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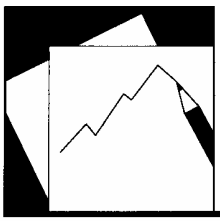

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Implicit Transfers in IMF Lending, 1973–2003

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Implicit Transfers in IMF Lending, 1973–2003

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Abstract

We compute realized transfers implicit in IMF lending from 1973–2003, based on 2003 IMF repayment projections and promised debt relief. IMF lending rates to high- and middle-income countries fell short of industrial country borrowing rates by 30–150 basis points over the period as a whole, but exhibited a small premium after 1987. The subsidy received by low-income and HIPC countries was much higher (400–600 basis points, respectively). In 2002 NPV terms, cumulative transfers were 12–15 percent of 2002 GDP for the HIPCs, 2–3 percent for low income countries, and less than ¾ percent for the emerging market countries.

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I. INTRODUCTION

This paper measures transfers embodied in IMF lending activity to member countries since 1973. In principle, such transfers could arise for two reasons. IMF lending rates may be less than the sum of a default risk-free international interest rate (at the corresponding maturity) and the default risk faced by the IMF. In that case, one would say that a transfer exists, or is expected, *ex ante*. In addition, if countries end up not repaying or are granted debt relief, there could be a transfer *ex post* even if none was expected ex ante. Transfers of this second kind cannot exist in the very long run, but they could exist over a limited horizon—such as the 30 years covered in this paper—if the repayment record of some countries to the IMF turns out to be worse than anticipated.

Is the existence of *ex ante* transfers to borrowing countries consistent with lending under a zero profit constraint (as faced by the IMF)? In principle, the answer is yes. First, transfers associated with aggregate lending can be reconciled with a zero profit constraint so long as the members of the IMF are willing to fund them, either by accepting a low rate of remuneration for the funds they put at the IMF's disposal, or through the special financing of concessional lending facilities. Second, the IMF cannot, as a legal matter, charge different lending rates across countries (except to the extent that it uses different lending facilities, of which there are few). Thus, unless its credit risk is identical for all borrowers, there is bound to be cross-subsidization in IMF lending. In the first case, net creditor countries would thus be subsidizing net borrowers, while in the second case net borrowers with very low credit risk would be subsidizing borrowers with relatively high credit risk. For brevity, we speak of "IMF transfers," even though it is clear that in both cases IMF lending is only a conduit.

While it is clear that IMF transfers could exist, very little is known about their magnitude. This is the question that this paper seeks to address. It is important from two quite different policy perspectives. One is IMF-induced moral hazard, that is, the distortion of the incentives of borrower countries and perhaps private investors as a result of IMF lending. The presence of a transfer element in IMF lending is one important reason (though not the only one) why IMF lending could potentially result in moral hazard.[2] Without implicit transfers, IMF lending could still have an impact on borrowing costs, capital flows, policies, and borrowing and lending decisions. In particular, with a better financial safety net, borrowing costs will fall, and investors and country authorities might be inclined to take bigger risks. But if this occurs at no cost to the IMF and its members, this could be efficient in the sense that no one loses and some gain (Mussa, 1999, 2004; Jeanne and Zettelmeyer, 2004). With implicit transfers in IMF lending, however, the potential "losers" are easy to pinpoint: they are the international taxpayers that ultimately fund the IMF.

[2] Another potential reason is that IMF lending may facilitate domestic redistribution, for example, by benefiting governments or financial elites at the expense of taxpayers in the *borrowing* countries. See Jeanne and Zettelmeyer (2001).

The second policy issue is development finance. While transfers in crisis lending to middle income countries are generally viewed as harmful because of the moral hazard problem, IMF (and other IFI) lending to very poor countries is deliberately concessional. It is designed to embody a transfer element, as one way of providing, and perhaps leveraging, redistribution from rich to poor countries. On top of that, IMF debts of poor countries have been reduced under the Highly Indebted Poor Countries (HIPC) initiative. The question is how significant transfers through these channels have been for the countries at the receiving end. One view in the debate on the HIPC initiative is that they were small. This paper provides estimates that add empirical content to this debate. These estimates do not, of course, describe the *welfare gain* that poor countries—or any IMF borrowers—experienced as a result of IMF lending. Depending on the nature of the economic problems that IMF lending helps to alleviate, this will depend on many effects—for example, consumption smoothing in the absence of other sources of external financing, a longer and hence safer debt structure relative to private borrowing, signaling to other donors, and liquidity provision that prevents a financial crisis—in addition to the magnitude of transfers. Rather, our estimates describe the *redistributive* effect of IMF lending, which occurs at the expense of the creditor countries funding the IMF.

The existing literature has discussed IMF transfers only from two limited perspectives. There are of course estimates of the net present value (NPV) of debt relief received or planned under the HIPC initiative e.g., IMF and World Bank, 2004). However, we are not aware of any systematic attempt to combine or contrast this with the transfer element in concessional IMF lending, which has existed since the mid-1970s. As far as non concessional lending is concerned, there is a small literature comparing IMF charges to crisis countries with interest rates charged to these countries by private creditors either in "normal" times (Haldane, 1999) or immediately before a crisis (Higginbotham and Schuler, 2002). Not surprisingly, IMF lending rates are found to be lower, leading to the conclusion that IMF lending embodies a transfer that could cause (inefficient) moral hazard. This argument overlooks the possibility that default risk born by the IMF could be much lower than the default risk borne by private creditors. As a result, the comparison between market interest rates that embody a (possibly large) default risk premium and IMF lending rates is uninformative from the perspective of measuring the transfer implicit in IMF lending.

A study that is closer and in some ways complementary to this paper is Jeanne and Zettelmeyer (2001), who are interested in whether or not IMF crisis lending to emerging market countries carries a subsidy. They observe that the IMF's non concessional lending rates since the late 1980s are close to the international risk-free rate, so that the question of whether IMF lending carries a subsidy boils down to whether it can be viewed as essentially risk free. In the past, the IMF has virtually always been repaid, but this leaves the possibility that currently open lending relationships may eventually result in arrears or debt forgiveness. Jeanne and Zettelmeyer then argue that most open lending relationships with emerging market countries are statistically similar to past lending cycles that eventually ended in repayment, while the very long open lending cycles of many poor countries statistically "look" like they might continue forever. On this basis, they conclude that IMF lending to poor countries embodies a subsidy—even ignoring explicit concessionality in lending—while lending to middle income countries does not.

This paper pursues a broader objective, namely, to estimate *realized* transfers implicit in *all* IMF lending since the early 1970s. This includes lending periods and facilities when IMF lending was clearly below the international risk-free rate, as well as the more recent period, in which the IMF rate of charge was set in reference to market exchange rates. While Jeanne and Zettelmeyer did not seek to quantify the overall transfer resulting from concessional lending and promised debt relief, this is one of the main objectives of our paper. Unlike those authors, however, we do not seek to evaluate the "riskiness" of currently outstanding IMF lending, but simply assume that all loans will be repaid as projected, taking into account promised debt relief. To the extent that this is optimistic, it would lead us to underestimate the subsidy element associated with the ongoing lending cycles—particularly for the poorer countries, where lending at concessional interest rate terms might continue for much longer than assumed in current IMF repayment projections and additional debt relief might become available. For those countries, our results should be viewed as a lower bound rather than a best guess.

Our approach is to calculate both internal rates of return and NPV transfers based on realized cash flows (disbursements + charges – repayments) between the IMF and debtor countries, as well as repayment projections.[3] The main challenge in doing this is to decide which market interest rates should be used to discount the IMF cash flows, and for comparison with the IMF's internal rates of return. We argue that because standard IMF lending passes on most or all interest rate risk to its borrowers, while lending through concessional facilities does not, the latter needs to be discounted using a long rate while a short rate is appropriate for the former.

The main results are as follows. IMF rates of return to lending to high and middle income countries were, on average, 30–150 basis points lower than comparable lending rates paid by industrial countries on their debts. This is due to a general subsidy in IMF lending during the 1970s and early 1980s; since 1987, standard IMF lending through non concessional facilities has been essentially subsidy free. Lending to poor countries, however, has been and remains highly subsidized: by about 400 basis points for low income countries on average, and over 600 basis points for the HIPC countries. This translates to a total (cumulative) NPV transfer on the order of 12–15 percent of 2002 GDP for the HIPCs, 2–3 percent for low income countries, and less than ¾ of a percent for emerging market countries.

II. Potential Sources of IMF Transfers

A. General Resource Account (GRA) Lending

Most of IMF lending (since 1973, about 94 percent of total disbursements) utilizes the IMF's general resources—in essence, the hard currency deposits of its members ("reserve positions"). The terms of this "general resource account lending" have undergone several

[3] In part, this follows a paper by Klingen, Weder, and Zettelmeyer (2004), who compute internal rates of return to private debt flows to emerging markets, using World Bank data.

changes since the early 1970s (see Boughton, 2001, Chapter 17 for details). Until the early 1980s, the IMF's standard lending rates were low and stable, and deliberately incorporated a concessional element. This was made possible by the fact that a large portion of the IMF members reserve positions were not remunerated, and that the remuneration rate paid on the remaining portion was substantially below short-term market interest rates of the major currencies. Moreover, lending rates were not explicitly linked to remuneration rates through a markup or an income targeting rule, so that operating losses were possible, and did indeed occur from 1972 to 1977. In response to these operating losses, lending rates were raised from 2–5 percent in 1974—depending on the size and duration of the balance—to 4⅜–6⅜ percent in 1977.

Lending rates were unified into a single rate of charge, initially set at 6¼ percent, in 1981. At the same time, the ad-hoc adjustment of the rate of charge was replaced by an annual net income targeting rule. In effect, lending rates were now set as low as possible consistent with covering the IMF's financing costs, its administrative budget, and a modest reserves accumulation target (3 percent per annum). However, because the rate of remuneration paid by the IMF on its members' reserves positions was still less than average money market interest rates in the SDR currencies (85 percent in 1981), this rule was still consistent with a zero or negative spread between short term market interest rates in the major industrial countries and IMF lending rates. The rate of charge in this period was set in nominal terms for the duration of the fiscal year (May of the previous calendar year until April).

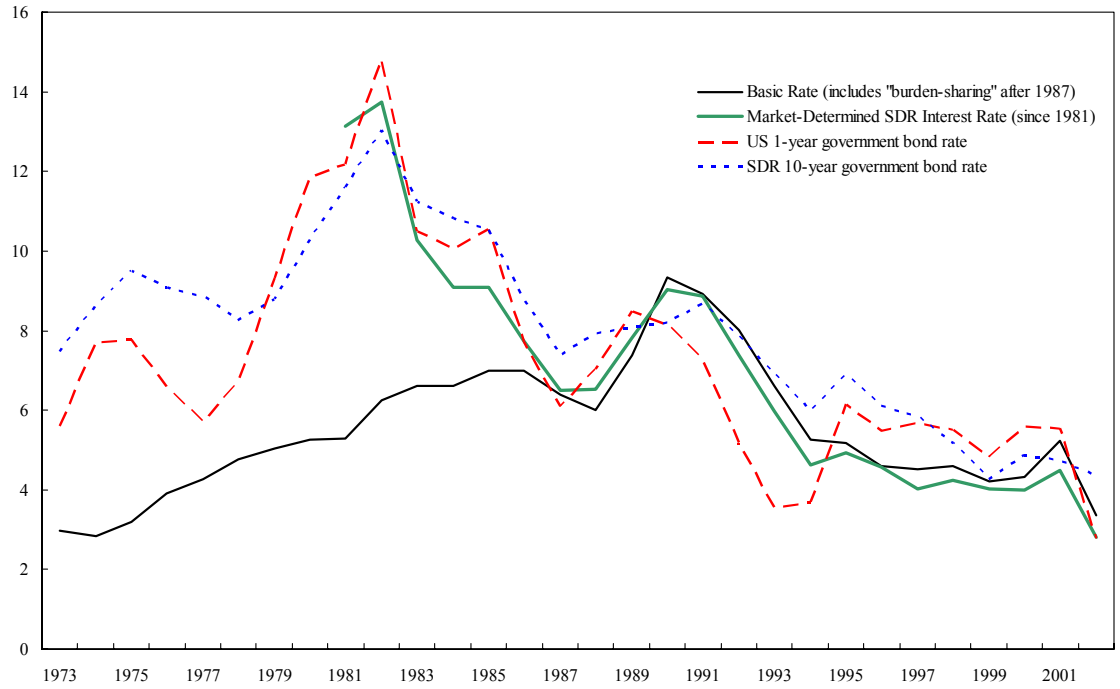
In 1986, the rate of remuneration was raised to 100 percent of the SDR interest rate, set as a weighted average of 3-month money market interest rates of the 5 major currencies. The unremunerated *portion* of reserve positions had been shrinking since a change in the rules in 1978, and stood at only about 8 percent in the mid-1980s. Furthermore, a surcharge on lending rates was introduced to cover the costs of arrears to the Fund, which had been accruing as a result of the debt crisis of the 1980s ("burden sharing"). All in all, these changes implied that since the late 1980s the basic rate of charge has effectively been set as a markup over the SDR interest rate. Moreover, starting with fiscal year 1990 (i.e., since May 1989), the rate of charge is no longer expressed in fixed nominal terms but instead as a percentage of the SDR interest rate, which itself changes on a weekly basis. Thus, all GRA lending since May of 1989 occurs at a floating interest rate.

Finally, in 1997, the IMF began to impose surcharges on large scale lending. This occurred first with the introduction of the "Supplemental Reserves Facility" (SRF) designed to provide large scale support over short maturities at a premium interest rate of 300–500 basis points over the basic rate of charge. Since November of 2000, a 100 basis point surcharge applies to all GRA lending that exceeds 200 percent of quota, and a 200 basis point surcharge to lending that exceeds 300 percent of quota.

Figure 1 shows the basic rate of charge since 1973 in relation to three market interest rates: the SDR interest rate, which since 1981 has been set as an average of 3-month money market rates of the SDR currencies; the yield on a 1 year U.S. government bond; and the average yield of 10 year government bonds in the SDR currencies. It confirms that the basic rate of charge was significantly below market interest rates until the late 1980s. Since then it has

generally been slightly higher than the short run SDR interest rate, and fluctuated around the U.S. 1 year government bond rate. However, it was generally lower than the SDR 10 year bond rate.[4] Thus, to the extent that one believes that IMF lending rates should be compared to sovereign lending rates of longer maturities, a transfer embodied in GRA lending could have arisen even after the late 1980s, through a term structure effect. Whether or not these longer rates are actually the right comparison will be discussed in some detail in the section on methodology below.

Figure 1. IMF Rate of Charge and Market Interest Rates, 1973–2003



B. Concessional Lending to Low Income Countries

Since the mid 1970s, the IMF has operated lending facilities that are specifically intended for concessional lending to low income countries. The first of these facilities was the "Trust Fund", financed by the sale of 25 million ounces of gold (about 16 percent of the IMF's gold stock) between 1976 and 1980.[5] About 60 low income developing countries were eligible for

[4] Note that the IMFs *average* rate of charge was a bit higher than the basic rate of charge after 1997, because of surcharges on large scale crisis lending.

[5] See Boughton (2001), Chapter 14 and IMF *Annual Report* 1980, pp. 85–89. A portion of the gold profits (approximately $1.3 bn, about 30 percent) were distributed directly among all developing countries in proportion of quota, with the Organization of the Petroleum Exporting Countries (OPEC) donating their distributions to the Trust Fund. Since this distribution amounted to a one-off transfer that was independent of the IMF's lending

(continued…)

Trust Fund loans, which had relatively long maturities (6–10 years) and carried a low 0.5 percent rate of charge. Approximately $3.75 bn were disbursed under the Trust Fund between 1977 and 1981.

The Trust Fund was intended to be a temporary facility designed to help oil-importing low income countries deal with the first oil price shock. However, the second oil price shock in 1979, the rise in U.S. interest rates in the early 1980s and eventually the eruption of the debt crisis in 1982 all fuelled demands for a successor facility. In 1986, the "Structural Adjustment Facility" (SAF) was created, financed by Trust Fund repayments. The "Enhanced Structural Adjustment Facility" (ESAF) which combined Trust Fund repayments with new funding through bilateral contributions, replaced the SAF in December of 1987 and began lending in May of 1988. The terms of lending under SAF/ESAF were similar as under the Trust Fund, namely, a rate of charge of just 0.5 percent per annum, beginning repayment after 5½ years, and full repayment over 10 years.

In December of 1999, the ESAF was replaced by the "Poverty Reduction and Growth Facility" (PRGF), whose objective was to focus more explicitly on poverty reduction. The lending terms were unchanged. By 2002, about $16bn had been disbursed under the combined SAF/ESAF/PRGF facilities.

C. Arrears Cases

Regardless of the lending terms, a transfer arises if the debtor does not repay. This leads to the question of how the Fund has handled arrears cases, and whether they were a possible source of transfers.[6]

Non-repayment by members was not a serious problem for the Fund until the mid-1980s. Prior to the 1980s, there were only three arrears cases: Cuba after its 1959 revolution; Egypt after the 1967 war with Israel, and Cambodia after the take over of the Khmer Rouge in 1975. Both Cuba and Egypt repaid their arrears by the end of the 1960s, so Cambodia was the only outstanding case in the 1970s and early 1980s. The onset of the Debt Crisis, however, led to an unprecedented wave of new arrears cases. By 1988, 13 countries were in protracted arrears to the Fund: Cambodia, Guyana, Haiti, Honduras, Liberia, Panama, Peru, Sierra Leone, Somalia, Sudan, Vietnam, Zaire, and Zambia. As a fraction of IMF credit outstanding, arrears peaked at about 14 percent in 1990.

Two new cases—Yugoslavia and Iraq—emerged in the early 1990s. Since then, most arrears cases have been settled. As of April 30, 2003, only 5 countries remained in protracted arrears

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activities, we disregard it in the main results section, but include it when we check the robustness of our estimates to alternative assumptions.

[6] The following discussion draws on Aylward and Thorne (1998), Boughton (2001, Chapter 16), and the IMF's Annual Reports.

with the Fund: Iraq, Liberia, Somalia, Sudan, and Zimbabwe (the only significant new arrears case since 1993).

While a country is in arrears, standard interest charges continue to accrue. In addition, since February of 1986, the IMF has imposed special charges on overdue obligations and overdue charges. These extra charges were originally designed to remove any element of concessionality still present in the Fund standard lending terms in the mid-1980s, as well as to ensure that an interest would accrue on unpaid charges.[7] For this reason, arrears *which are eventually settled* cannot generally be a source of transfers. Of course, when arrears are settled, they may be settled with the help of bilateral grants or low interest loans from a donor government. However, this would constitute a bilateral transfer rather than a transfer from the IMF, and it has not been a quantitatively significant source of transfers in the past.

Arrears *outstanding*—about $3 bn in late 2004, more than the net present value of all IMF debt relief committed under the HIPC initiative, see below—could of course result in a significant transfer if they are not fully repaid. For these countries, the IMF produces three alternative repayment projections: first, full repayment; second, no repayment of the overdue obligations but repayment of any new obligations falling due; and third, no repayment. In our baseline estimates, we assume full repayment, based on the experience of most arrears cases. In the final section of the paper, we explore the sensitivity of our overall results with respect to the assumption that these arrears will not be repaid.

D. Debt Relief under the HIPC Initiative

The Highly Indebted Poor Countries (HIPC) initiative, created in 1996 and extended in 1999, is a framework for coordinated bilateral and multilateral debt relief to low income countries. Prior to the HIPC initiative, there was no multilateral debt relief. In particular, the debt crisis of the 1980s was resolved without any IMF debt relief, on the grounds that debt forgiveness was inconsistent with the IMF's mandate as a lending institution and with preserving the "revolving nature of IMF resources" (see Boughton, pp. 551–52). What made the difference in the case of the HIPC initiative were mainly two factors. First, a consensus that many developing countries faced an unsustainable debt problem which could not be tackled by bilateral official debt reduction alone (as had already been attempted in a series of initiatives between 1987 and 1996, see Daseking and Powell, 1999). Second, the fact that the potential beneficiaries of the initiative were the poorest countries, which had been recipients of IMF transfers through special funds and facilities for 20 years. Debt relief could be financed through similar funds, without formally forgiving debts to the IMF.[8]

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[7] See Boughton, pp. 811–813 for details. The current special charges regime is summarized in IMF (2001), p. 165.

[8] In a legal and accounting sense, the IMF does not actually write down its claims under the HIPC initiative. Rather, it provides grants which are used to servicing debts to the IMF. These grants are financed in much the same way as previous concessional lending facilities,

(continued…)

About 41 "highly indebted poor countries" have been designated by the IMF and the World Bank as potentially eligible for debt relief under the initiative. Of these, four are expected to achieve debt sustainability without multilateral debt relief. As of July 2004, the remaining 37 countries were expected to eventually receive about $54 bn worth of debt relief in 2003 NPV terms, with about $25 bn coming from multilateral creditors (see IMF, 2004). The IMF is expected to contribute about $5 bn. Of the 37 countries, 27 have reached their "decision point", i.e. received firm multilateral debt relief commitments.[9] Of these, 14 have reached their "completion points," i.e. received the full debt relief for which they are eligible.

As of end-July 2004, the IMF's debt relief commitments to the 27 "post-decision point" countries was about $2.8 bn in 2003 NPV terms, of which about $2 bn had already been disbursed. The degree of committed IMF debt relief varies by country, from as little as 10 percent of the present value of IMF debt outstanding to as much as 75 percent. For most countries, the present value committed debt relief is in the range of 30–50 percent of the present value of obligations to the IMF.

III. Methodology and Data

As stated in the introduction, our approach is to compute internal rates of return as well as net present values based on actual observed cash flows between the IMF and the countries receiving IMF loans. In principle, this could be done loan by loan. However, since loans often overlap—in the sense that loans from several facilities are disbursed at about the same time, or that new loans are disbursed before the old ones are fully repaid—this would require associating each repayment and payment of charges with a particular set of disbursements. In other words, to compute loan-by-loan rates of return, one would require cash flows that are indexed by a particular loan number. This data is not available in electronic format over the long horizon we seek to cover in this paper.

What we have, instead, are monthly flows of disbursements, repayments and interest charges, separated by General Resource Account (GRA) and concessional lending facilities, going back to 1973, by country.[10] The smallest unit for which internal rates of return and NPVs can

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namely through a mix of bilateral contributions and use of IMF gold. For details, see IMF (2001), pp. 130–140. For an overview of the HIPC initiative, see Andrews et al. (1999).

[9] Namely, Benin, Bolivia, Burkina Faso, Cameroon, Chad, Democratic Republic of Congo, Ethiopia, The Gambia, Guyana, Ghana, Guinea, Guinea-Bissau, Honduras, Madagascar, Mali, Malawi, Mauritania, Mozambique, Nicaragua, Niger, Rwanda, Senegal, Sierra Leone, Tanzania, Uganda, Zambia, and São Tomé and Príncipe. The latter received no IMF debt relief commitment but will receive debt relief from other multilateral sources.

[10] This date is determined by the availability of charges data. Disbursements and repayments are available since 1950. GRA disbursements refer only to "credit tranche purchases," i.e. exclude members drawing down their reserve tranche (the hard currency portions of their

(continued…)

be computed using this data is a "lending cycle," defined as a period of strictly positive IMF credit or loans outstanding. The NPV transfer associated with each lending cycle can be transformed into end-2002 dollars and added up to give a total transfer from the IMF to each country. One can also compute an internal rate of return for all flows between the IMF and lenders since 1973, to arrive at an average rate of return for lending to that country.

To do this, a few practical and conceptual difficulties need to be addressed. The first is what to do with ongoing lending cycles, i.e. lending that had not been fully repaid by the time our sample ends (2003). As stated before, our approach is to "close" these cycles using IMF repayment projections, taking into account any projected debt relief for the HIPC cycles. As expectations of actual flows, these projections are generally unrealistic, not so much because countries could openly default to the IMF, but because many lending cycles could extend beyond the projected repayment period of 10 years or less. Thus, to the extent that current lending has a concessional element, this may accrue over a longer period than is implicit in the current repayment projections, and our transfer estimates based on these projections should be taken as a lower bound. We will return to this issue at the end of the next section.

One also needs to decide how to treat lending cycles that started prior to 1973 but were ongoing in 1973. Our approach is to simply take the stock of credits outstanding to the IMF in 1973 as an initial disbursement. This will of course ignore any potential transfers associated with the portion of the cycle prior to 1973, but should not bias our results for the period after 1973.

The most critical conceptual question is what market interest rate the computed internal rates of return should be compared with, or equivalently, how net cash flows between the Fund and its debtors should be discounted. Since our results are meant to measure IMF transfers under the assumption of perfect future repayment (except for promised debt relief) the comparison should be with market lending rates to sovereigns that are essentially default risk free, i.e. industrial country government bond rates. But of what maturity?

In the case of lending through the concessional facilities, the answer is fairly straightforward: since these loans pay a very small fixed "coupon" (0.5 percent per annum) over a fixed maturity, they should be compared with bond rates with similar maturity. In principle, the maturity is 6–10 years, although *ex post* IMF resources were outstanding for much longer periods because expiring arrangements tended to be replaced by new lending arrangements (see next section below). Consequently, the SDR 10 year government bond rate seems a reasonable benchmark of comparison for these loans. We confirm this in the next section below, by examining the average repayment time associated with concessional loan cycles.

For GRA lending, the answer is a bit more complicated. Since the early 1980s these have been floating rate loans. Interest rates were initially adjusted on an annual (fiscal year) basis,

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quotas, see IMF, 2001, pp. 64–65). The charges included in our baseline estimates include only charges related to borrowing, not general membership fees. See Appendix I for details.

and eventually (since May of 1989) on a weekly basis. Thus, it would be wrong to compare the rate of return on these loans to sovereign bonds that pay a fixed interest over a similar maturity. By lending at a variable rate, the IMF passes on all interest risk to its borrowers. Consequently, a standard argument for charging a term premium—that with fixed interest rates, lenders assume all interest risk over the period of the loan—does not apply.

The question remains whether the fact that the IMF is committing *principal* over a longer term (2¼ to 5 years for Stand-by Arrangements, 4½ to 10 years for the Extended Fund Facility, 1–2½ years for the Supplemental Reserve Facility) should be compensated by some kind of premium over short interest rates. For example, floating rate government bonds usually command some term premium—presumably due to residual real interest rate risk resulting from the fact that fiscal news which do not affect the price of very short run government paper might still have an impact on longer bonds. However, this term premium tends to be very small in industrial countries.[11] In the case of the IMF, a reason to require a term premium is that by committing funds over several years, the IMF loses the opportunity to lend these funds to other countries if the need should arise. Unlike an investor in sovereign bonds, it cannot respond to a sudden need for liquidity by selling its long term loans in the secondary market.

This said, it is difficult to say how high such a liquidity premium should be. Situations in which the IMF was short of liquidity are rare, but they have occasionally occurred in the past.[12] In general, they have been resolved by delaying lending and/or borrowing from the main creditor countries through borrowing agreements created to provide an emergency backup to general IMF resources (see IMF, 2001, pp. 72–78), and eventually by negotiating a new quota increase. The costs of these liquidity shortages are hard to gauge, but they could include delays to crisis lending, and as such are potentially very high.

For lack of a better alternative, we take the approach of using a lower and an upper bound for the term premium. The lower bound is set at 30 basis points, which is in the order of the observed term premium of industrial country floating rate bonds. The upper bound is set at 200 basis points, which is the penalty the IMF imposes (since November 2000) for large scale lending exceeding 300 percent of quota. The reason for choosing this as an *upper bound* is that it reflects the institution's own view—backed by a minimum of 85 percent of shareholder votes—of the special costs and risks imposed by large scale lending, of which a premium for committing liquidity is just one. We then compute the net present value of

[11] The Italian "Certificati di Credito del Tesoro," floating rate 7 year government bonds issued since the early 1990s, pay a spread of 30 basis points over the 6-month money market rate. In the aftermath of the ERM crisis, the spread was only slightly higher (50 basis points).

[12] The last one was in December of 1998, just prior to the ratification of the 11 quota increase by the United States when lending to Brazil required invocation of the "new agreement to borrow."

transfers associated with GRA lending using both this lower and this upper bound, and see whether it affects our results.

IV. RESULTS

The full set of benchmark results for all countries and lending cycles is reproduced in an extensive table in Appendix III. In this section, we summarize and analyze these results, and explore their robustness.

A. Lending Cycles and Repayment Duration

We start by presenting some basic facts about the distribution of complete and incomplete lending cycles, as well as the time distribution of repayments after a country has embarked on a new lending cycle. Since new lending from the IMF often takes place before an old loan is fully repaid, the average time of repayment latter is typically larger than the maturity of the initial loan. However, it is smaller than the length of the lending cycle, since all repayment, by definition, takes place within the cycle. To capture this, one can construct a measure of average "repayment duration", defined as the average time of repayment within a lending cycle of length T, weighted by the fraction that is repaid each year:[13]

$$d = \sum_{t=1}^{T} \frac{repayment\ in\ year\ t}{total\ repayment} \cdot t \qquad (1)$$

For example, if the loan is disbursed through a stand-by arrangement that is repaid in full prior to the next disbursement, then d would be a number between 2¼ and 5, depending on the actual repayment profile. For a standard 5 year government bond, d would be exactly 5, since all repayments would happen at the time of maturity.

Table 1 shows the total number of completed and incomplete lending cycles, their average length by region, and their average "repayment duration" as defined by equation (1). It includes all cycles that were initiated after 1973, plus the cycles that were ongoing in 1973, but were initiated earlier. For the incomplete cycles, length and repayment duration is estimated based on IMF repayment projections. These projections assume no new disbursements after 2003; hence, the length and repayment duration shown for these cycles are effectively a lower bound to the length and repayment duration that will actually be observed once these cycles are completed in the future.[14]

[13] This is like the standard concept of duration, except that interest payments are ignored.

[14] The only qualification to this statement arises from the possibility that some borrowers may choose to repay early.

Table 1. Length and Repayment Duration of Lending Cycles

	No. of countries	number of cycles		average length		"repayment duration" *d* 2/		
		complete	ongoing	complete	ongoing	complete	ongoing	all
				all credits and loans				
All Countries by Income Level								
High income: OECD	12	13	n.a.	7.4	n.a.	4.8	n.a.	4.8
High income: non-OECD 3/	4	6	n.a.	8.3	n.a.	5.2	n.a.	5.2
Upper middle income 4/	24	24	9	10.7	20.6	6.9	8.8	7.4
Lower middle income 5/	41	34	25	11.4	26.2	6.9	12.8	9.4
Low income 6/	59	24	54	20.4	33.2	12.1	17.3	15.7
Developing Countries by Region								
Africa	46	22	40	17.9	34.1	11.0	17.7	15.3
Asia	21	20	12	11.4	34.8	7.3	18.5	11.5
Europe	27	13	18	11.5	19.7	6.8	9.0	8.1
Middle East	6	6	2	15.2	22.7	9.3	12.6	10.1
Latin America & Caribbean	27	27	16	11.8	28.3	7.0	13.6	9.4
EMBIG group 7/	31	32	16	9.9	27.7	6.4	13.4	8.8
HIPC group 8/	25	11	25	24.5	36.2	14.8	20.7	18.9
				lending through concessional facilities only				
All recipients of concessional lending								
Upper middle income	3	3	n.a.	12.3	n.a.	8.7	n.a.	8.7
Lower middle income	17	9	9	12.9	22.3	8.9	14.0	11.4
Low income	54	12	49	15.3	28.6	10.8	17.5	16.2
HIPC group 8/	25	3	25	12.8	31.6	8.6	21.3	19.9

1/ Defined as an uninterrupted period of strictly positive total credits and loans outstanding.

2/ Average year of repayment, see equation (1) for precise definition.

3/ Barbados, Cyprus, Israel and Slovenia.

4/ Argentina, Belize, Chile, Costa Rica, Croatia, Czech Republic, Dominica, Estonia, Gabon, Grenada, Hungary, Latvia, Lithuania, Malaysia, Mauritius, Mexico, Panama, Poland, Saint Kitts and Nevis, Saint Lucia, the Slovak Republic, Trinidad, Uruguay, and Venezuela.

5/ Albania, Algeria, Armenia, Belarus, Bolivia, Bosnia/Herzogovina, Brazil, Bulgaria, Cape Verde, China, Colombia, Djibouti, Dominican Republic, Ecuador, Egypt, El Salvador, Fiji, Guatemala, Guyana, Honduras, Iraq, Jamaica, Jordan, Kazakhstan, Macedonia, Morocco, Peru, Philippines, Romania, Russia, Saint Vincent and the Grenadines, Serbia and Montenegro, South Africa, Sri Lanka, Swaziland, Syria, Thailand, Tunisia, Turkey, Ukraine, Western Samoa and Yugoslavia.

6/ Afghanistan, Azerbaijan, Bangladesh, Benin, Burkina Faso, Burundi, Cambodia, Cameroun, Central African Republic, Chad, Comoros, Congo, DR - Zaire, Congo, Rep., Côte d'Ivoire, Equatorial Guinea, Ethiopia, Gambia, Georgia, Ghana, Guinea, Guinea-Bissau, Haiti, India, Indonesia, Kenya, Kyrgyz Republic, Laos, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Moldova, Mongolia, Mozambique, Myanmar, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Papua New Guinea, Rwanda, Sao Tome & Principe, Senegal, Sierra Leone, Solomon Islands, Somalia, Sudan, Tajikistan, Tanzania, Togo, Uganda, Uzbekistan, Vietnam, Yemen, Zambia, and Zimbabwe.

7/ 31 countries in J.P. Morgan's "Emerging Market Global" bond index in early 2003.

8/ 25 highly indebted poor countries to which IMF debt relief has been committed (see footnote 9).

Average repayment duration, according to Table 1, is substantially shorter than the average length of the lending cycle, reflecting the fact that countries repay most of their initial debts before the end of the cycle. Nevertheless, it is in the order of 16 years for the low income countries, quite a bit higher than the ex ante maturity of even concessional IMF facilities. For middle income countries average repayment is substantially quicker (7-9 years), though still slow compared to the maturity of IMF nonconcessional facilities. For high income countries, repayment has occurred after 5 years on average, as one would expect without repeat lending.

The last two lines of the table show that the ongoing concessional lending cycle for low income countries, on average, is projected to be about thirty years long. This means that countries that currently have concessional loans outstanding to the IMF have for the most part been continuous debtors to IMF concesssional facilities since the Trust Fund was created in the second half of the 1970s. The average repayment duration on these loans is about 20 years, more than twice the ex ante maturity.

B. Internal Rates of Return

We begin by presenting average internal rates of return over the full 1973-2003 period, for various geographical regions and country groups, distinguishing between concessional and nonconcessional lending. These rates of return are computed with respect to the aggregate net cash flows for all countries in the region or country group. This is the same as if we were to take the lending-cycle specific rates of return presented in Table 7 (see Appendix), and create an average that is weighted by the relative size of disbursements during that lending cycle. The purpose of this exercise is cross-sectional comparison: to see how the average subsidy per dollar of lending received by IMF borrowers since the early 1970s differed across country groups. However, to the extent that IMF lending terms changed over time—as they did, significantly, for the IMF's general lending—the results in Table 2 may not characterize the subsidy (if any) present in recent IMF lending, a subject we return to below.

Tables 2 shows internal rates of return for the main country groups together with several "alternative rates of return". For non-concessional lending, these are the rates of return that would have arisen if the IMF had used its non-concessional disbursements to purchase short term (3-month or 1 year) SDR denominated instruments market, rather than lending to countries (see Appendix II for computational details). This is like taking a weighted average of three month or 1 year SDR interest rates, where the weights are chosen according to timing of IMF disbursements. As explained above, the argument for using a short rate as a benchmark for comparison with the rates of return on IMF lending is that since the early 1980s, all GRA lending has occurred at floating interest rates. It matters very little whether one chooses a one year or a three month interest rate to compute the alternative rate of return; hence Table 2 only shows the latter.

For concessional lending, alternative rates of return are computed as the rate that the IMF would have obtained if it had directed its concessional disbursements into the 10 year bond markets of the SDR currencies. The 10 year maturity is chosen because it comes closest to the average ex ante maturity of these loans (8-9 years). The fact that it is slightly longer seems justified. The average repayment duration was much higher, as shown in Table 1, because most of the original loans led to successor arrangements before being fully repaid. Some portion of the original principal was thus effectively, though not contractually, committed over a longer period.

Finally, for comparison with internal rates of return on total lending, we compute rates which are effectively weighted averages of the alternative rates for non-concessional and concessional lending.[15]

Table 2. Internal Rates of Return: Results for Country Groups, 1973-2003 1/

	Total Lending			GRA		Concessional	
	IRR	alt. IRR 3/	spread (in bps)	IRR	SDR3m 4/	IRR	SDR10y 5/
All Countries By Income Level 2/							
High income: OECD	6.62	7.41	-80	6.62	7.41	n.a.	n.a.
High income: non-OECD	6.30	7.77	-147	6.30	7.77	n.a.	n.a.
Upper middle income	6.42	6.73	-31	6.43	6.73	0.50	8.56
Lower middle income	5.82	7.27	-145	6.20	6.57	-0.34	9.51
Low income	4.32	8.22	-390	6.47	8.84	-1.25	7.85
Developing Countries by Region							
Africa	4.18	8.03	-385	6.73	9.01	-2.12	7.45
Asia	5.56	8.68	-312	6.52	7.99	0.53	9.50
Europe	5.72	5.86	-14	5.84	5.94	0.50	5.10
Middle East	4.19	8.06	-387	5.32	7.38	0.50	8.63
Latin America & Caribbean	6.33	6.51	-18	6.49	6.41	-3.46	7.58
EMBIG group 2/	5.91	6.94	-103	6.18	6.39	0.51	9.36
HIPC group 2/	1.42	7.62	-620	7.23	9.29	-3.59	7.15

1/ Using IMF repayment projections, net of promised debt relief.

2/ For definition of country groups, see notes to Table 1.

3/ Rates of return if concessional disbursments had been used to buy 10 year government bonds in the SDR currencies and GRA disbursements had been invested at the SDR 3-month interest rate.

4/ Rates of return if IMF disbursements had been used to 3 month bills in the SDR currencies.

5/ Rates of return from using disbursements to buy 10 year government bonds in the SDR currencies.

Table 2 shows that regardless of income group or geographical region, IMF total lending over the full 1973-2003 period on average contained *some* subsidy element. For the upper middle income countries, European countries (mostly transition economies, as well as Turkey) and Latin America, the subsidy was very small—about 30 basis points or less. This is a reflection of the fact that these groups received none of very little lending through the

[15] Note that because of difference in the timing of concessional and GRA lending to low income countries, the average SDR10y shown in Table 2 is sometimes smaller than the SDR3m rate, even though the yield curve was generally upward sloping. For example, the SDR3m shown for Africa represents a weighted average of market rates centered in the 1970 and 1980s, when African countries were resorting to GRA lending in the absence of sufficient concessional funds, while the SDR10y rate reflects an average centered in the second half of the 1980s and in the 1990s, when interest rates were much lower.

concessional facilities, and that the bulk of their (GRA) disbursements to these regions took place after 1987, after GRA lending terms had been linked to the SDR interest rate.

Similarly, lending to high income countries was somewhat more subsidized than lending to upper middle income countries—at 80 basis points for members of the OECD and 150 for non-OECD countries—because it occurred mostly during the first half of our sample period. The OECD group includes Republic of Korea, which received a large loan from the Fund in the late 1990s at a spread of about 200 basis points above the market determined SDR interest rate. If this is excluded, the average spread between the SDR interest rate and the internal rate of return for OECD countries would widen from -80 to about -160 basis points.

For the emerging market countries, the average subsidy was around 100 basis points, while for the lower middle income group—which includes several large borrowers such as Turkey, Brazil, Thailand, Philippines, and Russia—it was a bit bigger (about 150 basis points), reflecting some lending through concessional facilities.

Subsidies to the poor countries were much larger, reflecting lending through concessional facilities and HIPC debt relief, which is included in the net cash flows underlying the "concessional" internal rates of return shown on the right. Table 2 shows that the combination of concessional lending and debt relief for 26 HIPC countries that had reached their "decision points" by 2002 earned the Fund the *negative* rate of return of about -3.6 percent per annum on concessional lending to this group. Because these countries also received GRA lending, the overall rate of return was slightly positive (1.4 percent per annum). But this still implies a large negative *spread*, relative to the SDR10, of over 620 basis points. For the low income countries (i.e. including those for which no IMF debt relief was projected) the average rate of return was 4.3 percent, corresponding to a negative spread of almost 400 basis points. Similar results are obtained for the African country group.

We next turn to the question of how subsidies in standard (GRA) lending evolved over time. Based on what we know about the development in IMF rates of charge, we would expect average subsidies to be substantially higher in the 1970s and early 1980s then in the 1990s. This is confirmed in Table 3, which compares the rate of return on their most recent lending cycles with the rate of return on earlier lending cycles for three fixed groups of countries. The first is a group of 17 countries that both completed a lending cycle prior to 1980 and had a more recent lending cycle ending after 1997. The second is a group of 9 countries that completed a lending cycle some time between 1980 and 1987 and also had a more recent lending cycle ending after 1997. A third group completed a lending cycle between 1988 and 1997 and had a more recent cycle as well. In all three cases, the subsidy associated with the first of the two cycles was much larger than that of the second of the two. Indeed, in groups II and III the second cycles were subsidy-free (in group I, the second cycles carried a subsidy on average as many of these cycles were initiated prior to 1987). Moreover, the average subsidy element of cycles completed in the 1970s (-681 basis points) was much larger than that of cycles completed in the 1980s and 1990s. Finally, note the small, positive spread on all GRA lending cycles *initiated* after 1987.

Table 3. Changes in Implicit Transfer Associated with GRA Lending
(in percent; unweighted averages)

	No.	Earlier Lending Cycles			Most Recent Lending Cycles		
		IRR	SDR3m 2/	spread	IRR	SDR3m 2/	spread
I. Countries with cycle completed prior to 1980 1/	17	2.98	9.79	-681	5.24	6.63	-138
II. Countries with cycle completed between 1980 and 1987 2/	9	5.59	8.08	-249	5.67	5.40	27
III. Countries with cycle completed between 1988 and 1997 3/	18	7.37	9.86	-249	4.08	3.95	13
Memorandum Item:							
All cycles started after 1987	59				4.72	4.68	3

1/ Completed after 1997 or ongoing.
2/ Rates of return if IMF disbursements had been used to 3 month bills in the SDR currencies.

Finally, we present some average internal rates of return for individual developing countries (Figure 2). Results are presented in terms of regional groups. Within each group, countries are ranked in increasing order of their subsidy element. Not all countries are shown since this would have made the figures too hard to read. The complete set of results is in Table 7.

Figure 2. Internal Rates of Return for Individual Countries

(a) Sub-Saharan African Countries (selection)

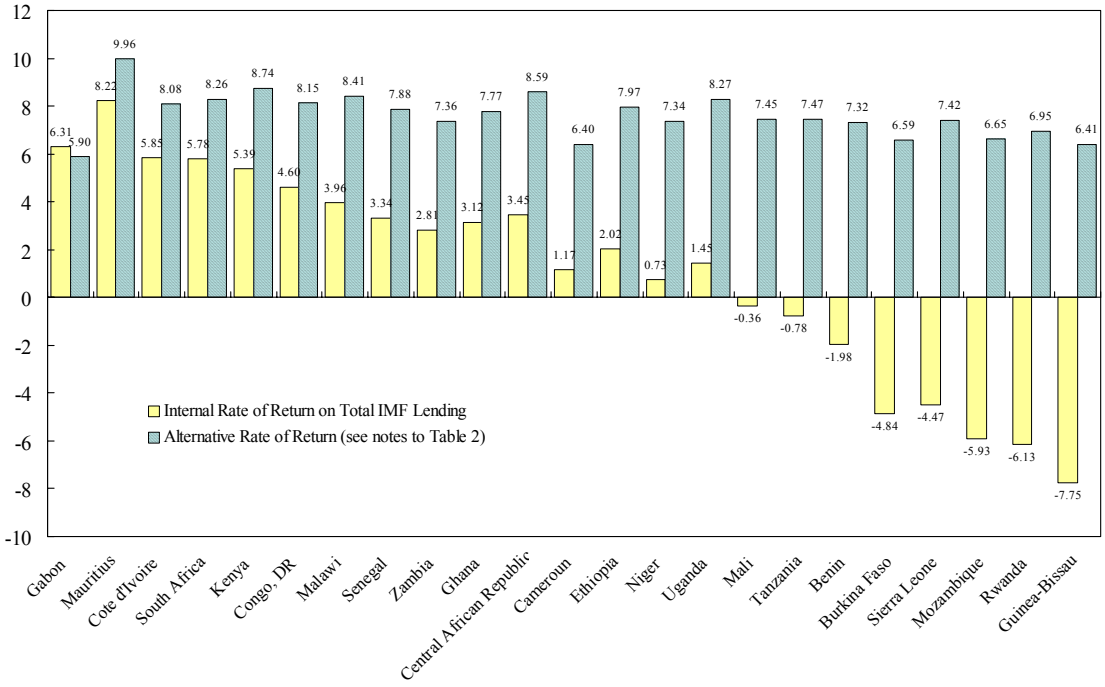
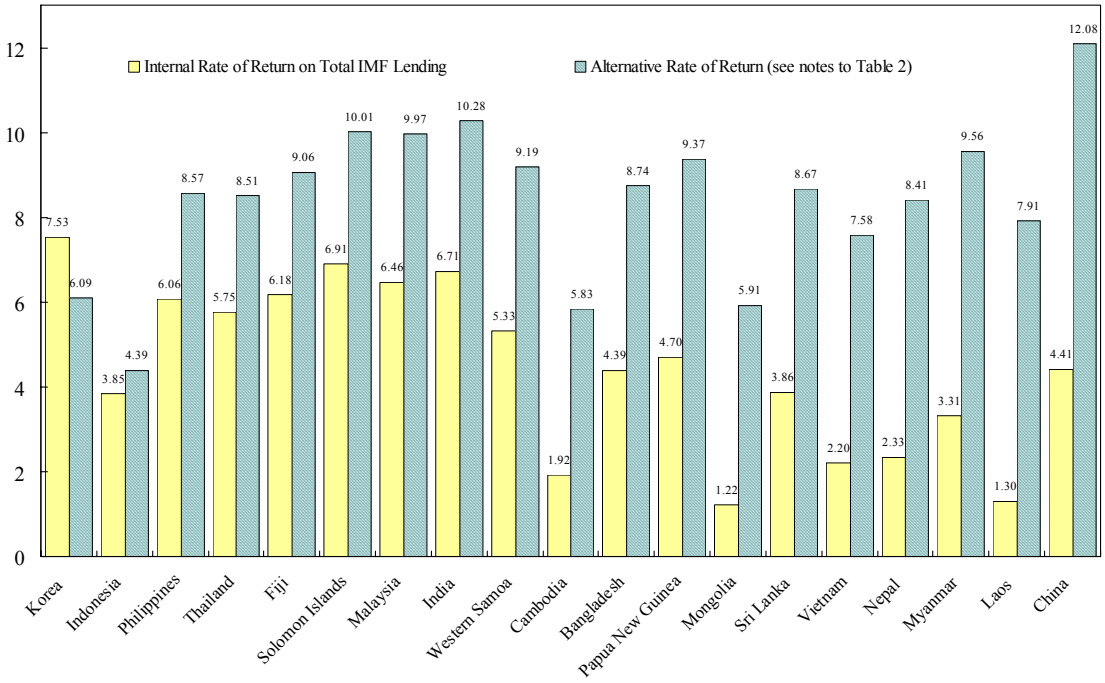


Figure 2. Internal Rates of Return for Individual Countries (continued)

(b) Asian and Pacific Countries



(c) Middle Eastern and Central Asian Countries

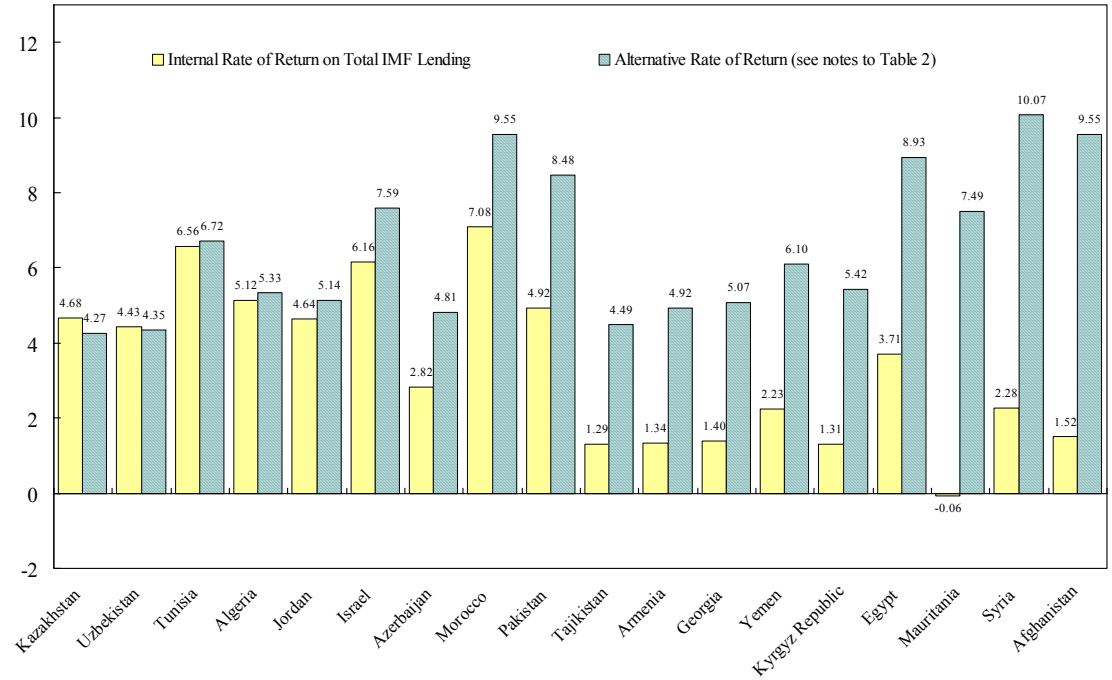
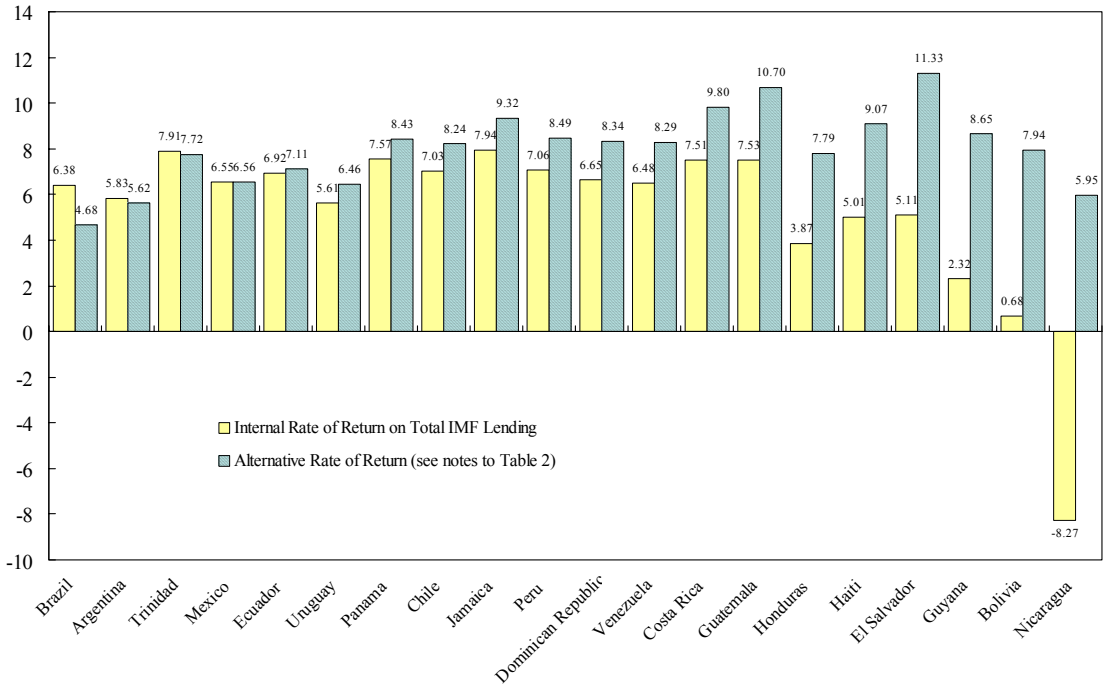


Figure 2. Internal Rates of Return for Individual Countries (concluded)

(d) Latin American and Caribbean Countries



(e) European Countries

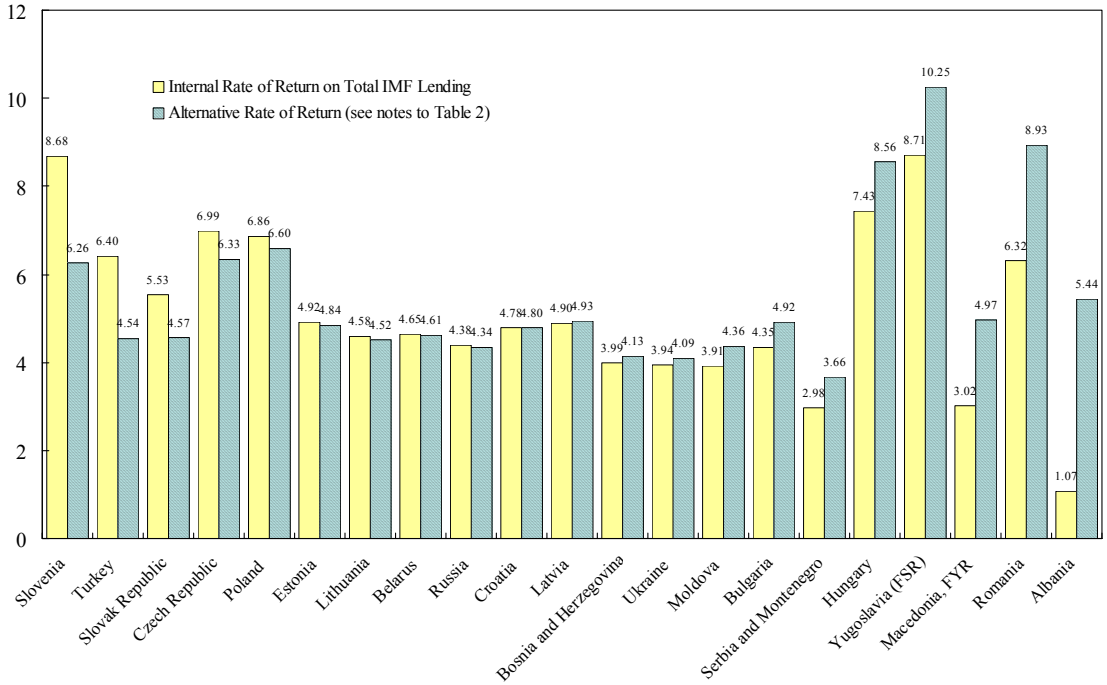


Figure 2 shows a large degree of heterogeneity not just across but also within most regions. Oil rich Gabon is the only African country for which the IMF earned an average rate of return that exceeded the opportunity cost of its borrowing, as measured by the alternative rate

of return described earlier. This reflects the fact that Gabon was not eligible for concessional lending and that most of its borrowing took place after 1986. For only three other African countries—Mauritius, Côte d'Ivoire, and South Africa—is the subsidy smaller than 250 basis points. For all other African countries, IMF lending was significantly concessional on average. However, there are large differences in degree. For about half of the forty or so Sub-Saharan African countries (not all are shown in the figure) nominal rates of return were positive, and spreads in the range between -350 and -600 basis points. About a dozen, of which six are shown in the Figure, had nominal rates of return around zero, and spreads in the range between -600 and -900 basis points. Most of these are HIPC countries that reached their decision points. Finally, five countries—Burkina Faso, Mozambique, Sierra Leone, Rwanda, and Guinea-Bissau—have negative nominal rates of return, of -4.5 to -7.75 percent per annum, and spreads in the order of -1100 to -1500 basis points.[16]

Other regions are not quite as heterogeneous. For the Asian and Pacific region, the top of the distribution looks a bit like Africa in the sense that the IMF earned a positive spread in only one case (Korea), and spreads were between 0 and -300 basis points in just four cases, including Indonesia, Philippines and Thailand. For most other countries in the region, lending was highly concessional, with spreads between -350 and -800 basis points, but there were no cases of negative nominal returns. The Middle Eastern and Central Asian group is similar, except that the group of countries that received no or relatively small subsidies (spreads above -250 basis points) was larger (8 out of 18 countries). For Latin America, that group is the majority. Only a half dozen countries received lending at highly concessional terms, with spreads of less than -400 basis points. There is only one case of a negative nominal rate of return (Nicaragua).

The European countries stand out in that the IMF earned rate of return that implied positive or approximately zero spreads in more than half of the countries. This reflects that fact that very few countries in Europe were eligible for concessional lending, and that most lending was directed to transition economies during the 1990s, after deliberate subsidies in GRA lending had been eliminated. Moreover, subsidy embedded in the concessional lending facilities was much lower in the 1990s than in earlier periods because of much lower market interest rates. Only one country, Albania, received loans that were highly concessional on average.

C. Net Present Values

The interest spreads we have focused on so far are a measure of subsidy *per unit of lending*. Whether or not they will result in a large monetary transfer depends on the lending scale. We now estimate the absolute size of transfers embodied in IMF lending by computing net present values (NPVs) for each lending cycle, and expressing these both in terms of 2002

[16] These do not include the current arrears cases Liberia, Sudan, Somalia and Zimbabwe, since the rate of return for these countries is sensitive to projections regarding the repayment of their arrears. We return to these countries below.

dollars and as a fraction of 2002 GDP. As before, we only show aggregate results in this section. Lending cycle specific results are contained in Table 7.

The results of this section hinge on the discounting methodology. Consider first the case of concessional lending, which happens at an interest rate that is fixed over the maturity of the loan, and suppose that a lending cycle that consists of just one (ESAF/PRGF) loan. This means that there will be some disbursements in the first three years, followed by interest payments, and then, starting with year 6, repayments until the loan is fully repaid in year 10. In this case, the discounting is conceptually simple: one ought to use the SDR yield curve at the time of disbursement for the purpose of discounting, i.e. discount the first year with the SDR 1 year zero coupon rate observed at year zero, the second year with the SDR 2 year, etc.

In reality, however, lending cycles often comprise more than one loan, and extend far beyond the maturity of the original loan. This leads to the question of how to discount payment streams arising from new loans that are disbursed in the course of a cycle. For example, consider a new loan that is disbursed in year 8 and for which a repayment is made in year 14. If one takes the view that this repayment was not expected in year zero but only after the new loan was disbursed, then it should be discounted to year zero in two steps: first, to year 8, using the 6 year SDR interest rate observed in that year, second, to year zero using the eight year interest rate observed in year zero. However, this approach is infeasible, since we cannot assign payments streams within a lending cycle to particular loans or disbursements.

A further practical difficulty is that we do not have SDR yield curve data for the entire 1973-2003 period—only a U.S. yield curve, and some bond yield data at particular maturities for the other SDR countries (Japan, Germany, France and the United Kingdom). In practice, only an SDR 10 year bond rate can be constructed using all five currencies over the entire period. With some additional assumptions, an approximate 1 year bond rate can be constructed as well.[17]

We deal with these complications by using a several different approaches to discounting and check whether this affects our results. To the extent that the expectations theory of the term structure approximately holds, discounting in two steps from a payment date to a loan disbursement date and then back to the initial year of the lending cycle should give about the same result as discounting in one step to the beginning of the cycle. We do this in two ways. First, by using an extremely crude approximation to the hypothetical SDR yield curve estimated by interpolating the 1 year and 10 year SDR rates and using the assumption that the SDR yield curve levels off after ten years. Second, by converting all flows into U.S. dollars and discounting using the U.S. yield curve. Finally, we also discount using a time varying 10 year SDR bond rate, i.e. we discount each payment using the SDR 10 year bond rate prevailing in the actual year of the payment, as opposed to the initial year of the cycle. This is

[17] For 1973-1978, this is constructed as a weighted average of 1 year U.S. and German government bond rates and the Japanese 1 year “interest bearing bank bencher”. From 1979 onwards, the weighted average in addition includes a U.K. 1 year government bond rate.

supposed to guard against the possibility that, by discounting long lending cycles with the yield curves observed at the beginning of the cycles, we may be introducing errors (relative to the hypothetical two-step discounting approach described above) if actual interest rates evolve very differently from what was anticipated at the beginning of the cycle.[18]

Our approach to discounting payments streams related to GRA lending is different because of the floating rate nature of these loans. We construct two sets of discount factors, in two steps. First, we combine the SDR 1 year series (for 1973-1989) and SDR 3 month series (since 1989) to reflect the fact that until 1989, IMF lending rates were fixed a year at a time in nominal terms, while they have been indexed to the SDR 3 month rate since then. To this combined short term SDR interest rate series we add two alternative term premia to reflect the opportunity costs of committing principal over a longer term than just 1 year or 3 months. As discussed in the section on methodology, we regard 30 basis points as a reasonable lower bound for this premium and 200 basis points as an upper bound. The discounting is carried out recursively, using the rate observed in year t-1 to discount from year t to t-1, the rate observed in t-2 to discount from year t-1 to t-2, etc.

Table 4 contains the results. It is analogous to Table 2. Instead of internal rates or return, it shows NPV transfers computed using the methods described above for concessional and non-concessional payments, respectively. For total lending, we show an upper bound and a lower bound; this is equal to the minimum and maximum, respectively, of the sum of nonconcessional and concessional transfers using the alternative estimates shown in the table. The upper panel shows the results in terms of 2002 dollar amounts, the lower panel as a percent of 2002 GDP. For country groups that include one or more of the 25 HIPC countries to which IMF debt relief was committed or disbursed as of March of 2003, we separately show how much of the transfer is attributable to debt relief, as opposed to the lending terms.

Total transfers associated with IMF lending activity since 1973 (and including projected IMF debt relief to 25 HIPC countries) have been between 37 and 90 billion U.S. dollars. Where one ends up in this range depend largely on whether one thinks that the IMF should be charging a large premium over short term SDR rates in its standard (GRA) lending or not. If one were to lean toward the lower figure, then over 70 percent of the total transfer would be explained by the sum of deliberately concessional lending and HIPC debt relief. At the same

[18] Note that this last approach it closest to the way in which the NPV of transfers (say, related to HIPC debt relief) are typically computed in official IMF or World Bank documents. To discount IMF flows, these typically use the SDR "commercial interest reference rate", an SDR-weighted average of medium term bond yields plus a spread of 100 basis points. All payments regardless of their timing are discounted using this interest rate, which is available since the 1980s. It is close to the SDR 10 year rate since the 100 basis point spread is of about the same magnitude as the term spread between SDR 10 year and medium term bonds.

Table 4. Net Present Value of Transfers: Results for Country Groups, 1973-2003 1/

	Total Lending		GRA Lending		Concessional Lending		
	min	max	SDRs+30	SDRs+200 2/	US yc	SDR(1-10)	SDR10
	(in billions of 2002 US dollars)						
Total	36.9	89.5	10.3	58.3	31.1	29.7	26.6
High income: OECD	3.1	10.8	3.1	10.8	n.a.	n.a.	n.a.
High income: non-OECD	0.3	0.7	0.3	0.7	n.a.	n.a.	n.a.
Upper middle income	0.4	9.2	0.3	9.1	0.0	0.0	0.0
Lower middle income	8.4	28.0	1.9	20.2	7.8	7.3	6.5
(of which: debt relief)					(0.2)	(0.2)	(0.2)
Low income	24.8	40.9	4.7	17.6	23.3	22.3	20.1
(of which: debt relief)					(2.0)	(2.1)	(2.1)
Developing Countries							
Africa	16.3	26.1	3.7	11.5	14.6	13.9	12.6
of which: debt relief					(1.9)	(2.0)	(2.0)
Asia	14.8	29.0	3.5	15.7	13.2	12.6	11.3
Europe	-1.0	7.7	-1.5	7.2	0.6	0.5	0.5
Middle East	1.5	2.6	0.7	1.8	0.8	0.9	0.8
Latin America & Caribbean	2.1	14.9	0.5	12.9	1.9	1.8	1.6
(of which: debt relief)					(0.3)	(0.3)	(0.3)
EMBIG group 4/	7.8	33.0	1.3	25.4	7.6	7.2	6.4
HIPC group 5/	11.8	16.5	1.5	4.4	12.1	11.3	10.3
(of which: debt relief)					(2.2)	(2.3)	(2.3)
	(as a share of 2002 GDP)						
High income: OECD	0.02	0.06	0.02	0.06	n.a.	n.a.	n.a.
High income: non-OECD	0.17	0.47	0.17	0.47	n.a.	n.a.	n.a.
Upper middle income	0.02	0.59	0.02	0.58	0.00	0.00	0.00
Lower middle income	0.25	0.84	0.06	0.60	0.23	0.22	0.19
(of which: debt relief)					(0.01)	(0.01)	(0.01)
Low income	2.13	3.51	0.40	1.51	2.00	1.92	1.73
(of which: debt relief)					(0.17)	(0.18)	(0.18)
Developing Countries by Region							
Africa	3.48	5.57	0.80	2.45	3.12	2.97	2.69
(of which: debt relief)					(0.41)	(0.42)	(0.42)
Asia	0.49	0.96	0.12	0.52	0.44	0.42	0.37
Europe	-0.08	0.61	-0.12	0.57	0.05	0.04	0.04
Middle East	0.60	1.07	0.29	0.73	0.34	0.35	0.31
Latin America & Caribbean	0.12	0.86	0.03	0.75	0.11	0.10	0.09
(of which: debt relief)					(0.02)	(0.02)	(0.02)
EMBIG group	0.17	0.71	0.03	0.55	0.16	0.16	0.14
HIPC group	11.77	16.45	1.49	4.36	12.10	11.32	10.27
(of which: debt relief)					(2.22)	(2.26)	(2.25)

1/ For definition of country groups, see notes to Table 1.

2/ SDRs+30: Discounting based on SDR 1 year (1973-1989) and SDR 3 month rate (after 1990), plus a margin of 30 basis points. SDRs+200: same, except that 200 basis point margin is used.

3/ US yc uses US yield curve, SDR (1-10) uses SDR 1 year and SDR 10 year bond rates and interpolations based on them, SDR10 uses just the SDR 10 year bond rate in the year of the payment (see text).

time, transfers attributable to GRA lending would be quite small, even in absolute dollar terms ($10 bn), in spite of the much larger scale of GRA lending relative to concessional lending. In contrast, if one picks the larger figure, then the contribution of concessional lending to the total transfers is only about 35 percent, and GRA transfers are about $60 bn.

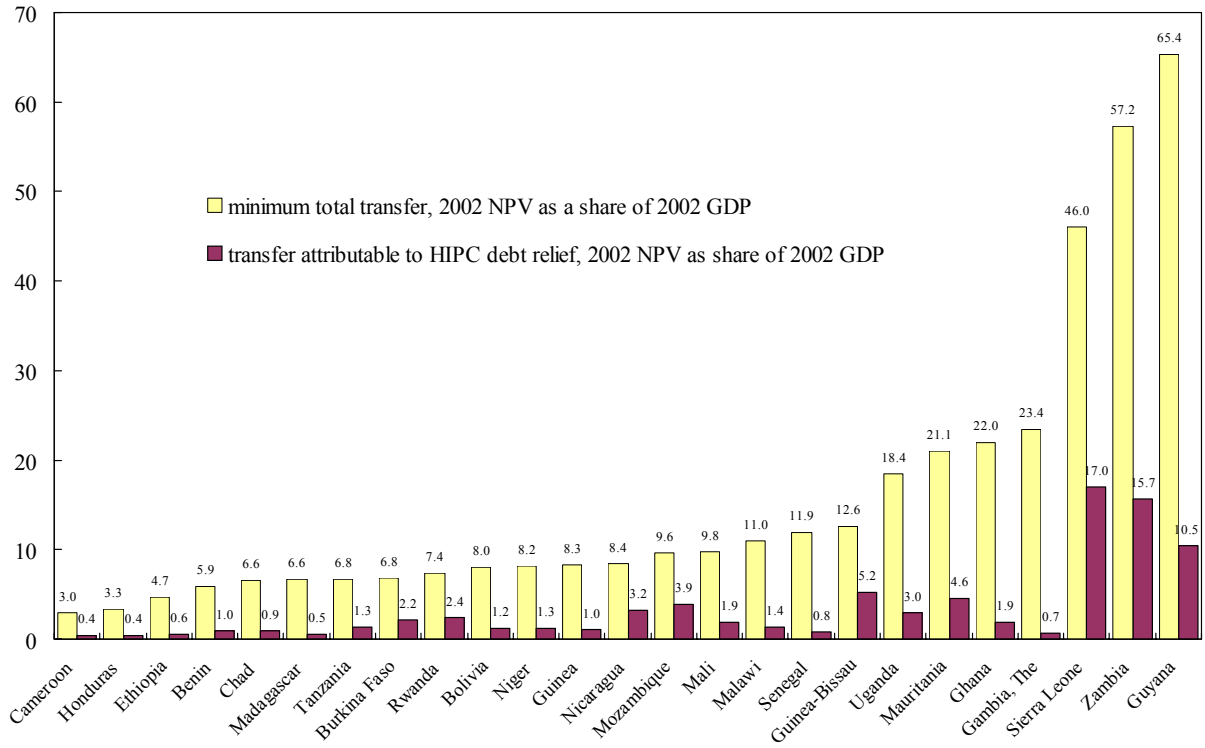
Consistent with this, the upper bound estimate attributes a large share of the total dollar transfer—40 percent, or about $33 bn—to emerging market lending (see results for "EMBI group"). This group received large volumes of GRA lending at terms that were for the most part not deliberately concessional, but nevertheless slightly below short term SDR interest rates on average, as we saw in Table 2. According to the lower bound estimates, the subsidy to these countries was much smaller in absolute terms ($8 bn), and only 20 percent of the total.

For the HIPC countries, the upper and lower bound estimates are fairly close, at almost $12 bn and about $16.5 bn, respectively. This reflects the fact that these transfers are mostly attributable to concessional lending, and thus unaffected by assumptions one makes about the interest rate premium on GRA lending.

While the dollar transfer estimates in the upper half of Table 4 are useful as a measure of the overall cost of IMF lending operations to the creditor countries in the IMF, they say little about the economic significance of the transfer from the point of view of the recipient countries. This is addressed by the lower half of the table, which expresses total transfers as a share of country GDP in 2002. The results are quite striking, and largely robust to whether upper bound or lower bound estimates are used. As a share of GDP, the HIPCs received by far the largest transfers, in the order of 12–16 percent. This mostly reflects the cumulative effect of concessional lending over the years, rather than HIPC debt relief *per se*, which makes up less than one fifth of the total. The corresponding average transfer to low income countries is substantially lower, in the order of 2-3 percent of their 2002 GDPs. The transfer to emerging markets was only 0.2–0.7 percent. Among the regional groups, only Africa was a large recipient of IMF transfers, about 3.5–5.5 percent of 2002 GDP. For all other regions, transfers were in the order of 1 percent or less. Note that these are cumulative transfers over a thirty year period expressed in terms of the GDP of just one year.

We next show NPV transfers for some individual countries. To limit the number of figures, we just show two groups of particularly interesting borrowers: the HIPC "decision point" countries, which received the largest transfers in GDP terms (Figure 3), and the EMBIG countries, which include most of the IMF's large-scale borrowers (Figure 4). The corresponding information for all other countries is available in Table 7.

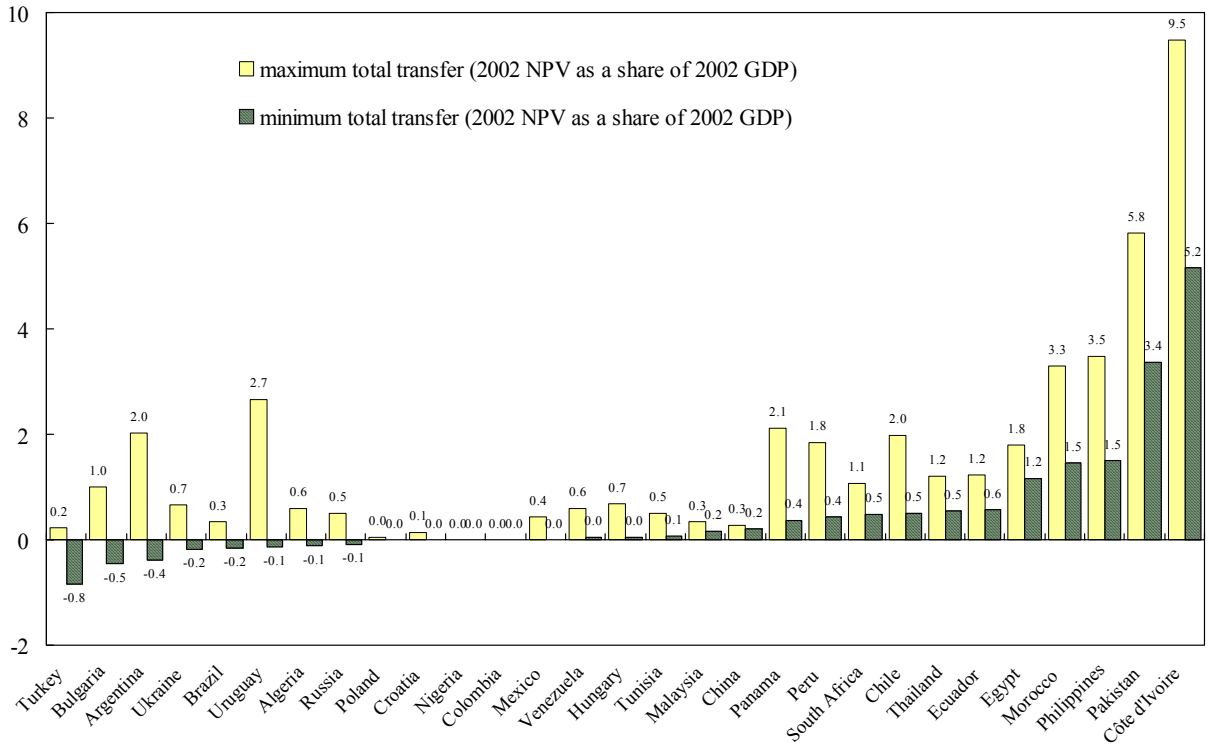
Figure 3. HIPC Countries: Cumulative NPV Transfers as a Percent of 2002 GDP



To avoid clutter, Figure 3 only shows the lower bound estimate for the cumulated NPV transfer, as a percentage of 2002 GDP. The upper bound estimates are about 25-40 percent higher, and lead to a very similar ranking. The figure shows that most countries (14 or 15 our of 25) received transfers of at least 6-13 percent of GDP. Three or four were slightly below this range, and six much above. In two cases—Sierra Leone and Guinea Bissau—this is explained by exceptionally low rates of return relative to market interest rates (see Figure 2). In the remaining four cases, it is due to a combination of relatively low rates of return with high volume of lending relative to GDP in 2002. The figure suggests that the relative importance of the HIPC initiative as a source of transfers was modest in most countries relative to the cumulative implicit transfers received from the IMF over the 1973–2003 period. The three outliers to the right (over 45 percent of 2002 GDP in cumulative transfers) reflect exceptionally large IMF concessional lending volumes to these countries in relation to their economic size.

Figure 4 shows a similar distribution for the EMBIG countries, except that in this case the second series is not the HIPC contribution to cumulative transfers (which is zero) but rather the upper bound estimated for the NPV of cumulative transfers.

Figure 4. EMBIG Countries: Cumulative NPV Transfers as a Percent of 2002 GDP



A large majority of countries—about two dozen, out of a total of 29 shown—have upper bound cumulative transfer estimates of about 2 percent or less and lower bound estimates of 1 percent or less. More than half (17 out of 29) have even *upper* bound estimates of 1 percent or less. Only four countries are considerably above this range: Côte d'Ivoire, Philippines, Pakistan and Morocco. Pakistan and Côte d'Ivoire are classified as low income, Philippines and Morocco as lower middle income; all four countries received a substantial fraction of their total lending on concessional terms over the course of their lending histories (see Table 7).

Finally, it is worth noting that the upper bound and lower bound transfer estimates are quite correlated. The main exceptions, to the left of the figures, are Argentina and Uruguay, which exhibit lower bound transfers below zero, but upper bound transfers in the 2–3 percent range, i.e. a range that one would typically associate with low income countries. As it turns out, this is mostly an artifact of the collapse of dollar GDP in both countries as a result of the currency crises of 2001–2002. Using a higher discount rate in the upper bound scenario makes the dollar net present value switch sign from a negative to a positive transfer; this positive flow (i.e. transfer from the Fund to the country) is then divided by a small base. If one were to substitute 2002 GDP for 2001 GDP, the upper bound of transfers as a percent of GDP would drop from 2 percent to 0.8 percent of GDP for Argentina and from 2.7 percent to 1.4 percent for Uruguay.

D. Robustness of Transfer Estimates for Low Income Countries

The transfer estimates so far have been based on a number of assumptions that tend to limit their overall size, particularly to the low income countries.

First, we have only considered transfers associated with IMF lending operations and HIPC debt relief. Since the IMF is an organizations which channels virtually all its financial assistance through lending, this is generally comprehensive, but there is one important exception during our sample period, namely the direct distribution of the profits (about $1.3 bn) from the sales of 25 percent of the stock of IMF gold in the 1970s to the developing countries (see footnote 5). Second, we have only taken into account projected debt relief to the 25 countries to which IMF debt relief had been committed by early 2003. This excludes two additional potential source of transfers, namely, that debt relief to those 25 countries could eventually be higher than is currently projected, and second, possible debt relief to HIPC countries that did not yet reach their "decision points" under the initiative. Finally, we have assumed that all outstanding arrears to the IMF will be repaid.

We now consider the consequences of dropping these assumptions both individually and jointly. The results are presented in Tables 5, which examines how internal rates of return are affected, and Table 6, which presents the impact on cumulative transfers in terms of 2002 GDP. Each table consists of 7 sections. Section I reproduces our benchmark results from Tables 2 and 4. Sections II looks at the impact of the 1970s gold profit distribution. Section III asks how the results for low income and developing countries in general would be affected if HIPC debt relief is extended to 8 additional countries that are considered potential recipients.[19] As of March 2003, the NPV cost of this extra debt relief was estimated at about $0.7 bn in 2002 NPV terms. Section IV examines the consequences of much bigger debt relief to the 25 countries that have already received commitments under the initiative, namely, 90 percent NPV debt relief, in line with the NPV debt reduction expected from bilateral and commercial sources. Section V looks at how transfers would be affected if the countries in arrears to the IMF (as of mid-2004, Sudan, Somalia, Liberia and Zimbabwe) were to default permanently. Finally, Section VI combines sections II and III, while Section VII reflects the combined impact of all assumptions.

[19] Namely, Burundi, Central African Republic, Comoros, Democratic Republic of Congo, Republic of Congo, Côte d'Ivoire, Myanmar and Togo.

Table 5. Impact of Alternative Scenarios on Rates of Return

	Total Lending			Concessional Lending		
	IRR	Alt. IRR	spread	IRR	SDR10	spread
I. Benchmark Scenario						
Low income countries	4.32	8.22	-390	-1.25	7.85	-910
Africa	4.18	8.03	-385	-2.12	7.45	-956
HIPC 25 group 1/	1.42	7.62	-620	-3.59	7.15	-1075
II. Benchmark Scenario + Effect of 1970s Gold Profit Distribution						
Low income countries	4.07	8.22	-416	-1.55	7.85	-940
Africa	3.92	8.03	-411	-2.34	7.45	-979
HIPC 25 group 1/	1.23	7.62	-639	-3.68	7.15	-1083
III. Benchmark Scenario + Effect of Projected HIPC Debt Relief to 8 more countries						
Low income countries	4.14	8.22	-409	-2.09	7.85	-994
Africa	3.85	8.03	-418	-3.44	7.45	-1089
HIPC 25 group 1/	1.42	7.62	-620	-3.59	7.15	-1075
IV. Benchmark Scenario + Effect of 90 percent NPV IMF debt relief to 26 HIPC countries						
Low income countries	3.90	8.22	-432	-3.62	7.85	-1147
Africa	3.42	8.03	-461	-6.13	7.45	-1357
HIPC 25 group 1/	-4.27	7.62	-1189	-10.69	7.15	-1784
V. Benchmark Scenario + Arrears are not repaid						
Low income countries	3.84	8.22	-438	-1.47	7.85	-933
Africa	3.29	8.03	-474	-2.47	7.45	-992
HIPC 25 group 1/	1.42	7.62	-620	-3.59	7.15	-1075
VI. Cumulation of II and III						
Low income countries	3.88	8.22	-434	-2.35	7.85	-1020
Africa	3.60	8.03	-443	-3.62	7.45	-1107
HIPC 25 group 1/	1.23	7.62	-639	-3.68	7.15	-1083
VI. Cumulation of II, III, IV and V.						
Low income countries	2.89	8.22	-533	-5.12	7.85	-1297
Africa	1.48	8.03	-655	-6.71	7.45	-1415
HIPC 25 group 1/	-4.41	7.62	-1202	-12.94	7.15	-2010

1/ 25 Highly indebted poor countries that received IMF debt relief commitments by early 2003.

Table 6. Impact of Alternative Assumptions on Net Present Value of Transfers
(in percent of 2002 GDP)

	Total Lending		Concessional Lending		
	min	max	US yc	SDR (1-10)	SDR 10
I. Benchmark Scenario					
Low income	2.13	3.51	2.00	1.92	1.73
Africa	3.48	5.57	3.12	2.97	2.69
(of which: debt relief)			(0.41)	(0.42)	(0.42)
HIPC 25 1/	11.77	16.45	12.10	11.32	10.27
(of which: debt relief)			(2.22)	(2.26)	(2.25)
II. Benchmark Scenario + Effect of 1970s Gold Profit Distribution					
Low income	2.26	3.65	2.14	2.06	1.86
Africa	3.65	5.75	3.30	3.16	2.86
(of which: debt relief+gold)			(0.59)	(0.61)	(0.59)
HIPC 25 1/	12.19	16.91	12.55	11.79	10.70
(of which: debt relief+gold)			2.68	2.73	2.67
III. Benchmark Scenario + Effect of Projected HIPC Debt Relief to 8 more countries					
Low income	2.19	3.57	2.06	1.98	1.79
Africa	3.63	5.72	3.27	3.12	2.84
(of which: debt relief)			(0.56)	(0.57)	(0.57)
HIPC 25 1/	11.77	16.45	12.10	11.32	10.27
(of which: debt relief)			(2.22)	(2.26)	(2.25)
IV. Benchmark Scenario + Effect of 90 percent NPV IMF debt relief to 26 HIPC countries					
Low income	2.27	3.66	2.16	2.07	1.87
Africa	3.82	5.94	3.49	3.33	3.02
(of which: debt relief)			(0.78)	(0.78)	(0.75)
HIPC 25 1/	13.60	18.47	14.12	13.32	12.11
(of which: debt relief)			(4.24)	(4.25)	(4.09)
V. Benchmark Scenario + Arrears are not repaid					
Low income	2.59	3.69	2.02	1.94	1.75
Africa	3.93	6.01	3.17	3.02	2.73
(of which: debt relief+arrears)			(0.46)	(0.47)	(0.46)
HIPC 25 1/	11.77	16.45	12.10	11.32	10.27
(of which: debt relief)			(2.22)	(2.26)	(2.25)
VI. Cumulation of II and III					
Low income	2.32	3.71	2.20	2.12	1.92
Africa	3.80	5.90	3.45	3.31	3.00
(of which: debt relief+gold)			(0.74)	(0.76)	(0.74)
HIPC 25 1/	12.19	16.91	12.55	11.79	10.70
(of which: debt relief+gold)			(2.68)	(2.73)	(2.67)
VII. Cumulation of II, III, IV and V.					
Low income	2.64	4.04	2.37	2.29	2.07
Africa	4.58	6.71	3.87	3.72	3.38
(of which: debt relief+arrears+gold)			(1.16)	(1.17)	(1.11)
HIPC 25 1/	14.03	18.93	14.57	13.79	12.53
(of which: debt relief+arrears+gold)			(4.70)	(4.72)	(4.51)

1/ 25 Highly indebted poor countries that received IMF debt relief commitments by early 2003.

To keep the tables manageable, we only consider the effects on three groups: low income developing countries (about 60, see notes to Table 1 for a definition), the HIPC "decision point" countries, and African countries. Since most of the current "decision point" countries, all but one of the additional 8 potential HIPC recipients, and four out of five arrears cases are African countries, this is the only regional group that is significantly affected by the scenarios we consider.

The main results are as follows. The aggregate impacts of both the 1970s gold profit distribution and debt relief to potentially eligible HIPC countries are minor with respect to both internal rates of return and NPVs. As far as the extra HIPC relief is concerned, this is explained by its small scale ($0.7 bn). The gold profits had larger scale (about $2.2 bn in 2002 dollar terms) but because they were distributed according to quota, only around $1.5 bn went to the low income countries. In terms of 2002 GDP, the impact is minimal.

The impact of a permanent default on current arrears and a larger (90 percent) NPV debt relief for the current "decision point" HIPCs is a bit larger in dollar NPV terms—about $2.6 bn and $2 bn, respectively—and much more concentrated, since all arrears countries and most HIPCs are African. Nonrepayment of arrears lowers the internal rate of return for low income countries and Africa by about 50 and 90 basis points, respectively. The effect of 90 percent debt HIPC relief is a bit smaller for those groups (about -40 and -75 basis points) but of course very large for the HIPC group itself (-600 basis points).

This said, none of these changes—not even cumulated—does much to change the order of magnitude of total transfers when expressed in terms of 2002 GDP. Comparing scenario VII in Table 6 with the benchmark, we see that cumulative transfers have gone up by about half a point for the low income countries in the aggregate, by about 1.1 points for Africa, and by about 2.5 points for the HIPC-25 group. Thus, the maximum cumulative transfer that we can squeeze out for this group, combining assumptions on much larger HIPC debt relief with the 1970s gold sales that we had previously ignored, is in the order of 14–19 percent, as opposed to our earlier range of 12–16.5 percent. The results of the previous section turn out to be remarkably robust.

V. CONCLUSION

The main result of this paper is that implicit transfers in IMF lending over the past 30 years have been small and economically insignificant for emerging market borrowers, but much larger for very poor countries. Lending rates to emerging market countries were about 100 basis points lower, on average, than the rate that would have fully compensated IMF creditor countries for their borrowing costs. This average subsidy is mainly attributable to concessional terms in standard IMF lending prior to 1987, and has disappeared from more recent lending. In contrast, lending rates to poor countries were and continue to be highly subsidized—by around 400 basis points in the case of low income countries on average, and over 600 basis points in the case of the HIPCs to which the IMF has committed debt relief.

If cumulative transfers are expressed as shares of 2002 GDP, the contrasts between the two groups are even starker. For the emerging market countries, total transfers were in the range

of 0.2–0.7 percent of 2002 GDP. For the HIPC recipients of IMF debt relief, transfers were in the order of 12–16 percent of 2002 GDP. Of this, less than one fifth is explained by actual HIPC debt relief. The rest is due to the cumulative effect of subsidized loans since the mid-1970s.

Our estimates are based on the assumption that countries fully repay their debts to the IMF, except for promised debt relief. Is this realistic? Based on the results of Jeanne and Zettelmeyer (2001) it seems fairly realistic for the emerging market countries, who have never been in arrears to the IMF, and have a track record of repaying their debts in full—even though this may take long, and involve new borrowing in the interim. Moreover, the upper bound estimate of 0.7 percent of 2002 GDP is already based on the assumption that the correct discount rate is 200 basis points above industrial country borrowing rates, which could be interpreted to reflect either a liquidity premium or as covering default risk. Finally, even a doubling or tripling of the upper bound estimate would not change the conclusion that the economic significance of IMF subsidies to the emerging market countries was small, since this estimate expresses a cumulative transfer over 30 years in terms of the GDP of just 1 year. Arguably, a better measure of economic significance is the average annual transfer in terms of annual GDP, which would be miniscule.

For some low income countries, the assumption of full repayment except for promised debt relief—including full repayment of outstanding arrears—may not be realistic. Because of the relatively small scale of lending to these countries, however, even much more pessimistic assumptions do not have a large impact on the results on average (although they may have large impacts on individual countries, like those that have large arrears outstanding). For example, assuming 90 percent IMF debt relief for the countries that have so far received multilateral debt relief commitments under the HIPC initiative increases the estimated cumulative transfer to these countries from about 12–16 percent of 2002 GDP to about 14–18.5 percent of GDP.

Returning to the questions that motivated this paper, it is not plausible that transfers in the order we have estimated could have been a source of significant moral hazard in lending to emerging market countries. Whether or not one considers the transfers embodied in concessional lending and HIPC debt relief "large" is somewhat in the eye of the beholder. 12–16 percent of 2002 GDP sounds large, but this is a cumulative effect over 30 years. However, if the purpose of concessional lending facilities was to allow adjustment lending to the poorest countries at terms that embodied a substantial subsidy relative to IMF lending to wealthier members, then this has certainly been achieved.

DATA ISSUES

All flows data used in this paper was provided by the IMF Finance Department. This included data on disbursements and repayments in the IMF's General Resources Account (where disbursements are referred to as "purchases" and repayments as "repurchases) as well as concessional facilities (Trust Fund/SAF/ESAF/PRGF). GRA purchases exclude all "reserve tranche" drawings, i.e. a member's use of the SDR-denominated portion of their quotas, since these are assets of the members which are part of the members liquid international reserves.

All results based in this paper are based on net cash flows between the IMF and a member, defined as disbursements—repayments + related charges or interest. "Related charges or interest" means that we attempt to include only charges that were directly related to lending. These include:

- Charges on outstanding GRA purchases (including burden-sharing, SRF and access level surcharges)
- Interest on outstanding SAF/TF/PRGF loans
- Special Charges on overdue Obligations
- Service charges (one half of one percent) on GRA purchases
- Arrangement charges under the Standby and Extended Fund Facilities

Not included in our concept of "related charges or interest" are member assessments for the SDR department and SDR net charges, which are related to the SDR's role as the IMF's internal unit of account and unrelated to charges for GRA purchases or Trust Fund/SAF/ESAF/PRGF loans (see IMF, 2001, Chapter III).

We use IMF repayment projections which assume no disbursements from the time at which they are created, namely April 30, 2003. These projections assume that all principal will be repaid by 2012. Interest due is calculated based on this assumption.

For the 25 HIPC to which IMF debt relief had been committed by March 2003, we incorporate debt relief projections in the projections. We incorporate them as grants, as if they were concessional disbursements that do not require any repayment, without netting out any specific repayments. Thus, projected debt relief will affect rates or return and NPV transfers associated with concessional financing and have no impact on GRA rates of return or NPV transfers, although is may in fact be used to repay GRA lending. This treatment of HIPC debt relief is appropriate since it is effectively funded through the same sources as concessional lending.

COMPUTATION OF INTERNAL RATE OF RETURN ON ALTERNATIVE INVESTMENT

We want to compute IRRs on an alternative investment, assuming that the net disbursements that went into emerging debt markets had instead been used to purchase SDR-denominated bond of maturity $\tau \geq 1$. Denote 0 the year in which the first bond was first purchased, and assume that purchases (disbursements) occur in the following years. The year in which the last bond is purchased is denoted *T*. Bonds are held to maturity, and pay an interest each year equal the interest rate at the time of the purchase. Then, net transfers from the creditor perspective are defined as:

$$-nt_t^A = r_t^A - d_t^A + i_{t-1}d_{t-1}^A + i_{t-2}d_{t-1}^A + ... + i_{t-\tau}d_{t-\tau}^A \ , \ T+\tau \geq t \geq 0$$

where d_t^A are gross disbursements, r_t^A are gross repayments and i_t is the yield of the bond in period *t*. Since bonds are held until maturity, $r_t^A = d_{t-\tau}^A$. Since no bonds were purchased before date 0, we have $d_j^A = 0$ for $j < 0$. Thus, $-nt_0^A = d_0^A$. Also, since no bonds are purchased after *T*, we have $d_j^A = 0$ for $j > T$. For example, $-nt_{T+\tau}^A = (1+i_T)d_T^A$.

Example: $\tau = 3$:

$$-nt_0^A = -d_0^A \ ,$$
$$-nt_1^A = -d_1^A + i_0 d_0^A \ ,$$
$$-nt_2^A = -d_2^A + i_1 d_1^A + i_0 d_0^A \ ,$$
$$-nt_3^A = -d_3^A + i_2 d_2^A + i_1 d_1^A + (1+i_0)d_0^A \ ,$$
$$-nt_t^A = -d_t^A + i_{t-1}d_{t-1}^A + i_{t-2}d_{t-2}^A + (1+i_{t-3})d_{t-3}^A \ , \ T \geq t \geq 3$$
...
$$-nt_{T+1}^A = i_T d_T^A + i_{T-1}d_{T-1}^A + (1+i_{T-2})d_{T-2}^A \ ,$$
$$-nt_{T+2}^A = i_T d_T^A + (1+i_{T-1})d_{T-1}^A$$
$$-nt_{T+3}^A = (1+i_T)d_T^A$$

If the alternative asset is a U.S. bond, we apply US$/SDR exchange rates at the time of actual disbursements and (pretended) interest payments and principal repayments. Subsequently, internal rates of return are calculated in the usual way, as the discount rate that sets the net present value of the net transfer series to zero. In principle, there could be several rates that achieve this (i.e. multiple solutions to the polynomial equation); but in practice there was only one solution within an economically sensible range.

Table 7. All Countries: Lending Cycles, Rates of Return and Net Present Value of Transfers

	Total Lending					Standard (General Resources Account) Lending							Lending through Concessional Facilities						
				Rates of Return					Rates of Return		NPV of transfer 3/					Rates of Return		NPV of transfer 3/	
Country	Start	End	d 1/	IRR	alt. IRR 2/	Start	End	d 1/	IRR	SDR3m	SDR+30 4/	SDR+200	Start	End	d 1/	IRR	SDR10y	USyc 4/	SDR10 4/
Afghanistan	1964-8	1978-7	8.1	1.52	9.55	1964-8	1978-7	8.1	1.52	9.55	64.6	34.5							
Albania						1992-8	2003-2	6.4	5.04	5.24	3.6	0.4							
Albania	1992-8	2013-4	11.4	1.07	5.45								1993-7	2013-4	12.4	0.50	5.45	57	47
Argentina	1972-3	1978-8	5.3	4.31	8.04	1972-3	1978-8	5.3	4.31	8.04	729.7	329.3							
Argentina	1983-1	2013-4	17.3	5.91	5.36	1983-1	2013-4	17.3	5.91	5.36	1360.8	-722.0							
Armenia	1994-12	2013-4	10.0	1.34	4.92	1994-12	2013-4	6.8	4.45	4.47	10.0	0.8	1996-2	2013-4	10.8	0.50	4.94	100	82
Australia	1976-7	1981-8	3.6	3.90	6.93	1976-7	1981-8	3.6	3.90	6.93	622.1	305.5							
Australia	1982-11	1984-2	1.0	7.08	11.17	1982-11	1984-2	1.0	7.08	11.17	9.0	4.7							
Azerbaijan	1995-4	2013-4	8.6	2.82	4.81	1995-4	2013-4	7.7	4.15	4.03	29.5	-5.2	1997-1	2013-4	9.3	0.50	5.04	65	49
Burundi	1971-2	1974-2	3.0	0.00	10.07	1971-2	1974-2	3.0	0.00	10.07	2.2	1.2							
Burundi						1975-3	1978-5	2.9	7.00	7.56	0.8	0.1	1977-1	2002-12	17.5	0.52	8.55	122	118
Burundi						1979-10	1985-2	4.2	5.81	10.11	21.2	11.8							
Burundi	1975-3	2013-4	19.3	1.06	2.24	2002-10	2013-4	4.1	2.37	2.24	-0.2	-0.6							
Benin	1978-2	2013-4	23.3	-1.98	7.32								1978-2	2013-4	24.0	-1.98	7.32	196	159
Burkina Faso	1978-2	2013-4	24.9	-4.84	6.59								1978-2	2013-4	25.6	-4.84	6.59	242	195
Bangladesh						1972-12	1994-2	13.0	7.04	9.53	962.2	351.8							
Bangladesh													1977-7	2003-3	18.5	0.51	8.42	1121	1034
Bangladesh	1972-12	2013-4	17.2	4.39	4.11	1998-11	2013-4	4.1	4.17	4.11	13.0	2.1							
Bulgaria	1991-2	2013-4	10.7	4.35	4.92	1991-2	2013-4	10.7	4.35	4.92	164.1	-75.3							
Bosnia and Herzegovina	1992-12	2013-4	9.6	3.99	4.13	1992-12	2013-4	9.6	3.99	4.13	16.3	-0.7							
Belarus	1993-8	2013-4	7.5	4.65	4.61	1993-8	2013-4	7.5	4.65	4.61	34.0	-1.9							
Belize	1983-6	1991-8	5.5	7.03	8.09	1983-6	1991-8	5.5	7.03	8.09	3.3	0.7							
Bolivia	1973-2	1978-1	3.0	1.76	9.76	1973-2	1978-1	3.0	1.76	9.76	221.7	45.4							
Bolivia						1978-7	1993-8	9.9	8.06	9.02	99.9	33.2							
Bolivia	1978-7	2013-4	17.7	0.65	7.68	2003-4	2013-4	3.1	2.35		-2.1	-3.0	1978-8	2013-4	21.8	-2.41	7.68	675	579
Brazil	1982-12	2013-4	18.4	6.38	4.68	1982-12	2013-4	18.4	6.38	4.68	1588.0	-742.1							
Barbados	1977-1	1991-7	9.8	7.21	9.32	1977-1	1991-7	9.8	7.21	9.32	34.2	12.7							
Barbados	1992-2	1997-11	4.2	5.75	6.26	1992-2	1997-11	4.2	5.75	6.26	3.1	-1.8							
Central African Republic						1974-10	1999-5	13.4	6.68	9.50	46.2	16.3							
Central African Republic	1974-10	2013-4	18.0	3.45	8.31								1978-1	2013-4	21.1	0.51	8.31	103	90
Chile	1971-12	1995-11	16.3	7.03	8.24	1971-12	1995-11	16.3	7.03	8.24	1300.0	335.4							
China	1981-3	1992-2	6.8	4.41	12.88	1981-3	1983-11	2.2	6.51	12.66	301.9	162.4	1981-3	1991-7	7.8	0.50	12.93	3005	2351
China						1986-11	1992-2	4.1	7.81	6.39	153.7	13.3							
Ivory Coast						1974-9	1979-2	3.1	5.41	8.12	26.8	8.7	1978-7	1991-7	8.8	0.50	9.93	196	165
Ivory Coast						1981-3	1998-2	8.7	8.37	10.39	425.1	79.7							
Ivory Coast	1974-9	2013-4	19.2	5.85	5.77								1994-3	2013-4	10.6	0.50	5.77	486	362
Cameroon						1974-10	1983-8	5.8	6.49	7.72	52.4	19.8	1978-3	1991-7	8.9	0.50	9.48	137	115
Cameroon						1988-9	2001-5	6.7	7.49	6.02	19.7	-3.7							
Cameroun	1974-10	2013-4	24.4	1.17	4.67								1997-8	2013-4	10.0	-1.66	4.67	172	144
Congo, DR - Zaire						1972-7	2002-8	16.0	6.68	9.14	1060.0	380.5							
Congo, DR - Zaire	1972-7	2013-4	19.5	4.60	7.42								1977-1	2013-4	27.9	0.50	7.42	916	837
Congo, Rep.						1977-2	1981-8	3.2	4.97	7.03	13.8	6.2	1977-2	1991-7	9.8	0.50	9.45	41	38
Congo, Rep.	1977-2	2013-4	17.3	2.94	5.79	1986-9	2013-4	12.1	5.71	5.49	5.3	-0.2	1996-7	2013-4	7.8	0.50	5.93	12	9
Colombia	1970-5	1974-11	1.9	0.00	10.07	1970-5	1974-11	1.9	0.00	10.07	0.0	0.0							
Comoros	1991-7	2013-4	9.4	0.50	7.34								1991-7	2013-4	9.4	0.50	7.34	3	2
Cape Verde	2002-4	2013-4	6.7	0.50	4.13								2002-4	2013-4	8.1	0.50	4.13	1	1
Costa Rica	1974-9	1997-5	13.3	7.51	9.80	1974-9	1997-5	13.3	7.51	9.80	203.4	62.5							
Czechoslavakia	1991-1	1993-1	2.0	7.08	7.44	1991-1	1993-1	2.0	7.08	7.44	135.9	46.7							
Cyprus	1974-12	1985-11	6.4	6.75	8.53	1974-12	1985-11	6.4	6.75	8.53	63.7	21.7							

Table 7. All Countries: Lending cycles, Rates of Return and Net Present Value of Transfers (continued)

	Total Lending					Standard (General Resources Account) Lending							Lending through Concessional Facilities						
				Rates of Return					Rates of Return		NPV of transfer 3/					Rates of Return		NPV of transfer 3/	
Country	Start	End	*d* 1/	IRR	alt. IRR 2/	Start	End	*d* 1/	IRR	SDR3m	SDRs+30 4/	SDRs+200 4/	Start	End	*d* 1/	IRR	SDR10y	USyc 4/	SDR10 4/
Czech Republic	1993-1	1994-11	1.4	6.82	4.64	1993-1	1994-11	1.4	6.82	4.64	-57.4	-75.0							
Djibouti	1996-4	2013-4	9.1	1.41	4.42	1996-4	2013-4	5.4	4.43	3.94	0.7	-0.1	1999-10	2013-4	9.5	0.50	4.45	6	5
Dominica	1979-12	1999-6	9.0	6.83	9.45	1979-12	1994-2	7.6	8.07	10.97	10.4	3.4	1986-12	1999-6	8.7	0.50	7.73	4	4
Dominica	2002-9	2013-4	3.1	2.40	2.24	2002-9	2013-4	3.1	2.40	2.24	0.0	-0.1							
Dominican Republic	1969-12	1973-8	2.3	4.63		1969-12	1973-8	2.3	4.63		-0.7	-0.5							
Dominican Republic	1976-9	2013-4	13.6	6.65	8.34	1976-9	2013-4	13.6	6.65	8.34	287.1	98.5							
Algeria	1989-6	2013-4	10.7	5.12	5.33	1989-6	2013-4	10.7	5.12	5.33	337.8	-60.0							
Ecuador	1972-8	1974-9	0.9	0.77	10.07	1972-8	1974-9	0.9	0.77	10.07	2.3	1.2							
Ecuador	1983-8	2000-2	8.1	7.45	7.55	1983-8	2000-2	8.1	7.45	7.55	303.5	153.1							
Ecuador	2000-4	2013-4	4.7	3.01	3.57	2000-4	2013-4	4.7	3.01	3.57	7.5	-8.2							
Egypt	1957-2	1997-5	24.5	3.71	7.86	1957-2	1997-5	23.5	5.14	7.86	1003.9	468.3							
Egypt													1977-7	1991-7	9.3	0.50	9.45	592	554
Spain	1975-3	1983-5	4.9	7.21	7.44	1975-3	1983-5	4.9	7.21	7.44	658.4	162.7							
Estonia	1992-9	2002-8	6.4	4.92	4.84	1992-9	2002-8	6.4	4.92	4.84	9.2	-0.8							
Ethiopia	1978-7	1991-7	8.2	5.86	10.00	1979-8	1991-5	7.0	7.60	10.80	142.5	61.1	1978-7	1991-7	8.6	0.50	9.48	106	89
Ethiopia	1992-10	2013-4	12.2	-2.65	5.43								1992-10	2013-4	13.3	-2.65	5.43	156	143
Finland	1975-6	1983-8	5.0	7.91	7.07	1975-6	1983-8	5.0	7.91	7.07	111.1	-2.5							
Fiji	1974-9	1976-3	1.3	6.99	11.94	1974-9	1976-3	1.3	6.99	11.94	0.2	0.1							
Fiji	1977-7	1980-8	3.0	4.27	6.47	1977-7	1980-8	3.0	4.27	6.47	8.8	4.2							
Fiji	1982-2	1990-2	4.9	6.88	10.48	1982-2	1990-2	4.9	6.88	10.48	7.5	2.3							
Gabon	1978-12	1984-8	4.0	5.68	8.65	1978-12	1984-8	4.0	5.68	8.65	25.7	13.7							
Gabon	1986-12	2013-4	10.6	6.37	5.53	1986-12	2013-4	10.6	6.37	5.53	40.9	0.8							
United Kingdom	1976-1	1983-2	3.4	5.77	6.59	1976-1	1983-2	3.4	5.77	6.59	2751.4	970.5							
Georgia	1994-12	2013-4	9.9	1.40	5.07	1994-12	2013-4	6.8	4.45	4.47	16.5	1.3	1996-3	2013-4	10.3	0.50	5.11	155	126
Ghana	1966-6	1975-5	4.7	0.07	10.07	1966-6	1975-5	4.7	0.07	10.07	463.2	6.5							
Ghana						1975-6	1998-11	14.4	7.42	8.08	336.4	67.7							
Ghana	1975-6	2013-4	19.1	3.13	7.67								1979-1	2013-4	21.6	-1.50	7.67	1363	1318
Guinea			27.1			1969-8	1982-7	9.0	3.34	9.84	131.7	36.6							
Guinea						1982-12	1992-5	6.5	7.33	8.40	-13.3	2.9							
Guinea	1969-8	2013-4	27.1	-0.67	7.30								1977-9	2013-4	24.1	-1.70	7.30	271	234
Gambia						1977-3	1992-11	9.3	7.41	9.57	34.7	13.5							
Gambia	1977-3	2013-4	15.9	3.07	7.78								1977-8	2013-4	22.9	0.01	7.78	75	73
Guinea-Bissau						1979-4	1989-11	7.2	6.49	10.78	5.4	2.7							
Guinea-Bissau	1979-4	2013-4	21.5	-7.75	6.07	1999-9	2013-4	4.3	3.79	3.85	0.3	-0.1	1987-10	2013-4	16.4	-10.42	6.11	31	26
Equatorial Guinea						1980-7	1991-2	5.4	6.58	11.98	23.7	11.9							
Equatorial Guinea	1980-7	2013-4	10.3	0.51	9.23								1980-7	2013-4	16.2	0.51	9.23	69	58
Greece	1974-9	1982-11	5.3	6.56	8.08	1974-9	1982-11	5.3	6.56	8.08	331.6	110.3							
Grenada	1975-10	1991-7	9.3	4.82	9.90	1975-10	1991-2	8.8	6.96	10.71	7.5	3.3	1977-8	1991-7	9.5	0.51	9.45	6	6
Grenada	2003-1	2013-4	4.1	2.35		2003-1	2013-4	4.1	2.35		-0.2	-0.3							
Guatemala	1981-11	1993-11	6.5	7.53	10.70	1981-11	1993-11	6.5	7.53	10.70	152.1	67.3							
Guyana	1971-9	1975-2	2.6	0.74	10.91	1971-9	1975-2	2.6	0.74	10.91	14.7	8.1							
Guyana						1976-9	1999-2	13.4	7.73	10.15	144.9	47.7							
Guyana	1976-9	2013-4	19.3	2.33	8.02								1981-2	2013-4	20.6	-4.85	8.02	608	438
Honduras	1974-11	1978-11	3.3	6.60	10.70	1974-11	1978-11	3.3	6.60	11.94	28.2	11.4	1979-8	1991-7	8.4	0.62	10.31	67	63
Honduras						1980-2	1997-5	10.1	7.27	10.27	114.8	35.8							
Honduras	1979-8	2013-4	17.2	3.71	5.11	1998-12	2013-4	4.1	4.11	4.11	6.5	1.1	1992-7	2013-4	13.9	-1.40	5.15	139	120
Croatia	1992-12	2003-2	7.2	4.78	4.80	1992-12	2003-2	7.2	4.78	4.80	30.2	-3.2							
Haiti						1962-9	1995-2	21.6	7.18	10.16	99.7	38.6							
Haiti	1962-9	2013-4	26.1	5.01	8.47	1995-3	2013-4	5.9	4.42	4.37	3.7	-0.1	1977-1	2013-4	18.0	0.52	8.64	88	83

Table 7. All Countries: Lending cycles, Rates of Return and Net Present Value of Transfers (continued)

	Total Lending					Standard (General Resources Account) Lending							Lending through Concessional Facilities						
				Rates of Return					Rates of Return		NPV of transfer 3/					Rates of Return		NPV of transfer 3/	
Country	Start	End	*d* 1/	IRR	alt. IRR 2/	Start	End	*d* 1/	IRR	SDR3m	SDRs+30 4/	SDRs+200 4/	Start	End	*d* 1/	IRR	SDR10y	USyc 4/	SDR10 4/
Hungary	1982-12	1998-5	9.0	7.43	8.56	1982-12	1998-5	9.0	7.43	8.56	460.9	30.3							
Indonesia	1961-9	1974-5	9.3	5.59	10.07	1961-9	1974-5	9.3	5.59	10.07	1.8	-3.2							
Indonesia	1983-1	1992-8	5.7	7.69	7.37	1983-1	1992-8	5.7	7.69	7.37	178.1	26.1							
Indonesia	1997-11	2013-4	7.3	3.51	3.86	1997-11	2013-4	7.3	3.51	3.86	620.1	-477.6							
India	1974-2	1978-8	3.3	4.80	11.09	1974-2	1978-8	3.3	4.80	10.77	1092.5	501.9	1980-8	1991-7	7.8	0.50	11.21	4102	3462
India	1980-8	2000-8	11.5	6.88	9.36	1980-8	2000-8	11.8	7.79	9.36	2517.1	110.8							
Iceland	1974-12	1988-2	7.3	6.80	9.01	1974-12	1988-2	7.3	6.80	9.01	93.2	31.5							
Israel	1974-11	1983-11	5.8	6.22	7.80	1974-11	1983-11	5.8	6.22	7.80	568.8	230.4							
Israel	1992-4	1997-5	4.0	5.83	6.26	1992-4	1997-5	4.0	5.83	6.26	13.5	-9.8							
Italy	1974-8	1979-11	4.0	6.34	10.02	1974-8	1979-11	4.0	6.34	10.02	3473.6	1264.5							
Jamaica	1973-8	2013-4	15.8	7.94	9.32	1973-8	2013-4	15.8	7.94	9.32	754.7	187.4							
Jordan	1971-11	1975-9	2.1	0.38	10.07	1971-11	1975-9	2.1	0.38	10.07	2.1	1.1							
Jordan	1985-1	2013-4	16.6	4.66	5.10	1985-1	2013-4	16.7	4.66	5.10	55.3	-20.4							
Kazakhstan	1993-7	2000-8	6.4	4.68	4.27	1993-7	2000-8	6.4	4.68	4.27	66.4	2.5							
Kenya						1974-9	1994-2	12.3	7.90	9.55	501.9	145.1							
Kenya	1974-9	2013-4	15.9	5.39	8.29								1977-1	2013-4	21.4	0.50	8.29	584	529
Kyrgyz Republic						1993-5	2003-3	6.5	4.87	4.64	8.2	-0.6							
Kyrgyz Republic	1993-5	2013-4	11.0	1.31	5.45								1994-8	2013-4	11.7	0.50	5.45	140	108
Cambodia	1973-4	2013-4	30.5	1.92	5.84	1973-4	2013-4	22.6	3.88	9.67	127.5	67.7	1994-5	2013-4	12.2	0.50	5.54	81	63
Saint Kitts and Nevis	1998-12	2013-4	4.1	4.10	4.11	1998-12	2013-4	4.1	4.10	4.11	0.2	0.0							
Korea, Republic of	1974-9	1989-2	11.3	8.69	10.57	1974-9	1989-2	11.3	8.69	10.57	1183.9	203.5							
Korea, Republic of	1997-12	2001-11	2.0	6.06	4.07	1997-12	2001-11	2.0	6.06	4.07	391.6	-379.4							
Laos						1975-12	1986-11	7.1	5.90	9.88	34.4	17.0							
Laos	1975-12	2013-4	19.9	1.30	7.67								1978-7	2013-4	22.2	0.50	7.67	133	107
Liberia	1973-1	1976-7	2.0	0.28	10.07	1973-1	1976-7	2.0	0.28	10.07	7.3	4.0							
Liberia	1976-8	2013-4	8.4	4.73	10.05	1976-8	2013-4	7.9	5.21	10.68	480.8	190.4	1977-1	2013-4	12.4	1.18	9.45	148	144
Saint Lucia	1980-11	1986-5	3.2	6.57	12.76	1980-11	1986-5	3.2	6.57	12.76	4.3	2.3							
Sri Lanka			29.4			1961-4	1993-5	21.8	6.50	9.78	1026.9	459.4							
Sri Lanka	1961-4	2013-4	29.4	3.86	8.19	2001-4	2013-4	4.3	2.44	2.86	3.3	-7.6	1978-1	2013-4	20.1	0.50	8.29	1051	877
Lesotho	1977-7	2013-4	22.5	0.50	7.50								1977-7	2013-4	23.7	0.50	7.50	60	53
Lithuania	1992-10	2013-4	8.5	4.58	4.52	1992-10	2013-4	8.5	4.58	4.52	44.8	-0.8							
Latvia	1992-9	2013-4	6.5	4.90	4.93	1992-9	2013-4	6.5	4.90	4.93	21.6	1.4							
Morocco	1976-4	1997-5	12.3	7.08	9.55	1976-4	1997-5	12.4	7.82	9.60	971.2	251.1	1977-1	1991-7	9.8	0.50	9.45	355	332
Moldova	1993-2	2013-4	9.1	3.91	4.36	1993-2	2013-4	8.6	4.33	4.25	31.9	-5.5	2000-12	2013-4	8.3	0.50	4.50	13	10
Madagascar						1974-9	1995-5	13.0	7.68	9.82	173.1	54.2							
Madagascar	1974-9	2013-4	18.0	4.26	7.72								1978-2	2013-4	23.9	-0.85	7.72	304	268
Mexico	1976-11	1980-8	2.2	4.94	6.68	1976-11	1980-8	2.2	4.94	6.68	457.6	204.9							
Mexico	1982-12	2000-11	13.7	6.60	6.62	1982-12	2000-11	13.7	6.60	6.62	2494.7	-141.0							
Macedonia	1992-12	2013-4	9.3	3.02	4.97	1992-12	2013-4	7.9	4.57	4.48	8.8	-1.0	1997-4	2013-4	8.5	0.50	5.13	20	15
Mali			30.9			1964-7	1995-8	20.8	7.54	9.48	64.8	17.6							
Mali	1964-7	2013-4	30.9	-0.36	7.11								1978-1	2013-4	24.5	-2.99	7.11	388	311
Myanmar	1967-11	1991-7	15.0	3.31	9.75	1967-11	1988-11	14.0	4.63	9.75	383.1	194.6							
Myanmar													1977-7	1991-7	9.3	0.50	9.45	189	177
Mongolia						1991-10	1997-8	4.3	6.00	7.47	3.1	0.7							
Mongolia	1991-10	2013-4	10.6	1.22	5.84								1993-6	2013-4	10.9	0.50	5.84	39	31
Mozambique	1987-6	2013-4	15.1	-5.93	6.65								1987-6	2013-4	15.4	-5.93	6.65	508	410
Mauritania						1976-1	1993-5	10.7	7.71	9.46	55.0	16.3							
Mauritania	1976-1	2013-4	19.6	-0.06	7.12								1977-8	2013-4	24.4	-2.96	7.12	248	213
Mauritius	1977-7	1991-7	9.5	8.22	9.96	1977-7	1991-7	9.5	8.76	10.44	138.1	31.5	1978-3	1988-7	7.9	0.50	8.50	39	33

Table 7. All Countries: Lending cycles, Rates of Return and Net Present Value of Transfers (continued)

	Total Lending					Standard (General Resources Account) Lending							Lending through Concessional Facilities						
				Rates of Return					Rates of Return		NPV of transfer 3/					Rates of Return		NPV of transfer 3/	
Country	Start	End	*d* 1/	IRR	alt. IRR 2/	Start	End	*d* 1/	IRR	SDR3m	SDRs+30 4/	SDRs+200 4/	Start	End	*d* 1/	IRR	SDR10y	USyc 4/	SDR10 4/
Malawi						1975-12	2000-2	12.1	7.96	9.91	134.0	44.5							
Malawi	1975-12	2013-4	17.5	3.96	7.77	2002-9	2013-4	4.1	2.39	2.24	-0.4	-1.1	1977-7	2013-4	22.6	-2.28	7.81	218	189
Malaysia	1971-8	1973-11	2.3	0.00		1971-8	1973-11	2.3	0.00										
Malaysia	1976-8	1977-5	0.7	2.04	6.74	1976-8	1977-5	0.7	2.04	6.74	62.7	32.8							
Malaysia	1981-9	1986-5	3.6	6.88	11.32	1981-9	1986-5	3.6	6.88	11.32	281.4	142.8							
Niger						1983-7	1999-5	7.1	7.14	7.76	31.1	7.6							
Niger	1978-7	2013-4	18.1	0.73	7.27								1978-7	2013-4	23.6	-2.38	7.27	209	187
Nigeria	1972-3	1973-11	1.7	0.00		1972-3	1973-11	1.7	0.00										
Nicaragua	1970-9	1987-4	8.2	4.70	9.74	1970-9	1987-4	8.2	4.70	9.74	126.2	65.5							
Nicaragua						1991-9	1996-11	4.1	6.12	7.72	3.5	0.6							
Nicaragua	1991-9	2013-4	13.4	-8.77	4.95								1994-7	2013-4	12.1	-9.30	4.95	184	170
Nepal						1976-5	1985-11	6.3	5.69	9.25	79.1	19.8							
Nepal						1985-12	1992-5	4.6	7.54	7.05	-11.1	0.0							
Nepal	1976-5	2013-4	15.2	2.33	8.37								1977-1	2013-4	18.6	0.50	8.37	103	96
New Zealand	1974-11	1983-5	5.7	6.70	8.33	1974-11	1983-5	5.7	6.70	8.33	583.3	199.3							
Pakistan	1965-7	2013-4	21.1	4.92	8.48	1965-7	2013-4	19.4	6.84	9.34	2300.2	736.0	1977-7	2013-4	24.3	0.51	7.90	1859	1679
Panama	1974-9	2013-4	18.0	7.57	8.43	1974-9	2013-4	18.0	7.57	8.43	260.6	45.0							
Peru	1972-6	1974-2	1.5	2.37	10.07	1972-6	1974-2	1.5	2.37	10.07	12.6	6.2							
Peru	1976-3	2013-4	17.4	7.08	8.46	1976-3	2013-4	17.4	7.08	8.46	1099.7	257.8							
Philippines													1977-1	1991-7	9.8	0.50	9.45	487	455
Philippines	1968-1	2013-4	25.3	6.06	8.19	1968-1	2013-4	25.5	6.51	8.19	2465.6	810.1							
Papua New Guinea						1976-3	1981-8	3.4	6.79	6.74	306.8	3.0	1978-7	1991-7	8.9	0.50	9.93	76	65
Papua New Guinea						1981-11	1986-11	3.2	6.87	12.66	18.7	28.3							
Papua New Guinea	1976-3	2013-4	18.8	4.70	5.92	1990-5	2013-4	10.6	5.11	5.92	15.8	-1.5							
Poland	1990-2	1995-8	5.0	6.86	6.60	1990-2	1995-8	5.0	6.86	6.60	85.6	-24.5							
Portugal	1976-1	1983-5	5.0	6.13	6.66	1976-1	1983-5	5.0	6.13	6.66	2079.8	119.1							
Portugal	1983-10	1989-2	4.3	7.23	8.72	1983-10	1989-2	4.3	7.23	8.72	212.8	88.4							
Romania	1973-11	1989-2	11.6	6.74	9.83	1973-11	1989-2	11.6	6.74	9.83	1548.3	663.3							
Romania	1991-3	2013-4	7.7	5.27	6.07	1991-3	2013-4	7.7	5.27	6.07	180.4	-28.0							
Russia	1992-11	2013-4	9.0	4.38	4.34	1992-11	2013-4	9.0	4.38	4.34	1898.9	-312.5							
Rwanda						1995-11	2003-2	5.2	4.60	4.27	3.4	0.2							
Rwanda	1979-11	2013-4	23.1	-6.13	7.06								1979-11	2013-4	24.4	-7.80	7.06	158	144
Sudan	1965-4	2013-4	20.8	5.01	10.06	1965-4	2013-4	20.7	5.43	10.39	1868.5	765.1	1978-7	2013-4	14.6	1.21	9.48	456	412
Senegal						1975-1	1999-5	13.5	7.89	9.45	258.2	76.6							
Senegal	1975-1	2013-4	19.4	3.34	7.46								1978-1	2013-4	22.7	-0.63	7.46	697	601
Solomon Islands	1979-4	1980-2	0.7	4.33	10.11	1979-4	1980-2	0.7	4.33	10.11	-0.3	-0.2							
Solomon Islands	1981-6	1991-11	6.4	7.06	9.98	1981-6	1991-11	6.4	7.06	9.98	3.0	1.2							
Sierra Leone						1974-10	1994-5	13.3	7.06	9.63	133.6	46.5							
Sierra Leone						1998-11	2001-11	2.8	4.94	3.93	2.0	0.0							
Sierra Leone	1974-10	2013-4	22.4	-4.47	7.02								1977-7	2013-4	25.6	-11.08	7.02	423	356
El Salvador	1972-11	1977-8	3.1	4.23	11.28	1972-11	1977-8	3.1	4.23	11.28	54.7	27.0							
El Salvador	1980-7	1991-6	6.0	5.25	11.34	1980-7	1988-8	5.7	6.82	11.50	109.9	52.3	1980-7	1991-6	7.8	0.51	11.21	153	129
Somalia	1980-2	2013-4	6.7	5.10	9.94	1980-2	2013-4	6.7	5.71	9.74	190.5	58.7	1980-4	2013-4	6.6	0.78	10.19	154	132
Sao Tome & Principe	1989-6	1999-6	7.8	0.50	7.97								1989-6	1999-6	7.8	0.50	7.97	1	1
Sao Tome & Principe	2000-5	2013-4	7.7	0.50	4.99								2000-5	2013-4	8.0	0.50	4.99	1	1
Slovakia	1993-1	2000-11	4.2	5.53	4.57	1993-1	2000-11	4.2	5.53	4.57	19.2	-35.3							
Slovenia	1992-12	1997-5	1.1	8.68	6.26	1992-12	1997-5	1.1	8.68	6.26	2.6	0.8							
Swaziland	1979-8	1991-7	7.8	3.69	9.99	1983-1	1988-8	4.2	6.87	8.60	3.9	1.3	1979-8	1991-7	8.1	0.50	10.31	22	20
Syria	1960-5	1976-7	10.1	2.20	10.07	1960-5	1976-7	10.1	2.20	10.07	53.2	27.9							

Table 7. All Countries: Lending cycles, Rates of Return and Net Present Value of Transfers (concluded)

	Total Lending			Rates of Return		Standard (General Resources Account) Lending			Rates of Return		NPV of transfer 3/		Lending through Concessional Facilities			Rates of Return		NPV of transfer 3/	
Country	Start	End	*d* 1/	IRR	alt. IRR 2/	Start	End	*d* 1/	IRR	SDR3m	SDRs+30 4/	SDRs+200 4/	Start	End	*d* 1/	IRR	SDR10y	USyc 4/	SDR10 4/
Chad						1970-1	1990-11	13.2	5.47	9.83	39.3	18.2							
Chad						1994-3	1999-5	4.1	4.94	4.29	0.7	-0.5							
Chad	1970-1	2013-4	28.8	-0.37	6.39								1978-1	2013-4	26.0	-1.41	6.39	149	125
Togo						1976-8	1978-8	1.8	3.47	6.74	7.8	3.7							
Togo						1980-10	1996-5	8.4	8.03	9.35	43.1	9.2							
Togo	1976-8	2013-4	17.6	3.42	7.90								1978-2	2013-4	21.4	0.50	7.90	193	158
Thailand	1976-8	1991-7	10.5	6.47	9.69	1976-8	1990-7	10.6	7.53	9.88	1004.6	377.7	1977-8	1991-7	9.3	0.50	9.45	422	395
Thailand	1997-8	2013-4	4.5	4.47	4.03	1997-8	2013-4	4.5	4.47	4.03	276.3	-0.3							
Tajikistan	1996-5	2013-4	8.1	1.29	4.49	1996-5	2013-4	5.0	4.53	3.99	3.1	-0.4	1998-6	2013-4	7.6	0.50	4.51	34	25
Trinidad	1988-11	1998-5	5.2	7.91	7.72	1988-11	1998-5	5.2	7.91	7.72	44.2	-5.2							
Tunisia	1977-8	1980-11	3.0	4.34	6.47	1977-8	1980-11	3.0	4.34	6.47	32.1	15.4							
Tunisia	1986-11	2001-8	8.1	6.73	6.75	1986-11	2001-8	8.1	6.73	6.75	85.1	-1.8							
Turkey	1971-5	1973-9	0.9	0.00		1971-5	1973-9	0.9	0.00										
Turkey	1975-3	1990-7	10.4	9.50	10.10	1975-3	1990-7	10.4	9.50	10.10	884.5	-107.4							
Turkey	1994-7	2013-4	9.7	4.34	3.07	1994-7	2013-4	9.7	4.34	3.07	-423.2	-1608.3							
Tanzania						1974-9	1992-8	9.4	7.05	9.93	261.5	105.1							610
Tanzania	1974-9	2013-4	21.6	-0.78	7.00								1977-2	2013-4	25.8	-2.72	7.00	713	
Uganda						1971-10	1993-5	15.0	7.97	10.31	286.8	79.9							1141
Uganda	1971-10	2013-4	22.3	1.45	7.62								1980-1	2013-4	20.9	-4.01	7.62	1352	
Ukraine	1994-10	2013-4	8.5	3.94	4.09	1994-10	2013-4	8.5	3.94	4.09	311.0	-89.7							
Uruguay	1962-10	1978-11	12.7	5.96	9.26	1962-10	1978-11	12.7	5.96	9.26	181.8	66.7							
Uruguay	1982-7	1997-8	6.9	7.75	8.60	1982-7	1997-8	6.9	7.75	8.60	149.7	26.6							
Uruguay	1998-12	2013-4	6.5	3.37	2.41	1998-12	2013-4	6.5	3.37	2.41	-34.1	-108.9							
Uzbekistan	1995-1	2013-4	6.9	4.43	4.35	1995-1	2013-4	6.9	4.43	4.35	28.0	-1.9							
Saint Vincent and the Grena	1980-11	1986-5	3.9	6.62	12.72	1980-11	1986-5	3.9	6.62	12.72	1.8	0.9							
Venezuela	1989-4	2002-2	8.2	6.48	8.29	1989-4	2002-2	8.2	6.48	8.29	643.2	45.2							
Vietnam, Democratic Rep.													1978-8	1993-12	14.2	1.60	10.71	222	236
Vietnam, Democratic Rep.	1977-1	2013-4	22.6	2.20	5.87	1977-1	2013-4	16.8	5.65	7.03	142.3	55.8	1994-11	2013-4	10.8	0.50	5.72	327	249
Western Samoa	1975-11	1992-7	10.1	5.33	9.19	1975-11	1992-7	10.0	6.57	8.91	12.9	5.4	1977-2	1991-7	9.7	0.50	9.45	6	6
Yemen	1983-3	1988-5	4.1	6.95	8.60	1983-3	1988-5	4.1	6.95	8.60	3.1	0.7							
Serbia and Montenegro	1992-12	2013-4	12.8	2.98	3.66	1992-12	2013-4	12.8	2.98	3.66	22.0	-25.9							
Yemen People's Republic	1974-11	1991-7	8.8	3.83	9.32	1974-11	1987-8	7.1	6.51	8.93	70.5	26.3	1977-1	1991-7	9.9	0.50	9.45	91	86
Yemen Arab Republic	1996-3	2013-4	8.6	1.71	4.57	1996-3	2013-4	6.0	4.21	3.90	13.8	-7.3	1997-11	2013-4	9.7	0.50	4.64	143	113
Yugoslavia/Serbia	1971-4	1992-12	15.3	8.71	10.25	1971-4	1992-12	15.3	8.71	10.25	1505.5	154.1							
South Africa	1976-1	1980-8	3.1	4.42	6.67	1976-1	1980-8	3.1	4.42	6.67	517.5	231.2							
South Africa	1982-11	1988-2	4.0	6.92	11.17	1982-11	1988-2	4.0	6.92	11.17	640.8	305.7							
South Africa	1993-12	1999-2	4.1	4.95	4.64	1993-12	1999-2	4.1	4.95	4.64	119.3	21.8							
Zambia						1971-12	1996-2	19.6	6.97	9.06	1576.4	578.3							
Zambia	1971-12	2013-4	23.8	2.81	6.49								1979-1	2013-4	25.4	-6.40	6.49	2329	1871
Zimbabwe	1981-4	1991-1	6.5	7.79	9.36	1981-4	1991-1	6.5	7.79	9.36	80.7	3.3							
Zimbabwe	1992-1	2013-4	8.5	3.44	6.52	1992-1	2013-4	8.2	5.55	5.26	13.6	-31.4	1992-9	2013-4	8.2	0.86	6.74	176	145
Consolidated Yemen, Yeme	1974-11	1991-7	9.2	4.03	9.30	1974-11	1988-5	7.9	6.55	8.90	73.1	22.0	1977-1	1991-7	9.9	0.50	9.45	91	99
Consolidated Yemen, Yeme	1996-3	2013-4	8.6	1.71	4.57	1992-12	2013-4	9.3	4.21	3.90	39.4	-9.6	1997-11	2013-4	9.7	0.50	4.64	143	113
Consolidated Czechoslavaki	1991-1	1994-11	17.9	6.99	9.99	1991-1	1994-11	17.9	6.99	9.99	55.7	-53.7							

1/ Average year of repayment in the lending cycle; see equation (1) in the text.

2/ Weighted average of SDR3m rate and SDR10 rae, where weights correspond to relative importance of GRA and concessional lending. See text and Table 2.

3/ Net present value of implict transfer, in millions of 2002 U.S. dollars. NPV of total transfer is not shown since this is just the horizontal sum of the transfers shown for GRA and concessional lending.

4/ See notes to Table 4.

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