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The moral hazard of IMF lending: Making a fuss about a minor problem?

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The Moral Hazard of IMF Lending: Making a Fuss about a Minor Problem?

by Peter Nunnenkamp

CONTENTS

- The International Monetary Fund (IMF) is under serious attack. Some critics blame IMF lending for having contributed to the spreading of financial crises in emerging markets. Consequently, they call for putting an end to IMF lending. This radical proposal rests on the contention that official financial support has discouraged IMF borrowers to pursue appropriate economic policies, and private creditors to pursue prudent lending strategies.
- Major IMF rescue operations, notably the Mexican bailout in 1995, drew particular attention to moral hazard on the part of international banks. It is striking indeed that banks do not seem to have suffered large losses in Mexico and Asia, although banks were heavily engaged there. "Too-big-to-fail" considerations may have motivated recent IMF rescue operations.
- However, IMF lending to all developing countries has remained small in relative terms. IMF credit outstanding in 1997 accounted for about 1 percent of international banking and developing countries' GNP, respectively. Longer-term developments in IMF lending do not support the view that incentive problems have become more serious over time.
- There is no empirical justification to blame the IMF for having encouraged inflationary policies and inflexible exchange rate regimes in developing countries by offering financial assistance in the case of emergencies. Furthermore, the IMF is unlikely to have shaped banking behavior in a significant way. The cross-country distribution of bank lending is not correlated with the cross-country distribution of IMF lending. The structure of private capital flows to developing countries has shifted towards equity financing and away from loan financing, although bailouts tend to benefit banks rather than equity investors.
- Putting an end to IMF lending would do more harm than good. Eradicating minor moral hazard problems would come at the cost of more serious contagion if financial crises were no longer contained by official emergency lending.
- Contrary to the past, moral hazard could become a relevant problem in the future, if the IMF were empowered to act as a true international lender of last resort. The new international financial architecture should involve private creditors directly in financial rescue operations, in order to prevent private creditors from taking excessive risk. Moreover, an IMF commanding over substantially increased financial resources must obey the rules of a lender of last resort. Developing countries would have to meet basic financial standards, in order to qualify for liquidity support. Emergency financing should be provided at a rate of interest above the market rate and, as far as possible, on collateral.

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I. IMF under Fire

Recent financial crises in Asia and Latin America have alarmed critics of the International Monetary Fund (IMF). In addition to what is widely considered to be macroeconomic mismanagement during the early phase of the Asian crisis, the IMF is blamed for not having *prevented* the Mexican crisis of 1994/95 and the Asian crisis that erupted in 1997 (Siebert 1998). In early 1999, Brazil has been added to the list of IMF failures. Some critics do not stop at this point. They regard the IMF to be part of the problem, rather than the solution (if only the IMF were to focus on crisis prevention in the future). Consequently, they suggest not to improve IMF operations, but to put an end to IMF lending altogether (e.g., Lal 1998; Meltzer 1998).

This radical proposal rests on the contention that IMF lending to crisis-ridden countries is bound to trigger the next financial crisis. Specifically, the Asian crisis is believed to be the logical consequence of the Mexican bailout (Meltzer 1998). Official support is anticipated by both IMF borrowers and private creditors. Moral hazard will ensue on both sides. Governments are tempted to pursue economic policies adding to the risk of financial crisis, the costs of which will be partly covered by the international community. Private creditors are tempted to ignore risk and to overlend, expecting that bailouts will reduce or even eliminate potential loan losses.

There is nothing to quarrel about this reasoning in principle. Yet it is open to question whether incentive problems call for putting an end to IMF lending. There is a dilemma involved: Ruling out moral hazard tends to increase the systemic risk of crisis contagion, unless IMF rescues are replaced by a privately funded safety net. Moreover, the critics of the conventional crisis management have not come up with evidence on the *empirical* relevance of IMF-induced incentive problems. This paper attempts to fill this gap, in order to enable policymakers to strike a reasonable "balance ... between coping with the emergencies that come

along (which argues for more IMF lending) and discouraging emergencies from happening in the first place (which argues for less)" (*The Economist*, October 10, 1998: 90).

Moral hazard eludes quantification. It is unknown how developing country governments and private creditors would have behaved in the absence of IMF lending. It is also impossible to determine the costs of misguided economic policies and the costs of overlending that could have been avoided if the international community had abstained from bailing out developing countries and their private creditors. Therefore, the subsequent evaluation refers to indirect evidence derived from the pattern of IMF lending since the mid-1970s.

The *first objective* is to put IMF lending into perspective. Relating IMF lending to variables relevant to recipient countries and private creditors may provide some clues as to the severity of incentive problems associated with bailouts. This approach may also help to decide whether moral hazard has become more serious over time. *Second*, the paper analyzes the distribution of IMF lending across developing countries. This evaluation aims at identifying possible biases in IMF lending, for example, in favor of developing countries pursuing misguided economic policies. *Third*, the paper refers to the current discussion suggesting that, compared with the 1970s, moral hazard has shifted from developing country borrowers to private creditors. This issue is approached by comparing the cross-country distribution and time profile of different capital flow items with the pattern of IMF lending to developing countries.

The paper concludes that moral hazard problems tend to be overrated in the ongoing debate on reforming the international financial architecture. Abolishing IMF lending altogether is likely to do more harm than good. However, moral hazard would become a more serious problem if IMF resources were sufficiently high to enable the IMF to act as a true international lender of last resort. The final section thus discusses options to contain moral hazard in the future.

II. Major Rescues in the 1990s

In the 1980s, critical observers of the IMF were mainly concerned about moral hazard on the part of IMF borrowers (Vaubel 1983). Recently, the emphasis shifted to perverse incentives that IMF lending may create on the part of private creditors. International banks are said to have been the main beneficiaries of the Mexican bailout during the peso crisis of 1994/95 (Reisen 1999). After this crisis, various emerging markets ran into serious financial troubles. In all cases, the IMF organized rescue operations which channeled sizable amounts of taxpayers' money to the countries in crisis. Stand-by arrangements and extended arrangements with Mexico (1995), Russia (1996 and 1998), Thailand, Indonesia and Korea (all 1997), and Brazil (1998) involved IMF resources of more than US\$90 billion (Table 1). Other multilateral organizations and official bilateral creditors supported IMF programs by considerable financial contributions.

Table 1: Official Financing of Major Rescue Operations (US\$ billion)

	IMF resources	Other multilateral organizations	Other	Total
Mexico (1995)	17.8	—	30.0	47.8
Russia (1996 and 1998)	≈21	.. ^a	.. ^a	≈33
Thailand (1997)	4.0	2.7	10.5	17.2
Indonesia (1997)	10.1	8.0	18.0	36.1
Korea (1997)	21.1	14.2	23.1	58.4
Brazil (1998)	18.0	9.0	14.5	41.5

^aDetailed breakdown not available.

Source: Lane et al. (1999); IMF (1998a); IMF, *International Financial Statistics* (various issues); ECLAC (1995); Deutsches Institut für Wirtschaftsforschung et al. (1998).

The significance of IMF rescue operations may be grasped when total official financing is related to the recipient countries' GDP and foreign indebtedness (Figure 1). On average, total official financing amounted to 11 percent of GDP and 25 percent of total outstanding debt. In the cases of Mexico, Indonesia and Korea, total official financing represented more than two thirds

Figure 1: Major Rescues: Significance of Total Official Financing

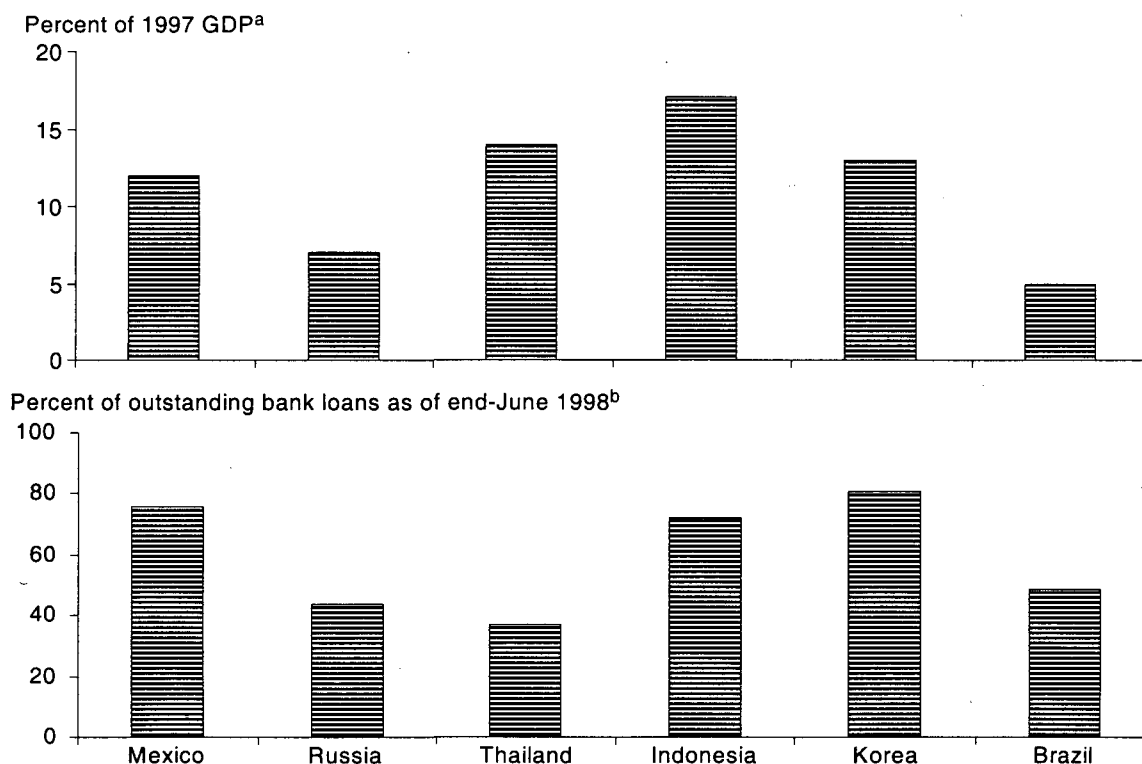
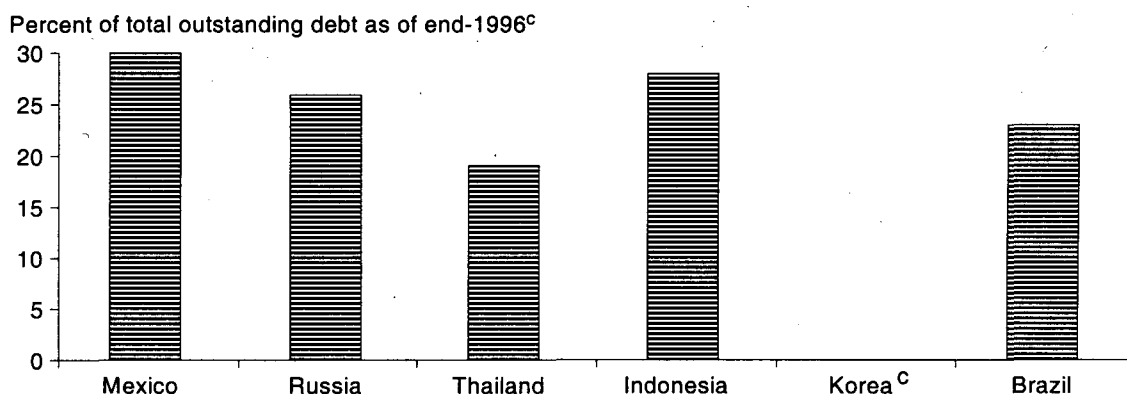


Figure 1 continued



^aGDP in 1997 converted into US\$ by applying period-average exchange rates. — ^bConsolidated claims of BIS reporting banks, end-June 1998. — ^cData on debt not available in source (World Bank).

Source: Table 1; IMF, *International Financial Statistics* (various issues); World Bank (1998a); BIS (1998).

of bank loans outstanding in mid-1998. Apart from offshore banking centers, the six countries under consideration (together with Argentina and China) constituted the “top eight” emerging markets with regard to outstanding bank loans (BIS 1998). This seems to suggest that IMF rescues were motivated by “too-big-to-fail” considerations. Moral hazard would then be concentrated on some large IMF borrowers and their private creditors. It follows by implication that moral hazard may play a minor role with respect to the bulk of IMF borrowers whose default would not pose a serious threat to private creditors.

III. IMF Lending in the Longer Run

Before returning to the issue of biased IMF lending towards particular countries, the longer-term trend in IMF lending to all developing countries is portrayed in this section.¹ This serves two purposes: (i) to get an idea on the overall importance of IMF lending, and (ii) to assess whether IMF-induced incentive problems have become more pronounced in the 1990s.

The analysis refers to lending on the basis of the IMF’s own resources, and on the basis of separate accounts for which the IMF is trustee (Trust Fund and Subsidy Account of the Supplementary Financing Facility) or from which the IMF may borrow (General and New Arrangements to Borrow, respectively). Financial contributions to IMF programs by other multilateral organizations and official bilateral creditors are neglected, as time series data on total official financing of IMF programs are not available. Incentive problems associated with official bailouts may be underestimated in this way. However, longer-term trends would be distorted only if the relative importance of official financing other than from IMF resources has changed over time. The limited evidence available does not point to a major distortion in this respect.²

IMF lending in Figure 2 comprises purchases by, and loan disbursements to, all developing countries:

- Purchases (also referred to as drawings) mean that the IMF sells currencies or SDRs to a

¹ For a historical perspective of rescues during the past two centuries, see Bordo (1998).

² According to World Bank data (1998a), the use of IMF credit by all developing countries increased five-fold in 1980–1997. The same increase is reported for outstanding loans extended by the World Bank. This seems to suggest that the financing structure of support programs remained fairly stable, at least as concerns cofinancing involving the IMF and the World Bank.

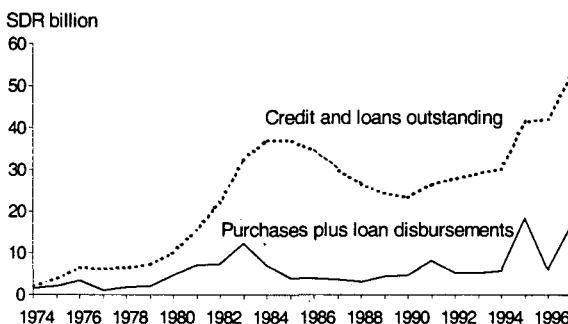
member country. The IMF's General Resources Account (GRA) provides the basis for purchases. Transactions related to the reserve tranche of IMF members are not considered part of purchases in the relevant statistics. The bulk of GRA financing consists of drawings from the Stand-by Credit Tranche and the Extended Fund Facility.

- Loan disbursements comprise financing related to the Structural Adjustment Facility (SAF), the Enhanced Structural Adjustment Facility (ESAF) and the Trust Fund.

In addition to these flow items, Figure 2 presents the development of stocks, i.e., total IMF credit and loans outstanding.

The notion of increasing moral hazard related to IMF operations is fairly compelling when flows and stocks are considered in absolute terms. Comparing annual averages for 1974–1979 and 1995–1997, IMF lending increased almost sevenfold and stocks soared more than eightfold. Record figures since 1995 are the result of financial crises in Mexico, Russia and Asia. However, IMF lending has not increased steadily since 1974. A previous high occurred in the early 1980s, when various developing countries ran into foreign debt problems. IMF lending declined to SDR 3.1 billion in 1988, which was below IMF lending in 1976. Similarly, outstanding credit and loans remained below the peak during the climax of the international debt crisis for almost a decade (1986–1994).

Figure 2: IMF Lending to, and IMF Credit and Loans Outstanding in, All Developing Countries^a, 1974–1997



^aFor definitions see text.

Source: IMF, *International Financial Statistics* (various issues).

Longer-term developments point to cycles in IMF lending, with major crises resulting in lending springs. This pattern may still be consistent with the view of IMF lending to crisis-ridden countries giving rise to the next crisis. Yet, it is difficult to conceive that high IMF lending during the debt crisis could have been reduced to pre-crisis levels for a fairly long period of time if it had added significantly and permanently to moral hazard problems. With regard to all developing countries taken together and with regard to all private creditors, IMF resources were possibly too small to create serious incentive problems on a broader scale. This possibility may be checked by relating IMF lending to variables of relevance to IMF borrowers and private creditors.

IV. Putting IMF Lending into Perspective

Stanley Fischer, the IMF's First Deputy Managing Director, has recently pointed out that the IMF's lending potential has shrunk relative to the size of the world economy: "If the IMF were today the same size relative to the output of its member states as it was in 1945, it would be more than three times larger than it will be when the present quota increase is completed" (Fischer 1999: 9).

For several reasons, such a comparison may not be appropriate for assessing the IMF's role in shaping the behavior of developing countries and their private creditors. First, IMF quotas provide an incomplete picture of the IMF's importance in terms of actual lending. IMF quotas increased sevenfold in 1970–1997, whereas IMF credit and loans outstanding increased eightfold (Deutsche Bundesbank 1997).³ Moreover, IMF lending is not restricted by quotas, as the IMF may refer to the Arrangements to Bor-

³ This huge discrepancy is mainly because IMF credit and loans outstanding almost tripled in the first half of the 1970s (in US\$ terms). However, the increase in IMF credit and loans outstanding continued to exceed the increase in quotas since 1975.

Table 2: Relative Importance of IMF Operations in Developing Countries (percent)

	Purchases plus loan disbursements, 1995–1997 (annual average)	Credit and loans outstanding, 1997
GNP of developing countries, 1997 ^a	0.3	1.1
Trade of developing countries, 1997 ^b	1.0	3.5
Total foreign debt stocks of developing countries, 1997 ^a	–	3.3
Financial account liabilities of developing countries, 1997	5.0	–
International reserves of developing countries, 1997 ^c	2.0	7.8
International banking, 1996 ^d	0.2	0.8
Claims of BIS reporting banks vis-à-vis developing countries and Eastern Europe, end-1997	2.2	7.9

^aWorld Bank coverage of developing countries excludes several countries included by the IMF. The ratios are overstated to some extent, as GNP and debt data are from World Bank (1998a). — ^bAverage of exports and imports. — ^cExcluding gold reserves. — ^dEstimated by Deutsche Bundesbank.

Source: IMF, *International Financial Statistics* (various issues); World Bank (1998a); BIS (1998); Deutsche Bundesbank (1997).

row.⁴ Second, there should have been less need for IMF lending after the collapse of the Bretton Woods system of fixed exchange rates in 1973. The IMF's likely borrower base is essentially limited to developing countries since then. Hence, it seems more appropriate to relate actual IMF lending to developing countries since 1974 to variables of relevance to IMF borrowers and their private creditors, in order to assess the IMF's relative size.

These qualifications notwithstanding, IMF lending is rather small in relative terms (Table 2). Even in 1995–1997, when Mexico, Russia and Asian countries drew heavily on the IMF, annual average purchases and loan disbursements amounted to just 0.3 percent of GNP of all developing countries. International reserves of developing countries in 1997 were almost 13 times higher than IMF credit and loans outstanding. International reserves added up to about US\$910 billion, slightly exceeding the claims of BIS reporting banks vis-à-vis developing countries (including Eastern Europe). Accordingly, IMF operations were of similar size when related to reserves and bank claims.

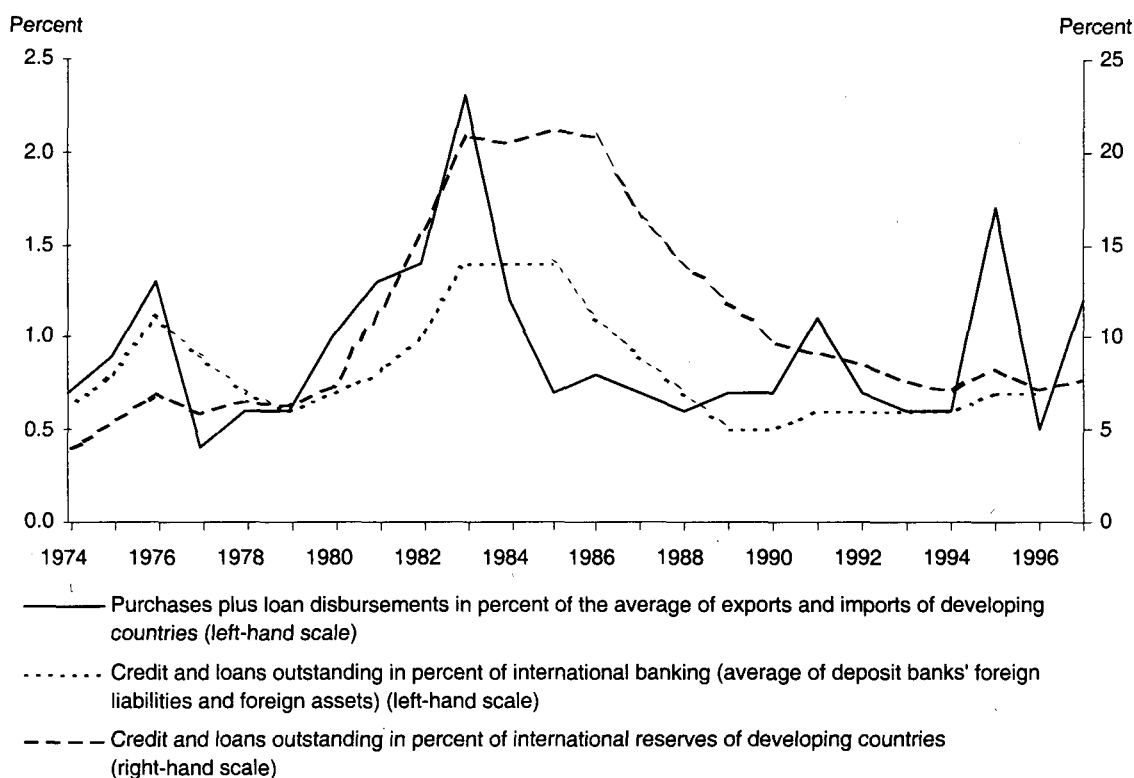
Moreover, IMF operations have not been on a rising trend when considered in relative terms (Figure 3):

- Relative to the trade of developing countries, average purchases plus loan disbursements in the mid-1970s were as high as in 1996/97. Apart from the peak in 1983 (i.e., at the climax of the debt crisis), the ratio of purchases plus loan disbursements to trade fluctuated modestly around 1 percent.
- Likewise, the ratio of outstanding IMF credit and loans to international reserves of developing countries was exceptionally high during the mid-1980s. Thereafter, this ratio declined over almost a decade. The ratio reported in 1997 was the same as the average level during the pre-debt-crisis period of 1978–1981.
- Outstanding IMF credit and loans persistently accounted for less than 1 percent of international banking since 1987. The 1996/97 average of 0.7 percent was lower than the average of 0.9 percent in 1974–1977.

Admittedly, these findings do not invalidate the notion of moral hazard related to IMF lending. The conclusion of an IMF program, i.e., linking financial support with economic policy conditions, is frequently considered to be a signal of restored creditworthiness. Hence, the IMF may have shaped the behavior of private credi-

⁴ According to the General Arrangements to Borrow, the IMF may draw on credit lines provided by G10 countries, totalling SDR 17 billion. In 1997, the New Arrangements to Borrow were agreed upon, providing for credit lines of SDR 34 billion (IMF 1998c).

Figure 3: IMF Operations in Developing Countries in Relative Terms, 1974–1997



Source: IMF, *International Financial Statistics* (various issues).

tors, even though its financial operations in developing countries involved marginal amounts relative to international banking. The engagement of private creditors in developing countries might have increased at a slower pace, if IMF support had not been available.⁵

However, the case for moral hazard on the part of IMF borrowers does not appear as strong as frequently claimed. For example, more serious moral hazard induced by booming IMF lending during the debt crisis should have reduced the incentives of developing countries to accumulate international reserves. Actually, the import coverage of (non-gold) reserves almost doubled from 13 months in 1981/82 to 24 months in 1996/97 (IMF, *International Financial Statistics* (various issues)).

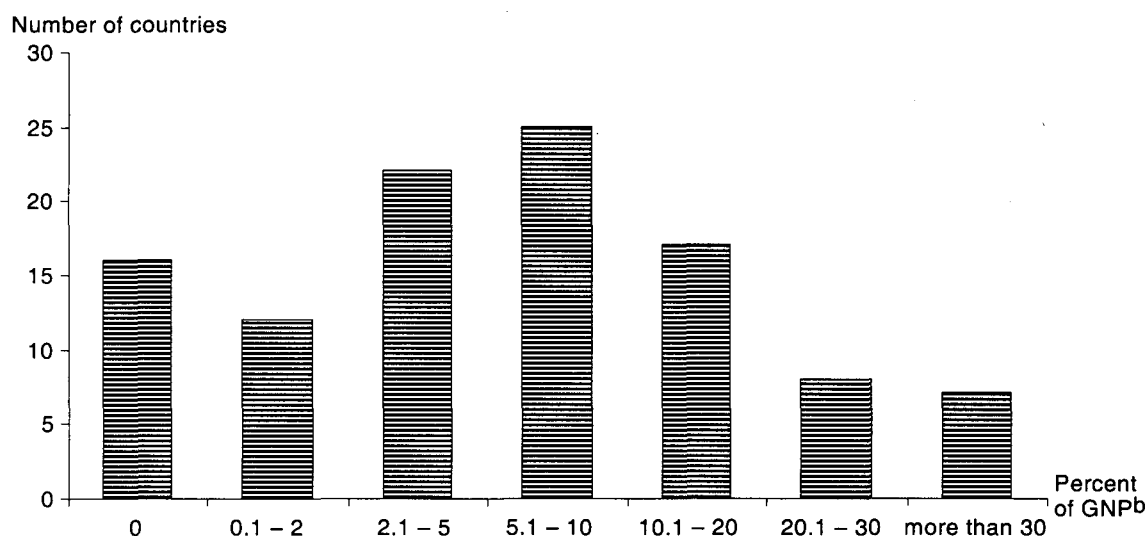
V. Possible Biases in IMF Lending to Developing Countries

The modest role of IMF lending to *all* developing countries notwithstanding, moral hazard on the part of borrowers may still be a relevant problem if IMF lending is biased towards particular countries or country groups. Accumulated purchases plus loan disbursements in 1974–1997 were indeed strongly concentrated on few borrowers. A group of 16 countries,⁶ each of which received IMF funds of more than SDR 2 billion in 1974–1997, accounted for nearly three quarters of IMF lending to all 119 sample countries.

⁵ We will return to this issue in Section VI.

⁶ In descending order of drawing on IMF funds: Mexico (SDR 17.3 billion), Korea, Argentina, India, Brazil, the Philippines, Pakistan, Thailand, Indonesia, Zambia, Romania, Venezuela, Algeria, Hungary, Chile and Morocco (SDR 2.1 billion).

Figure 4: Distribution of 107 Developing Countries^a according to Reliance on IMF Lending



^a The sample is reduced to 107 countries as GNP is not available for 12 countries. — ^bAccumulated purchases and loan disbursements in 1974–1997 in percent of the borrowing countries' GNP in 1996.

Source: IMF, *International Financial Statistics* (various issues); World Bank (1998b).

However, absolute figures are misleading when reliance on IMF lending shall be compared across countries. IMF lending in absolute terms is correlated positively with the size of recipient countries.⁷ In order to correct for country size, IMF lending in 1974–1997 is related to the recipient countries' GNP and population (as of 1996) in the following.

The cross-country distribution of IMF lending changes drastically when considered in relative terms. As a share of the recipient countries' GNP, IMF lending was below the overall average of 10.3 percent in all but two of the 16 largest borrowers in absolute terms (Romania and Zambia are the exceptions). Figure 4 shows that reliance on IMF lending differed widely: 16 countries did not draw at all on the IMF in 1974–1997, whereas IMF lending accounted for more than 20 percent of GNP in 15 countries. The latter group mainly consists of relatively small Sub-Saharan African countries; it also includes Jamaica and Guyana. Taken together the group of 15 countries most heavily relying on IMF lending represented about 1 percent of the

GNP and about 4 percent of the population of the overall sample.

In ten out of 119 countries, accumulated IMF lending amounted to more than SDR 200 per capita of the recipient countries' population. According to this indicator, Jamaica, Guyana and Zambia relied most strongly on the IMF. Some large countries, notably Argentina and Korea, also belong to the “top ten” borrowers in per capita terms.

Correlation analysis provides a clearer picture on possible biases in IMF lending to developing countries. Table 3 presents results for IMF lending in absolute terms and in per-capita terms. Findings can be summarized as follows:

- In contrast to IMF lending in absolute terms, IMF lending in per-capita terms was not biased towards large countries. In other words, “too-big-to-fail” considerations related to country size do not appear to have played a major role, even though they may have influenced IMF lending in particular instances.
- IMF support was not focused on particularly poor developing countries. Rather, lending in absolute and per-capita terms was correlated positively with per capita GNP of recipient countries.

⁷ Correlation coefficients are 0.59 and 0.31 (both significant at the 1 per cent level), if country size is measured by GNP and population, respectively.

Table 3: IMF Lending and Country Characteristics: Correlation Results^a

Country characteristics	IMF lending in 1974–1997	
	in absolute terms	in per-capita terms
Population (1996)	0.31** (119)	–0.10 (119)
GNP (1996)	0.59** (107)	0.07 (107)
Per capita GNP (1996)	0.34** (107)	0.34** (107)
Average rate of inflation (1974–1996) ^b	0.11 (96)	–0.003 (96)
Volatility of inflation (1974–1996) ^{b,c}	0.06 (96)	–0.02 (96)
Change in terms of trade (1975–1994)	–0.04 (73)	–0.21* (73)

^aPearson correlations; number of observations in parentheses; ** and * denote significance at the level of 1 and 10 percent, respectively (two-sided test). — ^bConsumer prices; incomplete time series for various countries; countries with insufficient number of observations excluded. — ^cStandard deviation.

Source: IMF, *International Financial Statistics* (various issues); World Bank (1998b); UNCTAD (1997).

- Some evidence exists to the effect that IMF lending was correlated with the recipient countries' need for support. Changes in the terms of trade are taken as proxy of exogenous world-market developments, assuming that import and export prices are beyond the control of most developing countries. In per-capita terms, IMF lending was higher to countries which suffered a steeper decline in their terms of trade since 1975.⁸
- Correlations with the average rate of inflation in recipient countries, and with the volatility of inflation are insignificant. The inflation rate is referred to as an indicator of macroeconomic policy conditions in developing countries. Correlation coefficients should be positive if IMF lending had discouraged recipient countries to pursue sound macroeconomic policies. This does not seem to be the case.

Some critics have blamed the IMF for having encouraged borrowers to maintain fixed exchange rate regimes.⁹ The cross-country distribution of IMF lending does not support this contention. Grouping sample countries into three exchange rate regimes (as of March 1998)

reveals a rather surprising pattern (IMF, *International Financial Statistics* (various issues)): Countries whose currencies were pegged to another currency or to a composite of currencies (48 observations), on average, received SDR 43 per capita from the IMF in 1974–1997. Countries with a more flexible managed floating regime (38 observations) received SDR 57 per capita, and countries whose currencies floated independently (32 observations) received SDR 81 per capita. In striking contrast, international bank lending (i.e., bank claims outstanding in mid-1998 per capita of the borrowing countries' population) was particularly high to developing countries with inflexible exchange rate regimes.¹⁰ Apparently, international banks considered pegged exchange rates to be sustainable, although IMF lending was not biased towards countries with inflexible exchange rate regimes.

Summarizing, the evidence presented so far does not point to serious moral hazard problems on the part of developing countries induced by IMF lending. This may explain why the current debate is more concerned with moral hazard on the part of private creditors of developing countries.

⁸ The correlation becomes insignificant (–0.07) if terms-of-trade changes are calculated for the period 1973–1994. The base year (1973 or 1975) is critical as oil prices tripled in 1973–1975. As a consequence, the terms of trade of oil-exporting countries improved considerably if 1973 is taken as base year, whereas they declined if 1975 is taken as base year.

⁹ See, for example, Dornbusch (1999) and Sachs (1999) in the case of Brazil.

¹⁰ In per-capita terms, bank claims amounted to US\$600, on average, in developing countries with pegged exchange rates. This compares with US\$350 and US\$200 in countries with a more flexible managed floating regime and with an independently floating currency, respectively (BIS 1998).

VI. IMF Lending and the Behavior of Private Creditors

International banks are widely believed to be particularly prone to moral hazard. As noted earlier, banks are perceived to have been the main beneficiaries of the Mexican bailout. It fits into this picture that "globally active commercial and investment banks ... have not, for the most part, suffered large losses on their balance sheet exposure to Asia" (IMF 1998b: 7). It must be noted, however, that losses on off-balance-sheet exposures and activities of international banks, such as securities underwriting, may be significant. The full extent of bank losses incurred during recent financial crises is not yet known.

In January 1999, the Institute of International Finance (IIF) released some information on losses incurred by foreign equity investors, bond holders and banks in Asia and Russia (*Frankfurter Allgemeine Zeitung*, January 28, 1999). Accordingly, bank losses of about US\$60 billion accounted for 17 percent of total losses of all three groups of foreign private investors involved in Asia and Russia. Bank losses are unlikely to be understated by the bank-based IIF. The IIF provided this information in order to counter the idea that banks have been bailed out once again.

It may thus be surprising that, in relative terms, IIF data are consistent with the view that banks have suffered less so far from the Asian and Russian crises than foreign equity investors and bond holders. In 1991–1997, loan financing accounted for 26 percent of total financial account liabilities of Russia and developing countries in Asia (IMF, *Balance of Payments Statistics Yearbook* (various issues)).¹¹ Reported bank losses of US\$60 billion come to 24 percent of loan financing during this period. This ratio is low compared with relative losses incurred by bond holders and equity investors in Asia and Russia. Reported losses of bond holders (US\$50 billion) represent 34 percent of external financing through bonds and notes. Rela-

tive losses of equity investors are still higher, namely 52 percent of external financing through foreign direct investment and equity securities in 1991–1997.

Even though international banks appear to be the prime candidates for moral hazard, the comparison of relative losses in Asia and Russia does not prove the case for moral hazard induced by IMF lending. Banks may have postponed the realization of losses by refusing immediate debt relief, e.g. in Asia. Moreover, the major rescue operations organized by the IMF in recent years may not be representative of IMF lending and its implications on the behavior of banks. In other words, it is open to question whether IMF lending had a major impact on bank lending.

The case for IMF-induced moral hazard on the part of international banks is weakened indeed, if the patterns of IMF lending and bank lending are analyzed for a large sample of developing countries and over a longer time span. The proposition that moral hazard has shaped the behavior of banks to a significant extent has several implications:

- The structure of external financing of developing countries should have shifted towards loan financing.
- Bank lending to developing countries should have boomed particularly when the IMF revealed its willingness to bail out borrowers experiencing debt problems.
- The distribution of bank lending across developing countries should be correlated positively with the distribution of IMF lending.

On all counts, empirical evidence is weak at best. As concerns the structure of external financing, an earlier investigation has shown that capital flows into 14 major developing countries shifted towards foreign direct investment (FDI) during the 1980s (Nunnenkamp 1998a). The above comparison of relative losses incurred during the financial crises in Asia and Russia suggests that moral hazard is least likely to have influenced the behavior of foreign equity investors. Nevertheless, equity financing gained further importance in developing countries in the 1990s (Table 4). The share of FDI plus equi-

¹¹ In the case of Russia, balance of payments data refer to 1994–1997.

Table 4: Structure of External Financing of Developing Countries, 1990–1997 (percent of financial account liabilities)

	Foreign direct investment	Portfolio investment			Other investment liabilities
		Total ^a	Equity securities	Bonds and notes	
1990	28.7	20.4	3.5	17.3	50.8
1991	30.0	22.8	5.2	18.0	47.2
1992	29.1	29.4	7.5	22.5	41.5
1993	28.2	43.8	15.5	28.5	28.0
1994	39.7	41.9	12.3	30.3	18.3
1995	36.4	14.1	5.7	12.4	49.4
1996	37.7	32.3	9.4	22.4	30.0
1997	45.5	31.8	8.5	23.1	22.7

^aTotal exceeds the sum of equity securities and bonds and notes for various years, in which developing countries reported negative liabilities with respect to money market instruments and financial derivatives.

Source: IMF, *Balance of Payments Statistics Yearbook* (various issues).

ty securities in total external financing increased from less than one third in 1990 to more than one half in 1997.

Other investment liabilities, including bank loans, had been the most important source of external financing in 1990–1992. By contrast, this source was least important in 1996/97. This is in striking contrast with the pattern that would be expected from a moral hazard point of view.¹²

The time profile of bank lending to developing countries casts further doubts on the significance of moral hazard for bank behavior. It may be argued that steeply increased IMF lending to Latin America in the first half of the 1980s provided a major indication as to the IMF's willingness to bail out troubled debtors and their private creditors. Yet, debt-related financing ("other investment liabilities" in balance of payments statistics) of a group of 14 developing countries (including six major Latin American countries) dwindled during the debt crisis and turned negative in 1986–1990 (Nunnenkamp 1998a).

The Mexican rescue package of 1995 provided the next major indication of the IMF's reaction to financial crises. If the Mexican bailout had been anticipated by international banks, one might wonder why loan financing of

Mexico was negative not only after the peso crisis (1996/97), but also before the crisis (1992/93) (IMF, *Balance of Payments Statistics Yearbook* (various issues)). Moreover, bank lending should have increased if the Mexican rescue had created bailout expectations of banks with regard to developing countries in general, and with regard to Asia in particular. Actually, loan financing of all developing countries declined from US\$106 billion in 1995 to US\$55 and US\$78 billion in the two subsequent years. At the same time, loan financing of developing countries in Asia declined from US\$50 billion to US\$46 and US\$36 billion, respectively.

Finally, correlation analyses do not point to strong similarities with regard to the cross-country distribution of IMF lending on the one hand, and the distribution of bank lending on the other hand. To be sure, in absolute terms, outstanding claims of BIS reporting banks are highly correlated with IMF lending in 1974–1997, and also with IMF credit and loans outstanding at end-1997 (Table 5). The correlations turn out to be insignificant with one exception, however, if bank exposure and IMF operations are adjusted for country size. Correlation coefficients even tend to have a negative sign if bank exposure and IMF operations are related to the borrowing countries' GNP. This suggests that the IMF and international banks decided independently from each other on their lending to developing countries.

¹² Meltzer (1998: 267) stated: "Banks were bailed out (in Mexico in 1995; parentheses added), so they continued to lend, and bank loans rose with direct investment." Empirical evidence is in conflict with this statement.

Table 5: Cross-country Distribution of IMF Financing and Bank Lending to Developing Countries: Correlation Results^a

	Outstanding claims of BIS reporting banks (as of June 1998)		
	in absolute terms	in per-capita terms ^b	in percent of GNP ^c
Accumulated purchases plus loan disbursements, 1974–1997			
– in absolute terms	0.74** (114)	—	—
– in per-capita terms ^b	—	0.15 (114)	—
– in percent of GNP ^c	—	—	–0.12 (104)
IMF credit and loans outstanding, end-1997			
– in absolute terms	0.69** (110)	—	—
– in per-capita terms ^b	—	0.17* (110)	—
– in percent of GNP ^c	—	—	–0.14 (103)

^aNumber of observations in parentheses; ** and * denote significance at the level of 1 and 10 percent, respectively (two-sided test). — ^bPopulation of borrowing countries as of 1996. — ^cGNP of borrowing countries as of 1996.

Source: IMF, *International Financial Statistics* (various issues); BIS (1998).

VII. How to Keep Moral Hazard Low

Moral hazard of IMF lending, though figuring prominently in the current debate on reforming the international financial architecture, appears to be a minor problem. IMF lending has remained small in relation to economic activity in borrowing countries, and in relation to the engagement of private creditors. The (indirect) evidence available does not support the idea that IMF-induced moral hazard has increased since the 1970s and 1980s.

There is little, if any, empirical justification to blame the IMF for having encouraged misguided economic policies in developing countries by offering financial assistance in the case of emergencies. Furthermore, the structure of private capital flows to developing countries as well as the time profile and cross-country distribution of bank lending all suggest that private creditors and the IMF have decided independently from each other on their engagement in developing countries. This is not to deny that international banks have underrated credit risk in emerging markets, resulting in overlending and the subsequent rush to the exits once crisis was looming. But the IMF is unlikely to have shaped banking behavior in a significant way.

This leads us to reject the radical proposal to put an end to IMF lending, advanced by various critics of the IMF in order to eradicate moral hazard. Abolishing the IMF would do more harm than good, at least until an alternative safety net is in place for coping with financial crises in emerging markets and international contagion. To the contrary, the weak empirical evidence on IMF-induced moral hazard shifts the balance towards dealing forcefully with emergencies that come along by providing sufficiently large and timely support, rather than discouraging emergencies from happening in the first place by credibly refusing any official support.

The relevant question is not whether a safety net is needed. Even if there were fewer crises in the absence of emergency lending, there would still be some; without a safety net, the remaining crises are likely to have more dramatic international repercussions. Hence, the relevant question is how to improve the existing crisis management. A true international lender of last resort would have to command over substantially more resources than the IMF currently does. However, enabling the IMF to act as a true international lender of last resort implies that, contrary to the past, moral hazard could become a serious problem in the future.

This dilemma can be dealt with in two ways, which should complement each other. Moral hazard on the part of private creditors may be contained by involving private creditors direc-

tly in financial rescue operations. Private creditors should be obliged to set up and finance emergency funds on which the IMF may draw in times of crisis.¹³ Private creditors would have to share the financial costs of rescue operations. This would strengthen their incentive to pursue prudent lending strategies, thereby helping to prevent financial crises in the first place.

In order to contain moral hazard on the part of borrowers, an IMF commanding over increasing resources must obey the rules of a lender of last resort, as put forward in Bagehot's (1873) classic contribution (see also Bordo 1998). Accordingly, the lender of last resort should counter a liquidity crisis by sufficiently high lending on collateral and at a rate of interest above the market rate. The IMF is moving in the direction of charging penalty rates of interest. With the introduction of the Supplemental Reserve Facility at the end of 1997 (which was made available to Korea and, subsequently, to Russia and Brazil), the IMF may provide large loans at a higher interest rate and for a shorter term than in its normal facilities (Fischer 1998, 1999).

The requirement for collateral is more difficult to meet. Policy conditions attached to IMF lending, sometimes considered to be a substitute for collateral, have frequently been circumvented by IMF borrowers. Principally, international reserves of IMF borrowers may serve as collateral. IMF borrowers may then be discouraged from running down reserves too far before calling on the IMF for financial assistance (Fischer 1999). However, financial assistance must not exceed international reserves of borrowers for succeeding in this respect. It would hardly be credible if the IMF were to announce to act accordingly. Note that various of the major rescue operations since 1995, starting with the Mexican crisis, involved official financing far in excess of international reserves of borrowers. Yet, at least some collateral could be part of rescue operations if borrowing countries were required to agree to debt-for-equity swaps

in return for the financial contribution of private creditors to rescue operations.

Finally, developing countries would have to adhere to basic financial standards in order to qualify for liquidity support in times of crisis. The incentives of borrowers to implement regulations concerning the supervision of domestic financial institutions and to enforce national bankruptcy procedures could be strengthened, if IMF loans were provided at varying rates of interest depending on the extent to which a borrowing country meets financial standards.

¹³ This proposal is presented in more detail in Nunnenkamp (1998b).

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