

Quotas—Further Thoughts on a New Quota Formula, and Statistical Appendices I and II
November 22, 2006

IMF documents cited in this report are available at www.imf.org

INTERNATIONAL MONETARY FUND

Quotas—Further Thoughts on a New Quota FormulaPrepared by the Quotas and Voice Working Group¹

November 22, 2006

Contents	Page
I. Introduction.....	4
II. Role of Quotas and the Quota Formula	4
III. Principles and Properties	6
IV. Variables	7
V. Functional Form and Weights.....	12
VI. Illustrative Calculations	16
VII. Issues for Discussion	18
 Tables	
1. Possible Quota Formula Variables—Shares in Global Totals.....	19
2. Correlations Between Quota Variables.....	20
3. Linear Formulas	21
4. Distribution of Quotas: Results of Alternative Specifications	22
5. Distribution of Quotas: Results of Alternative Specifications	23
 Box	
1. Alternative Quota Formula Specifications	14
 Figure	
1. Effect of Compression on Quota Share	24
 Appendices	
I. Quota Formulas—A Brief History.....	25
 Appendix Table	
A1. Distribution of International Investment Position of Reporting Members	29

¹ Messrs Burton (Chair), Ahmed, Anjaria, Hagan, Kuhn, and Kincaid; a FIN team led by Mr. Tweedie has worked closely with the group.

Appendix Box

A1. Existing Quota Formulas26

I. INTRODUCTION

1. **The Board of Governors in a Resolution adopted on September 18 requested that the Executive Board reach agreement on a new quota formula, starting discussions soon after the Annual Meetings in Singapore.**² According to the Resolution, this work should be completed by the Annual Meetings in 2007, and no later than the IMFC Meeting in the Spring of 2008. The Resolution states that the new formula should provide a simpler and more transparent means of capturing members' relative positions in the world economy. This new formula would provide the basis for a second round of ad hoc quota increases, as part of the program of quota and voice reform to be completed by the Annual Meetings in 2007, and no later than by the Annual Meetings of 2008.

2. **This paper explores key issues related to a new quota formula** as background for an informal Board seminar. This seminar is the first opportunity for the Board to discuss the new formula since the adoption of the Resolution. The paper first reviews the broad considerations and principles that should guide the design of a new quota formula, taking as a starting point the roles of quotas in the Fund. The paper also considers more specific issues in that light, such as the selection of variables and possible functional forms for the new formula. In examining these issues, the paper draws on the extensive discussion of the quota formulas in recent years, taking up questions raised both within the Board and in other fora.

3. **The paper does not make specific proposals for a new formula**, deeming that premature before further discussion has taken place within the Board. It is hoped, however, that, on the basis of the discussion at the seminar, the issues under discussion can begin to be narrowed down, leading in coming months to a convergence of views around a specific proposal or narrow range of proposals. For the new quota formula to provide a basis for further quota adjustments, it will require broad support from the membership. The history of the quota formula discussions suggests that this will be challenging and will require the same spirit of compromise and willingness to put the good of the Fund and the international financial system first that allowed the recent Resolution to be proposed and adopted.

II. ROLE OF QUOTAS AND THE QUOTA FORMULA

4. **A natural starting point for consideration of a new quota formula is the role of quotas themselves.** Quotas currently serve several inter-related purposes:³

- First, quotas constitute the Fund's financial base. A member's quota determines its financial contribution, which must be fully subscribed and paid in a combination of reserve assets and the member's own currency. Thus, the quotas of members with

² See Board of Governors Resolution on *Quota and Voice Reform in the International Monetary Fund* (Resolution No. 61-5, September 2006).

³ Quotas also determine participants' shares in SDR allocations.

currencies considered usable based on the strength of their external positions effectively determine the Fund's capacity to provide financing.⁴

- Second, quotas play a role in determining members' access to Fund resources. Specifically, access limits for both GRA and PRGF-ESF borrowing are set in terms of quotas. While these limits may be exceeded in exceptional circumstances, they nonetheless continue to play an important role in guiding access decisions.⁵ Quotas also provide the benchmark for determining the application of level-based surcharges in high access cases.
- Third, quotas together with "basic votes" determine the distribution of voting power in the Fund. Each member receives 250 basic votes plus one additional vote for each part of its quota equivalent to SDR 100,000. Also, the five members having the largest quotas are each required to appoint an Executive Director.

5. **Thus, quotas clearly play a critical role in the financial structure, financing operations, and governance of the Fund.** These multiple roles highlight the broader issues at stake in the discussion of the quota formula. While discussions of quota variables and quota formulas inevitably involve technical and statistical aspects, it is important not to lose sight of the larger issues relating to the Fund's governance structure, its overall effectiveness, and the maintenance of a sound financial structure.

6. **The multiple roles of quotas also raise the issue of whether quotas, and by extension the quota formula, are overburdened.**⁶ In principle, one could consider revisiting the underlying assumption that financial contribution, access and voting power should be based on the same criterion, namely a member's quota. However, such a step would involve a significant revision to the governance structure of the Fund and, to date, there is little evidence of support for moving in this direction.⁷

7. **So long as quotas continue to serve multiple purposes, the new quota formula will need to balance sometimes competing considerations about variables and their**

⁴ Under certain circumstances, these resources can be supplemented by the NAB and the GAB.

⁵ Under normal circumstances, current access policy allows annual access of 100 percent of quota with cumulative access limited to 300 percent of quota. Additional considerations governing the amount of GRA access are: (i) balance of payments need; (ii) capacity to repay, of which a critical component is the strength of adjustment policies; and (iii) a member's record in using Fund resources. Different access policies and practices apply to PRGF resources owing in part to their more limited availability.

⁶ This was clearly the view of Professor Mikesell, who was closely involved in designing the original Bretton Woods formula. See *Report to the IMF Executive Board of the Quota Formula Review Group* (2000).

⁷ While waivers are permitted to allow access outside the quota-based limits specified under the Articles (see Article V, Section 3 (b) (iii) and 4, under which use of Fund credit is limited to 100 percent of quota, unless waived), fully delinking quotas from all decisions on access would raise wider ranging issues and would also require an amendment to the Articles.

weights implied by each role in order to meet the goal of simplicity and transparency.

While it is envisaged that the second round of ad hoc increases will be based on the new quota formula, it should be borne in mind that, more generally, the quota formula itself has been used as a guide for changes to the structure of quotas, rather than a mechanical rule. The Resolution indicates that in the context of future general reviews of quotas, the Board of Governors will consider distributing any increase in quotas with a view to achieving a better alignment of members' quotas with their relative positions in the world economy, while ensuring that the Fund has adequate liquidity to achieve its purposes. As such, the new quota formula will be expected to play a more prominent role in determining quota realignments in the future than has often been the case in the past. This said, the Board will retain flexibility in recommending other relevant factors to the Board of Governors.

8. **The different roles of quotas provide guidance as to the variables that should enter a quota formula.** The first two roles suggest that these variables should capture a member's ability to contribute usable resources to the Fund and also reflect its potential need to borrow from the Fund. In terms of the third role, the use of quotas as a basis for calculating voting power derives, in many respects, from the role of quotas in determining the amount of a member's financial contribution to the Fund. Specifically, many decisions taken by the Fund relate directly to how its financial resources are used, and hence voting power should be linked to members' roles as contributors of financial resources. Quotas also determine voting power in relation to the Fund's broader responsibilities, including bilateral and multilateral surveillance, as well as capacity building. The ability of the Fund to discharge its broader responsibilities effectively requires the active engagement of all its members. However, there is a close link between these activities and Fund financing; in particular, effective surveillance will reduce the risk that members will require Fund financial support. Meeting these broader responsibilities also points in the same general direction in terms of variables that are relevant for the quota formula—namely measures of weight and role in the global economy. Issues related to the role of small economies in the decision making of the Fund are best addressed through basic votes.

III. PRINCIPLES AND PROPERTIES

9. As already reflected in recent discussions and consistent with lessons derived from experience with the existing formulas, **a number of principles should guide the development of the new formula.** In particular, a new formula should:

- be simple and transparent, as emphasized by the Resolution, so that the basis for differences in relative quota shares is readily understandable;
- be consistent with the roles of quotas, as described above, appropriately reflecting global economic and financial trends and capturing members' relative positions in the world economy;
- result in calculated quota shares that are broadly acceptable to the membership, otherwise the credibility, cooperative nature and effectiveness of the Fund will be compromised; and

- be feasible to implement statistically based on timely, high quality, and widely available data.⁸

10. **The existing quota formulas are problematic when viewed against these principles.**⁹ In particular, the system is neither transparent nor simple, involving five formulas and a complicated decision rule and with the impact of a change in a quota variable on a member's calculated quota share often counterintuitive (Appendix I).

11. **Several desirable properties for the new quota formula can also be posited, consistent with these principles.** These include a number of mathematical properties, such as homogeneity, monotonicity, and non-convexity, that are discussed further in the section on functional forms. The most important property, however, is that a new quota formula should have “intuitive appeal” in its interpretation and results. A further implication is that a new quota formula should not be viewed as set in stone and can and should be further modernized over time to reflect global economic trends and improvements in data availability.

IV. VARIABLES

12. **The selection of variables to be included is a critical step in the development of a new quota formula.** As noted above, the roles of quotas in the Fund suggest that the variables included in the formula should capture a member's capacity to contribute financial resources to the Fund, potential need to use Fund resources, and more generally its economic position and role in the world economy. With these considerations and also the principle of simplicity and transparency in mind, recent Board discussions have revealed quite a broad consensus to limit the variables included in the formula to no more than the four utilized in the existing formulas, but updated and modernized. Such an evolutionary approach provides an important element of continuity in terms of the considerations that have guided quota decisions in the past.

13. **This section reviews the main variables that have been considered for inclusion in the formula** and considers a number of issues that have been raised, including about how these variables should be defined. It draws on a series of Board discussions on this topic in recent years, beginning with the report of the Quota Formula Review Group (QFRG) chaired by Professor Richard Cooper in 2000 (see Appendix I).

A. GDP

14. **GDP has been recognized as a very important variable to be included in a new quota formula.** GDP provides a comprehensive measure of economic size and has been

⁸ See, for example, *Report to the IMF Executive Board of the Quota Formula Review Group* (2000) and *Staff Commentary on the External Review of the Quota Formulas* (2000).

⁹ Problems with the current formulas have been acknowledged by the membership for some time. See *Communiqué of the Interim Committee of the Board of Governors of the International Monetary Fund* (Press Release No. 97/22, 4/28/1997).

viewed as the single most relevant indicator of a member's ability to contribute to the Fund's finances, though it is clearly not the only such measure. GDP is also relevant to a member's potential demand for Fund resources and can be viewed more broadly as an indicator of relative positions and stake in the global economy. GDP is a widely reported and used measure that is available on a timely basis for the vast majority of the membership, which is an important consideration given the need to minimize the degree of estimation required to produce data for quota calculations.¹⁰

15. **For the purpose of quota calculations, a member's GDP has to be converted into a common currency.** In this context, differences of view have persisted over whether GDP should continue to be converted at market exchange rates, as has traditionally been the case, or whether a different conversion method based on PPP rates should be adopted.¹¹ The latter would lead to a significant change in calculated quotas because the distribution of PPP-based GDP across individual and groups of members differs substantially from that based on market exchange rates (Table 1). GDP converted at market exchange rates can be viewed as the more relevant measure of a member's ability to contribute to the Fund's finances, as it reflects the international market value of resources generated by an economy. It also is more relevant to a member's capacity to borrow from the Fund. PPP-based GDP may be a more relevant indicator for cross-country comparisons of the volume of goods and services produced by an economy. Thus, a decision on the appropriate conversion factor needs to weigh the relative significance of these considerations for the various roles of quotas as discussed above. To the extent that the financial contribution role remains central, and voting power remains linked to financial contributions, there would seem to be a strong case for maintaining a market-based conversion factor for GDP. If weakening the link between quotas and their financial role were desired, the introduction of a population variable could also be considered.¹² The QFRG report noted that use of such a measure could perhaps be justified on the grounds that the international community should move toward a system in which individuals have a greater say in global decision making. However, it also noted that population does not bear directly on international monetary issues and did not propose the inclusion of such a variable.¹³

¹⁰ In the most recent update of the quota database, 119 members reported GDP data that could be used directly from IFS, and staff were able to supplement this with data from the WEO database for most other members (see *Quotas—Updated Calculations* (2006)). Other potential measures, such as Gross National Income (GNI), may also have conceptual appeal but are less widely available and would require a greater degree of estimation. Moreover, GDP can be viewed as a proxy for GNI, given the close correlation between the two measures.

¹¹ PPP effectively assigns a single price to the same good or service, regardless of where it is produced, and therefore tends to lead to a larger GDP for developing countries because it places a higher value on production in the nontradables sector of those countries than would be implied by a market exchange rate conversion factor.

¹² This could achieve a similar effect to the use of PPP-based GDP, and may have advantages in terms of data availability. PPP-based GDP data of sufficient quality to be used for quota calculations are only available for a small subset of the membership, though a major project to upgrade these data is underway under the auspices of the International Comparison Programme (ICP). This work is expected to broaden the coverage of PPP-based GDP estimates on a consistent basis to about 130 countries, but is not expected to be completed until late 2007.

¹³ See *Report to the IMF Executive Board of the Quota Formula Review Group* (2000).

16. **It would also seem desirable that quota adjustments not be unduly influenced by temporary fluctuations in GDP.** Given the potential for sizable short-term volatility in a member's GDP resulting from temporary exchange rate movements or economic dislocation, it has been agreed in previous discussions that GDP should be averaged over several years rather than using a single year as in the existing formulas. In this context, a three-year average has been generally viewed as providing a reasonable trade-off between the potentially conflicting objectives of capturing current data and smoothing out unwarranted fluctuations, though slightly longer periods could also be considered.

B. Openness

17. **Openness can be viewed as an indicator of a member's involvement and stake in the global economy.** Countries that are relatively more open to trade and financial flows with the rest of the world may have a greater stake in promoting global economic and financial stability, as well as global trade and financial integration. Openness has been seen as having a bearing on countries' ability to contribute to the Fund's finances and can also serve as an indicator of potential demand for Fund resources, as relatively more open countries may be more vulnerable to external shocks. Thus, openness appears conceptually relevant to all of the various roles of quotas discussed above.

18. **Openness plays a significant role in the existing quota formulas.** It enters through the current receipts and payments (both separately and combined), as well as through the ratio of current receipts to GDP as a multiplicative factor (in three of the five formulas). The latter tends to give a very large effective weight to openness for highly open economies, and can lead to anomalous results if a country's GDP growth exceeds the growth in its exports. For these reasons, there has been considerable support for a single, simplified measure of openness that would include the sum of current receipts and payments, and staff has included such a variable averaged over a five-year period in recent papers. However, a number of unresolved issues remain.

19. **One concern is that openness enters the quota formulas on a gross rather than a value added basis.** This leads to a double counting of cross-border flows that can exaggerate the resulting measure of economic size and importance relative to the outcome if data on value added in the tradeables sector were more readily available. This can be a particular issue for countries with large entrepôt trade activities, international financial centers, or those heavily engaged in processing imports for re-export, where the gross flows recorded in the balance of payments may be very large in relation to their actual impact on a member's economy. In recognition of this issue, it has been the longstanding practice to make adjustments to the quota database for such activities before it is used in determining actual quota increases. However, such adjustments are resource-intensive, involve an inevitable element of judgment, and are heavily dependent on data availability. Thus, they must be viewed as a second-best approach to handling the potential distortions resulting from the inclusion of gross balance of payments flows in the quota formula, and it is proposed to revisit the issue of data adjustments as part of the work program on a new quota formula.

20. **A second related issue is the treatment of trade within economic or currency unions.** The increased integration between members of an economic union raises the question as to whether trade between members of a union should continue to be counted as foreign trade for the purpose of quota calculations. A currency union raises the additional issue that cross-border transactions within the union take place in the common domestic currency. In both cases, the increased economic integration that these and other trade arrangements are intended to promote may well imply increasing cross-border flows over time, which would be reflected in the openness variable relative to growth in the size of GDP. Given this trend, and the more general difficulties associated with an openness measure that captures gross flows rather than value added as discussed above, the QFRG proposed to exclude openness altogether from a new formula. However, it did not propose to single out intra-union trade for exclusion, arguing that this would run counter to the underlying principle that membership in the Fund is only available to countries and that membership in a currency union does not preclude a country encountering balance of payments difficulties of the type with which the Fund can help. Data availability considerations may also make it difficult to exclude intra-union transactions, as data are typically only available for trade flows and not for services.

21. **It has also been argued that the openness measure should be broadened to cover financial openness.** The conceptual case for doing so has considerable appeal, since the dramatic expansion in cross-border capital flows has been one of the most notable features of global economic developments since the quota formulas were last revised. It would therefore seem that a member's integration with and reliance on global capital markets is relevant to the different roles of quotas as discussed above. However, previous Board discussions have also pointed to significant data-related difficulties with the development of such a measure. Gross capital flows suffer from the problems already discussed but may also be inflated by "churning" or short-term flows related, for example, to hedging or portfolio activities that have little relationship to underlying economic trends. Net capital flows also do not provide a useful indicator of a member's integration or involvement with international capital markets. One indicator that has been discussed in the past is a stock measure such as the sum of a member's accumulated foreign asset and liability positions reported as part of its international investment position (IIP). However, data availability remains an issue. Coverage continues to improve but remains short of the needed level, with 106 economies now reporting full or partial data (85 are considered to be comprehensive reporters) compared with 83 in 2003 when this issue was last considered by the Board.¹⁴ Appendix Table A1 summarizes the latest available IIP data. Another consideration that is relevant to both openness and variability is the treatment of capital flows under the Articles. Specifically, the Articles recognize the right of members to impose controls on capital transfers¹⁵ and provide that a member may not "use the Fund's general resources to meet a large or sustained outflow of capital."¹⁶ This constraint on access to meet capital-account

¹⁴ Investment income flows have been suggested as a possible proxy for missing IIP data, but also suffer from significant statistical shortcomings.

¹⁵ Article VI, Section 3.

¹⁶ Article VI, Section 1.

driven needs would need to be considered if capital-based measures are used, as reflected in the Fund's policies on exceptional access.¹⁷

C. Variability

22. **Variability has generally been seen as a measure of a member's vulnerability to balance of payments shocks and therefore of the potential need for Fund resources.** It could also be viewed as providing an indicator of a member's stake in global financial stability. Variability has been included in the quota formulas from the beginning and has received considerable support in the discussions on a new formula (variability was one of the two variables proposed by the QFRG, along with GDP). Some have argued that need is already captured by the openness variable, though experience has demonstrated that relatively closed economies can face BoP crises with substantial financing needs. Concerns have also been raised that the inclusion of variability might reward unstable policies.

23. **The successive capital account crises of the last two decades have highlighted the importance of modernizing such a variable to take account of capital flows.** Thus, if variability is to be retained, it should include a capital account aspect. Previous discussions have revealed considerable support for a variable that measures variability of current receipts and net capital flows. It has also been generally agreed that the deviation from a three-year average (rather than five years as in the existing formulas) may be preferable to capture shorter term trends in capital flows while still smoothing out very temporary fluctuations. The data required for including such a variable are broadly available from the IFS and WEO databases.

D. Reserves

24. **Reserves provide a potential indicator of a member's financial strength and hence its ability to contribute to the Fund's finances.** However, a variety of views have been expressed on its continued relevance for quota calculations in recent Board discussions. Support has been expressed for its inclusion on the grounds that reserves have played a central role since the inception of the Fund and that reserve adequacy remains a relevant consideration for many members in assessing their external financial strength, including their ability to contribute to the Fund's usable resources. However, others have argued that reserves have become a less relevant indicator of ability to contribute with the growing importance of international capital markets and that it is a particularly misleading indicator for the international reserve currencies. Concerns have also been raised that the inclusion of reserves could be seen as rewarding excessive foreign exchange market intervention and reserve accumulation. These considerations have led to suggestions that reserves be given at

¹⁷ The Fund's policies on exceptional access define limited circumstances where Fund access can be directed to meet capital-account driven needs, specifically to restore confidence and build up reserves with the objective to stop capital outflows.

most a relatively small weight, and some have suggested that their influence should be capped in some way.

E. Correlation of Variables in the Quota Formulas

25. **As has been recognized in previous Board discussions, correlation among the main quota variables is high.** This reflects the fact that all of these variables are to a significant extent measures of economic size, in that larger economies also tend to have larger absolute balance of payments flows, both in terms of levels and fluctuations in those levels, and also to hold higher nominal levels of reserves. Correlation is very high—typically around 0.9—for GDP, openness, and variability, but significantly lower—less than 0.5—for reserves, in part due to the effect of reserve currencies (see Table 2). This high correlation constrains somewhat the range of results that may be obtained by varying the weights on the first three variables, but still leaves scope for differentiation as illustrated below. It also creates a problem of multicollinearity that complicates efforts to disentangle the relative influence of each variable on a member’s calculated quota. Consideration has been given in the past to alternative specifications that could reduce correlation across variables, but these have not been found to have desirable properties.¹⁸

V. FUNCTIONAL FORM AND WEIGHTS

A. Choice of Functional Forms

26. **The choice of functional form is a second critical element in the development of a new quota formula.** In previous work on alternative specifications and functional forms, the Board considered linear and multiplicative/log-linear specifications.¹⁹ Building on this work, this section considers possible functional forms that meet a set of important properties alluded to above.

27. In general it would be desirable for the quota formula to meet the following basic requirements:

- **Simplicity and transparency:** As emphasized in the Resolution, the formula should be parsimonious in the number of variables, and the relationship between the variables and calculated quotas should be transparent.
- **Homogeneity:** A uniform change for all members in all variables (such as a doubling of amounts) should leave calculated quota shares unchanged.

¹⁸ *IMF Executive Board Discusses Quota Distribution Issues, Public Information Notice No. 03/106.* For example, a stand-alone ratio of current receipts to GDP for openness would not be expected to be highly correlated with GDP itself. However, it would make the same absolute contribution regardless of a member’s size, and therefore be inconsistent with the objective of reflecting members’ relative economic positions.

¹⁹ See *Alternative Quota Formulas—Considerations* (2001).

- **Monotonicity:** The calculated quota of a member should increase if one of its variables in the quota formula increases, *ceteris paribus*.
- **Non-convexity:** Calculated quotas should increase equally (or less than proportional) to the underlying variables. Thus, the marginal impact of a variable on quotas should remain constant (or decline) as the variable increases.

28. **This section considers three potential functional forms of quota formulas in share terms that meet all of the criteria identified above** (See Box 1 for a summary of their statistical properties).

- **Linear in shares:** In this specification, quota shares of members are a linear combination of shares of individual country variables. The formula proposed by the QFRG was of this type (Appendix I). Variables in shares provide transparency, as the coefficients can be interpreted as weights (provided that the coefficients are positive and sum to one) and members' relative positions (in variables and calculated quota) are directly observable. In comparison, a formula with variables in levels (as in the existing formulas) is less transparent and difficult to interpret since the weights are not directly observable in the formula and change over time. In a formula that is linear in shares, the elasticity of a calculated quota share with respect to a variable share is always positive but varies across the membership.²⁰ The coefficients, nonetheless, have a simple, intuitive interpretation: each represents the percentage point impact on calculated quota shares of a given percentage point change in the member's share in the variable in question.

²⁰ The greater the value of a variable share relative to the calculated quota share of a member, the greater the elasticity of the calculated quota share with respect to that variable share.

Box 1: Alternative Quota Formula Specifications		
Specification:	Elasticities of Q_i (with respect to T_i):	Main Properties:
<p>(1) <u>Linear in Shares:</u> $Q_i = \alpha T_i + \beta U_i + \gamma \mathcal{N}_i + \delta W_i$</p>	$\alpha \frac{T_i}{Q_i}$	<ul style="list-style-type: none"> - Homogeneous of degree 1. - Member-specific elasticities. - Coefficients can be interpreted as weights of the (arithmetic) average under certain conditions. 1/
<p>(2) <u>Multiplicative in Shares:</u> $Q_i = k T_i^\alpha U_i^\beta V_i^\gamma W_i^\delta$</p>	α	<ul style="list-style-type: none"> - Homogeneous of degree $\alpha + \beta + \gamma + \delta$. - Constant elasticities (equal to the respective exponents) across membership. 2/ - Exponents can be interpreted as weights of the (geometric) average under certain conditions before rescaling. 1/ - k is a rescaling factor to ensure that the calculated quota shares add to 100 percent.
<p>(3) <u>Compressed Linear in Shares:</u> $Q_i = k(\alpha T_i + \beta U_i + \gamma \mathcal{N}_i + \delta W_i)^\lambda$</p>	$\lambda \alpha \frac{T_i}{\left(\frac{Q_i}{k}\right)^{\frac{1}{\lambda}}}$	<ul style="list-style-type: none"> - Homogeneous of degree λ (between 0 and 1). - Member-specific elasticities. - The choice of λ determines the amount of compression—a lower λ implies greater compression of the distribution of quota shares. - k is a rescaling factor to ensure that the calculated quota shares add to 100 percent.

1/ More specifically, if $\alpha > 0$, $\beta > 0$, $\gamma > 0$, $\delta > 0$ and $\alpha + \beta + \gamma + \delta = 1$.

2/ For instance, an increase of one percent in T_i would correspond to an increase of α percent in the calculated quota share of member i .

- **Multiplicative in shares:** This specification is a multiplicative combination of shares of individual country variables. When the variable exponents are positive and sum to one, the multiplicative specification before rescaling can be interpreted as the geometric average of each member's share in the totals of each of the formula variables.²¹ The elasticity of calculated quotas with respect to a variable is observable, is equal to the exponent attached to the variable, and is constant across the membership. Accordingly, a percentage increase in a variable would have the same proportional impact for all members with respect to an increase in calculated quota. The multiplicative specification tends to lead to lower calculated quota shares (as compared to the linear specification) for members with significant dispersion in their own variable shares.
- **Compressed linear in shares:** A compression factor could be introduced as a possible means to adjust for the high correlation of size-related variables that tend to favor large economies.²² The lower the compression factor, the more compressed the distribution becomes with a greater impact on large economies than small ones. The same properties of variables in shares hold in this specification, as described above. As in the linear in shares formula, the elasticities are always positive and vary across the membership.²³ Compression can also be applied in the case of a multiplicative formula, with broadly similar aggregate results.²⁴

B. Weights

29. **The Board of Governors' Resolution provides some guidance on the relative magnitude of weights**, indicating that consideration be given to placing "significantly higher weight on members' gross domestic product, together with ensuring that other variables, in

²¹There are two alternative formulations of this specification that yield the same distribution of calculated quota shares: (i) a formulation entirely in levels, i.e. quotas are a multiplicative combination of individual country variables expressed in levels and (ii) the familiar log-linear function, i.e. the logarithms of quotas are a linear combinations of the logarithms of individual country variables.

²² See also *Alternative Quota Formulas—Further Considerations* (2002).

²³ The coefficients in this model may be interpreted as weights in the sense that, regardless of the compression factor chosen, the relativities among the coefficients remain constant.

²⁴ Compressed quota shares are rescaled in order to sum to 100 percent. The size of the rescaling factor and, hence, a country's calculated quota share after compression will depend on several factors, including the size of the compression factor and the distribution of the uncompressed quota shares. One implication of this is that as the underlying data change over time, a country could experience changes in its calculated quota share (after compression) even if its uncompressed quota share remains the same. It should be noted, though, that compression does not change a country's rank in terms of calculated quota shares relative to the uncompressed distribution.

particular the openness of members' economies, also play an important role." Also, the accompanying report of the Executive Board stated that "some have stressed the importance of variability."²⁵

30. **In the most recent substantive discussion on quota formulas in 2003, Executive Directors reached broadly similar views.**²⁶ GDP was considered as the most important variable, with lesser weights to be assigned to openness, variability, and reserves.²⁷

31. **The correlation among variables needs to be taken into account in selecting weights.** As noted above, in previous Board discussions, most Directors acknowledged that this correlation is unavoidable and considered that approaches to reducing or eliminating the correlation would entail significant drawbacks, including reduced transparency of the formula.

32. **In the end, there are no rigorous criteria for the selection of variables in a quota formula and for the choice of weights and/or compression factors applied to variables.** These choices appropriately are, and will continue to be, matters of judgment by and of political consensus among the membership.

VI. ILLUSTRATIVE CALCULATIONS

33. **Simulations of alternative formulas can help to draw out the implications of different functional forms and weights for the distribution of quota shares and may facilitate consideration of key issues in the development of a new quota formula.** The calculations reported in this section should be viewed as purely illustrative; while the various formulations used are broadly consistent with the guidance provided by the Resolution, they should not be seen as indicating staff views on the appropriate formulation for the new quota formula. Only broad results by region are described below, with the implications for individual members' quota shares reported in detail in a supplement to this paper.

34. **The calculations use the four variables most recently discussed by the Board as broadly appropriate for inclusion in a new quota formula.** The variables (denominated in SDRs) are:

- GDP (annual data, converted at market exchange rates, averaged for 2002–2004).

²⁵ See *Report of the Executive Board and Proposed Resolution on Quota and Voice Reform in the International Monetary Fund* (2006).

²⁶ *Quota Distribution—Selected Issues and IMF Executive Board Discusses Quota Distribution Issues, Public Information Notice No. 03/106.*

²⁷ The estimated contributions in the current quota formulas are: GDP, 29 percent; reserves, 7 percent; variability, 14 percent; and openness, 50 percent (see Appendix I).

- Openness (measured as the annual average of the sum of current payments and current receipts for 2000–2004).
- Variability of current receipts and net capital flows (measured as a standard deviation from the centered three-year trend over a thirteen-year period, for 1992–2004).
- Reserves (twelve-month average of gold, foreign exchange reserves, SDR holdings, and reserve positions in the IMF for 2004).

At the risk of repetition, the use of these variables is not intended to prejudice the outcome of the discussion on the definition of the variables, but rather reflects those variables most recently discussed by the Board and for which data are readily available.

35. **The first group of simulations involves a simple linear formulation using six different sets of weights** (Table 3). The weight on GDP varies from 40 to 60 percent, and for each GDP weight, two different combinations of openness and variability weights are used. Reserves are given a weight of 5 percent in all six scenarios.²⁸ The broad results from these simulations are:

- The calculated quota shares of advanced countries as a group are higher in all six formulations than under the existing formulas. This reflects the higher weight in all six formulations on GDP, for which the advanced countries' share is particularly large.
- The calculated quota shares of developing countries, correspondingly, are lower in all six formulations than under the current formulas. This reflects the relatively low share of developing countries in global GDP.
- The calculated quota share of advanced countries as a group rises and that of developing countries as a group falls as the weight on GDP increases, for the reasons given above.
- A higher weight on openness and lower weight on variability tends to increase the calculated quota share of advanced countries and lower the calculated quota share of developing countries. There are, though, significant differences in impact across regions within these groups.

36. **The second group of simulations involves non-linear specifications for the formulas described above** (Tables 4-5 and Figure 1). For simplicity, we use only a single weight for GDP (50 percent) with high and low weights for openness and variability. In the compressed formulas, compression factors of 0.9 and 0.95 have arbitrarily been chosen. The main results are:

²⁸ A higher weight on reserves tends to increase modestly the share of developing countries, particularly in Asia, and lower that of advanced countries in calculated quotas.

- The results for the multiplicative specification are very similar to those for the linear form.
- Relative to the simple linear formulation, the compressed linear form lowers the calculated quota share of advanced countries as a group and raises the calculated share of developing countries taken together.
- The compressed linear form lowers the calculated quota share of the seven members with the highest calculated quota shares under the equivalent linear forms and raises the calculated quota share for all other countries.
- The smaller the compression factor, the greater the reduction of the calculated quota share of advanced countries as a group and the larger the gain in calculated share of developing countries as a group.
- The number of countries whose quota share is reduced does not vary with moderate changes in the compression factor.

VII. ISSUES FOR DISCUSSION

37. Directors may wish to comment on the following questions:

- Do Directors agree that the quota formula should be guided by the several roles of quotas described in Section II of the paper and that they will need to balance the sometimes competing considerations involved in these multiple roles?
- In light of the roles played by quotas, do Directors continue to consider that the quota formula should include at most four variables—GDP, openness, variability, and reserves—or are there other variables that Directors think should be included. In this connection, Directors could comment on the appropriate definitions of those variables including:
 - whether GDP should be measured at market or PPP exchange rates;
 - whether openness should include a measure of financial openness and the treatment of intra-currency union trade; and
 - whether reserves should be capped in some way.
- Which functional forms do Directors consider most appropriate, given the principles that should guide the new quota formula and its desirable properties? In this connection, Directors may wish to comment on the relative merits of the alternative functional forms presented in this paper.
- In light of the importance of the various roles of quotas, what do Directors see as the structure of weights for the variables they view as appropriate to be included in the formula? What other considerations should be taken into account to guide judgments on the structure of weights?

**Table 1. Possible Quota Formula Variables—Shares in Global Totals
(In percent)**

	Actual Quotas 1/ 2/	Existing Five Formulas		GDP 2002-04	PPP GDP 2002-04	Openness 2000-04	Current		Variability 3/ 1992-2004	Reserves 2004	IIP 4/	Population 2004
		2002-04	2000-04				Payments 2000-04	Receipts 2000-04				
Advanced economies	60.5	67.1	76.9	51.5	70.0	70.9	69.1	61.3	43.3	91.9	13.9	
Major advanced economies	45.2	47.3	64.9	43.2	49.0	50.3	47.7	43.1	34.4	64.2	11.3	
Of which: US	17.1	16.8	30.3	20.7	15.8	18.1	13.4	20.4	2.7	22.6	4.7	
Other advanced economies	15.3	19.8	12.0	8.3	21.0	20.6	21.5	18.2	9.0	27.7	2.6	
Developing countries	32.1	27.6	19.7	42.4	24.8	24.0	25.6	32.0	48.8	6.5	79.7	
Africa	5.4	2.4	1.6	3.4	2.0	2.0	2.1	4.1	3.3	0.5	12.8	
Asia 5/	11.5	15.3	10.3	27.8	13.8	13.4	14.3	13.5	33.2	3.0	53.2	
Middle East, Malta & Turkey	7.6	4.7	2.9	3.7	3.8	3.5	4.1	6.3	5.8	0.6	5.2	
Western Hemisphere	7.6	5.2	5.0	7.5	5.1	5.2	5.1	8.1	6.5	2.4	8.5	
Transition economies	7.4	5.3	3.4	6.1	5.2	5.1	5.3	6.7	7.9	1.6	6.4	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Memorandum item:												
EU 25	31.6	37.6	30.3	21.7	43.0	42.6	43.4	29.9	12.6	56.6	7.2	
LICs 6/	7.4	3.6	3.1	9.7	3.0	3.0	3.1	5.1	5.9	0.6	37.8	

Source: Finance Department.

1/ For the three countries that have not yet consented to, and paid for, their quota increases, 11th Review proposed quotas are used.

2/ Includes ad hoc increases for China, Korea, Mexico, and Turkey.

3/ Variability of current receipts plus net capital flows.

4/ Total number of countries not reporting is 99; of which 2 are advanced countries, 88 are developing countries, and 9 are transition economies.

5/ Including Korea and Singapore.

6/ PRGF-eligible countries.

Table 2. Correlations Between Quota Variables

	Openness 1/	Reserves 2/	Current Receipts	Current Payments	GDP 3/	Variability 4/	Population	PPP-GDP 5/
Openness 1/	1.000							
Reserves 2/	0.444	1.000						
Current Receipts	0.995	0.493	1.000					
Current Payments	0.996	0.398	0.981	1.000				
GDP 3/	0.919	0.886	0.939	1.000	1.000			
Variability 4/	0.932	0.420	0.947	0.970	1.000	1.000		
Population	0.341	0.515	0.349	0.294	0.283	1.000		
PPP-GDP 5/	0.862	0.572	0.840	0.873	0.889	0.869	0.670	1.000

Source: Finance Department.

- 1/ Measured as the annual average of the sum of current payments and current receipts for 2000-04.
2/ Twelve-month average of gold, foreign exchange reserves, SDR holdings, and reserve positions in the IMF for 2006.
3/ Annual data, converted at market exchange rates, averaged for 2002-04.
4/ Variability of current receipts and net capital flows (measured as a standard deviation from the centered three-year trend over a thirteen-year period, for 1992-2004).
5/ Annual data, converted at purchasing power parity rates, averaged for 2002-04.

**Table 3. Linear Formulas 1/ 2/
(In percent)**

	Actual Quotas 3/		Existing Five Formulas	(1)			(2)			(3)			(4)			(5)			(6)		
	Pre Ad Hoc Increases	Post Ad Hoc Increases 4/		GDP 40% Openness 30% Variability 25% Reserves 5%	GDP 40% Openness 25% Variability 30% Reserves 5%	GDP 50% Openness 30% Variability 15% Reserves 5%	GDP 50% Openness 15% Variability 30% Reserves 5%	GDP 60% Openness 20% Variability 15% Reserves 5%	GDP 60% Openness 15% Variability 20% Reserves 5%	GDP 60% Openness 20% Variability 15% Reserves 5%	GDP 60% Openness 15% Variability 20% Reserves 5%	GDP 60% Openness 20% Variability 15% Reserves 5%	GDP 60% Openness 15% Variability 20% Reserves 5%	GDP 60% Openness 20% Variability 15% Reserves 5%	GDP 60% Openness 15% Variability 20% Reserves 5%	GDP 60% Openness 20% Variability 15% Reserves 5%	GDP 60% Openness 15% Variability 20% Reserves 5%				
Advanced economies	61.6	60.5	67.1	69.3	68.8	70.8	69.5	71.5	71.1												
Major advanced economies	46.0	45.2	47.3	53.2	52.9	55.3	54.4	56.9	56.6												
Of which: US	17.4	17.1	16.8	22.1	22.3	23.1	23.8	24.6	24.8												
Other advanced economies	15.6	15.3	19.8	16.1	16.0	15.5	15.1	14.6	14.5												
Developing countries	30.9	32.1	27.6	25.8	26.1	24.5	25.6	24.0	24.4												
Africa	5.5	5.4	2.4	2.4	2.5	2.2	2.5	2.1	2.2												
Asia 5/	10.3	11.5	15.3	13.3	13.3	13.0	12.9	12.6	12.6												
Middle East, Malta & Turkey	7.6	7.6	4.7	4.2	4.3	3.8	4.2	3.7	3.9												
Western Hemisphere	7.5	7.6	5.2	5.9	6.0	5.6	6.0	5.5	5.7												
Transition economies	7.5	7.4	5.3	5.0	5.0	4.6	4.9	4.5	4.5												
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0												
Memorandum Item:																					
EU 25	32.2	31.6	37.6	33.1	32.5	33.2	31.2	31.9	31.2												
LICs 6/	7.5	7.4	3.6	3.7	3.8	3.5	3.8	3.5	3.6												

Source: Finance Department.

1/ Calculated as the sum of variable weights multiplied with a country's share in the global total of the respective variables. Weights do not reflect a variable's contribution per se as correlation among variables is high.

2/ Based on 1992-2004 data. Reflects the impact of adjustments to current receipts and payments for re-exports, international banking interest, and non-monetary gold. The specification of GDP and variability differs from the existing five formulas as average GDP and variability of current receipts plus net capital flows are used.

3/ For the three countries that have not yet consented to, and paid for, their quota increases, Eleventh Review proposed quotas are used.

4/ Includes ad hoc increases for China, Korea, Mexico, and Turkey.

5/ Including Korea and Singapore.

6/ PRGF-eligible countries.

**Table 4. Distribution of Quotas: Results of Alternative Specifications 1/
(In percent)**

	Actual Quotas 2/		Existing Five Formulas	Linear Formula 4/	Multiplicative Formula 5/	Compressed	
	Pre Ad Hoc Increases	Post Ad Hoc Increases 3/				Linear Formula 0.9 6/	Compressed Linear Formula 0.95 7/
Advanced economies	61.6	60.5	67.1	70.8	70.8	66.2	68.6
Major advanced economies	46.0	45.2	47.3	55.3	55.5	49.0	52.2
Of which: US	17.4	17.1	16.8	23.1	22.6	18.8	20.9
Other advanced economies	15.6	15.3	19.8	15.5	15.3	17.2	16.4
Developing countries	30.9	32.1	27.6	24.5	24.4	28.1	26.3
Africa	5.5	5.4	2.4	2.2	2.0	3.0	2.6
Asia 8/	10.3	11.5	15.3	13.0	12.8	13.8	13.4
Middle East, Malta & Turkey	7.6	7.6	4.7	3.8	3.8	4.8	4.3
Western Hemisphere	7.5	7.6	5.2	5.6	5.8	6.5	6.0
Transition economies	7.5	7.4	5.3	4.6	4.8	5.7	5.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Memorandum Item:							
EU 25	32.2	31.6	37.6	33.2	33.4	33.8	33.5
LiCs 9/	7.5	7.4	3.6	3.5	3.4	4.6	4.0

Source: Finance Department.

1/ Based on 1992-2004 data. Reflects the impact of adjustments to current receipts and payments for re-exports, international banking interest, and non-monetary gold.

The specification of GDP and variability differs from the existing five formulas as average GDP and variability of current receipts plus net capital flows are used.

2/ For the three countries that have not yet consented to, and paid for, their quota increases, Eleventh Review proposed quotas are used.

3/ Includes ad hoc increases for China, Korea, Mexico, and Turkey.

4/ $Q = 0.50 \cdot \text{Average GDP} + 0.30 \cdot \text{Openness} + 0.15 \cdot \text{Variability} + 0.05 \cdot \text{Reserves}$.

5/ $Q = (\text{Average GDP})^{0.50} \cdot (\text{Openness})^{0.30} \cdot (\text{Variability})^{0.15} \cdot (\text{Reserves})^{0.05}$. This requires rescaling of calculated shares.

6/ $Q = (0.50 \cdot \text{Average GDP} + 0.30 \cdot \text{Openness} + 0.15 \cdot \text{Variability} + 0.05 \cdot \text{Reserves})^{0.9}$. This requires rescaling of calculated shares.

7/ $Q = (0.50 \cdot \text{Average GDP} + 0.30 \cdot \text{Openness} + 0.15 \cdot \text{Variability} + 0.05 \cdot \text{Reserves})^{0.95}$. This requires rescaling of calculated shares.

8/ Including Korea and Singapore.

9/ PRGF-eligible countries.

**Table 5. Distribution of Quotas: Results of Alternative Specifications 1/
(In percent)**

	Actual Quotas 2/		Existing Five Formulas	Linear Formula 4/	Multiplicative Formula 5/	Compressed	
	Pre Ad Hoc Increases	Post Ad Hoc Increases 3/				Linear Formula 0.9 6/	Compressed Linear Formula 0.95 7/
Advanced economies	61.6	60.5	67.1	69.5	69.9	64.7	67.2
Major advanced economies	46.0	45.2	47.3	54.4	55.0	48.0	51.2
Of which: US	17.4	17.1	16.8	23.8	23.6	19.3	21.5
Other advanced economies	15.6	15.3	19.8	15.1	14.9	16.7	15.9
Developing countries	30.9	32.1	27.6	25.6	25.1	29.4	27.4
Africa	5.5	5.4	2.4	2.5	2.2	3.4	2.9
Asia 8/	10.3	11.5	15.3	12.9	12.6	13.8	13.4
Middle East, Malta & Turkey	7.6	7.6	4.7	4.2	4.0	5.2	4.7
Western Hemisphere	7.5	7.6	5.2	6.0	6.2	7.0	6.5
Transition economies	7.5	7.4	5.3	4.9	5.0	5.9	5.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Memorandum Item:							
EU 25	32.2	31.6	37.6	31.2	31.3	32.0	31.6
LICs 9/	7.5	7.4	3.6	3.8	3.5	5.0	4.4

Source: Finance Department.

1/ Based on 1992-2004 data. Reflects the impact of adjustments to current receipts and payments for re-exports, international banking interest, and non-monetary gold.

The specification of GDP and variability differs from the existing five formulas as average GDP and variability of current receipts plus net capital flows are used.

2/ For the three countries that have not yet consented to, and paid for, their quota increases, Eleventh Review proposed quotas are used.

3/ Includes ad hoc increases for China, Korea, Mexico, and Turkey.

4/ $Q = 0.50 \cdot \text{Average GDP} + 0.15 \cdot \text{Openness} + 0.30 \cdot \text{Variability} + 0.05 \cdot \text{Reserves}$

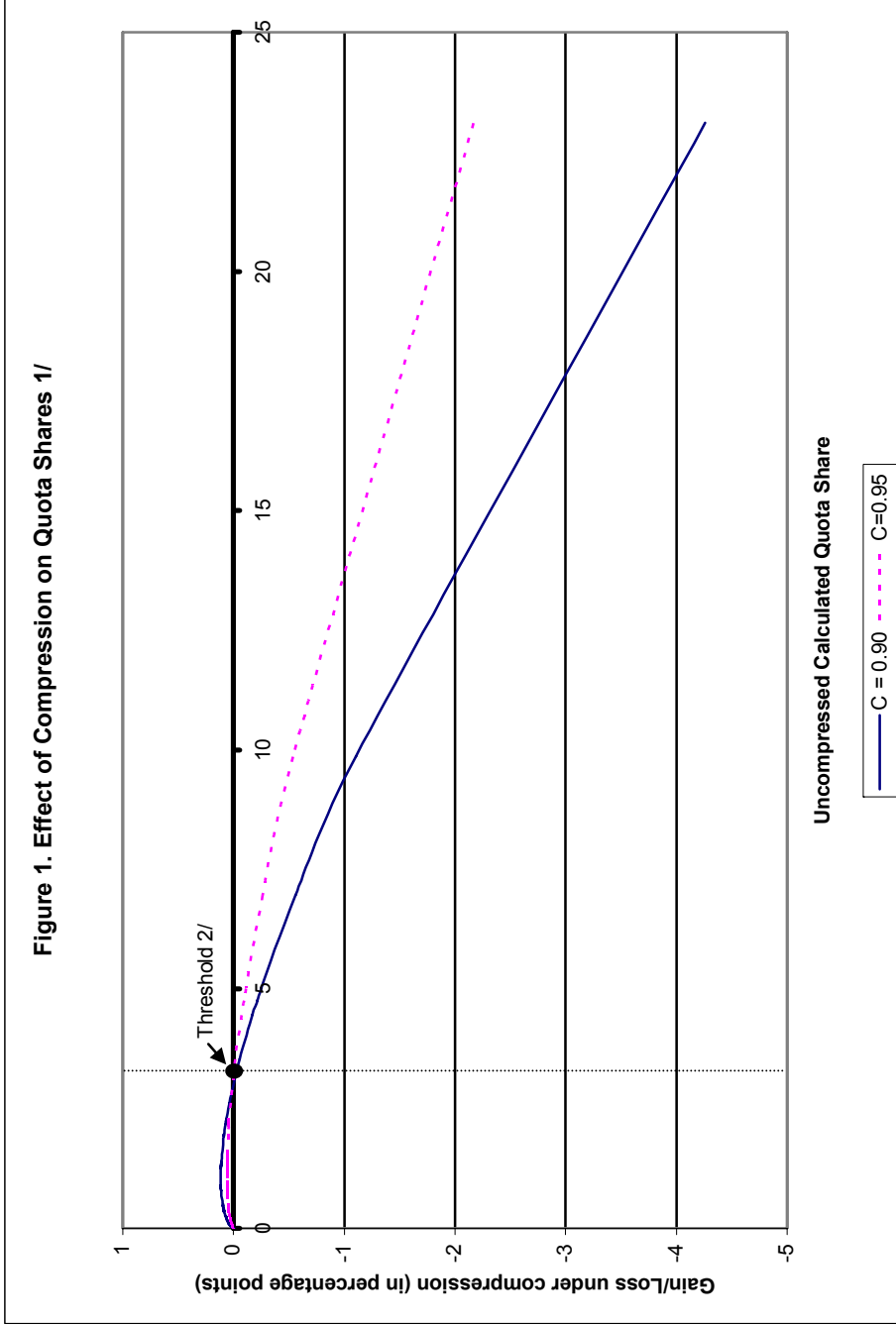
5/ $Q = (\text{Average GDP})^{0.50} \cdot (\text{Openness})^{0.15} \cdot (\text{Variability})^{0.30} \cdot (\text{Reserves})^{0.05}$. This requires rescaling of calculated shares.

6/ $Q = (0.50 \cdot \text{Average GDP} + 0.15 \cdot \text{Openness} + 0.30 \cdot \text{Variability} + 0.05 \cdot \text{Reserves})^{0.9}$. This requires rescaling of calculated shares.

7/ $Q = (0.50 \cdot \text{Average GDP} + 0.15 \cdot \text{Openness} + 0.30 \cdot \text{Variability} + 0.05 \cdot \text{Reserves})^{0.95}$. This requires rescaling of calculated shares.

8/ Including Korea and Singapore.

9/ PRGF-eligible countries.



Source: Finance Department.

1/ Compression of linear formula with variable weights as follows: 50 percent GDP, 30 percent Openness, 15 percent Variability, and 5 percent Reserves. Alternative weighting and/or compression of a multiplicative functional form produce broadly similar results.

2/ Countries with a calculated quota share below 3.01 (3.22) percent before compression gain with compression at 0.90 (0.95), while those above this threshold lose. For the scenarios presented, most members (177) gain with compression and seven countries lose quota share.

Appendix I. Quota Formulas—A Brief History

The Existing Quota Formulas

1. The existing five quota formulas used since the Eighth Review are presented in Box A1. These are comprised of the original Bretton Woods (BW) formula and four other linear and non-linear formulas. For each of the four non-BW formulas, quota calculations are multiplied by an adjustment factor so that the sum of the calculations across members equals that derived from the BW formula. The calculated quota of a member is the higher of the BW calculation and the average of the lowest two of the remaining four calculations (after adjustment).
2. The contributions of each of the variables to the calculated quotas of Fund members using the existing formulas can be estimated. These estimates are approximations because of the non-linearity of the existing five formulas and the high correlation among the quota variables. Using data through 2004 (see *Quotas—Updated Calculations* (2006)) the contributions of the variables are estimated as follows: GDP, 29 percent; openness, 50 percent; variability, 14 percent; and reserves, 7 percent.

The Evolution of Quota Formulas

3. The existing quota formulas reflect modifications introduced in 1963 and 1983 to the original BW formula. The BW formula was first used in 1944 as a basis for determining the broad configuration of the initial quota distribution. This formula contained five variables: national income, official reserves, imports, export variability, and the ratio of exports to national income. The weights were set according to various constraints, including a desired rank of the largest four members and the objective that total calculated quotas of Bretton Woods participants should equal about US\$8 billion.²⁹
4. A multi-formula and dual data set approach was introduced in the early 1960s. The BW formula was supplemented with four other formulas which included the same basic variables but with significantly larger weights for external trade and external variability. In the BW formula, the coefficients on the trade and variability variables were more than doubled, while the coefficients on national income and reserves were cut in half. The variable for reserves was eliminated in the four new formulas and the multiplicative ratio of exports to national income was deleted from two formulas. Calculations were performed on two data sets—the first including exports and imports, and the second substituting current payments and receipts. The impetus for these changes was to give greater influence to trade and variability, and to produce a predetermined target for total calculated quotas.

²⁹ See *Report to the IMF Executive Board of the Quota Formula Review Group* (2000).

Box A1. Existing Quota Formulas

The current five formulas, used from the Eighth to the Eleventh Reviews, are:

Bretton Woods: $Q_1 = (0.01Y + 0.025R + 0.05P + 0.2276VC) (1 + C/Y);$

Scheme III: $Q_2 = (0.0065Y + 0.0205125R + 0.078P + 0.4052VC) (1 + C/Y);$

Scheme IV: $Q_3 = (0.0045Y + 0.03896768R + 0.07P + 0.76976VC) (1 + C/Y);$

Scheme M4: $Q_4 = 0.005Y + 0.042280464R + 0.044 (P + C) + 0.8352VC;$

Scheme M7: $Q_5 = 0.0045Y + 0.05281008R + 0.039 (P + C) + 1.0432VC;$

where:

Q_1, Q_2, Q_3, Q_4 and Q_5 = Calculated quotas for each formula;

Y = GDP at current market prices for a recent year;

R = twelve-month average of gold, foreign exchange reserves, SDR holdings, and reserve positions in the IMF, for a recent year;

P = annual average of current payments (goods, services, income, and private transfers) for a recent five-year period;

C = annual average of current receipts (goods, services, income, and private transfers) for a recent five-year period; and

VC = variability of current receipts, defined as one standard deviation from the centered five-year moving average, for a recent 13-year period.

Calculated Quota

$$Q^c = \text{Max} (Q_1, \text{Mean of the lowest two of } (Q_2, Q_3, Q_4, Q_5)),$$

where the values of Q_i ($i=2, \dots, 5$) have been normalized so that the totals add up to the total of the BW calculations.

5. The quota formulas were last modified in the context of the Eighth General Review (1982/83) in an effort to simplify quota calculations and pare back the increased influence of variability introduced in the 1960s, and at the same time to preserve in the calculations the considerable diversity in the structure of members' economies. The basic structure of the formulas was retained, but the following changes were made: (i) one of the two data sets was eliminated; (ii) the coefficient on variability was reduced by 20 percent in all of the formulas except BW; and (iii) the reserves variable was reintroduced as part of an effort to achieve a better balance in the structure of quota formulas and offset to some extent the effects of the reduced coefficients for variability.

6. During the Ninth Review, some interest was expressed in effecting certain changes in the formulas though there was not a broad consensus for modification. The existing formulas were also endorsed in the Tenth Review as working as intended "to give a reasonably comprehensive measure of the relative economic size of member countries." However, during the Eleventh General Review, Executive Directors expressed concern about

shortcomings in the existing five formulas, and the Interim Committee in 1997 requested that “the Executive Board should also review the quota formulas promptly after the completion of the Eleventh Review of Quotas.”³⁰

7. There are a number of shortcomings with the current formulas. The fundamental deficiencies are a lack of transparency and simplicity. These shortcomings arise from the properties of the current system: (i) the formulas are a mix of linear and non-linear specifications; (ii) the calculated quota for a member is based on a complicated decision rule (Box A1); (iii) coefficients are fixed in each formula and the weights not directly observable; (iv) the underlying data are expressed in levels that change over time, leading to instability in the weights of each variable; and (v) three of the five formulas contain a multiplicative element, the ratio of current receipts to GDP, that can lead to perverse results—e.g., *ceteris paribus* an increase in GDP can in some cases lead to a decline in calculated quota, as GDP is in the denominator of the multiplicative ratio. There is also the possibility of formula switching in response to changes in underlying data and/or over time. Accordingly, assessments of the relationship between changes in quota variables and calculated quotas are difficult and non-transparent.

8. Against this backdrop, in 1999 the Managing Director appointed a group of external experts, to provide the Executive Board with an independent report on the adequacy of the quota formulas, including proposals for changes. This group, known as the Quota Formula Review Group (QFRG),³¹ was asked to “review the quota formulas and their working, and to assess their adequacy to help determine members’ calculated quotas in the IMF in a manner that reasonably reflects members’ relative position in the world economy as well as their relative need for and contributions to the Fund’s financial resources, taking into account changes in the...world economy and the international financial system and in light of the increasing globalization of markets.” Based on this, the QFRG was asked to “propose, as appropriate, changes in the variables and their specification to be used in the formulas” and to “examine other issues directly related to the quota formulas.”

The QFRG Proposal

9. The QFRG’s main findings were as follows: (1) significant changes in the world economy since 1944 have made IMF member countries more exposed to external shocks; (2) the quota formulas themselves have had only an indirect influence on actual quotas; and (3) gaps between actual quota shares and calculated quota shares have persisted over time. In

³⁰ Communiqué of the Interim Committee of the Board of Governors of the International Monetary Fund, (Press Release No. 97/22, 4/28/1997)

³¹ The group included Richard Cooper (Harvard University), Chairman; Joseph Abbey (Center for Economic Analysis, Ghana); Montek Ahluwalia (Planning Commission, India); Muhammad Al-Jasser (Saudi Arabian Monetary Agency); Horst Siebert (Kiel Institute of World Economics, Germany); Gorgy Suranyi (National Bank of Hungary); Makoto Utsumi (Keio University, Japan); and Roberto Zahler (Central Bank of Chile).

addition, the report presented a vast amount of background work on analysis of the existing as well as possible new quota formulas.³²

10. Three main criteria were used by the QFRG to assess proposals for change in the quota formula: (i) any new formula should have a sound economic basis and reflect the relevant changes in the world economy; (ii) its form and content should be consistent with the multiple functions of quotas; and (iii) it should be simple and transparent.

11. Based on its findings, the criteria for a new formula, and the analysis of a range of potential variables, the QFRG recommended replacing the existing five formulas with a single linear formula containing two variables, one representing a country's ability to contribute to the IMF's resources and the other its external vulnerability. It was suggested that ability to contribute should have the larger weight, about twice that of external vulnerability. GDP would be converted into a common currency at market exchange rates, and averaged over three years to avoid the effects of undue exchange rate and GDP variability. Vulnerability should be measured by the variability of current receipts (in line with its measurement in the existing five formulas)—but expanded to cover also the variability of net long-term capital flows to reflect the large and growing impact of long-term capital flows.³³

12. The Board discussed the QFRG report and staff commentary in 2000, and has had several substantive discussions on quota formulas (see Appendix II) since that time, in particular in 2001, 2002, and 2003. These discussions resulted in broad agreement on the principles of transparency and simplicity for a new quota formula limited to at most three to four variables. In addition, four variables along the lines of those included in the current formulas, but updated and modernized—GDP, openness, variability, and reserves—were broadly endorsed.

³² See Appendix II for QFRG document references.

³³ *Report to the IMF Executive Board of the Quota Formula Review Group* (2000). A minority view was that GDP should be converted into a common currency using PPP exchange rates rather than market exchange rates.

**Table A1. Distribution of International Investment Position of Reporting Members
(in percent)**

	Actual Quotas 1/ 2/	Existing Five Formulas	International Investment Position 3/			Number of Non- Reporting Members 4/
			Assets	Liabilities	Assets plus Liabilities	
Advanced economies	60.5	67.1	93.5	90.4	91.9	2
Major advanced economies	45.2	47.3	65.5	63.0	64.2	0
Of which: US	17.1	16.8	20.4	24.6	22.6	0
Other advanced economies	15.3	19.8	28.0	27.4	27.7	2
Developing countries	32.1	27.6	5.1	7.7	6.5	88
Africa	5.4	2.4	0.4	0.6	0.5	35
Asia 5/	11.5	15.3	2.7	3.3	3.0	23
Middle East, Malta & Turkey	7.6	4.7	0.5	0.7	0.6	12
Western Hemisphere	7.6	5.2	1.6	3.2	2.4	18
Transition economies	7.4	5.3	1.4	1.9	1.6	9
Total	100.0	100.0	100.0	100.0	100.0	99
Memorandum Item:						
EU 25	31.6	37.6	57.9	55.5	56.6	0
LICs 6/	7.4	3.6	0.4	0.8	0.6	58

Source: Finance and Statistics Departments.

1/ For the three countries that have not yet consented to, and paid for, their quota increases, 11th Review proposed quotas are used.

2/ Includes ad hoc increases for China, Korea, Mexico, and Turkey.

3/ Average 2000-04.

4/ Members with fewer than 3 years of data during 2000-04. There are 7 members with 1 or 2 years of data.

5/ Including Korea and Singapore.

6/ PRGF-eligible countries.

INTERNATIONAL MONETARY FUND

Quotas—Further Thoughts on a New Quota Formula—Statistical Appendix

Prepared by the Finance Department

Approved by Michael G. Kuhn

November 29, 2006

	Contents	Page
Tables		
1.	Linear Formulas by Member	2
2.	Distribution of Quotas: Results of Alternative Specifications by Member	8
3.	Distribution of Quotas: Results of Alternative Specifications by Member	14

**Table 1. Linear Formulas by Member 1 / 2 /
(In percent)**

	Actual Quotas 3/ Pre Ad Hoc		Existing Five Formulas		(1)			(2)			(3)			(4)			(5)			(6)		
	Increases	Post Ad Hoc	Increases 4/ Post Ad Hoc	Increases 3/ Post Ad Hoc	GDP 40%	Openness 30%	Openness 25%	GDP 40%	Openness 30%	Openness 25%	GDP 50%	Openness 30%	Openness 25%	GDP 50%	Openness 30%	Openness 25%	GDP 60%	Openness 30%	Openness 25%	GDP 60%	Openness 30%	Openness 25%
United States	17.382	17.078	16.795	22.108	22.336	23.105	23.792	24.560	24.789													
Japan	6.229	6.120	7.525	9.360	9.415	10.035	10.490	10.545														
Germany	6.087	5.980	6.953	6.977	6.879	6.966	6.759	6.660														
France	5.025	4.937	4.334	4.294	4.197	4.463	4.436	4.338														
United Kingdom	5.025	4.937	5.176	4.478	4.268	4.771	4.646	4.436														
China 5/	2.980	3.719	5.197	4.866	4.764	5.018	4.966	4.865														
Italy	3.301	3.243	3.442	3.323	3.213	3.529	3.516	3.406														
Saudi Arabia	3.269	3.211	1.063	0.752	0.753	0.724	0.698	0.698														
Canada	2.980	2.928	3.098	2.611	2.549	2.623	2.510	2.447														
Russia	2.782	2.733	1.519	1.616	1.661	1.511	1.497	1.542														
Netherlands	2.416	2.373	2.880	1.957	1.856	1.962	1.768	1.667														
Belgium	2.155	2.117	2.088	1.357	1.298	1.322	1.169	1.111														
India	1.946	1.912	1.200	1.317	1.305	1.396	1.453	1.441														
Switzerland	1.618	1.590	1.530	1.316	1.305	1.255	1.171	1.159														
Australia	1.514	1.488	1.182	1.236	1.231	1.274	1.301	1.295														
Mexico	1.210	1.449	1.928	1.970	1.973	1.937	1.910	1.913														
Spain	1.427	1.402	2.250	2.246	2.209	2.293	2.263	2.225														
Brazil	1.421	1.396	0.998	1.393	1.441	1.348	1.401	1.450														
Korea	0.764	1.346	2.508	2.262	2.270	2.179	2.114	2.122														
Venezuela	1.244	1.222	0.415	0.394	0.413	0.351	0.348	0.367														
Sweden	1.121	1.101	1.229	1.011	0.989	0.998	0.941	0.919														
Argentina	0.991	0.973	0.396	0.541	0.574	0.472	0.469	0.502														
Indonesia	0.973	0.956	0.767	0.804	0.823	0.757	0.747	0.767														
Austria	0.876	0.861	1.142	0.903	0.871	0.896	0.824	0.791														
South Africa	0.874	0.859	0.436	0.458	0.460	0.453	0.451	0.452														
Nigeria	0.820	0.806	0.309	0.267	0.281	0.232	0.226	0.241														
Norway	0.782	0.768	0.868	0.856	0.873	0.799	0.775	0.791														
Denmark	0.769	0.755	1.078	0.887	0.895	0.826	0.782	0.789														
Iran	0.701	0.688	0.404	0.371	0.369	0.379	0.383	0.381														
Malaysia	0.696	0.683	1.399	0.849	0.850	0.759	0.671	0.672														
Kuwait	0.646	0.635	0.351	0.238	0.247	0.209	0.198	0.207														
Ukraine	0.642	0.631	0.277	0.232	0.234	0.214	0.201	0.203														
Poland	0.641	0.629	0.739	0.768	0.779	0.732	0.717	0.728														
Finland	0.591	0.581	0.546	0.545	0.545	0.525	0.504	0.504														
Algeria	0.587	0.577	0.325	0.313	0.326	0.284	0.282	0.295														

Table 1. Linear Formulas by Member 1/ 2/ (continued)
(In percent)

	Actual Quotas 3/		Existing Five Formulas	(1)			(2)			(3)			(4)			(5)			(6)		
	Pre Ad Hoc Increases	Post Ad Hoc Increases 4/		GDP 40%	Openness 30%	Openness 25%	GDP 40%	Openness 30%	Openness 25%	GDP 50%	Openness 30%	Openness 15%	GDP 50%	Openness 30%	Openness 15%	GDP 60%	Openness 20%	Openness 15%	GDP 60%	Openness 20%	Openness 15%
Turkey	0.451	0.548	0.741	0.953	1.001	0.852	0.995	0.845	0.893												
Iraq	0.556	0.546	0.246	0.163	0.172	0.133	0.161	0.122	0.131												
Libya	0.526	0.517	0.228	0.188	0.199	0.160	0.193	0.154	0.165												
Thailand	0.506	0.497	0.909	0.783	0.794	0.710	0.742	0.657	0.668												
Hungary	0.486	0.477	0.468	0.390	0.387	0.364	0.357	0.334	0.332												
Pakistan	0.484	0.475	0.191	0.233	0.236	0.233	0.242	0.239	0.242												
Romania	0.482	0.474	0.207	0.215	0.217	0.203	0.211	0.197	0.200												
Egypt	0.442	0.434	0.248	0.271	0.277	0.258	0.275	0.256	0.262												
Israel	0.434	0.427	0.579	0.476	0.477	0.447	0.452	0.422	0.424												
New Zealand	0.419	0.411	0.229	0.230	0.229	0.227	0.225	0.223	0.222												
Philippines	0.412	0.404	0.504	0.399	0.404	0.363	0.378	0.337	0.342												
Portugal	0.406	0.399	0.528	0.502	0.504	0.479	0.485	0.460	0.462												
Singapore	0.404	0.397	1.922	1.180	1.221	0.996	1.118	0.893	0.933												
Chile	0.401	0.394	0.298	0.295	0.299	0.278	0.291	0.270	0.274												
Ireland	0.392	0.385	1.677	1.417	1.490	1.152	1.373	1.035	1.109												
Greece	0.385	0.378	0.456	0.575	0.596	0.529	0.592	0.525	0.546												
Czech Republic	0.383	0.377	0.538	0.461	0.462	0.427	0.430	0.394	0.395												
Colombia	0.362	0.356	0.208	0.246	0.250	0.241	0.253	0.245	0.249												
Bulgaria	0.300	0.294	0.113	0.098	0.099	0.091	0.093	0.085	0.086												
Peru	0.299	0.293	0.139	0.194	0.202	0.183	0.207	0.187	0.195												
United Arab Emirates	0.286	0.281	0.461	0.389	0.399	0.355	0.384	0.340	0.350												
Morocco	0.275	0.270	0.165	0.153	0.151	0.152	0.146	0.147	0.145												
Bangladesh	0.250	0.245	0.103	0.113	0.110	0.120	0.114	0.123	0.121												
Congo, Dem. Republic of	0.249	0.245	0.025	0.157	0.185	0.101	0.184	0.101	0.128												
Zambia	0.229	0.225	0.022	0.024	0.025	0.020	0.025	0.019	0.021												
Serbia	0.219	0.215	0.111	0.090	0.095	0.080	0.093	0.078	0.083												
Sri Lanka	0.193	0.190	0.074	0.065	0.064	0.063	0.061	0.060	0.059												
Belarus	0.181	0.178	0.118	0.083	0.083	0.077	0.077	0.071	0.071												
Ghana	0.173	0.170	0.043	0.040	0.041	0.035	0.039	0.033	0.034												
Kazakhstan	0.171	0.168	0.164	0.148	0.152	0.133	0.146	0.126	0.131												
Croatia	0.171	0.168	0.144	0.134	0.135	0.124	0.128	0.116	0.118												
Slovak Republic	0.167	0.164	0.231	0.168	0.166	0.159	0.153	0.145	0.143												
Zimbabwe	0.165	0.162	0.026	0.027	0.027	0.030	0.028	0.031	0.031												
Trinidad and Tobago	0.157	0.154	0.062	0.049	0.049	0.045	0.047	0.042	0.043												
Vietnam	0.154	0.151	0.214	0.158	0.151	0.158	0.139	0.146	0.139												

Table 1. Linear Formulas by Member 1/ 2/ (continued)
(In percent)

	Actual Quotas 3/		Existing Five Formulas	(1)			(2)			(3)			(4)			(5)			(6)		
	Pre Ad Hoc Increases	Post Ad Hoc Increases 4/		GDP 40% Openness 30% Variability 25% Reserves 5%	GDP 40% Openness 25% Variability 30% Reserves 5%	GDP 50% Openness 30% Variability 15% Reserves 5%	GDP 50% Openness 15% Variability 30% Reserves 5%	GDP 60% Openness 20% Variability 15% Reserves 5%	GDP 60% Openness 15% Variability 20% Reserves 5%	GDP 60% Openness 15% Variability 20% Reserves 5%	GDP 60% Openness 15% Variability 20% Reserves 5%	GDP 60% Openness 15% Variability 20% Reserves 5%									
Malawi	0.032	0.032	0.007	0.007	0.007	0.007	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	
Macedonia, FYR	0.032	0.032	0.028	0.024	0.024	0.024	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	
Barbados	0.032	0.031	0.015	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	
Niger	0.031	0.030	0.007	0.008	0.008	0.009	0.008	0.008	0.008	0.008	0.009	0.009	0.009	0.008	0.008	0.008	0.008	0.008	0.008	0.008	
Estonia	0.031	0.030	0.067	0.047	0.047	0.046	0.044	0.044	0.044	0.044	0.046	0.044	0.041	0.041	0.039	0.039	0.038	0.038	0.038	0.038	
Mauritania	0.030	0.030	0.008	0.007	0.007	0.008	0.006	0.006	0.006	0.006	0.008	0.006	0.007	0.007	0.006	0.006	0.006	0.006	0.006	0.006	
Botswana	0.029	0.029	0.054	0.043	0.043	0.045	0.038	0.038	0.038	0.045	0.045	0.042	0.042	0.036	0.036	0.037	0.037	0.037	0.037	0.037	
Benin	0.029	0.028	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.010	0.010	0.009	0.009	0.009	0.009	0.009	
Burkina Faso	0.028	0.028	0.010	0.012	0.012	0.013	0.012	0.012	0.012	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.012	
Chad	0.026	0.026	0.016	0.015	0.015	0.016	0.013	0.013	0.013	0.016	0.016	0.016	0.016	0.013	0.013	0.013	0.013	0.013	0.013	0.013	
Central African Republic	0.026	0.026	0.004	0.004	0.004	0.005	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
Lao, People's Dem. Republic	0.025	0.024	0.006	0.006	0.006	0.009	0.008	0.008	0.008	0.009	0.009	0.008	0.009	0.008	0.008	0.008	0.008	0.008	0.008	0.008	
Mongolia	0.024	0.023	0.010	0.008	0.008	0.008	0.007	0.007	0.007	0.008	0.008	0.007	0.008	0.006	0.006	0.006	0.006	0.006	0.007	0.007	
Swaziland	0.024	0.023	0.021	0.015	0.015	0.015	0.013	0.013	0.013	0.015	0.015	0.013	0.013	0.011	0.011	0.011	0.011	0.011	0.011	0.011	
Albania	0.023	0.022	0.026	0.026	0.022	0.023	0.021	0.021	0.021	0.023	0.023	0.021	0.022	0.021	0.021	0.021	0.021	0.021	0.021	0.021	
Lesotho	0.016	0.016	0.012	0.008	0.008	0.008	0.007	0.007	0.007	0.008	0.008	0.007	0.007	0.006	0.006	0.006	0.006	0.006	0.006	0.006	
Equatorial Guinea	0.015	0.015	0.039	0.028	0.028	0.028	0.024	0.024	0.024	0.028	0.028	0.024	0.026	0.021	0.021	0.021	0.021	0.021	0.021	0.021	
Gambia, The	0.015	0.014	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.003	0.003	0.002	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
Belize	0.009	0.009	0.006	0.005	0.005	0.005	0.004	0.004	0.004	0.005	0.005	0.004	0.005	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
San Marino	0.008	0.008	0.006	0.012	0.012	0.013	0.010	0.010	0.010	0.013	0.013	0.011	0.011	0.009	0.009	0.009	0.009	0.009	0.009	0.009	
Vanuatu	0.008	0.008	0.003	0.002	0.002	0.003	0.002	0.002	0.002	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
Djibouti	0.007	0.007	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
Eritrea	0.007	0.007	0.008	0.006	0.006	0.007	0.005	0.005	0.005	0.007	0.007	0.005	0.007	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
St. Lucia	0.007	0.007	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	
Guinea-Bissau	0.007	0.007	0.004	0.004	0.004	0.004	0.003	0.003	0.003	0.004	0.004	0.003	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	
Antigua and Barbuda	0.006	0.006	0.006	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	
Grenada	0.005	0.005	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
Samoa	0.005	0.005	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Solomon Islands	0.005	0.005	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
Cape Verde	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
Comoros	0.004	0.004	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
St. Kitts and Nevis	0.004	0.004	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	
Seychelles	0.004	0.004	0.005	0.004	0.004	0.005	0.004	0.004	0.004	0.005	0.005	0.004	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	
St. Vincent and the Grenadines	0.004	0.004	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
Dominica	0.004	0.004	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

Table 1. Linear Formulas by Member 1/ 2/ (concluded)
(In percent)

	Actual Quotas 3/		Existing Five Formulas	(1)		(2)		(3)		(4)		(5)		(6)	
	Pre Ad Hoc Increases	Post Ad Hoc Increases 4/		GDP 40%	Openness 30%	Openness 25%	GDP 40%	Openness 30%	Openness 25%	GDP 50%	Openness 30%	GDP 50%	Openness 15%	GDP 60%	Openness 20%
Maldives	0.004	0.004	0.006	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Timor-Leste	0.004	0.004	0.006	0.004	0.005	0.003	0.003	0.004	0.004	0.003	0.003	0.003	0.003	0.003	0.003
Sao Tome and Principe	0.003	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Tonga	0.003	0.003	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Bhutan	0.003	0.003	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Kiribati	0.003	0.003	0.003	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Micronesia, Fed. States of	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Marshall Islands	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Palau, Republic of	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001

Source: Finance Department.

1/ See Table 3 of *Quotas—Further Thoughts on a New Quota Formula* (2006). Calculated as the sum of variable weights multiplied with a country's share in the global total of the respective variables. Weights do not reflect a variable's contribution per se as correlation among variables is high.
2/ Based on 1992–2004 data. Reflects the impact of adjustments to current receipts and payments for re-exports, international banking interest, and non-monetary gold. The specification of GDP and variability differs from the existing five formulas as average GDP and variability of current receipts plus net capital flows are used.

3/ For the three countries that have not yet consented to, and paid for, their quota increases, Eleventh Review proposed quotas are used.

4/ Includes ad hoc increases for China, Korea, Mexico, and Turkey.

5/ Includes China, P.R., and Hong Kong, SAR.

**Table 2. Distribution of Quotas: Results of Alternative Specifications by Member 1/
(In percent)**

	Actual Quotas 2/		Existing Five Formulas	Linear Formula 4/	Multiplicative Formula 5/	Compressed	
	Pre Ad Hoc Increases	Post Ad Hoc Increases 3/				Linear Formula 0.9 6/	Compressed Linear Formula 0.95 7/
United States	17.382	17.078	16.795	23.105	22.637	18.846	20.937
Japan	6.229	6.120	7.525	9.870	9.813	8.765	9.332
Germany	6.087	5.980	6.963	6.966	7.270	6.406	6.702
France	5.025	4.937	4.334	4.463	4.648	4.291	4.391
United Kingdom	5.025	4.937	5.176	4.771	4.785	4.557	4.678
China 8/	2.980	3.719	5.197	5.018	5.102	4.768	4.907
Italy	3.301	3.243	3.442	3.529	3.626	3.474	3.513
Saudi Arabia	3.269	3.211	1.063	0.724	0.774	0.835	0.780
Canada	2.980	2.928	3.098	2.623	2.761	2.660	2.650
Russia	2.782	2.733	1.519	1.511	1.580	1.619	1.569
Netherlands	2.416	2.373	2.880	1.962	1.877	2.048	2.012
Belgium	2.155	2.117	2.088	1.322	1.252	1.435	1.382
India	1.946	1.912	1.200	1.396	1.416	1.508	1.456
Switzerland	1.618	1.590	1.530	1.255	1.298	1.369	1.315
Australia	1.514	1.488	1.182	1.274	1.373	1.388	1.334
Mexico	1.210	1.449	1.928	1.937	2.100	2.025	1.987
Spain	1.427	1.402	2.250	2.293	2.377	2.356	2.332
Brazil	1.421	1.396	0.998	1.348	1.419	1.461	1.408
Korea	0.764	1.346	2.508	2.179	2.262	2.251	2.222
Venezuela	1.244	1.222	0.415	0.351	0.355	0.436	0.393
Sweden	1.121	1.101	1.229	0.998	1.051	1.115	1.058
Argentina	0.991	0.973	0.396	0.472	0.470	0.568	0.520
Indonesia	0.973	0.956	0.767	0.757	0.803	0.869	0.814
Austria	0.876	0.861	1.142	0.896	0.899	1.012	0.955
South Africa	0.874	0.859	0.436	0.453	0.490	0.547	0.499
Nigeria	0.820	0.806	0.309	0.232	0.227	0.300	0.265
Norway	0.782	0.768	0.868	0.799	0.837	0.912	0.857
Denmark	0.769	0.755	1.078	0.826	0.854	0.941	0.885
Iran	0.701	0.688	0.404	0.379	0.398	0.466	0.422
Malaysia	0.696	0.683	1.399	0.759	0.646	0.871	0.816
Kuwait	0.646	0.635	0.351	0.209	0.206	0.273	0.240
Ukraine	0.642	0.631	0.277	0.214	0.219	0.279	0.245
Poland	0.641	0.629	0.739	0.732	0.780	0.843	0.788
Finland	0.591	0.581	0.546	0.525	0.559	0.625	0.575
Algeria	0.587	0.577	0.325	0.284	0.262	0.359	0.320

**Table 2. Distribution of Quotas: Results of Alternative Specifications by Member 1/ (continued)
(In percent)**

	Actual Quotas 2/		Existing Five Formulas	Linear Formula 4/	Multiplicative Formula 5/	Compressed Linear Formula		Compressed Linear Formula 0.95 7/
	Pre Ad Hoc Increases	Post Ad Hoc Increases 3/				0.9 6/	0.966	
Turkey	0.451	0.548	0.741	0.852	0.868	0.966	0.910	
Iraq	0.556	0.546	0.246	0.133	0.111	0.182	0.156	
Libya	0.526	0.517	0.228	0.160	0.130	0.215	0.186	
Thailand	0.506	0.497	0.909	0.710	0.687	0.820	0.765	
Hungary	0.486	0.477	0.468	0.364	0.366	0.450	0.406	
Pakistan	0.484	0.475	0.191	0.233	0.250	0.301	0.265	
Romania	0.482	0.474	0.207	0.203	0.215	0.266	0.234	
Egypt	0.442	0.434	0.248	0.258	0.274	0.329	0.292	
Israel	0.434	0.427	0.579	0.447	0.458	0.541	0.494	
New Zealand	0.419	0.411	0.229	0.227	0.245	0.294	0.259	
Philippines	0.412	0.404	0.504	0.363	0.363	0.449	0.405	
Portugal	0.406	0.399	0.528	0.479	0.502	0.576	0.527	
Singapore	0.404	0.397	1.922	0.996	0.713	1.113	1.056	
Chile	0.401	0.394	0.298	0.278	0.291	0.352	0.314	
Ireland	0.392	0.385	1.677	1.152	0.850	1.269	1.213	
Greece	0.385	0.378	0.456	0.529	0.530	0.629	0.579	
Czech Republic	0.383	0.377	0.538	0.427	0.419	0.519	0.472	
Colombia	0.362	0.356	0.208	0.241	0.259	0.311	0.275	
Bulgaria	0.300	0.294	0.113	0.091	0.089	0.129	0.109	
Peru	0.299	0.293	0.139	0.183	0.189	0.242	0.211	
United Arab Emirates	0.286	0.281	0.461	0.355	0.363	0.440	0.396	
Morocco	0.275	0.270	0.165	0.152	0.155	0.205	0.177	
Bangladesh	0.250	0.245	0.103	0.120	0.127	0.166	0.142	
Congo, Dem. Republic of	0.249	0.245	0.025	0.101	0.032	0.142	0.120	
Zambia	0.229	0.225	0.022	0.020	0.019	0.033	0.026	
Serbia	0.219	0.215	0.111	0.080	0.079	0.114	0.096	
Sri Lanka	0.193	0.190	0.074	0.063	0.067	0.093	0.077	
Belarus	0.181	0.178	0.118	0.077	0.075	0.111	0.093	
Ghana	0.173	0.170	0.043	0.035	0.035	0.055	0.044	
Kazakhstan	0.171	0.168	0.164	0.133	0.134	0.181	0.156	
Croatia	0.171	0.168	0.144	0.124	0.124	0.170	0.146	
Slovak Republic	0.167	0.164	0.231	0.159	0.153	0.213	0.185	
Zimbabwe	0.165	0.162	0.026	0.030	0.030	0.047	0.038	
Trinidad and Tobago	0.157	0.154	0.062	0.045	0.045	0.068	0.055	
Vietnam	0.154	0.151	0.214	0.158	0.162	0.212	0.184	

Table 2. Distribution of Quotas: Results of Alternative Specifications by Member 1/ (continued)
(In percent)

	Actual Quotas 2/		Existing Five Formulas	Linear Formula 4/	Multiplicative Formula 5/	Compressed Linear Formula	
	Pre Ad Hoc Increases	Post Ad Hoc Increases 3/				0.9 6/	0.95 7/
Cote d'Ivoire	0.152	0.149	0.061	0.047	0.050	0.071	0.058
Sudan	0.147	0.145	0.040	0.043	0.047	0.066	0.054
Uruguay	0.143	0.141	0.047	0.058	0.051	0.086	0.071
Ecuador	0.141	0.139	0.078	0.115	0.098	0.160	0.136
Syrian Arab Republic	0.137	0.135	0.122	0.179	0.137	0.237	0.207
Tunisia	0.134	0.132	0.105	0.090	0.095	0.128	0.108
Angola	0.134	0.132	0.193	0.117	0.079	0.162	0.139
Luxembourg	0.131	0.128	1.375	0.407	0.212	0.497	0.451
Uzbekistan	0.129	0.127	0.043	0.045	0.043	0.068	0.056
Jamaica	0.128	0.126	0.051	0.042	0.041	0.064	0.052
Kenya	0.127	0.125	0.036	0.043	0.046	0.065	0.053
Qatar	0.123	0.121	0.134	0.102	0.101	0.143	0.121
Myanmar	0.121	0.119	0.032	0.035	0.037	0.054	0.043
Yemen, Republic of	0.114	0.112	0.117	0.085	0.062	0.121	0.102
Slovenia	0.108	0.107	0.144	0.111	0.112	0.154	0.131
Dominican Republic	0.102	0.101	0.085	0.068	0.069	0.099	0.082
Brunei Darussalam	0.101	0.099	0.058	0.048	0.031	0.072	0.059
Guatemala	0.098	0.097	0.065	0.071	0.077	0.103	0.086
Panama	0.097	0.095	0.049	0.050	0.050	0.076	0.062
Lebanon	0.095	0.093	0.176	0.126	0.107	0.173	0.148
Tanzania	0.093	0.091	0.033	0.034	0.035	0.053	0.043
Oman	0.091	0.089	0.150	0.096	0.097	0.135	0.114
Cameroon	0.087	0.085	0.033	0.039	0.042	0.061	0.049
Uganda	0.084	0.083	0.025	0.022	0.023	0.037	0.029
Bolivia	0.080	0.079	0.023	0.025	0.026	0.040	0.031
El Salvador	0.080	0.079	0.053	0.048	0.052	0.072	0.059
Jordan	0.080	0.078	0.082	0.059	0.054	0.087	0.072
Bosnia-Herzegovina	0.079	0.078	0.066	0.042	0.037	0.064	0.052
Costa Rica	0.077	0.075	0.084	0.066	0.069	0.097	0.081
Islamic Republic of Afghanistan	0.076	0.074	0.042	0.034	0.026	0.053	0.043
Senegal	0.076	0.074	0.024	0.021	0.023	0.035	0.027
Azerbaijan	0.075	0.074	0.036	0.030	0.031	0.048	0.038
Gabon	0.072	0.071	0.072	0.030	0.028	0.048	0.038
Georgia	0.070	0.069	0.017	0.014	0.015	0.025	0.019
Lithuania	0.067	0.066	0.096	0.070	0.073	0.102	0.085

Table 2. Distribution of Quotas: Results of Alternative Specifications by Member 1/ (continued)
(In percent)

	Actual Quotas 2/		Existing Five Formulas	Linear Formula 4/	Multiplicative Formula 5/	Compressed Linear Formula	
	Pre Ad Hoc Increases	Post Ad Hoc Increases 3/				0.9 6/	0.95 7/
Cyprus	0.065	0.064	0.061	0.058	0.057	0.085	0.070
Namibia	0.064	0.063	0.024	0.016	0.016	0.027	0.021
Bahrain	0.063	0.062	0.144	0.084	0.063	0.120	0.101
Ethiopia	0.063	0.061	0.076	0.062	0.036	0.092	0.076
Papua New Guinea	0.062	0.060	0.028	0.019	0.018	0.031	0.024
Bahamas, The	0.061	0.060	0.029	0.021	0.022	0.035	0.028
Nicaragua	0.061	0.060	0.021	0.018	0.019	0.031	0.024
Honduras	0.061	0.060	0.037	0.029	0.029	0.046	0.036
Liberia	0.060	0.059	0.005	0.005	0.003	0.009	0.006
Latvia	0.059	0.058	0.053	0.043	0.044	0.065	0.053
Moldova	0.058	0.057	0.018	0.012	0.011	0.020	0.016
Madagascar	0.057	0.056	0.022	0.018	0.018	0.029	0.023
Iceland	0.055	0.054	0.035	0.036	0.038	0.055	0.045
Mozambique	0.053	0.052	0.025	0.019	0.020	0.031	0.024
Guinea	0.050	0.049	0.010	0.011	0.011	0.019	0.014
Sierra Leone	0.049	0.048	0.004	0.004	0.004	0.008	0.006
Malta	0.048	0.047	0.058	0.032	0.028	0.051	0.041
Mauritius	0.048	0.047	0.032	0.024	0.024	0.039	0.031
Paraguay	0.047	0.046	0.039	0.030	0.029	0.048	0.038
Mali	0.044	0.043	0.015	0.013	0.013	0.022	0.017
Suriname	0.043	0.042	0.009	0.006	0.005	0.012	0.009
Armenia	0.043	0.042	0.012	0.010	0.011	0.018	0.014
Guyana	0.043	0.042	0.015	0.008	0.006	0.015	0.011
Kyrgyz Republic	0.042	0.041	0.010	0.009	0.008	0.016	0.012
Cambodia	0.041	0.040	0.055	0.035	0.026	0.055	0.044
Tajikistan	0.041	0.040	0.012	0.009	0.008	0.015	0.012
Congo, Republic of	0.040	0.039	0.029	0.021	0.016	0.034	0.027
Haiti	0.038	0.038	0.014	0.012	0.012	0.021	0.016
Somalia	0.038	0.038	0.002	0.001	0.002	0.003	0.002
Rwanda	0.037	0.037	0.007	0.007	0.006	0.012	0.009
Burundi	0.036	0.035	0.003	0.003	0.003	0.005	0.004
Turkmenistan	0.035	0.035	0.046	0.041	0.043	0.063	0.051
Togo	0.034	0.034	0.009	0.007	0.007	0.014	0.010
Nepal	0.033	0.033	0.021	0.021	0.022	0.034	0.027
Fiji	0.033	0.032	0.011	0.009	0.009	0.015	0.012

Table 2. Distribution of Quotas: Results of Alternative Specifications by Member 1/ (continued)
(In percent)

	Actual Quotas 2/		Existing Five Formulas	Linear Formula 4/	Multiplicative Formula 5/	Compressed	
	Pre Ad Hoc Increases	Post Ad Hoc Increases 3/				Linear Formula 0.9 6/	Compressed Linear Formula 0.95 7/
Malawi	0.032	0.032	0.007	0.006	0.007	0.012	0.009
Macedonia, FYR	0.032	0.032	0.028	0.021	0.021	0.035	0.027
Barbados	0.032	0.031	0.015	0.013	0.013	0.022	0.017
Niger	0.031	0.030	0.007	0.008	0.008	0.014	0.010
Estonia	0.031	0.030	0.067	0.044	0.043	0.067	0.054
Mauritania	0.030	0.030	0.008	0.006	0.006	0.011	0.008
Botswana	0.029	0.029	0.054	0.038	0.032	0.059	0.048
Benin	0.029	0.028	0.009	0.009	0.010	0.017	0.013
Burkina Faso	0.028	0.028	0.010	0.012	0.012	0.020	0.015
Chad	0.026	0.026	0.016	0.013	0.012	0.023	0.017
Central African Republic	0.026	0.026	0.004	0.004	0.004	0.008	0.006
Lao, People's Dem. Republic	0.025	0.024	0.006	0.008	0.008	0.014	0.011
Mongolia	0.024	0.023	0.010	0.007	0.007	0.013	0.010
Swaziland	0.024	0.023	0.021	0.013	0.011	0.022	0.017
Albania	0.023	0.022	0.026	0.021	0.023	0.035	0.028
Lesotho	0.016	0.016	0.012	0.007	0.006	0.012	0.009
Equatorial Guinea	0.015	0.015	0.039	0.024	0.020	0.038	0.030
Gambia, The	0.015	0.014	0.003	0.002	0.002	0.005	0.003
Belize	0.009	0.009	0.006	0.004	0.004	0.009	0.006
San Marino	0.008	0.008	0.024	0.010	0.008	0.018	0.014
Vanuatu	0.008	0.008	0.003	0.002	0.002	0.004	0.003
Djibouti	0.007	0.007	0.003	0.003	0.003	0.005	0.004
Eritrea	0.007	0.007	0.008	0.005	0.004	0.009	0.007
St. Lucia	0.007	0.007	0.004	0.003	0.003	0.006	0.004
Guinea-Bissau	0.007	0.007	0.004	0.003	0.001	0.006	0.004
Antigua and Barbuda	0.006	0.006	0.006	0.003	0.003	0.007	0.005
Grenada	0.005	0.005	0.003	0.002	0.002	0.005	0.003
Samoa	0.005	0.005	0.002	0.001	0.001	0.003	0.002
Solomon Islands	0.005	0.005	0.003	0.002	0.002	0.004	0.002
Cape Verde	0.004	0.004	0.004	0.004	0.004	0.007	0.005
Comoros	0.004	0.004	0.001	0.001	0.001	0.002	0.002
St. Kitts and Nevis	0.004	0.004	0.003	0.002	0.002	0.003	0.002
Seychelles	0.004	0.004	0.005	0.004	0.003	0.008	0.005
St. Vincent and the Grenadines	0.004	0.004	0.002	0.002	0.002	0.004	0.003
Dominica	0.004	0.004	0.002	0.001	0.001	0.003	0.002

**Table 2. Distribution of Quotas: Results of Alternative Specifications by Member 1/ (concluded)
(In percent)**

	Actual Quotas 2/		Existing Five Formulas	Linear Formula 4/	Multiplicative Formula 5/	Compressed Linear Formula	
	Pre Ad Hoc Increases	Post Ad Hoc Increases 3/				0.9 6/	0.95 7/
Maldives	0.004	0.004	0.006	0.003	0.003	0.007	0.005
Timor-Leste	0.004	0.004	0.006	0.003	0.002	0.007	0.005
Sao Tome and Principe	0.003	0.003	0.001	0.000	0.000	0.001	0.001
Tonga	0.003	0.003	0.001	0.001	0.001	0.002	0.002
Bhutan	0.003	0.003	0.004	0.003	0.003	0.006	0.004
Kiribati	0.003	0.003	0.003	0.001	0.001	0.003	0.002
Micronesia, Fed. States of	0.002	0.002	0.002	0.001	0.001	0.003	0.002
Marshall Islands	0.002	0.002	0.001	0.001	0.001	0.002	0.001
Palau, Republic of	0.001	0.001	0.002	0.001	0.001	0.002	0.002

Source: Finance Department.

1/ See Table 4 of Quotas—Further Thoughts on a New Quota Formula (2006). Based on 1992–2004 data. Reflects the impact of adjustments to current receipts and payments for re-exports, international banking interest, and non-monetary gold. The specification of GDP and variability differs from the existing five formulas as average GDP and variability of current receipts plus net capital flows are used.

2/ For the three countries that have not yet consented to, and paid for, their quota increases, Eleventh Review proposed quotas are used.

3/ Includes ad hoc increases for China, Korea, Mexico, and Turkey.

4/ $Q = 0.50 \cdot \text{Average GDP} + 0.30 \cdot \text{Openness} + 0.15 \cdot \text{Variability} + 0.05 \cdot \text{Reserves}$.

5/ $Q = (\text{Average GDP})^{0.50} \cdot (\text{Openness})^{0.30} \cdot (\text{Variability})^{0.15} \cdot (\text{Reserves})^{0.05}$. This requires rescaling of calculated shares.

6/ $Q = (0.50 \cdot \text{Average GDP} + 0.30 \cdot \text{Openness} + 0.15 \cdot \text{Variability} + 0.05 \cdot \text{Reserves})^{0.9}$. This requires rescaling of calculated shares.

7/ $Q = (0.50 \cdot \text{Average GDP} + 0.30 \cdot \text{Openness} + 0.15 \cdot \text{Variability} + 0.05 \cdot \text{Reserves})^{0.95}$. This requires rescaling of calculated shares.

8/ Includes China, P.R., and Hong Kong, SAR.

**Table 3. Distribution of Quotas: Results of Alternative Specifications by Member 1/
(In percent)**

	Actual Quotas 2/ Post Ad Hoc		Existing Five Formulas	Linear Formula 4/ Formula 5/	Multiplicative Formula 5/ Formula 6/	Compressed Linear Formula 0.9 6/	Compressed Linear Formula 0.95 7/
	Pre Ad Hoc Increases	Increases 3/					
United States	17.382	17.078	16.795	23.792	23.627	19.293	21.498
Japan	6.229	6.120	7.525	10.035	10.127	8.872	9.468
Germany	6.087	5.980	6.953	6.672	7.027	6.144	6.424
France	5.025	4.937	4.334	4.170	4.342	4.024	4.111
United Kingdom	5.025	4.937	5.176	4.142	4.075	4.001	4.085
China 8/	2.980	3.719	5.197	4.713	4.746	4.494	4.618
Italy	3.301	3.243	3.442	3.200	3.244	3.171	3.197
Saudi Arabia	3.269	3.211	1.063	0.727	0.780	0.835	0.782
Canada	2.980	2.928	3.098	2.436	2.596	2.481	2.466
Russia	2.782	2.733	1.519	1.647	1.714	1.745	1.701
Netherlands	2.416	2.373	2.880	1.661	1.648	1.758	1.715
Belgium	2.155	2.117	2.088	1.146	1.135	1.259	1.205
India	1.946	1.912	1.200	1.362	1.368	1.470	1.419
Switzerland	1.618	1.590	1.530	1.221	1.276	1.332	1.280
Australia	1.514	1.488	1.182	1.258	1.360	1.368	1.316
Mexico	1.210	1.449	1.928	1.946	2.118	2.027	1.993
Spain	1.427	1.402	2.250	2.179	2.271	2.244	2.219
Brazil	1.421	1.396	0.998	1.494	1.591	1.598	1.551
Korea	0.764	1.346	2.508	2.205	2.296	2.268	2.244
Venezuela	1.244	1.222	0.415	0.409	0.404	0.498	0.453
Sweden	1.121	1.101	1.229	0.932	0.997	1.045	0.990
Argentina	0.991	0.973	0.396	0.571	0.548	0.672	0.621
Indonesia	0.973	0.956	0.767	0.814	0.860	0.925	0.871
Austria	0.876	0.861	1.142	0.798	0.823	0.909	0.855
South Africa	0.874	0.859	0.436	0.458	0.498	0.552	0.504
Nigeria	0.820	0.806	0.309	0.275	0.260	0.349	0.311
Norway	0.782	0.768	0.868	0.848	0.883	0.960	0.906
Denmark	0.769	0.755	1.078	0.850	0.876	0.961	0.907
Iran	0.701	0.688	0.404	0.373	0.393	0.458	0.415
Malaysia	0.696	0.683	1.399	0.762	0.651	0.872	0.818
Kuwait	0.646	0.635	0.351	0.235	0.224	0.303	0.268
Ukraine	0.642	0.631	0.277	0.221	0.224	0.286	0.252
Poland	0.641	0.629	0.739	0.764	0.814	0.874	0.820
Finland	0.591	0.581	0.546	0.525	0.561	0.623	0.574
Algeria	0.587	0.577	0.325	0.325	0.299	0.405	0.364

Table 3. Distribution of Quotas: Results of Alternative Specifications by Member 1/ (continued)
(In percent)

	Actual Quotas 2/		Existing Five Formulas	Linear Formula 4/	Multiplicative Formula 5/	Compressed Linear Formula		Compressed Linear Formula 0.95 7/
	Pre Ad Hoc Increases	Post Ad Hoc Increases 3/				0.9 6/	0.95 7/	
Turkey	0.451	0.548	0.741	0.995	0.989	1.108	1.053	
Iraq	0.556	0.546	0.246	0.161	0.125	0.215	0.187	
Libya	0.526	0.517	0.228	0.193	0.151	0.253	0.221	
Thailand	0.506	0.497	0.909	0.742	0.713	0.851	0.797	
Hungary	0.486	0.477	0.468	0.357	0.363	0.441	0.398	
Pakistan	0.484	0.475	0.191	0.242	0.262	0.311	0.275	
Romania	0.482	0.474	0.207	0.211	0.223	0.274	0.241	
Egypt	0.442	0.434	0.248	0.275	0.292	0.348	0.311	
Israel	0.434	0.427	0.579	0.452	0.464	0.545	0.498	
New Zealand	0.419	0.411	0.229	0.225	0.243	0.290	0.256	
Philippines	0.412	0.404	0.504	0.378	0.375	0.464	0.420	
Portugal	0.406	0.399	0.528	0.485	0.509	0.581	0.533	
Singapore	0.404	0.397	1.922	1.118	0.771	1.231	1.177	
Chile	0.401	0.394	0.298	0.291	0.304	0.366	0.328	
Ireland	0.392	0.385	1.677	1.373	0.942	1.481	1.431	
Greece	0.385	0.378	0.456	0.592	0.584	0.695	0.644	
Czech Republic	0.383	0.377	0.538	0.430	0.424	0.521	0.475	
Colombia	0.362	0.356	0.208	0.253	0.274	0.324	0.287	
Bulgaria	0.300	0.294	0.113	0.093	0.092	0.132	0.111	
Peru	0.299	0.293	0.139	0.207	0.215	0.269	0.237	
United Arab Emirates	0.286	0.281	0.461	0.384	0.387	0.470	0.426	
Morocco	0.275	0.270	0.165	0.146	0.150	0.197	0.171	
Bangladesh	0.250	0.245	0.103	0.114	0.118	0.157	0.134	
Congo, Dem. Republic of	0.249	0.245	0.025	0.184	0.052	0.243	0.212	
Zambia	0.229	0.225	0.022	0.025	0.022	0.040	0.031	
Serbia	0.219	0.215	0.111	0.093	0.090	0.132	0.111	
Sri Lanka	0.193	0.190	0.074	0.061	0.065	0.089	0.074	
Belarus	0.181	0.178	0.118	0.077	0.075	0.110	0.092	
Ghana	0.173	0.170	0.043	0.039	0.037	0.060	0.048	
Kazakhstan	0.171	0.168	0.164	0.146	0.144	0.196	0.170	
Croatia	0.171	0.168	0.144	0.128	0.128	0.175	0.150	
Slovak Republic	0.167	0.164	0.231	0.153	0.149	0.205	0.178	
Zimbabwe	0.165	0.162	0.026	0.028	0.028	0.045	0.036	
Trinidad and Tobago	0.157	0.154	0.062	0.047	0.047	0.071	0.058	
Vietnam	0.154	0.151	0.214	0.139	0.145	0.188	0.162	

Table 3. Distribution of Quotas: Results of Alternative Specifications by Member 1/ (continued)
(In percent)

	Actual Quotas 2/		Existing Five Formulas	Linear Formula 4/	Multiplicative Formula 5/	Compressed	
	Pre Ad Hoc Increases	Post Ad Hoc Increases 3/				Linear Formula 0.9 6/	Compressed Linear Formula 0.95 7/
Cote d'Ivoire	0.152	0.149	0.061	0.045	0.049	0.069	0.056
Sudan	0.147	0.145	0.040	0.044	0.048	0.067	0.054
Uruguay	0.143	0.141	0.047	0.077	0.064	0.110	0.092
Ecuador	0.141	0.139	0.078	0.157	0.121	0.210	0.182
Syrian Arab Republic	0.137	0.135	0.122	0.182	0.143	0.240	0.210
Tunisia	0.134	0.132	0.105	0.087	0.092	0.123	0.104
Angola	0.134	0.132	0.193	0.170	0.100	0.226	0.197
Luxembourg	0.131	0.128	1.375	0.420	0.216	0.510	0.465
Uzbekistan	0.129	0.127	0.043	0.055	0.050	0.082	0.068
Jamaica	0.128	0.126	0.051	0.045	0.043	0.068	0.055
Kenya	0.127	0.125	0.036	0.045	0.049	0.068	0.056
Qatar	0.123	0.121	0.134	0.113	0.109	0.156	0.133
Myanmar	0.121	0.119	0.032	0.038	0.040	0.058	0.047
Yemen, Republic of	0.114	0.112	0.117	0.121	0.080	0.166	0.142
Slovenia	0.108	0.107	0.144	0.102	0.105	0.143	0.122
Dominican Republic	0.102	0.101	0.085	0.067	0.068	0.098	0.081
Brunei Darussalam	0.101	0.099	0.058	0.066	0.038	0.096	0.080
Guatemala	0.098	0.097	0.065	0.071	0.078	0.103	0.086
Panama	0.097	0.095	0.049	0.057	0.055	0.084	0.070
Lebanon	0.095	0.093	0.176	0.149	0.121	0.201	0.174
Tanzania	0.093	0.091	0.033	0.037	0.039	0.058	0.047
Oman	0.091	0.089	0.150	0.102	0.101	0.142	0.121
Cameroon	0.087	0.085	0.033	0.043	0.045	0.065	0.053
Uganda	0.084	0.083	0.025	0.025	0.026	0.041	0.032
Bolivia	0.080	0.079	0.023	0.026	0.028	0.041	0.032
El Salvador	0.080	0.079	0.053	0.048	0.052	0.073	0.059
Jordan	0.080	0.078	0.082	0.060	0.055	0.089	0.073
Bosnia-Herzegovina	0.079	0.078	0.066	0.048	0.041	0.073	0.059
Costa Rica	0.077	0.075	0.084	0.066	0.069	0.097	0.080
Islamic Republic of Afghanistan	0.076	0.074	0.042	0.048	0.033	0.073	0.059
Senegal	0.076	0.074	0.024	0.020	0.022	0.033	0.026
Azerbaijan	0.075	0.074	0.036	0.032	0.032	0.050	0.040
Gabon	0.072	0.071	0.047	0.037	0.032	0.057	0.046
Georgia	0.070	0.069	0.017	0.015	0.016	0.026	0.020
Lithuania	0.067	0.066	0.096	0.069	0.073	0.101	0.084

Table 3. Distribution of Quotas: Results of Alternative Specifications by Member 1/ (continued)
(In percent)

	Actual Quotas 2/		Existing Five Formulas	Linear Formula 4/	Multiplicative Formula 5/	Compressed	
	Pre Ad Hoc Increases	Post Ad Hoc Increases 3/				Linear Formula 0.9 6/	Compressed Linear Formula 0.95 7/
Cyprus	0.065	0.064	0.061	0.062	0.061	0.092	0.076
Namibia	0.064	0.063	0.024	0.015	0.016	0.026	0.020
Bahrain	0.063	0.062	0.144	0.103	0.072	0.144	0.123
Ethiopia	0.063	0.061	0.076	0.101	0.052	0.141	0.120
Papua New Guinea	0.062	0.060	0.028	0.021	0.019	0.035	0.027
Bahamas, The	0.061	0.060	0.029	0.021	0.022	0.034	0.026
Nicaragua	0.061	0.060	0.021	0.019	0.020	0.032	0.025
Honduras	0.061	0.060	0.037	0.028	0.029	0.044	0.035
Liberia	0.060	0.059	0.005	0.007	0.004	0.012	0.009
Latvia	0.059	0.058	0.053	0.041	0.044	0.063	0.051
Moldova	0.058	0.057	0.018	0.013	0.012	0.022	0.017
Madagascar	0.057	0.056	0.022	0.021	0.020	0.034	0.027
Iceland	0.055	0.054	0.035	0.037	0.039	0.057	0.046
Mozambique	0.053	0.052	0.025	0.019	0.020	0.032	0.025
Guinea	0.050	0.049	0.010	0.011	0.012	0.020	0.015
Sierra Leone	0.049	0.048	0.004	0.005	0.005	0.010	0.007
Malta	0.048	0.047	0.058	0.032	0.028	0.050	0.040
Mauritius	0.048	0.047	0.032	0.024	0.024	0.038	0.030
Paraguay	0.047	0.046	0.039	0.036	0.032	0.055	0.044
Mali	0.044	0.043	0.015	0.012	0.013	0.021	0.016
Suriname	0.043	0.042	0.009	0.008	0.006	0.015	0.011
Armenia	0.043	0.042	0.012	0.010	0.011	0.018	0.013
Guyana	0.043	0.042	0.015	0.011	0.007	0.020	0.015
Kyrgyz Republic	0.042	0.041	0.010	0.010	0.009	0.018	0.013
Cambodia	0.041	0.040	0.055	0.048	0.032	0.072	0.059
Tajikistan	0.041	0.040	0.012	0.009	0.008	0.017	0.013
Congo, Republic of	0.040	0.039	0.029	0.026	0.019	0.042	0.034
Haiti	0.038	0.038	0.014	0.014	0.013	0.024	0.018
Somalia	0.038	0.038	0.002	0.001	0.002	0.003	0.002
Rwanda	0.037	0.037	0.007	0.009	0.008	0.015	0.012
Burundi	0.036	0.035	0.003	0.004	0.003	0.007	0.005
Turkmenistan	0.035	0.035	0.046	0.045	0.047	0.068	0.056
Togo	0.034	0.034	0.009	0.008	0.008	0.015	0.011
Nepal	0.033	0.033	0.021	0.022	0.023	0.036	0.028
Fiji	0.033	0.032	0.011	0.008	0.009	0.015	0.011

Table 3. Distribution of Quotas: Results of Alternative Specifications by Member 1/ (continued)
(In percent)

	Actual Quotas 2/		Existing Five Formulas	Linear Formula 4/	Multiplicative Formula 5/	Compressed	
	Pre Ad Hoc Increases	Post Ad Hoc Increases 3/				Linear Formula 0.9 6/	Compressed Linear Formula 0.95 7/
Malawi	0.032	0.032	0.007	0.006	0.007	0.012	0.009
Macedonia, FYR	0.032	0.032	0.028	0.023	0.022	0.038	0.030
Barbados	0.032	0.031	0.015	0.012	0.013	0.021	0.016
Niger	0.031	0.030	0.007	0.009	0.009	0.016	0.012
Estonia	0.031	0.030	0.067	0.041	0.041	0.063	0.051
Mauritania	0.030	0.030	0.008	0.007	0.006	0.013	0.010
Botswana	0.029	0.029	0.054	0.042	0.035	0.065	0.053
Benin	0.029	0.028	0.009	0.009	0.010	0.016	0.012
Burkina Faso	0.028	0.028	0.010	0.013	0.014	0.022	0.017
Chad	0.026	0.026	0.016	0.016	0.014	0.027	0.021
Central African Republic	0.026	0.026	0.004	0.005	0.005	0.009	0.007
Lao, People's Dem. Republic	0.025	0.024	0.006	0.009	0.009	0.016	0.012
Mongolia	0.024	0.023	0.010	0.008	0.007	0.014	0.010
Swaziland	0.024	0.023	0.021	0.013	0.011	0.023	0.018
Albania	0.023	0.022	0.026	0.022	0.024	0.036	0.028
Lesotho	0.016	0.016	0.012	0.007	0.006	0.013	0.009
Equatorial Guinea	0.015	0.015	0.039	0.026	0.021	0.042	0.033
Gambia, The	0.015	0.014	0.003	0.003	0.002	0.005	0.004
Belize	0.009	0.009	0.006	0.005	0.005	0.009	0.006
San Marino	0.008	0.008	0.024	0.011	0.008	0.019	0.015
Vanuatu	0.008	0.008	0.003	0.002	0.002	0.005	0.003
Djibouti	0.007	0.007	0.003	0.003	0.003	0.005	0.004
Eritrea	0.007	0.007	0.008	0.007	0.004	0.012	0.009
St. Lucia	0.007	0.007	0.004	0.003	0.003	0.006	0.004
Guinea-Bissau	0.007	0.007	0.004	0.004	0.002	0.008	0.006
Antigua and Barbuda	0.006	0.006	0.006	0.003	0.003	0.006	0.004
Grenada	0.005	0.005	0.003	0.002	0.002	0.005	0.003
Samoa	0.005	0.005	0.002	0.001	0.001	0.003	0.002
Solomon Islands	0.005	0.005	0.003	0.002	0.002	0.004	0.003
Cape Verde	0.004	0.004	0.004	0.004	0.004	0.008	0.006
Comoros	0.004	0.004	0.001	0.001	0.001	0.002	0.002
St. Kitts and Nevis	0.004	0.004	0.003	0.001	0.001	0.003	0.002
Seychelles	0.004	0.004	0.005	0.004	0.004	0.008	0.006
St. Vincent and the Grenadines	0.004	0.004	0.002	0.002	0.002	0.004	0.003
Dominica	0.004	0.004	0.002	0.002	0.001	0.003	0.002

**Table 3. Distribution of Quotas: Results of Alternative Specifications by Member 1/ (concluded)
(In percent)**

	Actual Quotas 2/		Existing Five Formulas	Linear Formula 4/	Multiplicative Formula 5/	Compressed Linear Formula	
	Pre Ad Hoc Increases	Post Ad Hoc Increases 3/				0.9 6/	0.95 7/
Maldives	0.004	0.004	0.006	0.003	0.003	0.006	0.004
Timor-Leste	0.004	0.004	0.006	0.004	0.003	0.008	0.006
Sao Tome and Principe	0.003	0.003	0.001	0.000	0.000	0.001	0.001
Tonga	0.003	0.003	0.001	0.001	0.001	0.003	0.002
Bhutan	0.003	0.003	0.004	0.003	0.003	0.006	0.004
Kiribati	0.003	0.003	0.003	0.001	0.001	0.003	0.002
Micronesia, Fed. States of	0.002	0.002	0.002	0.002	0.001	0.004	0.003
Marshall Islands	0.002	0.002	0.001	0.001	0.001	0.002	0.001
Palau, Republic of	0.001	0.001	0.002	0.001	0.001	0.003	0.002

Source: Finance Department.

1/ See Table 5 of Quotas—Further Thoughts on a New Quota Formula (2006). Based on 1992–2004 data. Reflects the impact of adjustments to current receipts and payments for re-exports, international banking interest, and non-monetary gold. The specification of GDP and variability differs from the existing five formulas as average GDP and variability of current receipts plus net capital flows are used.

2/ For the three countries that have not yet consented to, and paid for, their quota increases, Eleventh Review proposed quotas are used.

3/ Includes ad hoc increases for China, Korea, Mexico, and Turkey.

4/ $Q = 0.50 * \text{Average GDP} + 0.15 * \text{Openness} + 0.30 * \text{Variability} + 0.05 * \text{Reserves}$.

5/ $Q = (\text{Average GDP})^{0.50} * (\text{Openness})^{0.15} * (\text{Variability})^{0.30} * (\text{Reserves})^{0.05}$. This requires rescaling of calculated shares.

6/ $Q = (0.50 * \text{Average GDP} + 0.15 * \text{Openness} + 0.30 * \text{Variability} + 0.05 * \text{Reserves})^{0.9}$. This requires rescaling of calculated shares.

7/ $Q = (0.50 * \text{Average GDP} + 0.15 * \text{Openness} + 0.30 * \text{Variability} + 0.05 * \text{Reserves})^{0.95}$. This requires rescaling of calculated shares.

8/ Includes China, P.R., and Hong Kong, SAR.

INTERNATIONAL MONETARY FUND

Quotas—Further Thoughts on a New Quota Formula—Statistical Appendix

Prepared by the Finance and Statistics Departments

Approved by Michael G. Kuhn and Robert W. Edwards

February 2, 2007

	Contents	Page
I.	Introduction.....	2
II.	Purchasing Power Parity (PPP) Data	2
III.	International Investment Position (IIP).....	3
IV.	Population	4
Tables		
1.	Origin of PPP Conversion Factors Used in the Latest World Economic Outlook	5
2.	PPP-GDP, International Investment Position, and Population by Member.....	9
3.	PPP-GDP, International Investment Position, and Population—Shares in Global Totals by Member	15

I. INTRODUCTION

1. In response to requests from Executive Directors, this statistical appendix provides available individual member country data for the alternative variables reported in Table 1 of *Quotas—Further Thoughts on a New Quota Formula* (2006). The data are briefly described below.

II. PURCHASING POWER PARITY (PPP) DATA

2. PPP-based GDP statistics are designed to measure the relative volume of production of goods and services for final uses among countries.¹ PPP-adjusted GDP data thus are used to assess countries' relative importance in the world production of goods and services for final uses. PPPs also are produced for the final consumption sub-aggregate of GDP. PPP-adjusted final consumption data measure the relative volume of final consumption and thus are used to assess the relative living standards of countries.

3. The PPP-based GDP data currently available at the Fund are taken from the *World Economic Outlook* (WEO) database.² The WEO uses PPP data for 175 countries from the International Comparison Program (ICP) consisting of data from the OECD/Eurostat, Commonwealth of Independent States (CIS), and the World Bank, and Fund-staff estimates.^{3 4}

- OECD/Eurostat and CIS: Provide a combined coverage of 52 countries. GDP estimates are based on a common methodology. The data rely on price surveys conducted during the reference year 2002 for the OECD countries and 2000 for the CIS countries.
- World Bank: Coordinates data collection efforts carried out by a number of different agencies and publishes PPP-based GDP estimates for 104 countries in the *World Development Indicators* (WDI). World Bank data are based mostly on estimates, with

¹ PPP is derived from transforming GDP from national currency units to “international dollars,” not by market exchange rates, but by PPP conversion rates based on the estimated purchasing power of countries' currencies. The PPP between two countries is the rate at which the currency of one country needs to be converted into that of a second country to represent the same volume of goods and services in both countries. For further details see *Alternative Quota Formulas—Further Considerations—Statistical Appendix* (2002).

² WEO documentation of PPP calculations is available on the following website:
<http://www.imf.org/external/pubs/ft/weo/faq.htm#q21>.

³ For a detailed background discussion of the PPP calculations, see Anne Marie Gulde and Marianne Schultze-Ghattas “Purchasing Power Parity Based Weights for the World Economic Outlook” in *Staff Studies for the World Economic Outlook* (Washington: IMF, 1993).

⁴ The ICP was established in 1968 and its work has gradually become more comprehensive, but country coverage is still limited and data are gathered only for infrequent “benchmark” years.

only 63 countries providing price survey-based information for the reference year 1996.

- Staff estimates: PPP data for the remaining 19 countries are based on a cross-section regression that relates PPP-based GDP to GDP at market exchange rates, trade openness, and regional dummies. The regression results derived from countries for which PPP data are available are then applied to countries for which price surveys are not available.

4. There are significant differences across countries in the reference periods of the price survey sources for the ICP, with some surveys being more than a decade old. In part for this reason, and in part because of an inconsistent survey methodology across countries, the goods and services included in the price surveys of individual countries are not necessarily fully comparable across countries, and thus comparison of their prices may include differences in product quality. As a result, differences along the quality dimensions may well be mistaken for price differences rather than volume differences. Finally, the fact that a large number of primarily small developing countries are not included in the price surveys raises questions about the validity of the data for these countries.⁵

5. The new estimates for the 2005 ICP round are expected to be available in late 2007. These estimates will be based on more countries' data and a significantly improved and more consistent survey and estimation methodology compared with previous rounds.

III. INTERNATIONAL INVESTMENT POSITION (IIP)

6. The IIP provides a comprehensive measure of a country's external balance sheet position, reflecting its holding of foreign financial assets and foreign financial liabilities at a given point in time.

7. There were significant improvements in the reporting of IIP data over the past ten years with full or partial IIP data currently available for 106 countries, of which 85 are considered comprehensive reporters.⁶ However, the valuation of assets and liabilities may not follow a harmonized methodology across countries and differences due to the use of book value or market prices can be significant. The data are from the Balance of Payments database.

⁵ To overcome the lack of coverage, data for remaining countries are estimated with regression techniques, and missing years are filled in by extrapolation.

⁶ Members with 3 years or more of data during 2000-04.

IV. POPULATION

8. Population data are sourced from IFS based on data provided by the Population Division of the Department of Economic and Social Affairs of the United Nations. The data represent mid-year estimates and are revised every two years. Data are available for almost all members.

Table 1. Origin of PPP Conversion Factors Used in the Latest World Economic Outlook 1/

	Source 2/	Survey Year 3/
Albania	OECD	1996
Algeria	WDI	
Angola	WDI	
Antigua and Barbuda	WDI	1996
Argentina	WDI	1996
Armenia	OECD	2000
Australia	OECD	2002
Austria	OECD	2002
Azerbaijan	OECD	2000
Bahamas, The	WDI	1996
Bahrain	WDI	1996
Bangladesh	WDI	1996
Belarus	OECD	2000
Belgium	OECD	2002
Belize	WDI	1996
Benin	WDI	1996
Bhutan	IMF	
Bolivia	WDI	1996
Bosnia and Herzegovina	IMF	
Botswana	WDI	1996
Brazil	WDI	1996
Brunei Darassalam	IMF	
Bulgaria	OECD	2002
Burkina Faso	WDI	
Burundi	WDI	
Cambodia	WDI	1996
Cameroon	WDI	1996
Canada	OECD	2002
Cape Verde	WDI	
Central African Republic	WDI	
Chad	WDI	
Chile	WDI	1996
China, P.R.	WDI	1986
Colombia	WDI	
Comoros	WDI	
Congo, Dem. Rep.	WDI	
Congo, Rep.	WDI	1996
Costa Rica	WDI	
Cote d'Ivoire	WDI	1996
Croatia	OECD	2002
Cyprus	IMF	
Czech Republic	OECD	2002
Denmark	OECD	2002
Djibouti	IMF	
Dominica	WDI	1996
Dominican Republic	WDI	
Ecuador	WDI	1996
Egypt, Arab Rep.	WDI	1996
El Salvador	WDI	
Equatorial Guinea	IMF	
Eritrea	WDI	
Estonia	OECD	2002

**Table 1. Origin of PPP Conversion Factors Used in the Latest World Economic Outlook 1/
(continued)**

	Source 2/	Survey Year 3/
Ethiopia	WDI	
Fiji	WDI	1996
Finland	OECD	2002
France	OECD	2002
Gabon	WDI	1996
Gambia, The	WDI	
Georgia	OECD	2000
Germany	OECD	2002
Ghana	WDI	
Greece	OECD	2002
Grenada	WDI	1996
Guatemala	WDI	
Guinea	WDI	1996
Guinea-Bissau	IMF	
Guyana	WDI	
Haiti	WDI	
Honduras	WDI	
Hong Kong, SAR	WDI	1996
Hungary	OECD	2002
Iceland	OECD	2002
India	WDI	
Indonesia	WDI	1996
Iran, Islamic Rep.	WDI	1996
Ireland	OECD	2002
Israel	OECD	2002
Italy	OECD	2002
Jamaica	WDI	1996
Japan	OECD	2002
Jordan	WDI	1996
Kazakhstan	OECD	2000
Kenya	WDI	1996
Kiribati	IMF	
Korea, Rep.	WDI	2002
Kuwait	WDI	
Kyrgyz Republic	OECD	2000
Lao PDR	WDI	1996
Latvia	OECD	2002
Lebanon	WDI	1996
Lesotho	WDI	
Libya	IMF	
Lithuania	OECD	2002
Luxembourg	OECD	2002
Macedonia, FYR	OECD	2002
Madagascar	WDI	1996
Malawi	WDI	1996
Malaysia	WDI	1996
Maldives	IMF	
Mali	WDI	1996
Malta	WDI	2002
Mauritania	WDI	
Mauritius	WDI	1996
Mexico	OECD	2002

**Table 1. Origin of PPP Conversion Factors Used in the Latest World Economic Outlook 1/
(continued)**

	Source 2/	Survey Year 3/
Moldova	OECD	2000
Mongolia	OECD	2000
Morocco	WDI	1996
Mozambique	WDI	
Myanmar	IMF	
Namibia	WDI	
Nepal	WDI	1996
Netherlands	OECD	2002
New Zealand	OECD	2002
Nicaragua	WDI	
Niger	WDI	
Nigeria	WDI	1996
Norway	OECD	2002
Oman	WDI	1996
Pakistan	WDI	1996
Panama	WDI	1996
Papua New Guinea	IMF	
Paraguay	WDI	
Peru	WDI	1996
Philippines	WDI	1996
Poland	OECD	2002
Portugal	OECD	2002
Qatar	IMF	
Romania	OECD	2002
Russia	OECD	2002
Rwanda	WDI	
Samoa	WDI	
Sao Tome and Principe	IMF	
Saudi Arabia	WDI	
Senegal	WDI	1996
Serbia	IMF	
Seychelles	IMF	
Sierra Leone	WDI	1996
Singapore	WDI	1996
Slovak Republic	OECD	2002
Slovenia	OECD	2002
Solomon Islands	WDI	
South Africa	WDI	
Spain	OECD	2002
Sri Lanka	WDI	1996
St. Kitts and Nevis	WDI	1996
St. Lucia	WDI	1996
St. Vincent and the Grenadines	WDI	1996
Sudan	WDI	
Suriname	IMF	
Swaziland	WDI	1996
Sweden	OECD	2002
Switzerland	OECD	2002
Syrian Arab Republic	WDI	1996
Tajikistan	OECD	2000
Tanzania	WDI	1996
Thailand	WDI	1996
Togo	WDI	

**Table 1. Origin of PPP Conversion Factors Used in the Latest World Economic Outlook 1/
(concluded)**

	Source 2/	Survey Year 3/
Tonga	IMF	
Trinidad and Tobago	WDI	1996
Tunisia	WDI	1996
Turkey	OECD	2002
Turkmenistan	OECD	2000
Uganda	WDI	
Ukraine	OECD	2000
United Arab Emirates	IMF	
United Kingdom	OECD	2002
United States	OECD	2002
Uruguay	WDI	1996
Uzbekistan	OECD	2000
Vanuatu	WDI	
Venezuela	WDI	1996
Vietnam	WDI	1996
Yemen, Rep.	WDI	1996
Zambia	WDI	1996
Zimbabwe	WDI	1996

Sources: Finance Department, World Economic Outlook, and the International Comparison Program (based in the World Bank).

1/ The PPP GDP data shown in Table 2 were downloaded from the WEO database on September 13, 2006.

2/ OECD refers to data of OECD members and CIS countries provided by the OECD. WDI refers to data from the World Development Indicators database. IMF refers to data by Fund staff estimated for countries not present in the OECD or WDI data sets.

3/ Blanks indicate that PPP conversion factors are estimated rather than based on actual price surveys.

**Table 2. PPP-GDP, International Investment Position, and Population by Member
(In millions of SDRs, unless otherwise indicated)**

	Actual Quotas 1/	PPP-GDP 2002-04	International Investment Position 2/			Population 3/ 2004
			Assets	Liabilities	Assets plus Liabilities	
United States	37,149.3	7,970,732.5	5,641,528.1	7,264,396.1	12,905,924.2	295.4
Japan	13,312.8	2,614,553.7	2,384,546.6	1,328,260.0	3,712,806.6	127.9
Germany	13,008.2	1,727,138.3	2,426,847.4	2,315,985.6	4,742,833.0	82.6
France	10,738.5	1,236,420.0	2,215,853.9	2,102,229.6	4,318,083.5	60.3
United Kingdom	10,738.5	1,216,425.5	3,970,660.6	4,068,628.8	8,029,289.4	59.5
China 4/	8,090.1	5,570,726.7	n.a.	n.a.	n.a.	1,315.0
Italy	7,055.5	1,152,628.2	963,754.0	992,346.5	1,956,100.6	58.0
Saudi Arabia	6,985.5	218,229.4	n.a.	n.a.	n.a.	24.0
Canada	6,369.2	729,223.4	465,881.6	567,698.4	1,033,580.1	32.0
Russia	5,945.4	970,705.9	214,897.8	195,083.1	409,980.9	143.9
Netherlands	5,162.4	344,742.7	1,156,074.0	1,201,983.4	2,358,057.4	16.2
Belgium	4,605.2	219,131.5	735,037.0	647,292.2	1,382,329.2	10.4
India	4,158.2	2,202,342.0	75,620.3	118,786.4	194,406.7	1,087.1
Switzerland	3,458.5	162,303.1	1,133,327.8	834,023.9	1,967,351.7	7.2
Australia	3,236.4	416,190.4	238,204.2	426,155.1	664,359.4	19.9
Mexico	3,152.8	702,158.3	78,892.8	271,998.4	350,891.2	105.7
Spain	3,048.9	713,470.2	533,751.8	701,954.3	1,235,706.2	42.6
Brazil	3,036.1	1,028,618.9	88,558.9	277,434.6	365,993.5	183.9
Korea	2,927.3	641,042.7	172,027.0	226,365.8	398,392.8	47.6
Venezuela	2,659.1	97,357.1	57,422.9	54,182.9	111,605.8	26.3
Sweden	2,395.5	178,522.7	312,858.2	358,673.9	671,532.1	9.0
Argentina	2,117.1	317,791.4	103,352.2	121,677.1	225,029.3	38.4
Indonesia	2,079.3	612,807.4	35,420.2	119,870.1	155,290.3	220.1
Austria	1,872.3	184,380.0	262,478.9	293,114.4	555,593.3	8.2
South Africa	1,868.5	368,419.5	65,674.9	73,818.8	139,493.7	47.2
Nigeria	1,753.2	108,497.3	n.a.	n.a.	n.a.	128.7
Norway	1,671.7	129,312.4	n.a.	n.a.	n.a.	4.6
Denmark	1,642.8	125,929.8	237,830.1	257,823.7	495,653.8	5.4
Iran	1,497.2	345,169.9	n.a.	n.a.	n.a.	68.8
Malaysia	1,486.6	180,181.7	51,026.0	60,645.6	111,671.6	24.9
Kuwait	1,381.1	29,217.6	n.a.	n.a.	n.a.	2.6
Ukraine	1,372.0	201,204.3	7,045.9	22,066.8	29,112.7	47.0
Poland	1,369.0	319,827.0	40,318.5	97,781.7	138,100.2	38.6
Finland	1,263.8	108,213.3	164,450.1	225,001.9	389,451.9	5.2
Algeria	1,254.7	149,410.8	n.a.	n.a.	n.a.	32.4

Table 2. PPP-GDP, International Investment Position, and Population by Member (continued)
(In millions of SDRs, unless otherwise indicated)

	Actual Quotas 1/	PPP-GDP 2002-04	International Investment Position 2/			Population 3/ 2004
			Assets	Liabilities	Assets plus Liabilities	
Turkey	1,191.3	350,257.0	47,034.4	125,726.9	172,761.3	72.2
Iraq	1,188.4	n.a.	n.a.	n.a.	n.a.	28.1
Libya	1,123.7	42,431.1	n.a.	n.a.	n.a.	5.7
Thailand	1,081.9	344,978.7	43,517.0	82,140.1	125,657.1	63.7
Hungary	1,038.4	110,294.6	19,919.9	59,910.9	79,830.8	10.1
Pakistan	1,033.7	246,277.9	10,872.1	29,725.8	40,597.9	154.8
Romania	1,030.2	118,040.9	10,339.9	19,838.1	30,178.0	21.8
Egypt	943.7	195,579.0	n.a.	n.a.	n.a.	72.6
Israel	928.2	102,239.1	58,487.1	84,465.5	142,952.6	6.6
New Zealand	894.6	66,289.6	30,993.7	71,872.3	102,866.0	4.0
Philippines	879.9	261,646.0	22,619.8	51,100.7	73,720.5	81.6
Portugal	867.4	140,751.6	148,944.6	198,649.3	347,594.0	10.4
Singapore	862.5	78,075.3	318,220.3	258,602.6	576,823.0	4.3
Chile	856.1	120,790.8	40,035.0	64,946.2	104,981.2	16.1
Ireland	838.4	106,616.0	827,442.5	846,468.8	1,673,911.3	4.1
Greece	823.0	160,839.2	63,743.2	127,030.3	190,773.5	11.1
Czech Republic	819.3	120,720.5	37,276.9	48,583.2	85,860.1	10.2
Colombia	774.0	217,081.5	21,196.7	40,662.7	61,859.4	44.9
Bulgaria	640.2	44,739.4	7,855.6	12,285.4	20,141.0	7.8
Peru	638.4	105,661.5	11,966.0	31,546.9	43,512.8	27.6
United Arab Emirates	611.7	79,008.8	n.a.	n.a.	n.a.	4.3
Morocco	588.2	89,518.3	11,144.7	23,094.7	34,239.4	31.0
Bangladesh	533.3	190,483.6	1,989.5	14,167.5	16,157.0	139.2
Congo, Dem. Republic of	533.0	28,551.1	n.a.	n.a.	n.a.	55.9
Zambia	489.1	6,818.8	n.a.	n.a.	n.a.	11.5
Serbia	467.7	28,153.7	n.a.	n.a.	n.a.	7.5
Sri Lanka	413.4	53,900.4	n.a.	n.a.	n.a.	20.6
Belarus	386.4	44,646.2	1,150.3	3,667.0	4,817.3	9.8
Ghana	369.0	34,422.0	n.a.	n.a.	n.a.	21.7
Kazakhstan	365.7	73,544.5	7,958.1	17,765.0	25,723.0	14.8
Croatia	365.1	35,473.0	10,120.3	17,554.5	27,674.7	4.5
Slovak Republic	357.5	54,734.6	10,008.3	14,444.7	24,453.0	5.4
Zimbabwe	353.4	24,595.2	n.a.	n.a.	n.a.	12.9
Trinidad and Tobago	335.6	11,108.9	n.a.	n.a.	n.a.	1.3
Vietnam	329.1	151,657.1	n.a.	n.a.	n.a.	83.1

Table 2. PPP-GDP, International Investment Position, and Population by Member (continued)
(In millions of SDRs, unless otherwise indicated)

	Actual Quotas 1/	PPP-GDP 2002-04	International Investment Position 2/			Population 3/ 2004
			Assets	Liabilities	Assets plus Liabilities	
Cote d'Ivoire	325.2	18,862.6	3,194.2	11,539.1	14,733.3	17.9
Sudan	315.1	51,502.2	n.a.	n.a.	n.a.	35.5
Uruguay	306.5	20,729.6	10,260.3	11,539.2	21,799.5	3.4
Ecuador	302.3	36,682.8	2,163.9	18,660.8	20,824.7	13.0
Syrian Arab Republic	293.6	46,830.3	n.a.	n.a.	n.a.	18.6
Tunisia	286.5	52,536.8	3,285.9	21,578.7	24,864.5	10.0
Angola	286.3	24,287.8	2,699.4	14,124.8	16,824.2	15.5
Luxembourg	279.1	20,697.1	1,800,565.7	1,781,237.4	3,581,803.1	0.5
Uzbekistan	275.6	32,248.2	n.a.	n.a.	n.a.	26.0
Jamaica	273.5	7,885.1	n.a.	n.a.	n.a.	2.6
Kenya	271.4	30,981.3	n.a.	n.a.	n.a.	33.5
Qatar	263.8	15,154.4	n.a.	n.a.	n.a.	0.8
Myanmar	258.4	58,040.6	n.a.	n.a.	n.a.	50.0
Yemen, Republic of	243.5	12,746.5	3,747.0	4,590.1	8,337.1	20.3
Slovenia	231.7	28,205.3	8,101.1	9,408.0	17,509.0	2.0
Dominican Republic	218.9	43,064.3	1,771.2	7,850.7	9,621.9	8.4
Brunei Darussalam	215.2	6,045.5	n.a.	n.a.	n.a.	0.4
Guatemala	210.2	37,551.6	n.a.	n.a.	n.a.	12.3
Panama	206.6	15,002.5	16,319.9	22,921.6	39,241.5	3.2
Lebanon	203.0	16,104.2	n.a.	n.a.	n.a.	3.5
Tanzania	198.9	16,544.0	n.a.	8,292.1	8,292.1	37.6
Oman	194.0	26,513.7	n.a.	n.a.	n.a.	2.5
Cameroon	185.7	28,230.4	n.a.	n.a.	n.a.	16.0
Uganda	180.5	27,028.1	954.0	3,910.5	4,864.6	27.8
Bolivia	171.5	16,679.9	2,236.9	8,469.6	10,706.5	9.0
El Salvador	171.3	20,900.1	2,775.7	6,963.0	9,738.7	6.8
Jordan	170.5	17,425.1	n.a.	n.a.	n.a.	5.6
Bosnia-Herzegovina	169.1	14,881.9	n.a.	n.a.	n.a.	3.9
Costa Rica	164.1	29,041.4	3,132.1	6,258.2	9,390.2	4.3
Islamic Republic of Afghanistan	161.9	17,778.1	n.a.	n.a.	n.a.	23.6
Senegal	161.8	12,712.9	870.2	3,765.5	4,635.7	11.4
Azerbaijan	160.9	20,564.5	2,258.0	7,320.5	9,578.4	8.4
Gabon	154.3	6,452.1	n.a.	n.a.	n.a.	1.4
Georgia	150.3	9,325.4	n.a.	n.a.	n.a.	4.5
Lithuania	144.2	29,410.8	3,254.3	7,320.6	10,574.9	3.4

Table 2. PPP-GDP, International Investment Position, and Population by Member (continued)
(In millions of SDRs, unless otherwise indicated)

	Actual Quotas 1/	PPP-GDP 2002-04	International Investment Position 2/			Population 3/ 2004
			Assets	Liabilities	Assets plus Liabilities	
Cyprus	139.6	11,386.6	20,766.8	19,563.3	40,330.1	0.8
Namibia	136.5	9,791.5	1,187.8	1,753.9	2,941.6	2.0
Bahrain	135.0	9,726.4	64,921.9	60,974.8	125,896.8	0.7
Ethiopia	133.7	36,821.9	n.a.	n.a.	n.a.	75.6
Papua New Guinea	131.6	9,493.4	n.a.	n.a.	n.a.	5.8
Bahamas, The	130.3	4,280.0	n.a.	n.a.	n.a.	0.3
Nicaragua	130.0	13,570.9	n.a.	n.a.	n.a.	5.4
Honduras	129.5	13,948.2	n.a.	n.a.	n.a.	7.0
Liberia	129.2	n.a.	n.a.	n.a.	n.a.	3.2
Latvia	126.8	17,463.2	4,100.8	7,168.3	11,269.1	2.3
Moldova	123.2	5,258.6	570.8	1,691.6	2,262.5	4.2
Madagascar	122.2	9,971.6	n.a.	n.a.	n.a.	18.1
Iceland	117.6	6,615.1	5,660.1	10,965.8	16,625.9	0.3
Mozambique	113.6	16,278.4	n.a.	n.a.	n.a.	19.4
Guinea	107.1	12,501.5	n.a.	n.a.	n.a.	9.2
Sierra Leone	103.7	2,954.0	n.a.	n.a.	n.a.	5.3
Malta	102.0	5,357.1	10,335.5	9,391.5	19,727.0	0.4
Mauritius	101.6	10,346.1	n.a.	n.a.	n.a.	1.2
Paraguay	99.9	18,449.4	2,044.1	3,025.4	5,069.5	6.0
Mali	93.3	9,083.2	694.1	2,630.1	3,324.3	13.1
Suriname	92.1	1,837.1	n.a.	n.a.	n.a.	0.4
Armenia	92.0	8,223.5	500.5	1,580.3	2,080.8	3.0
Guyana	90.9	2,477.4	n.a.	n.a.	n.a.	0.8
Kyrgyz Republic	88.8	6,737.6	464.8	1,750.7	2,215.5	5.2
Cambodia	87.5	21,145.6	2,101.1	2,625.0	4,726.2	13.8
Tajikistan	87.0	5,146.3	n.a.	n.a.	n.a.	6.4
Congo, Republic of	84.6	2,856.6	n.a.	n.a.	n.a.	3.9
Haiti	81.9	10,505.4	n.a.	n.a.	n.a.	8.4
Somalia	81.7	n.a.	n.a.	n.a.	n.a.	8.9
Rwanda	80.1	7,925.9	261.5	1,085.7	1,347.2	8.9
Burundi	77.0	3,578.1	58.0	49.0	107.1	7.3
Turkmenistan	75.2	22,172.2	n.a.	n.a.	n.a.	6.4
Togo	73.4	6,127.5	290.9	1,503.8	1,794.6	6.0
Nepal	71.3	25,733.0	n.a.	n.a.	n.a.	26.6
Fiji	70.3	3,595.0	n.a.	n.a.	n.a.	0.8

Table 2. PPP-GDP, International Investment Position, and Population by Member (continued)
(In millions of SDRs, unless otherwise indicated)

	Actual Quotas 1/	PPP-GDP 2002-04	International Investment Position 2/			Population 3/ 2004
			Assets	Liabilities	Assets plus Liabilities	
Malawi	69.4	5,013.9	n.a.	n.a.	n.a.	12.6
Macedonia, FYR	68.9	10,309.7	n.a.	n.a.	n.a.	2.0
Barbados	67.5	3,168.8	n.a.	n.a.	n.a.	0.3
Niger	65.8	7,159.1	133.0	1,378.6	1,511.6	13.5
Estonia	65.2	13,413.9	3,404.2	7,421.0	10,825.2	1.3
Mauritania	64.4	4,434.6	n.a.	n.a.	n.a.	3.0
Botswana	63.0	11,496.5	5,777.5	1,836.5	7,613.9	1.8
Benin	61.9	5,676.3	734.0	1,498.5	2,232.5	8.2
Burkina Faso	60.2	10,732.2	346.0	1,299.0	1,645.0	12.8
Chad	56.0	7,373.1	n.a.	n.a.	n.a.	9.4
Central African Republic	55.7	3,218.5	n.a.	n.a.	n.a.	4.0
Lao, People's Dem. Republic	52.9	7,672.9	n.a.	n.a.	n.a.	5.8
Mongolia	51.1	3,388.4	n.a.	n.a.	n.a.	2.6
Swaziland	50.7	3,818.8	1,079.1	734.2	1,813.4	1.0
Albania	48.7	10,514.6	n.a.	n.a.	n.a.	3.1
Lesotho	34.9	3,351.9	n.a.	n.a.	n.a.	1.8
Equatorial Guinea	32.6	10,267.5	n.a.	n.a.	n.a.	0.5
Gambia, The	31.1	1,903.8	n.a.	n.a.	n.a.	1.5
Belize	18.8	1,348.6	n.a.	n.a.	n.a.	0.3
San Marino	17.0	n.a.	n.a.	n.a.	n.a.	0.0
Vanuatu	17.0	478.8	338.1	372.5	710.6	0.2
Djibouti	15.9	1,075.6	n.a.	n.a.	n.a.	0.8
Eritrea	15.9	2,689.9	n.a.	n.a.	n.a.	4.2
St. Lucia	15.3	679.4	n.a.	n.a.	n.a.	0.2
Guinea-Bissau	14.2	771.3	87.6	792.2	879.8	1.5
Antigua and Barbuda	13.5	611.8	n.a.	n.a.	n.a.	0.1
Grenada	11.7	596.6	n.a.	n.a.	n.a.	0.1
Samoa	11.6	761.9	n.a.	n.a.	n.a.	0.2
Solomon Islands	10.4	576.4	n.a.	n.a.	n.a.	0.5
Cape Verde	9.6	1,906.9	n.a.	n.a.	n.a.	0.5
Comoros	8.9	753.2	n.a.	n.a.	n.a.	0.8
St. Kitts and Nevis	8.9	398.7	n.a.	n.a.	n.a.	0.0
Seychelles	8.8	728.6	n.a.	n.a.	n.a.	0.1
St. Vincent and the Grenadines	8.3	512.8	n.a.	n.a.	n.a.	0.1
Dominica	8.2	308.2	n.a.	n.a.	n.a.	0.1

Table 2. PPP-GDP, International Investment Position, and Population by Member (concluded)
(In millions of SDRs, unless otherwise indicated)

	Actual Quotas 1/	PPP-GDP 2002-04	International Investment Position 2/			Population 3/ 2004
			Assets	Liabilities	Assets plus Liabilities	
Maldives	8.2	1,631.9	n.a.	n.a.	n.a.	0.3
Timor-Leste	8.2	n.a.	n.a.	n.a.	n.a.	0.9
Sao Tome and Principe	7.4	164.4	n.a.	n.a.	n.a.	0.2
Tonga	6.9	540.4	n.a.	n.a.	n.a.	0.1
Bhutan	6.3	1,809.5	n.a.	n.a.	n.a.	2.1
Kiribati	5.6	154.1	n.a.	n.a.	n.a.	0.1
Micronesia, Fed. States of	5.1	n.a.	n.a.	n.a.	n.a.	0.1
Marshall Islands	3.5	n.a.	n.a.	n.a.	n.a.	0.1
Palau, Republic of	3.1	n.a.	n.a.	n.a.	n.a.	0.0

Source: Finance Department.

1/ For the three countries that have not yet consented to and paid for their quota increases, Eleventh Review proposed quotas are used. Includes ad hoc increases for China, Korea, Mexico, and Turkey.

2/ Average 2000–04.

3/ In millions.

4/ Includes China, P.R., and Hong Kong, SAR.

**Table 3. PPP-GDP, International Investment Position, and Population—Shares in Global Totals by Member
(In percent)**

	Actual Quotas 1/ 2/	PPP-GDP 2002-04	International Investment Position 3/			Population 2004
			Assets	Liabilities	Assets plus Liabilities	
United States	17.078	20.706	20.448	24.578	22.584	4.661
Japan	6.120	6.792	8.643	4.494	6.497	2.018
Germany	5.980	4.487	8.796	7.836	8.300	1.304
France	4.937	3.212	8.031	7.113	7.556	0.951
United Kingdom	4.937	3.160	14.392	13.732	14.050	0.939
China 4/	3.719	14.472	n.a.	n.a.	n.a.	20.748
Italy	3.243	2.994	3.493	3.357	3.423	0.916
Saudi Arabia	3.211	0.567	n.a.	n.a.	n.a.	0.378
Canada	2.928	1.894	1.689	1.921	1.809	0.504
Russia	2.733	2.522	0.779	0.660	0.717	2.271
Netherlands	2.373	0.896	4.190	4.067	4.126	0.256
Belgium	2.117	0.569	2.664	2.190	2.419	0.164
India	1.912	5.721	0.274	0.402	0.340	17.153
Switzerland	1.590	0.422	4.108	2.822	3.443	0.114
Australia	1.488	1.081	0.863	1.442	1.163	0.315
Mexico	1.449	1.824	0.286	0.920	0.614	1.668
Spain	1.402	1.853	1.935	2.375	2.162	0.673
Brazil	1.396	2.672	0.321	0.939	0.640	2.902
Korea	1.346	1.665	0.624	0.766	0.697	0.752
Venezuela	1.222	0.253	0.208	0.183	0.195	0.415
Sweden	1.101	0.464	1.134	1.214	1.175	0.142
Argentina	0.973	0.826	0.375	0.412	0.394	0.605
Indonesia	0.956	1.592	0.128	0.406	0.272	3.473
Austria	0.861	0.479	0.951	0.992	0.972	0.129
South Africa	0.859	0.957	0.238	0.250	0.244	0.745
Nigeria	0.806	0.282	n.a.	n.a.	n.a.	2.031
Norway	0.768	0.336	n.a.	n.a.	n.a.	0.073
Denmark	0.755	0.327	0.862	0.872	0.867	0.085
Iran	0.688	0.897	n.a.	n.a.	n.a.	1.086
Malaysia	0.683	0.468	0.185	0.205	0.195	0.393
Kuwait	0.635	0.076	n.a.	n.a.	n.a.	0.041
Ukraine	0.631	0.523	0.026	0.075	0.051	0.741
Poland	0.629	0.831	0.146	0.331	0.242	0.608
Finland	0.581	0.281	0.596	0.761	0.682	0.083
Algeria	0.577	0.388	n.a.	n.a.	n.a.	0.511

Table 3. PPP-GDP, International Investment Position, and Population—Shares in Global Totals by Member (continued)
(In percent)

	Actual Quotas 1/2/	PPP-GDP 2002-04	International Investment Position 3/		Population 2004	
			Assets	Liabilities plus Liabilities		
Turkey	0.548	0.910	0.170	0.425	0.302	1.140
Iraq	0.546	n.a.	n.a.	n.a.	n.a.	0.443
Libya	0.517	0.110	n.a.	n.a.	n.a.	0.091
Thailand	0.497	0.896	0.158	0.278	0.220	1.005
Hungary	0.477	0.287	0.072	0.203	0.140	0.160
Pakistan	0.475	0.640	0.039	0.101	0.071	2.442
Romania	0.474	0.307	0.037	0.067	0.053	0.344
Egypt	0.434	0.508	n.a.	n.a.	n.a.	1.146
Israel	0.427	0.266	0.212	0.286	0.250	0.104
New Zealand	0.411	0.172	0.112	0.243	0.180	0.063
Philippines	0.404	0.680	0.082	0.173	0.129	1.288
Portugal	0.399	0.366	0.540	0.672	0.608	0.165
Singapore	0.397	0.203	1.153	0.875	1.009	0.067
Chile	0.394	0.314	0.145	0.220	0.184	0.254
Ireland	0.385	0.277	2.999	2.864	2.929	0.064
Greece	0.378	0.418	0.231	0.430	0.334	0.175
Czech Republic	0.377	0.314	0.135	0.164	0.150	0.161
Colombia	0.356	0.564	0.077	0.138	0.108	0.709
Bulgaria	0.294	0.116	0.028	0.042	0.035	0.123
Peru	0.293	0.274	0.043	0.107	0.076	0.435
United Arab Emirates	0.281	0.205	n.a.	n.a.	n.a.	0.068
Morocco	0.270	0.233	0.040	0.078	0.060	0.489
Bangladesh	0.245	0.495	0.007	0.048	0.028	2.197
Congo, Dem. Republic of	0.245	0.074	n.a.	n.a.	n.a.	0.881
Zambia	0.225	0.018	n.a.	n.a.	n.a.	0.181
Serbia	0.215	0.073	n.a.	n.a.	n.a.	0.118
Sri Lanka	0.190	0.140	n.a.	n.a.	n.a.	0.325
Belarus	0.178	0.116	0.004	0.012	0.008	0.155
Ghana	0.170	0.089	n.a.	n.a.	n.a.	0.342
Kazakhstan	0.168	0.191	0.029	0.060	0.045	0.234
Croatia	0.168	0.092	0.037	0.059	0.048	0.072
Slovak Republic	0.164	0.142	0.036	0.049	0.043	0.085
Zimbabwe	0.162	0.064	n.a.	n.a.	n.a.	0.204
Trinidad and Tobago	0.154	0.029	n.a.	n.a.	n.a.	0.021
Vietnam	0.151	0.394	n.a.	n.a.	n.a.	1.312

Table 3. PPP-GDP, International Investment Position, and Population—Shares in Global Totals by Member (continued)
(In percent)

	Actual Quotas 1/2/	PPP-GDP 2002-04	International Investment Position 3/			Population 2004
			Assets	Liabilities	Assets plus Liabilities	
Cote d'Ivoire	0.149	0.049	0.012	0.039	0.026	0.282
Sudan	0.145	0.134	n.a.	n.a.	n.a.	0.561
Uruguay	0.141	0.054	0.037	0.039	0.038	0.054
Ecuador	0.139	0.095	0.008	0.063	0.036	0.206
Syrian Arab Republic	0.135	0.122	n.a.	n.a.	n.a.	0.293
Tunisia	0.132	0.136	0.012	0.073	0.044	0.158
Angola	0.132	0.063	0.010	0.048	0.029	0.244
Luxembourg	0.128	0.054	6.526	6.027	6.268	0.007
Uzbekistan	0.127	0.084	n.a.	n.a.	n.a.	0.410
Jamaica	0.126	0.020	n.a.	n.a.	n.a.	0.042
Kenya	0.125	0.080	n.a.	n.a.	n.a.	0.528
Qatar	0.121	0.039	n.a.	n.a.	n.a.	0.012
Myanmar	0.119	0.151	n.a.	n.a.	n.a.	0.789
Yemen, Republic of	0.112	0.033	0.014	0.016	0.015	0.321
Slovenia	0.107	0.073	0.029	0.032	0.031	0.031
Dominican Republic	0.101	0.112	0.006	0.027	0.017	0.133
Brunei Darussalam	0.099	0.016	n.a.	n.a.	n.a.	0.006
Guatemala	0.097	0.098	n.a.	n.a.	n.a.	0.194
Panama	0.095	0.039	0.059	0.078	0.069	0.050
Lebanon	0.093	0.042	n.a.	n.a.	n.a.	0.056
Tanzania	0.091	0.043	n.a.	0.028	0.015	0.594
Oman	0.089	0.069	n.a.	n.a.	n.a.	0.040
Cameroon	0.085	0.073	n.a.	n.a.	n.a.	0.253
Uganda	0.083	0.070	0.003	0.013	0.009	0.439
Bolivia	0.079	0.043	0.008	0.029	0.019	0.142
El Salvador	0.079	0.054	0.010	0.024	0.017	0.107
Jordan	0.078	0.045	n.a.	n.a.	n.a.	0.088
Bosnia-Herzegovina	0.078	0.039	n.a.	n.a.	n.a.	0.062
Costa Rica	0.075	0.075	0.011	0.021	0.016	0.067
Islamic Republic of Afghanistan	0.074	0.046	n.a.	n.a.	n.a.	0.373
Senegal	0.074	0.033	0.003	0.013	0.008	0.180
Azerbaijan	0.074	0.053	0.008	0.025	0.017	0.132
Gabon	0.071	0.017	n.a.	n.a.	n.a.	0.021
Georgia	0.069	0.024	n.a.	n.a.	n.a.	0.071
Lithuania	0.066	0.076	0.012	0.025	0.019	0.054

Table 3. PPP-GDP, International Investment Position, and Population—Shares in Global Totals by Member (continued)
(In percent)

	Actual Quotas 1/2/	PPP-GDP 2002-04	International Investment Position 3/			Population 2004
			Assets	Liabilities	Assets plus Liabilities	
Cyprus	0.064	0.030	0.075	0.066	0.071	0.013
Namibia	0.063	0.025	0.004	0.006	0.005	0.032
Bahrain	0.062	0.025	0.235	0.206	0.220	0.011
Ethiopia	0.061	0.096	n.a.	n.a.	n.a.	1.193
Papua New Guinea	0.060	0.025	n.a.	n.a.	n.a.	0.091
Bahamas, The	0.060	0.011	n.a.	n.a.	n.a.	0.005
Nicaragua	0.060	0.035	n.a.	n.a.	n.a.	0.085
Honduras	0.060	0.036	n.a.	n.a.	n.a.	0.111
Liberia	0.059	n.a.	n.a.	n.a.	n.a.	0.051
Latvia	0.058	0.045	0.015	0.024	0.020	0.037
Moldova	0.057	0.014	0.002	0.006	0.004	0.067
Madagascar	0.056	0.026	n.a.	n.a.	n.a.	0.286
Iceland	0.054	0.017	0.021	0.037	0.029	0.005
Mozambique	0.052	0.042	n.a.	n.a.	n.a.	0.306
Guinea	0.049	0.032	n.a.	n.a.	n.a.	0.145
Sierra Leone	0.048	0.008	n.a.	n.a.	n.a.	0.084
Malta	0.047	0.014	0.037	0.032	0.035	0.006
Mauritius	0.047	0.027	n.a.	n.a.	n.a.	0.019
Paraguay	0.046	0.048	0.007	0.010	0.009	0.095
Mali	0.043	0.024	0.003	0.009	0.006	0.207
Suriname	0.042	0.005	n.a.	n.a.	n.a.	0.007
Armenia	0.042	0.021	0.002	0.005	0.004	0.048
Guyana	0.042	0.006	n.a.	n.a.	n.a.	0.012
Kyrgyz Republic	0.041	0.018	0.002	0.006	0.004	0.082
Cambodia	0.040	0.055	0.008	0.009	0.008	0.218
Tajikistan	0.040	0.013	n.a.	n.a.	n.a.	0.101
Congo, Republic of	0.039	0.007	n.a.	n.a.	n.a.	0.061
Haiti	0.038	0.027	n.a.	n.a.	n.a.	0.133
Somalia	0.038	n.a.	n.a.	n.a.	n.a.	0.140
Rwanda	0.037	0.021	0.001	0.004	0.002	0.140
Burundi	0.035	0.009	0.000	0.000	0.000	0.115
Turkmenistan	0.035	0.058	n.a.	n.a.	n.a.	0.101
Togo	0.034	0.016	0.001	0.005	0.003	0.094
Nepal	0.033	0.067	n.a.	n.a.	n.a.	0.420
Fiji	0.032	0.009	n.a.	n.a.	n.a.	0.013

Table 3. PPP-GDP, International Investment Position, and Population—Shares in Global Totals by Member (continued)
(In percent)

	Actual Quotas 1/ 2/	PPP-GDP 2002-04	International Investment Position 3/			Population 2004
			Assets	Liabilities	Assets plus Liabilities	
Malawi	0.032	0.013	n.a.	n.a.	n.a.	0.199
Macedonia, FYR	0.032	0.027	n.a.	n.a.	n.a.	0.032
Barbados	0.031	0.008	n.a.	n.a.	n.a.	0.004
Niger	0.030	0.019	0.000	0.005	0.003	0.213
Estonia	0.030	0.035	0.012	0.025	0.019	0.021
Mauritania	0.030	0.012	n.a.	n.a.	n.a.	0.047
Botswana	0.029	0.030	0.021	0.006	0.013	0.028
Benin	0.028	0.015	0.003	0.005	0.004	0.129
Burkina Faso	0.028	0.028	0.001	0.004	0.003	0.202
Chad	0.026	0.019	n.a.	n.a.	n.a.	0.149
Central African Republic	0.026	0.008	n.a.	n.a.	n.a.	0.063
Lao, People's Dem. Republic	0.024	0.020	n.a.	n.a.	n.a.	0.091
Mongolia	0.023	0.009	n.a.	n.a.	n.a.	0.041
Swaziland	0.023	0.010	0.004	0.002	0.003	0.016
Albania	0.022	0.027	n.a.	n.a.	n.a.	0.049
Lesotho	0.016	0.009	n.a.	n.a.	n.a.	0.028
Equatorial Guinea	0.015	0.027	n.a.	n.a.	n.a.	0.008
Gambia, The	0.014	0.005	n.a.	n.a.	n.a.	0.023
Belize	0.009	0.004	n.a.	n.a.	n.a.	0.004
San Marino	0.008	n.a.	n.a.	n.a.	n.a.	0.000
Vanuatu	0.008	0.001	0.001	0.001	0.001	0.003
Djibouti	0.007	0.003	n.a.	n.a.	n.a.	0.012
Eritrea	0.007	0.007	n.a.	n.a.	n.a.	0.067
St. Lucia	0.007	0.002	n.a.	n.a.	n.a.	0.003
Guinea-Bissau	0.007	0.002	0.000	0.003	0.002	0.024
Antigua and Barbuda	0.006	0.002	n.a.	n.a.	n.a.	0.001
Grenada	0.005	0.002	n.a.	n.a.	n.a.	0.002
Samoa	0.005	0.002	n.a.	n.a.	n.a.	0.003
Solomon Islands	0.005	0.001	n.a.	n.a.	n.a.	0.007
Cape Verde	0.004	0.005	n.a.	n.a.	n.a.	0.008
Comoros	0.004	0.002	n.a.	n.a.	n.a.	0.012
St. Kitts and Nevis	0.004	0.001	n.a.	n.a.	n.a.	0.001
Seychelles	0.004	0.002	n.a.	n.a.	n.a.	0.001
St. Vincent and the Grenadines	0.004	0.001	n.a.	n.a.	n.a.	0.002
Dominica	0.004	0.001	n.a.	n.a.	n.a.	0.001

Table 3. PPP-GDP, International Investment Position, and Population—Shares in Global Totals by Member (concluded)
(In percent)

	Actual Quotas 1/ 2/	PPP-GDP 2002-04	International Investment Position 3/		Population 2004
			Assets	Liabilities	
Maldives	0.004	0.004	n.a.	n.a.	0.005
Timor-Leste	0.004	n.a.	n.a.	n.a.	0.015
Sao Tome and Principe	0.003	0.000	n.a.	n.a.	0.002
Tonga	0.003	0.001	n.a.	n.a.	0.002
Bhutan	0.003	0.005	n.a.	n.a.	0.033
Kiribati	0.003	0.000	n.a.	n.a.	0.001
Micronesia, Fed. States of	0.002	n.a.	n.a.	n.a.	0.002
Marshall Islands	0.002	n.a.	n.a.	n.a.	0.001
Palau, Republic of	0.001	n.a.	n.a.	n.a.	0.000

Source: Finance Department.

1/ For the three countries that have not yet consented to and paid for their quota increases, Eleventh Review proposed quotas are used.

2/ Includes ad hoc increases for China, Korea, Mexico, and Turkey.

3/ Average 2000–04.

4/ Includes China, P.R., and Hong Kong, SAR.