

Economic Cost of Foreign Financing

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Abstract

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The conventional treatment by the economic appraisal of investments has been to disregard the particular terms of foreign financing as a benefit or cost. This approach is being called into question as the private provision of public services has become dominated by foreign investors and operators. Many of the BOT and BOO contracts are far from being transparent capital market transactions. This paper contains a methodology for introducing the measurement of the extra costs or benefits attributable to the project because of prepared financing arrangements.

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1. Introduction

Large-scale, capital intensive projects frequently rely on foreign financing. In recent years the foreign-owned segment of many types infrastructure have grown considerably. New projects either reallocate the existing foreign investment within an economy or draw incremental foreign investment into the country. Conventional methodologies for the economic appraisal of projects have usually recommended that the source of the funds used for financing of the project, either domestic or foreign be ignored. This assumption is increasingly being called into question as the private provision of public services has become dominated by foreign investors and operators. Many of the BOT and BOO contracts are far from being transparent capital market transactions. Hence, the forms of arrangement can have an economic cost or benefit as they involve different flows of resources in and out of the host country. This paper outlines a methodology for estimating the nature and magnitude of the net economic benefits resulting from the foreign financing of new investments, such net benefits should be included in the overall economic evaluation of a project.

Public concern over foreign ownership has often focused on the issue of possible foreign control of a country's economy and interference with decision-making that would otherwise have been in the domestic economy's best interests.² Although recognizing the importance of such issues, our examination is limited to estimating the net economic benefits (costs) resulting from changes in the pool of capital resources available to a country due to foreign financing of a project. Negative political externalities resulting from foreign control may add to the economic costs arising from changes in foreign

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investment or they might also cast a shadow over a project that would otherwise have created substantial net economic benefits for the country. However, such factors are excluded from our analysis.

The economic benefits and costs of a project should initially be examined regardless of the source of financing. The economic opportunity cost of capital (EOCK) should be used as the economic discount rate for evaluating the costs and benefits that occur to the project overtime. The EOCK is the measure of the real opportunity cost of the funds that are drawn out of the pool of capital available to the country to finance investments. This pool of capital will include both domestic and foreign owned funds.

If a new investment opportunity is financed from foreign sources, the net economic benefits from the project (discounted by the economic opportunity cost of capital) are going to be shared not only by the government (g) and the other residents of the country (p) but also by foreigners (f). In net present value (NPV^e) terms we thus have:

$$NPV^e = B - C = B_g + B_p + B_f - C_g - C_p - C_f \quad (1)$$

Where B and C represent gross benefits and costs respectively. These gross benefits and gross costs can be broken down further into benefits and costs incurred by the various stakeholders in the project. For the purpose of this discussion we divide the stakeholders into just three groups. Benefits realized by the government (B_g) take the form of such items as taxes and fees paid to the treasury. Benefits realized by the foreign investors (B_f) comprise the debt repayment, interest, and dividends payments. B_p denotes the gross benefits accruing to the non-government residents of the host country. Since we want to evaluate any project only from a perspective of the host country, we may need to adjust the net economic benefits accruing to the domestic economy for the benefits and costs realized by foreigners.

² For an excellent discussion of some of the historical experience of conflict between foreign investors and sovereign governments, see Wells, Louis T. and Eric S. Gleason, "Is Foreign Infrastructure Investment Still Risky?" Harvard Business Review, Sept -Oct. 1995.

To make this adjustment in the appropriate manner, however, we must also ascertain whether our project has simply reallocated the existing foreign capital in the country or it has attracted incremental foreign investment into the country. A normal supply function of foreign financial capital to a country has a finite elasticity. The implication is that the use of foreign owned capital for a specific project makes other foreign investment more expensive to attract. Some fraction of the foreign investment for our projects will thus result in a move away from foreign financing of other projects, and some fraction will likely be incremental. The normal cost of these funds as measured by the capital market are included in the EOCC for a country. The estimate of the EOCC, however, does not capture the net economic benefits (costs) resulting from foreign investment that arise due to the special characteristics of the project and the idiosyncratic nature of the financial agreements that determine the ultimate return to the foreign investors.

2. Measurement of the Benefits from Incremental Foreign Investment

Foreign investment can be considered incremental to a host country when it is specific to a project, and when the project would not be undertaken unless the foreign capital was available. Furthermore, the attraction of foreign investment to this project does not affect the ability of the country to service its other foreign owned financial obligations. This suggests that the project is not available to other foreign investors and that the project itself will generate enough incremental foreign exchange to service this investment. In economic terms, the combination of this project and its funding causes the supply curve of foreign financing to the country to shift by an equal amount to the right. In this sense the foreign financing obtained by this project is incremental to what foreigners would otherwise have invested in the host country.

If the foreign investment is incremental, then the host country should not be concerned over how much the foreigners put into or take out of the project. It should ensure, however, that the host country's resources, which are employed in the project along with the foreign capital, earn an economic rate of return at least as great as they could have

earned in alternative uses. This is accomplished by evaluating all resources at their economic opportunity cost and by discounting all relevant costs and benefits by the economic opportunity cost of capital. Since our evaluation of a new investment adopts a host country point of view, we simply want to exclude C_f and B_f from equation (1) by adding $(C_f - B_f)$ to it as follows:

$$NPV^e + (C_f - B_f) = B_g + B_p - C_g - C_p \quad (2)$$

Since the incremental foreign capital (C_f) also provides incremental foreign exchange, the additional foreign investment carries an additional premium (ρ) to reflect the difference between the economic opportunity cost of foreign exchange and the market exchange rate.³ By the same token dividends, interest, and loan repayments made to foreign investors (B_f) entail a loss of foreign exchange which also results in a loss of the foreign exchange premium. The net foreign exchange externality accrues to the host country as a result of foreign investment and is not captured by foreign owners of the capital in their return. As the foreign exchange externality from foreign financing is not included in the NPV^e of net benefits from the project, we must add $\rho (C_f - B_f)$ to both sides of the equation (2) to yield the adjusted economic net present value NPV_a^e as:

$$NPV_a^e = NPV^e + (1+\rho)(C_f - B_f) = B_g + B_p - C_g - C_p + (\rho) (C_f - B_f) \quad (3)$$

The total adjustment to equation (1) made necessary by incremental foreign investment, $(1+\rho) (C_f - B_f)$, will raise or lower the present value of net economic benefits to the host country depending on whether $(1+\rho)(C_f - B_f)$ is positive or negative. For instance, if $B_f > C_f$, the stream of dividends (net of withholding taxes) plus interest and debt repayment is sufficient, when discounted at the EOCK, to permit foreigners to recapture their investment and to earn a rate of return greater than the EOCK. The economic net present value from the point of view of the host country will be less after making the adjustment

for the cost of incremental foreign investment than before the adjustment is made. If after making the adjustment we find that the economic net present value NPV_a^e is greater than zero, the project should be permitted by the host country. If on the other hand, the NPV_a^e is less than zero, the country is going to be made worse off by this project and it should not go forward.

3. The Benefit from Reallocating Foreign Investment Already Present in the Host Country

As noted above, a normal supply function of foreign financial capital to a host country has a finite elasticity. In the previous section, we adopted the extreme assumption of allowing all the foreign investment for a project to be incremental to the host country. In this section, we go to the opposite extreme by assuming that foreign investment for a project results only in a reallocation of foreign investment away from other projects in the host country. It is assumed that the project will go ahead even without the foreign investment, we then need to know whether the country is better off to use the foreign capital for this specific project rather than in alternative projects.

When none of the foreign investment for our project is incremental to the host country, but only reallocates the existing pool of foreign capital resources away from other projects, we must adjust equation (1) in a different fashion. As before, the present value of the benefits foreigners receive from their investment (B_f) is the stream of dividends, interest and loan repayments, discounted at the EOCK that actually flows from the project. The relevant opportunity cost of the investment for the foreigners is the stream of benefits which they would have received from the alternative investment foregone (B_f^a).

³ Jenkins, Glenn and Kuo, Chun-yan, "Estimation of the National Parameters for Economic Cost-Benefit Analysis for the Philippines," Development Discussion Paper, Harvard Institute for International Development, Harvard University, May 1998.

The benefit to foreigners from alternative investment in the host country is equal to the present value of the real (net of inflation) returns these investments would have earned. Since foreign-owned capital is part of the host country's capital stock, it is reasonable to expect that foreign investors would earn a rate of return roughly equal to that earned on the total capital stock in the host country. We shall denote the private discount rate that makes the net present value of the net-of-tax net cash flow to total capital equal to zero as r_f .

If alternative investments with a similar level of risk in a country yield foreigners a r_f real return, the crucial question is whether our project yields them more or less than what they would normally receive. In the case where the foreign investment is non-incremental, a greater than normal return to foreigners represents a net cost to the economy. In contrast, a foreign investor willing to make an investment and receive a lower than normal rate of return, will increase the economic net present value of the project.⁴

The level of political risk that foreign investors face with a particular project may mean that they will require a higher or lower rate of return from a particular project than what would be normal the case for such foreign investments.⁵ There is strong evidence that foreign investors considering investing in electricity projects in some countries have required higher than normal rates of return due to the perceived political risk with such projects.⁶ In other cases foreign investors might face restrictions on the length of the term of debt financing available for a project. This may mean that the price set for the project's service has to be set very high initially in order to make the debt service obligations. Over time the debt will be repaid, but the continuation of such pricing

⁴ For example, if the investment is of great strategic importance to the firm.

⁵ Wells, Louis T., and Eric C. Gleason, "Is Foreign Infrastructure Investment Still Risky?," Harvard Business Review, September-October 1995.

⁶ Jenkins, Glenn P. and Henry B.F.Lim, "An Integrated Analysis of A Power Purchase Agreement," Development Discussion Paper Harvard Institute for International Development, Harvard University, 1998.

policies might cause the foreign equity holders to earn an extraordinary high rate of return.⁷

In either of these circumstances, the project might still have a positive economic NPV from the host country's point of view after making the adjustment for the higher than usual returns that have to be paid to these particular foreign investors. In such a situation, the host country evaluators of the project should first consider alternative methods of managing the risks or consider alternative financial structures, before giving final approval to the project.

If by investing in a specific project foreigners earn a real return just equal the average of r_f , then the ratio (Z) of the present value (discounted at r_f %) of the stream of foreign equity and debt invested in the project over the present value (discounted at r_f %) of the foreign dividends, debt repayment and interest received (equation 4) would equal 1. If this ratio (Z) is greater than 1, then foreigners would be earning less than a r_f % return by investing in the project; if the ratio were less than 1, then foreigners would be earning more than a r_f % real return.

$$Z = \left[\frac{\text{PV (foreign equity + foreign debt) at } r_f \text{ discount rate}}{\text{PV (foreign dividend + foreign interest + foreign repayment) for project at } r_f \text{ discount rate}} \right] \quad (4)$$

By multiplying this ratio times the actual stream of dividends, debt repayment, and interest received from foreigners from the project, we can determine the stream of payment to foreigners which is below, above, or equal to what the normal stream would be⁸. Discounting this stream by the EOCK for the country yields our estimate of B_f^a as in equation (5):

$$B_f^a = (Z) (B_f), \quad (5)$$

⁷ International Institute for Advanced Studies, Buenos Aires-Colonia Bridge Project, Financial and Economic Appraisal, July 30, 1998.

⁸ The stream of dividends, debt repayment, and interest received are all measured in constant prices.

where B_f represents the present value of foreign capital receipts discounted at the EOCK. Following the reasoning used in the previous section, the total adjustment we must make in this case is to add $(1+\rho)(B_f^a - B_f)$ to equation (1) where B_f^a and B_f are net present value estimated using the EOCK as the discount rate. Hence, equation (1) becomes:

$$NPV_a^c = B_g + B_p + B_f - C_g - C_p - C_f + (1+\rho)(B_f^a - B_f) \quad (6)$$

When the ratio of the present values (discounted at r_f) is equal to one, then $B_f^a = B_f$ and our project yields foreign investors just a normal return; since $(1+\rho)(B_f^a - B_f) = 0$, no adjustment to equation (1) is necessary. If, however, the ratio of the present values is greater than one, then $B_f^a > B_f$ and therefore $(1+\rho)(B_f^a - B_f) > 0$. This suggests that the project should receive a net benefit for paying out less to foreigners than the country would have from the foreign financing of alternative investments. Since this case also implies that private investors earn less than a normal real rate of return of r_f , we must pause to consider some other factors before adding this net benefit to the economic externalities attributable to the project.

A critical factor in determining the rate of return that a foreign investor demands before making the investment is the economic cost of any explicit and implicit guarantees the project or the investor receives from the country (usually the government).⁹ The guarantees that are designed to remove risk from the perspective of the foreign investor may cover a wide range of issues. Examples include completion guarantees, loan guarantees, and the contractual allocation of the foreign exchange rate risk to either the government or consumers.¹⁰ These guarantees have associated with them real economic

⁹ Vega, Arturo Olvera, "Risk Allocation in Infrastructure Financing", *The Journal of Project Finance*, Vol 3, No. 2, Summer 1997.

¹⁰ A good example of the allocation of foreign exchange rate risk to consumers can be found in the Concession Agreement between Metropolitan Waterworks and Sewerage System and the private contractor in the case of the privatization of the water systems in Manila. In this case any movement in the nominal exchange rate between the peso and the currency of the loans that was greater than 2 percent from the date of the agreement would be built into the adjustment for the price of water. It is not surprising that the concessionaires borrowed large amounts of funds in Yen, the currency that was likely to appreciate the most with respect to the peso.

costs that usually are not explicitly accounted for in the cash flows of the project.¹¹ Hence, while it may appear that the foreign investor is willing to make funds available at an abnormally low required rate of return, it might simply be that the government is bearing a larger proportion of the financial risks than is normal for such investments. If, however, a foreign investor is willing to accept a lower than normal rate of return due to some reason, such as the strategic nature of the investment, then this should be attributed to the project as a benefit.¹²

Another factor that is often present in the foreign financing of investment projects is financing subsidies given by foreign governments to promote certain types of investments abroad. If these subsidies are included, it might appear that a host economy is receiving a substantial benefit because the project attracts this subsidized financing.

It is generally incorrect to include any foreign (or domestic) financing subsidies as a benefit (or a reduction in financing costs) to any single project. Usually such financing subsidies are provided to countries through a quota system, where it will not be able to get more than a given amount of such subsidies over a period of time. From the point of view of the promoter of any single investment in the host country it might appear that these foreign financing subsidies are either bringing in incremental foreign financing, or are at least reducing the cost of foreign financing that would have been available to the host country. In both cases it is incorrect to credit the financing subsidy provided to any single project within a country.

4. Conclusion

The central issue in the evaluation of the benefits or costs to an economy from foreign financing of investments is the determination of the proportion of the inflow of foreign financing to project that is simply a substitute for other foreign capital inflows, and the

¹¹ Mason, Scott, C. Baldwin and D. Lessard, "Budgetary Time Bombs: Controlling Government loan Guarantees", Canadian Journal of Public Policy, No 9, Vol. 3, 1983.

proportion that represents an increase in the productive resources available to the host country. In cases where the economic cost of incremental and non incremental foreign investment are different, the relative size of this parameter can be an important determinant of the economic net present value of a project.

A difficulty arises in the empirical estimation of the proportions of the foreign investment that are incremental and non-incremental because the impact of foreign investment entering a country today on the ultimate amount of foreign investment available to a country need not be fully realized within a given period of time. In addition, the nature of the various types of financial obligations undertaken by a country will alter the impact of the inflow of foreign savings on the investment and saving decisions in the country over extended periods of time.

Because of the serious statistical problems that arise in the derivation of reliable estimates of the long-run effects of foreign investment on capital formation, and the plethora of unaccounted for implicit and explicit guarantees associated with many projects, caution is warranted before crediting a project either for inducing incremental foreign investment or for securing low cost foreign financing. In the vast majority of cases, a project that is being financed from foreign sources will be simply reallocating the total amount of foreign investment available to the country. This arises due to the constraints on a country's ability to repay its foreign financial obligations. In such a situation, the main concern of the project evaluator is to determine if this project is being structured in such a way (or is attracting the type of foreign investor) that will require a greater than normal rate of return to participate in this project. In this case the economic analysis should reflect this higher cost and the particular financial design of the project appropriately penalized.

A case where a project is likely to create incremental foreign investment can be illustrated by a factory that is being set up in an export processing zone. In such a case,

¹² The abnormally low rate of return that the Japanese automobile manufacturers have received from their assembly plants in the USA might be considered as a case where the companies were willing to sacrifice part of the rate of return in order to obtain a strategic position in the US market.

the primary concern of the project analyst is to see that the domestic resources being used to accommodate this foreign investment are yielding a net return of at least equal to the economic opportunity cost of capital. The foreign investment coming in to finance the factory is a benefit to the country and the flow of interest, dividends and loan repayments are costs. The question here is, does the domestic labor and capital being employed earn a return greater than their economic opportunity cost?

Probably the most important reason for not giving a benefit to a project for non-incremental foreign investment that appears to have been made available at lower than normal costs, is the existence of complex guarantee provisions that are at the heart of all project financing arrangements. In such a situation the costs of financial risk may be reflected in other charges to the project separate from the rate of interest and expected dividends. Often the costs of risk management are being borne by the government, and are not allocated in any way to the project. It is the economic costs of these guarantees that need to be the focus of the analyst's attention.

Guarantees that are provided by the government to domestic investors may alter behavior and damage or help a project, but the triggering of the guarantee is essentially a transfer from the government to the domestic financial institutions within the country. This could have little or no economic cost. This is not the case with guarantees made to foreign investors. When such a guarantee is exercised, the flow of funds is an outflow of economic resources. In this case, the expected economic cost to the economy is increased above what it would be if no guarantee were given.

Bibliography

1. Harberger, A.C and Jenkins, G.P., "Manual for Cost Benefit Analysis of Investment Decisions," HIID, Harvard University, (1998).
2. Harberger, A.C. "On Measuring the Social Opportunity Cost of Public Funds," Project Evaluation - Collected Papers, (Chicago: the University of Chicago Press, 1972)
3. International Institute for Advanced Studies, Buenos Aires-Colonia Bridge Project, Financial and Economic Appraisal, July 30, 1998.
4. Jenkins, Glenn P., "Public Utility Finance and Economic Waste," Canadian Journal of Economics, (August 1985).
5. Jenkins G.P. and M.B. El-Hifnawi, Economic Parameters for the Appraisal of Investment Projects: Bangladesh, Indonesia and the Philippines, report prepared for Economics and Development Resource Center, Asian Development Bank, (December 1993).
6. Jenkins, G.P. "The Public-Sector Discount Rate for Canada: Some Further Observations", Canadian Public Policy, (Summer 1981).
7. Jenkins G.P. "Evaluation of Stakeholder Impacts in Cost-Benefit Analysis", Development Discussion Paper (HIID, Harvard University, February 1998).
8. G.P. Jenkins and C.Y. Kuo, "On Measuring the Social Opportunity Cost of Foreign Exchange", Canadian Journal of Economics, (May 1985).
9. Jenkins, Glenn and Kuo, Chun-yan "Estimation of the National Parameters for Economic Cost-Benefit Analysis for the Philippines" Development Discussion Paper, Harvard Institute for International Development, Harvard University, May 1998.
10. Little I.M.D. and Mirrlees J.A., "Project Appraisal and Planning for Developing Countries" (London, Heineman Educational Books Ltd., 1974).
11. Mason, Scott, C. Baldwin and Lessard, D., "Budgetary Time Bombs: Controlling Government loan Guarantees", Canadian Journal of Public Policy, No 9, Vol. 3, 1983.
12. Roemer M. and Stern, J.J. "The Appraisal of Development Projects" (New York: Praeger Publisher, Inc., 1975).

13. Sell, Axel, *Project Evaluation: An Integrated Financial and Economic Analysis* (Avebury, England 1991).
14. Vega, Arturo Olvera, "Risk Allocation in Infrastructure Financing", The Journal of Project Finance, Vol 3, No. 2, Summer 1997.
15. Wells, Louis T., and Gleason, Eric C., "Is Foreign Infrastructure Investment Still Risky?," Harvard Business Review, Sept.-Oct. 1995.