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SM/02/253

August 9, 2002

To: Members of the Executive Board

From: The Secretary

Subject: **Twelfth General Review of Quotas—Further Considerations**

Attached for consideration by the Executive Directors is a paper on the twelfth general review of quotas—further considerations, which is now tentatively scheduled for discussion on **Friday, August 30, 2002**. Next steps, conclusions, and issues for discussion appear on pages 19–21. The staff proposes the publication of this paper after the Executive Board completes its discussion, together with a PIN summarizing the Executive Board's discussion.

Questions may be referred to Mr. Trines (ext. 35639) and Mr. P. Ross (ext. 38973) in TRE.

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INTERNATIONAL MONETARY FUND

Twelfth General Review of Quotas—Further Considerations

Prepared by the Treasurer's Department

(In consultation with the other departments)

Approved by Eduard Brau

August 9, 2002

Contents | Page

Tables

I. Introduction

1. **In February 2002, Directors discussed conceptual issues involved in assessing the adequacy of the Fund's resource base as a start to the Twelfth General Review of Quotas**. There was broad recognition that increased global economic and financial integration had increased vulnerability to economic shocks and financial market volatility. It was noted that recent adaptations in the Fund's surveillance and financial policies had strengthened the Fund's role in the prevention and resolution of financial crises and have implications for the future demand for Fund financial assistance to be taken into account in assessing the adequacy of the Fund's resource base. Several Directors considered that more frequent provision of contingent and precautionary arrangements for crisis prevention could involve substantial commitments of financial resources, including during times when the world economic situation is favorable, but several others did not see great scope for a strong expansion of contingent financing by the Fund. Most Directors agreed that, while effective crisis prevention should tend to reduce the disbursement of Fund resources, crises and bouts of financial contagion could occur from time to time and the Fund will need to be in a position to respond to requests for substantial disbursements. The discussion also highlighted a number of factors that could attenuate future resource needs, including the evolving arrangements for private sector involvement (PSI), greater clarity on access policies, especially in large capital account crises, and more effective surveillance. There was no common view on the extent to which, on balance, the various developments could or would affect the required size of the Fund's resource base.

2. **This paper responds to the request by Directors for a further quantification of factors that could be used to inform judgments regarding the adequacy of Fund resources and the possible need for a quota increase.** The remainder of this paper is structured as follows: Section II briefly reviews the qualitative considerations relevant to an assessment of the adequacy of the Fund's resource base and discusses some of the issues raised at the February 2002 seminar on the size of the Fund.[1] Section III discusses quantitative indicators of the size of the Fund and Section IV considers possible scenarios of the demand for Fund resources. Section V briefly discusses the role of borrowing to meet the Fund's resource needs. Section VI presents conclusions and issues for discussion.

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[1] SEM/02/1, 2/8/02; as in *Twelfth General Review of Quotas—Preliminary Considerations and Next Steps* (SM/02/22, 1/22/02) this paper considers only issues relating to the Fund's activities in the General Resources Account (GRA) and not the role of the Fund in providing unconditional liquidity through the SDR Department or concessional financing and debt relief through the PRGF and HIPC Trust Accounts.

II. General Considerations

3. **The Fund was established, inter alia, to promote an open, growing world economy, and a stable international financial system.** The Fund provides a public good through its policy advice and financing by promoting the sound macroeconomic policies and structural reforms necessary to prevent and resolve balance of payments problems. In particular, the Fund makes its resources available to members to provide them with the confidence to implement needed policy adjustment to deal with balance of payments problems without recourse to disorderly measures destructive of national and international prosperity.

4. **The increased depth and breadth of globalization and financial market integration in recent years has enhanced the role of the Fund as the central monetary institution for the world economy**. As a growing number of countries seek to benefit from integration by reducing barriers to international transactions in goods, services and capital, vulnerability to adverse shocks and the cost of instability have increased. The international community acts through the Fund to promote the stability necessary for members to benefit from the opportunities arising from integration while minimizing the downside risks.

5. **The Fund has adapted its policies and practices to better achieve its basic purposes and objectives in the current economic and financial environment**. The Fund has responded in several ways, including:

- **Placing greater focus on crisis prevention** through expanded surveillance, including of financial sectors with Financial Sector Assessments, adoption of standards and codes, and greater transparency to improve market functioning, including the promotion of sovereign-investor relations programs and the Capital Markets Consultative Group;

- **Increasing the emphasis on prudent debt and reserve management policies, a strengthening of financial markets and structural reforms** to better position members to respond to the increased volatility in the system;

- **Adapting its financing facilities and policies** to provide more contingent financing to promote crisis prevention, ensuring adequate access to Fund resources to facilitate the orderly resolution of those crises that do occur in conjunction with appropriate financing from other sources, including strengthened private sector financial involvement, and introducing financial terms designed to strengthen the revolving nature of Fund resources.

6. **The traditional approaches for assessing the adequacy of the Fund's resource base need to be modified to take account of the greater size and volatility of capital flows and of the changes in Fund lending policies that can produce potentially large spikes in financing commitments.** The increased emphasis on contingent financing will require that the Fund commit substantial resources well in advance of any balance of

payments financing need. Moreover, projections of credit demand that have been used traditionally to assess Fund liquidity will likely be unreliable in an environment of large and uncertain capital flows. Finally, credit outstanding is likely to be more concentrated among a few members than previously and the duration of the Fund's exposure, while generally shorter than under previous policies, is less certain due to the increased discretion provided in determining the final maturity of Fund financing (repurchase expectations). **In these circumstances, the "premium on prudence" with regard to assessments of the adequacy of Fund resources has increased.**

7. **During the February seminar on the size of the Fund, there was broad recognition of the importance of assuring that the Fund had adequate resources to fulfill its responsibilities. However, judgments varied on the need for, and timing of, a quota increase**. In particular, issues were raised regarding how to treat contingent commitments in assessing potential resource demands, and whether an increase in quotas prior to resolution of issues on PSI/Sovereign Debt Restructuring Mechanism (SDRM) and policies on access to Fund resources would send the wrong signals to markets and borrowers and heighten moral hazard. The remainder of this section considers these issues further.

8. **The increased emphasis on contingent financing mechanisms such as the Contingent Credit Line (CCL) and other precautionary arrangements as crisis prevention measures has led to renewed consideration of how such commitments should be treated in assessing Fund liquidity**. The Fund has not made any CCL commitments as yet but it is expected that such a mechanism with its emphasis on sound policies would contribute to a reduction in possible contagion and thus reduce Fund disbursements from what they otherwise might be.[2] Moreover, some have argued that such "insurance" type arrangements should be discounted in assessing the potential impact on Fund resources, as the probability of activation is smaller than traditional Fund financing. They note, for example, that insurance companies do not hold liquid resources to cover fully all potential claims but rather rely on probability estimates of the need to meet such claims in deciding on the composition of their investment portfolios. In these circumstances, staff proposals to take into account the full amount of all contingent commitments when assessing the Fund's uncommitted resources[3] were considered excessively conservative.

9. **The analogy with practices of insurance companies is not fully applicable to the Fund.** The probability that a contingent commitment will be drawn is largely unknowable, given prevailing uncertainties and the potential for volatile capital flows. Moreover, the Fund, unlike insurance companies, is not able to spread its risks through a reinsurance market or obtain additional resources on short notice and in potentially large amounts from investors.

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[2] A review of the CCL by the Executive Board is scheduled to take place after the 2002 Annual Meetings.

[3] See *The Fund's Liquidity Position—Review and Outlook* (SM/01/171, 10/4/01).

Consequently, the Fund must rely entirely on currently available resources (i.e., quotas and standing borrowing arrangements) to meet commitments that could be drawn upon in large amounts and suddenly. In these circumstances, the Fund's resource base must be adequate to meet its contingent commitments in full in order to preserve the credibility of the "insurance" it provides.

10. **The recent sharp increase in Fund credit in response to members' financing needs arising from capital account crises has led to renewed concerns about borrower and creditor moral hazard**. The issue of moral hazard is inherent in any insurance type arrangement such as the Fund provides and must be weighed against the potential cost of disorderly adjustment to the member and to the international community. There is some empirical evidence in work done by Fund staff of moral hazard due to large official financing packages in the period prior to the Russian crisis in mid-1998; however, based on more recent analysis, there is little evidence of moral hazard related to Fund financing after 1998.[4] More generally, the Fund has sought traditionally to balance these considerations through targeted policies that seek to minimize moral hazard while retaining sufficient flexibility to support sound policies and orderly adjustment by members.

11. **Fund policy conditionality traditionally has been the principal means of dealing with potential moral hazard and safeguarding Fund resources**. Conditionality is intended both to give the country confidence that it will continue to receive Fund financing as it implements the policies envisaged under the program and to provide safeguards by ensuring that Fund financing supports needed policy adjustment. Moral hazard would exist if Fund financing would lead to wealth transfers, which could be shared between a borrower and other (private) creditors. Adequate conditionality that ensures repayment of Fund resources will greatly reduce the scope for moral hazard. The expanded work on sustainability assessments complements Fund conditionality by providing a crosscheck that the policies being pursued will promote sustainable debt positions in the medium term. This should help to address concerns about moral hazard by improving the prospect that Fund resources will be used as intended and effectively, thereby achieving prompt repayment.

12. **Similarly, the development of robust arrangements for private sector involvement (PSI and SDRM) complements other efforts to address potential creditor moral hazard.** The recognition that Fund resources are limited and broad agreement that the Fund should remain a catalytic lender has motivated the search for more effective means of involving the private sector in crisis prevention and resolution. The Prague framework on PSI

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[4] See Lane, T. D. and S. Phillips, "Does IMF Financing Result in Moral Hazard," *IMF Working Papers,* WP/00/168 (2000), which provides evidence that Fund arrangement approvals had no significant impact on sovereign spreads, and Jeanne, O. and J. Zettelmeyer, "International Bailouts—The IMF's Role: International Bailouts, Moral Hazard and Conditionality," *Economic Policy,* Vol. 16, Issue 33, October 2001, which articulates the role of conditionality in alleviating moral hazard concerns.

provides for a continued Fund role, which could be large in specific cases. In certain circumstances, PSI including the possibility of SDRM could result in a decrease in the demand for Fund resources as private creditors voluntarily agree to play a greater role in resolving a financial rises. In other cases, however, it may be impractical to generate substantial private sector support and significant Fund financing may be needed to support a member's adjustment effort in the initial stages. Finally, in cases where the debt level is clearly unsustainable and a restructuring is required, Fund financing is likely to be small, for example in amounts sufficient to help rebuild reserve holdings of the member. At this point in time, it is not possible to make robust estimates of the likely impact of PSI/SDRM on Fund financing.

13. **The establishment of the Supplemental Reserve Facility (SRF), which does not have formal access limits, and greater use of the exceptional circumstances clause, has enabled the Fund to respond flexibly to members' increased financing needs.** The initiatives to broaden and deepen the analysis of debt sustainability issues help to provide an assurance that access to SRF resources is provided only to members that have a sustainable debt position and an adequate repayment capacity in order to allay potential moral hazard concerns. Further, the Board's pending consideration of access policies in capital account crises should provide greater clarity on the circumstances when exceptional access would be appropriate. **At the same time, the tighter are access limits in relation to quota, the greater is the need to ensure that quotas bear a realistic relation to the size of the economies and the potential financing needs of members.**

14. **A judgment regarding the adequacy of Fund resources will need to take account of developments regarding contingent financing arrangements, access, and PSI, but a prolonged delay in reaching decisions on quotas until all of these issues are resolved and their effects known would not be prudent.** Judgments regarding resource adequacy and a possible quota increase as part of the Twelfth General Review need to be made in a forward-looking, medium-term context. Given the time needed to negotiate and implement a quota increase and the increased uncertainty and volatility of Fund financing, a forward-looking approach is required in which decisions are made before an actual liquidity shortage emerges.

15. **The costs associated with a possible shortfall or excess of Fund resources are sharply asymmetric.** The direct financial costs to creditor members of an increase in quotas are negligible as they provide resources to the Fund only when needed and remuneration is paid at market-based rates. The potential costs of an inadequate resource base are much larger in terms of the impact of disorderly adjustment on members and on the system if the Fund were unable to fulfill its responsibilities. Concerns regarding possible moral hazard should be addressed by measures targeted at the specific cause. Attempts to address this issue by having a Fund with an inadequate resource base are likely to prove counterproductive.

16. **Decisions regarding what constitutes an adequate resource base and what should trigger an increase in quotas are ultimately an exercise in judgment regarding both the appropriate role of the Fund and the possible vulnerabilities and shocks which members may face.** The next sections provide additional background on the size of the Fund

relative to the world economy and possible scenarios of demand for Fund resources in the period ahead to help inform such judgments.

III. QUANTITATIVE INDICATORS

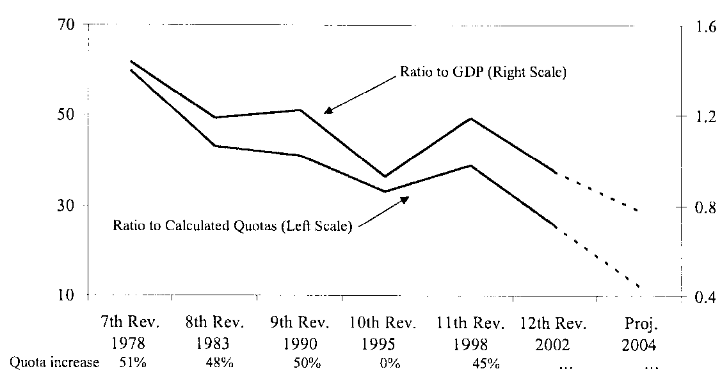
17. **In earlier quota reviews, assessments of the adequacy of Fund resources have initially considered the size of the Fund relative to various measures of the size of the world economy, trade and global financing needs.** In addition, Executive Directors have requested in the present review that staff also present information on the size of the Fund relative to capital flows and measures of members' vulnerability to financial crises. The purpose of such comparisons is to indicate how the size of the Fund has evolved over time relative to key measures of the world in which the Fund functions. As such, these measures provide additional information that can be used in reaching a judgment regarding a quota increase.

A. Traditional Indicators

18. **The traditional indicators used in past quota reviews consider aggregate quotas relative to measures of global output, trade, payments, and reserves.** In addition, in the Eleventh General Review, the potential financing needs of members were considered. The size of the Fund clearly has not kept pace with most measures of the world economy and, absent a quota increase, would fall to unprecedented levels that may undermine the credibility of the institution and its ability to fulfill important responsibilities.

19. **In previous quota reviews, Executive Directors generally agreed that the size of the Fund relative to global GDP was the most comprehensive measure for assessing the adequacy of Fund resources.** The quota reviews since the mid-1970s (i.e., following the collapse of the Bretton Woods system and the second amendment of the Articles of Agreement) have resulted in quota increases that have generally maintained the size of the Fund relative to GDP around 1¼ percent, with the exception of the Tenth General Review, when no quota increase took place, although the subsequent review was accelerated and the relative size of the Fund restored. Based on the data for the Twelfth Review, the size of the Fund has declined to less than 1 percent and would decline to about 3/4 percent of projected members' GDPs in 2004 in the absence of a quota increase (Figure 1 and Table 1).

Figure 1. Ratios of Agreed Size of the Fund to GDP and to Calculated Quotas in Recent Quota Reviews
(In Percent)



20. **The integration of the world economy has led to rapid growth and increased volatility in measures related to international transactions, including trade, current payments, and reserves.** The size of the Fund relative to these measures has declined more sharply than in the case of GDP and a larger increase in quotas would be needed to restore the Fund's size relative to its level following the last quota review. Although views differ on what may be the "right" size of the Fund and on the weight to be given to specific variables, it is perhaps worth noting that actual quotas relative to calculated quotas (which represent a weighted average of all the quota variables) have declined since the mid-1970s and would reach the lowest level in the Fund's recent history if there were no quota increase as part of the current review.

Table 1. Actual and Calculated Quota Size of the Fund
(In billions of SDRs or in percent)

		Seventh Review 1978 1/ (1)	Eighth Review 1983 1/ (2)	Ninth Review 1990 1/ (3)	Tenth Review 1995 1/ (4)	Eleventh Review 1998 1/ (5)	Twelfth Review 2002 (6)	Illustration and WEO-Based Projection 2004 (Preliminary) (7)
	Size of Quota Increase, in Percent	50.9	47.5	50.0	0.0	45.0	...	
1.	Agreed size of the Fund 2/ 3/ 4/	61.1	90.0	135.2	146.1	212.0	213.7	213.7
2.	Quantitative economic indicators and applicable data periods	1972-76	1976-80	1981-85	1986-90	1990-94	1995-99	2000-04
	a. GDP	4,253	7,588	11,083	15,744	17,884	22,442	27,431
	b. Calculated quotas	102	209	330	441	545	832	1,762
	c. Current payments	718	1,341	2,168	2,852	3,700	5,785	9,925
	d. Reserves	185	333	391	594	768	1,150	1,687
	e. Variability of current receipts	43	67	112	159	173	264	563
3.	Ratio of line 1 to line 2, in percent							
	a. GDP	1.44	1.19	1.22	0.93	1.19	0.95	0.78
	b. Calculated quotas	59.9	43.1	41.0	33.1	38.9	25.7	12.1
	c. Current payments	8.5	6.7	6.2	5.1	5.7	3.7	2.2
	d. Reserves	33.0	27.0	34.6	24.6	27.6	18.6	12.7
	e. Variability of current receipts	142.1	134.3	120.7	91.9	122.4	81.0	38.0

1/ Year in which the quota review was completed, i.e., when the Board of Governors' Resolution on quota increases was approved. Quota agreed in 1976 under the Sixth Review came into effect in 1978, following the coming into effect of the Second Amendment of the articles. The Tenth Review did not provide for an increase in quotas, and the increase in actual quotas relative to the Ninth Review is due to the increase in the number of members.

2/ For column (1) includes special quota increases for China and Saudi Arabia in 1980 and 1981.

3/ For column (6) includes China's ad hoc quota increase of SDR 1.682 billion in 2002.

4/ For column (7) includes China but assumes no increase in quotas otherwise.

21. **The size of the Fund has also been assessed in relation to the projected gross financing needs (GFN)[5] of members that have used Fund resources.** In recent years, the Fund's share of GFN has increased due to the large commitments to countries experiencing serious capital account crises although the share remains small (Table 2). If the Fund's share of GFN were the same as in 1995–99, Fund commitments would total about SDR 115 billion in 2000–04 based on recent WEO projection of the underlying flows, some 11 percent higher than in the earlier period.[6] The scenario analysis in the next section uses levels and patterns of demand for Fund resources that are in line with demand for Fund resources in recent years

Table 2. Gross Financing Needs for Past Users of Fund Resources
(Excluding Industrial and PRGF Countries), 1990–2004

(In billion of SDRs)

	1990–94	1995–99	2000–04
All countries			
GFN	751	1,229	1,364
AGFN	1,416	2,366	2,500
Fund commitments (percent of GFN)	2.6	8.5	...
Fund commitments (percent of AGFN)	1.4	4.4	...
All countries excluding large access			
GFN	329	513	569
AGFN	593	915	1,109
Fund commitments (percent of GFN)	3.9	3.0	...
Fund commitments (percent of AGFN)	2.2	1.7	...
Large access cases 1/			
GFN	423	717	796
AGFN	823	1,451	1,391
Fund commitments (percent of GFN)	1.6	12.3	...
Fund commitments (percent of AGFN)	0.8	6.1	...

Source: World Economic Outlook database.

1/ Large Access Cases: Argentina, Brazil, Indonesia, Korea, Mexico, Russia, Thailand, and Turkey.

[5] GFN is defined as the sum of current account balance excluding grants, amortizations of maturities exceeding one year, repurchases due to the Fund, repayments of arrears, and gross reserve accumulation. The concept can be expanded by including short-term debt to reflect a further potential source of financing need (Augmented GFN).

[6] For 2000–04, future commitments could be projected based on trends observed during January 2000–June 2002, which would be somewhat higher than projections based on the 1995–99 experience.

as reflected in the GFN based projections. However, the GFN concept has a number of limitations as an indicator of potential demand for Fund resources in current circumstances. In particular, the measure assumes no change in policies at a time when Fund surveillance and conditionality are being strengthened to promote improved policies and more effective adjustment efforts. Moreover, assuming a constant Fund share of GFN does not take account of measures to enhance the role of the private sector in crisis prevention and resolution, while also ignoring the recent sharp fall in bilateral official financing packages that accompanied some Fund arrangements in the second half of the 1990s. Finally, measures of AGFN are inherently uncertain due to the increased volatility of short-term capital flows. In these circumstances, forecasts of Fund commitments based on GFN concepts must be treated with considerable caution.

B. Capital Flows

22. **The volume, variety and volatility of capital flows continued to grow during the 1990s as the depth and breadth of global financial integration increased.**[7] The general upward trend in capital flows to emerging market countries that began in the 1970s, but was curtailed in the financial crises of the 1980s, resumed and accelerated during the first half of the 1990s, before easing in the wake of the latest crises. Gross private market financing grew strongly in absolute terms and relative to GDP through 1996, but has since eased somewhat. Net capital flows also increased sharply in the first half of the decade, but have declined markedly as market access has become more difficult (Figure 2). Moreover, the share of the private sector as a source of capital flows to emerging markets and as recipients of capital flows also continues to grow in importance, although the composition has changed in important ways. In particular, foreign direct investment has steadily increased despite the recent crises and portfolio investment, particularly bond issuance, has increased relative to bank loans (Figures 3 and 4). A notable change in the 1990s has been the emergence of the private sector as a major user of imported capital.

23. **The financial crises of the 1990s have been marked by large reversals of capital flows which have affected a wider range of countries accounting for a larger share of world output than in previous crises.** The volatility of gross private market financing to emerging market countries increased in the 1990s compared to the 1980s, while the volatility of net private capital flows was similar between the two periods.[8] The levels of gross private market financing in 1997–2001 are above those in the 1980s and the early 1990s, and there has been a significant propensity for these flows to stop or reverse suddenly in 1997–2001

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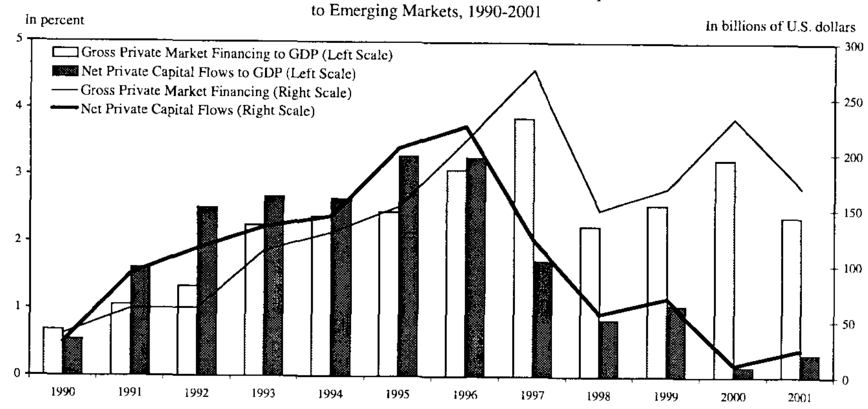
[7] For a detailed discussion of capital flows to emerging market countries, see Mussa, Swoboda, Zettelmeyer and Jeanne, International Monetary Fund 2000, "Moderating Fluctuations in Capital Flows to Emerging Market Economies," Chap. 4 in *Reforming the International Monetary and Financial System*, edited by Kenen and Swoboda.

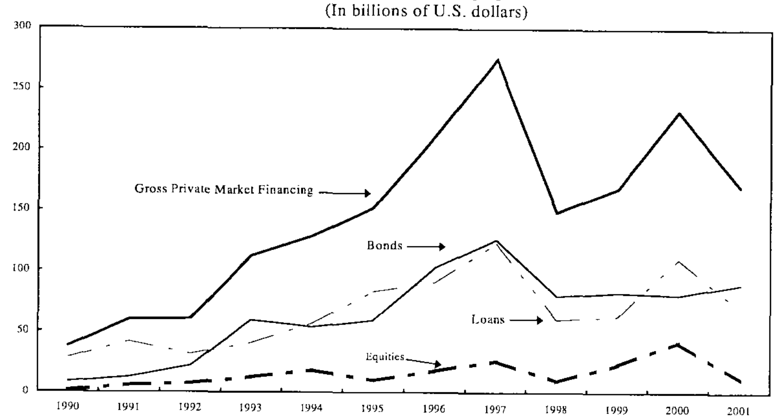
[8] See pages 123–30 in the Appendix of "Moderating Fluctuations in Capital Flows to Emerging Market Economies" op. cit.

Figure 2. Gross Private Market Financing and Net Private Capital Flows to Emerging Markets, 1990-2001



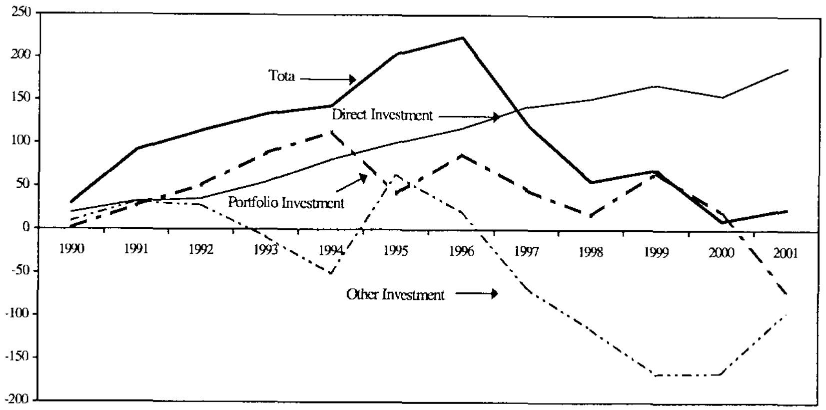
Source: Capital Data and World Economic Outlook database.

Figure 3. Gross Market Financing to Emerging Markets, 1990-2001
(In billions of U.S. dollars)



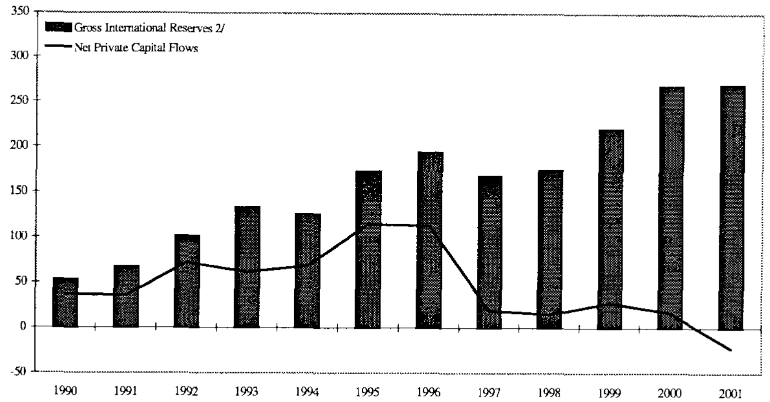
Source: Capital Data.

Figure 4. Principal Components of Net Private Capital Flows to Emerging Markets, 1990-2001
(In billions of U.S. dollars)



Source: World Economic Outlook database.

Figure 5. Gross International Reserves and Net Private Capital Flows for Members With High Acess to Fund Resourses, 1990-20011/
(In billions of U.S. dollars)



Source: *International Financial Statistics*
1/ Argentina, Brazil, Indonesia, Korea, Mexico, Russia, Thailand, Turkey.
2/ Total reserves with gold valued at SDR 35 per ounce.

for countries experiencing capital account crises. Moreover, crises have tended to occur in more countries simultaneously (or in close succession) than in the past and recent empirical work[9] concludes that the incidence and duration of contagion, in terms of co-movement in spreads, was significantly higher in the 1990s than in the 1980s.

24. **In the late 1990s, the incidence of reversals of capital flows has increased compared to the 1980s and the early 1990s and this trend has continued in 2000–01.** In particular, the larger emerging market economies, which account for the bulk of private capital flows and include those members that have had high access levels to Fund resources have experienced significant capital outflows relative to GDP (Table 3). In response, many of these countries have sought to increase their gross reserve holdings significantly (Figure 5).

Table 3. Reversals in Net Private Capital Flows for Selected Members, 1995-2001

	Argentina	Brazil	Indonesia	Korea	Mexico	Russia	Thailand	Turkey
Crisis Year 1/	2001	1999	1998	1997	1995	1996	1997	2001
Reversals/GDP 2/ (percent)	5	2	19	11	5	6	22	14

Source: World Economic Outlook database, Winter 2002 publication version as of August 9, 2002.

1/ The year with the largest recorded reversal of net private capital flows.
2/ The reversal is equal to the ratio of (change in net private capital flows plus errors and omissions) to GDP in the crisis year.

25. **A broader measure of variability, which includes both current and capital accounts, also points to greater volatility of flows to member countries.** In the work on revised quota formulas, staff considered a broader measure of capital variability, which covered current receipts and net capital flows, and it may be useful to consider a similar measure to examine trends in capital flows.[10] This measure of capital movements indicates that the variability of these flows is large relative to total quotas and increased during the 1990s for all members in the aggregate. In 1995–99, this measure of variability was equivalent to more than four times total quotas and had increased by 50 percent compared to 1990–94. Using the same measure but narrowing country coverage to include only emerging market countries, indicates that variability in 1995–99 was also equivalent to more than four times quotas of these members, but increased by only 3 percent compared to 1990–94.

[9] Kaminsky, G. L. and C. M. Reinhart, "Financial Crises in Asia and Latin America: Then and Now", *American Economic Review*, Vol. 88, No. 2, May 1998 and Forbes, K. and R. Rigobon, "Contagion in Latin America: Definitions, Measurement, and Policy Implications", *NBER Working Paper* No. 7885, September 2000.

[10] See *Alternative Quota Formulas—Considerations* (SM/01/293, 9/27/01). The measure used here has the same coverage of balance of payments aggregates as that used in SM/01/293, i.e., capital account variability is equal to the standard deviation of the sum of current receipts and net capital inflows. However, due to lack of historic data, it uses a different time period (five rather than thirteen years) and does not employ a three-year moving average.

C. Vulnerabilities Assessments

26. **The Fund's work on assessing countries' vulnerabilities to various shocks may provide additional information in arriving at a judgment on the Fund's size.** These vulnerabilities assessments identify countries that have some significant probability of an external crisis and Fund involvement over the next 6–12 months and provide a snapshot assessment of financing requirements and possible sources of financing. Recent assessments indicate that a significant number of members face a not entirely remote possibility of external crises. Financing requirements reflect the growing importance of capital flows, with current account deficits accounting for only one-tenth of total financing requirements and the bulk of the remainder attributable to maturing short-term debt and amortization of medium- and long-term debt account.

27. **While private markets will provide the bulk of financing to these countries and reserve holdings provide an important cushion if market access is disrupted temporarily, the potential impact of extended disruptions in market access could be quite large.** Even if such disruptions affected only a small sub-set of these members, there could be significant demand for Fund resources that could quickly materialize (even with significant policy adjustment), and place a strain on the Fund's forward commitment capacity. For example, if only a few of the members currently considered to be vulnerable were to obtain Fund arrangements with access of 500 percent of quota—based on the average quota size of those members assessed to have the highest probability of an external crisis and Fund involvement—this could result in new Fund commitments exceeding SDR 20 billion.

28. **In conclusion, indicators of the size of the Fund relative to the world economy and potential financing needs point to a continued decline which could impair the credibility of the Fund as an "insurance" provider and weaken the institution's ability to fulfill its important responsibilities.** All the traditional indicators suggest that a quota increase would be needed to restore the Fund's relative size, particularly in relation to GDP. Moreover, members' potential financing needs and measures of vulnerability to balance of payments problems suggest that potential demand for Fund resources could be substantial. A next step in assessing the adequacy of the Fund's resources base is to consider the impact of such potential demand on the Fund's liquidity.

IV. Illustrative Scenarios

29. **Assessments of the adequacy of the Fund's resource base must consider the Fund's current and prospective liquidity position and the potential demand for Fund resources.** As discussed above, changes in the global economic environment and Fund financial policies have resulted in greater volatility in use of Fund resources and made it more difficult to project future demand.

30. **Since 1994/95, the Fund has provided large amounts of financing in response to a rolling series of crises** that began in Mexico, passed through Asia and Russia, and presently is in South America and Turkey. The ability of the Fund to respond was due in part

to the fact that each episode of crisis was largely distinct and some large borrowers were able to make accelerated repayments that helped finance the next crisis (see Table 4). Moreover, the Fund was able to use borrowed resources in 1998/99, when its liquidity was low, prior to implementation of the quota increase under the Eleventh General Review.

Table 4. The Fund's Liquidity, 1995-2002
(In billions of SDRs)

	1995	1996	1997	1998	1999	2000	2001	2002 1/ June
Flows during the preceding 12 months								
Commitments	21.9	11.6	28.4	30.6	13.7	16.8	31.2	15.8
Purchases	17.0	5.3	16.1	20.6	10.0	7.2	23.8	17.8
Repurchases	6.7	5.1	5.7	6.7	19.4	15.2	13.3	11.7
End of period								
1. Usable resources	58.0	61.1	50.7	53.6	94.9	109.7	102.4	99.4
2. Undrawn balances under GRA arrangements	8.8	13.2	20.7	27.3	21.5	20.9	25.8	19.5
3. Uncommitted usable resources (1-2)	49.2	47.8	30.1	26.3	73.4	88.8	76.6	79.9
4. Projected repurchases	5.1	5.7	6.7	19.4	15.2	13.3	17.9	15.7
5. One-year forward capacity to make financial commitments from own resources (3 + 4 - 6)	26.9	26.1	9.4	18.3	48.6	62.1	54.5	55.6
Memorandum items, end of period								
6. Prudential minimum uncommitted usable resourc	27.4	27.4	27.4	27.4	40.0	40.0	40.0	40.0
7. GRA credit outstanding	35.9	36.1	46.6	60.5	51.1	43.0	53.5	59.6
8. Outstanding GAB/NAB borrowing	...	...	...	6.3	...	...	...	...

1/ The flows in 2002 cover a six-month period: January-June 2002.

31. **In view of the difficulties in forecasting demand for Fund resources, the staff has considered three illustrative scenarios of potential demand in order to assess their effects on the Fund's forward commitment capacity.**[11] Demand is measured in terms of potential financial commitments made by the Fund to members, which reflects the increased emphasis on making financial commitments to support members' crisis prevention efforts. The scenarios focus on floating one- or two-year periods that could occur at any time during the next five years. As an illustrative starting point for the scenarios, the Fund's position as of end-June 2002 is used, with outstanding credit of SDR 60 billion and one year forward commitment capacity from own resources of SDR 56 billion. The choice of starting position and the length of period used in the scenarios are not forecasts. Moreover, none of the scenarios represent a catastrophic or a worst-case event and all reflect demand fluctuations of a size that has been experienced in the last seven years. As such, all the scenarios are

[11] As defined in Table 4. Forward commitment capacity is a new measure of liquidity proposed by the staff in *The Fund's Liquidity Position—Review and Outlook* (SM/01/171, 10/4/01). See also SM/02/68, 4/16/02) and Concluding Remarks of the Acting Chair (BUFF/02/68, 5/15/02).

plausible, although the probability of any of the three scenarios occurring is unknowable and therefore each scenario should be considered purely illustrative of the impact on Fund resources of potential levels of demand.

32. **The first scenario illustrates a level of demand that could occur in a situation of a generally favorable world economy, with a few and separate crises.** The level of new commitments is similar to the average level experienced in 1996–2001, plus commitments under the CCL of SDR 14 billion.[12] The scenario illustrates the effect of maintaining Fund exposure at the end-June 2002 levels, including to high access cases, with repurchase expectations either being extended or refinanced through new commitments. The phasing of commitments and purchases is in line with historical experience. The result is that Fund credit outstanding increases slightly, and forward commitment capacity declines mainly on account of the new CCL commitments (Table 5). In this scenario, the Fund would be well positioned to maintain its current credit outstanding, provide several CCLs, and meet financing needs that do not involve exceptional or large SRF access.

33. **The second scenario illustrates potential demand in a situation when several severe financial crises take place within one year and with contagion**. This results in a sharp spike in demand for Fund resources. In this scenario, the magnitude of the non-CCL demand is assumed to be on the order of magnitude of the level experienced during the Asian and Russian crises in 1997–98. To simplify, the level of CCL demand is assumed to be the same as in Scenario 1. The scenario also assumes that the bulk of the non-CCL commitments would be to support members' crisis resolution efforts, the phasing would be frontloaded, and a large share would be disbursed.[13] All repurchase expectations would be extended, as many members experienced a weakening of their external positions. In this scenario, there are sharp spikes in the levels of new commitments and credit outstanding, which exhaust the Fund's forward commitment capacity from own resources and requires activation of the Fund's borrowing arrangements.

[12] The CCL demand component takes account of the International Monetary and Financial Committee's encouragement to members to use CCLs as a signal of strength of policies and safeguard against contagion, e.g., at its Ottawa meeting in November 2001. For illustrative purposes this assumes that members with combined quotas of SDR 3.5 billion request CCL arrangements with an average access level of 400 percent.

[13] This reflects experience to date with SRF commitments made to Argentina, Brazil, Korea, and Turkey.

Table 5. Impact of Illustrative Scenarios on the Fund's Forward Commitment Capacity (FCC)

	Last 12 months July 2001- June 2002	Scenarios			
		1	2	3	
		Maintain Current Exposure plus CCL	One-Year Crisis	Two-Year Crisis	
				Year 1	Year 2
		(SDR billions)			
Flows					
Commitments	28	42	66	33	33
Purchases	32	18	62	32	32
Repurchases	18	14	9	9	15
End of period					
GRA credit outstanding	60	63	113	82	99
One-year FCC from own resources	56	41	0	31	32

Explanatory Notes: The scenarios all relate to the same initial levels of forward commitment capacity, GRA credit outstanding, and undrawn balances under existing commitments, as of end-June 2002.

Scenario 1 assumes that current repurchase expectations are extended or refinanced, that all repurchases and expiring undrawn balances are refinanced with new commitments, and that the projected level of purchases and repurchases under new commitments are based on historical experience during 1996-2001. In addition, SDR 14 billion of CCL commitments are made and 5 percent of these commitments are disbursed with repurchases on the expectations schedule, as provided in the decision establishing the CCL.

Scenario 2 assumes non-CCL demand for Fund resources on the order of magnitude of the level experienced during the Asian and Russian crises in 1997 and 1998, that CCL demand is the same as in Scenario 1 (SDR 14 billion), that virtually all new non-CCL and one third of CCL commitments are disbursed (based on a worst case assumption and the CCL decision), that repurchases are extended to the obligations schedule, and that half of current undrawn balances are disbursed.

Scenario 3 assumes the same level of commitments as in Scenario 2, but this amount is divided equally over 2 years. The assumptions used for purchases and repurchases are the same as those in Scenario 2 and half of the current undrawn balances are disbursed in each of the 2 years.

34. **The third scenario illustrates potential demand in a situation when financial crises and contagion occur, but their incidence is less severe and less concentrated in time**. In this scenario, the same level of commitments as in scenario 2 is assumed, but spread over a two-year period. This results in some reduction of the Fund's forward commitment capacity and an increase in credit outstanding, but the Fund still retains a considerable forward commitment capacity. This is similar to the experience of the last three years, after the increase under the Eleventh General Quota review had been implemented in early 1999, where episodes of crises have not been overly concentrated and where the Fund has been able to respond to members' needs during these crises without undue stress on its resource base.

35. **These scenarios illustrate that there are some circumstances when the current resource base is adequate to meet potential demand from members, and other circumstances when forward commitment capacity from own resources could be depleted and borrowing arrangements would need to be activated**. The likelihood of any of these scenarios occurring is unknown, but each is plausible and fully within the historical experience. This suggests that a judgment needs to be made on how to prepare for the possibility that the Fund's forward commitment capacity from own resources could be depleted. For reasons of prudence, as discussed in Section II, this could involve an increase in quotas. A further factor in arriving at this judgment is the role of borrowed resources.

V. BORROWING

36. **The Fund has considered quotas as the basic source of its financing while acknowledging that borrowing on a limited basis can provide an important supplement.**[14] The Fund maintains two standing borrowing arrangements, the New and the General Arrangements to Borrow (NAB and GAB) with a total borrowing capacity of SDR 34 billion, and has borrowed on an ad hoc basis from official sources.[15] The Fund may borrow from private markets, although it has never done so because of concerns about consistency with the cooperative nature of the institution, uncertain availability in times of greatest need, and potential cost. The NAB/GAB provide a useful degree of flexibility, especially at times when the Fund's liquidity is under strain, but are limited to specific purposes involving threats to the international monetary system and entail consultation and approval requirements, which may prevent application to the broad range of circumstances that may confront the Fund. Moreover, under the NAB, the cost of borrowing has exceeded the cost of using owned resources. Finally, concern has been expressed that excessive reliance on borrowing from a relatively small group of members to finance Fund activities

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[14] See also Box 3 in *Twelfth General Review of Quotas—Preliminary Consideration and Next Steps* (SM/02/22, 1/22/02).

[15] E.g., the Oil Facility of 1974/75 and the Supplementary Financing Facility in 1979/81.

could raise fundamental issues about the cooperative character and thus the governance of the institution.

37. **In addition to the above considerations, a judgment regarding the appropriate balance between owned and borrowed resources will need to consider the nature of the balance of payments imbalances likely to confront Fund members in the future, including duration.** The activation of the NAB/GAB in 1998 reflected the widespread view that borrowing by the Fund should be temporary and took place against the background of the quota increase under the Eleventh General Review which had already been agreed upon and was expected to become effective in 1999, thus providing a clear prospect of early retirement of the borrowing. In the circumstances where the magnitude and timing of demand for Fund resources have become more uncertain, reliance on permanent owned resources in the form of quota subscriptions may be more consistent with the Fund's financing needs. At the same time, borrowing remains useful in circumstances where it is relatively clear that the expected use of Fund resources will be brief (e.g., 1–2 years). Ex-ante, this may be difficult to know, however.

38. **Both the NAB and the GAB are scheduled to be renewed in 2003 and reviews of the arrangements are required in late 2002.** Consultations with NAB/GAB creditors on renewal of the borrowing arrangements have been initiated and the Executive Board will review the arrangements after the Annual Meetings.

VI. NEXT STEPS, CONCLUSIONS, AND ISSUES FOR DISCUSSION

A. Next Steps

39. **The staff would propose as a next step following consideration of the present paper by the Executive Board that a status report be prepared for the IMFC on the Board's discussions of the size and distribution of Fund quotas, including possible reforms of the quota formulas and basic votes, that could be considered by Ministers at the Fall meeting.** A further Board meeting could be scheduled for late in the year to take stock of views following the IMFC meeting as the basis for the required report to the Board of Governors on the Twelfth General Review of Quotas that would be submitted before end January 2003. The Executive Board would also undertake the scheduled review of the NAB and GAB (tentatively planned for late October or early November, 2002). This proposed work program would facilitate continued consideration of quota issues without prejudicing the conclusion and provide time to better assess the outcome of the discussions on access policy, review of the CCL, and PSI/SDRM as well as the outlook for the world economy and financial market conditions.

B. Conclusions

40. The paper has reviewed the implications of the evolving role of the Fund in a more integrated world economy for assessing the adequacy of the Fund's resource base, and has provided quantitative indicators to help inform judgments regarding the possible need for an increase in quotas.

41. **The principal conclusions** that could be drawn are as follows:

- **The increased emphasis on contingent financing for crisis prevention and the greater scope for large disbursements to help resolve crisis are likely to require the Fund to commit resources in potentially large cumulative amounts.** In these circumstances, the traditional approaches for assessing resource adequacy need to be modified to provide a more forward-looking approach.

- The Executive Board is reviewing policies on access to Fund resources and on private sector involvement in crisis resolution, inter alia, with a view to minimizing moral hazard concerns and clarifying the situations under which high access can be provided. **In addition, measures are in place to strengthen the revolving character of Fund resources, including repurchase expectations and surcharges, that are making the use of Fund resources more efficient.**

- **The erosion in the size of the Fund relative to the world economy may pose a risk to the institution's ability to extend the credible insurance necessary to provide members with the confidence** required to deal with the opportunities and risks of a more integrated world economy and global financial markets.

- **Illustrative scenarios** of possible demand for Fund financing that are fully within bounds of recent historical experience **suggest that in certain situations the Fund's forward commitment capacity from owned resources could become eroded.**

- **In these circumstances, prudence suggests that decisions regarding a quota increase should be made before the Fund's capacity to assist members is put into question,** especially as the costs of having a Fund that is unable to meet its responsibilities far exceed the costs of having a Fund that may have a large commitment capacity that does not need to be utilized.

C. Issues for Discussion

42. Executive Directors may wish to give their views on these conclusions and the related issues:

- **What are Directors' views on the implications of the evolving role of the Fund in crisis prevention and resolution in assessing the adequacy of the Fund's resource base?**

- **Do Directors believe that concerns about moral hazard should be addressed through targeted measures** related to access and PSI/SDRM or by limiting the overall size of Fund resources? How do Directors see the relationship between these issues in terms of the timing of possible decisions?

- **What are Directors' views regarding the implications of a further decline in the Fund's resource base relative to the world economy and financial flows** on the Fund's ability to provide credible "insurance" to members?

- **What are Directors' views on the illustrative scenarios** presented by staff and what implications might they have for judgments regarding the adequacy of Fund resources?