taking into consideration the level of administrative charges in other countries which have employed individual accounts as a possible form of pension provision it can be

inferred that by owing a RRSP account invested in GICs an individual can protect the value of his or her accumulated assets from a more than 15 percent (in real terms) decline in the value of the accumulated assets.

To conclude, the fact that almost all the retirement savings administrators offer the same interest rate level on GICs within and outside the RRSP and a zero level of administrative fees imposed on the RRSP account proves that the RRSP administrators in Canada have designed an efficient system of pension fund management. The main factor that motivates these institutions to efficiently manage the retirement savings is that they enjoy large benefits from acquiring these long-term funds. These benefits can be in the form of facilitating the Asset Liability Management process which is critical in banks given that their available sources of funds are mainly short-term when compared to the long-term nature of their investment options. In addition, this source of funds contributes to portfolio risk reduction as in the case when the GIC is an investment option that offers a given rate of return guaranteed by the government

This study evaluated the efficiency level of pension fund management in Canada under the RRSP scheme and concluded that the RRSP administrators have implemented an effective system for managing these funds. The conclusion was drawn based on the comparison of the GICs and RRSP rates as well as the level of administrative fees imposed on the clients. However, a more complete evaluation would be to empirically analyze the administrative costs incurred by the plan administrators. This investigation would reveal important findings with regard to the main determinants of administrative costs in the RRSP scheme.

REFERENCES

1. Baldwin, B. (2004). "Pension Reform in Canada in the 1990s: What Was Accomplished, What Lies Ahead?", Canadian Labor Congress, Research Paper, No. 30
2. Barrand, P., Ross, S. and Harrison, G. (2004). "Integrating a Unified Revenue Administration for Tax and Social Contribution Collections: Experiences of Central and Eastern European Countries", International Monetary Fund, Working Paper, No. 237.
3. Boadway, R. and Cuff, C. (2003). "Evaluating Public Pensions", in Shah A.(ed) (2003), *Bringing Civility in Governance*, World Bank, Handbook on Public Sector Performance Reviews, Vol 3, Washington D. C.
4. Bodie, Z. (1989). "Pension Funds and Financial Innovation", National Bureau of Economic Research, NBER Working Paper Series, No. 3103, Cambridge, MA 02138.
5. Bodie, Z. (1989). "Pensions as Retirement Income Insurance", National Bureau of Economic Research, NBER Working Paper Series, No. 2917, Cambridge, MA 02138.
6. Bodie, Z., Marcus, A., J. and Merton, R., C. (1985). "Defined Benefit versus Defined Contribution Pension Plans: What Are the Real Tradeoffs?", National Bureau of Economic Research, NBER Working Paper Series, No. 1719, Cambridge, MA 02138.
7. Bonoli, G. (2000). *Politics of Pension Reform: Institutions & Policy Change in Western Europe*, Cambridge University Press, NY, USA.
8. Canada Revenue Agency (2005). "Registered Retirement Savings Plan (RRSP)" available at: <http://www.cra-arc.gc.ca/tax/individuals/topics/rrsp/rrsps-e.html> (reached on 10 December, 2005).
9. CANOE Money (2005). "GICs Rates", available at: <http://money.canoe.ca/rates/gics.html> (reached on December 15, 2005).
10. CANOE Money (2005). "RRSP Rates", available at: <http://money.canoe.ca/rates/rrsps.html> (reached on December 15, 2005).
11. Carmichael, J. and Palacios, R. (2004). "A Framework for Public Pension Fund Management", in World Bank Staff (ed), *Public Pension Fund Management: Governance, Accountability and Investment Policies*, World Bank Publications, Herndon, VA, USA.
12. Chan-Law, J., A. (2004). "Pension Funds and Emerging Markets", International Monetary Fund, IMF Working Paper, No. 04/184.

13. Chlon, A. (2002). "Administrative Costs of Pension Funds in Poland in International Perspective", Regional Meeting for the Eastern and Central European Countries, Session 3, Room Document NO. 24, Estonia.
14. Clark, G., L. (2000, February 8). "Pension systems: A Comparative Perspective", WBG Working Paper, No. 00-01.
15. Clements, J., Mihlar, F. and Francis, J., L. (1999). "20% Foreign Property Rule Increasing Risk and Decreasing Returns on RRSPs and RPPs", The Fraser Institute, Critical Issues Bulletin, Canada.
16. Congressional Budget Office (2004, March). "Administrative Costs of Private Accounts in Social Security", A Congressional Budget Office Study, available at: <http://www.cbo.gov/ftpdocs/52xx/doc5277/03-26-PrivateRetirement.pdf>. (reached on October 15, 2005)
17. Davis, E., Ph. (2000). "Pension Funds, Financial Intermediation and the New Financial Landscape", The Pensions Institute, Discussion Paper, No. PI-0010, Birkbeck College, London, UK.
18. Davis, E., Ph. (2002). "Pension Fund Management and International Investment - A Global Perspective", The Pensions Institute, Discussion Paper, PI-0206, Birkbeck College, London, UK.
19. Davis, E., Ph. (2003). "Institutional Investors, Financial Market Efficiency and Financial Stability", The Pensions Institute, Discussion Paper, No. PI-0303, Birkbeck College, London, UK.
20. Devesa-Carpio, J. and Vidal-Melia, C. (2002). "The Reformed Pension Systems in Latin America", World Bank, Social Protection Discussion Paper Series, No. 0209.
21. Diamond, P. (1999). "Administrative Costs and Equilibrium Charges with Individual Accounts", National Bureau of Economic Research, NBER Working Paper, No. 7050, Cambridge, MA 02138.
22. Dobronogov, A. and Murthi, M. (2005, March), "Administrative Fees and Costs of Mandatory Private Pensions in Transition Economies", *Journal of Pension Economies and Finance*, Vol. 4, Issue 1, pp 31-55.
23. Estrin, A. (1988). "Administrative Costs for Social Security Programs in Selected Countries", *Social Security Bulletin*, Vol.51/11, pp 29-39, in Kinsella, K. and Gist, Y. J. (1995). *Older Workers, Retirement, and Pensions: A Comparative International Chartbook*, U.S. Census Bureau, Series IPC95-2, Washington DC: United States Government Printing Office.
24. Eurostat (2003, February 17-18). "Social Protection", Eurostat Working Group, Document PS/2003/12/EN, Luxembourg.

25. Feldstein, M. and Liebman, J., B. (2001). "Social Security", National Bureau of Economic Research, NBER Working Paper Series, No. 8451. Cambridge, MA 02138.
26. Fougere, M. (2002). "RRSP Savings and the Aging of the Baby Boom Generation", *Canadian Tax Journal*, Vol. 50, No.2, pp. 524-549.
27. Frenken, H., (1990). "RRSPs: Tax-assisted Retirement Savings", *Perspectives on Labor and Income*, Vol. 2, No.4, Statistics Canada, Catalogue 75-001E.
28. Fried, J. (2001) "Canadian Retirement Savings Programs and Russian Pension Reform", available at:
http://www.ssc.uwo.ca/economics/econref/workingpapers/researchreports/wp2001/wp2001_12.pdf (reached on October 15, 2005).
29. Fried, J. and Arnaboldi, F. (2002). "Canadian Retirement Savings Plans and Italian Pension Reform", RBC Financial Group, Economic Policy Research Institute, EBRI Working Paper Series, No. 2002-7, Canada.
30. Furman, J. (2005). "The Financial Costs of Individual Accounts", Testimony Before the Subcommittee on Securities and Investment of the U.S. Senate Committee on Banking, Housing and Urban Affairs, available at: http://banking.senate.gov/_files/furman.pdf (reached on November 2, 2005).
31. Genetski, R. (1999). "Administration Costs and the Relative Efficiency of Public and Private Social Security Systems", The Cato Project on Social Security Privatisation, SSP No. 15.
32. Gruber, J. (1997). "Social Security and Retirement in Canada", National Bureau of Economic Research, NBER Working Paper, No. 6308, Cambridge, MA 02138.
33. Hart, L. E., Kearney, M., Musil, C. and Olsen K. (2001). "SSA's Estimates of Administrative Costs under a Centralized Program of Individual Accounts", Social Security Administration, available at: <http://www.ssa.gov/policy/docs/research/rr2000-01rev.pdf> (reached on October 21, 2005).
34. Hemming, R. (1998). "Should Public Pensions be Funded?", International Monetary Fund, Fiscal Affairs Department, Working Paper, No. 35.
35. Hoexter, E. (1970). *Administrative Expenses of Welfare and Pension Plans*, US Department of Labor, Labor Management Services Administration, Washington, D.C. USGPO in Mitchell O. S (1996) "Administrative Costs in Public and Private Retirement Systems", National Bureau of Economic Research, NBER Working Paper, No. 5734, Cambridge, MA 02138.

36. Holzmann, et al (2005). "Old-Age Income Support in the Twenty-first Century: An International Perspective on Pension Systems and Reform", World Bank, Report, available at: <http://www.muhamma.org/wb.pdf>, (reached on December 5, 2005).
37. Human Resource Development Canada (2001). "Canada's Retirement Income System", Income Security Programs, available at: <http://www.hrdc-drhc.gc.ca/isp>, (reached on December 3, 2005).
38. International Labour Office (ILO) (1989). *From Pyramid to Pillar*, Geneva, in Kinsella, K. and Gist, Y. J. (1995). *Older Workers, Retirement, and Pensions: A Comparative International Chartbook*, U.S. Census Bureau, Series IPC95-2, Washington DC: United States Government Printing Office.
39. International Monetary Fund (2004). *Global Financial Stability Report Market Developments and Issues*, available at: <http://www.imf.org/External/Pubs/FT/GFSR/2004/02/index.htm> (reached on November 3, 2005).
40. International Monetary Fund (2004). "Canada: Selected Issues", IMF Country Report, No. 04/60, Washington D.C.
41. James, E. (2001). "Comparative Costs of IA Systems", World Bank, Institute Pension Reform Seminar, Budapest.
42. James, E. (2004). "Administrative Costs-How to Compare Them and Control Them" Presented at World Bank Video Conference, available at <http://info.worldbank.org/etools/docs/library/142181/DL%2DAdmin%207%2DJames.pdf> (reached on October 28, 2005).
43. James, E., Smalhout, J. and Vittas D. (2001) "Administrative Costs and the Organization of Individual Retirement Account Systems: A Comparative Perspective", The World Bank Development Research Group, Policy Research Working Paper, No. 2554.
44. John, D. C. and Davis, G. G. (1998). "The Costs of Managing Individual Social Security Accounts", Center for Data Analysis, The Heritage Foundation Background, Working Paper, NO. 1238, Washington, D.C
45. Keeney, G. and Whitehouse, E. (2002). "The Role of the Personal Tax System in Old-Age Support: A Survey of 15 Countries", Centre for Pensions and Superannuation, Discussion Paper, No. 02/07.
46. Kinsella, K. and Gist, Y. J. (1995). *Older Workers, Retirement, and Pensions: A Comparative International Chartbook*, U.S. Census Bureau, Series IPC95-2, Washington DC: United States Government Printing Office.

47. Mastrángelo, J. (1999). "Políticas Para la Reducción de Costos en Los Sistemas de Pensiones: El Caso de Chile". Serie Financiamiento Del Desarrollo, 86. CEPAL, available at <http://www.eclac.org>, in Devesa-Carpio, J. and Vidal Melia, C. (2002). "The Reformed Pension Systems in Latin America", World Bank, Social Protection Discussion Papers Series, No. 0209.
48. Mintz, J., M. and Wilson, T., A. (2002). "Saving the Future: Restoring Fairness to the Taxation of Savings", C.D. Howe Institute, Commentary, No. 176.
49. Mitchell, O. S. (1996). "Administrative Costs in Public and Private Retirement Systems", National Bureau of Economic Research, Working Paper, No.5734, Cambridge, MA 02138.
50. Mitchell, O. S. (1999). "Evaluating Administrative Costs in Mexico's AFORES Pension System", Pension Research Council, Working Paper, No. 99-1, Wharton School, University of Pennsylvania.
51. Mitchell, O. S. (2002). "Redesigning Public Sector Pensions in Developing Countries" Pension Research Council, Working Paper, No. 9, The Wharton School, University of Pennsylvania.
52. Mitchell, O. S. and Bateman, H. (2003). "New Evidence on Pension Plan Design and Administrative Expenses: The Australian Experience", Center for Pensions and Superannuation, Discussion Paper. No.03/03.
53. Mitchell, O., S. (1999). "New Trends in Pension Benefit and Retirement Provisions", National Bureau of Economic Research, NBER Working Paper, No. 7381, Cambridge, MA 02138.
54. Monkiewicz, J. (2004), "Pension Funds and Acceleration of Poland's Economic Development", Transformation, Integration and Globalization Economic Research, TIGER Working Paper Series, No. 53, Warsaw.
55. Muralidhar, A., S. (2001). *Innovations in Pension Fund Management*, Standford University Press, USA.
56. Murthi, M., Orzag, J. M. and Orzag, P. R. (1999). "The Charge Ratio on Individual Accounts: Lessons from the U.K. Experience", Birkbeck College, University of London, Working Paper, No. 99-2.
57. OECD (2004). "OECD Classification and Glossary of Private Pensions", Paris, in OECD (2005). *Pensions at a Glance Public Policies across OECD Countries*, Paris.
58. OECD (2005). "Private Pensions: OECD Classification and Glossary", Paris.
59. OECD, (2005), "Pension Markets in Focus", Newsletter, Issue 1.

60. OECD, (2005). *Pensions at a Glance Public Policies across OECD Countries*, Paris.
61. Pension Investment Association of Canada (2001). "Overview of Canadian Retirement Income System", Second International Pension Conference, Santiago, Chile.
62. Pesando, J., E. (2001). "The Canada Pension Plan: Looking at Recent Reforms", available at <http://www.csls.ca/events/slt01/pesando.pdf> (reached on December 6, 2005).
63. Poterba, J. M. and Warshawsky, M. J. (1999). "The Costs of Annuitizing Retirement Payouts from Individual Accounts", National Bureau of Economic Research, NBER Working Paper, No. 6918, Cambridge, MA 02138.
64. Pozzebon, S. (2004). "The Future of Pensions in Canada", Pension Research Council, , Working Paper, No. 2004-15, The Wharton School, University of Pennsylvania.
65. Robson, W., B., P. (2001). "Six Pillars of Social Policy: The State of Pensions and Health Care in Canada", in Grady, P. and Sharpe, A. (ed), (2001), *The State of Economics in Canada: Festschrift in Honour of David Slater*, Centre for the Study of Living Standards.
66. Rofman, R. and Demarco, G. (1999). "Collecting and Transferring Pension Contributions", World Bank, Social Protection Discussion Paper, No. 9907.
67. Rofman, R., "Collecting and Transferring Contributions in Multipillar Pension Schemes" available at: <http://info.worldbank.org/etools/docs/library/142184/DL%2DAdmin%2DRofman.pdf> (reached on November 5, 2005).
68. Ross, D. and Wills, L. (2002). "The Shift from Defined Benefit to Defined Contribution Retirement Plans and the Provisioning of Retirement Savings", The Pensions Institute, Discussion Paper, PI-0210, Birkbeck College, London, UK.
69. Social Development Canada (2004). "Overview of the Old Age Security Program", available at <http://www.sdc.gc.ca/en/isp/oas/oasoverview.shtml> (reached on December 4, 2005).
70. Stanko, D. (2003). "Polish Pension Funds: does the System Work? Cost, Efficiency and Performance Measurement Issues", The Pensions Institute, Discussion Paper, No. PI-0302, Birkbeck College, London, UK.
71. Statistics Canada (2003). "Pension Plans in Canada", Pension and Wealth Research Paper Series, Catalogue no. 13F0026MIE-NO. 001.
72. Summers, L., H. (1982). "Observations on the Indexation of Old Age Pensions", National Bureau of Economic Research, NBER Working Paper Series, No. 1023, Cambridge, MA 02138.

73. Thompson, L., H. (1999). "Administering Individual Accounts in Social Security: The Role of Values and Objectives in Shaping Options", Urban Institute, The Retirement Project, Occasional Working Paper, No.1.
74. Thompson, L., H. (2001). "Operation of Pension Systems: Public or Private" in Ortiz, I., (2001) (ed). *Social Protection in Asia and the Pacific*, Asian Development Bank.
75. Tomagno, E. (2005). "The Canadian Pension System", Caledon Institute of Social Policy, A Report prepared for the General Assembly of the Japan Pension Research Council, Tokyo.
76. Treasury Board of Canada Secretariat (2004). *Report on Plans and Priorities 2004-2005, Social Development Canada*. Ottawa. Available at http://www.tbssct.gc.ca/estpre/20042005/SDCDSC/SDCDSCr4501_e.asp#section_12, in Tomagno, E. (2005). "The Canadian Pension System", Caledon Institute of Social Policy, A Report prepared for the General Assembly of the Japan Pension Research Council, Tokyo.
77. Visco, I. (2005). "Ageing and Pension System Reform: Implications for Financial Markets and Economic Policies", Report prepared at the request of the Deputies of the Group of Ten, available at: <http://www.bis.org/publ/gten09.pdf>, (reached on November 3, 2005).
78. Weaver, K., R. (2005). "Design and Implementation Issues in Swedish Individual Pension Accounts", Center for Retirement Research, Working Paper, No. 2005-05, Boston College.
79. Weller, C. (2001). "Programs Without Alternative: Public Pensions in the OECD", Center for European Integration Studies, Working Paper, No. B15.
80. Whiteford, P. (1995). "The Use of Replacement Rates in International Comparison of Benefit Systems", Social Policy Research Centre, SPRC Discussion Paper, No. 54.
81. Whitehouse, E. (2000). "Administrative Charges for Funded Pensions: An International Comparison and Assessment", World Bank, Social Security Protection Paper Series, No. 0016.
82. Willmore, B. and Bertucci, G. (1999). "Public versus Private Provision of Pensions", United Nations, Department of Economic and Social Affairs, DESA Discussion Paper, No.1.
83. Wilson, T., A. and Murphy, S. (1997). "Tax-exempts and Corporate Capital Structure: An Empirical Analysis", Technical Committee on Business Taxation, Working Paper, No. 97-5.