Project Analysis and the World Bank

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Abstract

The World Bank has been the single most important international institution to promote the practice of professional project appraisal over the past five decades. Although at times conventional project lending has been a relatively small share of total lending by the World Bank, key members of the Bank staff have continued to be active in improving the understanding of what creates success or failure in the performance of development projects. Their influence on governments and practitioners in this field has been significant and widespread.

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The World Bank has been the single most important international institution to promote the practice of professional project appraisal over the past five decades. Although at times conventional project lending has been a relatively small share of total lending by the World Bank, key members of the Bank staff have continued to be active in improving the understanding of what creates success or failure in the performance of development projects. Their influence on governments and practitioners in this field has been significant and widespread.

It was in the 1960's that project evaluation became an integral part of the profession of applied economic analysis, although the cost- benefit approach to economic development has been part of the literature on economic policy since its beginnings. The comparison of the economic costs with the economic benefits of a policy measure has been the fundamental tool of analysis employed by policy economists since at least the time when the economic effects of the Corn Laws were being debated.

The economic environment in which the World Bank staff and consultants have practiced their profession has changed dramatically since the 1960's, however. In the early period, development planning was the watch- word, with licenses, prohibitions, tariffs, quotas, tax incentives and multiple exchange rates being the tools of the economic planners. That situation is now the exception in developing countries from Latin America to Asia.

Where there are high tariffs, lists of prohibited imports and exports, and distorted capital markets, the evaluations of capital expenditures on the basis of market prices are likely to come to significantly different conclusions than those based on the economic values of benefits and costs. In this context, the first priority is to correct the measurement of benefits and costs in order to find out whether the investment can potentially add more to the economy than it takes out as costs.

To make these corrections, the Bank turned to the methodology developed by I. M. D. Little and James A. Mirrlees (1974), which was deemed to be a practical and consistent way to evaluate the economic benefits and costs of a project. This involved using border prices for tradable goods and converting domestic prices of nontraded inputs and outputs into their border-price equivalents. Where the commodity-specific conversion factors could not be estimated, the translation of the domestic price of an item into its border price was done through a standard conversion factor. Little and Mirrlees (1974) also allowed for different weights to be given to costs and benefits accruing to different groups. Consumption benefits and investment benefits were valued differently, as were benefits and costs accruing to the public and private sectors.

As a logical extension of the Little and Mirrlees work, Lyn Squire and Herman G. Van der Tak (1975) refined three further aspects of the methodology. First, when it is the goal of the government to alter the in- come distribution in the country, the value of the benefits and costs created by a project should be weighted according to whom they accrued. Second, if there are distortions in the capital market that make the unit cost of decreased consumption less than the unit cost of reduced investment, then a greater weight should be placed on changes in in- vestment caused by a project than changes in consumption. Third, as there are dead- weight losses in raising taxes, including ad- ministrative and compliance costs, the cost of budgetary contributions to finance or maintain a project should be weighted by a factor greater than 1.

It is this augmented analytical framework that provided the foundation for the World Bank's (1980) Operational Manual on the Economic Analysis of Projects. The guidelines also emphasized the need to identify the sec- tors in particular need of additional investment, to select the appropriate scale and timing of the project, and to do a sensitivity analysis to identify potential weaknesses in the project. No emphasis was given to linking the financial and economic analyses to determine whether the project had the financial resources necessary for survival. In fact, the financial and economic analyses of a project were divorced analytically and institutionally from each other. While the financial analysis was ex- pressed in units of domestic currency at the

domestic price level, the economic analysis was expressed in units of foreign exchange or else, if expressed in units of domestic currency, the economic prices would be valued at the border price level. Hence, comparison of the financial and economic performance over specific periods of a project's life was made virtually impossible.

I. Theory versus Practice

Any brief review, such as what I am at- tempting to do in this paper of the practices and outcomes of the World Bank's efforts to apply economic analysis to projects, must leave out many important aspects. The thrust of my remarks is basically to point out that, while the World Bank has been only partially successful in implementing its own formal methodology for the economic analysis of projects, its impact on improving investment decision-making and the economic performance of investments in developing countries has been enormous.

For example, Price Gittinger (1972, 1982) through his book on the economic analysis of agricultural projects has had a lasting impact on improved economic analysis of projects worldwide. It is a credit to the wisdom of its content and clarity of its presentation that it is still the standard reference book on the subject, 25 years after it was first published. In addition, the World Bank has produced and published hundreds of reports on the evaluation of projects in sectors such as transportation, water, electricity, and education. These studies have been widely distributed and are used as guidelines of best practice worldwide.

In their review of actual World Bank prac- tices as of 1990, however, Little and Mirrlees (1991 p. 360) came to the conclusion that the economic appraisal of projects by the Bank had been abandoned:

> Social pricing, using distributional weights, has been abandoned. No distinction is made between public and private income, or between the uses of income-whether saved or invested. Sectoral conversion factors are rarely if ever calculated and used. Shadow wage rates are not

systematically used or estimated. The values of nontraded goods are mostly converted to border values by a single standard conversion factor. To put this in another way, there is seldom if ever any attempt to estimate the actual foreign exchange consequences of using or producing particular nontraded goods. It is also equivalent to saying the relative prices of nontraded goods are assumed to be undistorted (except perhaps that taxes may be subtracted).

By the early 1990's, as a consequence of its own internal reviews of the performance of the projects it financed and the analytical proce- dures it employed, the same conclusion was reached by World Bank staff-that the Little and Mirrlees methodology was never fully op- erationalized within the World Bank. Further- more, the internal analysis arrived at a much stronger conclusion that the Bank's formal methodology for the economic analysis of in- vestments did not address the most important issues on which the Bank should deploy its scarce project-analytic resources in the future (World Bank, 1991 p. i). One might ask: what are the lessons to be learned from this experience?

An important lesson is that economic project evaluation only starts with the measurement of the potential economic costs and benefits. Except for the use of distributional weights, there was little that was theoretically wrong with the Bank's proposed methodology for shadow pricing. What was misguided was to put so much emphasis on the techniques of estimating shadow prices to measure a potential economic rate of return, while neglecting to evaluate systematically whether the project was likely to survive or be able to perform at a sufficient level to generate the net economic benefits.

Scant emphasis was given to procedures that would put the spotlight on the

"personality" of the project. What would be the situation without the project? Under what conditions is the project likely to underperform? Under what conditions will the project have difficulty meeting its financial obligations? Are there groups in the country that are being hurt by the project's operation and could stop its successful operation? How can the project be re- designed to make it more robust to withstand economic, budgetary, or policy changes? I do not wish to imply that these questions were not being asked and addressed by World Bank staff. At all times, many professionals in the Bank were using their considerable skills to evaluate and make sound judgments on such aspects of projects, but this type of analysis was not institutionalized by the Bank in its appraisal procedures. The organizational incentives were not in place to generate desirable outcomes. Neither the staff nor management was made accountable for either the quality of the appraisals or the ultimate performance of the investments they recommended financing. The fact that loans made by the World Bank are fully guaranteed by the client governments removes the risk faced from the poor performance of any specific underlying investment the Bank finances. Under such circumstances it is natural that the organization is less worried about such contingencies than if repayments were in some way related to project performance.[1]

II. Determinants of Project Performance

An important question that has to be asked when undertaking project appraisals is: what are the determinants of project performance? I turn once again to investigations made by staff at the World Bank to address this question. The first step is to see whether the quality of the economic analysis undertaken to evaluate projects prior to their approval had any relationship to subsequent performance.

Based on nine characteristics of a "good" economic appraisal, a score of 1-4 was assigned to the Staff Appraisal Reports of pro- jects approved by the Board of the World

[1] For a good discussion of some of the issues affecting the introduction of bias into the analysis, see Arnold C. Harberger (1997).

Bank during 1991. These same projects have been followed and periodically evaluated on their performance over time. Their performance has been classified as "highly satisfactory," "satisfactory," "unsatisfactory," or "highly unsatisfactory." An econometric analysis (logit model) was then conducted to find out if the probability of failure of the project was a function of the quality of the economic analysis.

The results are striking. If the economic appraisal of a project had been poorly done prior to its approval, the probability that it would perform unsatisfactorily by the third year after implementation is seven times higher than that of a project with a good economic analysis. By the fourth year the probability of failure of a project that is poorly evaluated is 16 times higher than the corresponding probability for one subject to a good economic evaluation (Pedro Belli and Lant Pritchett, 1995). There may be reasons for this relationship other than causality. I would hope that good project appraisals at the Bank are doing the job that I have long assigned as the first priority of a sound investment appraisal system, that is, stopping bad projects!

A second determinant of the successful performance of projects is strongly suggested by the work of Jonathan Isham and Daniel Kaufman (1995). In their empirical study of project performance across countries, they investigate how the economic rate of return of Bank-financed projects is influenced by the macroeconomic conditions of the country. Their results suggest that macroeconomic policies are important determinants of project performance. For example, lowering the black-market premia from 120 percent to 20 percent is associated with an increase of the average economic rate of return (ERR) from projects by over 15 percentage points. Moving from a very restrictive trade regime to a fairly open one increases the average ERR by about 7 percentage points. A difference in the fiscal deficit of 8 percentage points of GDP changesthe ERR by almost 3 percentage points. Sound macroeconomic policies not only increase the chances for a better performance of the bank financed projects, they

impact on all other in- vestments as well.[2] Also, it is probably the case that better project evaluations can and are undertaken in those countries where the macroeconomic distortions are not huge.

This points out the key role that the World Bank and its staff have played in the promotion of better economic policies at both the macro level and the sectoral level. Through the numerous missions, policy dialogues, and evaluations of specific projects, the Bank has provided a tutelage function in promoting sound economic analysis. This has had an enormous impact on the type of economic policies pursued by countries and, ultimately, on the performance of their economies.[3]

III. Future Directions

Since 1989, the World Bank has launched a major ongoing review of its practices in the area of project preparation and evaluation. Out of this process, an attempt is being made to institutionalize the evaluation of the quality of project appraisals within the Bank. To date there have been three major reviews of the quality of the economic analysis of Staff Appraisal Reports covering those projects approved in 1991, 1993, and the first half of fiscal 1996 (World Bank, 1991, 1995, 1996).

The results to date are promising. By 1996, approximately 70 percent of the Staff Appraisal Reports were judged to contain acceptable or good economic analysis, as compared with 65 percent three years earlier. But more important for the future, a system for the consistent measurement of the quality of the economic analysis of each report has been developed and implemented. Such monitoring creates the incentives for improving and maintaining quality over time. This is true not only for international institutions but particularly for government organizations as well.

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[2] For a more extensive discussion of the estimation techniques, see Isham and Kaufman (1995 pp. 6-8).

[3] For a fuller discussion of the tutelage role of the World Bank, see Harberger (1984).

Furthermore, a proposed methodology for the economic appraisal of projects has been developed out of the findings of the reviews of Bank experience. If implemented, it will reflect a major modification of the 1980 Operations Manual on this topic.

This proposed approach to the economic analysis of projects puts much more emphasis on understanding the economic environment surrounding the project and the behavior of the project in an uncertain world. It eliminates the use of different public- and private-sector in- come weights and distributional (poverty) weights in the calculation of the economic net present value or economic return. Shadow prices should be used selectively, depending on the country circumstances and the severity of market distortions, but environmental costs and benefits should be included in the economic analysis (Belli et al., 1996 p. 1).

The question of what will happen if the project is not undertaken is addressed by the pro- posed approach, as is the question of whether the project is the best alternative. An identification is made of the winners and losers in society as a consequence of the project, including the fiscal impact of the project on the government budget. Furthermore, the pro- posed methodology calls for financial analysis of the project to be examined to determine sustainability. It is recommended that both the economic and financial analysis be done in domestic prices so that a direct comparison of the financial and economic impacts of the project can be made. This is particularly useful in the determination of acceptable user charges and the quantity of budgetary allocation required. Finally, it is recommended that, when possible, a Monte Carlo analysis should be under- taken to assess the key variables affecting the riskiness of the project and to assess the probabilities of the project's potential for success or failure (Belli et al., 1996 pp. 6-9).

This proposed methodology will bring the appraisals done by the World Bank much closer to the type of analysis used to design project-financing arrangements in the private sector. It builds on what has been learned through the Bank's operational experience over the past 30 years. It draws heavily on the writings and practical

applications made by people such as Arnold Harberger, Price Gittinger, and Ernesto Fontaine and on the experience of successful economic appraisal systems implemented in countries such as Chile. These practices have proved their worth through application in several countries for decades by improving the quality of decision- making. A question remains of how quickly the other international financial institutions will follow the World Bank's lead and update the procedures they follow when appraising projects. The most important question, how- ever, is whether developing countries will follow the lead of the World Bank and implement this approach for the appraisal of their own investments. I remain optimistic.

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