INTERNATIONAL MONETARY FUND

Alternative Quota Formulas: Considerations

Prepared by the Treasurer's and Statistics Departments

(In cooperation with other Departments)

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This paper is the latest in a series of ongoing work examining quota formulas. Calculations in the paper are purely illustrative.

EXECUTIVE SUMMARY

The paper attempts to advance the work on alternative quota formulas in response to concerns that the current formulas are outdated and produce calculated quotas, which do not adequately reflect members' relative positions in the world economy and current economic developments. The paper reviews the development and role of the quota formulas; discusses the problems with the existing formulas and proposals for reform, especially by the Quota Formula Review Group (QFRG); considers issues related to the choice of variables and the specification of formulas; and provides illustrative calculations based on preliminary data.

The staff has followed an evolutionary approach in considering possible alternative formulas. The variables that have been used traditionally to reflect the Fund's financial functions have been retained but modernized to take account of changes in the world economy and to deal with certain specification problems. In particular:

- **GDP,** converted to a common SDR base with market exchange rates, would remain the principal measure of capacity to provide resources but a three-year average would be used to smooth possible large cyclical and exchange rate fluctuations.

- **Openness** would be retained as an indicator of integration in the world economy although a simplified specification is suggested to deal with methodological problems with an openness ratio.

- **Variability** of current receipts would continue to serve as an indicator of potential vulnerability but would be expanded to include net capital flows in recognition of the growing role of international capital markets.

- **Reserves** would be eliminated as a variable as they no longer provide a good measure of either capacity to provide resources or potential need for financing, especially for countries with access to global capital markets.

The paper examines alternative specifications of formulas using these variables to determine whether they meet certain basic requirements of simplicity, consistency, and reasonableness. The three approaches considered include formulas that are:

- Linear in quota levels and in levels of individual country variables.

- Linear in quota shares and individual country shares in the total for each variable.

- Multiplicative or log-linear in quota levels and with individual country variables that are scaled by the use of an exponent.

The paper presents calculated illustrative quota shares on the basis of each of the formulas using current data in order to demonstrate the various properties of the formulas. As an initial, neutral assumption, weights were assigned to the variables in each formula to

replicate actual quotas for broad country groups (Variant A). Calculations were also made on the basis of equal weights (Variant B) and, in the non-linear formula, weights that would minimize the deviation of actual from calculated quotas for each member (Variant C). The paper also presents calculated quota shares based on the current formulas using latest available data.

The results of these quantifications suggest that:

- **Linear formulas require very large weights for variability relative to GDP and openness to approximate the current distribution of actual quotas,** which may not reflect the supply and demand functions of quotas in an analytically sound manner. A more equal weighting pattern, however, points to higher calculated quota shares for the advanced economies, especially the major industrial countries, as they account for the largest share of GDP. The more equal weighting pattern produces quota shares that are very similar to the calculated quotas derived from the existing set of formulas for broad country groups.

- **Non-linear formulas in which the variables are scaled would compress the distribution of calculated quotas and thus would provide greater flexibility in achieving a desired distribution of calculated quotas with variable weights that are more evenly distributed.** Non-linear formulas also have the desirable feature that an equal percentage increase in a variable would have the same effect on the calculated quotas of members and a common scaling factor for the variables would alter the distribution of calculated quota shares but not the ranking of members. The results of a non-linear formula are, however, very sensitive to the scaling factor that is used.

The alternative formulas presented in the paper would produce calculated quota shares for individual members that continue to diverge significantly from actual quota shares for most members. Two features are worth noting. First, regardless of the formula type and variables used, countries that have experienced faster than average growth rates during past decades tend to see an increase in their calculated quota shares. Second, there are some countries whose calculated quota shares are significantly higher than their actual quota shares in any formulation.

The paper seeks guidance from the Executive Board on the variables that should be included in a revised formula, the preferred specification of the formula, and the direction of adjustment in quota shares that the Board would consider desirable. The alternative quota formulas suggested in the paper represent a substantial simplification of the current approach. The proposed variables are consistent with the traditional financial function of quotas and would reflect developments in the world economy. Moreover, the specification of the formula and the weights assigned to variables can help to achieve particular distributions of calculated quotas that would be consistent with the Board's preference for gradual adjustment.

I. INTRODUCTION

1.   The report of the Executive Board to the Board of Governors on the increases in quotas under the Eleventh General Review recommended "that the formulas used to calculate quotas be reviewed promptly after the completion of the Eleventh General Review."[1] As a first step in this process, a group of external experts was established to provide the Fund with an independent review of the quota formulas. The panel of eight experts, known as the Quota Formula Review Group (QFRG), submitted a report to the Executive Board with recommendations in May 2000. This report and an accompanying staff commentary were discussed at an Executive Board seminar in August 2000.[2] At that time, Directors agreed on the need to carry forward the work of the panel with a view to developing quota formulas that more fully reflect members' positions in the world economy. The International Monetary and Financial Committee (IMFC) supported this view at its meeting in Prague in September 2000, and further consideration of alternative formulas was included in the Fund's work program. A quantification of the formula proposed by the QFRG group was prepared by the staff in April 2001.[3]

2.   **This paper attempts to advance the work on alternative quota formulas**. Chapter II of the paper recalls the development and the role of quota formulas, problems with the existing set of formulas, the QFRG work, and the staff's commentary and quantification. Chapters III, IV, and V discuss issues related to the choice and specification of variables to be included in quota formulas and the mathematical specification of formulas, and provide illustrative calculations. Chapter VI draws some conclusions and seeks Executive Directors' guidance on the direction of further work. Data issues are discussed in Annex I, and the evolution of quota formulas is shown in Annex II.

II. HISTORY, ROLE AND USE OF QUOTA FORMULAS

3.   **The Articles of Agreement provide for a general review and possible adjustment of quotas every five years but do not indicate how quotas should be determined**. The Executive Board has neither formally adopted nor endorsed any particular method for

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[1] *Eleventh General Review of Quotas—Draft Report to the Board of Governors and Proposed Resolution* (SM/97/289, 12/19/97).

[2] *Report to the IMF Executive Board of the Quota Formula Group* (EBAP/00/52, 5/01/00 and Supplements 1, 2, and 3, all 5/01/00), and *Staff Commentary on the External Review of the Quota Formulas* (EBAP/00/66, 6/07/00). These papers are available on the Fund's web site.

[3] *External Review of Quota Formulas—Quantification* (EBAP/01/29, 4/13/01). This paper is available on the Fund's web site.

determining quotas or quota increases. However, over the years, the Fund has developed quantitative criteria (or formulas) to "calculate quotas," which help determine the initial quota of new members, and serve as a guide in determining increases in quotas for existing members.[4]

4. **Formulas have played a role in the determination of quota increases since 1963**. Quota formulas were used to measure the extent to which calculated quotas exceeded actual quotas in the Fifth through Seventh Reviews (late 1960s–1970s), and this measure of divergence between actual and calculated quotas formed the basis for distributing a portion of the increases agreed in those reviews. In more recent quota reviews (the Eighth (1981/83), Ninth (1990/92), and Eleventh (1997/99) Reviews) quota formulas served as the distribution key for allocating the selective (i.e., nonproportional) component of the overall quota increase.[5] However, the impact of formulas on the distribution of actual quotas of members has been modest.

A. Relationship Between Formulas and the Functions of Quotas

5. **Quotas calculated on the basis of formulas are a composite measure of the relative economic size of members based on variables that reflect the multiple functions that quotas perform**. The quota functions are: (i) to determine the maximum financial commitment of resources to the Fund by each member and thus the resource base of the institution,[6] (ii) to provide the basis for members' access to Fund resources; (iii) to determine voting power;[7] and (iv) to distribute general allocations of SDRs.[8] Given this multiplicity of functions, it is difficult to identify a particular set of economic variables and to combine them in a formula that would reflect a reasonable balance with respect to these four functions.

B. Bretton Woods Formula

6. **The Bretton Woods formula was introduced in 1944 to help derive the initial quotas for the 45 original members of the Fund.** The use of a formula provided a statistical base to the process of determining quotas, although the determination of the relevant

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[4] Given the near-universal membership in the IMF, the primary role in the future for quota formulas will be to provide a basis for allocating quota increases. Consequently, this paper does not address issues relating to the use of the formulas in determining initial quotas.

[5] There was no quota increase associated with the Tenth General Review.

[6] Quotas also serve as the distribution key for transfers in the Financial Transactions Plan.

[7] Each member receives 250 basic votes plus 1 vote for each SDR 100,000 of quota. Changes in basic votes would require an amendment of the Articles of Agreement.

[8] The Articles of Agreement mention the first two functions.

economic criteria and the weights assigned to them in the formula reflected preconceived notions about the overall size of the Fund and the relative economic size of members.[9] Moreover, adjustments were made to take account of noneconomic considerations in order to achieve a quota distribution that commanded wide support.

7.   **The original Bretton Woods formula was a single equation intended to provide a comprehensive measure of the relative size of a country's economy that took into account important differences in economic structures of countries** (Annex II). The formula contained the following variables: (i) national income as a measure of a country's economic size and ability to contribute to Fund resources; (ii) reserves, also a measure of a member's capacity to finance Fund operations, but with a smaller weight;[10] (iii) merchandise imports as an indicator of possible need to use IMF resources; (iv) variability of exports with a high weight to reflect vulnerability to external trade shocks that could lead to a possible need for financing; and (v) a multiplicative factor that increased the role of exports relative to national income in the determination of calculated quotas.

8.   **The Bretton Woods formula was revised and a number of alternative formulas were added in 1962/63.** The changes were intended to increase the quotas of smaller primary commodity producing countries—those with quotas less than US$60 million—and to reestablish for most other countries calculated quotas that bore a "reasonable" relationship to the actual quotas. Two main changes were made to the Bretton Woods formula: (i) the original coefficients were reduced by half to bring the total of calculated quotas more in line with the sum of actual quotas; and (ii) the measure of variability was modified to remove the effects of a rising trend in exports. In addition, improvements in the reporting of invisible transactions and transfers permitted additional calculations on the basis of more comprehensive current account measures, with current payments replacing merchandise imports, current receipts for merchandise exports, and variability of current receipts taking the place of variability of merchandise exports. The original variables were retained as Set I data, while the new variables were referred to as Set II data.

9.   **Nevertheless, the revised Bretton Woods formula did not adequately capture the economic structure of smaller primary commodity producing countries.** Therefore, four derivative formulas were developed that provided greater emphasis on trade and variability and reduced the role of national income and reserves. Moreover, the multiplicative factor was eliminated from two of the derived formulas. A member's calculated quota was determined as the larger of the Bretton Woods formula or the average of the two lowest calculated quotas

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[9] See Raymond F. Mikesell, "The Bretton Woods Debate: A Memoir," *Essays in International Finance*, No. 192 (Princeton, NJ: International Finance Section, Department of Economics, Princeton University, 1994).

[10] Because reserve holdings were subject to significant fluctuations and had an inverse relationship with the need to use IMF resources.

from the derived formulas. In effect, a dual structure of ten formulas was utilized (i.e., five formulas based on two sets of data) with the larger countries relying primarily on the Bretton Woods formula and smaller, more open countries with highly unstable external sectors using the supplementary formulas.

10.   **The quota formulas were simplified and updated in 1981/82**. These changes consisted of: (i) focusing exclusively on Set II data, effectively eliminating five of the ten formulas used since 1963; (ii) replacing national income by GDP, which was viewed as a more comprehensive and readily available measure of national output; (iii) broadening the measure of reserves to include holdings of SDRs, ECUs, and IMF reserve positions and calculation of the holdings as a twelve-month average rather than an end-of-period total; and (iv) reduction of the coefficient of variability in the four derivative formulas by 20 percent to moderate the impact of very sharp increases in the prices of certain commodities, especially the increases in oil prices in 1973/74 and 1979. There have been no changes in the formulas since 1983, although the Executive Board considered proposals for changes, mostly on the variables to be included, on several occasions. Annex II sets out quota formulas that have been used since 1944.

C. The Quota Formula Review Group (QFRG)

11.   **During the Eleventh General Review of Quotas, concern was expressed that the current quota formulas did not reflect changes in the world economy, such as the growing role of emerging markets and the increased importance of international capital.** A consensus on possible revisions was not achieved, but the widespread dissatisfaction with the formulas led to an agreement to initiate a further review of the method for calculating quotas after the completion of the Eleventh General Review.[11]

12.   **The QFRG was convened in 1999 to provide the Executive Board with an independent review of the quota formulas**. The eight-member panel, chaired by Professor Richard Cooper (Harvard University), was asked to review the quota formulas with respect to "their adequacy to help determine members' calculated quotas … in a manner that reasonably reflects members' relative positions in the world economy as well as their relative need for and contributions to the IMF's financial resources, taking into account changes in the functioning of the world economy and the international financial system and in light of the increasing globalization of markets." The QFRG's report was submitted to the Executive Board in May 2000 and considered at a Board seminar in August. A staff commentary on the report was also provided and discussed at the seminar (see Footnote 2).

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[11] The discussions resulted in an overall quota increase of 45 percent, 75 percent of which was allocated equiproportionately on the basis of existing quotas and 25 percent on the basis of calculated quotas. Furthermore, of the 25 percent, two fifths (10 percent of the total increase) was distributed exclusively to those members with calculated quota shares exceeding actual shares.

13.   **The QFRG reviewed the history of the quota formulas and provided an analysis of possible variables that could be included in a revised formula**. The QFRG also suggested criteria for assessing proposals for changes in the formulas, notably a sound economic basis for variables, reflecting changes in the world economy, consistency with the multiple functions of quotas, and simplicity and transparency. Finally, the QFRG recommended a single formula with two variables: GDP, as a measure of ability to contribute resources to the Fund, and variability of current receipts and net long-term capital flows, as a measure of external vulnerability, with the GDP variable having the larger weight (Box 1).

14.   **The staff commentary supported the objectives of the QFRG.** The staff agreed in particular with the goal of simplicity and the use of variables that reflect the functions of quotas. Staff also supported the use of GDP, converted to a common base at market exchange rates, and a broader measure of variability to indicate potential vulnerability.

15.   **However, staff expressed concern that the QFRG variability measure would not reflect vulnerability arising from short-term capital shocks**. Moreover, a partial quantification of the QFRG-recommended formula pointed to a distribution of calculated quotas that most members would consider unacceptable. A subsequent, more comprehensive and updated quantification confirmed this preliminary calculation (see Footnote 3).

Box 1. Formula Proposed by QFRG

The QFRG suggested guiding principles for future reforms and presented recommendations to simplify and update the formulas. In particular, the report recommended the following formula:

$$Q = \alpha Y + \beta V$$

where Q = quota
         Y = GDP averaged over three years
         V = measure of external variability
         α, β = relative weights, $\alpha = 2\beta$, and all variables are expressed in terms of countries' shares in global totals.

The panel recommended that external variability in addition to current receipts also cover the variability of net long-term capital flows.

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16.   **The Executive Board seminar revealed a wide divergence of views on the issues raised in the QFRG report and the staff commentary**. Directors generally recognized the need to simplify the current formulas and to update them to take account of the growing role of capital flows. Concern was expressed, however, that the specific formula recommended by the panel pointed toward a greater concentration of quotas among the largest industrial countries.

D. Use and Impact of Quota Formulas

17.   It is useful to recall how the quota formulas have been used to adjust quota shares and the properties of the current formulas before examining possible revisions.

18.   **Since the last revision of the quota formulas in 1981/82, calculated quotas have been used to facilitate an adjustment of quota shares to reflect changes in the world economy.** This has been achieved by distributing a portion of the overall increase on the basis of calculated quota shares. **However, the magnitude and pace of adjustment has been modest,** because the size of the selective (nonproportional) increase available for adjustment has been small relative to the overall size of total quotas and widely distributed among members.

19.   **The present five formulas utilize essentially the same set of economic variables but combine them in different ways and with different weights**. The weights assigned to each variable reflect adjustments for the different scale of each variable and a judgment by the Executive Board on the relative importance of each variable in light of the different functions of quotas and the economic structure of member countries. Thus, the relative contribution of GDP is greatest in the Bretton Woods formula but is much less in the four derived formulas due to much higher weights for other factors, especially variability. For example, in the Eleventh Review, the coefficient for variability in the derived formulas was up to 232 times greater than GDP, while the magnitude of variability was about 1 percent of the size of GDP (Table 1). The underlying distribution of the variables across country groups for the Eleventh Review is shown in Table 2.

20.   **Calculated quotas for members with relatively large, closed economies have tended to be generated by the Bretton Woods formula while calculated quotas for smaller, more open economies have generally been determined by the derived formulas.** For the Eleventh Review, the Bretton Woods formula was used for 72 countries (accounting for 65 percent of total quotas) (Table 3). Combinations of formulas III plus M4, and IV plus M7, were used by 94 members, while formulas III plus M7 and IV plus M4 were not used for any member, even though the latter combinations generate higher calculated quotas for many members. This occurs because the derivation of the calculated quota provides that the average of the two lowest calculated quotas based on the derived formulas be used, in order to mitigate the effects of the very high weights applied to the variability measure in these formulas.

Table 1. Relative Size of Variable Coefficients in Current Five Formulas
(In relation to coefficient on GDP)

	Formula Coefficients 1/				
	GDP	Current Receipts	Current Payments	Variability	Reserves
Bretton Woods	1.0	0	5.0	22.8	2.5
Scheme III	1.0	0	12.0	62.3	3.2
Scheme IV	1.0	0	15.6	171.1	8.7
Scheme M4	1.0	8.8	8.8	167.0	8.5
Scheme M7	1.0	8.7	8.7	231.8	11.7
Memorandum items:					
Average size of variables 2/	98,233	20,277	20,452	950	4,199
(in relation to GDP)	1.00	0.21	0.21	0.01	0.04

1/ Formulas M4 and M7 are purely linear, while the linear part of the other three formulas is multiplied by the openness ratio (current receipts divided by GDP).
2/ In millions of SDRs. Calculated as the total value of the variables in the Eleventh Review divided by the number of countries.

Table 2. Distribution of Variables in World Totals: Eleventh Review Data
(In percent)

	Actual Quotas 2/	GDP	Current Receipts	Current Payments	Variability	Reserves
Advanced economies	61.6	79.2	75.9	74.6	58.1	59.9
Major advanced economies	46.0	68.3	55.3	54.2	44.2	36.1
Other 1/	15.6	10.8	20.5	20.4	13.9	23.8
Developing	30.9	18.3	20.0	21.2	30.4	37.0
Africa	5.5	1.4	2.2	2.4	4.2	1.9
Asia 1/	10.3	8.1	10.2	10.3	8.3	19.8
Middle East, Malta and Turkey	7.6	2.5	3.8	4.2	10.7	5.1
Western Hemisphere	7.5	6.3	3.8	4.3	7.3	10.2
Transition economies	7.5	2.5	4.1	4.2	11.5	3.0

1/ WEO classification except inclusion of Korea and Singapore under Asia instead of "other advanced."
2/ Except for the nine countries that have not yet consented to their proposed quota increase, for which Eleventh Review proposed quotas are used.

Table 3. Eleventh Review of Quotas: Distribution
of Applicable Formulas in Final Calculated Quotas

Applicable Formulas	Number of Countries
Bretton Woods	72
Scheme III plus IV	14
Scheme III plus M4	54
Scheme III plus M7	0
Scheme IV plus M4	0
Scheme IV plus M7	3
Scheme M4 plus M7	40

21.   **The formulas also are subject to a specification problem**. It was noted as early as 1949 that the use of the ratio of external receipts to GDP (in the Bretton Woods formula and subsequently in Schemes III and IV) could produce an anomalous result that a country with increasing GDP could experience a reduction in calculated quota. This anomaly occurs for countries with high ratios of current receipts to GDP, because the multiplicative coefficient tends to reduce the weight of the portion of GDP not attributable to external receipts.[12] With the rapid growth of exports relative to GDP for many countries, this anomaly has affected a growing number of Fund members (it is estimated that during the Eleventh Review some 88 members were affected to some degree).[13] However, a number of countries with lower ratios of current receipts to GDP, but still relatively open economies, continue to have higher calculated quotas due to the multiplicative coefficient, particularly in those formulas that include other measures of openness such as the level of current transactions.

III. CHOICE AND SPECIFICATION OF VARIABLES

22.   **The choice of variables to be included in a quota formula has been extensively discussed during previous quota reviews and a cautious approach has been taken to the introduction of new variables, particularly measures that could lead to significant changes in the distribution of quota shares**. Consequently, there has been a broad consensus since the 1960s on the variables that should be included in the formulas, although there is less agreement on the precise specification of these variables. The present work of the staff attempts to build on this broad consensus, focusing on a limited number of variables that appear to have wide support. In line with the discussions during the Eleventh Review and in

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[12] Using the Bretton Woods formula, an increase in GDP leads to a decline in quota Q, when

$$\frac{C}{Y} > \left[\frac{0.01Y}{(0.025R + 0.05P + 0.2276VC)} \right]$$ where C is current receipts, R is reserves, P is current payments, and VC is variability of current receipts.

[13] EBAP/00/52, Supplement 1, Table 1.1 (5/01/00).

the QFRG report, the staff also explored ways in which capital account variables could be introduced.

A. GDP

23.   **It is generally accepted that GDP is the most comprehensive indicator of a country's ability to contribute resources to the Fund, as it measures the total amount of resources generated by a country.**[14] Moreover, as a measure of economic size it signifies a stake in the world economy. Data are available for almost all countries on a consistent basis and over time, which permits an assessment of the relative size of countries.

24.   **There are differing views on the measure of GDP that should be used**. The measure of GDP in the existing formulas is domestic currency GDP for the most recent year, converted into SDRs using market exchange rates. This measure has been criticized for a number of reasons. First, reliance on the most recently available data could result in the use of an unrepresentative year near a cyclical peak or trough of economic activity, or capture an unusually large exchange rate adjustment. Second, prices of nontradable goods and services produced and consumed in one country do not have a straightforward relationship with prices of similar goods in other countries, even adjusting for quality, which complicates interpretation of GDP converted in a common currency using market exchange rates across countries. This could imply that GDP in low-income countries is understated relative to advanced countries.

25.   **To address these concerns it has been proposed to use a measure of GDP averaged over a number of years**. However, reservations have been expressed about this approach because use of an extended period could result in the measurement of members' relative economic positions that would be less current than indicated by the most recent data.

26.   **Some Executive Directors have argued for the use of an appropriate index of purchasing power (PPP) rather than market exchange rates to adjust GDP.** GDP converted at PPP rates has been used for cross-country comparisons of the real value of output produced by an economy.[15] However, the QFRG and others have argued that a PPP measure would be a misleading indicator of a member's ability to contribute to the Fund or of potential need for Fund resources, where external markets are more relevant.[16] Furthermore,

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[14] It has been recognized that GDP by itself is not in all cases a good indicator of ability to contribute resources to the Fund. There are many countries with a relatively large GDP but low per capita GDP that cannot contribute to the same extent as countries with similar levels of GDP but higher per capita income. The same could apply to large closed economies with non-convertible currencies.

[15] For this reason, the Fund's *World Economic Outlook (WEO)* uses GDP converted at PPP rates as weights in aggregating individual countries' GDP growth rates to calculate world output growth.

[16] Empirical findings that GDP based on market exchange rates is generally lower than PPP-based GDP for developing countries are frequently attributed to the relatively lower productivity levels in these countries'

such measures are still not available for many Fund members and some of the calculations are based on fragmentary or out of date information.[17]

27.   **For the purpose of this paper, the staff proposes to continue using nominal GDP converted at market exchange rates as one of the variables in an alternative quota formula.** To smooth out cyclical effects and to reduce swings in GDP due to exchange rate movements, the staff has averaged GDP over a three-year period. Choosing a relatively short averaging period of three years would smooth fluctuations while limiting the potential problem that the resulting measure would not be an indication of a country's current economic position.[18]

B. Openness

28.   **Openness has been included in the quota formulas to reflect countries' integration in the world economy.** Judging the economic position of open economies by GDP alone may understate their position in the world economy and their ability to contribute, as the size of GDP does not indicate the degree to which output is available to meet external demand. Openness can also be seen as an indicator of the extent to which a country is dependent on imports and of potential need for Fund resources associated with external shocks.[19]

29.   **Openness in the present quota formulas appears both in the form of an openness indicator (the ratio of current receipts to GDP) and through the inclusion of current receipts and payments.** The openness indicator enters the formula as a multiplicative scaling factor. This leads to the anomalous result that the calculated quota of a country could decline if the growth of GDP exceeds the growth of exports (see paragraph 21). Because of this

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tradables sectors, which translates into lower wages and lower prices in their nontradables sectors. The PPP methodology essentially assigns one and the same price to a given good and services, no matter where produced. Since in developing countries these assigned prices are higher than market prices (in a common numeraire) such countries' GDPs are raised when PPP indices are used for the conversion. Use of a PPP-based measure in the existing formulas (focusing on the function of supplying resources to the Fund) would suggest, for example, that China could contribute one third more than Japan, or that India could contribute more than France.

[17] For more details, see Note 5 in EBAP/00/52, Supplement 1.

[18] A straightforward technique was used to smooth fluctuations, because it produces results similar to more sophisticated techniques yet was less sensitive to data problems.

[19] It has been argued that vulnerability is more pronounced for more open economies because the achievement of external balance through exchange rate adjustments is accompanied by larger changes in internal prices. Some scholars, however, have found some evidence that openness makes countries less vulnerable to adverse external developments (e.g., Sachs, Jeffrey and Andrew Warner, "Economic Reform and the Process of Global Integration," *Brookings Papers on Economic Activity,* 1995, Vol. 1, pp. 1–118).

methodological problem, which affected 88 countries in the Eleventh Review, and also to avoid duplication of variables already included in the formula, the staff has not included the indicator in the linear formulas presented in this paper. As noted in the staff commentary on the QFRG report, it is possible to achieve in certain non-linear specifications the same calculated quotas by including a level-based openness measure and adjusting the weights. Finally, to the extent that it may be desirable to introduce scaling factors that compress the distribution of quotas, such factors can be introduced in the quota formulas in a more direct and transparent way, as further discussed in Chapters IV and V.

30.   **The inclusion of a stand-alone openness indicator in the formula would not be desirable**. The ratio of current receipts to GDP is widely used in cross-country comparisons. When the focus is on assessing the relative degree of openness, a ratio is essential to arrive at a measure that is independent of the absolute size of the underlying variables. It is precisely this independence, however, which would make the ratio of current receipts to GDP an inappropriate stand-alone variable in quota formulas. Inclusion of such a ratio would have the effect that equal ratios would make an equal contribution to absolute quotas (or quota shares), regardless of whether the country was large or small. Since this effect would be clearly at variance with the function of quotas as a measure of countries' relative importance in the world economy, stand-alone ratios have not been used in quota formulas in the past, and are not considered further in this paper.

31.   **In this paper the staff uses the sum of current receipts and current payments as a measure of openness.**[20] Current receipts and payments give an indication of the resources generated in a country from transactions with the rest of the world and of the amount of resources devoted to consumption of goods and services created elsewhere. Thus, both receipts and payments have direct bearing on the supply side and the demand side functions of quotas. The staff does not believe that there is a good basis for choosing either current receipts or current payments as the measure of openness and therefore propose to combine them in a single variable.

C. Capital Account and Variability

32.   **A principal criticism of the present formulas is the lack of a variable that takes account of the large and growing role of international capital flows.** The continued inclusion of reserves in the existing formulas has been justified in recent years as a surrogate measure for capital and an indicator of capacity to provide resources to the Fund. Reserves

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[20] Other trade openness measures discussed in the literature are: (i) outcome measures, which usually look at the volume of existing trade; (ii) policy indicators, which describe the institutional features of a country's attitude toward trade; and (iii) measure that consider deviations from predictive trade models. Measures under the latter two categories usually involve significant estimation and construction of complicated indices. From the point of view of simplicity and transparency, these measures would not seem appropriate for quota formulas.

have become less meaningful as a proxy for capital or capacity to provide financing, particularly for countries with access to international capital markets. The Executive Board has discussed on several occasions the possible introduction of a capital flow variable but lack of data and methodological problems have precluded agreement. However, recent financial crises have demonstrated that capital flow reversals can be a source of significant balance of payments vulnerability in some countries and thus have an important bearing both on the supply and demand function of quotas. Therefore, the staff believes introducing a capital flow variable is warranted and makes proposals for inclusion of a specific capital account variable in the quota formulas.[21]

33.   **To be included in a quota formula, a capital account variable ideally should be linked to a function of the quotas in an economically sound manner.** Thus, capital account variables could be examined from the point of view of countries' ability to contribute to the resources of the Fund, from the perspective of potential need for Fund resources,[22] or from the perspective of countries' relative positions in global capital markets, which could reflect some combinations of potential need and ability to contribute resources.[23]

34.   **A stock measure that could be considered for inclusion in quota formulas is the net international investment position of a country**.[24] Countries with large net foreign asset positions would be in better position to contribute resources to the Fund than those with smaller or negative net positions. However, at this stage, such measures are available only for a relatively small number of countries and, especially for longer time series, are still subject to compilation difficulties (Box 2).[25]

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[21] In this paper, "capital account" transactions refer to those defined in the Fund's *Balance of Payments Manual*, Fifth Edition as "financial account" transactions, excluding changes in reserves and related items.

[22] Considerable work on indicators of countries' external vulnerability is ongoing in the Fund and elsewhere. Much of this work focuses on developing early warning systems that include variables such as the ratio of foreign currency denominated short-term debt to reserves. However, inclusion of this type of measure, which depend largely on policy actions and the size of which can change quickly, in a quota formula could lead to frequent changes in the calculated quota structure. This would not appear to be a desirable feature and thus this type of measure is not further considered here.

[23] Clearly, use of this variable affects both the supply and demand functions of quotas and thus creates a tension. However, this is consistent with the concept of the Fund's resources revolving from members with stronger balance of payments positions to those with weaker positions and that the relative strength of individual countries' external positions will vary between periods.

[24] This extends the notion that a central bank's international reserves represents its gross investment position abroad, and broadens and refines it to estimate the international investment position (on a net basis) for a country.

[25] There have been some suggestions that one could overcome the problem of lack of data on net investment positions of countries by using investment income streams as a proxy. However, the large and

35.   **The importance of capital could also be measured by the level of flows.** However, it is conceptually difficult to use level measures of balance of payments capital flows. Large gross flows can reflect weakness (the larger the stock of a country's external debt and the shorter the maturity, the larger the gross flows) or strength (a country with well developed and liquid financial markets that offer investment opportunities for nonresidents) or, most likely, an ambiguous combination of the two. Furthermore, gross flow figures may be inflated by "churning" (i.e., by offsetting asset and liability transactions for diversification, hedging, or other purposes). More practically, the lack of data on gross flows on a consistent basis for most members would also prevent use of such a variable in the quota formulas. Levels of net capital flows are more widely available but suffer from similar conceptual problems.[26] A given net flow is consistent with an infinite combination of gross inflows and outflows. As noted above, it is not obvious how one should interpret net flows that are either inflows or outflows, which makes it difficult to determine whether they should be an indicator of ability to contribute resources to the Fund or of potential need for resources over the medium-term time horizon applicable to quota determination.

36.   **Capital account variability as a measure of potential vulnerability could be included in a quota formula.** It has long been recognized that the most relevant variable for measuring a country's vulnerability to external economic disturbances (and thus its potential need to use Fund resources) is the variability of its international receipts. One measure that has been used for this purpose is the variability of current account receipts. But variability of

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persistent imbalances on investment income in global balance of payments statistics would need to be addressed. Moreover, investment income would be included in measures of current receipts and payments and the need for an additional variable is unclear.

[26] The size and sign of net capital flows are a function of savings/investment gaps, which in turn reflect a range of domestic factors.

Box 2. A Measure of Capital Openness

Many open-economy models of growth and business cycles use the level of net foreign assets as a key variable. However, relatively little is known about the magnitude of the stocks of foreign assets and liabilities of the private nonbank sector. One approach is to construct estimates of the net international investment positions of countries using balance of payments data. In essence what is done is to use existing stock measures if available and supplement them by the cumulation of capital flows, with valuation adjustments. Most industrial countries and a few developing countries report data on international investment positions to *International Financial Statistics* and are published, but most others do not, thus estimation is vital.

One recent study by Lane and Milesi-Ferretti estimated foreign assets and liabilities and their equity and debt subcomponents for 66 industrial and developing countries for the period 1970–97.[1] They extended work done by others to reflect more up to date information. The data were reported as ratios to GDP as a measure of capital openness. The authors conclude that while the constructed data have ample margins for error (lack of reliable comparable source data, lack of adjustments for cross currency fluctuations, problems associated with capital flight, etc.), they fill a gap in available data. They also find that for developing countries, GDP per capita is strongly correlated with the net international investment position, and trade openness is associated with larger gross stocks of foreign direct investment and equity. For industrial countries this link is weaker.

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[1] "The External Wealth of Nations: Measures of Foreign Assets and Liabilities for Industrial and Developing Countries," Philip Lane and Gian Maria Milesi-Ferretti, *IMF Working Paper,* WP/99/115, August 1999.

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capital flows, and in particular sharp reversals of capital, have become an increasingly important source of balance of payments vulnerability. The use of variability of net capital flows as an indicator of balance of payments vulnerability would seem conceptually quite straightforward, as can be illustrated from a simple balance of payments framework (Box 3).

37.   **Which measure of capital flows provides the best indicator of potential vulnerability?** The vulnerability measure proposed by the QFRG (variability of current receipts and net long-term capital) is unaffected by short-term outflows that are fully offset by changes in reserves and current payments (Equation (2) in Box 3). However, since long-term flows are relatively more stable in the short run, this specification may fail to capture capital account shocks associated with short-term movements. This conclusion would hold for either a fixed or a floating exchange rate regime; in the short run, adjustment in a fixed exchange rate regime would generally fall on reserves, while in a floating regime adjustment this would be reflected in current payments.[27]

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[27] As in the case of openness measures, there is an issue of whether variability of net capital flows should be scaled by GDP. As discussed in paragraph 30, there are strong arguments against using ratio indicators as stand-alone variables in the quota formula.

Box 3. Capital Flows in a Balance of Payments Framework

The balance of payments identity can be written as:

(1) $X - M + K_L + K_S - R = 0$

Where X and M are current account receipts and payments, K_L and K_S are net long-term and short-term capital inflows, and R is the change in reserves.

Based on this equation a number of variability measures can be derived. The QFRG proposed the following:

(2) $\text{var}(X + K_L) = \text{var}(M - K_S + R)$

The variability measure for current receipts and net long-term capital flows is equal to the variability of the sum of current payments, net short-term outflows and changes in reserves.

An alternative measure could be:

(3) $\text{var}(X + K_L + K_S) = \text{var}(M + R)$

This augmented variability measure explicitly captures the changes in reserves and current payments resulting from all capital flows (provided that the periods and the intervals are adequately measured).

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38.   **Since variability in net capital flows can arise at both the short and long end, and to capture the interaction of capital flows with reserves and current payments, it would be appropriate to consider a variability measure that captures all net capital flows.**[28] As illustrated in equation (3) in Box 3, this broader measure would explicitly capture the changes in reserves and imports resulting from capital flows (provided that the periods and intervals are adequately measured).[29] The QFRG did not include short-term capital in its variability measure on the grounds that short-term flows could, at least to some extent, be influenced by the authorities' policy measures. Including variability of total net capital flows might, therefore, imply linking quotas indirectly to "undesirable" government policies. However,

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[28] Conventional wisdom suggests that more liquid flows ought to be more volatile. For instance, short-term flows are generally thought to be more volatile than medium- and long-term flows. However, some research suggests that this may not always be the case. See, e.g., Claessens, Stijn, Michael P. Dooley, and Andrew Warner (1995), "Portfolio Capital Flows: Hot or Cold?" *World Bank Economic Review,* Vol. 9, No. 1, pp. 153–174.

[29] Other decompositions, including some with separate covariance terms could be derived, or even one which has reserves alone as a reflection of movements in other components. However, in the past, the Board has rejected the variability of reserves as a good indicator of balance of payments vulnerability. Such other decompositions may not be feasible for many members due to lack of data and would not be consistent with the objective of simplifying the quota formulas.

even longer-term flows to some degree can be endogenous (albeit perhaps with longer lags).[30] **On balance, in the staff's view, the advantage of being able to capture all types of capital shocks would outweigh the possible negative implication of covering (some) endogenous movements**.

39. **Should net capital flow variability be included as a stand-alone measure or in combination with another measure?** The overall balance of payments framework suggests that current receipts and net capital flows should be combined in a variability measure, because taking variability of net capital flows separately would be equivalent to measuring the variability of the current account plus reserves. This sum may fluctuate from year to year for a number of reasons that are not necessarily indicative of the degree of balance of payments vulnerability. However, there are also arguments for using a stand-alone measure. The interpretation to be given to a measure that combines current receipts, recorded (primarily)[31] on a gross basis, with net capital flows is unclear. Moreover, from an economic perspective, it is not obvious that a slowdown in current receipts ought to be treated in the same way as a capital account reversal. Finally, current receipts and net capital flows may have different trends and different cyclical behavior, which may complicate the process of defining the "normal" level around which variability is to be measured. With arguments on both sides, for simplicity reasons, **in this paper the staff has chosen as a vulnerability measure the variability of the sum of current receipts and net capital flows**.[32] At this stage, the staff has excluded errors and omissions, use of Fund credit and loans, and exceptional financing from the variability measure and included reserve liabilities for conceptual, methodological, and data reasons (see Annex I).

40. **Issues also arise regarding the frequency and period over which variability should be measured.** The traditional variability measure for current receipts uses annual data over a period of 13 years, detrended by using a 5-year centered moving average. To capture variability of capital flows, where reversals can be quite sudden and sometimes short-lived, a more appropriate measure might require shorter-term data, such as quarterly, applied over a shorter period. The choice of detrending method, if any, also could be different, depending on the behavior of net capital flows, although it is difficult to determine which methods should be applied a priori. At this stage, the choice of methods is in large part constrained by data availability. For example, quarterly data are available only for a subset of the membership. To

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[30] For example, in countries that depend heavily on official flows, policy actions directly influence financing inflows.

[31] Current receipts may contain some netting of (actual or imputed) investment income flows, e.g., reinvested earnings on direct investment (net profits or losses).

[32] Assuming that a unit of current receipts and net capital flows have different impacts on vulnerability but the transmission channels of the shocks were similar, one could also consider a measure like: $var(\acute{a} X + K_L + K_S)$, which would give different weights to the components.

account for possibly shorter trends, **in this paper variability of the sum of current receipts and net capital flows is calculated as the standard deviation from a centered three-year moving average, using annual data.**[33]

41.   **In conclusion, it is the staff's view that the key variables that should be included in a quota formula are:**

- **GDP,** converted into SDRs at market exchange rates and averaged over a three-year period.

- **Openness,** as measured by the sum of current receipts and payments, averaged over a five-year period.

- **Variability** of the sum of current receipts and net capital inflows, measured as the standard deviation from a three-year moving average over a thirteen-year period.

With the exception of net capital flows, all these variables are part of the Bretton Woods framework of formulas and using these variables would thus represent an evolution, rather than a break with the past. The next section discusses how these variables could be combined in a formula.

IV. TECHNICAL ISSUES RELATED TO THE FORM OF THE FORMULAS

42.   Before discussing specific alternative formulas it is useful to consider which functional properties quota formulas should have and how or if these desirable properties apply to the existing formulas. In general, it can be posited that the functional form of a quota formula should meet the following basic requirements:

- **Simplicity and transparency.** That is, the formula (or set of formulas) should be parsimonious in the number of variables and have intuitive appeal in its interpretation. The existing formulas do not meet these criteria: there are five different formulas, the selection of the final results is not transparent, and the inclusion of a multiplicative factor makes interpretation difficult.

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[33] The staff has examined other variability measures using different detrending and/or smoothing techniques. The measures included variability around a five-year moving average (1987–99), variability around a fixed average (1987–99 and 1995–99), variability around a stochastic trend, and variability of smoothed data that filter out outliers. Removing a stochastic trend is more important than smoothing cyclical outliers. Several methods produced comparable results, including: annual variability around a three-year moving average; variability around a stochastic trend; and variability around smoothed data.

- **Homogeneity** in the sense that a uniform change for all members in all variables (such as a doubling of amounts) should leave calculated quota shares unchanged. The present formulas meet this criterion.

- **Robustness** to both changes in the world economy and to relative changes in countries' positions. This implies that a member experiencing a higher than average increase in a variable should, all other things equal, see an increase in its quota share. In other words, the partial derivatives (or elasticities) should be strictly positive. This critical aspect of robustness can be violated if one variable is specified as a ratio to another variable (as in the present formulas) which can, depending on the specification of the formula, lead to declines in calculated quotas when the variable in the denominator increases.

43.   **Three prototype formulas are considered, as shown in Box 4.**

- Formulas that are linear in quota levels and levels of individual country variables.

- Formulas that are linear in quota shares and individual country variable shares in total.

- Formulas that are multiplicative or log-linear in quota levels and individual country variables.

Other combinations are imaginable, but are not further explored here.[34] For simplicity of exposition, formulas with only two variables are shown in Box 4. The formulas straightforwardly generalize to more variables, and the conclusions are not affected by this simplification. The aim of all three formula types is to derive quota shares. Some of the formulas compute notional quota amounts, which are then used to derive quota shares.

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[34] In particular, the staff has considered formulas that are linear in quota levels and individual country variables that are scaled by an exponent. They allow for similar flexibility as the multiplicative forms but are more difficult to interpret.

Box 4. Alternative Formula Specifications and Properties

Variables can be formulated in terms of levels, shares, or ratios. The level variables are U and V, expressed in millions of SDRs, and the share variables are U_S and V_S, which are defined as shares in the total of the corresponding level variables over all members:

(1) $U_S = U / \Sigma U$ and $V_S = V / \Sigma V$

Subscripts indicating member j on the variables, the calculated (notional) quota Q in millions of SDRs, and the calculated quota share Q_S, are not shown for simplicity. For some formulas, quota shares are derived after a notional calculated quota for each member is obtained:

(2) $Q_S = Q / \Sigma Q$

Specific properties of different formula specifications are shown below.

Functional form (with 2 variables)	Partial elasticities (of Q with respect to U)	Advantages/Disadvantages
1. **Linear in levels**: $Q = a + bU + cV$	BU/Q	Homogeneous if a = 0. Elasticities vary across membership and over time. Elasticity with respect to U is high if U is relatively large.
2. **Linear in shares**: $Q_S = a + bU_S + cV_S$	$b(U_S/Q_S)(1-U_S)$	Homogeneous. Elasticities vary across membership and over time. Elasticity with respect to U is high if U_S is relatively large.
3. **Multiplicative/log-linear**: $Q = U^A V^B$ or $\log Q = A(\log U) + B(\log V)$	A	Homogeneous and robust. Constant elasticities across membership and over time. Straightforward interpretation of coefficients in terms of elasticities. Allows for flexibility as coefficients determine the degree of scaling of variables.

44.   **Formulas that are linear in quota levels and levels of individual country variables would meet the basic requirements.**[35] In this type of formula, the elasticity of calculated quotas with respect to a variable is always positive but varies across the membership: the greater value of a variable relative to the calculated quota of a member, the greater the elasticity of the calculated quota with respect to that variable. For example, members with a high GDP relative to their calculated quota would benefit more from GDP growth than members with a lower relative GDP (vice versa, these members would benefit more from growth in other variables that contribute more to their calculated quota). Elasticities would vary over time with changes in the relative magnitude of variables.

45.   **A variant of the linear formula based on levels is a linear combination of variables expressed as shares in world totals**.[36] The formula proposed by the QFRG was of this type. This formula satisfies the basic requirements, even if a constant were included. As with the formula that is linear in levels, the elasticity of calculated quotas with respect to a variable is always positive but varies across the membership. A member with a high share of the world total of a particular variable relative to its quota share, will benefit more from growth in that variable than other members with a relatively lower share in the world total of that variable.

46.   **Non-linear formulas may perform better in approaching the actual distribution of quotas than linear formulas.** Advanced countries account for a large share of GDP and, to a lesser extent, of current receipts and payments, while the distribution of variability of current receipts and net capital inflows is roughly balanced between advanced and developing countries. A linear combination of such variables can therefore not approach the distribution of actual quotas unless very high weights are given to variability. Non-linear formulas can compress the upper and lower end of the distribution of calculated quotas toward the center while retaining the existing ranking for members in terms of each variable. In a non-linear formula, the variables are scaled (transformed) by exponential coefficients. A formula of this type would be homogeneous, which would not be affected by including a (multiplicative) constant. The elasticity of calculated quotas with respect to a variable would be equal to the coefficient of the variable and a percentage increase in a variable would have the same

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[35] It should be noted that for any given specification of this type of formula one could define coefficients for a formula that is linear in level variables that produces an identical distribution of calculated quota shares. These coefficients would have to be revisited every time these calculations would be revised because of new data.

[36] It should be noted that for any given specification of this type of formula one could define coefficients for a formula that is linear in level variables that produces an identical distribution of calculated quota shares. These coefficients would have to be revisited every time these calculations would be revised because of new data.

implication for all members with respect to the increase in calculated quota.[37] The greater the sum of coefficients in the formula discussed here, the wider the distribution of calculated quotas would tend to be. Since the sum of coefficients in the formula discussed here is not restricted to one, it allows flexibility to achieve specific quota distributions.

V. Quantification of Alternative Formulas

A. Choice of Formulas

47.   **It should be recognized from the outset that it may not be possible to determine alternative formulas that achieve the desired objectives of simplicity and transparency, reflection of economic realities, and acceptability**. The basic requirements of simplicity and transparency combined with economic considerations can help in the selection process of potential variables to be included in the formulas and also in determining efficient and operationally feasible specifications of the variables. Technical considerations can guide the choice of robust functional forms for the formula. At the same time, there **are no rigorous criteria for the final selection of variables in a formula and for the choice of weights applied to these variables**. These choices appropriately are, and indeed have been since the first formula was introduced, matters of judgment by and of political consensus among the membership.

48.   **The key test for any new formula is broad acceptability**. **If a formula is not widely supported it will not be applied.** This means that choices must be the outcome of a political process that reflects the various judgments inherent in the Fund's quota structure, notably the necessary compromises between demand and supply considerations. Acceptability also implies, as clearly demonstrated by the experience to date, that quota shares based on a new formula cannot depart too much from the existing shares without making broad agreement on a new formula impossible.

B. Suggested Approach

Update of existing formulas

49.   **As a first step in the quantification, the staff recalculated the existing five formulas using data as of mid-June, 2001.** For these calculations, shown in Box 5, and

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[37] This type of formula clearly illustrates the effect of the inclusion of a ratio variable V/U (e.g., openness). Rewriting the formula would result in: $Q = U^A(V/U)^B = U^{A-B}V^B$. The elasticity of Q with respect to U would be negative if A<B, rendering the formula less than robust. If A>B, the formula would retain its favorable characteristics because the effect of U by itself in the formula would outweigh the effect exerted by U through the ratio variable.

other quantifications in the paper, the staff used data from *IFS* and *WEO* (details in Annex I) and country groups are as defined in the current *WEO,* except that Korea and Singapore are included under Asia in developing countries.[38] *IFS* data were chosen because *IFS* provides a relatively consistent set of official data across countries. Gaps in data series and member coverage were filled by using *WEO* information, and in a few cases, data from staff reports. The data have not yet been verified by country desks in area departments. Given the sometimes-incomplete data in *IFS* and inconsistencies between *IFS* and area department data, improving the consistency of the data would be a crucial element in the remaining stages of quota work. However, it was felt that the available data were of sufficient quality to be used in calculations at this early stage and that the labor-intensive process of refining the data could be left until later. At the same time, efforts by staff and country authorities need to intensify to improve coverage and quality of reporting to the *IFS* to ensure that the situation of each member is reflected as fully and accurately as possible in the quota calculations. Some adjustments that at times were included for selected countries in the past (reexports, international banking interest) have not been made in this paper.[39] Given the above, all quantitative results should be considered as illustrative.

50.   **The updated quantification of the existing five formulas shows that calculated quota shares have remained broadly unchanged.** The share of the advanced countries in calculated quotas would decline somewhat compared to the Eleventh Review (from 71.8 percent to 68.7 percent), entirely on account of a reduction of the share of the major advanced economies. The developing countries in Asia would see a relatively large increase in calculated quotas (by more than 4 percentage points),[40] while the shares of all other developing countries would decline slightly, due in part to lower growth on average in many of these countries during the late 1990s compared with some major Asian countries.

Alternative formulas

51.   **In examining possible alternative formulas, the staff used the three proposed variables in different formula specifications with various coefficients and scaling factors.** The variables are as discussed in Chapter III:

- **GDP** (annual data, converted into SDRs at market exchange rates, averaged for 1997–1999).

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[38] The data obtained covered: current receipts and net capital inflows (1987–99), current payments (1995–99), GDP (1997–99), and reserves (monthly data for 1999), all in SDRs.

[39] Details of various types of adjustments made to selected countries' data in recent quota reviews are provided in Annex I.

[40] This reflects not only the strong growth in some Asian countries, but also the fact that adjustments for reexports were not made, which affects, in particular, the calculated quota share for Singapore.

Box 5. Update of Existing Formulas

As an illustration, this box compares the implied quota shares of country groups derived from the updated set of existing quota formulas with actual and previously calculated quota shares.

	Shares in Quotas		
		Five Formulas	
	Actual [1]	Eleventh Review [2]	Now
Advanced economies	61.6	71.8	68.7
Major advanced economies	46.0	54.0	49.5
Other advanced economies [3]	15.6	17.7	19.2
Developing countries	30.9	23.0	26.2
Africa	5.5	2.5	2.2
Asia[3]	10.3	10.1	14.6
Middle East, Malta, Turkey	7.6	5.1	4.3
Western Hemisphere	7.5	5.2	5.1
Transition economies	7.5	5.3	5.1
Total	100.0	100.0	100.0

1/ Based on actual quotas except for the nine countries that have not yet consented to their proposed quota increase, for which Eleventh Review proposed quotas are used.

2/ Based on Eleventh Review calculated quotas except for China, for which the calculated quota derived by staff in connection with China's recent ad hoc quota increase is used.

3/ Korea and Singapore are included under Asia rather than the other advanced economies.

- **Sum of current receipts and payments** (in SDRs, annual average for 1995-1999).

- **Variability of current receipts and net capital flows** (standard deviation of a three-year centered moving average using annual data in SDRs for 1987-1999).

In deriving the quantifications, these variables were included in each of the three functional forms discussed in Chapter IV with two or three variants.

52.   **In the first variant (Variant A), the staff aimed at replicating the existing quota distribution for broad country groups ("advanced economies" and "other economies").** This approach makes no a priori assumptions about the desirable distribution of quota shares. If a formula can be found that has reasonable properties and comes close to replicating actual quota shares, it would be possible for Executive Directors to give staff guidance on those

appropriate shifts in shares for certain groups of countries that might find broad acceptance. Such guidance would then allow the staff to provide illustrative calculations of resulting shares for individual countries. As an illustration of the effect of different weights, the staff also **made a second set of calculations, using equal weights or elasticities for each variable in the different formulas (Variant B)**. For the non-linear Formula 3, a third variant is presented which shows the effect of scaling which compresses quota distribution. These quantifications are summarized in Table 4. Country-specific results are shown in Table 6.

C. Illustrative Calculations

53.   Several conclusions emerge from the illustrative quantifications of alternative formulas. **Under Variant A, which attempts to replicate the existing quota shares at the level of broad country groups**:

- **The two linear specifications require very large coefficients on variability relative to GDP and openness** (Formulas 1 and 2). In the non-linear specification, the coefficient on variability would also have to be much larger if the sum of coefficients is constrained at one (Formula 3). Given the large size of the coefficient on variability, the relative size of the coefficients on GDP and openness has little impact on the results. For simplicity and to facilitate comparison with Variant B, the calculations used approximately equal weights for GDP and openness.[41]

- The **distribution of calculated quota shares between the major advanced and other advanced economies is almost identical for all three formula types.** With the total share for the advanced countries held constant at 61.6 percent by construction, there would be a shift by about 4 percentage points away from the major advanced countries to the other advanced economies.

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[41] In Formula 1, calculated quota shares depend only on the relative magnitude of the coefficients, not their absolute value. The coefficient on GDP was set at one to make interpretation easier, which implied, for equal weighting, a coefficient on openness of two to reflect broadly the relative magnitudes of the world totals of these two variables.

Table 4. Variable Coefficients and Calculated Quota Shares, by Formula Variant 1/

	Actual Quota Shares 2/	Five Formulas 11th Rev. 3/	Five Formulas Now 4/ 5/	Formula 1 Variant A	Formula 1 Variant B	Formula 2 Variant A	Formula 2 Variant B	Formula 3 Variant A	Formula 3 Variant B	Formula 3 Variant C
				Variable coefficients		Variable coefficients		Variable exponents		
Gross domestic product	...	...	...	1	1	0.07	0.33	0.05	0.33	0.47
Current receipts + current payments 5/	...	...	...	2	2	0.07	0.33	0.06	0.33	0.05
Variability of current receipts + net capital inflows 5/	...	...	...	1000	100	0.86	0.33	0.89	0.33	0.28
Total	...	...	...	1003	103	1.00	1.00	1.00	1.00	0.80

Calculated quota shares
(In percent)

	Actual Quota Shares 2/	11th Rev. 3/	Now 4/ 5/	F1 A	F1 B	F2 A	F2 B	F3 A	F3 B	F3 C
Advanced economies	61.6	71.8	68.7	61.6	68.7	61.6	69.4	61.6	70.8	61.6
Major advanced economies	46.0	54.0	49.5	41.8	51.3	41.8	52.2	41.6	53.9	43.9
Other advanced economies 6/	15.6	17.7	19.2	19.8	17.4	19.8	17.1	20.1	16.9	17.7
Developing countries	30.9	23.0	26.2	29.6	25.5	29.6	25.2	29.7	24.4	31.7
Africa	5.5	2.5	2.2	3.0	2.3	3.0	2.3	3.0	2.2	4.2
Asia 6/	10.3	10.1	14.6	12.5	12.0	12.5	12.0	12.6	11.9	12.7
Middle East, Malta and Turkey	7.6	5.1	4.3	8.3	5.4	8.3	5.2	8.1	4.4	6.4
Western Hemisphere	7.5	5.2	5.1	5.9	5.7	5.9	5.7	6.0	5.9	8.5
Transition economies	7.5	5.3	5.1	8.8	5.7	8.8	5.5	8.6	4.8	6.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Memorandum item:										
Korea, Malaysia, Singapore and Thailand	2.4	5.0	6.9	5.6	4.8	5.6	4.7	5.7	4.5	4.3

1/ Using data for 1987-99.
  Formula 1, linear in levels: CQ = a GDP + b (CUR + CUP) + c VAR[CUR + CAP]
  Formula 2, linear in shares: CQshare = a GDPshare + b (CUR + CUP)share + c (VAR[CUR + CAP])share
  Formula 3, multiplicative: $CQ = GDP^A (CUR + CUP)^B (VAR[CUR + CAP])^C$
  where GDP is gross domestic product, CUR is current receipts, CUP is current payments, and CAP is net capital inflows.
2/ Based on actual quotas except for the nine countries that have not yet consented to their proposed quota increase, for which 11th Review proposed quotas are used.
3/ Based on 11th Review calculated quotas except for China, for which the calculated quota is used that was derived by staff in connection with China's recent ad hoc quota increase.
4/ Computed as traditionally specified.
5/ Current receipts and payments have not been adjusted for official transfers, re-exports, and international banking interest.
6/ Korea and Singapore are included under Asian developing countries.

- For the other subgroups the results are more difficult to interpret. The calculations suggest a **larger share in calculated quotas for developing countries in Asia in all three formulas** (but by a smaller margin than based on the existing set), as well as a **larger share for the transition economies.**

54.   **These results are not surprising, given the underlying distribution of the variables that enter into the formulas**. Compared with the distribution of actual quotas, the distribution of GDP and openness continues to be skewed towards the advanced economies (Table 5). The relative effect of the variability measure must therefore be very large in order to approach the distribution of actual quotas at the level of broad country groups.

55.   **The results of Variant B, which uses equal weights or elasticities for the variables, confirm these conclusions**. The calculated quota share of the group of advanced economies would exceed their actual share by up to 9 percentage points, with the excess entirely accounted for by the major economies. All other subgroups, except developing countries in Asia, would see calculated quota shares lower than actual quota shares. Moreover, the formulas result in calculated quota shares that diverge from actual shares by slightly more than the shares based on the existing formulas.

56.   **The non-linear formula allows for scaling to compress the distribution of calculated quotas.** Technically, the scaling is achieved by reducing the sum of the coefficients to less than one. In this case, the interpretation of the coefficients remains unchanged in terms of elasticities, but a given percentage change in all variables would now lead to a smaller percentage change in quota.[42] This means that the flexibility provided by scaling would need to be used with considerable caution to meet the requirement that calculated quotas reflect developments in the world economy. The scaling could be done in a wide variety of ways. For example, a uniform reduction of the coefficients in Variant B by 10 percent from 0.33 to 0.30 would generate a distribution of calculated quota shares that lies in between actual shares and the shares calculated with the existing formulas.

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[42] The smaller the sum of coefficients, the more compressed the distribution becomes. At the extreme (with coefficients of zero), the size of the variables no longer matters, and the distribution of calculated quotas becomes uniform with equal quota shares for all members.

Table 5. Distribution of Variables in World Totals
(In percent)

	Actual Quotas 1/	GDP	Current Receipts plus Payments	Variability
Advanced economies	61.6	76.6	72.0	59.5
Major advanced economies	46.0	65.7	52.0	39.0
Other advanced economies 2/	15.6	10.8	20.1	20.5
Developing	30.9	20.7	23.9	30.8
Africa	5.5	1.8	1.9	3.2
Asia 2/	10.3	9.6	13.7	12.6
Middle East, Malta and Turkey	7.6	3.0	3.4	9.1
Western Hemisphere	7.5	6.4	4.9	6.0
Transition economies	7.5	2.7	4.0	9.7
Total	100.0	100.0	100.0	100.0

1/ Except for the nine countries that have not yet consented to their quota increases, for which Eleventh Review proposed quotas are used.
2/ Korea and Singapore are included under Asian developing countries.

57.   The example presented in **Variant C approximates actual quota shares both on the broad country level and the level of individual countries**. The coefficients were derived from an optimization procedure that minimizes the squared differences between actual and calculated quota shares for all countries.[43] This example provides an illustration how the non-linear formula can replicate the actual distribution with more reasonable coefficients than Variant A of the linear formulas. It also demonstrates the possibility of using scaling factors in a more explicit and transparent manner than in the existing formulas.

58.   **In the alternative formulas presented here, large differences between actual and calculated quotas persist for many Fund members**. The staff could not find a formula that closely replicates the existing distribution of quotas of all or even most countries under Variant A. The individual country results of the illustrative calculations presented in Table 6 bear this out. While it is difficult to draw general conclusions from these results, a few features are noteworthy:

•   Regardless of the formula type and variables used, countries that have experienced faster than average growth rates during past decades tend to see an increase in their

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[43] The same least-squares procedure for the linear formulas resulted in large negative coefficients and is therefore of no practical use.

calculated quota shares.[44] The effect of the faster than average GDP growth is clearly evident by the increased aggregate share of the Asian economies within the developing country group.

- There are some countries whose calculated quota shares are significantly higher than their actual quota shares in any formulation.

- There are also some countries whose calculated quota shares are consistently below their actual quota shares. While some of these cases reflect poorer than average economic performance, for others, notably the oil producers, the divergence is due to past quota adjustments that were based on country-specific characteristics that are not adequately captured in the quota formulas.

59. **The results also reveal that the past determination of quota adjustments and establishment of actual quotas has not been based on the formulas in a straightforward manner.** The strong tension between formula-based shares and actual quota shares has been dealt with in the past by using the formula-based calculations as a guide for the direction of quota share adjustments through the selective portion in general quota increases. This reflects the Executive Board's view that general quota reviews should provide all members with an adequate increase in quotas and, perhaps as importantly, the difficulty of obtaining the wide support necessary to implement politically sensitive quota share adjustments. As a consequence, a large portion of the overall increase has been distributed as a uniform proportionate increase in the quotas of all members and the bulk of the selective component was distributed to each member based on its calculated share. Thus, in the Eighth through Eleventh General Reviews, the effective weight of calculated quota shares in the new shares resulting from the review has only been about 13 percent on average (Box 6). As a result, actual shares have converged only little to calculated shares over time and, for countries that have experienced relatively rapid growth, actual quotas continue to lag behind economic developments.

60. **Past experience suggests that the role of quota formulas should continue to be considered in the context of a more general quota adjustment process**. Calculated quotas have played an important, but relatively limited role in the Executive Board's decisions on relative quota adjustments. A modernization and simplification of the existing set of quota formulas has to be seen against this broader background. Agreement on a new alternative quota formula, if it can be reached, is not likely to lead to a major readjustment of actual

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[44] Given the relatively low effective contribution of the selective quota increases during the past quota reviews, the actual quota shares of countries that have experienced faster than average growth rates have tended to diverge from their calculated quotas. In some cases, these divergences have been addressed by targeted quota increases (e.g., in the Eleventh Review 10 percent of the total 45 percent increase was distributed as ad hoc increase for a selected group).

quota shares (as noted in Box 6). Rather, a new formula would help put the process of quota adjustments, whether in general or through ad hoc increases, on a basis that reflects more fully and transparently the evolution of economic realities.

Box 6. Quota Adjustment Process

The adjustments in quota shares during the general reviews since 1983 have taken the form of a partial adjustment model, which can be seen as a more **general quota adjustment process**:

$$\text{New Share} = \alpha * (\text{Calculated Share}) + (1- \alpha) * (\text{Existing Share})$$

The adjustment coefficient α has, in fact, been much smaller than would appear just on the basis of the shares of the quota increase devoted to the selective element. Over the past three general increases, the effective weight given to calculated quota shares averaged 13 percent, much less than the average 42 percent share of the overall increase devoted to selective increases (Table). A hypothetical overall increase of quotas by 50 percent entirely devoted to selective increases would still preserve two-thirds of the existing quota share.

Contribution of Calculated Quotas to Quota Increases (1983–1998)

(In percent)

	Overall Increase	Share of Total for Selective Increase	Existing Quota Shares $(1-\alpha)$	Calculated Quota Shares (α)
8th review (1983)	47.5	60	80.7	19.3
9th review (1990)	50.0	40	86.7	13.2
11th review (1998) [1]	40.5	25	92.8	7.2
Hypothetical adjustment	50.0	100	66.6	33.3

[1] Excludes the 10 percent of the total 45 percent increase distributed as ad hoc increase for a selected group. The ad hoc increases reduced the quota share of each nonparticipating member by 4.3 percent.

VI. CONCLUSIONS AND ISSUES FOR DISCUSSION

61.   **This paper has outlined a process of discovering alternative quota formulas that could eventually lead to changes in the present system**. This process consists of choosing economically sound variables, robust functional specifications of formulas, and quantification targeted at achieving a certain quota distribution at an aggregate level. **Do Directors endorse this approach or process; are there other ways to discover suitable quota formulas?**

62.   The variables the staff has used in the quantification are average GDP, the average of the sum of current receipts and payments, and variability of the sum of current receipts and net capital flows. While these variables reflect the core financial functions of quotas, other variables or specifications are possible. **Do Directors agree that the variables used by staff adequately reflect the principal functions of quotas and should be used in any new formula? Do Directors consider that other forms of these variables or other variables should be considered?**

63.   The staff has suggested a possible simplification of the current approach, which would rely on a single formula and has proposed several formulas with different characteristics. **Do Directors have views on the form of the formulas that should be used?**

64.   The staff has also selected initial weights to illustrate the impact of different variables and formulas on the determination of calculated quotas. A decision on weights (and formulas), however, ultimately reflects a judgment regarding the distribution of calculated quotas. **Do Directors have views on the importance to be attached to particular variables and a distribution of calculated quotas that could command wide support?**

65.   Experience suggests that the impact of the formulas on the distribution of actual quotas has been modest as other considerations have tended to predominate and that such adjustment are most practical in the context of a general increase in quotas. **Do Directors believe that revised formulas that would command wide support could contribute to faster adjustment of actual quotas toward calculated quota shares and what are Directors views on actual pace of adjustment and whether adjustments should be envisaged primarily in the context of a general increase in quotas?**

Table 6. Calculated Quota Shares, by Formula Variant 1/

	Actual Quota Shares 2/	Five Formulas		Formula Type						
		11th Rev. 3/	Now 4/ 5/	Formula 1 Variant A	Formula 1 Variant B	Formula 2 Variant A	Formula 2 Variant B	Formula 3 Variant A	Formula 3 Variant B	Formula 3 Variant C
United States	17.3830	17.1113	16.6315	15.6515	19.3307	15.6515	19.7584	15.5180	20.1869	15.4468
Japan	6.2293	10.1212	8.3459	6.0343	8.6746	6.0343	8.9452	5.7800	8.9159	7.8599
Germany	6.0868	8.9344	7.5453	7.3790	7.7313	7.3790	7.7451	7.5520	8.3130	6.3484
France	5.0248	5.5344	4.6504	4.3491	4.7641	4.3491	4.7931	4.4292	5.1453	4.4125
United Kingdom	5.0248	4.9511	5.9491	3.1650	4.6446	3.1650	4.7474	3.0296	4.7795	3.9001
Italy	3.3014	4.1468	3.6373	3.2689	3.7610	3.2689	3.7981	3.3066	4.0589	3.6597
Saudi Arabia	3.2687	1.3018	0.9176	1.5609	1.0341	1.5609	0.9878	1.5844	0.9216	1.0423
Canada	2.9803	3.2424	2.7612	1.9684	2.4165	1.9684	2.4422	1.9663	2.5406	2.3196
China	2.9803	2.4559	4.6127	3.8394	4.1424	3.8394	4.1565	3.9159	4.4415	3.7870
Russia	2.7820	1.8279	1.3055	1.9693	1.4758	1.9693	1.4332	2.0290	1.4642	1.6106
Netherlands	2.4156	2.8081	2.9571	1.7255	2.0951	1.7255	2.1066	1.7138	2.0670	1.7669
Belgium	2.1549	2.4092	2.1295	2.1149	1.8437	2.1149	1.8075	2.1642	1.7623	1.5483
India	1.9457	0.7557	0.8535	0.8139	0.9518	0.8139	0.9691	0.8148	0.9991	1.3945
Switzerland	1.6183	1.5815	1.5944	1.4759	1.4159	1.4759	1.4023	1.5138	1.4422	1.4015
Australia	1.5144	1.1919	1.1061	1.1187	1.1805	1.1187	1.1868	1.1433	1.2771	1.5202
Spain	1.4266	2.0627	1.9852	1.9989	2.0394	1.9989	2.0393	2.0512	2.1931	2.2032
Brazil	1.4207	1.3602	1.1024	0.9894	1.3526	0.9894	1.3952	0.9530	1.3488	1.8744
Venezuela	1.2443	0.5189	0.3289	0.4032	0.3470	0.4032	0.3426	0.4168	0.3648	0.5611
Mexico	1.2100	1.3178	1.4534	1.7191	1.6237	1.7191	1.6141	1.7737	1.7360	1.8552
Sweden	1.1209	1.2522	1.3669	1.6812	1.3710	1.6812	1.3397	1.7336	1.3693	1.3957
Argentina	0.9906	0.6342	0.5864	0.8956	0.8001	0.8956	0.7965	0.9180	0.8215	1.2123
Indonesia	0.9729	0.7852	0.7336	0.7910	0.6982	0.7910	0.6884	0.8173	0.7270	0.8766
Austria	0.8761	1.2679	1.1428	0.9135	0.9733	0.9135	0.9728	0.9303	1.0131	1.0797
South Africa	0.8743	0.4417	0.3929	0.4603	0.4591	0.4603	0.4590	0.4731	0.4951	0.6972
Nigeria	0.8204	0.4086	0.2718	0.4727	0.3883	0.4727	0.3837	0.4825	0.3807	0.6846
Norway	0.7822	0.9473	0.7851	0.7418	0.6890	0.7418	0.6822	0.7651	0.7224	0.8629
Denmark	0.7687	0.9910	1.1219	1.3489	1.0635	1.3489	1.0353	1.3888	1.0433	1.1136
Korea	0.7644	1.6456	1.8390	1.5461	1.6294	1.5461	1.6301	1.5798	1.7308	1.7347
Iran	0.7006	0.5630	0.3342	0.4898	0.4512	0.4898	0.4515	0.4979	0.4487	0.7964
Malaysia	0.6956	1.0199	1.3843	1.3355	0.9973	1.3355	0.9615	1.3485	0.8386	0.7968
Kuwait	0.6462	0.5151	0.3823	1.4920	0.7429	1.4920	0.6798	1.3663	0.3605	0.4639
Ukraine	0.6420	0.3950	0.3843	0.9404	0.5183	0.9404	0.4825	0.9122	0.3551	0.4840
Poland	0.6406	0.4832	0.5795	0.9592	0.7277	0.9592	0.7079	0.9891	0.7278	0.9299
Finland	0.5914	0.6297	0.5949	0.9378	0.7058	0.9378	0.6849	0.9657	0.6941	0.8499
Algeria	0.5871	0.3293	0.1879	0.2708	0.2064	0.2708	0.2011	0.2792	0.2075	0.3541

Table 6. Calculated Quota Shares, by Formula Variant 1/ (continued)

	Actual Quota Shares 2/	Five Formulas		Formula Type						
		11th Rev. 3/	Now 4/ 5/	Formula 1 Variant A	Formula 1 Variant B	Formula 2 Variant A	Formula 2 Variant B	Formula 3 Variant A	Formula 3 Variant B	Formula 3 Variant C
Iraq	0.5561	0.3292	0.2037	0.7114	0.3653	0.7114	0.3370	0.6681	0.2132	0.3863
Libya	0.5258	0.3129	0.1438	0.1709	0.1341	0.1709	0.1311	0.1764	0.1367	0.2543
Thailand	0.5062	0.8549	0.8643	1.1119	0.8700	1.1119	0.8456	1.1424	0.8382	0.9114
Hungary	0.4859	0.2990	0.3404	0.5337	0.3696	0.5337	0.3546	0.5436	0.3342	0.4432
Pakistan	0.4837	0.2058	0.1647	0.1377	0.1687	0.1377	0.1716	0.1377	0.1815	0.3213
Romania	0.4821	0.2262	0.1723	0.2174	0.1707	0.2174	0.1667	0.2246	0.1735	0.2947
Turkey	0.4511	0.5284	0.6489	1.0202	0.8210	1.0202	0.8044	1.0545	0.8446	1.0714
Egypt	0.4416	0.3736	0.4210	1.1788	0.6700	1.1788	0.6282	1.1581	0.5040	0.7339
Israel	0.4343	0.3821	0.4695	0.5322	0.4767	0.5322	0.4705	0.5495	0.4961	0.6385
New Zealand	0.4186	0.2599	0.2436	0.3013	0.2600	0.3013	0.2559	0.3115	0.2703	0.4028
Philippines	0.4117	0.3368	0.5636	0.6360	0.5007	0.6360	0.4870	0.6537	0.4841	0.5883
Portugal	0.4059	0.5539	0.5328	0.4045	0.4493	0.4045	0.4509	0.4104	0.4737	0.6023
Singapore	0.4036	1.5165	2.8039	1.6402	1.3343	1.6402	1.2952	1.6405	1.0574	0.8767
Chile	0.4006	0.2543	0.2855	0.3752	0.3098	0.3752	0.3041	0.3881	0.3208	0.4809
Ireland	0.3923	0.6038	1.1175	2.8041	1.6129	2.8041	1.5076	2.7203	1.0723	1.0047
Greece	0.3851	0.3802	0.3602	0.6817	0.5091	0.6817	0.4954	0.7014	0.5059	0.7422
Czech Republic	0.3834	0.3157	0.4168	0.4866	0.3838	0.4866	0.3732	0.4994	0.3668	0.4620
Colombia	0.3622	0.2408	0.2182	0.2089	0.2413	0.2089	0.2450	0.2103	0.2577	0.4515
Bulgaria	0.2996	0.1903	0.1157	0.2161	0.1291	0.2161	0.1216	0.2143	0.0996	0.1675
Peru	0.2987	0.1561	0.1505	0.2793	0.2115	0.2793	0.2064	0.2871	0.2104	0.3812
United Arab Emirates	0.2862	0.3958	0.5117	0.3974	0.3587	0.3974	0.3527	0.4062	0.3443	0.4170
Morocco	0.2752	0.1672	0.1398	0.1440	0.1392	0.1440	0.1384	0.1483	0.1483	0.2505
Bangladesh	0.2495	0.0881	0.0952	0.1035	0.1065	0.1035	0.1069	0.1061	0.1150	0.2239
Congo, Dem. Republic of	0.2494	0.0548	0.0332	0.0507	0.0330	0.0507	0.0315	0.0514	0.0292	0.0673
Zambia	0.2289	0.0333	0.0245	0.1154	0.0587	0.1154	0.0540	0.1078	0.0326	0.0732
Yugoslavia	0.2188	0.1957	0.1275	0.3827	0.1976	0.3827	0.1822	0.3612	0.1171	0.2147
Sri Lanka	0.1934	0.0776	0.0718	0.0553	0.0624	0.0553	0.0627	0.0561	0.0660	0.1257
Belarus	0.1808	0.1180	0.1227	0.1223	0.0870	0.1223	0.0835	0.1237	0.0743	0.1202
Ghana	0.1727	0.0283	0.0325	0.0484	0.0380	0.0484	0.0371	0.0500	0.0382	0.0836
Kazakstan	0.1711	0.1877	0.1949	0.3989	0.2190	0.3989	0.2039	0.3871	0.1515	0.2561
Croatia	0.1708	0.1566	0.1313	0.2060	0.1427	0.2060	0.1369	0.2099	0.1295	0.2089
Slovak Republic	0.1673	0.1360	0.1794	0.2121	0.1586	0.2121	0.1533	0.2170	0.1474	0.2225
Zimbabwe	0.1654	0.0426	0.0352	0.0304	0.0308	0.0304	0.0307	0.0311	0.0322	0.0691
Trinidad and Tobago	0.1570	0.0583	0.0385	0.0406	0.0348	0.0406	0.0342	0.0419	0.0352	0.0741
Vietnam	0.1540	0.0629	0.1575	0.1239	0.1269	0.1239	0.1265	0.1268	0.1325	0.2145

Table 6. Calculated Quota Shares, by Formula Variant 1/ (continued)

	Actual Quota Shares 2/	Five Formulas		Formula Type						
		11th Rev. 3/	Now 4/ 5/	Formula 1 Variant A	Formula 1 Variant B	Formula 2 Variant A	Formula 2 Variant B	Formula 3 Variant A	Formula 3 Variant B	Formula 3 Variant C
Cote d'Ivoire	0.1522	0.0689	0.0567	0.0528	0.0523	0.0528	0.0520	0.0542	0.0547	0.1064
Sudan	0.1474	0.0361	0.0270	0.0599	0.0408	0.0599	0.0394	0.0608	0.0376	0.1002
Uruguay	0.1434	0.0550	0.0574	0.0583	0.0619	0.0583	0.0623	0.0595	0.0668	0.1472
Ecuador	0.1415	0.0941	0.0723	0.0718	0.0704	0.0718	0.0701	0.0739	0.0751	0.1453
Syrian Arab Republic	0.1374	0.1316	0.1057	0.1019	0.1307	0.1019	0.1344	0.0993	0.1287	0.2960
Tunisia	0.1341	0.1130	0.0996	0.0722	0.0839	0.0722	0.0844	0.0728	0.0878	0.1544
Angola	0.1340	0.0939	0.2122	0.3657	0.1922	0.3657	0.1772	0.3418	0.1028	0.1520
Luxembourg	0.1306	0.2887	1.5516	0.9107	0.6351	0.9107	0.6061	0.8793	0.3882	0.3448
Uzbekistan	0.1290	0.0901	0.2204	0.6177	0.2992	0.6177	0.2729	0.5567	0.1360	0.2566
Jamaica	0.1280	0.0510	0.0471	0.0361	0.0380	0.0361	0.0379	0.0367	0.0388	0.0770
Kenya	0.1270	0.0498	0.0394	0.0429	0.0419	0.0429	0.0417	0.0442	0.0448	0.0974
Qatar	0.1234	0.0926	0.0716	0.1404	0.0872	0.1404	0.0825	0.1407	0.0719	0.1329
Myanmar	0.1209	0.1143	0.3027	0.1033	0.2760	0.1033	0.2971	0.0589	0.1164	0.4312
Yemen, Republic of	0.1139	0.0767	0.1087	0.2816	0.1433	0.2816	0.1316	0.2617	0.0760	0.1338
Slovenia	0.1084	0.1413	0.1461	0.0977	0.1008	0.0977	0.1004	0.0996	0.1031	0.1690
Dominican Republic	0.1024	0.0673	0.1166	0.1069	0.0925	0.1069	0.0908	0.1101	0.0931	0.1591
Brunei Darussalam	0.1007	0.1007	0.0504	0.0616	0.0451	0.0616	0.0434	0.0625	0.0392	0.0722
Guatemala	0.0984	0.0473	0.0492	0.0647	0.0604	0.0647	0.0601	0.0667	0.0646	0.1416
Panama	0.0967	0.0676	0.1227	0.1056	0.0894	0.1056	0.0873	0.1073	0.0801	0.1227
Lebanon	0.0950	0.0793	0.0758	0.1549	0.1000	0.1549	0.0954	0.1569	0.0890	0.1738
Tanzania	0.0931	0.0260	0.0252	0.0232	0.0257	0.0232	0.0259	0.0236	0.0278	0.0694
Oman	0.0908	0.1516	0.1029	0.0825	0.0765	0.0825	0.0757	0.0850	0.0790	0.1421
Cameroon	0.0869	0.0519	0.0272	0.0545	0.0409	0.0545	0.0398	0.0561	0.0409	0.0975
Uganda	0.0845	0.0157	0.0200	0.0298	0.0248	0.0298	0.0244	0.0309	0.0258	0.0667
Bolivia	0.0802	0.0283	0.0250	0.0237	0.0250	0.0237	0.0251	0.0243	0.0270	0.0698
El Salvador	0.0802	0.0350	0.0544	0.0648	0.0544	0.0648	0.0534	0.0670	0.0562	0.1158
Jordan	0.0798	0.0789	0.0707	0.1066	0.0745	0.1066	0.0714	0.1081	0.0649	0.1122
Bosnia-Herzegovina	0.0791	0.0714	0.1627	0.4655	0.2160	0.4655	0.1952	0.3949	0.0662	0.1201
Costa Rica	0.0768	0.0514	0.0695	0.0586	0.0617	0.0586	0.0617	0.0598	0.0648	0.1219
Afghanistan, Islamic State of	0.0758	0.0099	0.0058	0.0105	0.0081	0.0105	0.0079	0.0107	0.0081	0.0285
Senegal	0.0757	0.0289	0.0232	0.0283	0.0233	0.0283	0.0228	0.0292	0.0238	0.0567
Azerbaijan	0.0753	0.0457	0.0386	0.0869	0.0474	0.0869	0.0441	0.0842	0.0324	0.0756
Gabon	0.0722	0.0697	0.0505	0.0619	0.0425	0.0619	0.0408	0.0629	0.0377	0.0755
Georgia	0.0703	0.0197	0.0169	0.0343	0.0219	0.0343	0.0208	0.0346	0.0192	0.0500
Lithuania	0.0675	0.0593	0.0717	0.0733	0.0598	0.0733	0.0585	0.0755	0.0597	0.1137

Table 6. Calculated Quota Shares, by Formula Variant 1/ (continued)

	Actual Quota Shares 2/	Five Formulas		Formula Type						
		11th Rev. 3/	Now 4/ 5/	Formula 1 Variant A	Formula 1 Variant B	Formula 2 Variant A	Formula 2 Variant B	Formula 3 Variant A	Formula 3 Variant B	Formula 3 Variant C
Cyprus	0.0653	0.0601	0.0537	0.0616	0.0519	0.0616	0.0509	0.0635	0.0519	0.0998
Namibia	0.0639	0.0347	0.0255	0.0173	0.0187	0.0173	0.0186	0.0175	0.0184	0.0405
Bahrain	0.0632	0.1071	0.1853	0.3546	0.1941	0.3546	0.1800	0.3344	0.1078	0.1483
Ethiopia	0.0626	0.0240	0.0209	0.0650	0.0397	0.0650	0.0376	0.0651	0.0332	0.0818
Papua New Guinea	0.0616	0.0423	0.0346	0.0462	0.0335	0.0462	0.0323	0.0472	0.0307	0.0638
Bahamas, The	0.0610	0.0346	0.0276	0.0244	0.0221	0.0244	0.0217	0.0250	0.0217	0.0469
Nicaragua	0.0608	0.0155	0.0874	0.1985	0.0960	0.1985	0.0874	0.1759	0.0377	0.0703
Honduras	0.0606	0.0252	0.0340	0.0338	0.0291	0.0338	0.0285	0.0349	0.0293	0.0636
Liberia	0.0605	0.0061	0.0659	0.0094	0.0085	0.0094	0.0083	0.0096	0.0078	0.0193
Latvia	0.0593	0.0460	0.0426	0.0413	0.0350	0.0413	0.0343	0.0426	0.0352	0.0738
Moldova	0.0576	0.0297	0.0212	0.0214	0.0147	0.0214	0.0140	0.0216	0.0124	0.0290
Madagascar	0.0572	0.0137	0.0127	0.0182	0.0155	0.0182	0.0152	0.0188	0.0162	0.0438
Iceland	0.0550	0.0359	0.0311	0.0335	0.0327	0.0335	0.0326	0.0345	0.0348	0.0780
Mozambique	0.0532	0.0140	0.0175	0.0352	0.0233	0.0352	0.0223	0.0358	0.0211	0.0542
Guinea	0.0501	0.0191	0.0136	0.0233	0.0172	0.0233	0.0167	0.0239	0.0169	0.0467
Sierra Leone	0.0485	0.0051	0.0031	0.0104	0.0058	0.0104	0.0055	0.0102	0.0043	0.0163
Malta	0.0477	0.0573	0.0518	0.0358	0.0323	0.0358	0.0317	0.0363	0.0293	0.0546
Mauritius	0.0475	0.0362	0.0321	0.0285	0.0262	0.0285	0.0259	0.0292	0.0260	0.0546
Paraguay	0.0467	0.0358	0.0612	0.0670	0.0541	0.0670	0.0527	0.0690	0.0532	0.1016
Mali	0.0437	0.0127	0.0125	0.0113	0.0109	0.0113	0.0108	0.0116	0.0115	0.0319
Suriname	0.0431	0.0178	0.0117	0.0160	0.0098	0.0160	0.0092	0.0160	0.0078	0.0219
Armenia	0.0430	0.0185	0.0111	0.0125	0.0100	0.0125	0.0097	0.0129	0.0100	0.0277
Guyana	0.0425	0.0111	0.0197	0.0189	0.0121	0.0189	0.0115	0.0187	0.0088	0.0205
Kyrgyz Republic	0.0416	0.0260	0.0738	0.2362	0.1072	0.2362	0.0965	0.1925	0.0259	0.0605
Cambodia	0.0409	0.0064	0.0178	0.0182	0.0154	0.0182	0.0151	0.0188	0.0157	0.0399
Tajikistan	0.0407	0.0410	0.0518	0.1046	0.0490	0.1046	0.0443	0.0878	0.0136	0.0278
Congo, Republic of	0.0396	0.0415	0.0275	0.0725	0.0409	0.0725	0.0382	0.0701	0.0266	0.0529
Haiti	0.0383	0.0078	0.0134	0.0241	0.0172	0.0241	0.0166	0.0247	0.0166	0.0467
Somalia	0.0382	0.0031	0.0020	0.0021	0.0020	0.0021	0.0019	0.0021	0.0021	0.0082
Rwanda	0.0375	0.0057	0.0115	0.0293	0.0162	0.0293	0.0151	0.0285	0.0115	0.0362
Burundi	0.0360	0.0055	0.0033	0.0076	0.0048	0.0076	0.0046	0.0076	0.0041	0.0164
Turkmenistan	0.0352	0.0495	0.0540	0.0956	0.0510	0.0956	0.0472	0.0912	0.0314	0.0659
Togo	0.0343	0.0086	0.0112	0.0187	0.0119	0.0187	0.0113	0.0188	0.0101	0.0273
Nepal	0.0334	0.0183	0.0195	0.0232	0.0207	0.0232	0.0205	0.0240	0.0218	0.0548
Fiji	0.0329	0.0200	0.0172	0.0125	0.0118	0.0125	0.0116	0.0128	0.0117	0.0286

Table 6. Calculated Quota Shares, by Formula Variant 1/ (continued)

	Actual Quota Shares 2/	Five Formulas		Formula Type						
		11th Rev. 3/	Now 4/ 5/	Formula 1 Variant A	Formula 1 Variant B	Formula 2 Variant A	Formula 2 Variant B	Formula 3 Variant A	Formula 3 Variant B	Formula 3 Variant C
Malawi	0.0325	0.0135	0.0106	0.0117	0.0101	0.0117	0.0100	0.0121	0.0104	0.0291
Macedonia, FYR	0.0322	0.0263	0.0486	0.0848	0.0474	0.0848	0.0442	0.0825	0.0328	0.0697
Barbados	0.0316	0.0218	0.0156	0.0108	0.0118	0.0108	0.0118	0.0110	0.0121	0.0304
Niger	0.0308	0.0122	0.0073	0.0175	0.0109	0.0175	0.0103	0.0176	0.0093	0.0292
Estonia	0.0305	0.0304	0.0499	0.0565	0.0431	0.0565	0.0417	0.0576	0.0393	0.0742
Mauritania	0.0301	0.0096	0.0082	0.0131	0.0087	0.0131	0.0083	0.0132	0.0076	0.0214
Botswana	0.0295	0.0652	0.0602	0.0671	0.0462	0.0671	0.0442	0.0681	0.0408	0.0800
Benin	0.0290	0.0133	0.0127	0.0149	0.0115	0.0149	0.0112	0.0153	0.0116	0.0327
Burkina Faso	0.0282	0.0117	0.0106	0.0283	0.0174	0.0283	0.0165	0.0284	0.0147	0.0414
Chad	0.0262	0.0077	0.0073	0.0091	0.0074	0.0091	0.0073	0.0094	0.0076	0.0235
Central African Republic	0.0261	0.0065	0.0057	0.0073	0.0055	0.0073	0.0054	0.0075	0.0055	0.0178
Lao, People's Dem. Republic	0.0248	0.0063	0.0085	0.0086	0.0076	0.0086	0.0075	0.0089	0.0078	0.0226
Mongolia	0.0239	0.0156	0.0106	0.0451	0.0227	0.0451	0.0209	0.0417	0.0116	0.0299
Swaziland	0.0237	0.0198	0.0188	0.0097	0.0106	0.0097	0.0106	0.0097	0.0097	0.0223
Albania	0.0228	0.0157	0.0225	0.0470	0.0269	0.0470	0.0252	0.0463	0.0204	0.0528
Lesotho	0.0163	0.0171	0.0160	0.0099	0.0087	0.0099	0.0085	0.0101	0.0078	0.0191
Equatorial Guinea	0.0153	0.0015	0.0076	0.0112	0.0075	0.0112	0.0072	0.0113	0.0060	0.0160
Gambia, The	0.0146	0.0053	0.0040	0.0052	0.0037	0.0052	0.0035	0.0053	0.0033	0.0105
Belize	0.0088	0.0073	0.0042	0.0038	0.0036	0.0038	0.0036	0.0039	0.0037	0.0118
San Marino	0.0080	0.0165	0.0361	0.0144	0.0137	0.0144	0.0135	0.0142	0.0103	0.0200
Vanuatu	0.0080	0.0029	0.0028	0.0044	0.0029	0.0044	0.0027	0.0044	0.0022	0.0072
Djibouti	0.0074	0.0053	0.0045	0.0074	0.0049	0.0074	0.0046	0.0075	0.0041	0.0129
Eritrea	0.0074	0.0056	0.0081	0.0108	0.0073	0.0108	0.0070	0.0109	0.0063	0.0181
St. Lucia	0.0072	0.0061	0.0048	0.0028	0.0034	0.0028	0.0034	0.0027	0.0033	0.0104
Guinea-Bissau	0.0066	0.0018	0.0017	0.0024	0.0016	0.0024	0.0015	0.0024	0.0015	0.0060
Antigua and Barbuda	0.0063	0.0094	0.0054	0.0064	0.0051	0.0064	0.0050	0.0065	0.0048	0.0136
Grenada	0.0055	0.0030	0.0023	0.0022	0.0020	0.0022	0.0020	0.0023	0.0021	0.0073
Samoa	0.0054	0.0021	0.0019	0.0011	0.0012	0.0011	0.0012	0.0011	0.0012	0.0047
Solomon Islands	0.0049	0.0036	0.0032	0.0041	0.0031	0.0041	0.0030	0.0042	0.0029	0.0093
Cape Verde	0.0045	0.0028	0.0032	0.0031	0.0029	0.0031	0.0029	0.0032	0.0030	0.0101
Comoros	0.0042	0.0019	0.0014	0.0017	0.0012	0.0017	0.0012	0.0017	0.0012	0.0049
St. Kitts and Nevis	0.0042	0.0023	0.0022	0.0035	0.0025	0.0035	0.0024	0.0036	0.0022	0.0077
Seychelles	0.0041	0.0045	0.0050	0.0043	0.0039	0.0043	0.0039	0.0044	0.0038	0.0116
St. Vincent and the Grenadines	0.0039	0.0029	0.0025	0.0022	0.0020	0.0022	0.0020	0.0022	0.0020	0.0069
Dominica	0.0038	0.0020	0.0019	0.0019	0.0017	0.0019	0.0016	0.0020	0.0017	0.0061

Table 6. Calculated Quota Shares, by Formula Variant 1/ (concluded)

	Actual Quota Shares 2/	Five Formulas		Formula Type						
		11th Rev. 3/	Now 4/ 5/	Formula 1 Variant A	Formula 1 Variant B	Formula 2 Variant A	Formula 2 Variant B	Formula 3 Variant A	Formula 3 Variant B	Formula 3 Variant C
Maldives	0.0038	0.0043	0.0058	0.0033	0.0033	0.0033	0.0033	0.0033	0.0030	0.0087
Sao Tome and Principe	0.0035	0.0006	0.0005	0.0013	0.0007	0.0013	0.0006	0.0012	0.0004	0.0022
Tonga	0.0032	0.0018	0.0014	0.0026	0.0016	0.0026	0.0015	0.0026	0.0012	0.0051
Bhutan	0.0029	0.0026	0.0035	0.0050	0.0033	0.0050	0.0031	0.0051	0.0029	0.0102
Kiribati	0.0026	0.0025	0.0014	0.0006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0018
Micronesia, Fed. States of	0.0024	0.0024	0.0039	0.0062	0.0035	0.0062	0.0033	0.0061	0.0024	0.0079
Marshall Islands	0.0016	0.0014	0.0012	0.0016	0.0011	0.0016	0.0010	0.0016	0.0009	0.0035
Palau, Republic of	0.0015	0.0010	0.0020	0.0035	0.0020	0.0035	0.0019	0.0034	0.0014	0.0052
Total	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000
Memorandum items:										
Sum of the absolute deviations from actual quota shares	0.0	28.6	34.1	35.8	31.4	35.8	31.7	36.0	32.3	27.7
Standard deviation of the difference between calculated and actual quota shares	0.0	0.44	0.43	0.41	0.40	0.41	0.42	0.42	0.45	0.35

1/ Using data for 1987-99. See Table 4 for formula variants.
2/ Based on actual quotas except for the nine countries that have not yet consented to their proposed quota increase, for which 11th Review proposed quotas are used.
3/ Based on 11th Review calculated quotas except for China, for which the calculated quota is used that was derived by staff in connection with China's recent ad hoc quota increase.
4/ Computed as traditionally specified.
5/ Current receipts and payments have not been adjusted for official transfers, re-exports, and international banking interest.

SELECTION OF THE DATABASE, DERIVATION OF QUOTA VARIABLES, AND OTHER ISSUES

66.   This annex discusses the required data, the selection of the database and the derivation of the data series that were used for the quota calculations. It also provides some information on possible adjustments of the data for re-exports and international banking interest.

A. Required Data

67.   The quantification of existing and alternative quota variables used in this paper requires the following data for 183 member countries (converted into SDRs as the common denominator):

- **GDP** (Gross Domestic Product), for 3 years (1997–99).

- **Current receipts** (goods, services, income, and current transfers)[45] for 13 years (1987–99). Current receipts are defined as the credit component of all economic transactions between resident and nonresident entities other than those relating to financial transactions and reserves.

- **Current payments** (goods, services, income, and current transfers,)[46] for 5 years (1995–99). Current payments are defined as the debit component of all economic transactions between resident and nonresident entities other than those relating to financial transactions and reserves.

- **Net capital flows** for 13 years (1987–99).[47] Capital flows relate to cross-border transactions in all foreign financial assets and liabilities except reserve assets, Fund credit and loans, and exceptional financing.

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[45] Current transfers include both private and official transfers, unlike past quota calculations that excluded official transfers. The capital account (as defined in the fifth edition of the Fund's *Balance of Payments Manual*) is included here with the current account to improve data comparability across countries as many countries have difficulty in distinguishing current and capital transfers in their balance of payments systems.

[46] See previous footnote.

[47] See Footnote 21.

- **Official reserves** (average over the 12 months of 1999), defined as the sum of foreign exchange, SDR holdings, reserve position in the Fund, and monetary gold valued at SDR 35 per fine troy ounce.

68.   Errors and omissions have not been included in the measure of variability of current receipts and net capital inflows. In many analytical presentations of the balance of payments errors and omissions are considered financing flows and included with short-term capital. However, errors and omissions are, by definition, a residual item, which reflects recording errors that cannot be ascribed to any particular balance of payments category and staff do not believe that recording errors should be a factor in determining quotas. This is fully in line with the definition of capital flows in the balance of payments manual.

69.   At the same time, Fund credit and loans and exceptional financing have been excluded from the variability measure for the same reason that reserve changes have been excluded. Such transactions, including Fund borrowing, payment arrears, and debt forgiveness or rescheduling, represent exceptional measures undertaken to finance balance of payments needs. Exceptional financing flows are normally shown "below the line" because they are not autonomous transactions affecting the balance of payments position of a country. For these reasons, the staff believes that these transactions should not be included in the variability measure.

70.   Along these same lines, changes in both reserve assets and liabilities should in principle be excluded from net capital inflows so that only autonomous, and not financing, flows are captured. Data on transactions in reserve assets are available for most members in IFS and have been excluded from net capital inflows. However, because of the continuing lack of data on reserve liabilities for many members (reserve liabilities are not a standard component in *BPM5*), changes in reserve liabilities have not been excluded from the measure of net capital flows in this paper.

B. Data Sources

71.   The database containing the variables used in the quota calculations would ideally have the following attributes: it should be comprehensive, i.e., contain all required data— compiled in line with internationally accepted concepts and definitions—for all members; the data would be from official sources (ministries, central banks and national statistical agencies); and the data would be comparable (consistent and coherent) across time and countries. This would ensure similar treatment for all countries' data and facilitate the comparability of results in a transparent manner. It would also be helpful if the database could be updated without major additional use of staff resources.

72.   As in past quota reviews**,** the main source of data used in the quota calculations was the Fund's central macroeconomic database of country, regional, and global statistics. This database is managed by the Statistics Department (STA) for international statistical

cooperation and publication purposes, and to support the Fund's surveillance and use of Fund resources functions. This database, which encompasses a number of component databases and is collectively known as the Economic Information System (EIS), embodies the application of general methodological guidelines for the compilation of economic and financial data. These guidelines promote international comparability and methodological continuity in the database over time. The database is used to compile the Fund publication—*International Financial Statistics (IFS)*.[48]

73.   The *IFS* data are reported to STA by central banks and national statistical agencies, and are based on internationally consistent definitions, such as the fifth edition of the *Balance of Payments Manual (BPM5)* and the *1993 System of National Accounts (SNA)*. STA makes an effort to compile these data into long time series that are consistent across time and countries. However, gaps exist in some of the data. For instance, there are some missing data for GDP and for current account transactions for more recent years and, as in the past, current receipts and payments data for early years in the case of transition countries are not available. Also, for many members there are data gaps in the capital account of the balance of payments.

74.   Missing observations were largely supplemented using the *World Economic Outlook (WEO)* database. The *WEO* data are provided primarily by the Area Departments through their consultations with member countries. In the Eleventh Review of Quotas, *IFS* data were supplemented by other official data and staff estimates obtained from area departments and Treasurer's Department (TRE) staff estimates.

75.   Although *WEO* data should reflect a presentation of the balance of payments that is consistent with the *BPM5*, the definition of balance of payments variables do not necessarily need to exactly conform to *BPM5* until such time as (a) national compilers have revised the respective country's balance of payments accounts or (b) the staff report for the country reflects the new definitions.

76.   At the outset of the development of the database for the quota calculations, STA was aware that for some member countries there exist large differences between the *IFS* and the *WEO* data sets. As noted above, some of these differences are related to the use of different classification systems, i.e., use of a national presentation in *WEO* while the standardized *BPM5* presentation was reported to STA. In other cases, the *WEO* may have contained updated information that had not yet been transmitted to STA. In the same vein, it is possible that some of the historical data may have been updated in only one of the two sets of data.

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[48] In this paper, the data drawn from the EIS is referred to as the *IFS* database, following the practice in past quota review papers.

There were instances where *WEO* data were used to fill gaps in an *IFS* data set where there were large differences in the periods where data were reported for both datasets.

77.   These data discrepancies between the two data sources may also have been influenced by the varying institutional, legal, and accounting contexts of data compilation across member countries (see Box 7). At this point in the work on alternative quota formulas, data differences between the *IFS* and *WEO* have not been addressed. In addition, the database for the quota calculations has not been reviewed by the Fund's Area Departments or by national authorities. The primary focus of the staff's work on quota formulas at this stage is the exploration of the broad performance of various formulas, and not the derivation of accurate shares for each member country. While data discrepancies exist, they are not believed to be of magnitudes that would undermine the general assessment of the performance of the formulas at aggregate levels.

C. Data Availability and Adjustments

78.   The bulk of Fund members that report balance of payments statistics to STA (150 of the 168) do so on the basis of the *BPM5*. Data were prepared for current receipts and payments and net capital inflows (as defined above). Where members reported comprehensive balance of payments statistics to STA, the data stored in the *IFS* database were used without any adjustment. When data were not available for some members for the timeframe required for the quota calculations, estimates were made largely on the basis of the *WEO*. The estimation technique, or gap filling, extrapolates from nearby non-zero data based on growth rates in comparable (but not necessarily identical) *WEO* series.[49] For members where neither *IFS* nor *WEO* data were available, TRE staff obtained data from Article IV staff reports and the Eleventh Review database.

79.   The following sections describe for each of the data categories the general procedures employed by STA to construct the required database for the quota calculations. Tables 10 and 11 in the Appendix provide detailed information on the data that were used for each of the 183 member countries. Table 12 in that Appendix provides the data for each of the variables in the traditional five quota formulas and the alternative quota formulas.

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[49] This method has been used to fill gaps for the purpose of publishing world and regional summary tables in the *Balance of Payments Statistics Yearbook (BOPSY),* Part 2, and was used in "External Review of Quota Formulas – Quantification", EBAP/01/29, 4/13/2001.

Box 7. **Methodological Issues**

With regard to **GDP data**, the *System of National Accounts (1993 SNA)* extended the scope of GDP slightly, adding in some instances, production of goods for own final use as well as including capital formation on mineral exploration, computer software, and artistic originals. Typically, this has resulted in an increase in reported GDP levels of up to five percent. By the beginning of 2001, about 50 members had adopted the *1993 SNA* for reporting GDP data to the *IFS*. Some of them have revised historical data. The size of data inconsistencies across countries due to the revisions related to the *1993 SNA* is likely to be smaller than other differences related to known measurement problems with GDP (e.g., under coverage of surveys).

With regard to the **current receipts and payments** (goods, services, income, current transfers, and *BPM5's* capital account), the *BPM5* introduced changes in the conceptual presentation of balance of payments accounts. Broadly, the *BPM5* strives to make a clear distinction between transactions and other changes in the accounts—valuation, reclassification, and other adjustments. The latter are included among adjustment items affecting the international investment position (IIP). Also, the *BPM5* introduced a distinction between current and capital transfers to increase harmonization with the *SNA*. These methodologies have been only partially adopted by the membership, and it is not feasible to adjust the data so that they are defined consistently across countries. Data are taken as reported by member countries and the changes in methodology may have contributed to slight breaks in some series.

With regard to **financial account** transactions, the accuracy of financial account data in many countries, including those in the *IFS* database is uneven, and the data are generally less comprehensive than the other data used for the quota formulas. This reflects classification and practical difficulties encountered by countries in compiling the data. Financial account data, particularly on the private nonbank sector, are generally difficult and resource intensive to compile. The switch from data collection systems based predominantly on government and balance sheet records to systems (particularly surveys) incorporating large nonbank private sector transactions has been slow. Many countries are still in the midst of adapting their collection and recording systems to take account of changes in the composition and magnitude of financial transactions, including new instruments such as financial derivatives. Institutional and accounting requirements for data compilation differ markedly across countries (for example, a recent summary of country reporting practices with respect to direct investment documents the number of gaps in recording and differences in treatment),[1] and data availability on the private nonbank sector varies. In the *IFS*, in many instances, only aggregates and not component series are reported.

With regard to **official reserves**, the *Data Template on International Reserves and Foreign Currency Liquidity* has been approved as the benchmark for the reporting of data to the Fund on official reserves. The Operational Guidelines for the *Data Template*, issued in provisional form in 1999, clarify existing concepts on international reserves and provide guidelines for reporting the data on a consistent basis across countries. The quantitative effect of improved reporting practices is not known but is likely to be small for 1999 reserves data.

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[1] See "Report on the Survey of Implementation of Methodological Standards for Direct Investment," IMF/OECD, March 2000.

Current Receipts and payments

Goods and services transactions

80.   Data reported by members and maintained in *IFS* were used for each country. Where there were data gaps after the latest year of reporting to STA, estimates were made by applying the growth rates derived from the *WEO* for the missing year(s) to the latest reported annual data (debits and credits). When the data gaps were in respect of years prior to the latest reported data to STA, the *WEO* data were inserted for those years to complete the series.

81.   For credit transactions, the *IFS* database is the source of data for 166 members, with *WEO* growth rates applied to 64 of these where there were data gaps. *WEO* data were substituted completely in the case of 10 members, and no *IFS* or *WEO* data were available for 7 members. With respect to debit transactions, the *IFS* database is the source of data for 152 members, with *WEO* growth rates applied to 35 of these. *WEO* data were substituted completely for 22 members and no *IFS* or *WEO* data were available for 9 members.

Income and current transfers

82.   Data reported by members and maintained in *IFS* were used for each country. Where there were data gaps estimates were derived using *WEO* data series. As the *WEO* data for these series are available only on a net basis, the adjustment procedure involved adding the change in the balance on transactions from the *WEO* data to the STA data of the previous year—credits if *WEO* showed a net credit balance or debits if a net debit balance was shown. Where there were gaps in the data prior to the latest reported data to STA, the net credit or the net debit figures from *WEO* were substituted directly to estimate income and current transfers credits and debits, respectively.

83.   For income and current transfers credit transactions, the *IFS* database is the source of data for 164 members, with the change from the *WEO* series applied to 61 of these. Net credit figures from *WEO* were substituted directly for 6 members, and no IFS or *WEO* data were available for 13 members. With respect to income and current transfers debit transactions, the source of data for 152 members was the *IFS*, and the net change from the *WEO* series were applied directly for 36 members. Net debit figures from *WEO* were substituted directly for 17 members, and no *IFS* or *WEO* data were available in the case of 13 members.

"Capital account" transactions [50]

84.   The primary source for data on "capital account" transactions was the *IFS* data series. When *IFS* values were unavailable, the change in the *WEO* balance for that year was used to derive an estimate. The paucity of *IFS* "capital account" data may reflect the inclusion of capital transfers in current transfers by some members. In some cases, the use of the *WEO* data may have produced some duplication i.e., use of *WEO* data for capital transfers, which may have been classified under current transfers in the *IFS* series.

85.   For the "capital account" credit transactions, the *IFS* is the source of data for 127 members, with the data from the change in *WEO* applied to 73 of these. Net credit data from *WEO* were substituted directly for 17 members. With regard to "capital account" debit transactions, the *IFS* was the source of data for 94 countries, with the data from the change in *WEO* applied to 21 of these. Net debit data from *WEO* were substituted directly for 13 members.

Net capital flows

86.   The primary source for data on net capital flows was the *IFS* financial account data provided by member countries to STA. When *IFS* values were unavailable, a *WEO* value was used to fill the gaps. The *IFS* database is the source of data for 165 members, with *WEO* data substituted for 62 of these members with some years of missing data, and completely substituted for 8 members where there were no *IFS* data. No *IFS* or *WEO* data were available for 9 members.

Official reserves

87.   The data on official reserves—comprising monetary gold, SDR holdings, reserve position in the Fund, and foreign exchange holdings—were obtained from *IFS* with monetary gold valued at SDR 35 per fine troy ounce. In deriving annual average holdings of official reserves for 1999, the data for the 12 months of 1999 were summed and then divided by 12 (or by the number of months for which data were available).

Gross domestic product

88.   The *IFS* and *WEO* databases provided GDP data for 173 members. The *IFS* database is the source of data for 113 members, *WEO* data were used for 20 members, and *WEO* growth rates were applied to the latest *IFS* data to estimate missing data for 40 members. GDP data for 11 members that are compiled and reported on a fiscal year basis were first

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[50] "Capital account" (in quotation marks) refers to the capital account as defined in BPM5.

adjusted to calendar year basis by recalculating the annual GDP as an average of the quarters of the fiscal year.

Valuation

89.   The balance of payments and the GDP data series in U.S. dollars were converted to SDRs using period-average exchange rates.

Other country data series

90.   In the case of Afghanistan, Iraq, Somalia, and Yugoslavia, data for the various series were assumed unchanged from the Eleventh Review. For Bosnia-Herzegovina, data were estimated based on the Eleventh Review and the *IFS* databases, and recent Article IV staff reports. For Eritrea, Marshall Islands, Micronesia, Palau, and San Marino, data were estimated on the basis of the Eleventh Review database and data in recent Article IV staff reports.

91.   Balance of payments data for Belgium were estimated as the difference between data for the Belgium–Luxembourg Economic Union and Luxembourg. For Luxembourg, balance of payments data were derived from the *IFS* and the Eleventh Review databases. For China balance of payments data adjusted for trade between the mainland and Hong Kong SAR were obtained as follows: (i) for 1987–97, data were derived from the staff's database for China's ad hoc quota increase, and (ii) for 1998–99, estimated by staff on the basis of *IFS* data using the same adjustment coefficients that were applied for the ad hoc quota increase.

D.   Adjustments to Current Account Data in Previous Reviews

92.   In past quota reviews, adjustments have been made to current transactions data for countries with significant entrepot trade (or reexports), international banking interest, and some other transactions. This section briefly describes the adjustments that were made. In this paper no similar adjustments have been made to the data.

Reexports/entrepot trade

93.   For some countries adjustments to current receipts and current payments were made in the past for reexports/entrepot trade to avoid overestimating "true" exports and imports. In practice, the terms reexports and entrepot trade have been used interchangeably. A definition of reexports is "foreign goods exported in the same state as previously imported." This contrasts with "goods in transit," which are commodities simply transported through the country, which are not included in trade or BOP statistics. The crucial aspect of these

transactions is ownership.[51] If there is no change of ownership to a resident the transactions are not recorded. Transportation or other earnings associated with the transport through the country would be recorded in services.[52] Countries do not report data on reexports separately to *IFS*. An entrepot is defined as an intermediary center of trade and transshipment. With the above caveat on change in ownership, it thus appears that these two concepts cover the same transactions.

94.   The countries for which adjustments for reexports and/or entrepot trade were made in the Ninth and Eleventh Reviews are shown in Table 7. More adjustments were made for the Ninth than for the Eleventh Review, and only 7 countries' data were adjusted in both reviews. The adjustments took the form of deducting the amount of reexports from both current receipts and payments. No specific criteria were used to determine for which country an adjustment should be made. For some countries reexports accounted for a very large share of current transactions (e.g., Singapore) while for others reexports in fact were small compared to total current receipts (e.g., Bahrain and Malta). At the same time, the trade data of some countries with large reexports (e.g., Denmark and the Netherlands) were not adjusted.

Other adjustments

95.   For the Eleventh Review a number of other adjustments to current account data were made. In particular, for Mexico, the Dominican Republic, and El Salvador, adjustments were made to exclude maquiladora trade, i.e., the trade to the large export processing zones in these countries, and for Israel an adjustment was made for the diamond trade. These adjustments were made because while the gross trade flows in export processing zones can be substantial, their value added is relatively limited (compared to the size of the flows). Data on maquiladora trade on a net basis were provided by the authorities. For Israel the adjustment consisted of deducting the minimum of exports and imports of diamonds in a given year from the total exports and imports.[53] No specific criteria were used to determine for which country export processing should be excluded. Data for some countries with large export processing zones (e.g., Mauritius, China) were not adjusted.

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[51] There are some exceptions to the change in ownership rule for recording transactions in the balance of payments that are indicated in the *BPM5* (para. 205–207). For instance, goods for processing are recorded.

[52] For other commodities, according to *BPM5*, the value of goods includes related distributive services at the time when the goods reach the customs frontier of the economy from which they are exported (para. 222).

[53] This was done because in some years imports were larger than exports.

Table 7. Countries for which Export Data were Adjusted

(Ninth and Eleventh Reviews of Quotas)[1]

	Type of Adjustment
Adjusted in both reviews	
Bahrain	Reexports on net basis (11th)/Reexports excluded (9th)
Cyprus	Reexports on net basis (11th)/Reexports excluded (9th)
Djibouti	Reexports on net basis (11th)/Reexports excluded (9th)
Malta	Reexports on net basis (11th)/Reexports excluded (9th)
Panama	Reexports on net basis (11th)/Entrepot trade excluded (9th)
Singapore	Reexports on net basis (11th)/Entrepot trade excluded (9th)
United Arab Emirates	Reexports on net basis (11th)/Reexports excluded (9th)
Adjusted in 11th Review only	
Dominican Republic	Free trade zone transactions on net basis
El Salvador	Maquiladora trade on net basis
Israel	Diamond trade on net basis
Mexico	Maquiladora trade on net basis
Switzerland	Nonmonetary gold on net basis
Togo	Entrepot trade on net basis
Adjusted in 9th Review only	
Antigua and Barbuda	Reexports excluded
Bahamas	Reexports excluded
Barbados	Reexports excluded
Belize	Reexports excluded
Fiji	Reexports excluded
Gambia, The	Reexports excluded
Jamaica	Reexports excluded
Jordan	Reexports excluded
Malawi	Reexports excluded
Maldives	Reexports excluded
Seychelles	Reexports excluded
St. Lucia	Reexports excluded
Trinidad and Tobago	Reexports excluded
Vanuatu	Reexports excluded
Western Samoa	Reexports excluded
Yemen, PDR	Reexports excluded

[1] As reported in EB/CQuota/97/4 and EB/CQuota/89/8.

96.   As an illustration, Table 8 shows the share of "goods for processing" in total exports for countries that provide this information to *IFS*. Based on *BPM5,* "goods for processing" covers commodities that are exported or imported for processing and that comprise two transactions; (i) the export of a good (e.g., crude oil, vehicle parts, fabric) and (ii) the re-import of the processed good (e.g., gasoline, clothing) on the basis of a contract and for a fee. Symmetrically, processing performed (for nonresidents) in the compiling economy consists of an import followed by an export. *BPM5* recommends that these types of goods be recorded separately. The rationale for this treatment is based upon requirements of the national accounts. Commodities processed in export processing zones fall in this category.

97.   While less than one third of countries presently report data on "goods for processing" separately to *IFS* and time series typically do not go back for many years, it is clear that there is a large number of countries which could be included for this type of adjustment to the data. Countries where "goods for processing" account for a large share of total exports include (in addition to Mexico, the Dominican Republic, and El Salvador) Albania, China, Costa Rica, Czech Republic, Honduras, Laos, Morocco, and the Baltics.

Adjustment for nonmonetary gold

98.   For one country (Switzerland) adjustments were made in the Eleventh Review to trade flows for nonmonetary gold exports and imports because Switzerland has an important gold market and transactions in this market have no clear bearing on the economic size of the country. The method used for the adjustment for Switzerland was to deduct the minimum of the exports and imports of nonmonetary gold in a given year from total exports and imports.[54] In the case of the United Kingdom, which is another major gold market, the net value of nonmonetary gold exports and imports is included in the financial account.[55] Japan treats some nonmonetary gold flows similarly. In both cases the size of these flows is not explicitly shown.

International banking interest

99.   Since the Eighth Review it has also been practice to adjust international banking interest (IBI) flows so that they are included on a net, rather than a gross, basis in current transactions data for those countries with significant international and/or offshore banking activity. IBI flows are interest payments (i) by nonresidents on their borrowings from domestic banks, and (ii) by domestic banks on deposits held by nonresidents. This treatment was based on the premise that when nonresident deposits with domestic banks are used to

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[54] This adjustment was made for total gold flows and would include gold used for purposes such as the production of jewelry.

[55] According to the recommended methodology in *BPM5*, nonmonetary gold flows should be included in the goods account.

Table 8. Goods in Processing as a Share of Total Exports, 1997–99[1]

(In percent)

	1997	1998	1999
Armenia	…	…	4.9
Albania	42.7	51.6	66.7
Australia	0.1	0.3	1.4
Austria	…	4.8	4.8
Barbados	1.7	2.9	3.9
Belgium-Luxembourg	2.2	2.1	1.7
Bolivia	6.4	5.5	3.9
Bulgaria	32.0	…	…
Cape Verde	…	21.8	…
China	54.5	56.9	56.9
Colombia	0.0	0.1	0.1
Costa Rica	31.2	43.0	59.4
Cote d'Ivoire	2.0	2.1	…
Czech Republic	26.6	27.9	31.3
Dominican Republic	78.0	82.3	84.3
El Salvador	43.5	48.2	53.3
Estonia	24.9	30.0	31.8
Finland	1.8	3.1	1.8
Guatemala	8.2	10.0	10.3
Germany	4.8	5.3	4.0
Honduras	16.6	19.7	29.5
Japan	1.2	1.1	1.1
Korea	6.7	7.5	8.3
Lao, PDR	6.5	19.4	27.5
Latvia	18.3	18.5	19.9
Lithuania	19.4	21.5	26.1
Macedonia, FYR	36.3	45.8	43.1
Madagascar	36.9	37.2	…
Mexico	40.9	45.2	46.8
Moldova	6.3	10.7	15.6
Mongolia	19.4	21.5	26.1
Morocco	33.6	34.7	35.2
Netherlands	4.0	3.1	2.9
Panama	0.3	0.1	0.1
Philippines	…	…	49.5
Portugal	0.4	0.4	0.4
Romania	0.1	1.0	2.0
Slovak Republic	26.6	27.9	31.3
Slovenia	10.6	9.7	8.9
Turkey	…	…	0.9
Ukraine	…	10	10.9

[1] Countries reporting data on "goods for processing" to IFS only.

make loans to nonresidents, only the net interest earnings are indicative of the relative size of the country's external transactions. The method used has been to deduct the lower of interest paid and interest earned from the gross data on current receipts and payments

100.   The average adjustments that were made for countries that were explicitly mentioned in the data description in the Eleventh Review Board papers are shown in Table 9.[56] They were large for Luxembourg and the United Kingdom, but relatively small for most others. No adjustments were made for Germany because it did not provide any data. No breakdown is available for Switzerland.

Table 9. Average Adjustment to Current Account Receipts on Account of
International Banking Interest, 1982–1994

(In percent of total current receipts)

Country	
Belgium	13.9
Canada	3.3
France	9.6
Italy	3.4
Japan	10.2
Luxembourg	54.5
Netherlands	6.0
Sweden	2.6
Switzerland	n.a.
United Kingdom	21.0
United States	3.1

Source: Data for Eleventh Review Calculations as of December 1997.

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[56] Possibly some other adjustments were made directly by the authorities or country desks, but that information is not available.

EVOLUTION OF QUOTA FORMULAS

The Original Bretton Woods Formula

The original Bretton Woods formula may be written in symbols as:

$$Q^C = (0.02Y + 0.05R + 0.010M + 0.10V)(1 + X/Y) \tag{1}$$

where
Q^C = Calculated quota
Y = National income, 1940
R = Gold and foreign exchange reserves as of July 1, 1943
X, M = Average annual exports (imports) (five-year average), 1934–38
V = Maximum fluctuation in exports defined as the difference between the highest and lowest value of exports in 1934–38.

1962/63 Revision of the Formula and Multi-Formula System

Revised Bretton Woods

$$Q_1 = (0.01Y + 0.025R + 0.05M + 0.2276V)(1 + X/Y) \tag{2}$$
$$Q_1^* = (0.01Y + 0.025R + 0.05P + 0.2276VC)(1 + C/Y) \tag{3}$$

where
Q_1 = Quota calculated with Set I data
Q_1^* = Quota calculated with Set II data
Y = National income in a recent year
R = Gold and foreign exchange reserves at the end of a recent year
X, M = Average annual exports or imports over a recent five-year period
C, P = Average annual current receipts or payments over a recent five-year period
V, VC = Variability of annual exports or current receipts, defined as one standard deviation from the centered five-year moving average, for a recent 13-year period.

Modified Formulas on Set I Data (that use trade data)

Scheme III: $Q_2 = (0.0065Y + 0.078M + 0.5065V)(1 + X/Y)$ $\tag{4}$
Scheme IV: $Q_3 = (0.0045Y + 0.070M + 0.9622V)(1 + X/Y)$ $\tag{5}$
Scheme M4: $Q_4 = 0.005Y + 0.044M + 0.044X + 1.044V$ $\tag{6}$
Scheme M7: $Q_5 = 0.0045Y + 0.039M + 0.039X + 1.304V$ $\tag{7}$

Modified Formulas on Set II Data (that use data for trade, invisible transactions and transfers)

Scheme III: $Q_2^* = (0.0065Y + 0.078P + 0.5065VC)(1 + C/Y)$ $\tag{8}$
Scheme IV: $Q_3^* = (0.0045Y + 0.070P + 0.9622VC)(1 + C/Y)$ $\tag{9}$
Scheme M4: $Q_4^* = 0.005Y + 0.044P + 0.044C + 1.044VC$ $\tag{10}$
Scheme M7: $Q_5^* = 0.0045Y + 0.039P + 0.039C + 1.304V$ $\tag{11}$

Calculated quota

$$Q^C = \text{Max}[\text{Mean}(Q_1, Q_i^*), \hat{Q}] \tag{12}$$

where

$\hat{Q}$ = Mean of the lowest two of Mean (Q_i, Q_i^*), $i = 2$ to 5

and the values of Q_i ($i = 2$ to 5) and Q_i^* ($i = 1$ to 5) have been normalized so that their totals equal that of Q_1.

1981/82 Revision of the 1962/63 Formulas (that use GDP data and a broader definition of reserves)

Bretton Woods:	$Q_1 = (0.01Y + 0.025R + 0.05P + 0.2276VC)(1 + C/Y)$	(13)
Scheme III:	$Q_2 = (0.0065Y + 0.0205125R + 0.078P + 0.4052VC)(1 + C/Y)$	(14)
Scheme IV:	$Q_3 = (0.0045Y + 0.03896768R + 0.07P + 0.76976VC)(1 + C/Y)$	(15)
Scheme M4:	$Q_4 = 0.005Y + 0.042280464R + 0.044(P + C) + 0.8352VC$	(16)
Scheme M7:	$Q_5 = 0.0045Y + 0.05281008R + 0.039(P + C) + 1.0432VC$	(17)

where
    Y = GDP in a recent year
    R = Average value of gold, SDRs, ECUs, IMF reserve positions, and foreign exchange reserves in a
        recent year
    C, P, VC = as defined in 1962/63.

Calculated Quota

    Q^C = Max (Q_1, Mean of lowest two of Q_2, Q_3, Q_4, Q_5)   (18)

where the values of Q_i (i = 2 to 5) have been normalized so that the totals of Q_i equal that of Q_1.

Table 10. Source Data for BOP Statistics used in Quota Exercise: Current Receipts and Net Capital Inflows, 1987-1999 1/

Country	Goods & Services		Income		Current Transfers		Capital Account *(BPM5)*		Net Capital Inflows	
	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO
Afghanistan, Islamic State of	87-89		87-89		87-89				87-89	
Albania	87-99		87-89, 91-99	90	87-99		95-99	91-94	87-99	
Algeria	87-91	92-99	87-91	92-99	87-91	92-99			87-91	92-99
Angola	87-96	97-99	90-96	97-99	87-96	97-99		96	87-96	97-99
Antigua and Barbuda	87-96	97-99	87-96	97-99	87-96	97-99	87-96		87-96	97-99
Argentina	87-99		87-99		87-99				87-99	
Armenia	93-99	87-92	95-99	89-94	93-99	87-92	93-99		93-99	87-92
Australia	87-99		87-99		87-99		87-99		87-99	
Austria	87-99		87-99		87-99		87-99		87-99	
Azerbaijan	95-99	87-94	95-99	87-94	95-99	88-94			95-99	87-94
Bahamas, The	87-99		87-99		87-99				87-99	
Bahrain	87-99		87-99		87-99		90-99		87-99	
Bangladesh	87-99		87-99		87-99		96-99	87, 89-95	87-99	
Barbados	87-99		87-99		87-99		94, 96, 98-99		87-99	
Belarus	93-99	87-92	93-99	91-92	93-99	87, 91-92	94-99		93-99	87-92
Belgium		BLEU		BLEU				95-97		BLEU
Belize	87-99		87-99		87-99		99		87-99	
Benin	87-98	99	87-98	99	87-98	99	88-98	87, 99	87-98	99
Bhutan		87-99				87-99		87-99		87-99
Bolivia	87-99		87-99		87-99		87-99		87-99	
Bosnia-Herzegovina	98-99		98-99		98-99		98-99		98-99	
Botswana	87-99		87-99		87-99		87, 89-99		87-99	
Brazil	87-99		87-99		87-99		87-99		87-99	
Brunei Darussalam		87-99		87-99						
Bulgaria	87-99		87-99		87-99		94, 96	95, 97-99	87-99	
Burkina Faso	87-94	95-99	87-94		87-94	95-99	89, 91, 93-94	88, 90, 92, 95-99	87-94	95-99
Burundi	87-99		87-99		87-99			87-99	87-99	
Cambodia	92-99	87-91	93-99	87-92	92-99	87-91	92-99		92-99	87-91

Table 10. Source Data for BOP Statistics used in Quota Exercise: Current Receipts
and Net Capital Inflows, 1987-1999 1/ (continued)

Country	Goods & Services		Income		Current Transfers		Capital Account (*BPM5)*		Net Capital Inflows	
	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO
Cameroon	87-95	96-99	87-95	96-99	87-95	96-99	88-95	87	87-95	96-99
Canada	87-99		87-99		87-99		87-99		87-99	
Cape Verde	87-98	99	87-98	99	87-98	99	87-98	99	87-98	99
Central African Republic	87-94	95-99	87, 89-93	88, 94-99	87-94	95-99		87, 89-99	87-94	95-99
Chad	87-94	95-99	87-94	95-99	87-94	95-99	91	87-90, 92-99	87-94	95-99
Chile	87-99		87-99		87-99				87-99	
China	98-99		98-99		98-99				98-99	
Colombia	87-99		87-99		87-99				87-99	
Comoros	87-95	96-99	87-95	96-99	87-95	96-99		87-99	87-95	96-99
Congo, Dem. Republic of		87-99				94-99		87-99		87-99
Congo, Republic of	87-97	98-99	87-97	98-99	87-97	98-99		94	87-97	98-99
Costa Rica	87-99		87-99		87-99		96	92, 94	87-99	
Cote d'Ivoire	87-98	99	87-98	99	87-98		94-98		87-98	99
Croatia	93-99	87-92	93-99		93-99	87-92	96-99		93-99	87-92
Cyprus	87-99		87-99		87-99				87-99	
Czech Republic	93-99	87-92	93-99	92	93-99	87-92	93, 95-99		93-99	87-92
Denmark	87-99		87-99		87-99		97-99	93-94	87-99	
Djibouti	92-95	87-91, 96-99	92-95	87-91, 96-99	92-95	87-91, 96-99	95	87-89	92-95	87-91, 96-99
Dominica	87-98	99	87-98	99	87-98	99	87-98	99	87-98	99
Dominican Republic	87-99		87-99		87-99		93-99		87-99	
Ecuador	87-99		87-99		87-99			87-88, 91-93	87-99	
Egypt	87-99		87-99		87-99		90-91, 93, 96	94, 97-99	87-99	
El Salvador	87-99		87-99		87-99		97-99	93	87-99	
Equatorial Guinea	87-96	97-99	92, 95-96	87-91, 93-94, 97-99	87-96		91-92, 94-95	89-90, 93, 96-99	87-96	97-99
Eritrea										
Estonia	92-99	87-91	92-99	87-91	92-99	87-91	92, 94-99		92-99	87-91
Ethiopia	87-99		87-99		87-99		91, 94, 98-99	90, 92-93, 95-97	87-99	

Table 10. Source Data for BOP Statistics used in Quota Exercise: Current Receipts
and Net Capital Inflows, 1987-1999 1/ (continued)

Country	Goods & Services		Income		Current Transfers		Capital Account *(BPM5)*		Net Captial Inflows	
	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO
Fiji	87-99		87-99		87-99		87-99		87-99	
Finland	87-99		87-99		87-99		95-99		87-99	
France	87-99		87-99		87-99		88-99		87-99	
Gabon	87-95	96-99	87-95	96-99	87-95	96-99	94-95	89-93, 96-99	87-95	96-99
Gambia, The	87-97	98-99	87-97	98-99	87-97	98-99	87-88, 91-92, 96-97		87-97	98-99
Georgia	97-99	87-96	97-99	89-96	97-99	87-96		96-99	97-99	87-96
Germany	87-99		87-99		87-99		87-99		87-99	
Ghana	87-99		87-99		87-99				87-99	
Greece	87-97	98-99	87-97	98-99	87-97	98-99			87-97	98-99
Grenada	87-96	97-99	87-96	97-99	87-96	97-99	87-96	97-99	87-96	97-99
Guatemala	87-99		87-99		87-99		95-99	89-94	87-99	
Guinea	87-99		87-99		87-99		89-90, 92-97	87-88, 91, 98-99	87-99	
Guinea-Bissau	87-97	98-99			87-97	98-99	87-97	98-99	87-97	98-99
Guyana	92-95	87-91, 96-99	92-95	96-99	92-95	87-91, 96-99	92-95	96, 99	92-95	87-91, 96-99
Haiti	87-98	99	87-93	94-99	87-98	99	95		87-98	99
Honduras	87-99		87-99		87-99		93-99	90-92	87-99	
Hungary	87-99		87-99		87-99		95-99		87-99	
Iceland	87-99		87-99		87-99		87-99		87-99	
India	87-99		87-99		87-99				87-99	
Indonesia	87-99		87-99		87-99				87-99	
Iran	87-98	99	87-98	99	89-94, 96-98	95, 99		87, 89, 95	87-98	99
Iraq										
Ireland	87-99		87-99		87-99		87-99		87-99	
Israel	87-99		87-99		87-99		87-99		87-99	
Italy	87-99		87-99		87-99		87-99		87-99	
Jamaica	87-99		87-99		87-99		94-99	92	87-99	
Japan	87-99		87-99		87-99		95-99		87-99	

Table 10. Source Data for BOP Statistics used in Quota Exercise: Current Receipts
and Net Capital Inflows 1987-1999 1/ (continued)

Country	Goods & Services		Income		Current Transfers		Capital Account *(BPM5)*		Net Capital Inflows	
	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO
Jordan	87-99		87-99		87-99		95-99	90-94	87-99	
Kazakstan	95-99	87-94	95-99	87-94	95-99	87-94	95-99		95-99	87-94
Kenya	87-99		87-99		87-99		87-93, 99	95-98	87-99	
Kiribati	87-94	95-99	87-94	95-99	87-94	95-99	87-94	96, 98-99	87-94	95-99
Korea	87-99		87-99		87-99		87-99		87-99	
Kuwait	87-99		87-99		92-99		96-99		87-99	
Kyrgyz Republic	93-99	87-92	95-99	87-94	93-99	87-92	94-99	93	93-99	87-92
Lao, People's Dem. Republic	87-99		88-99		87-99		87-98	99	87-99	
Latvia	92-99	87-91	92-99		92-99	90-91	97-99		92-99	87-91
Lebanon		87-99		87-99		87-99				87-99
Lesotho	87-99		87-99		87-99		95-99	87-94	87-99	
Liberia	87	88-99	87	88-99	87	88-99	87		87	88, 97-99
Libya	87-99		87-99		87-99				87-99	
Lithuania	93-99	87-92	93-99	87-92	93-99	87-92	94-99		93-99	87-92
Luxembourg	95-99		95-99		95-99					
Macedonia, FYR	96-99	87-95	96-99		96-99	87-95	98-99		96-99	87-95
Madagascar	87-98	99	87-98	99	87-98	99	87-98	99	87-98	99
Malawi	87-94	95-99	87-94	95-99	87-94	95-99		94-96	87-94	95-99
Malaysia	87-99		87-99		87-99			90-97	87-99	
Maldives	87-99		87-99		87-99				87-99	
Mali	87-97	98-99	87-97	98-99	87-97	98-99	87-97	98-99	87-97	98-99
Malta	87-99		87-99		87-99		87-89, 93, 95-99	94	87-99	
Marshall Islands										
Mauritania	87-98	99	87-98	99	87-98	99		87-90	87-98	99
Mauritius	87-99		87-99		87-99				87-99	
Mexico	87-99		87-99		87-99				87-99	
Micronesia, Fed. States of										
Moldova	94-99	87-93	94-99	87-93	94-99	87-93	94, 96-99		94-99	87-93

Table 10. Source Data for BOP Statistics used in Quota Exercise: Current Receipts
and Net Capital Inflows, 1987-1999 1/ (continued)

Country	Goods & Services		Income		Current Transfers		Capital Account (BPM5)		Net Capital Inflows	
	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO
Mongolia	87-99		87-90, 92-99	91	89-99				87-99	
Morocco	87-99		87-99		87-99		87-89, 91, 93-94, 96-99		87-99	
Mozambique	87-98	99	87-98	99	87-98		88-91, 93-98	87, 92, 99	87-98	99
Myanmar	87-99		87-99		87-99		89-90	95-99	87-99	
Namibia	90-98	87-89, 99	90-98	99	90-98	87-89, 99	90-98	99	90-98	87-89, 99
Nepal	87-99		87-99		87-99		99	97-98	87-99	
Netherlands	87-99		87-99		87-99		87-99		87-99	
New Zealand	87-99		87-99		87-99		87-99		87-99	
Nicaragua	87-99		87-99		87-99		87, 91-99		87-99	
Niger	87-95	96-99	87-95	96-99	87-95	96-99	87-95	97-99	87-95	96-99
Nigeria	87-99		87-99		87-99		98-99		87-99	
Norway	87-99		87-99		87-99		87-99		87-99	
Oman	87-99		87-99		87-99			91	87-99	
Pakistan	87-97	98-99	87-97	98-99	87-97	98-99	87-93		87-97	98-99
Palau, Republic of										
Panama	87-99		87-99		87-99		92, 95-99	90-91, 93	87-99	
Papua New Guinea	87-99		87-99		87-99		87-99		87-99	
Paraguay	87-99		87-99		87-99		87-99		87-99	
Peru	87-99		87-99		87-99		87-99		87-99	
Philippines	87-99		87-99		87-99		92, 99		87-99	
Poland	87-99		87-99		87-99		89, 91-99		87-99	
Portugal	87-99		87-99		87-99		96-99		87-99	
Qatar		87-99		87-99						87-99
Romania	87-99		87-99		90-99	87-88	93-99		87-99	
Russia	94-99	87-93	94-99		94-99	87-89, 91-93	94-99		94-99	87-93
Rwanda	87-99		87-93, 95-99	94	87-99		87-93, 98	94-97, 99	87-99	
Samoa	87-99		87-99		87-99		99		87-99	

Table 10. Source Data for BOP Statistics used in Quota Exercise: Current Receipts
and Net Capital Inflows, 1987-1999 1/ (continued)

Country	Goods & Services		Income		Current Transfers		Capital Account *(BPM5)*		Net Capital Inflows	
	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO
San Marino										
Sao Tome and Principe	87-90	91-99	87-90	91-99	87-90	91-99		87-99	87-90	91-99
Saudi Arabia	87-99		87-99						87-99	
Senegal	87-97	98-99	87-97	98-99	87-97	98-99	87-97	98-99	87-97	98-99
Seychelles	87-99		87-99		87-99		98-99	96-97	87-99	
Sierra Leone	87-95	96-99	87-95	96-99	87-95	96-99	87-95	96-97	87-95	96-99
Singapore	87-99		87-99		87-99				87-99	
Slovak Republic	93-99	87-92	93-99	91-92	93-99	87-92	93-96, 98-99		93-99	87-92
Slovenia	92-99	87-91	92-99		92-99	87-91	93-99		92-99	87-91
Solomon Islands	87-99		87-99		87-99		93-99		87-99	
Somalia	87-89				87-89				87-89	
South Africa	87-99		87-99		87-99		87-90, 98-99		87-99	
Spain	87-99		87-99		87-99		87-99		87-99	
Sri Lanka	87-99		87-99		87-99		95-99	92-94	87-99	
St. Kitts and Nevis	87-94	95-99	87-94	95-99	87-94	95-99	87-94	95-99	87-94	95-99
St. Lucia	87-96	97-99	87-96	97-99	87-96	97-99	87-96	97-99	87-96	97-99
St. Vincent and the Grenadines	87-96	97-99	87-96	97-99	87-96	97-99	87-96	97-99	87-96	97-99
Sudan	87-99		87-91, 93-99	92	87-99		98-99	87-97	87-99	
Suriname	87-98	99	87-98	99	87-98	99	87-98		87-98	99
Swaziland	87-99		87-99		87-99		87-99		87-99	
Sweden	87-99		87-99		87-99		87-99		87-99	
Switzerland	87-99		87-99		87-99				87-99	
Syrian Arab Republic	87-99		87-99		87-99		93-99		87-99	
Tajikistan		87-99		87-99		88-99				87-99
Tanzania	87-99		87-99		87-99		90-99		87-99	
Thailand	87-99		87-99		87-99		87-89		87-99	
Togo	87-99		87-99		87-99		88-89, 94-99	87, 90-93	87-99	
Tonga	87-93	94-99	87-93	94-99	87-93	94-99	87-93	95-99	87-93	94-99
Trinidad and Tobago	87-98	99	87-98	99	87-98	99	87, 89-95		87-98	99

Table 10. Source Data for BOP Statistics used in Quota Exercise: Current Receipts
and Net Capital Inflows, 1987-1999 1/ (concluded)

Country	Goods & Services		Income		Current Transfers		Capital Account *(BPM5)*		Net Capital Inflows	
	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO
Tunisia	87-99		87-99		87-99		93-99	87-89	87-99	
Turkey	87-99		87-99		87-99		89		87-99	
Turkmenistan	96-97	87-95, 98-99	96-97	90-95, 98-99	96-97	87-95, 98-99	96-97	98-99	96-97	87-95, 98-99
Uganda	87-99		91-99		87-99		93-99		87-99	
Ukraine	94-99	87-93	94-99		94-99	88-89, 93	94-96	99	94-99	87-93
United Arab Emirates		87-99		89-99						87-99
United Kingdom	87-99		87-99		87-99		87-99		87-99	
United States	87-99		87-99		87-99		87-99		87-99	
Uruguay	87-99		87-99		87-99				87-99	
Uzbekistan		87-99		87-99		87-99				87-99
Vanuatu	87-99		87-99		87-99		87-99		87-99	
Venezuela	87-99		87-99		87-99				87-99	
Vietnam		87-99				87-99		90-98		87-99
Yemen, Republic of	90-99	87-89	90-99	89	90-99	87-89	97-99	90-96	90-99	87-89
Yugoslavia										
Zambia	87-91	92-99	87-91	92-99	87-91	92-99		93	87-91	92-99
Zimbabwe	87-94	95-99	87-94	95-99	87-94	95-99	87-94	95-96, 98-99	87-94	95-99
Belgium-Luxembourg	87-99		87-99		87-99		95-99		87-99	
China,P.R.:Hong Kong	87-99		98-99		98-99		98-99		98-99	87-97

1/ Years covered varies by country, as indicated in the table.

Table 11. Source Data for BOP Statistics used in Quota Exercise: Current Payments
and Gross Domestic Product, 1995-1999 1/

Country	Goods & Services		Income		Current Transfers		Capital Account *(BPM5)*		GDP	
	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO
Afghanistan, Islamic State of										
Albania	95-99		95-99		95-99					97-99
Algeria		95-99		95-99		95-99				97-99
Angola	95-96	97-99	95-96	97-99	95-96	97-99				97-99
Antigua and Barbuda	95-96	97-99	95-96	97-99	95-96	97-99	90, 94		97-99	
Argentina	95-99		95-99		95-99				97-99	
Armenia	95-99		95-99		95-99		99	94	97-99	
Australia	95-99		95-99		95-99		87-99		97-99	
Austria	95-99		95-99		95-99		87-99		97-99	
Azerbaijan	95-99		95-99		95-99		95, 97-98			97-99
Bahamas, The	95-99		95-99		95-99		87-99			97-99
Bahrain	95-99		95-99		95-99				97-99	
Bangladesh	95-99		95-99		95-99				97-99	
Barbados	95-99		95-99		95-99				97-99	
Belarus	95-99		95-99		95-99		96-99		97-99	
Belgium		BLEU				BLEU		98-99	97-99	
Belize	95-99		95-99		95-99		96-99	94-95	97-99	
Benin	95-98	99	95-98	99	95-98	99			97-99	
Bhutan		95-99		95-99					97-99	
Bolivia	95-99		95-99		95-99				97-99	
Bosnia-Herzegovina	98-99		98-99		98-99					
Botswana	95-99		95-99		95-99		87, 89-99		97-99	
Brazil	95-99		95-99		95-99		87-91, 93-99		97-99	
Brunei Darussalam		95-99				95-99				97-99
Bulgaria	95-99		95-99		95-99		99		97-99	
Burkina Faso		95-99				95-99			97-99	
Burundi	95-99		95-99		95-99		87-99		97-99	
Cambodia	95-99		95-99		95-99					97-99

Table 11. Source Data for BOP Statistics used in Quota Exercise: Current Payments
and Gross Domestic Product, 1995-1999 1/ (continued)

Country	Goods & Services		Income		Current Transfers		Capital Account (BPM5)		GDP	
	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO
Cameroon	95	96-99	95	96-99	95	96-99	89-95		97-98	99
Canada	95-99		95-99		95-99		87-99		97-99	
Cape Verde	95-98	99	95-98	99	95-98	99		87-88, 92, 95		97-99
Central African Republic		95-99		95-99		95-99		88	97-99	
Chad		95-99		95-99		95-99			97-99	
Chile	95-99		95-99		95-99				97-99	
China,P.R.: Mainland	98-99		98-99		98-99		97-99		98-99	
Colombia	95-99		95-99		95-99				97-99	
Comoros	95	96-99	95	96-99	95	96-99				97-99
Congo, Dem. Republic of		95-99		95-99		95-99				97-99
Congo, Republic of	95-97	98-99	95-97	98-99	95-97	98-99		87-93, 95-99	98-99	
Costa Rica	95-99		95-99		95-99				97-99	
Cote d'Ivoire	95-98	99	95-98	99	95-98				97-99	
Croatia	95-99		95-99		95-99		96-99		97-99	
Cyprus	95-99		95-99		95-99				97-99	
Czech Republic	95-99		95-99		95-99		93, 95-99		97-99	
Denmark	95-99		95-99		95-99		98-99	95-97	97-99	
Djibouti	95	96-99	95	96-99	95	96-99				97-99
Dominica	95-98	99	95-98	99	95-98	99	87-98		97-98	99
Dominican Republic	95-99		95-99		95-99				97-99	
Ecuador	95-99		95-99		95-99				97-98	99
Egypt	95-99		95-99		95-99			90-92, 95	97-99	
El Salvador	95-99		95-99		95-99		98-99		97-99	
Equatorial Guinea	95-96	97-99	95-96	97-99	95-96				97	98-99
Eritrea										
Estonia	95-99		95-99		95-99		94-99		97-99	

Table 11. Source Data for BOP Statistics used in Quota Exercise: Current Payments
and Gross Domestic Product, 1995-1999 1/ (continued)

Country	Goods & Services		Income		Current Transfers		Capital Account *(BPM5)*		GDP	
	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO
Ethiopia	95-99		95-99		95-99		87-89, 96-97		97-98	99
Fiji	95-99		95-99		95-99		87-99		97-99	
Finland	95-99		95-99		95-99		91, 95-96, 99		97-99	
France	95-99		95-99		95-99		88-99		97-99	
Gabon	95	96-99	95	96-99	95	96-99			97-98	99
Gambia, The	95-97	98-99	95-97	98-99	95-97	98-99				97-99
Georgia	97-99	95-96	97-99	95-96	97-99	95-96	97-99	94-95		97-99
Germany	95-99		95-99		95-99		87-99		97-99	
Ghana	95-99		95-99		95-99		87-89, 91-99		97	98-99
Greece	95-97	98-99	95-97	98-99	95-97	98-99			97-99	
Grenada	95-96	97-99	95-96	97-99	95-96	97-99	87-96		97-99	
Guatemala	95-99		95-99		95-99				97-99	
Guinea	95-99		95-99		95-99					97-99
Guinea-Bissau	95-97	98-99	95-97	98-99	95	96-99			97	98-99
Guyana	95	96-99	95	96-99	95	96-99	92-95		97	98-99
Haiti	95-98	99	95-98	99		95-99			97-99	
Honduras	95-99		95-99		95-99		96-98		97-99	
Hungary	95-99		95-99		95-99		95-99		97-98	99
Iceland	95-99		95-99		95-99		87-99		97-99	
India	95-99		95-99		95-99				97-98	99
Indonesia	95-99		95-99						97-99	
Iran, I.R. Of	95-98	99	95-98	99	95-98	99			97-99	
Iraq										
Ireland	95-99		95-99		95-99		87-99		97-99	
Israel	95-99		95-99		95-99				97-99	
Italy	95-99		95-99		95-99		87-99		97-99	

Table 11. Source Data for BOP Statistics used in Quota Exercise: Current Payments
and Gross Domestic Product, 1995-1999 1/ (continued)

Country	Goods & Services		Income		Current Transfers		Capital Account *(BPM5)*		GDP	
	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO
Jamaica	95-99		95-99		95-99		87-99		97-99	
Japan	95-99		95-99		95-99		87-99		97-99	
Jordan	95-99		95-99		95-99				97-99	
Kazakstan	95-99		95-99		95-99		95-99		97-98	99
Kenya	95-99		95-99		95-96	97-99	87-96		97-99	
Kiribati		95-99		95-99		95-99		87, 89, 91, 95, 97		97-99
Korea	95-99		95-99		95-99		87-99		97-99	
Kuwait	95-99		95-99		95-99		93-99		97-99	
Kyrgyz Republic	95-99		95-99		95-99		93-99		97-99	
Lao, People's Dem. Republic	95-99		95-99		99	95-98	95-98		97-99	
Latvia	95-99		95-99		95-99				97-99	
Lebanon		95-99				95-99				97-99
Lesotho	95-99		95-99		95-99				97-99	
Liberia		95-99		95-99		95-99				97-99
Libya	95-99		95-99		95-99			89	97-99	
Lithuania	95-99		95-99		95-99		95, 97-99		97-99	
Luxembourg	95-99		95-99		95-99				97-99	
Macedonia, FYR	96-99	95	96-99	95	96-99		98		97-99	
Madagascar	95-98	99	95-98	99	95-98	99	87-88	89, 91-94	97-99	
Malawi		95-99		95-99		95-99			97-99	
Malaysia	95-99		95-99		95-99		87-94	98-99	97-99	
Maldives	95-99		95-99		95-99					97-99
Mali	95-97	98-99	95-97	98-99	95-97	98-99		87	97-98	99
Malta	95-99		95-99		95-99		95-99		97-99	
Marshall Islands										
Mauritania	95-98	99	95-98	99	95-98	99			97	98-99
Mauritius	95-99		95-99		95-99		87-99		97&99	98
Mexico	95-99		95-99		95-99				97-99	

Table 11. Source Data for BOP Statistics used in Quota Exercise: Current Payments
and Gross Domestic Product, 1995-1999 1/ (continued)

Country	Goods & Services		Income		Current Transfers		Capital Account (BPM5)		GDP	
	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO
Micronesia, Fed. States of										
Moldova	95-99		95-99		95-99		94-99		97-99	
Mongolia	95-99		95-99		98-99	95-97			97-99	
Morocco	95-99		95-99		95-99		87-99		97-99	
Mozambique	95-98	99	95-98	99					97-99	
Myanmar	95-99		95-99		95-99				97-99	
Namibia	95-98	99	95-98	99	95-98	99	90-98		97-98	99
Nepal	95-99		95-99		95-99				97-99	
Netherlands	95-99		95-99		95-99		87-99		97-99	
New Zealand	95-99		95-99		95-99		87-99		97-99	
Nicaragua	95-99		95-99						97-99	
Niger	95	96-99	95	96-99	95	96-99		96	97-98	99
Nigeria	95-99		95-99		95-99		95-99		97-98	99
Norway	95-99		95-99		95-99		87-99		97-99	
Oman	95-99		95-99		95-99			90	97-99	
Pakistan	95-97	98-99	95-97	98-99	95-97	98-99	87-92		97-98	99
Palau, Republic of										
Panama	95-99		95-99		95-99				97-99	
Papua New Guinea	95-99		95-99		95-99		87-99		97-98	99
Paraguay	95-99		95-99		95-99		88		97-99	
Peru	95-99		95-99		95-99		87-99		97-99	
Philippines	95-99		95-99		95-99		99		97-99	
Poland	95-99		95-99		95-99		96-99		97-99	
Portugal	95-99		95-99		95-99		96-99		97-99	
Qatar		95-99		96-99		95-99		96-97	97	98-99
Romania	95-99		95-99		95-99		99		97-98	
Russia	95-99		95-99		95-99		94-99		97-99	
Rwanda	95-99		95-99		95-99		87-93		97-99	
Samoa	95-99		95-99		95-99		99		97&99	98

Country	Goods & Services		Income		Current Transfers		Capital Account (BPM5)		GDP	
	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO
San Marino										
Sao Tome and Principe		95-99		95-99		95-99			98	97&99
Saudi Arabia	95-99		95-99		95-99				97-99	
Senegal	95-97	98-99	95-97	98-99	95-97	98-99	87-97		97-98	99
Seychelles	95-99		95-99		95-99				97-99	
Sierra Leone	95	96-99	95	96-99	95	96-99			97-99	
Singapore	95-99		95-99		95-99		87-99		97-99	
Slovak Republic	95-99		95-99		95-99		93, 98-99		97-99	
Slovenia	95-99		95-99		95-99		93-99		97-98	99
Solomon Islands	95-99		95-99		95-99		87-98			97-99
Somalia										
South Africa	95-99		95-99		95-99		87-99		97-99	
Spain	95-99		95-99		95-99		87-99		97-99	
Sri Lanka	95-99		95-99		95-99		95-99		97-99	
St. Kitts and Nevis		95-99		95-99		95-99	87-90, 92-94		97-99	
St. Lucia	95-96	97-99	95-96	97-99	95-96	97-99	92-96		97-99	
St. Vincent and the Grenadines	95-96	97-99	95-96	97-99	95-96	97-99	87-96		97-98	99
Sudan	95-99		95-99		95-99		98-99		97	98-99
Suriname	95-98	99	95-98	99	95-98	99	87-94		97-98	99
Swaziland	95-99		95-99		95-99		87-95, 97		97	98-99
Sweden	95-99		95-99		95-99		87-99		97-99	
Switzerland	95-99		95-99		95-99		91-99		97-99	
Syrian Arab Republic	95-99		95-99		95-99				97-98	99
Tajikistan		95-99		95-99		95-99				97-99
Tanzania	95-99		95-99		95-99				97-99	
Thailand	95-99		95-99		95-99		87-90		97-99	
Togo	95-99		95-99		95-99				97	99
Tonga		95-99		95-99		95-99	87-93			97-99

Table 11. Source Data for BOP Statistics used in Quota Exercise: Current Payments
and Gross Domestic Product, 1995-1999 1/ (concluded)

Country	Goods & Services		Income		Current Transfers		Capital Account (BPM5)		GDP	
	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO	IFS	WEO
Trinidad and Tobago	95-98	99	95-98	99	95-98	99	87-95		97-98	99
Tunisia	95-99		95-99		95-99		87-99		97-99	
Turkey	95-99		95-99		95-99				97-99	
Turkmenistan	96-97	95, 98-99	96-97	95, 98-99	97	95-96, 98-99	96-97			97-99
Uganda	95-99		95-99							97-99
Ukraine	95-99		95-99		95-99		94, 98-99	95	97-99	
United Arab Emirates		95-99		95-99		95-99			97-98	99
United Kingdom	95-99		95-99		95-99		87-99		97-99	
United States	95-99		95-99		95-99		89-91, 93-95, 99		97-99	
Uruguay	95-99		95-99		95-99				97-99	
Uzbekistan		95-99		95-99		95-99		98-99		97-99
Vanuatu	95-99		95-99		95-99		87-99			97-99
Venezuela	95-99		95-99		95-99				97-99	
Vietnam		95-99		95-99		95-99		99	97	98-99
Yemen, Republic of	95-99		95-99		95-99				97-99	
Yugoslavia										
Zambia		95-99		95-99		95-99	87-91		97	98-99
Zimbabwe		95-99		95-99		95-99	87-94	97	97-99	
Belgium-Luxembourg	95-99		95-99		95-99		95-99			
China,P.R.:Hong Kong	98-99	95-97	98-99			97-99	98-99		98-99	

1/ Years covered varies by country, as indicated in the table.

Table 12. Data Used for Quantification of Quota Formulas
(SDR millions)

	Actual Quota 1/	GDP 1999	GDP Average 1997-99	Reserves 12 month Average 1999	Current Payments Average 1995-99	Current Receipts Average 1995-99	Current Receipts plus Current Payments 1995-99	Variability of Current Receipts 1987-99	Variability of Current Receipts plus Net Capital Inflows 1987-99
United States	37,149.3	6,801,434.9	6,437,920.6	55,025.8	949,640.1	817,071.3	1,766,711.3	29,030.3	38,982.6
Japan	13,312.8	3,180,638.0	3,016,345.4	182,273.8	418,034.1	483,016.6	901,050.7	13,145.6	14,055.4
Germany	13,008.2	1,544,587.9	1,555,512.8	48,385.9	514,943.4	506,859.3	1,021,802.8	19,682.1	19,480.3
France	10,738.5	1,048,228.1	1,045,521.5	30,894.9	299,485.7	321,034.0	620,519.7	14,492.9	11,316.3
United Kingdom	10,738.5	1,054,336.2	1,017,427.2	23,110.6	396,803.6	395,899.1	792,702.7	16,603.0	7,296.5
Italy	7,055.5	856,402.3	860,284.8	18,911.4	241,049.3	259,951.5	501,000.8	9,297.4	8,362.1
Saudi Arabia	6,985.5	104,484.4	101,877.4	11,012.6	46,232.5	43,790.0	90,022.6	4,488.8	4,600.1
Canada	6,369.2	471,535.7	459,455.7	18,678.9	195,882.1	195,578.4	391,460.5	5,512.6	4,914.2
China	6,369.2	841,011.4	817,576.5	112,332.0	281,533.1	293,742.7	575,275.7	12,070.0	10,040.4
Russia	5,945.4	135,027.9	217,080.0	5,909.6	65,618.2	71,901.0	137,519.2	6,075.4	5,667.2
Netherlands	5,162.4	291,340.9	277,407.3	8,681.8	191,336.2	205,249.9	396,586.1	7,604.7	4,326.3
Belgium	4,605.2	182,008.2	181,245.2	8,686.1	134,161.9	142,640.4	276,802.3	5,198.0	5,880.0
India	4,158.2	320,639.6	306,528.1	22,924.1	44,069.4	40,659.4	84,728.8	1,388.8	2,069.6
Switzerland	3,458.5	189,382.1	189,678.6	29,131.6	97,699.1	115,376.7	213,075.9	3,218.5	4,000.3
Australia	3,236.4	288,148.2	284,204.4	11,582.5	73,065.0	61,011.4	134,076.3	3,370.2	2,946.5
Spain	3,048.9	435,833.2	410,101.5	28,403.6	128,938.7	131,576.7	260,515.4	5,122.2	5,321.0
Brazil	3,036.1	387,236.4	518,221.4	28,162.8	63,284.5	44,845.1	108,129.6	2,090.1	2,360.1
Venezuela	2,659.1	75,557.1	70,225.9	8,758.3	15,535.4	17,592.9	33,128.3	1,666.2	1,124.6
Mexico	2,585.8	351,011.5	317,614.2	23,248.2	97,845.7	91,843.2	189,688.9	2,622.1	4,680.0
Sweden	2,395.5	174,561.5	174,139.6	10,788.4	81,710.0	85,593.0	167,303.0	4,373.3	4,749.6
Argentina	2,117.1	207,268.0	213,563.5	17,433.4	31,993.2	24,543.4	56,536.6	1,108.9	2,474.5
Indonesia	2,079.3	103,345.2	110,165.5	18,807.4	43,461.5	42,297.4	85,758.9	1,996.7	2,192.3
Austria	1,872.3	153,569.1	152,980.9	11,572.5	78,298.7	74,448.6	152,747.3	2,903.1	2,398.7
South Africa	1,868.5	95,237.2	100,364.1	3,892.5	27,081.5	25,748.2	52,829.7	738.3	1,233.6
Nigeria	1,753.2	100,589.0	101,177.7	3,826.8	11,210.1	10,841.5	22,051.6	1,662.1	1,333.2

Table 12. Data Used for Quantification of Quota Formulas (continued)
(SDR millions)

	Actual Quota 1/	GDP		Reserves	Current Payments	Current Receipts	Current Receipts plus Current Payments	Variability of Current Receipts	Variability of Current Receipts plus Net Capital Inflows
		1999	Average 1997-99	12 month Average 1999	Average 1995-99	Average 1995-99	1995-99	1987-99	1987-99
Norway	1,671.7	111,855.8	110,954.5	13,466.8	43,231.1	47,033.4	90,264.5	2,710.1	2,028.8
Denmark	1,642.8	127,460.7	125,950.3	15,650.6	63,607.8	62,942.7	126,550.5	3,944.9	3,840.0
Korea	1,633.6	296,983.3	292,334.4	45,998.3	115,437.3	119,224.5	234,661.8	3,795.5	4,074.0
Iran	1,497.2	165,098.5	136,238.7	13.0	12,207.7	14,415.9	26,623.6	1,292.6	1,342.5
Malaysia	1,486.6	57,673.7	61,310.3	21,732.5	66,438.6	68,360.2	134,798.8	3,630.4	3,846.3
Kuwait	1,381.1	21,802.7	20,744.9	3,197.2	11,317.4	15,196.3	26,513.7	2,693.2	4,592.8
Ukraine	1,372.0	22,509.6	29,943.6	662.8	14,472.5	13,745.3	28,217.8	2,656.5	2,855.1
Poland	1,369.0	113,481.7	111,858.9	20,139.2	35,701.4	31,762.9	67,464.2	1,502.1	2,753.4
Finland	1,263.8	94,623.4	92,901.2	5,306.9	33,659.3	38,276.2	71,935.6	2,176.9	2,696.5
Algeria	1,254.7	35,390.0	35,156.5	3,789.4	8,529.5	9,094.2	17,623.7	1,078.3	776.7
Iraq	1,188.4	24,332.8	24,332.8	0.0	5,409.7	4,438.3	9,848.0	2,181.0	2,181.0
Libya	1,123.7	23,587.0	23,962.3	5,193.3	5,397.0	6,391.3	11,788.3	863.1	486.9
Thailand	1,081.9	89,266.7	93,865.5	22,542.7	53,486.9	53,154.7	106,641.6	1,646.1	3,170.6
Hungary	1,038.4	35,689.2	34,533.8	7,070.1	19,306.4	18,028.1	37,334.5	1,125.9	1,560.2
Pakistan	1,033.7	45,866.0	45,687.7	1,273.7	11,028.7	9,457.0	20,485.7	410.4	344.0
Romania	1,030.2	25,726.7	27,399.9	1,862.1	9,011.8	7,564.5	16,576.3	912.5	619.6
Turkey	964.0	144,820.2	144,713.9	16,439.2	39,280.3	38,340.5	77,620.8	1,950.3	2,891.0
Egypt	943.7	68,229.4	63,042.2	12,147.7	15,252.5	15,466.6	30,719.1	2,975.1	3,562.7
Israel	928.2	73,749.6	73,918.0	16,149.1	30,828.3	29,755.7	60,584.0	436.9	1,469.4
New Zealand	894.6	39,390.7	41,659.0	2,936.6	16,265.0	14,170.8	30,435.8	658.8	839.8
Philippines	879.9	56,062.3	54,727.9	9,095.6	30,875.3	30,820.8	61,696.1	2,003.6	1,811.1
Portugal	867.4	83,366.6	78,723.1	6,573.7	36,131.5	33,330.3	69,461.8	1,319.7	1,047.4
Singapore	862.5	62,126.6	63,965.0	54,448.6	101,244.5	113,614.5	214,859.0	5,265.5	4,636.5
Chile	856.1	49,482.2	52,685.3	10,866.2	16,885.6	15,060.3	31,945.9	773.6	1,057.0
Ireland	838.4	68,316.8	63,345.1	3,884.9	61,189.3	62,815.2	124,004.5	4,403.0	8,459.2

Table 12. Data Used for Quantification of Quota Formulas (continued)
(SDR millions)

	Actual Quota 1/	GDP		Reserves	Current Payments	Current Receipts	Current Receipts plus Current Payments	Variability of Current Receipts	Variability of Current Receipts plus Net Capital Inflows
		1999	Average 1997-99	12 month Average 1999	1995-99	Average 1995-99	1995-99	1987-99	1987-99
Greece	823.0	91,279.4	89,621.5	15,020.8	21,501.5	18,162.4	39,664.0	592.2	1,963.2
Czech Republic	819.3	38,779.5	39,368.4	8,926.7	25,187.8	23,586.2	48,774.0	1,219.9	1,384.9
Colombia	774.0	63,447.7	71,277.6	6,189.7	13,567.7	10,677.7	24,245.4	375.7	533.6
Bulgaria	640.2	9,070.8	8,492.0	1,973.0	4,797.5	4,882.7	9,680.2	648.5	648.0
Peru	638.4	38,013.9	40,962.5	6,763.5	8,771.7	6,516.3	15,288.0	355.5	802.1
United Arab Emirates	611.7	37,485.4	35,869.6	7,096.6	27,254.2	28,755.3	56,009.5	1,915.5	1,095.1
Morocco	588.2	25,595.7	25,390.5	3,682.5	8,985.0	8,781.1	17,766.1	299.9	389.3
Bangladesh	533.3	26,914.5	25,723.0	1,170.4	5,792.6	5,807.9	11,600.5	278.0	274.9
Congo, Dem. Republic of	533.0	2,989.4	3,349.7	0.0	1,551.8	1,134.5	2,686.3	223.3	149.8
Zambia	489.1	2,169.9	2,456.4	51.5	1,247.1	891.9	2,139.0	146.5	354.1
Yugoslavia	467.7	10,458.9	10,458.9	0.0	3,680.5	3,368.7	7,049.2	1,172.4	1,172.4
Sri Lanka	413.4	11,499.7	11,370.1	1,275.7	4,926.9	4,632.8	9,559.7	141.7	142.6
Belarus	386.4	6,889.9	5,940.6	223.9	5,343.8	5,102.1	10,445.9	688.6	355.7
Ghana	369.0	5,565.6	5,333.3	287.6	2,193.3	1,880.8	4,074.1	91.7	138.1
Kazakstan	365.7	11,770.5	14,256.6	943.4	5,776.0	5,076.5	10,852.5	1,681.6	1,211.6
Croatia	365.1	13,261.6	13,616.1	1,972.3	7,689.5	6,574.5	14,264.0	470.1	602.3
Slovak Republic	357.5	14,415.7	14,985.6	2,105.4	9,912.7	8,952.2	18,864.9	719.0	610.7
Zimbabwe	353.4	4,105.1	4,818.4	168.5	2,390.9	2,194.5	4,585.4	107.5	81.1
Trinidad and Tobago	335.6	5,017.0	4,578.9	569.2	2,328.4	2,197.8	4,526.2	120.2	113.5
Vietnam	329.1	20,745.6	19,999.8	1,201.6	9,560.0	9,482.5	19,042.6	513.7	329.5
Cote d'Ivoire	325.2	8,321.9	8,208.5	571.8	3,806.9	3,763.4	7,570.2	142.1	141.7
Sudan	315.1	7,129.2	7,238.6	101.8	1,379.5	867.0	2,246.6	184.4	175.6
Uruguay	306.5	15,295.2	15,853.1	1,539.1	3,440.9	3,180.4	6,621.2	138.1	153.2
Ecuador	302.3	10,012.8	12,972.8	1,201.7	4,740.0	4,366.8	9,106.8	184.1	193.5
Syrian Arab Republic	293.6	51,625.2	50,601.8	29.2	4,453.7	4,623.4	9,077.1	296.5	250.1

	Actual Quota 1/	GDP		Reserves	Current Payments	Current Receipts	Current Receipts plus Current Payments	Variability of Current Receipts	Variability of Current Receipts plus Net Capital Inflows
		1999	Average 1997-99	12 month Average 1999	Average 1995-99	Average 1995-99	1995-99	1987-99	1987-99
Tunisia	286.5	15,317.4	14,560.2	1,368.2	6,998.1	6,617.5	13,615.6	181.4	184.2
Angola	286.3	4,531.7	4,943.2	155.9	4,415.6	6,181.6	10,597.2	1,548.9	1,117.6
Luxembourg	279.1	14,134.3	13,447.5	47.0	43,347.3	44,830.7	88,178.0	3,440.9	2,658.5
Uzbekistan	275.6	12,492.0	11,607.7	292.0	3,214.0	2,908.0	6,122.0	2,675.2	1,908.1
Jamaica	273.5	5,393.0	5,342.1	480.2	3,169.1	3,032.8	6,201.9	114.5	95.2
Kenya	271.4	7,788.4	7,984.5	514.4	2,682.1	2,569.0	5,251.1	91.8	115.7
Qatar	263.8	7,821.0	6,981.6	853.8	3,515.1	3,345.9	6,860.9	362.5	418.4
Myanmar	258.4	237,957.4	177,201.2	243.4	1,752.4	1,704.3	3,456.7	115.5	138.9
Yemen, Republic of	243.5	4,914.9	4,678.9	820.4	2,451.3	3,390.3	5,841.6	900.2	864.3
Slovenia	231.7	14,751.7	14,140.0	2,487.1	8,146.8	8,002.1	16,148.9	499.9	259.0
Dominican Republic	218.9	12,724.0	11,787.0	402.0	6,293.7	6,105.8	12,399.4	532.4	297.7
Brunei Darussalam	215.2	3,330.4	3,237.2	38.6	2,129.2	3,516.3	5,645.5	218.7	178.2
Guatemala	210.2	13,389.5	13,537.3	884.3	3,276.5	2,793.5	6,070.0	80.9	176.7
Panama	206.6	6,989.3	6,723.2	707.6	7,231.5	6,698.9	13,930.4	315.6	295.8
Lebanon	203.0	12,157.9	11,665.6	5,347.3	5,066.9	2,035.7	7,102.6	138.7	458.6
Tanzania	198.9	6,325.4	6,040.1	471.0	1,686.8	1,504.7	3,191.5	44.7	60.2
Oman	194.0	11,414.4	11,102.4	1,720.7	5,579.2	5,026.4	10,605.7	425.9	225.8
Cameroon	185.7	7,391.4	6,993.7	1.9	1,714.5	1,639.5	3,354.0	110.8	156.7
Uganda	180.5	4,648.4	4,701.9	535.9	1,274.6	1,073.8	2,348.5	50.3	84.0
Bolivia	171.5	6,115.8	6,054.6	630.6	1,570.9	1,239.1	2,809.9	77.1	62.6
El Salvador	171.3	9,112.6	8,677.3	1,420.5	3,092.0	2,981.8	6,073.8	186.3	181.8
Jordan	170.5	5,904.0	5,698.9	1,704.9	4,107.4	4,205.0	8,312.5	160.8	311.1
Bosnia-Herzegovina	169.1	3,231.2	2,864.4	7.1	2,282.0	1,492.2	3,774.2	1,847.4	1,445.5
Costa Rica	164.1	11,120.5	10,197.8	987.3	4,821.7	4,500.3	9,322.0	150.4	154.3
Afghanistan, Islamic State of	161.9	1,651.0	1,651.0	4.9	381.2	188.6	569.8	29.9	29.9

Table 12. Data Used for Quantification of Quota Formulas (continued)
(SDR millions)

	Actual Quota 1/	GDP		Reserves	Current Payments	Current Receipts	Current Receipts plus Current Payments	Variability of Current Receipts	Variability of Current Receipts plus Net Capital Inflows
		1999	Average 1997-99	12 month Average 1999	Average 1995-99	Average 1995-99	1995-99	1987-99	1987-99
Senegal	161.8	3,514.2	3,382.1	323.4	1,370.9	1,309.3	2,680.2	79.9	79.8
Azerbaijan	160.9	3,184.6	3,111.9	451.8	1,421.9	816.9	2,238.8	318.9	264.3
Gabon	154.3	3,532.2	3,617.9	2.0	2,103.4	2,292.2	4,395.7	302.8	181.2
Georgia	150.3	1,991.6	2,365.9	93.2	856.6	733.7	1,590.3	93.5	101.6
Lithuania	144.2	7,798.9	7,562.5	953.9	4,014.3	3,320.6	7,334.9	308.6	206.9
Cyprus	139.6	6,596.6	6,444.0	1,136.8	3,510.9	3,256.4	6,767.4	127.6	172.7
Namibia	136.5	2,178.2	2,257.3	191.4	1,584.5	1,721.1	3,305.6	55.7	45.4
Bahrain	135.0	4,841.7	4,671.5	960.3	6,722.6	6,695.9	13,418.5	1,046.3	1,077.6
Ethiopia	133.7	4,439.5	4,406.8	292.6	1,152.2	1,160.1	2,312.4	94.9	194.3
Papua New Guinea	131.6	2,851.0	3,072.1	93.7	1,829.8	1,972.0	3,801.8	146.8	133.9
Bahamas, The	130.3	2,633.2	2,442.6	315.0	1,865.5	1,485.6	3,351.1	85.6	67.0
Nicaragua	130.0	1,658.6	1,565.7	348.1	1,271.5	1,732.0	3,003.5	777.2	613.3
Honduras	129.5	3,967.0	3,757.8	756.6	1,982.7	1,845.9	3,828.7	104.2	94.4
Liberia	129.2	59.0	714.5	0.4	725.2	652.5	1,377.7	37.8	26.0
Latvia	126.8	4,870.6	4,484.8	600.8	2,401.5	2,126.2	4,527.7	170.2	115.8
Moldova	123.2	774.6	990.4	140.0	876.8	762.9	1,639.8	121.6	62.6
Madagascar	122.2	2,721.1	2,684.6	136.4	880.2	786.0	1,666.2	33.4	50.8
Iceland	117.6	6,304.8	5,893.7	326.9	2,235.6	2,037.0	4,272.7	55.7	90.4
Mozambique	113.6	2,894.3	2,737.8	469.7	960.1	832.0	1,792.2	71.4	103.9
Guinea	107.1	2,546.8	2,646.2	150.7	765.0	710.5	1,475.4	62.2	67.2
Sierra Leone	103.7	497.3	530.0	21.0	154.8	97.6	252.4	20.8	31.6
Malta	102.0	2,667.7	2,559.5	1,241.4	2,759.8	2,596.9	5,356.7	99.1	98.7
Mauritius	101.6	3,092.5	3,027.2	467.8	2,004.2	1,985.4	3,989.5	86.1	78.2
Paraguay	99.9	5,661.3	6,327.9	614.3	3,414.1	3,329.5	6,743.6	233.3	189.8
Mali	93.3	1,945.6	1,888.6	280.9	745.6	680.4	1,426.0	39.8	30.5

| | Actual Quota 1/ | GDP | | Reserves | Current Payments | Current Receipts | Current Receipts plus Current Payments | Variability of Current Receipts | Variability of Current Receipts plus Net Capital Inflows |
		1999	Average 1997-99	12 month Average 1999	Average 1995-99	Average 1995-99	1995-99	1987-99	1987-99
Suriname	92.1	815.0	691.5	33.6	396.9	362.6	759.5	93.7	48.0
Armenia	92.0	1,349.3	1,311.7	230.7	680.7	468.5	1,149.2	42.2	35.4
Guyana	90.9	490.0	515.9	187.4	640.2	642.6	1,282.8	121.9	56.0
Kyrgyz Republic	88.8	913.9	1,135.8	147.5	661.4	459.3	1,120.6	871.7	735.3
Cambodia	87.5	2,203.1	2,177.7	266.8	984.2	908.6	1,892.8	71.8	50.9
Tajikistan	87.0	350.8	350.8	4.5	615.3	564.3	1,179.6	445.9	324.6
Congo, Republic of	84.6	1,621.8	1,582.3	5.1	1,776.6	1,150.3	2,926.9	125.4	219.4
Haiti	81.9	2,959.9	2,602.4	0.7	714.3	638.0	1,352.3	79.3	70.1
Somalia	81.7	343.4	343.4	0.0	206.7	42.8	249.5	5.6	5.6
Rwanda	80.1	1,403.9	1,417.4	113.0	288.2	358.8	647.0	109.6	88.8
Burundi	77.0	597.3	659.0	45.5	131.9	125.7	257.6	23.9	22.6
Turkmenistan	75.2	2,408.9	2,155.6	1,076.6	1,425.2	1,219.3	2,644.4	441.7	291.7
Togo	73.4	965.9	981.5	87.3	546.2	459.1	1,005.3	61.5	55.5
Nepal	71.3	3,668.2	3,628.7	582.4	1,242.8	1,168.0	2,410.8	40.9	64.2
Fiji	70.3	1,307.2	1,355.3	297.1	913.1	927.4	1,840.6	62.9	34.2
Malawi	69.4	1,302.9	1,510.9	186.9	738.6	501.3	1,239.9	31.9	32.7
Macedonia, FYR	68.9	2,510.0	2,593.8	258.4	1,503.5	1,358.1	2,861.7	391.6	257.0
Barbados	67.5	1,821.1	1,725.4	240.3	984.9	967.4	1,952.3	42.7	28.2
Niger	65.8	1,231.3	1,230.3	36.5	380.3	303.0	683.3	44.1	52.2
Estonia	65.2	3,724.3	3,642.1	555.6	2,910.4	2,639.6	5,550.0	189.2	161.9
Mauritania	64.4	749.0	748.1	151.9	389.1	440.0	829.1	33.8	38.4
Botswana	63.0	4,028.3	3,866.7	4,303.9	2,242.4	2,568.6	4,811.0	182.2	196.4
Benin	61.9	1,726.2	1,660.8	208.9	611.5	579.5	1,191.0	65.9	42.4
Burkina Faso	60.2	1,888.7	1,840.6	234.9	536.4	553.7	1,090.1	49.4	84.6
Chad	56.0	1,138.0	1,164.4	79.7	390.2	403.3	793.4	32.8	25.6

Table 12. Data Used for Quantification of Quota Formulas (continued)
(SDR millions)

	Actual Quota 1/	GDP 1999	GDP Average 1997-99	Reserves 12 month Average 1999	Current Payments Average 1995-99	Current Receipts Average 1995-99	Current Receipts plus Current Payments 1995-99	Variability of Current Receipts 1987-99	Variability of Current Receipts plus Net Capital Inflows 1987-99
Central African Republic	55.7	780.9	753.8	101.1	331.1	240.6	571.6	24.0	20.8
Lao, People's Dem. Republic	52.9	1,061.0	1,092.5	82.1	516.6	460.7	977.3	30.2	23.8
Mongolia	51.1	625.3	702.6	71.1	435.4	433.6	869.0	61.6	138.8
Swaziland	50.7	911.9	944.7	266.6	1,039.3	1,029.5	2,068.8	24.8	25.3
Albania	48.7	2,688.8	2,203.5	263.8	741.6	713.6	1,455.3	186.7	141.9
Lesotho	34.9	653.3	673.6	390.7	782.6	610.1	1,392.7	59.5	27.7
Equatorial Guinea	32.6	558.6	437.7	0.4	537.8	282.4	820.3	34.2	33.1
Gambia, The	31.1	315.9	306.9	79.0	216.8	199.5	416.2	14.9	15.1
Belize	18.8	512.6	475.6	45.9	291.1	263.6	554.7	9.1	10.3
San Marino	17.0	563.4	563.8	3.4	1,333.5	1,344.6	2,678.1	71.5	39.3
Vanuatu	17.0	154.0	155.3	31.6	154.5	145.0	299.5	8.7	12.9
Djibouti	15.9	392.1	378.8	46.7	237.4	227.1	464.5	18.9	21.8
Eritrea	15.9	574.3	590.2	0.0	395.8	343.2	739.0	44.0	31.6
St. Lucia	15.3	493.0	455.7	52.5	337.8	300.8	638.6	7.4	6.9
Guinea-Bissau	14.2	156.5	165.5	26.7	69.7	77.5	147.2	9.3	7.0
Antigua and Barbuda	13.5	476.5	451.1	43.8	364.3	345.5	709.8	9.3	18.0
Grenada	11.7	276.4	254.6	34.6	168.4	134.2	302.6	4.8	6.1
Samoa	11.6	160.7	161.4	45.8	98.4	106.5	204.9	6.3	2.9
Solomon Islands	10.4	262.8	280.9	39.1	189.3	193.2	382.5	9.6	11.8
Cape Verde	9.6	424.6	396.7	31.5	227.8	197.4	425.2	6.8	8.6
Comoros	8.9	133.2	133.3	27.2	67.2	67.5	134.7	6.7	4.9
St. Kitts and Nevis	8.9	219.9	208.8	31.6	161.8	116.0	277.8	5.0	10.2
Seychelles	8.8	431.9	424.0	18.6	332.3	284.7	617.0	15.1	11.7
St. Vincent and the Grenadines	8.3	241.5	229.4	27.8	169.5	139.2	308.7	7.0	5.9
Dominica	8.2	199.1	188.7	21.8	126.7	117.5	244.1	4.0	5.3

Table 12. Data Used for Quantification of Quota Formulas (concluded)
(SDR millions)

	Actual Quota 1/	GDP		Reserves	Current Payments	Current Receipts	Current Receipts plus Current Payments	Variability of Current Receipts	Variability of Current Receipts plus Net Capital Inflows
		1999	Average 1997-99	12 month Average 1999	Average 1995-99	Average 1995-99	1995-99	1987-99	1987-99
					1995-99				
Maldives	8.2	287.4	270.6	96.7	321.5	299.4	620.8	9.1	8.8
Sao Tome and Principe	7.4	34.3	32.1	6.5	15.4	19.7	35.2	3.2	3.8
Tonga	6.9	109.8	113.3	20.3	73.8	42.8	116.5	7.2	7.7
Bhutan	6.3	321.0	301.4	198.5	132.6	157.6	290.2	14.3	14.9
Kiribati	5.6	35.8	32.9	0.0	82.3	45.1	127.4	3.2	1.5
Micronesia, Fed. States of	5.1	157.4	153.6	98.4	116.8	134.5	251.3	23.4	18.9
Marshall Islands	3.5	71.2	69.6	0.0	56.7	57.3	114.0	6.4	4.6
Palau, Republic of	3.1	94.6	95.1	0.0	65.3	83.9	149.2	12.9	10.5

1/ Actual quota except for the nine members that have not yet consented to their quota increase, in which case 11th Review proposed quotas are used.