PN-ABK 564
20476

Analyses of:

The Contribution of Capital Projects to Development

The Tied Aid Practices of Donor Countries

The International Arrangement on Officially Supported Export Credits

FINAL REPORT

Bureau for Private Enterprise
U.S. Agency for International Development

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Sponsored by: *Private Enterprise Development Support Project II*
Project Number 940-2028.03
Prime Contractor: Coopers & Lybrand

October 1992

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EXECUTIVE SUMMARY
OF PART I

CONTRIBUTION OF CAPITAL PROJECTS TO ECONOMIC DEVELOPMENT: A COMPREHENSIVE SURVEY

The three components of Part 1 of this report provide the following: (a) reasoning for the crucial and strategic role of capital projects in economic development; (b) an extensive review of the existing literature indicating the important contribution of capital projects to economic development; and (c) indices reflecting the beneficial relationship between investment in infrastructure and economic development.

The principal conclusions of the report are the following:

1. Capital projects are an essential part of economic development as they affect the growth and efficiency of all sectors of the economy. An increase in the supply of electricity, an expansion of transport and communications facilities, and a healthier labor force thanks to an improved sanitation and water supply, all lower the unit cost of production and raise the productive capacity of the economy as a whole.

2. Shortages in the availability of any of the key infrastructure facilities and services can have an unfavorable multiplier effect on the aggregate output of the economy, causing inflationary pressures and a slow-down in the growth of the economy.

3. Since the onset of the 1990s, we face a situation where many of the developing nations, and, in particular, the middle income developing nations, have implemented a domestic policy environment conducive to further economic growth. These countries have now reached a threshold level of development with non-agricultural (especially industrial) output reaching a significant proportion of GNP, and urban growth exceeding population growth. In such situations, infrastructure needs requiring investment in capital projects begin to grow with leaps and bounds, usually at a much higher rate than economic growth. Most middle income developing nations report an elasticity of demand for infrastructure services, especially for power and transport, well above unity.

4. While the middle income developing nations, in particular, have a rapidly increasing need for investment in capital projects, the least developed countries also require investment in capital projects because several infrastructure facilities must be in place before any significant economic development effort can be initiated. The least developed countries lack a well-integrated transport system linking the various parts of their countries, and they have weak links with the outside world.

5. The newly industrialized economies, which have generally well-developed physical infrastructure facilities, face a different set of problems. These countries, being major

exporters of manufactured goods, need to maintain their competitive edge by investing in the expansion and modernization of their physical infrastructure in order to reduce unit costs of production. These countries need to provide not only better transport and urban housing facilities, but also to invest heavily in telecommunications, ports and shipping, as well as in civil aviation.

6. The extensive review of the existing literature refers to over forty different sources, and renders only one primary conclusion; that is, capital projects have made, and can make significant contributions to economic development. (The literature review covers the timespan 1943 through 1990.)

7. The application of indices reflecting the relationship between investment in infrastructure and economic development to six developing nations (Botswana, Egypt, India, Kenya, Korea, and Pakistan) during a period of nine years renders the following important conclusion: every single index for total activity in each country is positive, thereby indicating that total additional capital formation in physical infrastructure has had a positive effect on economic development in each of the countries concerned and for each of the nine years.

8. Based on these findings, ***it is concluded that capital projects have made and can make significant contributions to economic development.***

EXECUTIVE SUMMARY
OF PART II

TIED AID PRACTICES OF
DONOR COUNTRIES OTHER THAN THE U.S.

The most important findings and conclusions of Part II of the report are summarized as follows:

1. Tied aid refers to loans, grants, or concessional financing tied to the procurement of goods and services from the donor country, or subject to procurement modalities implying limited geographic procurement eligibility. Partially untied aid refers to loans, grants, or concessional financing tied to procurement of goods and services from the donor country and from a restricted number of countries, including substantially all developing nations.

2. Though the definitions of tied and partially untied aid seem quite straightforward, they are rather difficult to apply when it comes to precisely assessing the nature of tied aid relationships.

3. Considerable methodological problems hinder the possibility of arriving at any solid conclusions concerning the real impact of tying practices on a donor's economy because of fungibility.

4. The interaction between aid, trade, and investment flows in the overall economic relationship between the industrialized and developing countries is likely to increase in the foreseeable future.

5. The limited data on past tied aid practices, together with the importance of capital projects and the prevailing uncertainty concerning the interpretation of the current Helsinki rules, may be an indication of the future extent of tied aid but such an indication is, by necessity, subject to subjective judgment. The currently prevailing weakness about the Helsinki rules appears to be an open invitation for further tying of aid (without necessarily reporting such practices, as has been the case for Japan).

6. A 1989 Eximbank report on tied aid practices grossly understates the lost sales to the United States; the annual lost sales to the United States mentioned in this report are between $400-$800 million. The methodology employed to arrive at this estimate is incorrect. A more accurate estimate of annual U.S. export losses is between $2.4-$4.8 billion.

7. The increases in tied aid as observed from available OECD statistics are most likely understated, in particular, in the case of Japan, because these statistics generally represent member country submissions that are, in some respects, disputed.

8. There is much evidence that Japan's claims of having made great progress in untying aid are simply incorrect. The data submitted by the Japanese Government to the OECD cannot be trusted.

9. The U.S. Government is urged to provide more assistance for capital projects on the basis of development objectives and trade merit. Without a strong capital projects program of its own, the U.S. will be in a weak position to influence the behavior of other donors.

10. It is unfortunate that the DAC definition of untying refers to the stated intention at the point of committing aid; multifarious examples prevail where the actual procurement appears to contradict the intention at commitment point.

11. The parameters of a model of commercial vulnerability are: aid highly tied; proportionately high levels of capital projects and equipment related aid in productive and social sector programs; no development strategy/country programming; projects selected without development criteria; a limited body of development policy; an ineffective project appraisal process; negligible staff in the field and inadequate staff at headquarters.

12. DAC's grant element norm of eighty-six percent for total ODA is currently met by all OECD members except for Japan, Austria and France (when its highly concessional aid to its overseas possessions/districts is excluded).

13. Mixed credits are a central and integral element of both France's development assistance and export financing systems; French terms are among the hardest within the DAC.

14. The principal institutions involved in France's mixed credits are the Direction des Relations Economique, the Treasury, the Banque Francaise du Commerce Exterieur, and the Caisse Centrale de Cooperation Economique.

15. Italy's overall policy and aid implementation falls under the Interministerial Committee on Development Cooperation. The Directorate General for Development Cooperation is specifically responsible for foreign aid.

16. The Mediocredito Centrale administers Italy's mixed credit/tied aid programs through its Revolving Fund.

17. While Japan claims to have untied most equipment procurement for infrastructure projects, the net result continues to be a significant tying of aid in favor of Japanese companies.

18. Experts of the Japan International Cooperation Agency play an important liaison role with Japanese businesses; this role is facilitated because various experts of this Japanese agency work in recipient government ministries and are involved in project identification and formulation.

19. With relatively hard terms and an emphasis on repayment, Japanese aid programs have had, and continue to have, distinctly commercial overtones.

20. The large volume of Japan's concessional finance, together with its concentration on capital projects and high-level of Japanese procurement, assure continuing concern on the part of U.S. exporters.

21. Tying of aid funds to U.K. purchases appears to be an element of British Government policies. U.K. aid is among the most highly tied of DAC aid programs with strict limitations on local cost financing.

22. While the German federal budget allocation determines the level of grants and aid credits that can be extended, it influences, but does not determine the level of mixed credits extended.

23. While stressing development and the needs of low-income countries, German aid strategy emphasizes the mutual benefit of the aid program and the need to protect the economic interest of Germany.

24. There has been a growing discrepancy between the moderate level of tied bilateral assistance reported by the German Government and the much higher and sharply rising of share of actual procurement in Germany.

25. The Germans have relied increasingly on mixed financing and on advance bidding to implement the policy of making development assistance "employment effective" for German industry when this is in accord with sound development policy.

26. Canada's official development assistance is driven less by political consideration than by development objectives and what makes sense from the perspective of both Canada and the Third World. The geographic location and composition of its aid does reflect genuine concern for development.

27. Canada provides tied aid credit through two sources: the Canadian International Development Agency (CIDA), and the Canada Account Funds.

28. As long as mixed credits and concessional financing are a part of doing business, Canada can be expected to play a defensive game aggressively.

29. The Canadian Export Development Corporation supplies commercial credit and this is blended with ODA grants offered by the Canadian International Development Agency. The Canadian Export Development Corporation also has a formal mixed credit facility, which is used primarily for matching.

30. With the exception of Finland, the Nordic countries have exceeded the United Nation's ODA/GNP target of 0.7 percent (Finland has come close with a ratio of .64 percent). The grant element of total Nordic ODA and the grant share in Nordic bilateral aid are both virtually one-hundred percent.

31. Aid tying policies are not altogether liberal in the Nordic countries, reflecting the prominent business constituency orientation of the Finnish and Danish programs.

32. Finland and Denmark have, traditionally, allocated substantial bilateral resources to economic infrastructure and to the productive sectors. These two countries have taken a more business-like approach to aid than Sweden and Norway.

EXECUTIVE SUMMARY
OF PART III

THE INTERNATIONAL ARRANGEMENT ON OFFICIALLY SUPPORTED EXPORT CREDITS: DEADLOCKED, LOCKED-IN, AND UNLOCKED ISSUES

Part III of the report provides the underlying essence of the Helsinki Package, previous attempts to strengthen the rules on commercial and aid credits, and critically important issues of the Arrangement. These issues are categorized in **12 deadlocked issues, 5 locked-in issues,** and **15 unlocked issues.**

> Deadlocked issues are issues for which no rational decision can be made unless considerable time and resources are spent on researching, analyzing, and evaluating interdependent relationships between and among a project and its environment. These issues are further complicated by the recognition that these relationships are not constant if, indeed, economic development is to take place.
>
> Locked-in issues are issues which are unalterably fixed until they have been brought to the attention of the participants, acted upon, and remedied. The Helsinki Package recognizes that not all possible contingencies have been covered and that, therefore, participants may agree to modify any of the existing rules if there is a consensus that circumstances warrant it.
>
> Unlocked issues are issues which can be resolved within the existing framework of the Helsinki Package through further specification. By and large, the current rules are geared towards export credit agencies, which make decisions based upon country risk and credit worthiness of borrowers; however, these rules are not geared toward bilateral aid agencies and, therefore, require further specification.

The text includes various recommendations and conclusions. The most important ones are:

1. Commercial viability is relevant to private sector projects and financial viability is relevant to public sector projects.

2. For **public sector** projects: A project is financially non-viable if the project lacks capacity, with appropriate pricing determined on market principles, to generate cash flow sufficient to cover the project's operating costs and to service all the debt employed; where applicable, already outstanding debt should be serviced on the established, historical terms; and, the new debt should be serviced on the Arrangement terms with respect to the minimum interest rate and maximum repayment period. (Note: in cases where the remaining years of the repayment term of the already outstanding debt exceeds the years stipulated by the Arrangement, the total number of years for determination of

financial viability shall not exceed the years stipulated by the Arrangement....currently, 8 1/2 years).

For **private sector** projects: A project is commercially non-viable if the project lacks capacity, with appropriate pricing determined on market principles, to generate cash flow sufficient to cover the project's operating costs and, within the maximum repayment term stipulated by the Arrangement, to service all the capital employed; where applicable, already outstanding debt should be serviced on the established, historical terms (however, the remaining years of the debt outstanding cannot exceed the years stipulated by the Arrangement); the new debt should be serviced on the Arrangement terms, including the stipulated minimum rate of interest; and, equity capital should be serviced at the minimum rate of interest stipulated by the Arrangement plus an additional ten percent; and, finally, a maximum debt/equity ratio of eighty-two percent, as well as a straight line method of depreciation applicable to the expected life of the project (or project components) should be postulated. Or:

3. For **public and private sector** projects: A project is financially/commercially non-viable if it is reasonable to conclude, based on communication with other participants, that it is unlikely that the project can be financed on market or Arrangement terms, provided that the guarantee for debt servicing by the recipient government is not considered for projects financed by aid agencies.

4. The determination of commercial viability and of financial viability of projects financed by aid agencies is the responsibility of such agencies.

5. Extenuating circumstances based on sound social valuation may exempt the rate setting of public utilities (or other projects rendering a public service) from the use of appropriate pricing determined on market principles.

6. Irrespective of capacity to generate cash flow, projects that do not earn hard currency cannot be considered financially viable or commercially viable if the debt service-to-exports ratio is larger than 25%, and/or the debt-to-exports ratio is larger than 275% in the recipient county.

7. The two-step financing procedure does not allow OECD participating governments to disregard the rules of the Helsinki Package.

8. Interest rate swaps and currency swaps cannot be used.

9. It is recommended that AID carefully assess which route to follow with respect to the need to further specify risk, which must be considered an inherent aspect of commercial viability.

10. In determining financial viability or commercial viability of a project, any applicable international agreement on the environment must be strictly followed.

11. In determining financial or commercial viability of a project, the cost of incorporating environmental protection components should not exceed five percent of total project costs for non-environmental projects, which are all projects except the primarily environmental ones, such as pollution control, water supply, sewerage, and reforestation.

12. The following definition of a project is the best to counteract "cheating": A capital project is a project that supports economic and social development and involves the development, replacement or rehabilitation of physical assets and activities relating to those assets, including feasibility work, engineering, procurement, training, technical assistance, maintenance and operational support, and institutional development; any such phase or component of a capital project is a "capital project component" rather than a "capital project".

13. Though the definition of (12) is superior from the point of view of counteracting "cheating", it does limit AID's maneuverability of decision-making processes regarding capital projects.

14. The only way to attempt to counteract cheating as a result of project disaggregation, and, at the same time, maintain maneuverability for decision-making by aid agencies, is through a rigid notification procedure that requires, at an early stage of project identification, alternative designs, engineering specifications, and, where applicable, other project specifications. These alternative designs, engineering specifications, and other project details, should be geared toward maximizing international response in bidding for contracts.

15. In its attempt to counteract cheating, AID should carefully assess whether it wants to follow the approach of precisely defining a capital project, or the approach of specifying a rigid notification procedure regarding required <u>alternative</u> designs, engineering specifications, and other project details geared toward maximizing international response in bidding for contracts.

16. The complexity of the deadlocked issues could be the basis for the following longer term strategy for AID. Without significant additional knowledge, the concept of commercial viability, though acceptable for the operations of export credit agencies, cannot be operational for bilateral aid agencies. The significant additional knowledge required can only be obtained through the allocation of time and resources for research. AID may, therefore, be well advised to aim at a strategy to eventually abandon the concept of commercial viability for the decision-making processes of bilateral aid agencies.

17. The earlier OECD approach of making a distinction between "competition motivated credits" and "aid motivated credits" and a gradual increase in the percentage of concessionality level is much easier to administer than the approach based upon commercial viability. The earlier OECD approach resulted in cheating; one cannot help but wonder how much cheating is to be expected with an approach that is more difficult to administer.

18. The DAC and the participants accepted an "Aid Quality Checklist" for information and general guidance, but not as an enforceable rule. Consequently, the Helsinki Package does not contain any rule with respect to aid quality.

19. One locked-in issue refers to the lack of specificity concerning time frame in the key test with regard to determining financial/commercial viability of projects. Another locked-in issue is the one of ignoring the concept of time value of money in the key test for commercial/financial viability of projects. These, and other locked-in issues need to be acted upon and remedied.

20. The issue of "artificially limiting" the total potential funds available to the middle income developing nations is a serious one. One may, therefore, opt for abandoning the criterion of financial/commercial viability for those projects where financial leverage and co-financing are significant. Once this philosophy is accepted, one can focus on <u>what</u> level of financial leverage and co-financing is <u>significant</u>.

21. With respect to interest rates, the rules of the Helsinki Package refer to interest rates of industrialized countries only, even though other decision variables, such as fluctuating exchange rates, interest rates in developing nations, and different national taxation schemes should have been considered as well, if, indeed, optimal allocation of scarce capital in the developing world is the ultimate goal, as it should be. Ignoring interest rates, fluctuations of exchange rates, and different national taxation schemes in developing countries may have the following serious implications: (i) it may render a project prematurely "commercially viable" in the decision-making process; and, (ii) it significantly limits obtaining financial leverage with capital available in the middle income developing nations.

22. It is recommended that all of the 15 unlocked issues be "unlocked" during in-house meetings among AID officials, and, subsequently, during meetings with representatives from the Eximbank and Treasury.

INTRODUCTION

On October 31, 1991, participants in the OECD Arrangement on Guidelines for Officially Supported Export Credits concluded two years of negotiations with an ad referendum agreement on measures to strengthen Arrangement rules for provision of export credit and tied aid. Through increased transparency, the objective is to reduce trade distortions and to reduce subsidies in standard export credits. Known as the "Helsinki Package," this Arrangement made a complete break with past efforts to separate officially supported trade credits from aid credits by periodically increasing minimum permissible grant elements or concessionality levels. Instead, provisions for commercial and financial viability were introduced for the first time. The principal problem of the Helsinki Package is that a number of issues have not been adequately explored, thereby causing a large "gray area" for further interpretation. The new discipline on limited tied aid based upon the newly introduced concept of commercial viability poses a serious risk for "cheating;" consequently, several issues need to be addressed. To some extent, past tied aid practices of donor countries may provide some insight into how much "cheating" may be expected.

The implications of the Helsinki Package are very important for the forthcoming activities of AID's Capital Projects Fund. Traditionally, AID's capital projects have been subject to a sound "development screen" of guidelines and criteria prior to authorization and obligation of funds. Typically, such a development screen includes important considerations of technical, economic, financial, environmental, institutional, and social analyses. This approach ensures selection of developmentally sound projects; however, this approach does not ensure adherence to the Helsinki Package. Adherence to the Helsinki Package means, to begin with, the need to fully comprehend all its possible interpretations, assumptions, and connotations.

The future magnitude of AID's Capital Projects Fund depends upon availability of funds and on the possible contribution of capital projects to economic development. Consequently, there is a need to know how useful capital projects can be for economic progress.

The new guidelines of the Helsinki Package and the creation of AID's Capital Projects Fund form the foundation for the following primary objectives of this study:

1. To assess the contribution of capital projects to economic development.

2. To examine tied aid practices of donor countries other than the U.S.

3. To study, in great detail, the existing OECD rules and proposed guidelines for implementation and enforcement.

In accordance with these primary objectives, the study is disaggregated into three major components:

PART I: Contribution of Capital Projects to Economic Development: A Comprehensive Survey

PART II: Tied Aid Practices of Donor Countries Other Than the U.S.

PART III: The International Arrangement on Officially Supported Export Credits: Deadlocked, Locked-In, and Unlocked Issues

Part I is much more than a very extensive review of the existing literature indicating the important contribution of capital projects to economic development; it also includes the reasoning for the crucial role of capital projects in economic development, and the design of indices reflecting the beneficial relationship between investment in infrastructure and economic progress. The overriding conclusion of this part of the report is that capital projects have been, and will be, very important for economic development.

Prior to the discussion of tied aid practices of donor countries other than the U.S., **Part II** introduces a precise interpretation of tied and of partially untied aid, and addresses the methodological problems in measuring the real impact of tying practices on a donor's economy because of fungibility. The discussion of tied aid practices is accompanied by an assessment of the reliability of available data. The multifarious conclusions of this part of the report include the important indication that the actual (rather than reported) tying of aid is on the increase in the foreseeable future. The currently prevailing confusion about the Helsinki Package appears to be an open invitation for the further tying of aid without necessarily reporting such practices.

Part III commences with a discussion of the underlying essence of the Helsinki Package. It then indicates how, through detailed assessment, three categories of issues urgently need to be addressed. These three categories of issues are labeled the "**Deadlocked Issues,**" the "**Locked-In Issues,**" and the "**Unlocked Issues**". The deadlocked issues are issues for which no rational decision can be made unless considerable time and resources are spent on researching, analyzing, and evaluating interdependent relationships between and among a project and its environment. The locked-in issues are issues which are unalterably fixed until they have been brought to the attention of the participants, acted upon, and remedied. The unlocked issues are issues which can be resolved within the existing framework of the Helsinki Package through further specifications. In total, thirty-two issues relevant to the interpretation of the Helsinki Package are explored and addressed in great detail. The "gray area" concerning the interpretation of the Helsinki Package is, therefore, eliminated or, at least, significantly minimized.

The analytically oriented approach of Part III leads toward several practical recommendations and guidelines for AID to ensure the best possible implementation of the Helsinki Package.

It is important to recognize that the various guidelines recommended for implementing the Helsinki Package must, ideally, be fully accepted and carried out by all parties involved (i.e., all relevant U.S. Government agencies and OECD participants). This recognition means, inter alia, that the content of Part III forms the basis for a magnificent opportunity for AID to assume the lead role among U.S. Government agencies and OECD participants in attaining the best possible, practical interpretation of the newly formulated rules of the Helsinki Package. Part III indicates, in great detail, that the Helsinki Package implies a conglomerate comprised of numerous, interlinking elements which must be agglutinated with responsive rationality if it is to be effective. Measures must be tailored in such a way that all nations will benefit, instead of remaining apprehensive witnesses to increased "cheating" and being victimized by an increase in global trade distortions. Part III of this study is critically important because of the various carefully stipulated guidelines for implementing the Helsinki Package. Equally important is the recognition that carrying out an international arrangement is an arduous though essential process, which can lose its effectiveness in the trajection of ill-defined concepts and a maze of prevailing loopholes.

Part I and Part II are the result of carrying out task one and task three of the Scope of Work, respectively. (The Scope of Work is contained in Appendix 2.) The results of performing tasks two, four, five, and six are described in Part III.

I conducted this study as a consultant to Coopers & Lybrand at the request of AID's Bureau for Private Enterprise under Prime Contract No. PDC-2028-Z-00-7186-00. I extend my great appreciation to all the individuals I interviewed, who so willingly gave their time and perspectives to the benefit of this study. I had the opportunity to interview representatives of U.S. Government agencies, including the Agency for International Development, the Export-Import Bank, and the Treasury, as well as a number of officials of the multilateral donor community, and the Center for Strategic and International Studies. Please see Appendix 4 for the names of all the officials interviewed.

These acknowledgments are made with great appreciation, but the views expressed in this report remain my full responsibility. It is my sincere hope that the observations, conclusions, and recommendations contained in this study will facilitate the decision-making process of all those individuals who are charged with the important task of implementing the forthcoming activities supported by the Capital Projects Fund, and of all those who aim for successfully carrying out the important International Arrangement on Officially Supported Export Credit.

Arie Beenhakker, Ph.D.
Consultant to Coopers & Lybrand
September 1992

PART I

CONTRIBUTION OF CAPITAL PROJECTS TO ECONOMIC DEVELOPMENT:

A COMPREHENSIVE SURVEY

A. THE ROLE OF CAPITAL PROJECTS IN ECONOMIC DEVELOPMENT

Capital projects are an essential part of economic development as they affect the growth and efficiency of all sectors of the economy. An increase in the supply of electricity, an expansion of transport and communications facilities, and a healthier labor force thanks to an improved sanitation and water supply all lower the unit cost of production and raise the productive capacity of the economy as a whole. Shortages in the availability of any of the key infrastructure facilities and services can have a multiplier effect on the aggregate output of the economy, causing inflationary pressures and a slow-down in the growth of the economy. This crucial and strategic role of capital projects underlines their economic significance. It is generally recognized that the poor quality and limited supply of capital projects rendering infrastructure services constitutes a major source of high costs for all producers and consumers in many developing nations.

Investment in capital projects is, and should be, a continuous process. A number of capital projects should be put in place before any significant economic development effort can be initiated. Several other capital projects need continuous extension and maintenance to avoid the development of bottlenecks which interrupt the supply of essential inputs to the productive sectors of the economy. Other capital projects which have been implemented in the past, such as telecommunications and power stations, may need to be rebuilt or replaced because of obsolescent technology or environmental hazards.

Reasoning for the need of capital projects has undergone several changes during the last half century. Indeed, its evolution has been closely linked with the continuing debate on the content and nature of economic development itself. In the 1940s and 1950s, when capital projects were first formulated in the context of Eastern European economies and later of the developing economies of Asia, Africa, and Latin America, capital investments in infrastructure were postulated as a prerequisite for initiating the development process in an economy. (See, for example, P.N. Rosenstein-Rodan, "Problems of Industrialization of Eastern and Southeastern Europe", Economic Journal, June-September, 1943, pp. 202-211.) Capital projects were conceived as a set of physical facilities without which an integrated, interdependent economy could not function effectively. It was assumed to set the limit for self-sustained growth in the economy.

This concept was also linked to that of the absorptive capacity of an economy for external aid. It was pointed out, in those days, that in the absence of adequate investments in capital projects rendering infrastructural services, an economy could not make good use of external assistance. These perceptions led to massive investments, often largely financed by external assistance, in capital projects such as roads, bridges, ports, irrigation dams, electric power and communications, as a prelude to the development and industrialization of a country. Most development plans, as well as foreign assistance programs, in the 1950s and 1960s placed primary emphasis on the building of physical infrastructure facilities and on project aid and project lending.

Subsequently, it became apparent that physical infrastructure was, at most, only a necessary and by no means a sufficient condition for development. Although the investment in infrastructural projects facilitated the establishment of other industries, the viability of those industries depended on other factors, including, in particular, a conducive domestic policy environment and entrepreneurial abilities. The earlier establishment of import-substituting industries often created pressures for the availability of infrastructure services at subsidized rates. This, in turn, eroded the financial viability of infrastructural capital projects, which often suffered from deterioration and lack of maintenance. This was further aggravated by the reluctance of foreign aid agencies, which had helped to build such capital projects, to give assistance for maintenance or improvements.

Disappointing results such as these were the cause for dissatisfaction with economic growth theories which gave primary importance to increased physical capital investments. This dissatisfaction necessitated a modification of the concept of infrastructure to also include investment in human capital. Thus, education, health, sanitation, water and other amenities of life began to be perceived as having many of the characteristics of physical infrastructure. It was recognized that investment in human capital needed to be undertaken concomitantly with, if not ahead of, other development expenditure. However, it was not until August, 1982, with the onset of the international debt crisis, that it became abundantly evident that lack of sound economic policies cannot generate sustained economic growth. Consequently, the 1980s witnessed the implementation of structural adjustment programs, focusing on sound economic policies, in many developing nations. In addition, privatization efforts have resulted in improved entrepreneurial abilities.

Since the onset of the 1990s, we have faced a situation where many of the developing nations, and, in particular, the middle income developing nations, have implemented a domestic policy environment conducive to further economic growth. These countries have now reached a threshold level of development, with non-agricultural, especially industrial, output reaching a significant proportion of GNP, and urban growth exceeding population growth. In such situations, infrastructure needs requiring investment in capital projects begin to grow with leaps and bounds, usually at a much higher rate than economic growth. Most middle income developing nations report an elasticity of demand for infrastructure services, especially for power and transport, well above unity. This is the reason why the Asian Development Bank in its 1992 outlook states, "The greatest challenge facing government in the 1990s is to find adequate resources for the provision or promotion of physical infrastructure, human resource and technology development, and environmental protection". Also referring to the middle income developing countries in Asia, the Financial Times, Section 3, of May 1, 1992, states in the article "Building for Asia's Future", inter alia, "Asia's expansion has outstripped the ability of its infrastructure---communications, transport, and energy capacity---to cope. But the need to spend on improvements comes as budget deficits are growing and aid from industrialized countries is becoming even harder to obtain".

The developing nations are replete with examples of inadequate investments in capital projects and their adverse effects. For example, consumers and industries are suffering grievously from

inadequate investment in energy projects in a number of countries in South Asia and in the Philippines. The "brownouts" in the Philippines and "load sheddings" in India and Pakistan occurred frequently in 1990 and 1991, paralyzing many business operations for four to six working hours per day. In Bangkok, the worsening traffic congestion is translating into huge economic losses for the economy. Fuel consumption by vehicles stuck in traffic jams alone is estimated at 36 million baht daily, not including the heavy economic losses associated with the wastage of time of those caught up in them. The rapid rate of urbanization and industrialization, particularly in populous Asia, has resulted in severe urban congestion and blight of various kinds, chronic air and water pollution, and a noticeable decline in the quality of life. (See, for example, J.P. Lea and J.M. Courtney, editors, "Cities in Conflict--Studies in the Planning and Management of Asian Cities", a World Bank report, Washington, D.C., World Bank, 1985.)

While the middle income developing nations, in particular, have a rapidly increasing need for investment in capital projects, the least developed countries also require investment in capital projects because several infrastructure facilities must be in place before any significant economic development effort can be initiated. The least developed countries lack a well-integrated transport system linking the various parts of their countries and they have weak links with the outside world. Also, several of these nations, including the South Asian economies, along with China, do have a network of basic infrastructure facilities, some of which, such as the railways and irrigation systems, were established during the colonial period. However, the high rate of population growth and rapid urbanization in these South Asian countries are causing attrition and decay of the existing capital projects, which are proving extremely inadequate for meeting the rapidly growing needs of population expansion and urban concentration.

In comparison, the Southeast Asian economies and East Asian newly industrialized economies, which have generally well-developed physical infrastructure facilities face a different set of problems. These countries, being major exporters of manufactured goods, need to maintain their competitive edge by investing in the expansion and modernization of their physical infrastructure in order to reduce unit costs of production. These countries need to provide not only better transport and urban housing facilities, but also to invest heavily in telecommunications, ports and shipping, as well as in civil aviation.

Without heavy investment in, and continuing efforts to raise the efficiency of their infrastructural capital projects, it is unlikely that the developing nations of the ESCAP region will be able to maintain the records of high growth rates that they have achieved, on the average, in the last two decades. For while it is possible to sustain high rates of growth without significant additions or improvements in infrastructure in the short run, it is impossible to have sustained, uninterrupted and structurally balanced growth in the long run without paying adequate and constant attention to infrastructural capital projects.

The validity of these observations is not confined to the ESCAP region only. In the 1990s, the issue of investing in physical capital projects has acquired a new urgency, in particular, for the middle income developing nations. As these countries restructure their economies to meet the emerging global challenges and opportunities and endeavor to find their niches in the changing

pattern of competitive advantage, there is a need to assess the adequacy of the available infrastructural capital projects. The speedy development of appropriate physical infrastructure in a cost-effective and efficient manner is a crying need for complementing the process of economic and industrial restructuring underway in these countries.

The potentially important role of the private sector in the development of appropriate physical infrastructure should be recognized. In specific areas of physical infrastructure, private sector participation has been rapidly increasing over the last two decades. For instance, with the development of world capital markets, substantial volumes of finance to undertake large infrastructural capital projects can be mobilized by private enterprises. The risks associated with such long-life projects can be more widely distributed through securities markets. In several countries, public works and utilities, including supply of gas and electricity as well as telecommunications, which were originally established and managed by government or local authorities, have been sold to the private sector.

There is no doubt about the relationship between economic growth and investment in physical capital projects during the development process; however, there are only a couple of systematic studies on this relationship. One such study conducted by Naoki Ono is entitled "Infrastructure Investment in Economic Development--An Empirical Study of Japan and its Comparison with India", International Development Center of Japan, Tokyo, December, 1987. This publication contains the results of a comparative study of physical infrastructure development in Japan during the period 1900-1940, and in India during the period 1950-1983. This study provides an interesting comparison about the similarities and differences in physical infrastructure development during a roughly comparable period of development of two economies having differing initial endowments, technological choices, institutional structures, and development strategies.

In spite of the difficulties in the availability of comparable data over long periods of time and relating to broad economic categories, both countries show an interesting pattern of relationship between infrastructure and economic development. In India, the share of physical infrastructure investment in total investment ranged from about 13 percent in 1950 to 26 percent in 1962/63, and an average of about 20 percent was observed during the period, 1950-1983. In Japan, the proportion varied from approximately 17 percent in 1900 to about 38 percent in 1925, and an average of 27.5 percent was observed in 1900-1940. Thus, India invested approximately five to ten percent less of its gross domestic product in infrastructure than Japan did in a comparable period of its development.

It is interesting to note here that several studies in India have attributed the slower growth of India's industrial sector after the 1960s and the high incremental capital output ratio to under-investment in infrastructure. (See, for example, I.J. Ahluwalia, Industrial Growth in India, Oxford University Press, 1985; and, S. Chakravarty, Development Planning: The Indian Experience, Oxford University Press, New Delhi, 1988). The underinvestment in physical infrastructure in India was not, however, because of low investment/gross domestic product (GDP) ratios. In fact, the investment/GDP ratio in India was almost as high as that of Japan's

in the comparable time span. What was mainly responsible for India's underinvestment in physical infrastructure was that a large part of public investment was devoted to the development of the manufacturing sector, especially heavy industry, which reduced the allocation for infrastructural capital projects. If the proportion of public sector investment devoted to manufacturing industries were added to physical infrastructure investment, the ratio would be approximately 30 percent of total investment, which is almost the same level as that for Japan.

The Naoki Ono study indicates an interesting difference in sectoral composition of physical infrastructure development in Japan and India. Both nations invested about 90 percent of their physical infrastructure investment in power, railways, and other transport. However, Japan tended to invest a much higher proportion of its physical infrastructural investment in railways, while India invested a higher proportion in power, and this proportion rose substantially during the period of comparison.

The underinvestment in railways in India has led to a marked deterioration in its capacity, quality, and reliability. The underinvestment problem is closely related to the problem of large subsidies borne by the railways in India, which amounted to 16.5 billion rupees (or approximately one billion U.S. dollars) in 1988/1989, about 82 percent of which is on account of passenger services owing to a policy of tariff restraint. (Railway Board: Status Paper on Indian Railways--Some Issues and Options, Government of India, New Delhi, March 1990). The investment needed by Indian Railways for capacity expansion, technologically up-grading and development in the next ten years, is estimated at over $US 50 billion (365 billion rupees in the eighth planned period, and 500 billion rupees in the ninth planned period).

Although the power sector has absorbed a much higher proportion of infrastructure development in India than in the comparable period in Japan, India continues to suffer from serious power shortages. This is due to not only underinvestment in physical capital structure as a whole, but also a result of the interdependence among physical infrastructure investments. The lower allocation to railways and other transport has raised the transport costs of hauling coal to the coal-fired power stations, and has contributed to the frequent power failures and lower efficiency of power plants in India. In many areas of India, there is excess capacity in power plants, despite a generalized excess demand. Among the reasons for such underutilization of capacity are inadequate transport facilities for coal and other fuels. Consequently, the underinvestment in railways has resulted in the inefficient use of overall resources.

Studies other than the one completed by Naoki Ono focused on a more limited aspect of infrastructural investment, such as a focus on just one component of the infrastructure, or on a delineated area, such as an urban setting or geographical region. For example, Jan Tinbergen assessed the effects of interregional transportation on production (Jan Tinbergen, "The Appraisal of Road Construction: Two Calculation Schemes," Review of Economics and Statistics, 1957, pp. 241-246). Y. Kanemoto and K. Mera explored the benefits of capital investment in transportation in their paper "General Equilibrium Analysis of the Benefits of Large Transportation Improvements," published by the University of Isubula in Japan. In a Boston

University mimeograph of 1983, entitled "Public Expenditure and the Performance of Regional Production Enterprises: Analytical and Policy Issues," T.S. Takshmanan and A. Elhance explored relationships between investment in infrastructure and production in a delineated area in an industrialized country.

Harvey Garn and Larry Ledebur prepared a report for the National Council on Public Works Improvement in the U.S.A., entitled "Infrastructure in Economic Development" (Aslan Institute, McLean, Virginia, 1986). In exploring the relationship between infrastructure and economic development, these authors stated, to begin with, that, "There are, of course, positive linkages between infrastructure and economic development" (ibid, p. 9). They based this statement on the observation that survey data confirms that infrastructure is important to business firms in making their location and expansion choices. However, they furthermore stated that, "It would be very helpful if the relative magnitudes of these causal linkages (between capital investments in infrastructure and production) had been clearly established empirically across infrastructure and production sectors and places. Unfortunately, the estimation problems have been very difficult to overcome" (ibid, p. 11). They concluded that only the study by Mera had documented some relationships between output and investments in infrastructure (Koichi Mera, "Regional Production Functions and Social Overhead Capital: An Analysis of the Japanese Case", Regional and Urban Economics, Vol. 3, 1973, pp. 157-186). Harvey Garn and Larry Ledebur stated the following about this study, "While this was a stride forward in recognizing the productive aspects of public capital, it was not possible for him to estimate the magnitudes of either the ability of enterprises to substitute public for private capital or the degree of complementarity between various elements of public and private capital. Filling this informational gap through additional research could make a major contribution to identifying efficient investment and determining the scale of investments that could be efficiently used in particular places" (op. cit., p. 12).

On this subject, in a report for the Advisory Commission on Intergovernmental Relations, entitled "Financing Public Physical Infrastructure," George E. Peterson and Mary John Miller stated the following: "At present we know next to nothing about the use of public capital facilities by business firms of various industrial classifications.... Until these basic pieces of the business-and-infrastructure puzzle are put together, we will be unable to go beyond unsupported (and often extreme) speculation about the role of capital in the next generation of industrial modernization".

The foregoing conclusions confirm the earlier observation that there are only a couple of systematic studies on the relationship between economic growth and investment in infrastructural projects. The nature and limitations of available data regarding investment in physical infrastructure make it difficult to conduct such systematic studies. Serial statistics on the magnitude and source of investment in physical infrastructure are generally very scarce; besides, such information is largely based on estimation by the residual method, which results in compounding the errors of estimation.

Another aspect of the problem relates to the serious and well-known limitations concerning public sector data on the operations and maintenance of physical infrastructure projects. The standard distinction between capital and current spending (a certain specified length--normally one year--in the life span of tangible assets) leads to cumulative bias towards investment in physical capital and, within this category of infrastructure, in the hard or capital-intensive systems and subsystems. This creates other difficult conceptional and operational problems of its own that could render the distinction between the capital and current budget highly arbitrary. These complexities and limitations imply at best a fair and approximate, quantitative indication of the broad national picture regarding infrastructure development and economic growth. In my effort to identify a relationship between investment in capital projects and economic growth, I have completed such an approximate quantitative indication, and will present the results after the completion of the survey of the literature.

Though there are only a few systematic studies on the relationship between economic growth and investment in physical infrastructure, the existing literature contains various very positive observations about the results obtained from investment in capital projects. In searching the existing literature, I noticed that this literature does not adhere to one precise definition of capital projects. However, the term usually refers to relatively large projects that have a high proportion of imported capital goods that generally incorporate a high level of technology. The most prominent sectors involved are energy, telecommunications, transportation, and waste water treatment plants. Thus far, AID has defined capital projects as: "Projects and supporting activities which encourage economic development by creating, replacing, or restoring productive physical assets in a developing country". By focusing on physical assets, this definition includes the bricks and mortar of construction along with capital equipment and machinery. The supporting activities mentioned in AID's definition of a capital project include training, technical assistance, and equipment to support the planning, development, management, operations, and maintenance of the capital project.

B. REVIEW OF THE EXISTING LITERATURE

Though the existing literature does not adhere to a strict definition of capital projects, the important contribution of such projects to economic development is well documented in this literature. This observation can be concluded from the following specific references.

Mikesell stated that most development practitioners have recognized the importance of capital projects for economic growth. He emphasized that capital investment continues to be essential for economic growth, whether derived from domestic savings or external flows. Mikesell further elaborated that a supportive policy environment and human capacity are important to enable the capital projects to function well (Mikesell, R., The Economics of Foreign Aid and Self-Sustaining Development, Westview Press, Boulder, CO, 1982, pp. 129-141).

Diewert focused on the measurement of the economic benefits of investments in infrastructure and concluded that these benefits can be significant. He included in the major types of infrastructure investments the following: utilities, such as water, electricity, natural gas, and

sewage; communications; transportation, such as roads, railways, airports, seaports, and canals; and, land development projects, such as drainage improvement projects, flood control, irrigation, pest control, and erosion control (Diewert, Walter E., The Measurement of the Economic Benefits of Infrastructure Services, Springer-Verlag Publishers, Berlin, 1986).

The World Development Report 1988, published for the World Bank by the Oxford University Press, stated inter alia: the importance of rural infrastructure in productivity has long been recognized. Rural roads allow inputs and outputs to be more efficiently transported between farms and markets. Irrigation increases the yield from agricultural land. Rural electrification expands the area under irrigation through the use of pumps and offers power for rural non-farm enterprises. Residential water supply may bring health benefits and, hence, a more productive labor force. Many of the benefits of rural infrastructure accrue to society at large (World Development Report 1988, Oxford University Press, New York, 1988, pp. 148-149).

Michalapoules et al. arrived at the same conclusion with respect to capital investments in rural infrastructure, such as roads, electrification, irrigation, and communication. Specifically, he stated that, "During the last decade, numerous studies have documented the strong positive impact of rural infrastructure investment on both the level and distribution of income in rural areas. Part of the positive impact is due to the direct impact on agricultural production; part is due to the more efficient functioning of input and product markets; and part is due to the multiplier effects of the income generated during both the initial construction phase and later through the impact of agricultural production and marketing on the demand for labor". (Krueger, Michalopoules, and Ruttour, Aid and Development, Johns Hopkins University Press, Baltimore, 1989, p. 138).

Hilling stated that, "Transport is one of the universal inputs in the development process and its influence is pervasive. A major United Nations report concluded that in most developing countries a lack of transport facilities is one of the main factors causing poverty and a major deterrent to rapid economic and social progress. While never inevitable, the economic effects of road investment may be profound. Roads provide access to domestic markets and are an essential stimulus for agricultural improvement and expansion, a critical factor in areas where the population is predominantly rural and dependent on farming" (Hilling, David, "The Infrastructure Gap," published in The Third World, edited by A.B. Mountjoy, St. Martins Press, New York, 1979, pp. 87-89). Hilling also concluded that there is general agreement on the importance of investments in infrastructure for the developmental process (ibid, p. 84).

Chaudhuri, citing Rosenstein-Rodan's "Big Push" theory, emphasized the importance of capital projects in their role to create investment opportunities in industries. He concluded that, "Social overhead capital comprises all those basic industries like power, transport, or communications, which must precede the more quickly yielding, directly productive investments and which constitute the framework of infrastructure and the overhead costs of the economy as a whole" (Chaudhuri, Marinal D., "Infrastructure and Location" in Policies for Industrial Progress in Developing Countries, edited by Cody, Hughes and Wall, Oxford University Press, New York, 1980, p. 237). Hughes stated that the benefits of infrastructure are countless and that, "In the short-to medium-term, lack of transport and adjacent markets is a serious deterrent to

industrialization" (Hughes, Helen, "Achievements and Objectives of Industrialization" in Policies for Industrial Progress in Developing Countries, edited by Cody, Hughes and Wall, Oxford University Press, New York, 1980, p. 34).

Chaudhuri, again citing Rosenstein-Rodan, stated that, "... the absence of infrastructure inhibits the setting up of production industries in backward regions, whether in mature industrial economies or in developing economies" (Chaudhuri, M.D., op cit., p. 236). Chaudhuri furthermore concluded that development economists, by and large, have recognized the importance of capital investments in infrastructure and the resulting external economies (ibid, p. 238). Though Chaudhuri recognized the importance of various types of capital investments in infrastructure, he singled out investments in transportation as extremely important. He stated, among others, that, "... the expansion of the transport system can trigger a process of self-sustained growth. The development of a transport network links different regional markets of an economy and leads to better allocation of resources through a more rational division of labor. In the short run, the reduced transport costs that result from expansion of the system create greater demands for the products of a region. Because delivery prices for consumer goods are lower, benefits accrue to consumers as well .... projects of this sort are built not to meet existing needs but to create new ones. Their role is that of trail blazers" (ibid, pp. 248-249).

Michalopoules et al. concluded, among others, that, "The absence of transport, power, and other infrastructure is an important barrier to economic development for a variety of reasons:

1. a certain minimum of infrastructure is a precondition to any economic activity and essential to the transformation of subsistence economies to market economies;

2. infrastructure activities generate significant external economies and, as such, can provide stimulus to other economic production;

3. the presence of indivisibilities and scale economies in these activities make them attractive candidates for investments in the eyes of supporters of the "big push" doctrine, such as Rosenstein-Rodan". (Krueger, Michalopoules, & Ruttour, Aid and Development, Johns Hopkins University Press, Baltimore, 1989, p. 125).

Michalopoules et al. also emphasized the importance of investments in roads. With respect to transportation, he stated that, "The potential benefit of new infrastructure in stimulating development is undeniable. A USAID evaluation showed that where new roads made transport possible for the first time, costs were greatly reduced ... similarly, new road projects substantially improved prices received by farmers and reduced prices paid for inputs, such as fertilizer. Improved transport also permitted farmers to diversify cropping patterns to include more perishable cash crops and to increase the land area under cultivation" (ibid, p. 126).

During the 1960s and 1970s, investments in infrastructure have also been recognized as being important. For example, Hoffman stated that "Investments in infrastructure provide the under-

pinnings of self-perpetuating economic advance" (Hoffman, P.G., World Without Want, Harper and Row, New York, 1962, p. 133). Black stated that infrastructure is a virtual prerequisite for internal programs and for attracting foreign private investment. He also stated that, "The lack or shortage of roads, ports, and power plants are well-known obstacles to economic development" (Black, Lloyd, The Strategy of Foreign Aid, D. Van Nostrand Company, Inc., Princeton, 1968, p. 54). Thorp, in assessing the role of foreign aid, concluded that, "To a large extent, official bilateral and multilateral capital have gone into basic development requirements such as roads, electric power, irrigation, education and health facilities, and other investments not directly profitable in themselves but essential for further growth" (Thorp, W.L., The Reality of Foreign Aid, Praeger, New York, 1971, p. 178). MacBean and Balasubramanyam concluded that with respect to attracting foreign investment, that it, "...requires that the developing countries should be able to provide the right 'climate' for F.P.I. (foreign private investment) by developing the necessary infrastructure and trading conditions" (MacBean, A.I., & Balasubramanyam, V.N., Meeting the Third World Challenge, St. Martins Press, New York, 1976, p. 212). Sutcliffe also concluded that, "There can be no doubt of the importance of investment in roads, power, and so on, to industrial growth" (Sutcliffe, R.B., Industry and Underdevelopment, Addison-Wesley, London, 1971, p. 102).

In the early 1960s, Broekmeijer also emphasized the importance of investment in infrastructure for economic development. Specifically, Broekmeijer stated that, "Today the underdeveloped nations badly need 'infrastructure,' .... these elements are essential for economic development and have to be available before there can be any thought of revenue-producing economic activities. The rate of development of the 'infrastructure' is decisive for the rate of increase in prosperity. Only the advanced countries will be able to provide the new nations with the capital required for the building up of their infrastructure. The faster the infrastructure has been built up, the sooner the economy will reach a point where it is self-propelling and shows a rapid acceleration" (Broekmeijer, M.W.J.N., Developing Countries and N.A.T.O., Sytnoff, London, 1963, p. 77).

In assessing economic growth and urbanization, Drakakis-Smith concluded that industrialization and urbanization require the ".... construction of a complicated system of infrastructure. Roads, electricity, water, sewerage, telephones and the like are required not only to produce manufactured goods, but also to support the labor force" (Drakakis-Smith, D., Economic Growth and Urbanization in Developing Areas, Routledge, London, 1990, p. 98). He also stated that, "In general, the local and national states seem to have been prepared to compromise to international pressure over the way in which services were provided. They recognized that without the major improvements in services and infrastructure, the economic future would be threatened" (ibid, p. 101).

More recently, the importance of various components of infrastructure for economic growth has been established as well. For example, Wheeler stated that, "Economic growth requires carefully prioritized infrastructure investment and the build-up or rehabilitation of productive capacity in agriculture, industry, and other sectors, with greater scope for private enterprise" (Wheeler, J.C., Development Cooperation in the 1990s, OECD, Paris, 1989, p. 2). Wheeler also stated that, "The expanded production and application of energy is essential for development

and the promotion of a higher quality of life for both rural and urban populations in developing countries" (ibid, p. 85). McCord said of infrastructure that, "Investment in such public facilities may have exceeded the capacities of any private investor and may not have returned quick, visible profits, but they laid the basis for an expansion in individual initiative and productivity" (McCord, W., & McCord, A., Paths to Progress, W.W. Norton and Co., New York, 1986, p. 286). Sundrun concluded that modern infrastructure is a prerequisite for adaptation of technology. He stated, among others, that, "Rapid growth of LDCs depends essentially on their adaptation of technology based on modern science; just as it contributed to the modern economic growth of DCs in the past two centuries. For this to be achieved, there must be a rapid expansion of education and modern infrastructure, and improvement of economic institutions" (Sundrun, R.M., Income Distribution in LDCs, Rutledge, NY, 1990, p. 308).

Mountjoy indicated the importance of investments in ports for developing nations. He stated, among others, that, "The progress of the LDCs is largely dependent on their ability to export their produce, mainly primary commodities, and import the capital goods and equipment which are the basis for development. It follows that most of their trade is with more advanced economies. In the case of Africa, a mere six percent of the total trade is intracontinental and the rest is directed overseas. The ports, therefore, assume a critical role in development and port improvements have been a major area of infrastructure investments (Mountjoy, A.B., op. cit., p. 92).

The list of others which emphasized the importance of capital investments in infrastructure during the 1970s is impressive, and certainly not limited to the ones mentioned heretofore. For example, Clifford and Osmond concluded that governments should make investments in infrastructure in order to generate investment opportunities for the private sector (Clifford, J., & Osmond, G., World Development Handbook, Charles Knight and Company, London, 1971, p. 24). Bognar simply stated that, "Economic growth is inconceivable without the development of the infrastructure. Yet, owing to the extreme scarcity of resources, the amount of investments must not, and cannot, exceed a certain level, since otherwise the directly 'productive' investments are neglected and this involves the danger of an economic disequilibrium" (Bognar, J., Economic Policy and Planning in Developing Countries, Akademia Kiado, Budapest, 1975, p. 441). Aharoni, while writing about how to attract business and entrepreneurs, stated that, "It is critically important that government supplies infrastructure services" (Aharoni, Y., Markets, Planning and Development, Ballinger Publishing Company, Cambridge, 1977, p. 180).

The 1980s also included a large number of development practitioners who pointed out the importance of capital projects for economic development. Their list is certainly not limited to the references mentioned thus far. As mentioned earlier, Mikesell indicated the relationship between capital investments and sound economic policies (see p. 17). He stated that, "Capital investment continues to be essential for growth, whether derived from domestic savings or external flows, but capital contributes to growth only in close relationship with the dynamic human, institutional, and governmental policy factors" (Mikesell, Raymond, The Economics of Foreign Aid and Self-Sustaining Development, Westview Press, Boulder, CO, 1982, pp. 15-22). He also examined economic models dealing with capital projects, productivity, and growth. On this subject, Mikesell stated that, "The increasing emphasis of modern growth theory on

productivity has greatly undermined the capital-oriented growth models which attributed a substantial portion of increased growth to capital inputs, including capital flows from abroad. Research on statistical analysis of the sources of growth in the United States and certain other developed countries dates from the 1950s, but adequate data has not been available for similar studies on developing countries. However, there is no reason to suppose that the share of growth attributable to productivity and technical progress is greatly different in developing countries than in undeveloped countries" (ibid, p. 11).

Clark stated, "For countries in the earliest stages of economic development, the most valuable investments are in infrastructure, particularly for transport, without which only a localized subsistence agriculture is possible, and for water supply, without which infectious diseases cannot be kept in check. Both roads and water supply must be public investments" (Clark, Colin, "Development Economics: The Early Years," in Pioneers in Development, edited by G.M. Meier and D. Seers, Oxford University Press, 1984, p. 75). Prebisch declared that, "The structural changes inherent in industrialization require rationality and foresight in government policy and investment in infrastructure to accelerate growth, to obtain the proper relation of industry with agriculture and other activities, and to reduce the external vulnerability of the economy" (Prebisch, Raul, "Five Stages in My Thinking on Development," in Pioneers in Development, edited by G.M. Meier and D. Seers, Oxford University Press, 1984, p. 180). Meier, while addressing the roles of public investments, noted that the World Bank, during the 1950s, already recognized the importance of these investments (roads, railways, power plants, ports, major irrigation works, and communication facilities) for the release of private initiative and private investments (Meier, G., Emerging From Poverty, The Economics That Really Matter, Oxford University Press, New York, 1984, p. 26).

Oshima, while assessing what is necessary for economic growth in the monsoon agriculture of Asian countries, expressed that, "To bring about balance and get the economy growing rapidly in a sustained fashion, irrigation and other infrastructures are needed to wipe out the underemployment through multiple cropping for diversified produce, and off farm employment in labor-intensive industries, instead of concentrating the resources in capital intensive industrialization as many countries did in the early post-war decades" (Oshima, H.T., "Human Resources in the Agri-Industrial Transition," in The Balance Between Industry and Agriculture in Economic Developments, edited by Chakravarty and Sukhamoy, St. Martins Press, New York, 1986, p. 19). Steidlmeier believed in addressing a long-term strategy for the development of infrastructure and claimed that, "Most important of all are energy, transport, storage, and communications. Without these, it is difficult for agricultural and industrial growth to take place". (Steidlmeier, P., The Paradox of Poverty, Ballinger Publishing Company, Cambridge, 1987, p. 300).

Hunt indicated the important relationship between investments in infrastructure and in light industry. She concluded, among others, that the "More or less simultaneous implementation of a range of investments in different branches of light industry and essential infrastructure will permit firms to find larger market outlets and to benefit from external economies" (Hunt, Diana, Economic Theories of Developments: An Analysis of Competing Paradigms, Barnes and Nobles, Maryland, 1989, p. 54). Todaro emphasized that, "Directly productive investments

must be supplemented by investments in infrastructure, including roads, electricity, water, sanitation, and communications". His book provides a number of examples of how infrastructure investments facilitate and integrate economic activities (Todaro, M.P., Economic Development in the Third World, Longman, New York, 1989, p. 115).

Bradford and Summers assessed the relationship between economic growth and investments in machinery and equipment. They used data from the United Nations comparison project and the Penn World Tables to demonstrate a clear, strong, and robust statistical relationship between national rates of machinery and equipment investment and productivity growth for the timespan between 1960 and 1985. Furthermore, they reported that equipment investment explains national rates of productivity growth better than other types of investments, and outperforms many other variables accounting for growth. For the time span, 1960-1985, Bradford and Summers concluded that each extra percent of gross domestic product invested in equipment was associated with an increase in gross domestic product growth of one-third of a percentage point per year (Bradford, J.B., & Summers, L.H., Equipment Investment and Economic Growth, National Bureau of Economic Research, Cambridge, MA, 1990).

Snickars decided that the quality of infrastructure provision affects the long run economic prospects of a region. Specifically, he stated that, "Infrastructure investment can be used as a lever for economic and social revitalization of a stagnant economic region. Thus, infrastructure can be used to strengthen the economic performance of an expanding region". Snickars remarked that these findings generally hold true for both developing and industrialized nations (Snickars, Folke, "Effects of Infrastructure Provision on Urban Economic Development" Tijdschrift Voor Economisch Social Geografie, 1989).

Ooi Guat Tin indicated the need to emphasize investments in infrastructure in the Far Eastern nations. He surmised that these nations may spend up to $119 billion on new infrastructure in the 1990s. He conjectured that the contribution to economic growth rates from such investments could be as much as three percent a year in the more rapidly developing Far Eastern countries (Ooi Guat Tin, "Infrastructure: Key to the 90s," Asia Business, July, 1989).

Denison researched the sources of economic growth in the United States and in nine other western nations, and reasoned that a substantial portion of growth rate can be attributed to productivity and technical progress resulting from capital investments. He found that during the period, 1929-1982, the United State's (potential) national income grew at an average annual rate of 3.18% and that capital inputs contributed 14.8% of the annual growth rate (Denison, Edward F., Trends in American Economic Growth, 1929-1982, Brookings Institution, Washington, DC, 1985).

Overton believed that infrastructure provision has almost always improved the quality of life for people through better access to health centers, electricity, facilitation of travel, a rise in standards of education, etc. He also emphasized that infrastructure should be considered as a necessary base for much rural and regional development. Furthermore, he advocated that donors should provide funding for infrastructure as a means of enhancing welfare and economic

development (Overton, John D., "Infrastructure and Multilevel Development: Some Examples From Fiji," Regional Development Dialogue, Vol. 11, No. 4, Winter, 1990).

The World Bank has recognized the importance of the contribution of capital projects to economic development since its inception. This observation has been documented in a number of World Bank publications, among which is one by Anwar Shah. He stated, among others, that the role of public infrastructure in stimulating economic growth and influencing productivity of private business is well-recognized in economic theory and has formed the genesis of the World Bank's lending policies since its early days (Shah, Anwar, Public Infrastructure and Private Sector Profitability and Productivity in Mexico, a World Bank publication, Washington, DC, 1988). A similar observation can be found in other World Bank documents, such as Indonesia: Developing Private Enterprise, a World Bank report, 1991. This study states that adequate infrastructure services are essential for sustained development of the private sector and economic growth. Infrastructure services affect the cost of doing business and competitiveness in international markets. The importance of each and every infrastructural component is duly noted. It emphasizes that electric power and available water are essential inputs for production. Transportation and telecommunications systems are critical in linking production points with domestic and foreign markets. Education and training services affect the productivity of laborers and managers. The study concludes that the growth of the private sector and the economy as a whole will suffer if these physical and human infrastructure services are limited in quantity, poor in quality, and/or high in cost.

In a recent study, concerning the development impact of a 10-year ESF (Economic Support Fund) Infrastructure Program in the Philippines, AID also concluded that the results of the program have been largely beneficial. The evaluation cites specifically that the program produced important social and economic benefits for poorer segments of the population. In those instances where capital investments in infrastructure produced results lower than expected, the report cites a lack of understanding of the existing economic environment as the major cause of this result. This is particularly true for road building projects. On balance, however, the ten-year experience in investing in capital projects in the Philippines has rendered very positive results (Impact Evaluation: Economic Support Fund Infrastructure Program, 1980-1991, AID, Washington, DC, 1991).

The American Consulting Engineering Council is very supportive of the important role of capital projects in supporting economic growth. A recent study of this Council makes a number of recommendations to the U.S. foreign assistance program for the 1990s (American Consulting Engineering Council, Engineering Services in a U.S. Foreign Assistance Program for the 1990s, Washington, DC, 1988). This study argues that by abandoning capital projects and other modern technology-oriented programs, in countries where they are an appropriate form of development assistance, a balanced approach is eliminated that could have generated more returns for the United States, while also better serving the needs of the countries being assisted. This study logically argues that the U.S. needs to strategically link its foreign assistance to areas where it holds a competitive position regarding current leading technology. To match U.S. strengths with the economic needs of developing nations obviously makes sense, and it is difficult to see how this would violate any development precepts. This approach would have the

further advantage of reducing the dominance of other countries in key fields, e.g., the Japanese targeting of telecommunications in Southeast Asia and the Pacific. The United States has often lost out on excellent opportunities that our competitors have recognized. The French, for example, vigorously promoted their tunneling and subway mass transit technology, winning competition for subway projects in Mexico City; Santiago, Chile; Sao Paulo, Brazil; and Seoul, South Korea.

The Council's report is not limited to the emphasis on the importance of capital projects only. It also recognizes the importance of training, technology, and institutional support. It observes that most capital projects require some type of training component to achieve sustainable results. The role of technology transfer is very important and involves the conveyance of a methodology. Both training and technology transfer are essential to institutional building which, in turn, is critically important to a country for prosperity and growth. The American Consulting Engineering Council recommends that the U.S. foreign policy agenda for the 1990s recognize the critical importance of capital projects in economic development together, where necessary, with the provision of training, technology transfer, and institutional strengthening.

This comprehensive survey of the literature renders one primary conclusion; that is, capital projects have made, and can make significant contributions to economic development.

C. INDICES REFLECTING THE RELATIONSHIP BETWEEN INVESTMENT IN INFRASTRUCTURE AND ECONOMIC DEVELOPMENT

Although I am quite aware of the complexities and limitations of an analysis attempting to measure results from investment in physical infrastructure, I did find it desirable to at least try to identify whether such investments render positive results. That is, given the limited availability of data, I concentrated on an increase in gross domestic product (GDP) attributable to an increase in investment in a particular type of infrastructure. Following this route, one postulates that an increase in investment in infrastructure renders enhanced economic development even though a causal linkage from increased economic development to new infrastructure likely also exists. That is, mutual causality, from capital formation in infrastructure to economic development and the reverse, represents reality. This realization presents a major challenge in estimating how much of observed change is attributable to the prior availability of infrastructure and how much to economic development. In spite of these analysis problems, one would expect enhanced capital formation to render economic progress if, indeed, the investment were not wasted. It is for this reason that I performed the following analysis for six developing nations, i.e., Botswana, Egypt, India, Kenya, Korea, and Pakistan:

1. For a comparable time span, data was collected for additional capital formation (investment) for the following categories of physical infrastructure: mining and quarrying; manufacturing; electricity, gas, water; construction; transportation, storage, and communication; and, total gross fixed capital formation in physical infrastructure. (Note that total gross fixed capital formation is not equal to the summation of the

categories of physical infrastructure mentioned here, because some categories, such as school buildings and hospitals, were omitted.)

2. In accordance with the computational procedure of the International Monetary Fund, the following annual quantities were arrived at: GDP attributable to additional capital formation in each infrastructure category identified under (1).

3. The annual change was calculated for the quantity computed under (2).

4. Recognizing a time lag of approximately two years between investment in physical infrastructure and expected results, the annual change computed under (3) was divided by the (additional) capital formation two years earlier.

The foregoing ratio analysis renders an index which is to be interpreted as follows: A positive index denotes an increase in economic development (GDP) attributable to additional capital formation in the identified category of physical infrastructure; a negative index denotes a decrease in economic development (GDP) attributable to (additional) capital formation in the identified category of physical infrastructure (in the latter case, a misallocation of resources had taken place). The results of this analysis are presented in Tables I-1 through I-6 for Botswana, Egypt, India, Kenya, Korea, and Pakistan, respectively. The following primary conclusions can be reached from the detailed data of Tables I-1 through I-6:

1. The vast majority of indices shown in these tables are positive, thereby showing that investment in physical infrastructure is profitable.

2. Although a few of the indices shown in these tables are negative, every single ratio for total activity in each country is positive, thereby indicating that total additional capital formation in physical infrastructure has had a positive effect on economic development in each of the countries concerned and for each of the identified years.

3. The few negative indices shown in Tables 1 through 6 are primarily in the category "Mining and Quarrying". These negative indices are explained mainly by the decrease in world market prices for the output mined in these countries. The other few negative indices shown in the tables are related to the recessions prevailing in these nations during the early 1970s and 1980s.

The foregoing conclusions confirm the earlier results from the extensive survey of the existing literature; that is, capital projects have made, and can make significant contributions to economic development.

TABLE I-1

Index Denoting Relationship Between Investment and Economic development

by Type of Infrastructure --- Botswana

Ratio Analysis by activity and year	1970	1971	1972	1973	1974	1975	1976	1977	1978
Mining and Quarrying						1 75	-0 16082	-0 07328	-0 08296
Manufacturing						26 125	16 64912	6 006329	12 16667
Electricity,Gas, And Water						0 578125	0 438596	1 265823	0 25641
Construction						3 916667	3 859649	1 392405	1 128205
Transportation, Storage, and Communication						3 8125	0 122807	0 088608	0 089744
Ratio for total activity						3 3725	1 92807	1 391139	1.408974

Ratio Analysis by activity and year	1979	1980	1981	1982	1983	1984	1985	1986
Mining and Quarrying	-0.0303	0.308282	0.1912	0.061075	0.036066	0.117188	1.156805	
Manufacturing	10.78409	-2.11656	-14.7992	17.03583	7.796721	13 2875	21 88609	
Electricity,Gas, And Water	#DIV/0!	1.288344	0.334672	0.428882	0.12178	0.207031	0 258203	
Construction	2	1.165644	1.86747	-0.2823	4.180328	-1.78125	4.112426	
Transportation, Storage, and Communication	0.106061	0.613497	0.42838	1.172638	0.137705	0.515625	0 934911	
Ratio for total activity	1	0.495092	0.010843	0.836482	0.827541	1.120625	1 576331	

Source: Compiled from data in: National Accounts Statistics: Main Aggregates and Detailed Tables, United Nations, 1971-1990; and Statistical Sources, IMF, 1971-1990.

TABLE I-2

Index Denoting Relationship Between Investment and Economic development

by Type of Infrastructure --- Egypt

Ratio Analysis by activity and year	1970	1971	1972	1973	1974	1975	1976	1977	1978
Mining and Quarrying			0.483881	0.705936	0.636214	0.556515	5.878075	3 475652	2 33252
Manufacturing			0.719324	0.546575	0.492593	0.510679	1 001576	0 655439	0 505836
Electricity,Gas, And Water			0.274178	0.266567	0.240329	0.210223	0 304412	0 163439	0.142759
Construction			3.301408	9.632877	8.681481	7.593952	8 786765	4.72332	1 373563
Transportation, Storage, and Communication			0.278261	0.282939	0.295257	0.181745	0 841124	0.422003	0.424801
Ratio for total activity			1.063211	1.034082	0.931951	0.815205	2 707132	1 455217	1.269552
Ratio Analysis by activity and year	1979	1980	1981	1982	1983	1984	1985	1986	
Mining and Quarrying	2.174646	4.076952	-0.22502	5.344684	1.122358				
Manufacturing	0.334691	0.788738	0.41603						
Electricity,Gas, And Water	0.074991	0.026061	0.08947	0.072435	0.183198				
Construction	2.167211	0.147839	1.139736	1.801096	0.878049				
Transportation, Storage, and Communication	0.363053	0.815449	0.374517	0.389894	0.324005				
Ratio for total activity	1.001551	1.720622	0.847586	0.889389	0.61252				

Source: Compiled from data in: National Accounts Statistics: Main Aggregates and Detailed Tables, United Nations, 1971-1990; and Statistical Sources, IMF, 1971-1990.

TABLE I-3

Index Denoting Relationship Between Investment and Economic development

by Type of Infrastructure --- India

Ratio Analysis by activity and year	1970	1971	1972	1973	1974	1975	1976	1977	1978
Mining and Quarrying			0.001602	0.00072	0.000621	0.000557	0.000718	0.000393	0.000206
Manufacturing			0.000987	0.001044	0.000808	0.000767	0.000814	0.000522	0.000647
Electricity,Gas, And Water			0.000152	0.000133	0.000132	0.000119	0.000266	0.000175	0.000153
Construction			0.002141	0.001899	0.001661	0.001489	0.001586	0.001313	0.001144
Transportation, Storage, and Communication			0.000434	0.000388	0.000309	0.000278	0.000402	0.000332	0.000347
Ratio for total activity			0.001129	0.001005	0.000876	0.000785	0.000809	0.000668	0.000581
Ratio Analysis by activity and year	1979	1980	1981	1982	1983	1984	1985	1986	
Mining and Quarrying	0.000231	0.000657	0.002586	0.000784	0.000327	0.000192	0.000129	0.000363	
Manufacturing	0.000524	0.000522	0.000849	0.000543	0.000718	0.000559	0.000599	0.000457	
Electricity,Gas, And Water	0.00013	9.58E-05	0.000135	0.000138	0.000157	0.000148	0.000176	0.000124	
Construction	0.001021	0.003748	0.002053	0.001998	0.002133	0.002343	0.00213	0.002358	
Transportation, Storage, and Communication	0.000311	0.00019	0.000561	0.000571	0.000486	0.000405	0.000507	0.000456	
Ratio for total activity	0.000521	0.001137	0.001108	0.000666	0.000931	0.000666	0.000801	0.000686	

Source: Compiled from data in: National Accounts Statistics: Main Aggregates and Detailed Tables, United Nations, 1971-1990; and Statistical Sources, IMF, 1971-1990.

TABLE I-4

Index Denoting Relationship Between Investment and Economic development

by Type of Infrastructure --- Kenya

Ratio Analysis by activity and year	1970	1971	1972	1973	1974	1975	1976	1977	1978
Mining and Quarrying			0.176991	0.145833	0.060976	0.166667	0.100985	0.165289	0.141379
Manufacturing			0.95649	0.692308	0.465208	0.400309	1.008539	0.912587	0.704957
Electricity,Gas, And Water			0.356195	0.222222	0.196341	0.126984	0.59803	0.358914	0.190282
Construction			1.09882	0.863426	0.908537	0.827778	2.29064	1.921488	1.603448
Transportation, Storage, and Communication			0.190757	0.142178	0.181989	0.134722	0.394089	0.267611	0.275862
Ratio for total activity			1.099823	0.862986	0.757805	0.690389	1.330197	1.115661	0.931241

Ratio Analysis by activity and year	1979	1980	1981	1982	1983	1984	1985	1986
Mining and Quarrying	0.102564	0.134241	0.033333	0.11236	0.104828	0.170659	0.202497	
Manufacturing	0.492147	0.550827	0.382176	0.59069	0.413103	0.818862	0.512621	
Electricity,Gas, And Water	0.172934	0.084144	0.326235	-0.35061	0.052261	0.163854	0.244626	
Construction	0.894231	0.88489	0.757778	0.564366	0.368276	-0.10966	0.748613	
Transportation, Storage, and Communication	0.174359	0.12192	0.151852	0.495515	-0.00526	0.40519	0.261211	
Ratio for total activity	0.692359	0.691362	0.729481	0.835169	0.576483	0.475913	0.990291	

Source: Compiled from data in: National Accounts Statistics: Main Aggregates and Detailed Tables, United Nations, 1971-1990; and Statistical Sources, IMF, 1971-1990.

TABLE I-5

Index Denoting Relationship Between Investment and Economic development

by Type of Infrastructure --- Korea

Ratio Analysis by activity and year	1970	1971	1972	1973	1974	1975	1976	1977	1978
Mining and Quarrying			#DIV/0!	2.847059	2.553341	1.752212	2.618557	1.992157	1.509658
Manufacturing			4.073168	2.887788	3.514822	1.534923	4.088351	2.488267	1.745947
Electricity,Gas, And Water			0.488501	0.274183	0.218575	0.192851	1.025052	0.649804	0.590966
Construction			10.22125	9.179085	8.232122	5.649236	27.97577	10.64157	5.376226
Transportation, Storage, and Communication			6.125182	2.750327	1.409479	0.677072	1.675902	0.805263	0.891873
Ratio for total activity			2.193392	1.969752	1.766542	1.212277	2.708881	2.060871	1.561733

Ratio Analysis by activity and year	1979	1980	1981	1982	1983	1984	1985	1986
Mining and Quarrying	1.049587	1.923077	1.523894	-0.08533	0.402908	0.028298	0.315476	0.569368
Manufacturing	1.130144	1.043693	1.016338	0.656318	1.177643	1.005455	0.647878	1.100789
Electricity,Gas, And Water	0.293447	0.436317	0.294486	0.174233	0.259349	0.273473	0.144156	0.379057
Construction	3.737741	3.504274	1.235404	2.17979	2.474158	1.22261	1.384199	0.633806
Transportation, Storage, and Communication	1.007619	1.083808	1.065428	5.281759	0.278349	0.335357	0.123681	0.35641
Ratio for total activity	1.085789	0.897169	0.926396	0.588104	0.726162	0.568998	0.443864	0.602265

Source: Compiled from data in: National Accounts Statistics: Main Aggregates and Detailed Tables, United Nations, 1971-1990; and Statistical Sources, IMF, 1971-1990.

TABLE I-6

Index Denoting Relationship Between Investment and Economic development

by Type of Infrastructure --- Pakistan

Ratio Analysis by activity and year	1970	1971	1972	1973	1974	1975	1976	1977	1978
Mining and Quarrying								#DIV/0!	1.140688
Manufacturing								0.766434	0.579169
Electricity,Gas, And Water								0.24589	0.306736
Construction								1.789846	1.545747
Transportation, Storage, and Communication								0.618063	0.533772
Ratio for total activity								1.078854	0.93172
Ratio Analysis by activity and year	1979	1980	1981	1982	1983	1984	1985	1986	
Mining and Quarrying	1.041633	#DIV/0!	#DIV/0!	1.445093	1.803799	3.577597	6.16813	1.541847	
Manufacturing	0.470111	0.782834	0.733682	0.727145	1.276455	0.671831	0.650625	0.947037	
Electricity,Gas, And Water	0.2801	0.382043	0.207293	0.243758	0.33961	0.020507	0.378001	0.113451	
Construction	1.411517	-0.45986	0.643382	1.349685	2.418961	2.516302	1.052586	1.831901	
Transportation, Storage, and Communication	0.584904	0.977077	0.410839	0.429262	0.671764	0.662328	0.568394	0.422859	
Ratio for total activity	0.850779	1.304564	1.073916	0.979452	1.16649	1.072627	1.02489	0.849882	

Source: Compiled from data in: National Accounts Statistics: Main Aggregates and Detailed Tables, United Nations, 1971-1990; and Statistical Sources, IMF, 1971-1990.

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PART II

TIED AID PRACTICES OF DONOR COUNTRIES OTHER THAN THE U.S.

A. INTERPRETATION OF TIED AID

Tied aid is usually defined as concessional financing linked to procurement of goods and services in the donor country. Though the primary purpose of tied aid may be to assist a developing economy, tied aid also has a commercial motivation in that it seeks to promote artificially the donor country's exports (especially of capital goods) while aiding economic development. The Development Assistance Committee (DAC) has provided a definition of tied aid and has contrasted this concept with the concepts of untied and partially untied aid. The DAC Guiding Principles on Associated Financing and Tied and Partially Untied Official Development Assistance (April, 1987) refers to **tied aid** as loans or grants which are either, in effect, tied to the procurement of goods and services from the donor country, or which are subject to procurement modalities implying limited geographic procurement eligibility. The limited geographic procurement eligibility can, for example, refer to an aid agency of a member state of the European Community, which would allow the recipient country the choice of procurement in any European Community nation. The DAC defines **partially untied aid** as loans or grants which are, in effect, tied to procurement of goods and services from the donor country and from a restricted number of countries, including substantially all developing nations. The DAC defines **untied aid** as loans or grants which are, in effect, freely and fully available to finance procurement from substantially all developing countries and from OECD nations. Funds for local cost financing are also considered to be untied aid.

The definitions of tied, partially untied and untied aid employed by the DAC seem quite straightforward at first glance, but are rather difficult to apply when it comes to precisely assessing the nature of tied aid relationships. The definitions themselves imply that tying is not only determined by formal agreements, but also by informal understanding, or even as a secondary consequence of an arrangement already in effect. Examples of informal tying abound. The phenomenon of "mutual interest" or "silent understanding", often based on bilateral relations which go beyond the donor-recipient aid relationship, can play an important role in procurement practices. The initiative in development projects is often taken by experts who are formally or informally involved with the donor's aid policy. Traditional patterns of procurement are often reinforced because information costs are considered too high for "shopping around". Even if the donor does not directly oblige the recipient government to make procurement in the donor country itself, the choice of the sectors supported by the donor can produce a similar result. The potential impact of monetary unions between donors and recipients, as is the case with the Franc zone between France and its former African colonies, may also result in tied aid practices.

The tying of aid may adversely affect optimal, global trade patterns, because procurement is linked to a donor country rather than the best possible source. It must be recognized, however, that, if tying is meant to expand exports of a donor country, then it is only relevant to the extent to which it achieves this goal. In other words, it is not only critical to know whether a tying regime can be effectively imposed on a recipient country, it is equally important to determine whether the impact of tying does, in fact, create a net expansion of the donor's exports. It is possible that a portion of the exports financed by tied aid would have been delivered to the recipient even in the absence of such financing. Catrinus Jepma refers to the degree to which

tying results in non-additional export flows as the "fungibility concept". Jepma furthermore observed that if the flow of exports generated by tied aid is not additional, the tying regime is ineffective from an economic standpoint, even if tying is "effective" in terms of official definitions. (Catrinus J. Jepma, The Tying of Aid, Development Centre Studies, Development Centre of the Organization for Economic Cooperation and Development, Paris, 1991, p. 21). Considerable methodological problems hinder the possibility of arriving at any solid conclusions concerning real impact of tying on a donor's economy because of fungibility. One faces the question of the reliability of non-objective respondents if one decides to derive the information from inquiries among the participants. If, instead, one tries to derive the size of fungibility from ex post statistical data, one faces the issue of developing a suitable "antimonde" (ibid, p. 21).

The difficulties regarding the precise assessment of the nature of tied aid relationships are not going to be resolved in the foreseeable future, and will probably be accompanied by an increasing interaction between aid, trade, and investment flows in the overall economic relationship between the industrialized and developing countries. This latter expectation is based on the observation that the importance of infrastructure to industrialization has grown during the 1980s and early 1990s as increasingly more developing nations adopt private sector and export-driven growth strategies based on rapid industrialization. Starting with the East Asian newly-industrialized economies and then spreading to, among others, the nations of the Association of Southeast Asian Nations (ASEAN), China, Turkey, and Mexico, adequate power generation, telecommunications, and transportation have become critical bottlenecks to sustained high levels of growth. Investments in these infrastructure capital projects encompass a very large part of long-term external financial needs and provide much of the technology base for industry. Bilateral aid for such capital projects has a direct commercial impact through capital projects programs and related technical assistance. The limited data on past tied aid practices, together with the importance of capital projects and the prevailing uncertainty concerning the interpretation of the current Helsinki rules, may be an indication of the future extent of tied aid. The importance of capital projects and the prevailing uncertainty regarding the interpretation of Helsinki rules are addressed in the components of this report entitled "Contribution of Capital Projects to Economic Development: A Comprehensive Survey" and "The International Arrangements on Officially Supported Export Credits: Deadlocked, Locked-in, and Unlocked Issues", respectively. To the extent that information is available, past tied aid practices are discussed in the forthcoming text.

B. PAST TIED AID PRACTICES

On April 20, 1989, the Eximbank transmitted (as mandated by the 1988 Omnibus Trade and Competitiveness Act) a report on tied aid credit practices to Congress. This report was the result of an interagency study that commenced during the summer of 1988. The report states, inter alia, that OECD data covering tied aid by member countries from mid-1987 to mid-1988 had showed an increase in total tied aid. The central conclusion of the report is that the U.S. might be experiencing perhaps $400 million to $800 million per year in lost sales because of tied aid. This relatively modest figure of $400-$800 million per year leads the report to conclude

that one "cannot find aggregate trends that imply noticeably adverse effects on either U.S. market share or industrial structure" (The April, 1989, Eximbank Report on Tied Aid Credit Practices, Chapter 5, p. 2). As Ernest H. Preeg indicated, the $400 million to $800 million per year in lost sales for the U.S. because of tied aid is grossly understated. Preeg indicated that the estimate of U.S. export loss per year at that time should be between $2,402 million to $4,797 million (Ernest H. Preeg, The Tied Aid Credit Issue: U.S. Exports Competitiveness in Developing Countries, The Centre for Strategic and International Studies, Washington, DC, Volume XI, No. 11, 1989, pp. 35, 38). The grossly understated $400-$800 million of lost sales to the United States, as mentioned in the Eximbank's report on tied aid credit practices, is incorrect because of the following methodological errors:

1. The estimate is based on a survey analysis of U.S. firms in five selected sectors of capital goods (telecommunications equipment, computer equipment, electric power generating equipment, rail transportation equipment, and earth moving equipment) and no attempt was made to extrapolate either the company-specific findings to the sector as a whole, or the sector-specific findings to the entire scope of capital goods-producing industries.

2. The survey of interviews was limited to cases where there was competitive bidding or potential bidding; a large share of tied aid credit financing is, however, simply a foreign aid loan for capital projects, often related to a prior, aid-financed feasibility study, which does not involve any form of potential bidding by suppliers. This is especially true for Japan, but also for other donor countries. Thus, a large number of projects fell outside the purview of the sample survey.

3. The survey was limited to projects where the degree of financial concessionality was less than fifty percent. The same Eximbank study states that "only one-sixth of DAC aid had a grant element below fifty percent, and only two percent had a grant element below thirty-five percent" (The April, 1989, Eximbank Report on Tied Aid Credit Practices, Chapter 3, p. 16). This observation means that up to five-sixths of tied aid credit projects fell outside the purview of the survey, and that the full estimated impact should be increased by a factor of six.

4. The survey result was an average annual level based upon the years 1985-88, even though there was a strong upward trend in the value of capital projects assistance during this period. Specifically, a comparison of 1987 with 1985-86 data for capital project commitments by six major donor countries indicates a seventy-seven percent increase and, in many cases, tied aid credit offers were significantly expanding.

Adjustments for the four methodological errors indicated above increase the range of estimated U.S. export losses by a factor of six, from $400-$800 million to $2.4-$4.8 billion (Preeg, op cit, pp. 36-38).

Catrinus Jepma indicated that estimates of tied aid can vary vitally, depending upon whether tying is specified for commitments or for disbursements. In the late 1980s, the DAC changed its reporting procedures on tying, focusing on commitments rather than on disbursements (Jepma, op cit, p. 22). This change in reporting procedures led to a breach in time series data, and calls for another adjustment. Jepma also concluded that official OECD statistics provide no definite answer to the question of whether or not tying has, in practice, increased (ibid, p. 22). A great deal of additional information is needed, especially concerning informal tying practices. With respect to the European situation, an overview of European country studies showed their conclusions to be largely unanimous: "Tying has been increasingly applied and more overtly than before, during the second half of the 1970s, and even more so during the 1980s" (O. Stokke (Ed.) European Development Assistance: Volume I: Policies and Performance, Volume II: Third World Prospectus on Policies and Performance, The European Association of Development Research and Training Institutes/The Norwegian Institute of International Affairs, Tilburg/Oslo, 1984, p. 43).

Though I fully agree with Jepma that official OECD statistics provide no definite answer to the question of whether or not tying has, in practice, increased, available data on tied and partially untied official development assistance (ODA) of 18 DAC members provide some insight into the size of such aid. The data of Table II-1, entitled "Tied and Partially Untied Official Development Assistance Commitments, 1985-87," provides such insight. The data of this table show a considerable increase in tied and partially untied aid during the period 1985-87, showing an increase of approximately forty percent in current dollars. This table also indicates, that during the period considered, U.S. tied aid declined, while it increased in the cases of France, Germany, Italy, and, most noticeably, Japan.

The increases in tied aid as observed from OECD statistics are most likely understated, in particular, in the case of Japan, because these statistics generally represent member country submissions that are, in some respects, disputed. The biggest controversy is about Japanese capital projects whereby the engineering portion of each project is tied to a Japanese engineering firm, while the remaining procurement is subject to Japanese engineering specifications and ... international competitive bidding. Japan submits these projects to the OECD as untied, while U.S. exporters consider them tied, including procurement through the engineering specifications. The OECD guidelines stipulate that if one part of a project is tied, the whole project should be considered as tied, and hence, the Japanese interpretation is incorrect. Nevertheless, Japan has been reporting to the OECD that infrastructure projects are already fully untied, even though engineering services are explicitly tied to Japanese companies. A compliant OECD Secretariat has been publishing the Japanese submission of information, thereby showing that sixty-five percent of Japanese economic aid has been fully untied (Ernest H. Preeg, "Japan's Development Aid" in Institutional Investor, September, 1991, pp. 18, 19). The Japanese officials then consistently cite the "independent OECD data" to illustrate Japan's "great progress" in untying aid. If, in accordance with the OECD guidelines, the forty-five percent of Japanese aid devoted to infrastructure projects, mostly with tied engineering, was shifted from the untied to the tied category, the touted sixty-five percent untied figure would drop sharply. Other practices

TABLE II-1

TIED AND PARTIALLY UNTIED OFFICIAL DEVELOPMENT ASSISTANCE (ODA) COMMITMENTS, 1985-1987*

	Million Dollars		
Country	1985	1986	1987
Australia	234	261	252
Austria	54	67	35
Belgium	74	239	222
Canada	617	636	795
Denmark	112	165	72
Finland	43	134	182
France	1,617	2,438	2,486
Germany	861	1,151	1,860
Ireland	12	18	18
Italy	800	1,770	1,941
Japan	1,776	1,735	3,203
Netherlands	242	506	733
New Zealand	10	13	23
Norway	98	117	161
Sweden	159	68	40
Switzerland	62	83	116
United Kingdom	471	665	835
United States	5,125	5,420	4,748
Total	12,368	15,486	17,722

* Excluding official development assistance used in associated financing.

Source: C.J. Jepma, The Tying of Aid, Development Centre of the OECD, Paris, 1991, p. 23.

prevailing in Japan significantly understate the size of this country's tied aid. As Preeg has indicated (ibid, pp. 18, 19), such practices include:

(i) Pre-project financing, such as for feasibility studies and training of local officials, is provided on a cash grant basis, fully tied to Japanese sources, with almost unlimited funding from the Japan International Cooperation Agency (JICA). This assistance facilitates paving the way for Japanese companies to implement the project.

(ii) Projects are funded through long-term loans, usually with an approximate forty percent grant element. Normally, the engineering portion of a loan is explicitly tied to Japanese firms, while the remaining procurement is subject to international competitive bidding. However, since a Japanese company draws up the detailed engineering specifications and help manage the bidding process, the result is a high degree of de facto tying of procurement despite the provision for competitive bidding.

(iii) The competitive bidding process is carried out by an implementing agency of the recipient country, such as a regional power authority, leaving the process open to influence by Japanese interests that have been involved since the pre-project state. Most remarkable, there is no requirement to announce who has won the competitive bidding and at what price.

Thus, while Japan has officially untied most equipment procurement for infrastructure projects, the net result has been a significant tying of aid in favor of Japanese companies. The official figures made available by the Japanese Government also overstate the procurement by companies in developing nations for Japanese aid projects. This is so, because the primary contractor for a Japanese aid project may be a firm based in the recipient country, but in almost all cases, these firms are part of joint ventures with Japanese firms, which own forty-nine percent of the venture. Thus, the technology- or equipment-intensive portion of the project is usually filled by the Japanese partner in the joint venture company.

Margee Ensign's research on the procurement that occurs under Japan's foreign assistance program confirms that official procurement figures greatly overstate the amount of procurement awarded to firms other than Japanese. In conducting her research, Ensign found it extremely difficult to locate the firms that comprised the five percent of American firms officially reported to have been awarded contracts. As a result of her research, Margee Ensign concludes that the loan component of Japan's aid program is effectively, though not officially tied. (The figures quoted here were provided in an interview of Margee Ensign. These and other findings of Dr. Ensign will be published in her forthcoming book.)

In contrast to Japan's loan program (the bulk of its foreign assistance), Dr. Ensign commented that Japan's grant program in Africa is a noteworthy example of an untied aid program. That is, in essence, Japan provides the funds for the program, and the United Nations Development Programme and Crown Agents administer and implement it. In this situation, the aid rather than commercial relationship is dominant. The dominance of an aid relationship, with heavy

emphasis on direct assistance to the most needy and on fast-disbursing financial support for urgent import needs, is valid for all donor agencies in the case of all the poorest countries (which are, principally, in Sub-Saharan Africa, and parts of South Asia and the Caribbean Basin).

The tying of Japanese aid is significantly facilitated by the extensive collaboration of a number of organizations which implement Japan's foreign assistance program. This organizational network and its routine practices probably mean that real untying of Japanese aid should not be expected in the foreseeable future. In this network, the Japan International Cooperation Agency (JICA) is primarily a grant-giving technical assistance agency which funds feasibility studies and other pre-project support. JICA operates somewhat similarly to the U.S. Trade Development Program (TDP), but the Japanese agency has received a much larger budget of approximately $1 billion per annum compared to TDP's $30-$40 million per year. JICA collaborates extensively and routinely with the Overseas Economic Cooperation Fund (OECF). OECF operates a project-oriented loan program and is Japan's central foreign assistance implementation agency. OECF provides soft loans directed mainly towards infrastructure projects and has a budget of approximately $4-5 billion per year. A third arm of Japan's foreign assistance program is Japan's Export-Import Bank, which is a more flexible organization than its U.S. counterpart. Japan's Export-Import Bank enjoys almost unlimited funding and is authorized to finance imports from developing nations, as well as exports. These exports are further facilitated by Japan's Ministry of Trade and Industry (MITI) under its commercial, as well as political risk insurance program. The MITI commercial/political risk insurance program for exporters is more extensive than the program of its U.S. counterpart, the Overseas Private Investment Corporation, which is limited to political risk insurance.

The sheer size of Japan's foreign assistance program is another indication of the significant size of Japan's tied aid to be expected in the foreseeable future. Japan was the largest overall aid donor in 1989, and is currently the largest donor in 26 nations. Japan focuses its aid on Asia, which receives seventy percent of all Japanese aid. In 1990, Japan's assistance to the Asia/Pacific region reached $4.0-4.1 billion, mostly for infrastructure projects. As was indicated during the aforementioned seminar on "Japanese Government Support for Trade and Investment in Developing Countries", this figure of slightly more than $4 billion is in contrast to U.S. assistance of slightly more than $1.0 billion to this region during the same year. Much of this U.S. assistance was directed towards the Philippines.

The Japanese foreign assistance program concentrates on project assistance and, in particular, on assistance for capital projects, rather than cash transfers or balance-of-payments support. In addition to bilateral assistance, Japan's foreign assistance program includes: joint and parallel financing of multilateral development banks' projects (with such financing usually only forthcoming if it is fairly certain that a Japanese company will win the contract); a $2 billion, officially "untied" fund, to support direct investment (usually joint ventures between Japanese companies and firms in Southeast Asian countries; and, a relatively small commodity import program). The officially untied funds to support direct investments in developing nations is probably the reason that Japanese investment in the Asia-Pacific region exceeded the U.S.

investment in this region during 1990; the Japanese and U.S. investments in the Asia-Pacific region totaled $11 billion and approximately $6.5 billion for Japan and the U.S., respectively.

During the seminar on "Japanese Government Support for Trade and Investment in Developing Countries," Ernest Preeg stated that the U.S. should realize that the new Helsinki rules will not substantially affect Japan's policies concerning tied aid, since most of this country's aid is already "officially untied" in the opinion of the Japanese Government. Ambassador Preeg furthermore noted that nearly all other donors are opposed to additional efforts aimed at untying capital projects assistance. In regard to possible overlap of development and commercial goals, Ernest Preeg identified capital projects as an area which he perceives as exemplifying successful, positive integration of development assistance, trade and investment goals. He, therefore, urged increased U.S. assistance for capital projects on the basis of developmental and trade merits. Ernest Preeg and Richard Cronin, a panelist in the seminar of April 30, 1992, concurred that, without a capital projects program of its own, the U.S. will be in a weak position to influence the behavior of other donors.

C. AID CHARACTERISTICS OF SELECTED DONOR COUNTRIES

No information can be obtained about future plans and practices of donor countries (other than U.S.) under the new Helsinki Arrangement. The best that can be done, therefore, is to attempt to understand the principal characteristics and mechanisms used in providing aid, and quality of aid of selected donor countries. Such an understanding can facilitate U.S. reactions to future, currently unknown activities of other donor countries. Also, each reader of this section of the report is invited to use his/her judgment in formulating expectations about specific donor's adherence to the new Helsinki Arrangement. Given the uncertainty about future plans of donor countries under the new Helsinki Arrangement, it would not be proper to provide my judgment which, by necessity, is subjective. The element of subjectivity in providing judgment is prevalent not only because of the unknown future plans of donor countries, but also because the information and data submitted to DAC (OECD) by member countries are not necessarily correct. The case of Japan fully illustrates how misleading available information can be.

The information provided in this section is obtained from various DAC, OECD, and Eximbank reports. These institutions, in turn, obtained this information from the OECD member states. Consequently, I can only hope that most of this information is more accurate than the data submitted by the Japanese Government.

In interpreting the available information about aid programs of donor countries, one must recognize that the orientation of aid programs can either be clearly stated, or it must be deducted from certain program characteristics. For example, commercial orientation can be pro-active with clear, though not necessarily stated, commercial objectives which dominate a program such as France's program outside Francophone Sub-Saharan Africa, and several OECD members' programs in China. Or, it can be passive, that is, the result of a program's lack of development discipline and staff to protect it from undue, commercial influence, as in the case of Italian aid.

A word of caution is necessary regarding the interpretation of the magnitude of untied aid reported by OECD members. It is very unfortunate that the DAC definition of untying refers to the stated intention at the point of committing aid. There are multifarious examples where the actual procurement appears to contradict the intention at commitment point, because actual procurement often is in the direction of the donor's sources. This is the reason that, in practice, procurement from donors' sources exceeds reported tied aid.

An attempt to understand the principal characteristics and quality of aid of selected donor countries is most useful if such an attempt is undertaken against certain guidelines. DAC has a substantial set of guidelines on aid policies and practices. Among these guidelines are parameters of aid effectiveness. DAC includes the following components as important parameters for aid effectiveness:

- Country programming, preferably based on country development strategies
- Development tests (including development rationale for project selection) comprising an effective project appraisal process
- Substantive aid policies in effect that reflect serious treatment of development issues (including environment, population, and women in development (WID)
- Policy dialogue
- Attention to institution building
- An effective program evaluation system

One may add that a critical mass of professional staff involved in the aid process is also an important parameter for an aid-effectiveness model. Commercial motivation, rather than aid effectiveness, plays an important role in the aid programs of various donor countries. In appraising aid programs of donor countries, it is, therefore, important to also recognize the characteristics of aid vulnerability to commercial motivation. The parameters of a model of commercial vulnerability can be listed as follows:

- Aid highly tied
- Proportionately high levels of capital projects and equipment-related aid in productive and social sector programs
- No development strategy/country programming
- Projects selected without development criteria

- A limited body of development policy
- An ineffective project appraisal process
- Negligible staff in the field and inadequate staff at headquarters.[1]

The vulnerability to commercial motivation in providing aid is high when the above features are prevailing. In such cases, private firms of the vulnerable donor agency will usually identify and formulate projects, resulting in high levels of tied aid. Among the major DAC aid programs, Italy's programs probably represent the best example of commercial vulnerability.

In addition to the parameters of aid effectiveness, DAC uses financial terms as an important aid quality factor. DAC employs a grant element norm of eighty-six percent for total official development assistance (ODA). This grant element norm is currently met by all OECD members except for Japan, Austria, and France (when its highly concessional aid to its overseas possessions/districts is excluded). The average grant share of DAC bilateral aid is seventy percent, with Japan having the lowest percentage of thirty-two percent. The average grant element of ODA loans is fifty-nine percent. Japan, France, and Italy have informally taken the position that loans constitute a more serious aid instrument than grants since loans must be repaid. The governments of these three countries also point out that loans leverage budgetary resources and, therefore, can increase aid volume. Supporters of loans rather than grants also indicate that loan capital is an appropriate instrument to finance projects with an internal rate of return high enough to justify its terms.

The foregoing observations should be born in mind in assessing the principal characteristics of donors' foreign assistance programs and the mechanisms they use to provide aid.

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[1] See the draft report of M. V. Dagata of January 28, 1992.

1. France

a. Principal Characteristics

Mixed credits are a central and integral element of both France's development assistance and export financing systems. One of the most striking features of French policy in this area is the absence of a clear demarcation between the domains of aid and export finance. It is generally the French view that limited aid resources are most effectively applied as investments in economic infrastructure, in particular, in transportation systems, power-generating facilities, and communication networks. For 1990, France reported a grant element of ODA and grant share of bilateral aid of ninety percent and sixty-eight percent, respectively; however, these percentages are inflated because they include "aid" to France's own overseas departments and territories.

France's terms are among the hardest within the DAC as illustrated by the eighty percent grant element of its bilateral aid to LLDCs against the DAC average of ninety-six percent in 1989-1990. France has two sources of tied aid credit: Caisse Centrale de Cooperation Economique (CCCE) and Treasury Funds. CCCE extends tied aid credit directly through its aid program. Treasury funds are mixed with export credits from the Banque Francaise du Commerce Exterieur (BFCE). Separate agreements are negotiated by the Treasury and BFCE with the recipient governments on the usage of these tied aid credits.

France's aid volume is the third highest among DAC members, with $6.6 billion in 1990, or .55 percent of GNP (the figure is $9.4 billion if "aid" to France's own overseas departments and territories were included). Francophone Sub-Saharan Africa is the recipient of approximately sixty percent of French bilateral aid.

b. Mechanisms

The principal institutions involved in French mixed credits are the Direction des Relations Economiques Exterieures (DREE), the Treasury, the BFCE, and the CCCE. The BFCE, a government-owned bank, takes the lead in providing the "commercial" (including the OECD Arrangement-rate) financing and the Compagnie Francaise du Commerce Exterieur (CoFACE), a semi-public, semi-private insurance company, provides credit insurance for commercial financing.

Acting under the auspices of the Ministry of Cooperation and the Treasury, the CCCE serves as a development bank and provides primarily tied aid to mainly Francophone nations in Africa. The institutions involved in providing development assistance funds used for project financing channel these funds through two basic mechanisms: (i) mixed credits granted under bilateral agreement known as "protocols" and, (ii) tied aid loans and grants provided by the CCCE. The CCCE loans and grants are available to approximately forty countries located in Sub-Saharan Africa, the Caribbean, and the Indian Ocean (most of the countries are former French colonies). The CCCE raises funds in domestic and international capital markets, while Treasury subsidies

enable it to provide concessional financing to eligible aid recipients. Most CCCE financing is used for capital projects and is tied to the procurement of French inputs. Protocols are generally entered into annually between the Government of France and the governments of those recipient countries that are not eligible for CCCE financing. Most protocols constitute classic mixed credit lines because they combine concessional Treasury loans with officially guaranteed commercial export credits.

2. Italy

a. Principal Characteristics

The Directorate General for Development Cooperation is responsible for foreign aid. Up to a maximum of twenty-five percent of the Directorate's foreign aid budget can be mixed with credits from the Mediocredito Centrale to create tied aid credits. Only developing nations with an annual per capita GNP less than $2,500 are eligible to receive tied aid credits from the Italian Government. The Italian Treasury supplies the Mediocredito Centrale, a public financing institution, with funds to cover interest subsidies and to replenish Mediocredito's endowment fund. These interest subsidies covered $6.7 billion in Italian exports in 1989. Italy's aid program is the fifth largest among DAC members and was $3.4 billion, or .32 percent of GNP in 1990. The grant element of Italy's ODA, approximately 91 percent in 1990, was close to the DAC average. The grant share of Italy's bilateral aid was sixty-five percent for that year. Over half of Italy's bilateral aid is allocated to Sub-Saharan Africa with heavy emphasis on East Africa and the Horn. Nearly twenty percent of Italy's bilateral aid goes to Latin America and the Caribbean, with Argentina, Bolivia, Brazil, and Peru the leading recipients. Approximately fourteen percent of Italy's bilateral aid is allocated to Egypt, Tunisia, and Morocco. Sectoral allocations favor infrastructure (twenty-two percent) and the productive sectors (twenty-seven percent), but even in social infrastructure activities, the emphasis is on machinery and equipment (for example, for the construction of hospitals).

b. Mechanisms

The overall policy formulation and aid implementation falls under the Interministerial Committee on Development Cooperation (CICS). The Minister of Foreign Affairs chairs the CICS, with the Ministers of Budget and Economic Programming of Treasury and of Foreign Trade also represented. A Steering Committee, chaired by the Minister of Foreign Affairs, and comprising Directors of the Ministries represented in the CICS and of Mediocredito Centrale, define the broad parameters of annual programs and authorizes expenditures in excess of two billion lire.

The mixed credit/tied aid program is administered by the Mediocredito Centrale through its Revolving Fund. In addition to the Revolving Fund, a policy to use grant funds for mixed credits is in place. These grant funds are not administered by the Mediocredito Centrale, but from a separate appropriation also under the policy control of CICS. The Italian Government's system of allocating bilateral tied aid/mixed credits is completely different from the U.S. Government's system. The Italian Government initiates mixed credit/tied aid financing offers

through government-to-government protocols established under joint committees. Mixed credit/tied aid financing is discussed during these meetings. An important factor for project selection is the commercial aspect with consideration given to market share and the significance of that sector to the Italian economy. This is an implied, rather than a stated policy.

3. Japan

a. Principal Characteristics

As Ambassador Ernest Preeg and Margee Ensign have demonstrated, unfortunately, one principal characteristic of Japan's aid program is the (purposely) incorrect submission of data to the DAC, and in official reports. While Japan claims to have untied most equipment procurement for infrastructure projects, the net result continues to be a significant tying of aid in favor of Japanese companies.

The Overseas Economic Cooperation Fund (OECF) provides tied aid to developing nations by combining its funds with Japan's Eximbank export credits. The stated rationale for Japan's aid is, perhaps purposely, confusing, although "world growth" is an agreed concept and indicative of an appreciation that development serves Japan's interests. Originally designed to promote exports, Japan's aid program continues to have commercial characteristics, including active involvement of business in project identification and implementation. Experts of the Japan International Cooperation Agency (JICA) play an important liaison role with Japanese business; this role is facilitated because various JICA experts work in recipient government ministries and are involved in project identification and formulation. With relatively hard terms and an emphasis on repayment, Japanese aid programs have had, and continue to have, distinctly commercial overtones. This aspect is further enhanced by the preponderance of project aid for economic infrastructure.

Japan relies heavily on foreign assistance as a foreign policy tool, and securing access to necessary raw materials has been a key foreign assistance objective. With a total official development assistance of approximately $9 billion, or .31 percent of GNP, Japan was the second largest bilateral donor in 1990, after the United States. Japan allocates about seventy percent of its bilateral aid in Asia, providing some $2 billion to just two recipients, Indonesia and China. The large volume of Japan's concessional finance, together with its concentration on capital projects and high-level of Japanese procurement, assure continuing concern on the part of U.S. exporters.

b. Mechanisms

The Ministry of Foreign Affairs, the Ministry of Finance, the Ministry of International Trade and Industry, and the Economic Planning Agency are all engaged in formulating development assistance policy; the Ministry of Foreign Affairs is considered the lead policy development agency. The Overseas Economic Cooperation Fund (OECF), providing project lending, and the

Japan International Cooperation Agency (JICA), providing technical and other, primarily pre-project implementation grant funded assistance, are the implementing agencies.

OECF and JICA are considered public corporations rather than official government agencies. As was indicated in the foregoing section of this report, OECF and JICA work closely together with Japan's Export-Import Bank, which enjoys nearly unlimited funding. Following a feasibility study carried out by JICA, the recipient nation requests a loan and presents supporting data that are reviewed by OECF and, where relevant, other Japanese government agencies. If the review is satisfactory, the government will indicate its willingness to support the project. After agreement on the amount and terms of the loan, there will be an exchange of notes which, one way or another, usually include assurance of the use of Japanese inputs. Following OECF's review and appraisal of the project, a loan agreement is concluded.

4. United Kingdom (U.K.)

a. Principal Characteristics

The stated responsibility of the aid program is to "promote sustainable economic and social progress, and to alleviate poverty in developing countries". The same report in which this primary responsibility is published (Bilateral Aid: Country Programs Report, October, 1987) also acknowledges that aid is only one aspect of bridging relations with the developing world, and that economic and trade policies are paramount. The Aid Trade Provision (ATP) was established specifically to provide tied aid credits. The ATP is administered jointly by the Department of Trade and Industry and the Overseas Development Administration, with cooperation from the Export Credit Guarantee Department (ECGD).

To create a tied aid credit, an ATP aid grant is combined with an ECGD export grant. In 1990, ATP's total budget was $155 million of which nearly $120 million was used for tied aid credits. Capital project assistance has been the single largest category of financial assistance. Tying of aid funds to U.K. purchases appears to be an element of British Government policy. This practice coincides with the long-standing theory of British aid that policies should be beneficial to the U.K. exporter whenever possible and sensible from a price and quality perspective.

U.K. aid is among the most highly tied of DAC aid programs with strict limitations on local cost financing. The British Government claims, however, that the commercial dimension of aid is kept in check by effective project screening and, more generally, by country programming and project appraisal procedures. The U.K. aid volume was $2.6 billion, or .27 percent of GNP in 1990. U.K. aid is ninety-eight percent grant-funded. Most of the bilateral aid is allocated to Sub-Saharan Africa (50%) and to Asia (37%).

b. Mechanisms

Oversight for the ATP program is centered in the Special Committee on Aid and Trade (SCAT), a group consisting of the Department of Trade and Industry, the Overseas Development

Administration, HM Treasury, the Bank of England, the Export Credit and Guaranty Department, and the Foreign and Commonwealth Office. The Foreign and Commonwealth Office usually takes an interest as an observer, but rarely is involved on an active basis. The mixed credit programs operate under the auspices of the ATP as follows: (i) the commercial banking community supplies the loan; (ii) ECGD subsidizes the interest rate down to consensus levels; and (iii) ATP subsidizes the interest rate down further to the minimum grant element. Only the interest rate subsidized by ATP is counted as official development assistance and only this portion is a charge to the ATP budget.

5. Germany

a. Principal Characteristics

Stressing that development aid must foster self-help, Germany's Basic Guidelines on Development Policy (adopted in 1986) emphasize the need for increased effectiveness of German aid and for support of structural adjustments undertaken by recipient countries under agreements with the International Monetary Fund and World Bank. While stressing development and the needs of low-income countries, German aid strategy also emphasizes the mutual benefit of the aid program and the need to protect the economic interest of Germany. The current emphasis appears in the introduction to the Basic Guidelines on Development Policy, which states: "In protecting our own interests, we are not by any means diminishing the interests of the developing countries. In cases where a nation's development program requires it to obtain goods from industrial countries, we try to insure that, if we are the supplier, our economy and workers benefit".

Mixed financing is normally tied to procurement in Germany, but, in some instances, third-country procurement is possible for partial amounts. This latter situation, for example, is true for local cost financing. Aid grants from the Bundesministerium fur Wirtschaftliche Zusammenarbeit (BMZ) are combined with export credit from the Kreditanstalt fur Wiederaufbau (KfW) to create tied aid credits. These credits are primarily used for infrastructure projects in the middle-income countries. In 1987, Germany extended $1.4 billion in tied aid credit offers. Federal funds channeled to the KfW are supplemented, for the extension of mixed credits, by funds raised on capital markets by the KfW. Thus, while the federal budget allocation determines the level of grants and aid credits that can be extended, it influences but does not determine the level of mixed credits extended.

To implement the policy of making development assistance "employment effective" for German industry when this is in accord with sound development policy, the Germans have relied increasingly on mixed financing and on advance bidding. Advance bidding, whereby public tendering precedes the final conclusion of an aid agreement, allows the German Government to conclude an agreement only if the contract is won by a German firm. Other means, such as project selection and design which favor German suppliers, and direct and indirect procurement restrictions, appear to be used as well, but the extent of their use is difficult to determine. There has been a growing discrepancy between the moderate level of tied bilateral assistance reported

by the German Government and the much higher and sharply rising share of actual procurement in Germany. The development assistance community has expressed concern about this discrepancy and about the rising de facto levels of procurement in Germany. The traditional German response is to affirm its right to look after its own economic interest when to do so is consistent with good development policy. Germany's dominant role in the European community, together with its large aid program and its access to the combined concessional financing resources of the Community, may influence the future aid policies and strategies of other European Community members.

In 1990, Germany official development assistance amounted to $6.3 billion, or .42% of GNP. German aid terms are close to the DAC average; i.e., its grant element is ninety-one percent, its grant share of bilateral aid is sixty-three percent (DAC average is seventy percent), and its loan terms are at the DAC average of fifty-nine percent. Substantial aid has been allocated to Sub-Saharan Africa (thirty-six percent in 1990) and to Asia (thirty-six percent in 1990), as well as to the Middle East and North Africa (twenty-six percent in 1990). In 1989-90, Turkey, India, China and Egypt were among the top five recipients of German aid. Given its interests in Eastern Europe and the former Soviet Union, it may be difficult for Germany to maintain the former aid levels to the traditional developing countries.

b. Mechanisms

The German Government's development assistance program is directed by the BMZ (the Ministry for Economic Cooperation). Policy is implemented primarily by the KfW, which channels capital assistance for economic development in developing nations, and by the Deutsche Gesellschaft fur Technische Zusammenarbeit (GTZ), which provides technical assistance.

Two other major sources of German development finance are the German Finance Company for Investment in Developing Countries and export credits of the Ausfuhrkreditanstalt, mbH (inc) (AKA), a consortium of fifty-five German banks. These latter export credits are one-to-four year supplier credits which are given official support by a limited rediscount arrangement with the Bundesbank.

While the BMZ handles all policy decisions for development finance, the KfW is the primary executor of all tied aid and mixed credits deals. Protocols are not used for tied aid; instead, financing is extended on a project basis. The BMZ and KfW work together with the recipient country to develop an aid packet in a given year. This arrangement allows the Germans to exercise reasonable control and restraint on the use of resources to insure project viability and to protect their interests.

6. Canada

a. Principal Characteristics

In 1988, the Canadian Government published the White Paper entitled "Sharing Our Future", which sets forth Canada's ODA policy framework to the end of the century. The official Government position on ODA can be summarized as follows: (i) putting poverty first, i.e., assist, in particular, the poorest countries and people of the world; (ii) helping people to help themselves, i.e., strengthen the ability of people and institutions in developing nations to solve their own problems in harmony with the natural environment; (iii) prevalence of development priorities, i.e., as long as development priorities are met, aid objectives may take into account other policy goals; (iv) partnership is the key to fostering and strengthening relationships, i.e., the link between Canada's people and institutions and those of the Third World.

Though the official Government position emphasizes development rather than commercial goals, the above (iii) does not exclude these latter goals. In fact, the important Winegard Report, which formed the basis for "Sharing our Future", states that, "where appropriate and competitive, Canadian goods and services should be purchased in preference to those of any other industrial country supplier. ODA should be driven less by political considerations than by development objectives and what makes sense from the perspective of both Canada and the Third World". The geographic location and composition of its aid does, however, reflect genuine concern for development.

In 1990, the Canadian ODA was $2.5 billion, or .44% of GNP. Canada has moved to an all-grant program. Over fifty percent of its bilateral aid is allocated to Sub-Saharan Africa and only fourteen percent to Latin America and the Caribbean. Half of Canada's considerable non-project aid (25% of bilateral aid) is "general commodity aid", said to be fertilizer, which is unrelated to structural adjustment measures. When food aid is taken into account, Canada's structural adjustment assistance is less than twenty-five percent of program aid. Food aid, approximately ten percent of total bilateral aid, is subject to policy framework considerations. Fifteen percent of the bilateral aid is allocated for economic infrastructure investments. Canada's multilateral contributions are in the range of thirty percent of ODA.

Canada provides tied aid credit through two sources: the Canadian International Development Agency (CIDA) and the Canada Account Funds. CIDA combines grant aid with export credit from the Canadian Export Development Corporation (EDC) in situations which meet both agencies' developmental and commercial interests. The Canada Account Funds are government funds which are used to match third country tied aid credit offers. In 1987, Canada made $843 million in tied aid credit offers. The Canadians have shown themselves to be aggressive matchers of mixed/tied aid credit offers by other countries. The DAC and Trade Secretariats of the OECD confirm that Canadian matching has shown a steady increase since the first parallel financing program was established in 1978.

The International Research Development Center (IRDC) and the Petro Canada International (PCI) play a minor role in tying of Canadian aid. IRDC supports feasibility and engineering studies in a variety of sectors, a large portion of which are energy and communications. The data indicate that ninety-nine percent of these grants are tied, though there is substantial evidence to conclude that the tying of feasibility studies often results in procurement from Canada, even if the project aid is untied. PCI is engaged in supporting petroleum exploration and drilling, and supports both products and projects through grants. All such grants are tied; however, these grants account for probably less than one percent of ODA.

As long as mixed credits and concessional financing are a part of doing business, Canada will play a defensive game aggressively. However, the Canadians agree on the need for further discipline over tied aid credits.

b. Mechanisms

Canada offers mixed credits/concessional financing through the EDC. That is, EDC supplies the commercial credit and this is blended with ODA grants offered by CIDA. CIDA is responsible for the development appraisal, whereas EDC is responsible for the commercial evaluation and for administering the official export credit. At the beginning of each five-year development evaluation period, CIDA engages in an overall country review and allocates funds to each nation for each year within the five-year time span. CIDA then negotiates with EDC to determine what markets might benefit from, or need parallel financing. EDC concentrates on spoiled markets, while CIDA identifies sectoral needs within these markets. CIDA funds are counted as ODA and used only for the concessional portion; the export credit is handled by EDC.

EDC also has a formal mixed credit facility, which is used primarily for matching. This facility does not involve funds from the ODA. Upon request from a Canadian exporter and if it is established that concessional export credits are being offered by a foreign competitor, EDC will provide a mixed credit in two portions: one on commercial terms from its own account, and one on concessional terms from the Government's account (the funds for this account are appropriated by the Government on an annual basis). Funds from the Government's own account are available only when it is demonstrable that Canadian exporters on a given export transaction are faced with competition backed by subsidized export credits.

7. The Nordic Countries

a. Principal characteristics

Norway, Denmark and Finland allocate close to forty percent of their ODA to multilateral organizations against a DAC norm of twenty-two percent. Sweden's allocation to multilateral organizations is thirty percent of ODA and still exceeds the norm of twenty-two percent. The Nordic countries together provided over $5 billion in ODA in 1990; with the exception of Finland, these countries far exceeded the United Nation's ODA/GNP target of .7 percent

(Finland came close with a ratio of .64 percent). The grant element of total Nordic ODA and the grant share in Nordic bilateral aid are both virtually one hundred percent. Nearly eighty percent of bilateral Nordic aid is allocated to Sub-Saharan Africa and South Asia, with nearly forty percent going to the LLDCs.

Aid tying policies are not altogether liberal, reflecting the prominent business constituency orientation of the Finnish and Danish programs. Finnish aid is highly tied. Denmark's bilateral aid procurement, while reported as fifty percent untied, is actually sourced in Denmark to the extent of seventy percent. Norway and Sweden pursue more liberal tying policies at sixty percent and seventy percent of bilateral aid, respectively. Norway's aid program has had the least commercial influence, but pressure is mounting from its business community to tighten up on tying practices. This pressure is accompanied by indications that the conservative coalition government wants to allocate higher percentages of aid to infrastructure and the productive sector than has been the case in the past. Finland and Denmark have, traditionally, allocated substantial bilateral resources to economic infrastructure and to the productive sectors.

b. Mechanisms

The foreign aid programs of each of the four Nordic countries are directed and administered by separate divisions of The Ministry of Foreign Affairs. Each of these countries has a small number of development officials in the field who, in Africa especially, are substantially reinforced by Embassy staff. Many of the Embassy staff members are devoted to aid administration.

* * *

The foregoing principal characteristics and mechanisms used in providing aid of selected donor countries suffice to subjectively arrive at expectations about specific donor's adherence to the new Helsinki Arrangement. These expectations should take into account that, unfortunately, the Helsinki Arrangement lacks specifications. Insufficient specification in an international agreement may lead to confusion and a less than adequate adherence to the content.

Part III of this report addresses, in very much detail, these and other issues, which, at some point in time, most likely will arise.

PART III

THE INTERNATIONAL ARRANGEMENT ON OFFICIALLY SUPPORTED EXPORT CREDITS:

DEADLOCKED, LOCKED-IN, AND UNLOCKED ISSUES

A. THE ESSENCE OF THE HELSINKI PACKAGE

The International Arrangement on Officially Supported Export Credits, also known as the "Helsinki Package", contains an important set of measures to strengthen the rules on commercial and aid credits, which affect the operations of aid agencies and export credit agencies of 22 industrialized nations (i.e., Australia, Austria, Canada, Finland, Japan, New Zealand, Norway, Sweden, Switzerland, the United States of America, and the countries of the European Community: Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, and the United Kingdom). The aid agencies and export credit agencies of the participating countries in the Arrangement are instruments of national policy. This means that, although in theory and often in law their objectives differ, their activities tend to overlap in practice. Aid may be used to subsidize domestic exporters as well as to finance development overseas; export credit may be used to funnel funds to needy or strategic developing countries as well as to promote domestic exports. Yet, it is useful to separate an aid credit and an officially supported export credit as far as possible.

Ideally, the following statement of principle should be adhered to: "OECD (Organization for Economic Cooperation and Development) members' export credits and tied aid policies should be complementary; those for export credits should be based on open competition and the freeplay of market forces; those for tied aid credits should provide needed external resources to countries, sectors, or projects with little or no access to market financing, and assure the best value for money, minimize trade distortion, and contribute developmentally to effective use of these resources". (This statement of principle was agreed upon by the participants in the Arrangement negotiations in May, 1991.) The statement of principle represents an ideal; yet, it is useful to recognize the principle upon which the compromise known as the Helsinki Package was based. Officially supported export credits and aid grants and credits should supplement the working of the market; that is, to enable trade to take place when and where it does not attract commercial financing.

Commercial financing does not always allocate scarce resources to where governments judge that they are most needed, either because the project seeking financing is not attractive to commercial lenders, or because of some market imperfection. The greatest market imperfection is, perhaps, the ignorance of conditions and risks in foreign markets. In these cases, the intention of officially supported export credits and aid grants and credits is to enable the market to work better. In principle, non-commercial financing should increase flows of resources, especially to less developed countries if trade distortion is to be minimized. Ideally, non-commercial financing should be additional to commercially financed flows of resources. When non-commercial financing is not additional to commercial financing, then it is only replacing commercial financing, and it will not increase flows of resources. It will only change repayment terms. Government supported funds simply replace commercial funds if non-commercial financing is not additional to commercial financing. In the case of aid, trade distortion is minimized and aid funds are not diverted to projects where it is known a priori that they are not needed to generate the resulting flow of resources. Again, in principle, the allocation of aid funds should meet the criterion of additionality. Any flow of resources that would be financed

from commercial sources or by export credits in the absence of aid financing does not meet the additionality criterion. However, aid financing that is additional is not necessarily good aid. Good aid also depends upon the wisdom, skill, and criteria applied in selecting projects. Agencies like AID possess all of these characteristics because of their specialization in developmental work. In contrast, export credit agencies are specialized in assessment of clients' credit worthiness and country risk, rather than selection, evaluation, and implementation of developmental projects and policies.

Though the essence of additionality for non-commercial financing is, in principle, sound, it has not always been adhered to by the various aid and export credit agencies of the industrialized countries. Mercantilist reckoning is often the cause of non-additionality of non-commercial financing. A national exporter may need some help in order to win a contract that would otherwise go to a foreign competitor. Export markets may need to be provided for certain enterprises, economic sectors, or regions of the country extending the non-commercial financing.

Another matter of principle is the issue of tied versus untied aid. Critics of tied aid credits cite the distortion they create in both trade flows and development assistance by diverting scarce foreign aid funds meant for poorer countries to support commercial export sales, typically in the more advanced developing countries. Advocates, however, contend that tied aid credits reduce the costs to developing countries of projects with a high developmental content, and stretch the development impact of scarce foreign aid funds. Proponents also argue that such credits enable poor countries to attain access to needed imports, particularly when commercial flows to them have been reduced. There is a strong temptation for governments to use tied aid credits to enhance the competitive position of their exporters. It is difficult enough to get parliaments to vote funds for foreign aid. It becomes even more difficult if suspicious legislators cannot be assured that the aid budget they are being asked to approve will also provide sales and jobs at home. It may well be that a general untying of aid would result in a drastic fall in aid budgets. Such a drastic fall in aid budgets could very well mean that positive effects of untying aid are more than offset. If this would be the case, tying may be a valid "second best" strategy. Nevertheless, the participants of the Arrangement decided to further concentrate their work on tied aid since Jepma completed a study in 1991. This study of tied development aid extended by main European Community donors found that, because of increases in the price of goods and services financed by tied aid, "the real value of aid for the recipient countries is reduced by an amount most likely ranging between ten and twenty percent". (Jepma, Catrinus J., EC-White Untying, Stichting, International Development Economics, University of Groningen, 1991, p. xii.)

B. PREVIOUS ATTEMPTS TO STRENGTHEN THE RULES ON COMMERCIAL AND AID CREDITS

Previous attempts have focused on the question of how to separate aid credits on one hand from export credits and commercial credits on the other. Even before the original text of the Arrangement of 1978, the members of the OECD Group on Export Credits and Guarantees

discussed the possibility of establishing a "neutral zone" between aid credits on one hand and export credits and commercial credits on the other. One guiding principle became that tied aid credits with a large grant element are more likely to be "aid motivated" than tied aid credits with a low grant element. These latter tied credits with a low grant element are likely to be "competition motivated".

The contraction of export credit markets caused by the onset of the international debt crisis of August, 1982, and by the Arrangement rules of 1978 and modified in 1982, induced the OECD governments to use increasingly more highly subsidized credits. At that time, a highly subsidized credit was a credit with a grant element of twenty percent or higher according to the Arrangement. The increased use of highly subsidized credits during the early 1980s led to the decision in April, 1985, to increase the grant element in tied officially supported financing from twenty to twenty-five percent and to considerably strengthen the provisions for prior notification and consultation under the Arrangement. Subsequent hard negotiations led to an agreement known as the "Wallen Package" in January, 1987. (This set of rules was named after the Arrangement's chairman at that time, Axel Wallen, of Sweden.) The principal accomplishments of the Wallen Package were:

1. An increase in the minimum permissible concessionality level of aid credits to 35% for all countries except the least developed nations (LLDCs) where the level became 50%.

2. A change in the formula for calculating the grant element to make it more closely reflect market rates of interest. (From here on, the result of this formula is called "concessionality level" rather than "grant element" in order to reflect the change in the formula.)

Although the Wallen Package aimed at a further separation of aid credits on the one hand from export credits and commercial credits on the other, the results did not meet expectations in so far as aid credits were concerned. Available data indicated a movement in tied aid credits away from the poorer and thus most needy, less-developed countries, towards richer and intermediate countries. This result was the opposite of what the Wallen Package hoped to achieve, that is, an increase in aid credits to the LLDCs and an increase in commercial credits to the richer and intermediate countries. To discuss this failure, the chairman of the participants of the Arrangement (Eero Timonen of Finland) invited the three vice chairmen and a representative of the Secretariat to a meeting in Helsinki in the summer of 1986. This meeting led to a series of "negotiations on a balanced package of measures to substantially reduce distortions resulting from the use of officially supported export credits and tied aid credits". (This ultimate aim was established at the meeting of the OECD ministers in June, 1990). After two years of negotiations, on November 4, 1991, the participants in the Arrangement had come to an agreement ad referendum on an important package of measures to strengthen the rules on commercial and aid credits. This ad referendum agreement was subsequently confirmed on December 16, 1991, and became known as the "Helsinki Package".

C. THE HELSINKI PACKAGE

The Helsinki Package made a complete break with past efforts to separate officially supported trade credits from aid credits by periodically increasing minimum permissible grant elements or concessionality levels. Instead, provisions on commercial and financial viability were introduced for the first time.

The adoption of the concept of commercial viability is based upon a principle accepted by the participants of the Arrangement during the negotiations. This principle is, that if government aid funds are reserved for worthwhile aid projects (e.g., those with large externalities) that nevertheless lack the ability to generate sufficient financial returns to make them attractive enough to call forth commercial financing and do not attract officially supported export credits, then these funds are truly "additional". In this case, resource flows are increased and trade distortion is minimized. It is, of course, still up to aid agencies to insure that the projects thus financed are of good aid quality. During the negotiations, the participants also attempted to specify indicators of aid quality; however, it proved impossible to develop a simple and easily useable list of indicators of aid quality. As a result, the Helsinki Package does not address new standards for aid quality. The participants agreed that aid quality neither is, nor should be, the concern of export credit agencies. Furthermore, most participants of the Arrangement felt that trade distortion, although not desirable, should be accepted where the quality of the aid is high.

The basis for adopting the concept of commercial viability was the principle of additionality. That is, in the absence of aid, worthwhile projects that are not commercially viable will not receive external financing; these are the projects towards which official aid should be directed if official aid is to become truly "additional". In the absence of official aid, these projects will either not take place or they will have to be financed out of LDC governments' limited funds, reducing their capacity to finance other projects. The participants of the Arrangement felt that concentrating official development aid on projects that are not commercially viable will not reduce aid flows (although it may re-direct them), but will increase total flows of resources to developing countries. (These total flows of resources consist of official development aid, officially supported export credits, and commercial credits.)

In view of the above considerations, the participants of the Arrangement agreed that tied and partially untied concessional or aid credits, except for credits to LLDCs, shall not be extended to public and private projects that normally should be commercially viable if financed on market or Arrangement terms. It was also agreed that the two key tests for evaluation of aid eligibility are:

(i) whether the project lacks capacity, with appropriate pricing determined on market principles, to generate cash flow sufficient to cover the project's operating costs and to service the capital employed, or

(ii) whether it is reasonable to conclude, based on communications with other participants, that it is unlikely that the project can be financed on market or Arrangement terms.

The gist of the Helsinki Package is based upon the following points:

1. Both the participants of the Arrangement and the OECD Development Assistance Committee (DAC) felt that the relatively well off LDCs should normally be treated on terms of commercial markets. Aid financing for a project in these countries will probably not be additional to what is already available commercially. Therefore, they agreed that, except for grants and very soft credits, tied aid financing shall not be extended to countries whose per capita GNP (gross national product) makes them ineligible for 17- or 20-year loans from the World Bank (at the present time, this per capita GNP is $2,465).

2. The poorest LDCs have great difficulty finding commercial financing no matter how attractive a project may be. Furthermore, these countries' foreign exchange situations are often desperate. There is usually justification for assuming additionality. Therefore, it was agreed that aid credits to the least developed countries (LLDCs) shall not be subject to the aforementioned rule that tied and partially untied concessional/aid credits shall not be extended to public and private projects that normally should be commercially viable if financed on market or Arrangement terms.

3. Grants and very soft credits (with a concessionality level of 80 percent or higher) are expected to be truly "aid motivated". Consequently, these credits are not subject to the aforementioned rule that tied and partially untied concessional/aid credits shall not be extended to public and private projects that normally should be commercially viable if financed on market or Arrangement terms.

4. The rule limiting the extension of tied and partially untied concessional/aid credits to public and private projects is not to be applied to projects with a value of less than SDR 2m in order to limit the administrative burden and to keep the system from becoming clogged.

5. The participants of the Arrangement may agree to modify any of the rules of the Helsinki Package if there is a consensus that circumstances (economic or political) warrant it. This stipulation was introduced because it is impossible to foresee every situation that may arise.

The rule with respect to commercial viability is written in general language. It is expected that many projects will neither be clearly commercially viable nor clearly non-commercially viable. A large number of projects will be in a "gray" area which means that further definitions and interpretations will be necessary.

The Helsinki Package states that any participating government may request consultations if there is a question as to whether or not a project meets the requirements for tied aid credits or whether or not an aid offered is justified even if the requirements have not been met. If these consultations do not lead to agreement, the other participating governments shall be invited to express their views. The government that made the original notification should reconsider going

forward if there appears to be no substantial support for the aid offer. Nevertheless, if a potential donor still finds that it is necessary to proceed with a tied aid credit despite the lack of substantial support, it may do so. In such a case, the potential donor shall provide prior notification to other participants and shall, in a letter to the Secretary General of the OECD, report the results of the consultations and explain the overriding non-trade related national interest that forces such action. Presumably, one expects that eventually all concerned agencies of all donor governments can agree on identical interpretation of the concept of commercial viability versus non-commercial viability of a project. It might take a long time before such an agreement will have been reached. Furthermore, in the case of non-commercial viability, only if all potential supplying countries can agree to offer exactly the same terms for their tied aid (i.e., if a "common line" can be arranged), then the result is much the same as it would have been had the aid been untied. Unfortunately, such a common line is not always easy to arrange. All potential suppliers must be included in the agreement. They may not all be known. The time available for consultations may be too short. Even if there is an agreement on a common line, some countries may feel they have been led to offer aid for projects where they do not feel that it is warranted. At best, it will be several years before the new provisions of the Helsinki Package can be expected to work reasonably well.

D. SUMMARY OF THE DETAILS OF THE HELSINKI PACKAGE

The details of the Helsinki Package are summarized in Exhibits 1 and 2. Exhibit 1, entitled "Tied Aid Financing," summarizes the principle rules of the Helsinki Package as they relate to loans or grants or associated financing packages involving a concessionality level greater than zero percent. Exhibit 2 summarizes the primary rules of the Helsinki Package as they relate to export credit terms; these terms refer to minimum allowable interest rates and maximum repayment periods. These terms are the ones agreed upon to promote exports, and hence, are highly relevant for the export credit agencies.

EXHIBIT I

TIED AID FINANCING

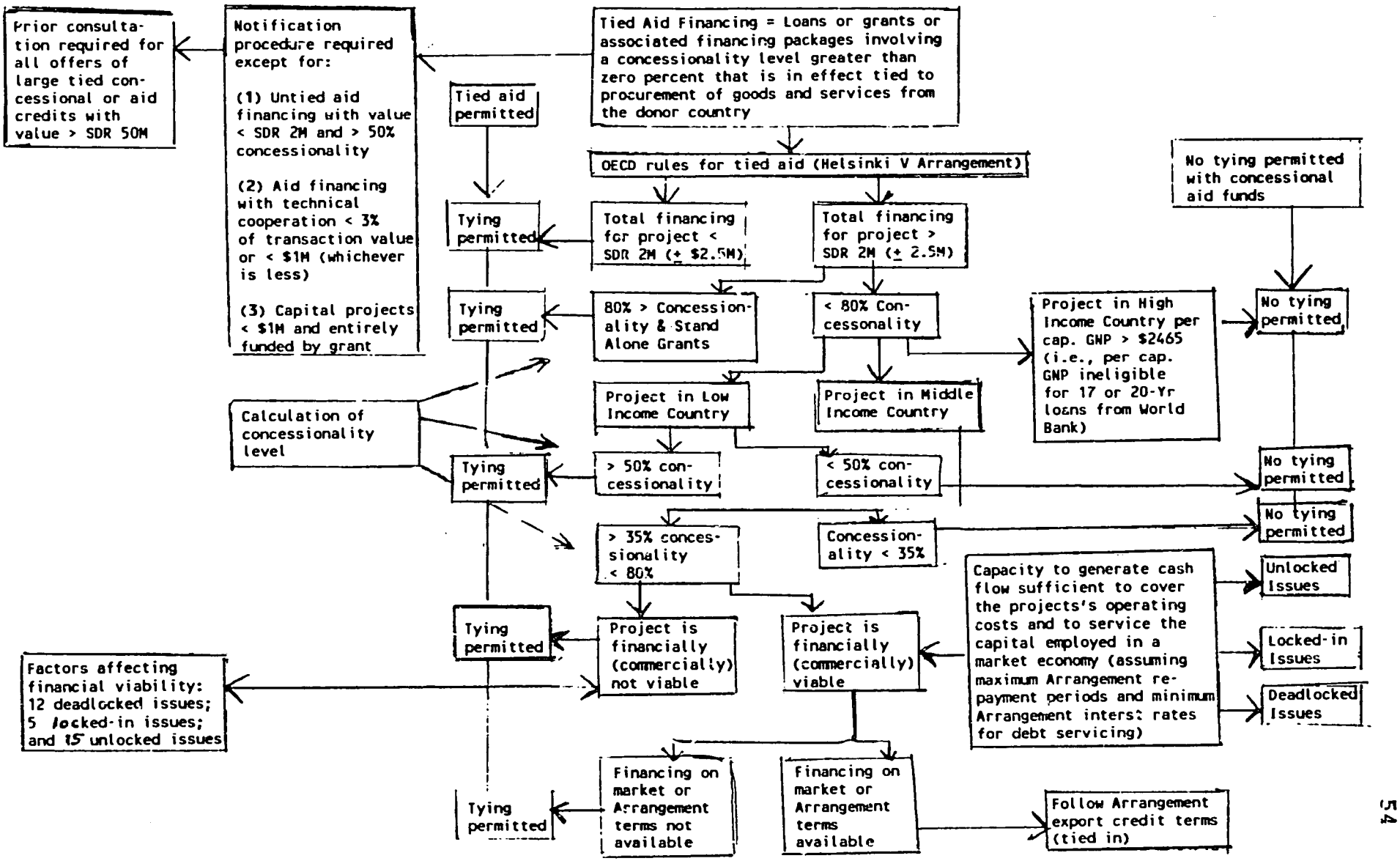

EXHIBIT II

ARRANGEMENT: PRIMARY EXPORT CREDIT TERMS AND PERIODS OF COMMITMENT

(1) Cash Payment: Minimum of 15% of export contract value.

(2) Maximum Repayment Terms:

(i) Category I countries: 5 years (but after adequate prior notification: 8 1/2 years).
(ii) Category II countries: 8 1/2 years.
(iii) Category III countries: 10 years.

(3) Repayment of Principal and Payment of Interest:

(i) Principal: in equal installments not less frequently than every six months.
(ii) Interest: normally payable not less frequently than every six months.

(4) Minimum Interest Rates:

(i) The Commercial Interest Reference Rate (CIRR) ------ plus 20 basis points if terms fixed before contract date;

or:

(ii) The SDR-based rate ----- plus 50 basis points if destination is a Category III country.

(5) Categories of Countries:

(i) Category I countries: relatively rich or high income developing countries with per capita GNP > $2,465.00.
(ii) Category II countries: intermediate or middle income developing countries which are neither in Category I, nor in Category III.
(iii) Category III countries: relatively poor or low income developing countries which are eligible for IDA credits, plus low income countries or territories with per capita GNP < IDA eligibility level.

(6) Local Costs: financing, guarantee or insurance subject to stipulations.

(7) Maximum Period of Commitments:

(i) For an individual export credit or credit line: maximum of six months.
(ii) For tied or partially untied aid credits with concessionality level < 35% (for Category II countries) or < 50% (for Category III countries): maximum of one year.
(iii) For aid protocols, aid credit lines or similar agreements: maximum of two years.

(8) Special Sectors: Ships, power plants, and aircrafts.

E. ISSUES REGARDING THE HELSINKI PACKAGE

The principal problem of the Helsinki Package is that a number of issues have not been adequately explored, thereby causing a large "gray area" for further interpretation. The new discipline on limiting tied aid based upon the newly introduced concept of commercial viability poses a serious risk for "cheating". Consequently, several issues need to be addressed.

A detailed scrutiny of the type of issues which have been insufficiently explored prior to determining the use of the concept of commercial viability renders the conclusion that there are three categories of issues. These three categories of issues can be labeled the "deadlocked issues", the "locked-in issues", and the "unlocked issues". That is:

> Deadlocked issues are issues for which no rational decision can be made unless considerable time and resources are spent on researching, analyzing, and evaluating interdependent relationships between and among a project and its environment. These issues are further complicated by the recognition that these relationships are not constant if, indeed, economic development is to take place.
>
> Locked-in issues are issues which are unalterably fixed until they have been brought to the attention of the participants, acted upon, and remedied. The Helsinki Package recognizes that not all possible contingencies have been covered and that, therefore, participants may agree to modify any of the existing rules if there is a consensus that circumstances warrant it.
>
> Unlocked issues are issues which can be resolved within the existing framework of the Helsinki Package through further specification. By and large, the current rules are geared towards export credit agencies, which make decisions based upon country risk and credit worthiness of borrowers; however, these rules are not geared toward bilateral aid agencies and, therefore, require further specification.

Each of these three categories of issues is discussed hereinafter.

DEADLOCKED ISSUES

As the above definition of deadlocked issues indicates, these are the very complex issues for which no rational decision can be made in the short run. AID is advised to bring these issues to the attention of Eximbank and the Treasury; subsequently, these issues should be brought to the attention of the participants with the aim to: *arrive at a limited time span, e.g., one or two years, to observe to what extent the concept of commercial viability is operationally acceptable. If, indeed, this concept has resulted in unacceptably much "cheating", then this concept should be abandoned. If, under the circumstances of unacceptably much "cheating", the concept of commercial viability cannot be abandoned, then the participants are recommended to agree to allocate sufficient resources to carefully research these issues.*

Specifically, the following issues are identified under the deadlocked category:

1. The case-law approach towards solving disputes about interpretation of the Helsinki Package is known in the USA, Australia, Canada, Ireland, New Zealand, and the United Kingdom; however, the case-law approach is not known in the other 16 countries of the Helsinki Arrangement. In these 16 countries, the lack of experience with the case-law approach is likely to result in argumentation based upon uniqueness of the situation. Consequently, the case-law approach is expected to be an inefficient way to settle different interpretations of the Helsinki Package.

2. The commercial and/or financial viability of a project depends very much upon the economic policies prevailing in the environment in which the project is considered. This issue of the relationships between and among economic policies and a project is not addressed by the Helsinki Package. The economic policies that can affect the commercial viability of a project are: monetary policy; fiscal policy; price policy; foreign exchange rate policy; wage and employment policy; privatization policy; tariff and trade policy; investment policy; and, anti-corruption policy.

   Some illustrations of how these policies can affect the commercial viability of a project may suffice here. A lack of monetary policy in terms of uncontrolled increases in the money supply of a nation leads towards inflation, thereby likely rendering the price of the product/service to be supplied by the project to be too high. As a result, the project's product/service will be less used and hence, the stream of cash inflows is likely to become insufficient to meet all the cash outflows. Consequently, a project that was originally conceived to be commercially viable could easily become commercially non-viable as a result of a lack of monetary policy. (The exact impact of the increase in the money supply on the commercial viability of the project depends upon the price and income elasticities of the product/service to be supplied by the project, thereby rendering this issue rather complex.) Another aspect of monetary policy, a change in interest rates, also affects the commercial viability of a project. Though the interest rates on foreign capital to be provided under the Helsinki Package are addressed in this Arrangement, interest rates on host countries' capital possibly used in conjunction with foreign capital are not addressed. Hence, these interest rates depend upon the monetary policy of the host country and can affect commercial viability of a project in that country.

   Fiscal policy, relating to taxation and public revenues of the area where the project is considered, also affects commercial viability. For example, fiscal policy may provide certain tax incentives for a particular project, or fiscal policy may allow accelerated methods of depreciating assets. An accelerated method of depreciation allowed for a particular project results in lower tax payments if the project were in the private sector. Lower tax payments, in turn, imply a higher return on the capital used for the project and, consequently, a greater probability of commercial viability for the project. The price policy of a country where the project is considered could be based either on the principle of full cost pricing or on the principle of subsidization. Prices of products or services produced by a project which is subsidized might render such a project

commercially viable during the time that such subsidies prevail; however, such a project is likely to become commercially non-viable once the principle of full cost pricing is used.

A wage and employment policy of a country where a project is considered can affect the commercial viability of such a project once one recognizes the necessary linkage between wage increases and productivity increases. Like many Latin countries experienced during the 1970s and early 1980s, strong labor unions result in a situation where increases in wages far exceed increases in labor productivity. Such unjustifiable wage increases imply higher costs of operation and hence, a reduced probability of commercial viability for a project. The "unwritten" employment policy of a country might be based upon nepotism, which usually means higher than justifiable costs, and, hence, the reduced likelihood of a project being commercially viable.

Closely related to employment policy is the country's policy concerning privatization. A country in which the government is seriously implementing a policy of privatization will improve the efficiency of assets, including the potential efficiency of a new project. An improved potential efficiency of a project enhances the probability of the project being commercially viable. The foreign exchange policy of a country can also affect the commercial viability of a project, if the project provides products or services that can be sold abroad, and/or if the project requires imported inputs. For example, a country which follows a policy of overvaluing its currency, like most of the foreign exchange policies of the Latin countries during the 1970s and early 1980s, leads to a situation where the imports are becoming "artificially" inexpensive and the exports "artificially" expensive. Influencing the cost of imported inputs and the price of exported products of a particular project through a foreign exchange policy must mean that the cash inflows and cash outflows of that project are affected. Once these cash flows are affected, the concept of commercial viability is impacted.

Tariff and trade policy of a country can also affect the commercial viability of a project. For example, a non-tariff trade barrier of a country can significantly affect the imports of a country, because this type of trade barrier addresses specifications of product mix and quality of product. Such a trade barrier may favor imports from one country over imports from other countries; however, the imports of the favored country may not be the most cost effective ones. The use of less than cost effective inputs in a project diminishes the likelihood of the project being commercially viable. An investment policy of a country which encourages the inflow of foreign investments and discourages flight capital can favorably affect the commercial viability of a project because of the often prevailing reinforcing effects between and among projects. For example, a warehouse to store agricultural products might only become commercially viable if sufficient funds have been invested in fertilizer, irrigation facilities, and pesticides to render a surplus of produce to be stored in the warehouse. Finally, a strong anti-corruption policy in a country will favorably affect the commercial viability of a project, simply because corruption implies unnecessarily high costs and a less than optimal resource allocation.

The impact of each of the foregoing economic policies on commercial viability of a project becomes increasingly more complex once one recognizes the following:

(a) the identified economic policies are interdependent and can, therefore, progressively magnify this impact; and,

(b) the level of impact on commercial viability depends upon the type of project. The foregoing recognition suffices to conclude that the issue of economic policies affecting commercial viability is a deadlocked issue.

3. The commercial and/or financial viability of a project depends upon the "proper mix" of projects or project components, which is not addressed by the Helsinki Package. For example, commercial viability of improved port facilities depends upon the anticipated increase in trade between the area served by the port and other destinations. This increased trade, in turn, depends upon the means of transportation to and from the port, as well as on the potential for a surplus to be traded. This latter surplus may depend, in turn, on additional investments, such as investments in improved inputs to increase agricultural production. The recognition of the proper mix of projects is the reason that many developmental projects combine components dealing with different sectors and activities.

For example, a project may combine irrigation with power generation and potable water supply, or it may combine farming with rural roads and the formation and improvement of villages. When the various components are significantly interrelated, the commercial viability of each component is enhanced by insuring that the proper mix is attained. A concept of viability of a project must address the issue of proper mix, which has long been recognized by AID and other sound, bilateral aid agencies.

4. The issue of a lack of an accurate model to calculate expected cash inflows and outflows of the interrelated components of a large project renders the assignment of level of commercial viability to each of these components impractical. This issue is closely related to the aforementioned issue of "proper mix" and is, again, not addressed by the Helsinki Package. It has long been recognized that when the various components of a project are significantly interrelated, neither costs (or cash outflows) nor benefits (including monetized benefits or cash inflows) can be meaningfully allocated to individual components in a project analysis. The appropriate procedure is to calculate the NPV (net present value) of the entire project package and then to test whether it can be increased by redesigning the project to delete one or more components in the project package. The NPV is, of course, one possible expression of commercial viability. Herman van der Tak had discussed this issue concerning the lack of a meaningful allocation of benefits and costs to individual components of a project in the context of power projects. Anandarup Ray arrived at the same conclusion in a recent publication when he discussed the various interrelated components of a project and concluded that "separate expected rates of return for the various components cannot be accurately calculated in such cases on the basis of arbitrary prorating of costs and benefits". (Anandarup Ray, Cost-Benefit

Analysis, Issues and Methodologies, A World Bank Publication, The Johns Hopkins University Press, Baltimore, MD, 1990, p. 19.) The terminology "expected rate of return" as used by Anandarup Ray is one way to express financial or commercial viability. For the last few years, the trend of funding many projects with inter-related components has been characterized by a group effort where the group consists of various agencies including one or more bilateral aid agencies. In these cases, it is very complex, and, indeed, impractical to decide on the level of commercial viability of each of the interrelated components. Yet, a bilateral aid agency involved in such a co-financing effort would like to know the level of commercial viability of its financed component, because this knowledge is needed to decide whether or not this donor's financial contribution can be tied to inputs from this country.

5. Different budgetary procedures of countries affect the extent to which operating expenses and debt servicing of public projects can be met, and hence, these procedures affect the financial viability of a project. The Helsinki Package states, inter alia, that a project is financially non-viable if it lacks the capacity, with appropriate pricing determined on market principles to generate cash flow sufficient to cover the project's operating costs and to service the capital employed. For public sector projects, this observation means that the budgetary procedures of the host country are all assumed to be based on "appropriate pricing determined on market principles" and on the principle of full cost pricing. It is, indeed, highly unrealistic to accept these two assumptions. It is, to say the least, surprising that the Helsinki Package does not mention the relationship between budgetary procedures and financial viability of a project.

6. The relationship between the shift to a market economy and the need for investments in infrastructure, on the one hand, and the commercial viability of a project, on the other hand, is not addressed by the Helsinki Package, even though this relationship can significantly affect the commercial viability of a newly considered project. Many developing nations have shifted to market economies; these economies now need investments in infrastructure to make the market economies operational and to render projects commercially viable. It appears premature to bring up the issue of commercial viability for those developing countries which have shifted to market economies; only after sufficient investments in infrastructure will have been made, should one expect commercial viability of increasingly more projects. Certainly, this level of investments in infrastructure has not yet been reached and is not expected to be attained in the foreseeable future.

7. The Helsinki Package does not address the issue of risk, and how risk affects commercial viability, even though various host countries where projects will be implemented are often characterized by high levels of commercial risk, exchange rate risk, and political risk. The analysis concerning commercial viability of a project is, by its very nature, based on uncertain future events, and, quite often, inaccurate data. Such an analysis, therefore, inevitably involves probability judgments, whether made explicit or not. The basic elements in the cost and benefit streams, such as input and output prices, quantities, and the economy-wide shadow pricing parameters, are seldom reasonably represented by

single values. It is desirable, therefore, that the analysis concerning cash inflows and cash outflows over a period of time, determining the level of commercial viability, consider the range of possible variations in the values of the basic elements. Furthermore, it is desirable that such an analysis present clearly the extent of the uncertainties associated with the outcome. One method of doing so is to determine how sensitive the commercial viability of the project is to changes in the variables or, alternatively, how much a variable must change for a project to become commercially viable. The value of a variable at which a project becomes commercially viable could be labeled its "switching" or "cross-over" value. Switching-value tests can be helpful in providing a better understanding of the critical elements on which the outcome of a project depends. These tests may focus attention on the variables for which a further effort should be made to firm up the estimates and narrow down the range of uncertainty. However, alternatively, these switching-value tests can also be employed to purposefully render a project non-commercially viable. Such a practice could be an invitation to "cheating".

Sensitivity analysis, whether used to provide a better understanding or to purposefully affect commercial viability, does not show the combined net effect of changes in all variables or the likelihood of various changes occurring together. Risk analysis, or probability analysis, can throw light on these questions by specifying, as far as possible, probabilities for the several values that may be attained by each variable in the analysis regarding commercial viability of a project, as well as how changes in one variable are correlated with changes in the others. A resulting probability distribution of present values of net cash flows (i.e., cash inflows minus cash outflows) can then be constructed for the possible outcomes that can be monetized. Such a probability distribution can provide a better picture of the degree of risk involved in the project than the one given by a single value computation. On the basis of such a distribution, judgments can be made as to the existence of, for instance, an "x" percent change in one variable that will affect the level of commercial viability of the project.

8. The Helsinki Package assumes that the local legislation and regulations affecting commercial viability of a project in a host country can and will be changed. This assumption cannot be accepted. For example, local legislation and regulations of a host country may not allow user fees of a project that would permit covering operating costs and the costs to service the capital employed. Furthermore, developmentally, it might be superior to phase in increases in user fees over a number of years. Significant knowledge of the prevalence and desirability of local laws and regulations concerning user fees is needed, if, indeed, rational conclusions can be made with respect to commercial viability of projects which are subject to such legislation and regulations.

9. The issue of recognizing different types of market principles and different types of market economies for different countries, and the manner in which such market principles and market economies affect the commercial viability of a project is not addressed in the Helsinki Package. One of the two "key tests" of the Helsinki Package simply states that a project is financially non-viable if it lacks capacity <u>with appropriate</u>

pricing determined on market principles, to generate cash flow sufficient to cover the project's operating costs and to service the capital employed. Surely, different countries around the globe have different market principles and different types of market economies. Surely, each different set of market principles and each different type of market economy can affect the commercial viability of a project in a different manner. This recognition acknowledges the complexity of an adequate interpretation of the concept of commercial viability for each country or set of highly comparable countries. The complexity of this issue is further augmented once one recognizes that the institutional framework of a nation also, without doubt, affects the commercial viability of a project. Both the efficiency and effectiveness of the prevailing institutional framework in the various developing countries tend to be diverse. Hence, different levels of efficiency and effectiveness mean different levels of a given project attaining commercial viability.

10. Both of the key tests of the Helsinki Package regarding commercial viability ignore the issue of which discount rate is appropriate for project analysis, even though they address need to service capital employed and financing on Arrangement terms. The existing literature concerning this issue concludes that the basic discount rate must be "the consumption rate of interest" which, by definition, indicates the rate at which the value of consumption falls over time. One unanswered issue is, however, whose consumption and whose valuation? In traditional project analysis, it is the valuation reflected in the market interest rate that is used for reference. The Helsinki Package appears to be based on this traditional approach. If all relevant parties participate in the capital market and if there are no distortions in that market, that interest rate will indeed reflect a common valuation within the present generation. This common consumption rate of interest may also equal the private return on investment. In practice, the equality of these rates is not likely to be attained. But if it were attained, and if, in addition, this interest rate equaled the marginal economic return on investment, this approach would imply that additional savings and investments to promote growth are as valuable as additional current consumption. A developing country may, however, set the consumption rate of interest exogenously, either because the market does not reveal a common rate (if a proper market exists in the first place) or because it views the market rate as too low or too high. If the discount rate is set differently from the marginal economic return on investment, then an investment premium, or discount, should be introduced in the project analysis. The sovereignty of a developing country to do so appears to be ignored by the somewhat simplistic key tests of the Helsinki Package.

11. According to an Eximbank report of March 31, 1992, one OECD consideration is to use shadow pricing if local pricing does not reflect world market conditions, in order to arrive at the level of commercial viability of a project. (See: Export-Import Bank of the United States, Engineering Division Implementation Guidelines, OECD Financial Viability Rules, Washington, D.C., March 31, 1992, p. 6.) This reference to the use of shadow pricing reflects a less than accurate understanding concerning the use of shadow prices in project appraisal. Proper use of shadow prices implies expensive and time consuming procedures; this is the reason that the World Bank only uses shadow

pricing for the appraisal of very large projects. For the appraisal of most projects at the World Bank, shadow pricing is not used.

Theoretically, economists agree that output will not be maximized and wrong investments will be made if prices do not reflect opportunity costs. However, available market prices may not be appropriate to reflect opportunity costs and some adjustments may be necessary. These adjusted prices, referred to as shadow prices, arise in the context of taxation, monopolies, subsidies, foreign exchange, and labor policies. The adjustments suggest indirect project beneficiaries other than direct producers or consumers and also costs not otherwise reimbursed. Capital investments that will maximize national income may need adjustment in market prices to more accurately reflect opportunity costs because of policies causing a divergence.

There are, however, a number of technical problems in estimating these opportunity costs. For example, in the case of labor, there is insufficient knowledge regarding mobility over time and supply response. In addition, there are some areas for public choice. Where there are conflicts in this choice, there is not a single opportunity cost. Politicians in the host country, rather than OECD participants, must answer the question of whose opportunity costs count. Project appraisers cannot presume that shadow pricing is purely a technical matter of discovering the one true opportunity cost. Analysts and politicians must be involved in an interactive, iterative process which results in adequately addressing the inferences of the systematic implementation of rules reflecting these political choices. Such a process is time consuming and expensive; consequently, the use of shadow pricing is only justifiable in the case of very large projects.

Presumably, the use of shadow pricing is being considered as a substitute for "appropriate pricing determined on market principles" in the current test for non-financial viability (i.e., it must lack capacity, with appropriate pricing determined on market principles, to generate cash flow sufficient to cover the project's operating costs and to service the capital employed). Fundamentally, it is less than rational to use shadow prices as a substitute for market prices, because shadow prices are being used as desirable adjustments in market prices. Furthermore, an international organization such as the OECD cannot address the (only proper) use of shadow prices without ascertaining the host government's intent in formulating policies concerning taxes, foreign exchange controls, employment, and prices.

12. The tendency for export credit agencies, such as the Eximbank, to always classify certain projects as "commercially viable regular (comprehensive) projects" (such as greenfield projects and new power plants), and other projects as "commercially viable partial projects" (such as upgrades in existing process lines or additional modules for industrial facilities), and yet other projects as "non-financially viable projects" (e.g., public transportation development projects or rural telecommunication projects), reflects a narrow approach towards project appraisal. More specifically, this tendency to invariably categorize a project either as "commercially viable" or as "non-financially viable" simply assumes that none of the foregoing deadlocked issues exist. The ultimate

implication of this tendency is that any project or partial project is always commercially viable or commercially non-viable, regardless of where in the world the project is located. This approach is oversimplified. Indeed, significant time and resources must be allocated to seek and appraise indicators of commercial viability. A rational process of categorizing projects can only commence once a range of acceptable indicators has been established. Hence, the prevailing tendency to hastily categorize projects is another deadlocked issue.

The attempt of the Engineering Division of the Eximbank to further specify the concept of commercial viability reflects occasional confusion or an implied acknowledgment that there are inherent deadlocked issues. The following references from the aforementioned Eximbank's report of March 31, 1992, illustrates this observation:

(a) "A non-financially viable project may be a project which would be financially viable but for a location, process, market or other extenuating circumstances beyond the control of the project sponsor or the host government". This observation is somewhat confusing because it contradicts the stipulation of the Helsinki Package that a project is financially non-viable if it lacks capacity, <u>with appropriate pricing determined on market principles</u>, to generate cash flow sufficient to cover the project's operating costs and to service the capital employed. This stipulation assumes the use of market principles and would not accept the lack of market forces or other extenuating circumstances as a justification for labeling a project as "non-financially viable".

(b) Eximbank's general criterion for determination of commercial viability refers to the question of whether or not the project could be completed in the United States or other developed countries by a private enterprise on typical OECD or market terms, rates and structure (see the aforementioned Eximbank report, p. 3). The question of whether or not a project can be completed in the United States or other developed countries appears irrelevant with respect to the potential completion of a project in a developing nation.

(c) "Generally, (primary natural resource) projects which are technically feasible will receive a commercial viability determination" (see the aforementioned Eximbank report, p. 4). Technical feasibility alone could never determine commercial viability; it is true, however, that engineers seem to overemphasize the importance of technical feasibility at the expense of socioeconomic, commercial, and financial feasibility. (The quote is from a report prepared by an engineering division.)

(d) "Public transportation development projects such as airports, subways and railways will likely receive a non-commercial viability determination unless the project has been structured in a commercial manner" (see the aforementioned Eximbank report, p. 4). This observation is confusing because the Helsinki Package stipulation regarding commercial viability specifically refers to

"appropriate pricing determined on market principles" and, therefore, assumes being "structured in a commercial manner". Why then, state "unless the project has been structured in a commercial manner"?

(e) The rather frequent reference to "unless extenuating circumstances are presented" (see, for example, p. 4 of the aforementioned Eximbank report) appears to recognize that the concept of commercial viability is, indeed, a complex one.

The foregoing deadlocked issues lead one to the following conclusion: *Without significant additional knowledge, the concept of commercial viability, though acceptable for the operations of export credit agencies, cannot be operational for bilateral aid agencies. The significant additional knowledge required can only be obtained through the allocation of time and resources for research. AID may, therefore, be well advised to aim at a strategy to eventually abandon the concept of commercial viability for the decision-making processes of bilateral aid agencies.*

The earlier approach of making a distinction between "competition motivated credits" and "aid motivated credits" and a gradual increase in the percentage of concessionality level is much easier to administer than the approach based upon commercial viability. The earlier approach resulted in cheating; one cannot help but wonder how much cheating is to be expected with an approach that is more difficult to administer.

During the negotiations for the Helsinki Package, a measure of agreement emerged among the participants that the quality of the aid projects being supported might usefully replace the level of concessionality of its financing as a basis for a new rule. It is reported that most participants felt that great distortion, although not desirable, should be accepted where the quality of aid is high. However, the participants came up against insurmountable practical difficulties in implementing sound criteria on aid quality. It proved impossible to develop a simple and easily useable list of indicators of aid quality. It was felt that evaluating the quality of aid is an art that requires judgment and experience, and cannot be reduced to a list of "yes/no" questions. As a result, the DAC and the participants accepted an "Aid Quality Checklist" for information and general guidance, but not as an enforceable rule. Consequently, the Helsinki Package does not contain any rule with respect to aid quality. It appears that the concept of commercial viability has overruled sound aid quality standards. Certainly, bilateral aid agencies are obliged to assign the highest priority to aid quality. This is another justification for arriving at a strategy to abandon the concept of commercial viability for decision-making processes of bilateral aid agencies.

LOCKED-IN ISSUES

These are the issues which are unalterably fixed until they have been brought to the attention of the participants, acted upon, and remedied. These are the issues which refer to the rules which, according to the Helsinki Package, should be adhered to, but call for modifications of the rules for reasons of rational decision-making. Furthermore, these issues, unlike the deadlocked issues, do not require extensive research to arrive at logical and acceptable interpretations of commercial viability. The following issues are identified in this category:

1. There is a lack of specificity concerning time frame in the two key tests with regard to determining financial viability of projects (i.e., the generation of cash flow sufficient to cover the project's operating costs and to service the capital employed and the likelihood that the project can be financed on market or Arrangement terms). Common measures of financial viability, such as net present value (NPV), profitability index (PI) and internal rate of return (IRR) are based on the expected life of the project or on the duration of the planning horizon. This common practice also recognizes that many projects may generate negative net cash flows during the first few years and often substantial positive net cash flows during the years thereafter. Such projects would not be commercially viable during the first few years, but would be so during the years thereafter, and, they could be commercially viable based upon the value of net cash flows (i.e., cash inflows minus cash outflows) during the entire planning horizon of the project.

   One could state that the key test of a project's commercial/financial viability is its capacity to generate cash flow sufficient to cover the project's operating costs and to service the capital employed <u>assuming maximum Arrangement repayment</u>. According to the Helsinki Package, the maximum repayment periods are five years for relatively rich countries ("Category one" countries); eight and one-half years for intermediate countries ("Category two" countries); and ten years for relatively poor countries ("Category three" countries). The memorandum of Laurance W. Bond of May 10, 1991, regarding prospects for a new OECD tied aid agreement included a similar interpretation when it stated that: "The key test of a project's commercial viability is its financial viability, i.e., its capacity to generate cash flow sufficient to cover the project's operating costs and to service debt in a market economy assuming maximum Arrangement repayment" (see p. 3 of this memorandum). Though this interpretation is similar to the one given above, it differs in the sense that only the servicing of debt is addressed. The Helsinki Package uses the terminology "servicing capital employed"; "capital" includes all feasible sources of capital, that is, loan capital and various forms of equity capital, such as common stock, preferred stock, retained earnings, and capital surplus. (This issue of various sources of capital will again emerge during the discussion of the "unlocked issues".)

   The introduction of a time frame based upon the maximum Arrangement repayment period for loan capital, though operationally attractive, is subject to possible criticism similar to the criticism concerning the "pay-back" criterion expressed in the existing

literature. The criticism regarding the payback period is twofold: (i) it does not consider the cash flows generated after the investment is earned back; and, (ii) the concept of the time value of money is ignored. The introduction of specificity regarding time frame based upon maximum Arrangement repayment period is similarly open to the following criticism: (i) cash flows generated after the repayment period are not considered; and, (ii) the concept of the time value of money is ignored. Though this criticism is logical, I do recommend the use of the maximum Arrangement repayment period in my discussion of the "unlocked issues", provided that this specificity is used for the employment of both loan capital and the various forms of equity capital. Such an approach will, in my judgment, minimize the constraints arising from commercial viability interpretations affecting AID's capital projects decisions. Consequently, the maneuverability of AID's decision-making process is maximized. (This point will again surface during the discussion of the "unlocked issues".)

2. There is the issue of ignoring the concept of time value of money in the two key tests for commercial viability contained in the Helsinki Package. The concept of the time value of money means, that for decision-making purposes, the value of cash flows generated at different points in time must all be brought back to the value of cash flows at one point in time; hence, one must compute present values of future values of cash flows. The implication of the necessity of computing present values of future values of cash flows is that, for decision-making purposes, the value of net cash flows earned during the earlier years of a project are given more weight than the value of net cash flows earned during the later years of the project. The implication of this is that, for most projects, the attainment of commercial viability is less likely with the introduction of present values than without the use of present values. This observation is valid because most projects earn less net cash flows, or even negative cash flows, during the earlier years as compared to the later years of the planning horizon. The reason is the overcoming of unexpected problems and/or insufficient demand during the earlier years of project operation. The decrease in the likelihood of a project obtaining commercial viability means an increase in maneuverability for AID's capital projects decision-making process.

3. The increased global scarcity of capital, further aggravated by the collapse of communism, should encourage bilateral aid agencies to use financial leverage and co-financing in their decision-making processes regarding allocation of capital, in particular, in middle income developing countries, because these countries do not any longer have an urgent need for concessional assistance. Yet, the two key tests regarding commercial viability are applicable to exactly these nations, and it is exactly these tests which significantly restrict the bilateral aid agencies in their use of financial leverage and co-financing. Financial leverage is the ability to make loans and loan guarantees at some multiple of the annual budget appropriation of a bilateral aid agency, such as AID. By combining aid credits with loan capital, one arrives at the concept of subsidized interest rates. These latter rates may not be used once one applies the criterion of commercial viability, even though these subsidized interest rates are highly desirable for many projects in exactly the middle income developing nations. The possibilities for co-

financing, which provide project leverage, are also limited by the two key tests regarding commercial viability. The reason is that co-financing usually occurs for a project that consists of significantly interrelated components presenting a situation where neither costs nor benefits can be meaningfully allocated to individual components of the project. Given the rules of the Helsinki Package, bilateral aid agencies do want to know how many benefits and costs are related to the components financed by these agencies, because these benefits and costs determine the level of commercial viability and, therefore, the possibility for financial leverage (and, of course, tying-in). The issue of artificially limiting the total potential funds available to the middle income developing nations is a serious one. One may, therefore, opt for abandoning the criterion of financial/commercial viability for those projects where financial leverage and co-financing are significant. Once this philosophy is accepted, one can focus on <u>what</u> level of financial leverage and co-financing is <u>significant</u>.

4. With respect to interest rates, the rules of the Helsinki Package refer to interest rates of industrialized countries only, even though other decision variables, such as fluctuating exchange rates, interest rates in developing nations, and different national taxation schemes should have been considered as well, if, indeed, optimal allocation of scarce capital in the developing world is the ultimate goal, as it should be. Ignoring interest rates, fluctuations of exchange rates, and different national taxation schemes in developing countries may have the following serious implications: (i) it may render a project prematurely "commercially viable" in the decision-making process; and, (ii) it significantly limits obtaining financial leverage with capital available in the middle income developing nations. This latter implication, in turn, may induce the unfavorable phenomenon of capital flight from the middle income developing nations. The matter of rendering a project prematurely "commercially viable" can only be appreciated if one considers the following:

(a) As was already noted in the foregoing second locked-in issue, the concept of time value of money should be introduced in the key test regarding generation of cash flow sufficient to cover the project's operating costs and to service the capital employed. The use of a discount rate is, therefore, needed to compute the present values. The Helsinki Package stipulates the use of the commercial interest reference rate as the discount rate in the computation of the concessionality level of tied and partially untied aid financing. One would, therefore, presume that the commercial interest reference rate must also be used to introduce the concept of time value of money in the key test regarding generation of cash flow sufficient to cover the project's operating costs and to service the capital employed. The commercial interest reference rate should not, however, be used in this key test, because it may render a project prematurely "financially/commercially viable" and it induces a less than rational allocation of scarce capital among the middle income developing nations. The reason for these observations is provided under the following (b).

(b) Let us assume a case where the participant is the U.S. Government and the middle income developing nation is Indonesia. In this case, the following variables must play a role in the decision-making process:

- The commercial interest reference rate applicable to the U.S.;
- The interest rate on loan capital in Indonesia applicable to the project being considered;
- The tax rate in the U.S. for computing the after tax interest rate in the U.S. (in view of the fact that interest payments are tax deductible payments in the U.S.);
- The tax rate in Indonesia for computing the after tax interest rate in Indonesia (in view of the fact that interest payments are a tax deductible expense in Indonesia); and
- The rate of devaluation of the Indonesian rupia per U.S. dollar one value.

(It is understood that the above variables are defined for the same time span.)

Given these defined variables, one can then state that, in terms of optimal decision-making, monies should be borrowed in the U.S. for the project being considered in Indonesia if the interest rate on loan capital in Indonesia is higher than a percentage which can be computed from the commercial interest reference rate applicable to the U.S., the rate of devaluation of the Indonesian rupia, and the applicable tax rates in the U.S. and Indonesia. (The precise manner to compute this percentage, as well as the details of this decision rule, are provided in Appendix 1). The following is noted with respect to this decision rule:

(i) It incorporates the variables which, heretofore, have been ignored in the Helsinki Package, i.e., the interest rate in the middle income developing nation, the difference in the tax rate in the U.S., and the tax rate in Indonesia), and the fluctuations in the relevant exchange rates, which are reflected by the rate of devaluation of the Indonesian rupia in terms of one U.S. dollar. At the same time, the decision rule also incorporates the commercial interest reference rate applicable to the U.S. Government.

(ii) The quantity to be computed from the aforementioned four variables is expected to be much higher than the commercial interest reference rate, particularly for a middle income developing nation with a high rate of inflation (note that a high rate of inflation inevitably leads towards a high rate of devaluation of the currency of the middle income developing nation with respect to one U.S. dollar). (For the specifics, see Appendix 1.)

(iii) Also note that the applicable interest rate for loan capital in the middle income developing nation is likely to be much higher than the relevant commercial interest reference rate in the aforementioned comparison of these two rates. This expectation is certainly valid if the country has followed a structural stabilization program.

(c) To ensure rational decision-making, the discount rate to be used to introduce the concept of the time value of money (in the key test concerning generation of cash flow sufficient to cover the project's operating costs and to service the capital employed), must be:

(i) The interest rate on loan capital in the middle income developing nation if this interest rate is lower than a percentage which can be computed from the commercial interest reference rate applicable to the U.S., the rate of devaluation of the currency of the middle income developing nation, and the applicable tax rates in this latter country and the U.S.;

(ii) Or this discount rate must be the percentage which can be computed from the aforementioned four variables if this percentage is smaller than the interest rate on loan capital in the middle income developing nation. (The precise manner to compute the aforementioned percentage, as well as the specifics of the decision rules implied under (i) and (ii) are provided in Appendix 1.)

(d) The use of either one of the discount rates stipulated in the foregoing (c) means the application of a discount rate higher than the one currently stipulated in the Helsinki Package. The use of a higher discount rate means, in turn, a decrease in the computed present value of cash flow to cover the project's operating costs and to service the capital employed. A decrease in the computed present value of this cash flow means, in turn, that the likelihood of attaining financial/ commercial viability is diminished for the project. Hence, the risk of rendering a project prematurely "commercially viable" is evident if a discount rate lower than either one of the discount rates stipulated in the foregoing (c) is used. Consequently, the use of a commercial interest reference rate means incurring the unnecessary (and likely high) risk of incorrectly labeling a project commercially viable.

The other issue of significantly limiting the possibility of obtaining financial leverage with capital available in the middle income developing countries can also be appreciated with the foregoing rationale. That is, the issue here is whether or not a budget appropriation of a bilateral aid agency, such as AID, should, from the point of view of optimal decision-making, be leveraged with loan capital from the bilateral aid agency's country or with loan capital in the relevant middle income developing nation. In the case of AID, its budget appropriations should be leveraged with loan capital from the U.S. if:

the interest rate on loan capital in the middle income developing nation is higher than the percentage which can be computed from the commercial interest reference rate applicable to the U.S., the rate of devaluation of the currency of the middle income developing country, and the applicable tax rates in this latter country and the U.S. (The precise manner to compute this percentage, as well as the details of this decision-making process are provided in Appendix 1.)

Alternatively, AID's budget appropriation should be leveraged with loan capital from the middle income developing nation if: the interest rate on loan capital in the middle income developing nation is lower than the aforementioned percentage to be computed from four variables. (For the specifics, please see Appendix 1.)

Ignoring the applicable interest rate in the middle income developing nation, the difference in tax rates between a middle income developing nation and an OECD participant, as well as the rate of devaluation of the currency of a middle income developing nation with respect to the currency of an industrialized nation (OECD nation), as is done in the Helsinki Package, means, in essence, that obtaining financial leverage with loan capital in the middle income developing nation is hardly ever possible. The reason for this observation is that ignoring the aforementioned decision variables means that the decision regarding where to obtain loan capital to be leveraged with a bilateral aid agency's budget appropriation would, incorrectly, be based upon the following:

(i) Borrow in the OECD (e.g., U.S.) if the interest rate on loan capital in the middle income developing nation applicable to the project is higher than the commercial interest reference rate of the country of the relevant participant.

(ii) Alternatively, borrow in the middle income developing nation to obtain leverage with the bilateral aid agency's budget appropriation if the interest rate on loan capital in the middle income developing nation applicable to the project is lower than the commercial interest reference rate of the country of the relevant participant.

In most cases, one would expect the former rate to be larger than the latter rate; hence, one would hardly ever expect loan capital from the middle income developing nation to be leveraged with a bilateral aid agency's budget appropriations. (For further specifics, see Appendix 1.)

5. As John Mullen (of A.I.D.'s Private Enterprise Bureau) indicated in his memorandum of March 26, 1991, to the Eximbank and Treasury, the U.S. aid to Israel may, in the opinion of the other participants, be considered tied at some future point in time. His memorandum specifically stated that "Appropriation legislation now requires us (USAID) to put all dollars from cash transfers in separate accounts and track them. A preferred use for separate account dollars is imports from the U.S.; to this point the DAC has

accepted the U.S. position that cash transfers are untied, but that could be challenged in cases in which the dollars are specifically used for U.S. imports. In the case of Israel, they currently use the dollars to pay debt, not directly for U.S. imports. Overall, they agree to keep their imports from the U.S. over a certain magnitude. Even this could be alleged to be tying at some point". (See the aforementioned memorandum, p. 4). In other words, the other participants could consider U.S. aid to Israel to be a locked-in issue, unless and until the U.S. Government could convince these participants that Israel is a special case based upon extenuating circumstances. The U.S. Government should be prepared to reply to this locked-in issue.

Based upon the foregoing observations concerning the locked-in issues, AID is recommended to cooperate with the relevant officials of the Eximbank and Treasury in order to bring these issues to the attention of the other participants, have these issues acted upon, and remedied.

UNLOCKED ISSUES

These are the issues which can be resolved within the existing framework of the Helsinki Arrangement through further specification. These issues do not require considerable time and resources to arrive at rational conclusions, such as the ones discussed under "Deadlocked Issues". Also, the unlocked issues are not unalterably fixed until they have been acted upon by the participants, like the ones discussed under "Locked-in Issues". The unlocked issues are simply the issues which demand further specification; AID is strongly recommended to take a lead role among the U.S. agencies involved in the Helsinki Package with respect to these unlocked issues. The relevant representatives from the Eximbank and Treasury should, to begin with, be convinced of the need for further specification through a series of meetings with these representatives. Once the U.S. agencies have agreed with respect to the further specifications to unlock certain issues, the other participants should be convinced to also accept these specifications.

The following issues need to be "unlocked".

1. The Helsinki Package uses the terms "commercially viable" and "financially viable" interchangeably. For example, the text reads on page six: "Tied and partially untied concessional or aid credits, except for credits to LLDCs, shall not be extended to public or private projects that normally should be commercially viable if financed on market or Arrangement terms". On the same page, the text also reads: "Whether the project is financially non-viable, i.e., does the project lack capacity with appropriate pricing determined on market principles, to generate cash flow sufficient to cover the project's operating costs and to service the capital employed". The use of "financially non-viable" in this latter quote is with respect to one of the two key tests. One cannot assume that the key tests are designed for public sector projects only, because the Helsinki Package states specifically that the relevant rules are applicable to both public and private projects. It would have been more precise to use the terminology, "commercially non-

viable" in the relevant tests, because this would reflect that the test is applicable to both public and private projects.

The terminology "commercial viability" has the connotation of private sector activities, because "commerce" refers to trade. Therefore, it is recommended here to use the terminology "commercial viability" for private sector projects only, and to earmark the use of "financial viability" for public sector projects. (Mr. Bernard A. Lubran of the Eximbank agreed to this suggestion in my meeting with him on April 9, 1992.)

2. One of the two key tests of the Helsinki Package refers to "servicing the capital employed" when it refers to the capacity, with appropriate pricing determined on market principles, to generate cash flow sufficient to cover the project's operating costs and to service the capital employed. Export credit agencies would be tempted to interpret "servicing the capital employed" as "servicing the loan capital being considered to be extended" without reference to possibly outstanding debt, and, in the case of private sector projects, equity capital. Though loan capital has a higher priority for being paid for its use than equity capital (because equity capital is more risk-taking than loan capital), one cannot accept the proposition that a project would be commercially viable if the rate of return on equity capital would be zero. Similarly, for projects which have already outstanding debt, a clause in the agreement for the new loan could assign a higher priority for being serviced than the servicing of the older debt. This possible implication could result in the situation where a project is labeled "commercially viable" even though there are insufficient cash flows to service the older debt and equity capital (in the case of private sector projects). To eliminate this possible confusion, it is recommended to refer to all capital, that is, possibly outstanding debt, new debt, and equity capital, when addressing the servicing of capital employed. Given this recommendation, the relevant test of the Helsinki Package would include:

- *A project is commercially non-viable if the project lacks capacity, with appropriate pricing determined on market principles, to generate cash flow sufficient to cover the project's operating costs and all capital employed; where applicable, all outstanding and new debt, as well as all equity capital.*

3. The need for introducing the terminology "servicing <u>all</u> capital employed" immediately calls for the necessity for further specification when one realizes that equity capital should be paid a higher (expected) rate of return than the interest rate on loan capital, because equity capital assumes more risk than loan capital. Theoretically, the rate of return on equity capital during a particular time span is determined by the dividend stream and the capital gain resulting from increases in the share prices during that time span. For common stock, as one type of equity capital, one can estimate the "required rate of return". The "required rate of return" on common stock is the equivalent of the percentage cost of using common stock. For common stock, this percentage cost can be estimated by dividing the expected dividends by the present price of the share, and, subsequently, adding a percentage, which is computed by dividing the expected increase

in price by the present price of the share. It is this estimated percentage cost that needs to be serviced when one states that the generation of cash flow should be sufficient to service the (common stock) capital employed. (Please see the first key test of the Helsinki Package).

Different economic activities are subject to different levels of risk. It is for this reason that the existing literature refers to "risk classes" of economic activities. Common stock issued for the financing of private sector economic activities "A", which are considered to be more risky than economic activities in risk classes "B", "C", etc., should have a higher required rate of return than the required rate of return for economic activities with a lower risk class. This acknowledgment, as well as the level of complexity involved in estimating the required rate of return on common stock, render a theoretically sound approach towards the concept of servicing the common stock capital to be operationally difficult for an agreement among nations, such as the Helsinki Package. The complexity is further augmented when one recognizes that there are different types of equity capital, and each type of equity capital has its own, uniquely estimated required rate of return. These uniquely required rates of return should be introduced in the tests of the Helsinki Package regarding commercial viability if one would follow the theoretically superior approach.

The types of equity capital other than common stock are preferred stock, retained earnings, and capital surplus. The existing literature offers computational procedures to calculate the percentage cost for using each of these types of equity capital. Application of these different computational procedures for each of the different types of equity capital would result in different required rates of return which, subsequently, would have to be incorporated in the test concerning "servicing all the capital employed". One could, for example, compute the weighted required rate of return for the different types of equity capital and use the nominal values of the equity components (which can be found on an actual or pro forma balance sheet) as weights. This approach, though theoretically sound, is cumbersome and time consuming. A less cumbersome and more operational approach should, therefore, be sought.

A simpler approach is the one in which one assumes that the return on equity capital is determined by dividend stream only and not by capital gains. Servicing the common stock capital would then simply mean that sufficient cash flow is generated to pay for the dividend stream. Application of this approach requires, however, knowledge of the dividend payout ratio, that is, the percentage of earnings after tax that is paid out in dividends. Knowledge of the dividend payout ratio is needed to compute the dividend stream for which sufficient cash flow must be generated according to the proper interpretation of commercial viability under this approach. The problem which arises now is that a high dividend payout ratio decreases the probability of a project being commercially viable, because the dividend stream to be serviced is higher than the dividend stream for the same project with a lower dividend payout ratio. Hence, the concept of commercial viability can be manipulated through the choice of the magnitude of the dividend pay-out ratio. This room for manipulation, together with the unrealistic

assumption that return on equity is not determined by capital gain, should suffice to conclude abandoning this simplified approach. I, therefore, recommend an alternative, approximation approach which, nevertheless, recognizes that equity capital should be serviced if a project in the private sector is to be labeled "commercially viable".

The approach I recommend is based upon one assumption and a few observations. The assumption is that equity capital, regardless of its type, earns the same required rate of return. This postulate is not a significant abstraction from reality because, in practice, the required rate of return on preferred stock, common stock, retained earnings, and capital surplus does not differ much. The following observations are the basis for my forthcoming recommendation:

(a) For a prolonged period of time, i.e., from 1926 through 1990, the average annual rate of return on equity capital in the U.S.A. was 12.13 percent. (Source: statistical data provided by the Federal Reserve System.)

(b) For the same time span, i.e., 1926 through 1990, the average annual rate of return on Treasury bills and long term bonds in the U.S.A. was 3.73 percent and 4.9 percent, respectively (Source: ibid).

(c) Depending upon the maturity time span of loan capital (Treasury bills versus long-term bonds), the annual average rate of return on equity capital in the United States was, for the time span 1926 through 1990, at least 8 percent higher for equity capital than for loan capital.

(d) Equity capital in the middle income developing nations is subject to more risk than equity capital in the U.S.A. In the U.S.A., equity capital is subject only to commercial risk, whereas equity capital in the middle income developing nations is subject to commercial risk, political risk, and exchange rate risk.

(e) The higher the risk, the higher the rate of return on equity capital should be. It is, therefore, safe to postulate that the annual average rate of return on equity capital in middle income developing nations should be at least 10 percent higher than the annual average rate of return on loan capital.

Given the foregoing observations, I recommend that the interpretation of servicing equity capital for the key test of the Helsinki Package must be that this capital is to be serviced at a rate which is 10 percent higher than the minimum interest rate stipulated by the Arrangement (that is, the relevant Commercial Interest Reference Rate (CIRR) or the SDR-based rate). Given this recommendation, the relevant key test for eligibility for tied and partially untied concessional or aid credits should read as follows:

- ***For private sector projects:*** *A project is commercially non-viable if the project lacks capacity, with appropriate pricing determined on market principles, to generate cash flow sufficient to cover the project's operating costs and to service all the capital employed; where applicable, already outstanding debt should be serviced on the established, historical terms; the new loan capital should be serviced on the Arrangement terms, including the stipulated minimum rate of interest; and, the equity capital should be serviced at the minimum rate of interest stipulated by the Arrangement plus an additional 10 percent.*

- ***For public sector projects:*** *A project is financially non-viable if the project lacks capacity, with appropriate pricing determined on market principles, to generate cash flow sufficient to cover the project's operating costs and to service all the debt employed; where applicable, already outstanding debt should be serviced on the established, historical terms; and, the new debt should be serviced on the Arrangement terms, including the stipulation of minimum interest rate.*

The following is noted with respect to the foregoing recommendation:

(a) The second test of the Helsinki Package referring to the likelihood that the project can be financed on market or Arrangement terms, has, thus far, not been addressed and, therefore, remains in place at this time.

(b) The increase in the rate at which capital needs to be serviced, resulting from the specification regarding equity capital, decreases the likelihood of a project being labeled "commercially viable". The decrease in probability of a project being commercially viable means increased maneuverability in the decision-making process concerning what capital projects should be considered. This observation is, in particular, relevant to the forthcoming plans of the Bureau for Private Enterprise, because of this Bureau's interest in capital projects and private sector development.

4. The further specification with respect to the rates at which debt and equity capital should be serviced necessitates yet another further particularization regarding the debt/equity ratio of a private sector project and eligibility for concessional credits. The need for this additional detailing can be appreciated when one considers the following. All other things being equal, a so-called "highly geared" project attains the label of commercial viability before a "lowly geared" project can attain such a label. This observation is valid because a lowly geared project is serviced at a percentage rate that is, on the average, higher than the percentage rate at which the capital of a highly geared project is serviced. (A lowly geared private sector project is a project that employs much equity capital relative to debt; contrariwise, a highly geared private sector project is a project that employs much debt relative to equity capital.) Manipulation of the debt/equity ratio of a private sector project can adversely affect the status of commercial viability if such an outcome is desired (for reasons of tied aid financing). Hence, further particularization with respect to the debt/equity ratio is required for the key test regarding concessional

credits of the Helsinki Package. Guidance for such specification is available by assessing the debt/equity ratios for various economic activities in the U.S.A.. Such an assessment leads to the conclusion that, prior to the onset of the international debt crisis and the mistakes made by the savings and loan institutions, the debt/equity ratio was, on the average, one in the U.S.A.. That is, about 50 percent of all capital being used to finance economic activities was loan capital, and a same percentage was applicable for the financing of such activities by means of equity capital. More recently, the percentage of all economic activities financed through equity capital has increased, on the average, to approximately 55 percent; the remaining 45 percent is financed by debt. Given this observation, I recommend a further specification of a debt/equity ratio of 82 percent in the test regarding eligibility of tied and partially untied concessional or aid credits to be extended to private projects. Consequently, this test should now read as follows:

- ***For private sector projects:*** *A project is commercially non-viable if the project lacks capacity, with appropriate pricing determined on market principles, to generate cash flow sufficient to cover the project's operating costs and to service all the capital employed; where applicable, already outstanding debt should be serviced on the established, historical terms; the new debt should be serviced on the Arrangement terms, including the stipulated minimum rate of interest; and equity capital should be serviced at the minimum rate of interest stipulated by the Arrangement plus an additional 10 percent, and, furthermore, a maximum debt/equity ratio of 82 percent should be postulated.*

- ***For public sector projects:*** *A project is financially non-viable if the project lacks capacity, with appropriate pricing determined on market principles, to generate cash flow sufficient to cover the project's operating costs and to service all the debt employed; where applicable, already outstanding debt should be serviced on the established, historical terms; and, the new debt should be serviced on the Arrangement terms, including the stipulation of minimum interest rate.*

5. The other test contained in the Helsinki Package refers to the likelihood that the project can be financed on market or Arrangement terms. Applicability of this test for projects or project components to be financed by bilateral aid agencies requires further specification if aid quality standards are not to be jeopardized. The issue at stake here is that an export credit agency can, without observing aid quality standards, label a project commercially viable once the recipient government has guaranteed the loan. Such a practice is quite appropriate for an export credit agency, but cannot be accepted for a bilateral aid agency which, to begin with, should be concerned with the high quality of aid. A bilateral aid agency, such as AID, evaluates a project carefully with respect to aid quality standards and may, as a result of observing such standards, conclude that a particular project is not commercially viable even thought the recipient government is willing to guarantee the servicing of debt for the project. To prevent such conflicts, I recommend the following two specifications:

(a) The second key test regarding concessional credits eligibility should read as follows:

- *For public and private sector projects: A project is financially/commercially non-viable if it is reasonable to conclude, based on communication with other participants, that it is unlikely that the project can be financed on market or Arrangement terms, provided that the guarantee for debt servicing by the recipient government is not considered for projects financed by aid agencies.*

(b) The second recommendation is based on the following rationale. The determination of commercial viability and of financial viability of projects financed by AID is the responsibility of AID rather than the responsibility of Eximbank or of the Treasury, because AID is uniquely qualified to evaluate projects with respect to aid quality and other stipulations, such as the specifications being offered in this report. An export credit agency, such as Eximbank, does not have the expertise to evaluate projects concerning aid quality standards, because such agencies traditionally assess credit worthiness of the borrower and risk of the foreign country. Given this rationale, I recommend that the following clause be added to the second test regarding concessional credits eligibility:

- *The determination of commercial viability and of financial viability of projects financed by aid agencies is the responsibility of such agencies.*

The second recommendation regarding AID's responsibility concerning determination of commercial viability might be difficult to implement; alternatively, AID may aim for a strategy which, in case of conflict, would result in determination of aid quality to overrule determination of commercial viability. This strategy is not far removed from the earlier recommendation concerning deadlocked issues, which states that the concept of commercial viability should not be applicable to projects financed by bilateral aid agencies.

6. As was already noted in the discussion on locked-in issues, the key test of the Helsinki Package regarding the generation of cash flow sufficient to cover the project's operating costs and to service all the capital employed, does not address the time frame during which the project is expected to become commercially viable. The second test of the Helsinki Package regarding the likelihood of the project being financed on market or Arrangement terms could assume that generation of cash flow sufficient to cover the project's operating costs and to service all the capital employed must occur within the maximum repayment term stipulated by the Helsinki Package (that is, 8 1/2 years for the middle income developing countries). Logically, the expected life of the project should be the time frame to generate cash flow sufficient to cover the project's operating costs and to service the capital employed. The expected life of a capital project nearly always exceeds 8 1/2 years. Consequently, further specification of the test concerning commercial viability in terms of a time frame that would be equal to the expected life of

the project would render a less rigid test than a test which is specified in terms of 8 1/2 years. To state it differently, ceteris paribus, it is nearly always easier for a project to be labeled commercially viable at a point in time during its expected life time than being labeled commercially viable during 8 1/2 years. Presuming that OECD participants other than the U.S. Government will adhere to the rules of the Helsinki Package in a manner less rigid than the U.S. Government, AID may as well aim for a necessary specification which renders more maneuverability for its decision-making regarding capital projects than a more rigid interpretation of time frame. I, therefore, recommend the following further specification for the key test of the Helsinki Package with respect to determination of financial and commercial viability:

- ***For public sector projects:*** *A project is financially non-viable if the project lacks capacity, with appropriate pricing determined on market principles, to generate cash flow sufficient to cover the project's operating costs and to service all the debt employed; where applicable, already outstanding debt should be serviced on the established, historical terms; and, the new debt should be serviced on the Arrangement terms with respect to the minimum interest rate and maximum repayment period. (Note: in cases where the remaining years of the repayment term of the already outstanding debt exceeds the years stipulated by the Arrangement, the total number of years for determination of financial viability shall not exceed the years stipulated by the Arrangement....currently, 8 1/2 years).*

- ***For private sector projects:*** *A project is commercially non-viable if the project lacks capacity, with appropriate pricing determined on market principles, to generate cash flow sufficient to cover the project's operating costs and, within the maximum repayment term stipulated by the Arrangement, to service all the capital employed; where applicable, already outstanding debt should be serviced on the established, historical terms (however, the remaining years of the debt outstanding cannot exceed the years stipulated by the Arrangement); the new debt should be serviced on the Arrangement terms, including the stipulated minimum rate of interest; and, equity capital should be serviced at the minimum rate of interest stipulated by the Arrangement plus an additional ten percent, and, finally, a maximum debt/equity ratio of eighty-two percent should be postulated.*

The following is noted at this level of specification of commercial viability and financial viability: the need to introduce the concept of time value of money is indicated in the earlier discussed "locked-in issues". Once this concept is (hopefully) accepted by the other participants, the concepts of financial viability and commercial viability must be further specified in terms of present values of cash flows sufficient to cover the project's operating costs and to service all the capital employed. It should be recognized, at that time, that the present values can no longer be computed at a discount rate which is a commercial interest reference rate or a SDR-based rate in the case of private sector projects. In the case of private sector projects, where, as has been indicated in the foregoing text, a distinction between debt and equity capital is necessary for the concept

of commercial viability, the present values of all cash flows should be computed at the minimum rate of interest stipulated by the Arrangement (either the relevant commercial interest reference rate or the SDR-based rate) plus ten percent.

For reasons similar to the ones discussed with the introduction of the time value of money, ceteris paribus, it becomes more difficult for a project to attain the label "commercially viable" once the discount rate at which present values are to be computed is raised. (This same reasoning is the basis for multinationals deciding upon investments in newly developing countries; that is, in brief, the expected rate of return of such investments should be sufficiently higher than the expected rate of return on investments in industrialized countries in order to justify the additional risk inherent in operating in newly developing nations. In other words, the expected commercial viability should be much higher in developing nations than in industrialized nations.)

7. The concept of commercial viability still needs further specification once one realizes that different depreciation methods affect the availability of cash flows and hence, the cash flow sufficient to cover the project's operating costs and to service all the capital employed in accordance with the specifications introduced in the foregoing text. Depreciation, tnough recognized as an expense, does not constitute a cash outflow. The funds accumulated in the "reserve for depreciation" are available, for example, to cover a project's operating costs and to service capital employed. An accelerated method of depreciation results in a reserve of depreciation which is larger than such a reserve resulting from a traditional depreciation method, such as depreciating the same value during each year of the expected life of the asset (which, when properly applied, should result in a zero book value at the end of the expected life of the asset).

There is yet another way in which the method of depreciation affects the available cash flow. That is, for a private sector project, depreciation is considered a tax deductible expense; a tax deductible expense lowers cash outflow for tax payment and hence, increases the cash flow available to cover a project's operating costs and to service all the capital employed. Again, an accelerated method of depreciation results in lower cash outflows for tax payments than a traditional method of depreciation, such as the straight line method of depreciation. (The straight line method of depreciation is that method which depreciates equal amounts each year during the expected lifetime of the project (or project components) until the nominal value of the asset has reached zero at the end of its expected lifetime).

These observations regarding the impact of method of depreciation on determination of commercial viability mean that a further specification is needed with respect to the key test based on generation of cash flow sufficient to cover the project's operating costs and service all capital employed. This key test should now read as follows:

- ***For public sector projects:*** *A project is financially non-viable if the project lacks capacity, with appropriate pricing determined on market principles, to generate cash flow sufficient to cover the project's operating costs and to service all the*

debt employed; where applicable, already outstanding debt should be serviced on the established, historical terms; and, the new debt should be serviced on the Arrangement terms with respect to the minimum interest rate and maximum repayment period. (Note: in cases where the remaining years of the repayment term of the already outstanding debt exceeds the years stipulated by the Arrangement, the total number of years for determination of financial viability shall not exceed the years stipulated by the Arrangement....currently, 8 1/2 years).

For private sector projects: *A project is commercially non-viable if the project lacks capacity, with appropriate pricing determined on market principles, to generate cash flow sufficient to cover the project's operating costs and, within the maximum repayment term stipulated by the Arrangement, to service all the capital employed; where applicable, already outstanding debt should be serviced on the established, historical terms (however, the remaining years of the debt outstanding cannot exceed the years stipulated by the Arrangement); the new debt should be serviced on the Arrangement terms, including the stipulated minimum rate of interest; and, equity capital should be serviced at the minimum rate of interest stipulated by the Arrangement plus an additional ten percent; and, finally, a maximum debt/equity ratio of eighty-two percent, as well as a straight line method of depreciation applicable to the expected life of the project (or project components) should be postulated.*

The following is noted with respect to the foregoing specification: the U.S. Government does not apply methods of depreciation for the assets financed with internal revenue funds or debt. However, there has been talk among the EC governments to also apply depreciation methods for public sector projects. A specification regarding straight line method of depreciation is recommended for the determination of financial viability for public projects, once it has been decided that such projects should also be subject to methods of depreciation.

8. The issue of rate setting for public utilities and other possible public services (such as garbage collection and waste collection), as well as the possibility of tolls for certain roads, should be addressed in the Helsinki Package if the concept of commercial viability is to become operational for capital projects rendering these types of services. If the principle of full-cost pricing were used, commercial viability could easily be "enforced" on all projects. The use of full-cost pricing means, however, that tradeoffs between growth and distribution are ignored even though such tradeoffs pose important policy choices that cannot be dismissed by putting forward "trickle down" or similar theories of the development process. Whether benefits of public services trickle down or not is an empirical issue that is far from settled. But even if benefits do trickle down, the normative issue of whether the trickle is large enough cannot be avoided. Much of the work on growth and development has rejected the rigid social valuation implicit in the traditional approach and has led to the development of a new approach that is quite open-ended in its social valuation. This new approach does not compel one to reject the

traditional view, but allows the use of different judgments when considered relevant (see, for example, Little, Ian, and Mirrlees, James, Project Appraisal and Planning for Developing Countries, New York, 1974).

According to the new approach, decision-makers can use social valuation as a flexible tool, for example, to incorporate the objective of redressing poverty and economic inequality. Decision makers of recipient governments, rather than decision makers of donor countries, should use social valuation as a flexible tool. Consequently, decision makers of recipient countries, rather than decision makers of donor countries, should decide whether full-cost pricing should be followed for rate setting of public utilities and other possible public services. Given this observation, I recommend the following specification for the application of the test contained in the Helsinki Package regarding eligibility of tied and partially untied concessional or aid credits. Insert the following clause after the wording of the test regarding the sufficiency of generation of cash flows for both private and public projects:

- *Extenuating circumstances based on sound social valuation may exempt the rate setting of public utilities (or other projects rendering a public service) from the use of appropriate pricing determined on market principles.*

The following is noted regarding this specification. The social valuation of the government in the recipient country may be different from the judgment of a bilateral aid agency. The agency may, if it chooses, try to convince the recipient nation's government that its judgment consistent with quality aid standards. Nevertheless, the decision to finance a project, its rationale, and the processes by which it is reached, are the responsibility of the aid agency, not that of the decision-makers in the recipient country.

9. The Finland delegation has already brought up the need for further detail with respect to the maximum time span for which credit terms and conditions can be fixed for aid protocols and aid credit lines. Eero Timonen stated in his memorandum of March 14, 1992, to the "ECHGROUP" that, according to paragraph 7 of the Helsinki Package, "the participants shall not fix credit terms and conditions for a credit line for a period exceeding six months. However, there is no similar restriction for aid protocols, aid credit lines or similar agreements which may be valid up to two years after their signature". Given this observation, Eero Timonen suggested in the same memorandum that paragraph 7 of the Helsinki Package be modified "so that also under the aid credit lines, it is not allowed to fix credit terms and conditions for an individual transaction for a period exceeding six months". He felt that, this way, all individual transactions would be treated equally irrespective of the form of financing. I recommend that AID carefully assess this suggested specification in the light of the usual duration for which AID fixes credit terms and conditions. AID may need to present an alternative specification.

10. As Mr. John Mullen indicated, a serious shortcoming of the Helsinki Package is the absence of a reference to a recipient country's debt capacity for projects that do not earn hard currency. This serious lack calls for a further particularization. The payback of

many projects in the middle income developing nations might enable debt servicing in local currency, but not in hard currency (in which nearly all relevant loans are made). Unless the project earns hard currency, it cannot serve debt in hard currency. Most projects in these middle income developing nations do not earn hard currency. The implicit assumption of the two key tests of the Helsinki Package regarding the eligibility of tied and partially untied concessional or aid credits is that the debt capacity of the recipient country is such that the debt can be serviced in hard currency even if the project does not earn hard currency. The prevailing debt capacity in many of the middle income developing countries renders this assumption unrealistic and unacceptable. A particularization with respect to debt capacity must, therefore, be introduced.

Debt capacity of a country is usually gauged by debt stock indicators, such as the debt service-to-exports ratio, the debt-to-exports ratio, and the debt-to-GNP ratio. Overall, the development of aggregate debt stock indicators for developing nations has been mixed in 1990-91, with the debt service-to-exports ratio worse at 21.2% compared with 19.8% in 1990; the debt-to-exports ratio slightly lower at 176.2% in 1991 compared with 176.8% in 1990; and the debt-to-GNP ratio better at 38.4% compared to 41.8% in 1990. (Source: Computed from the World Bank's world debt tables regarding external debt of developing countries.) The Helsinki Package stipulates that the concept of financial viability and of commercial viability needs to be applied to middle income developing nations. Hence, a further insight into the magnitude of debt stock indicators of these countries is necessary prior to arriving at a desirable specification in the Helsinki Package.

The debt service-to-exports ratio for the severely indebted middle income developing nations was as follows for each of the years, 1985 through 1991: 40.4% for 1985; 46.2% for 1986; 39.6% for 1987; 41.2% for 1988; 34.3% for 1989; 25.5% for 1990; and, 29.7% for 1991 (Source: ibid). The debt-to-exports ratio for the severely indebted middle income developing nations was as follows for each of the years, 1985 through 1991: 288.3% for 1985; 371.9% for 1986; 366.1% for 1987; 324.3% for 1988; 295.7% for 1989; 276.2% for 1990; and, 280.4% for 1991 (Source: ibid). The time series of data for the debt service-to-exports ratio and for the debt-to-exports ratio shown above are for the severely indebted middle income developing nations. These debt stock indicators reflect a much worse debt capacity than the debt stock indicators for all developing nations without debt-servicing difficulties. The debt service-to-exports ratio for all developing countries without debt-servicing difficulties for each of the years, 1985 through 1991, is as follows: 20.8% for 1985; 21.7% for 1986; 21.0% for 1987; 17.0% for 1988; 14.0% for 1989; 12.4% for 1990; and, 11.6% for 1991 (Source: ibid). The debt-to-export ratio for all developing countries without debt-servicing difficulties for each of the years, 1985 through 1991, is as follows: 107.6% for 1985; 104.2% for 1986; 92.0% for 1987; 77.4% for 1988; 70.9% for 1989; and, 69.5% for 1990 (Source: ibid).

The difference in debt stock indicators for all developing nations without debt-servicing difficulties as compared to those for the severely indebted, middle income developing

nations, is much more significant than the difference in debt stock indicators for middle income, severely indebted developing nations as compared to those for the low income, severely indebted developing nations. Observance of the former time series of data, together with the following time series of data, renders this conclusion. The debt service-to-exports ratio for the severely indebted, low income developing nations is for each of the years, 1985 through 1991 as follows: 30.6% for 1985; 32.8% for 1986; 24.2% for 1987; 28.9% for 1988; 30.1% for 1989; 23.8% for 1990; and, 31.3% for 1991 (Source: ibid). The debt-to-exports ratio for the severely indebted, low income developing countries is for each of the years, 1985 through 1991, as follows: 321.1% for 1985; 456.8% for 1986; 521.0% for 1987; 494.8% for 1988; 480.4% for 1989; 389.6% for 1990; and, 441.6% for 1991 (Source: ibid).

Given the range of magnitudes of the debt stock indicators contained in the foregoing time series, I recommend that AID carefully assess inclusion of the following clause in the two key tests concerning financial and commercial viability:

- *Irrespective of capacity to generate cash flow, projects that do not earn hard currency cannot be considered financially viable or commercially viable if the debt-service-to-exports ratio is larger than 25%, and/or the debt-to-exports ratio is larger than 275% in the recipient country.*

The following is noted with respect to this specification:

(a) The lower one sets the debt service-to-exports ratio and the debt-to-exports ratio, the more maneuverability AID has in its decision-making process regarding capital projects.

(b) Additional time and effort may be needed to arrive at superior values for the debt service-to-exports ratio and the debt-to-exports ratio in the foregoing suggested clause.

11. During my last visit to AID in Washington, D.C., Mr. Robert N. Bakley (Deputy Assistant Administrator for A.I.D.'s Private Enterprise Bureau) raised the interesting question whether the two-step financing procedure would allow OECD participating governments to disregard the rules contained in the Helsinki Package. At that time, I told Mr. Bakley that I didn't think this would be possible, but I would explore the issue further. Further specification in the rules of the Helsinki Package would be needed if the two-step financing procedure would offer such an "escape route". Based on a report by DAC, I have now concluded that the two-step financing procedure does not allow OECD participating governments to disregard the rules of the Helsinki Package. Consequently, no further specification is needed in this case.

Under the two-step financing procedure, the aid is made available to the central government of the recipient, which government then finances the project at domestic market interest rates. The concessionary element in the aid financing thus accrues to the central government of the recipient country. A variation of this two-step financing

procedure is the case where an aid agency provides funds to a bank in a recipient country, and this bank then finances a project on domestic market terms (regarding interest rate and repayment) in the recipient country. The two-step financing procedure does not allow the funding from the aid agency to be tied. The absence of a possibility for tying is the reason that DAC recommends two-step financing procedures as a useful device to avoid distorting effects of tied aid on resource allocation and income distribution.

12. The Helsinki Package contains stipulations concerning repayment of principal, payment of interest, and minimum interest rates, without recognizing the existence of interest rate swaps and currency swaps. Through the use of such swaps, one can change one type of debt for another type of debt in order to attain terms which are preferred for a particular situation (e.g., in order to obtain a large contract in a middle income developing country). A brief description of interest rate swaps and currency swaps illustrates this possibility.

A swap is a contractual agreement in which two parties agree to make periodic payments to each other, and the agreement contains a specification of the currencies to be used (which may or may not be the same), the rate of interest applicable to each (which may be fixed or floating), the time table by which the payments are to be made, and any other provisions bearing on the relationship between the parties. There are two major categories of swaps: interest rate swaps and currency swaps. A number of variations of swaps is possible within each of these categories. Interest rate swaps are swaps in one and the same currency: the most common type involves exchanging cash flows of a floating rate obligation for cash flows of a fixed rate obligation. The principal exchanges of an interest rate swap are identical and in the same currency; hence, the principal exchanges offset one another and are unnecessary. The principal is, therefore, referred to as "notional", and interest payments are calculated on the basis of this hypothetical amount.

A currency swap entails the exchange of debt denominated in one currency for debt denominated in another currency. Currency swaps involve three distinct sets of cash flows: (i) the initial exchange of principals called the "exchange of borrowings"; (ii) the interest payments of each counter party to the other between the exchanges of principals; and, (iii) the re-exchange of principals at the same exchange rate used for the initial exchange of borrowings. In the most common currency swap, one counter party pays a fixed rate of interest and the other pays a floating rate of interest; however, there are many variations on this most common currency swap. (For a detailed description of the various types of interest rate and currency swaps, as well as a description regarding the decision-making processes for the use of these various swaps, I refer to the following paper: Arie Beenhakker, Swaps As Vehicles to Integrate the Global Capital Market, to be presented at the forthcoming meetings of the Internationalized Business Association in Brussels, Belgium, during November, 1992.)

The brief discussion concerning interest rate swaps and currency swaps highlights possibilities of changing the terms of one debt for other terms of another debt; and hence, possibilities of "escaping" the rules of the Helsinki Package with respect to repayment of principal, payment of interest, and minimum rates of interest. The most effective way to deal with this "escape route" is to stipulate that interest rate swaps and currency swaps cannot be used. If, alternatively, the Arrangement participants want to allow the use of swaps, then specifications should be designed for each and every variation of the multifarious types of interest rate swaps and currency swaps. Such an approach would be complex and operationally difficult to implement. I, therefore, recommend that the following clause be included in paragraph 4 and/or paragraph 5 of the Helsinki Package:

- *Interest rate swaps and currency swaps cannot be used.*

Interest rate swaps and currency swaps should not be confused with "credit swaps". Credit swaps are arrangements, usually via the central bank of a developing nation, where a specified amount of hard currency is converted into a weak currency at a negotiated swap rate of exchange (which is neither the market rate of exchange nor the official rate of exchange), with the understanding that, at a future, stipulated point in time, the amount of weak currency obtained at the onset of the swap, is converted back into hard currency at the same, negotiated swap rate of exchange applied at the onset of the swap. There are usually two types of costs associated with these credit swaps: (i) the swap rate of interest charged by the central bank (to my knowledge, only the central bank of Ecuador and of Chile do not charge a swap rate of interest), and, (ii) a hidden cost which can be computed by taking the difference between the market rate of exchange and the swap rate of exchange and, subsequently, divide the difference thus obtained by the market rate of exchange.

I did not mention the possibility of a credit swap during the discussion of the aforementioned unlocked issue (9). I addressed, in that issue, inter alia, a project that can earn sufficient local currency cash flow to cover the operating costs and to service all the capital employed, but these cash flows cannot be generated in hard currency. Seemingly, a credit swap may offer a solution for this situation where the debt was provided in hard currency and must be serviced in hard currency. However, this is not the case and hence, I did not make this recommendation for the following reasons:

(a) Traditionally, credit swaps only cover an investment outlay or principal of a debt, but not the interest payments on debt; consequently, the problem of lacking hard currency to service the debt would only be partially solved via a credit swap (only for the principal of the debt).

(b) Traditionally, credit swaps are only available for non-amortizing funds, whereas the Helsinki Package stipulates the use of amortizing funds.

(c) Depending upon the expected rate of inflation in the developing nation, the cost for a credit swap could be rather high, thereby decreasing the funds available for economic development.

The lack of reference to swap arrangements in the Helsinki Package is just one example of ignoring modern mechanisms of international financial markets. Other mechanisms include, but are not limited to commodity-linked financing, securitization, and the use of various instruments of the derivative security markets. The possible use of such modern mechanisms of international financial markets may necessitate further specifications in the Helsinki Package.

13. The Helsinki Package's test regarding commercial viability requires further detail regarding risk of a project, because the very nature of commercial viability connotes the concept of risk. Also, funding projects in a developing nation should be treated like a capital investment and, usually, such investments are assessed with respect to both return and risk. That is, the higher the risk, the higher the expected return on capital investment should be to render it justifiable or commercially viable.

One way to specify risk is through the formulation of a probability distribution of net cash flows (cash inflows minus cash outflows) expected to be generated by the project during each partial time span of the planning horizon. Following this route, one would then compute the mean and standard deviation of each probability distribution of net cash flows for each time span, and, subsequently, one would estimate one mean and one standard deviation for the sets of probability distributions of net cash flows during the entire planning horizon. These measures of mean and standard deviation can then be used as measures of return and risk. Since both of these measures are computed in one currency (e.g., the U.S. dollar), dividing the mean by the standard deviation renders a simple index. Indices computed in this manner could, subsequently, be used as measures of commercial viability. The attraction of this approach is that such indices of commercial viability would simultaneously address the two most important aspects of the concept of commercial viability, that is, return and risk. In fact, such indices of commercial viability would also reflect the basic rationale of "risk versus return" inherent in capital investment decisions. If one would accept this route of specifying risk and return, then one would have to assess what magnitude of commercial viability index would be sufficient to label a project "commercially viable".

At the present time, the level of specificity of risk as contained in the suggested commercial viability index might be too complex to implement. Another, more simplified, approach to address risk could be similar to the one followed, for example, by the Foreign Credit Insurance Association (FCIA). This approach categorizes countries in sets, and each set of countries is subject to a different level of (somewhat subjectively) assessed risk. The FCIA approach is based upon country risk only. A specification of risk for projects in middle income developing countries should also include concepts of commercial risk and foreign exchange rate risk. The Delphi methodology could be followed to arrive at categories of countries with similar risk, and

where risk includes country risk, foreign exchange rate risk, and commercial risk. The results thus obtained could then be used as further necessary specification of risk in the concept of commercial viability contained in the Helsinki Package.

- *It is recommended that AID carefully assess which route to follow with respect to the need to further specify risk, which must be considered an inherent aspect of commercial viability.*

The result of this assessment depends on AID's guidelines currently in use for project evaluation and selection; these guidelines may refer to probability distributions of cash flows, which would render the introduction of a "commercial viability index" operational.

14. The lack of specificity regarding environmental considerations in the Helsinki Package may result in a situation where most projects would be labeled commercially non-viable, because no environmental degradation whatsoever would be accepted. Yet, some environmental degradation may be acceptable. For example, it may be more cost effective, and preferable to those affected, to compensate people for a project's unwanted environmental effect, such as the noise of a railway routed near a village, than to eliminate the effect at great expense by rerouting the railway or soundproofing houses. Improved cost effectiveness means an increase in the likelihood of the project being commercially viable.

As more has become known about the impact of development on the environment, safe minimum standards with which a project must comply if it is to be socially and environmentally acceptable have been increasingly adopted by the international community. This relates to such matters as setting standards for public health and safety, protecting specially designated natural areas (parks and natural preserves) and safeguarding plant or animal species in danger of extinction. Projects should not contravene any applicable international agreements on the environment. Given this observation, I recommend that, at minimum, the following clause be included in paragraph 8 of the Helsinki Package:

- *In determining financial viability or commercial viability of a project, any applicable international agreement on the environment must be strictly followed.*

Further specification can be included in this clause if one considers the World Bank's experience with respect to environmental safeguards. In 1970, the World Bank began examining every project considered for financing to identify likely environmental, health, and related problems and opportunities. A review of the work done from July, 1971, through June, 1980, covering a total of 1,342 projects in industry, agriculture, energy, education, health, transport, and telecommunications, showed that the majority of projects (845, or 63%) had no apparent or potential environmental problems. In 22 projects (2%), some other agency, such as the UNDP or WHO, had already identified the problem and action had been taken to incorporate necessary safeguards. In 365

projects (27%), there were relatively simple environmental problems, which were dealt with mostly through improvements in project design or operation. Only the remaining 8 percent of the projects had environmental problems sufficiently serious to require special studies by consultants to design and incorporate safeguard measures. This experience indicates that, of the projects requiring attention, roughly three-quarters could be dealt with through simple design changes. The World Bank's experience over this prolonged period of time also indicates that the cost of incorporating environmental protection components into nonenvironmental projects (that is, all projects except primarily environmental ones such as pollution control, water supply, sewerage, and reforestation) ranged from zero to three percent of total project costs, with the higher figure usually the result of adding protective measures after the project design was already well advanced.

As economic development continues, developing nations are likely to face increasingly serious environmental conditions and to be forced to adopt higher standards. For example, worsening air pollution in Mexico City, Bangkok, Jakarta, and many other cities indicates that environmental controls will have to be tighter on new projects. Nevertheless, a figure of approximately five percent of total project cost appears to be a likely ceiling for the cost of incorporating environmental protection components into nonenvironmental projects. This ceiling appears to be quite acceptable if one realizes that, for maximum effectiveness, environmental concerns should be reflected in project design at the earliest possible stage. Environmental concerns that are reflected at the earliest possible stage can be accommodated at the lowest possible cost; hence, maximum cost effectiveness is obtained.

Given these foregoing observations, I recommend that the following clause be included in paragraph 8 of the Helsinki Package:

- *In determining financial or commercial viability of a project, the cost of incorporating environmental protection components should not exceed five percent of total project costs for non-environmental projects, which are all projects except the primarily environmental ones, such as pollution control, water supply, sewerage, and reforestation.*

15. The lack of specification in the Helsinki Package with respect to what a project is, permit our competitors to continue to do exactly what they have been doing successfully for years. To quote Mr. John Mullen, most of the other participants of the Arrangement "finance feasibility studies and project design and engineering with tied grants (which in a variety of ways locks the procurement into donor country firms or LDC firms in which the donor has an interest) and then finance the rest of the project with 'untied' harder credits, which, of course, also flow to donor firms or LDC firms of the donor's choosing. Any discipline based on limiting tied aid runs the serious risk of cheating". (See the memorandum by John Mullen and Reggie Brown [Assistant Administrator for A.I.D.'s Near East Bureau] of March 26, 1991, to Eximbank and Treasury.) I may add that any new discipline which does not contain sufficient specifications also runs the

serious risk of cheating. Consequently, a more precise definition and interpretation of a project may be needed if the content of the Helsinki Package is to become operational.

The need for a specific definition of a capital project has also been indicated by Mr. Mike Unger (Chief Financial Economist of A.I.D.'s Bureau for Private Enterprise) when he raised the important question "To what extent can capital projects be divided into discrete projects, e.g., pre-feasibility, feasibility, design, construction, and implementation?"

Donor M. Lion stated that one of the sources of differences among the definitions of capital projects is the frequent use of the word "infrastructure" as a synonym for capital projects. The definitional issue is further muddied by the use of such phrases as socio-infrastructure, research infrastructure, intellectual infrastructure, and legal infrastructure. Mr. Lion subsequently concluded that, "apparently there is no consensus on a single definition of either 'infrastructure' or 'capital project'" (Donor M. Lion, Reconnaissance of AID's Experience with Capital Projects, a report prepared for AID, October, 1991.) Most definitions of a capital project also refer to activities which support, supplement, enhance, or are otherwise associated with the capital project. Examples of such activities are training, technical assistance, operations and maintenance assistance, institutional development, and engineering services.

Mr. Fred Zobrist (Director, Office of Capital Projects, Bureau for Private Enterprise, A.I.D.) refers to a capital project as the "development and replacement or rehabilitation of physical assets" and he includes in the interpretation of such a project any of the supportive activities designed to contribute to this development, replacement, or rehabilitation of physical assets. This interpretation reflects AID's recognition that an expansion of capital projects will require an expansion of a range of assistance activities, including the traditional phases of capital projects (feasibility studies, engineering, construction/procurement, and start-up training), as well as such activities as master planning, institutional support and program/project management (See Donor M. Lion, op. cit. p. 4).

In seeking a proper definition for a capital project, AID must take into account the Lieberman bill or "AID Trade and Competitiveness Act of 1991", which states that its purpose is to develop an AID program that will focus on developmentally sound capital projects, taking into consideration the export opportunities of U.S. firms. This bill refers to the standard criteria of the DAC in defining "developmentally sound" capital projects. DAC's standard criteria for developmentally sound capital projects are similar to, but somewhat less rigid than AID's standard criteria for project selection, design, review, and evaluation. The Lieberman bill stipulates that, for purposes of AID's mission, the definition of a capital project should encompass project activities which are developmentally sound and, at the same time, hospitable to, and supportive of export promotion.

In his effort to arrive at a working definition of a capital project, Mr. Lion concludes that he prefers the terminology "capital development project", because of the essential linkage to development. Lion furthermore states that: "The typical capital development project supports economic and social development in developing countries through a mix of several activities, some undertaken successively, some simultaneously as follows: ...Development, replacement, or rehabilitation of physical assets involving feasibility work, engineering, construction, commodity procurement, and training; and, directly related to the foregoing, ...Institutional development, involving technical assistance, training, program/project management, maintenance and operational support and planning. Thus, a 'capital project' encompasses any or all of the above. As indicated, it usually involves several activities, a kind of capital development program. It may also be one activity, for example, a feasibility study" (ibid, p. 4).

Given the foregoing observation, Lion suggests the following definition for a capital (development) project:

> "A capital development project supports economic and social development and involves the development, replacement or rehabilitation of physical assets and/or one or more of several activities relating to those assets, such as feasibility work, engineering, procurement, training, technical assistance, maintenance and operational support and institutional development" (Ibid, p. vi).

Lion further notes that the proposed definition of a capital project does not make size, level of technology, project length, or method of financing part of the definition.

Though Lion's proposed definition of a capital project is quite acceptable for his purpose, that is, to determine what kind of capital projects should be included in his study of evaluating such projects, this definition is less than acceptable as a specification for the Helsinki Package. Lion's definition of a capital project is not acceptable as a specification for the Helsinki Package, because it allows for the continuation of Mr. John Mullen's concern, namely that our competitors will finance feasibility, project design and engineering studies with tied grants, which in a variety of ways locks the procurement in to donor country firms, and then finance the rest of the project with "untied" harder credits, which also flow to donor firms. In order to counteract these possibilities of "cheating" a definition similar to the one suggested by Senator Max Baucus of Montana is superior. His definition of a capital project is:

> "The construction, expansion, alteration or equipment of a physical facility, including engineering or other services; the procurement of equipment, including any related services; and feasibility studies or similar engineering and economic services, when carried out in conjunction with a capital project".

Note that this definition does not appear to allow for the disaggregation of a project in phases, because, contrary to Lion's definition, it does not contain "and/or" and "such as" terminology. Following this approach, the following definition would be superior to counteract "cheating":

> A capital project is a project that supports economic and social development and involves the development, replacement or rehabilitation of physical assets and activities relating to those assets, including feasibility work, engineering, procurement, training, technical assistance, maintenance and operational support, and institutional development; any such phase or component of a capital project is a "capital-project component" rather than a "capital project".

Though this definition is superior from the point of view of counteracting "cheating", it does limit the maneuverability of decision-making processes of aid agencies with respect to their programs for capital projects. These programs should, in my opinion, have the flexibility to include one or more phases of a project, as is recognized in Lion's definition. It, therefore, appears to me that the only way to attempt to counteract cheating as a result of project disaggregation, and, at the same time, maintain maneuverability for decision-making by aid agencies, is through a rigid notification procedure that requires, at an early stage of project identification, alternative designs, engineering specifications, and, where applicable, other project specifications. These alternative designs, engineering specifications, and other project details, should be geared toward maximizing international response in bidding for contracts. This approach may be less effective in counteracting cheating than the approach of adhering to a strict definition of a capital project (which, in order to counteract cheating, cannot allow for disaggregation of the project into phases). However, the argument in favor of maintaining maneuverability for decision-making in programs of capital projects is also important.

Based upon the foregoing observations, I recommend the following:

- *In its attempt to counteract cheating, AID should carefully assess whether it wants to follow the approach of precisely defining a capital project, or the approach of specifying a rigid notification procedure regarding required alternative designs, engineering specifications, and other project details geared toward maximizing international response in bidding for contract.*

I will introduce further specifications suggested for inclusion in the Helsinki Package regarding this issue, once AID has decided which approach to follow.

In conclusion, it is recommended that all of the foregoing 15 unlocked issues be "unlocked" during in-house meetings among AID officials, and, subsequently, during meetings with representatives from the Eximbank and Treasury.

APPENDICES

APPENDIX 1

THE HELSINKI PACKAGE AND THE PROPER USE OF INTEREST RATES

With respect to interest rates, the rules of the Helsinki Package refer to interest rates of industrialized countries only, even though other decision variables, such as fluctuating exchange rates, interest rates in developing nations, and different national taxation schemes should have been considered as well, if, indeed, optimal allocation of scarce capital in the developing world is the ultimate goal, as it should be. Ignoring interest rates, fluctuations of exchange rates, and different national taxation schemes in developing countries may have the following serious implications: (i) it may render a project prematurely "commercially viable" in the decision-making process; and, (ii) it significantly limits obtaining financial leverage with capital available in the middle income developing nations. This latter implication, in turn, may induce the unfavorable phenomenon of capital flight from the middle income developing nations. The matter of rendering a project prematurely "commercially viable" can only be appreciated if one considers the following:

(a) As was already noted in the foregoing second locked-in issue, the concept of time value of money should be introduced in the key test regarding generation of cash flow sufficient to cover the project's operating costs and to service the capital employed. The use of a discount rate is, therefore, needed to compute the present values. The Helsinki Package stipulates the use of the commercial interest reference rate as the discount rate in the computation of the concessionality level of tied and partially untied aid financing. One would, therefore, presume that the commercial interest reference rate must also be used to introduce the concept of time value of money in the key test regarding generation of cash flow sufficient to cover the project's operating costs and to service the capital employed. The commercial interest reference rate should not, however, be used in this key test, because it may render a project prematurely "financially/commercially viable" and it induces a less than rational allocation of scarce capital among the middle income developing nations. The reason for these observations is provided under the following (b).

(b) Let us assume a case where the participant is the U.S. Government and the middle income developing nation is Indonesia. Let us now introduce the following variables:

C = the commercial interest reference rate applicable to the U.S.

R = the interest rate on loan capital in Indonesia applicable to the project being considered.

T (U.S.) = the tax rate in the U.S. for computing the after tax interest rate in the U.S. (in view of the fact that interest payments are tax deductible payments in the U.S.)

T (I) = the tax rate in Indonesia for computing the after tax interest rate in Indonesia (in view of the fact that interest payments are a tax deductible expense in Indonesia).

D = the rate of devaluation of the Indonesian rupia per U.S. dollar one value.

(It is understood that the above variables are defined for the same time span.)

Given these defined variables, one can then state that, in terms of optimal decision-making, monies should be borrowed in the U.S. for the project being considered in Indonesia if the following inequality holds true:

$$R > \left(\frac{1-T(U.S.)}{1-T(I)}\right)\left[C(1+D)+D\right]$$

(The derivation of the aforementioned decision rule is provided in my forthcoming book to be published by Prentice Hall.) The following is noted with respect to this decision rule:

(i) It incorporates the variables which, heretofore, have been ignored in the Helsinki Package, i.e., the interest rate in the middle income developing nation, i.e., **R**, the difference in the tax rate in the U.S., i.e., **T**(U.S.), and the tax rate in Indonesia, i.e., **T**(I), and the fluctuations in the relevant exchange rates, which are reflected by the rate of devaluation of the Indonesian rupia in terms of one U.S. dollar, i.e., **D**. At the same time, the decision rule also incorporates the commercial interest reference rate applicable to the U.S. Government, i.e., **C**.

(ii) The quantity to the right side of the inequality sign is expected to be much higher than the commercial interest reference rate, particularly for a middle income developing nation with a high rate of inflation (note that a high rate of inflation inevitably leads towards a high rate of devaluation of the currency of the middle income developing nation with respect to one U.S. dollar).

(iii) Also note that the applicable interest rate for loan capital in the middle income developing nation (the "R" for Indonesia) is likely to be much higher than the relevant commercial interest reference rate (the "C" for the U.S. Government) in the aforementioned decision rule. This expectation is certainly valid if the country has followed a structural stabilization program.

(c) To ensure rational decision-making, the <u>discount rate</u> to be used to introduce the concept of the time value of money (in the key test concerning generation of cash flow

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(i) The interest rate on loan capital in the middle income developing nation (the "R" in our example for Indonesia) if the inequality of the aforementioned decision rule does not hold true, i.e., if

$$R < \left(\frac{1-T\ (U.S.)}{1-T\ (I)}\right)\left[C\,(1+D) + D\right]$$

(ii) <u>OR</u> this discount rate must be:

$$\left(\frac{1-T\ (U.S.)}{1-T\ (I)}\right)\left[C\,(1+D) + D\right]$$

if the inequality of the aforementioned decision rule holds true, that is, if:

$$R > \left(\frac{1-T\ (U.S.)}{1-T\ (I)}\right)\left[C\,(1+D) + D\right]$$

(d) The use of either one of the discount rates stipulated in the foregoing (c) means the application of a discount rate higher than the one currently stipulated in the Helsinki Package. The use of a higher discount rate means, in turn, a decrease in the computed present value of cash flow to cover the project's operating costs and to service the capital employed. A decrease in the computed present value of this cash flow means, in turn, that the likelihood of attaining financial/ commercial viability is diminished for the project. Hence, the risk of rendering a project prematurely "commercially viable" is evident if a discount rate lower than either one of the discount rates stipulated in the foregoing (c) is used. Consequently, the use of a commercial interest reference rate means incurring the unnecessary (and likely high) risk of incorrectly labeling a project commercially viable.

The other issue of significantly limiting the possibility of obtaining financial leverage with capital available in the middle income developing countries can also be appreciated with the foregoing rationale. That is, the issue here is whether or not a budget appropriation of a bilateral aid agency, such as AID, should, from the point of view of optimal decision-making, be leveraged with loan capital from the bilateral aid agency's country or with loan capital in the relevant middle income developing nation. In the case

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of AID, its budget appropriations should be leveraged with loan capital from the U.S. if:

$$R > \left(\frac{1-T\,(U.S.)}{1-T\,(I)}\right)\left[C(1+D)+D\right]$$

Alternatively, AID's budget appropriation should be leveraged with loan capital from the middle income developing nation if the following inequality holds true:

$$R < \left(\frac{1-T\,(U.S.)}{1-T\,(I)}\right)\left[C(1+D)+D\right]$$

(Note that the definitions of "R", "T(I)", and "D" in the foregoing decision rules refer to the variables defined for Indonesia; of course, Indonesia was merely taken as an example, and, therefore, these variables can similarly be defined in terms of any middle income developing country.)

Ignoring the applicable interest rate in the middle income developing nation, the difference in tax rates between a middle income developing nation and an OECD participant, as well as the rate of devaluation of the currency of a middle income developing nation with respect to the currency of an industrialized nation (OECD nation), as is done in the Helsinki Package, means, in essence, that obtaining financial leverage with loan capital in the middle income developing nation is hardly ever possible. The reason for this observation is that ignoring the aforementioned decision variables means that the decision regarding where to obtain loan capital to be leveraged with a bilateral aid agency's budget appropriation would, <u>incorrectly</u>, be based upon the following:

Borrow in the OECD (e.g., U.S.) if:

$$R > C,$$

where:

R = the interest rate on loan capital in the middle income developing nation applicable to the project;
and,

C = the commercial interest reference rate of the country of the relevant participant.

Alternatively, borrow in the middle income developing nation to obtain leverage with the bilateral aid agency's budget appropriation if:

$$R < C,$$

where the variables are defined as above.

In most cases, one would expect the "R" to be larger than the "C"; hence, one would hardly ever expect loan capital from the developing, middle income nation to be leveraged with a bilateral aid agency's budget appropriations.

APPENDIX 2

SCOPE OF WORK FOR THE STUDY

A. BACKGROUND

On October 31, 1991, participants in the OECD Arrangement on Guidelines for Officially Supported Export Credits concluded two years of negotiations with an ad referendum agreement on measures to strengthen Arrangement rules on provision of export credits and tied aid. Through increased transparency, the objective is to reduce trade distortions and to reduce subsidies in standard export credits. Known as the "Helsinki Package", core elements of the agreement consists of three rules which apply to tied aid credits having concessionality levels of less than 80 percent and which exceed SDR 2 million in value. The rules are as follows:

- Except for credits to LLDC's tied aid credits are prohibited for projects that should be commercially viable if financed on market or export credit commercially viable if finance on market or export credit terms and standard export credit or commercial financing is available. (This rule implies that criteria can be developed to differentiate between projects suitable for aid and those suitable for export credit financing).

- Tied aid credits are prohibited for recipients having GNP per capita levels above $2465 in 1991.

- Participants agreed to mandatory prior consultations for offers of tied aid for projects larger than SDR 50 million.

The key issue in the Arrangement is to eliminate tied aid and subsidized export credits for commercially viable capital projects that are intended for commercial reasons and to promote exports for the respective donor country. Tied aid financing is legitimate for projects that meet the above criteria and are considered to promote economic development.

B. PURPOSE

In order to assist in the development of its capital projects strategy, A.I.D. is requesting assistance to define the parameters of the OECD Arrangement and to identify and analyze opportunities that exist for A.I.D. to pursue aggressively capital projects.

The intent of the study is (1) after defining commercial and financial viability, to advise on the practicability of applying the "financial viability" rule to capital projects, the non-financial practices that host governments are likely to employ (such as exclusive rights to produce and sell in a specific area, guarantees of raw materials, etc.) in order to ensure financial viability, the practicality of using shadow pricing to determine financial viability and its effect on the goal of eliminating subsidies, and the impact on broader development goals of making specific projects financially viable; and (2) to develop criteria for selection by A.I.D. of projects which meet the Agency's development objectives as well as comply with OECD rules on tied aid credits. Specifically, the consultant will undertake the following tasks:

C. TASKS

1. Summarize the existing literature and evaluations, articulate clearly and concisely the contribution of capital projects to economic development. An analysis of the value of capital projects to economic development will comprise a major part of the report to be prepared by the consultant.

2. Study the existing OECD rules and proposed guidelines for implementation and enforcement.

3. Examine existing practices of other donor countries and their plans under the new Arrangement.

4. Prepare examples of capital projects in telecommunications, power, and transport that would be financially viable or non-viable (in the short-run); the assumptions/differences in the project affecting such viability; and the broader development implications of the financial viable vs. the non-financially viable project.

5. Analyze the formula proposed by the OECD for determining concessionality or the subsidy as contained in the "Helsinki Package."

6. Examine the feasibility and advisability of an analytical approach that desegregates capital projects into discrete phases (prefeasibility, feasibility, design, construction, and implementation) versus the various types of turnkey projects.

7. Develop criteria for A.I.D. to select capital projects that have the best chance of meeting economic development criteria and comply with OECD rules. For projects that are not immediately financially or commercially viable, over what time frame should financial viability be considered?

APPENDIX 3

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