I. INTRODUCTION

1. **The report of the Executive Board to the Fund's Board of Governors on the increases in quotas of Fund members under the Eleventh General Review reaffirmed the view of the Interim Committee that the quota formulas should be reviewed following the completion of that review.**[1] Accordingly, in 1999 the Managing Director requested 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 if appropriate. This Quota Formula Review Group (QFRG) recently submitted its report to the Executive Board. As called for in the Terms of Reference of the Review of the Quota Formulas, this commentary presents the staff's views on the report.

2. **The report of the Quota Formula Review Group (QFRG) addresses many of the complex issues that the Executive Board has discussed over the years regarding the role, structure, and content of the quota formulas**. The QFRG has made a proposal for a new formula which involves a major simplification and updating of the formula to enhance transparency and to take account of changes in the world economy. Adoption and implementation of the QFRG proposal could have significant implications for the distribution of quotas with important consequences for members' financial relations with, and governance of, the IMF.

3. **This commentary presents the staff's views on the QFRG's approach and indicates areas where further work is required on a number of key conceptual and data related issues.** The remainder of this paper is organized as follows. Section II provides background on how quota formulas have been utilized in the past and how a reformed formula would need to be introduced in the future. Section III discusses the method used by the QFRG to derive a new quota formula, including the role that the different functions of quotas should play in quota formulas and the specific criteria that might be used to guide any changes in the quota formulas. Section IV assesses the quota formulas proposed by the QFRG, discusses data-related issues, and presents the results of mechanically applying an incomplete version of the QFRG formula to the data ending in 1994 that were used for the Eleventh Review. Section V discusses the next steps that could be undertaken by the staff.

II. ROLE OF QUOTA FORMULAS

4. **Since the IMF's inception, the quota formulas have been used primarily to help guide decisions regarding the size and distribution of members' actual quotas**. In recent years, the calculated quotas derived from the formulas have served to distribute a portion of the quota increases in the context of general quota reviews, to determine the initial quotas of

[1] *Selected Decisions and Selected Documents of the International Monetary Fund*, Twenty-Fourth Issue, June 30, 1999, p. 723.

new members, and to guide ad hoc quota increases to a portion of the membership.[2] The quota formulas affect members' actual quotas and thus members' financial relationships with the IMF and, through the effect on voting power, members' role in IMF decision making and representation on the Executive Board.

5. **In practice, however, the role of the quota formulas in determining actual quotas and quota share adjustments has been quite limited**. Thus, quota increases in the context of general reviews have been distributed largely on the basis of a uniform proportionate increase in actual quotas, and the selective element based on calculated quotas has been provided to all members (Box 1). The convergence of actual quotas toward the calculated quotas as measured by the formulas has therefore been quite modest, reflecting (i) the Executive Board's view that general quota reviews should provide all members with an adequate increase in quota; (ii) a general reluctance to make politically difficult quota share adjustments; and (iii) widespread dissatisfaction with formulas that were viewed as overly complex, lacking in transparency and unrepresentative of actual conditions in the world economy. Moreover, even in those cases where it was decided to provide ad hoc or special increases in quotas to a subset of the membership, the role of the quota formulas has been limited. During the Eleventh Review (1999) of quotas, a portion of the quota increase was distributed solely to members that were considered to have quotas seriously out of line with their relative position. However, in other cases where ad hoc quota increases have been provided to some members, the formulas and/or calculated quotas played little or no role.

6. **The question therefore arises as to what role quota formulas might have in any future realignment of quota shares in the Fund. Such changes in actual quota shares can only be brought about through one of three methods**:

- decreases in quotas for certain members, which, under the Articles of Agreement, can only be done with the member's consent;[3]
- ad hoc quota increases for a subset of members (outside a general quota review); or
- nonproportional quota increases for all members within the context of a general increase in quotas.

The probability of the first of these possibilities—rearranging quota shares through selected voluntary reductions of absolute quotas—would appear to be exceedingly small. The second possibility—ad hoc increases in absolute quotas—may be feasible if it involved a relatively small number of members which were judged to be clearly disadvantaged under the current quota distribution. However, in any significant realignment of quota shares through ad hoc

[2] Quota formulas are not mentioned in the Articles. While the Executive Board has agreed to modifications in the formulas, it has not formally adopted any formula(s). The Board does not need to take any formal decision in considering the QFRG's proposals.

[3] An increase in a member's quota requires the member's consent as well.

Box. How Quota Shares Can be Adjusted

In the past, the Fund has adjusted quota shares within the context of general reviews and on an ad hoc basis outside of general reviews. In either case, an 85 percent majority of voting shares is needed to change quotas. Adjustments in quota shares have tended to take place within general reviews, usually in the context of an urgent need for resources on the part of the Fund. This reflects the fact that it has been easier to reach agreement if all members receive an increase in quotas. Agreement is more difficult to reach when only a subset of members receives an increase, as the quotas of all other members would remain unchanged and their quota shares would decline.

General increases. Increases in quotas during general reviews consist of two elements: (1) an equiproportional element which is distributed to all members according to their shares of actual quotas; and (2) a selective element which is distributed to either all members or a subset of members. The selective element is used to attain a change in quota shares among members. For any overall increase in quotas, the larger the selective increase, the greater the redistribution of quotas. In practice, the selective component has tended to be relatively small (usually under 50 percent). Both the list of members eligible for a selective increase and the way of apportioning the selective element can be based on the Executive Board's judgement or on the quota formulas. The formulas determine calculated quotas, which can play a role in determining which members receive a selective increase and how it is apportioned.[1] The following examples illustrate the methods used.

> During the Sixth Review in 1976, the Executive Board decided to double the quota share of the major oil exporters with the stipulation that the collective share of all the developing countries should not fall. The decision was based on the Executive Board's judgement that such a reallocation would strengthen the Fund's liquidity. The quota formulas played no role in identifying the members' eligible for the selective increase.
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> Under the recently-concluded Eleventh Review, 25 percent of the quota increase was selective. The quota formulas helped determine each member's share of the selective increase as follows: (1) 15 percent of the total increase (three-fifths of the selective element) was distributed to all members; (2) in addition, 10 percent of the total increase was distributed to those countries whose ratio of calculated to actual quotas was considered to be most "out of line".[2]

Ad hoc increases. A member can request an adjustment of its quota at any time, in which case the Executive Board must, after consulting with the member, report to the Board of Governors.[3] Ad hoc quota increases can occur both within and outside the context of a general review. In recent years, they have tended to occur within a general review. As with selective increases, both the quota formulas and the Executive Board's judgement have played a role in determining the amount of the ad hoc adjustment. The following are examples.

> Five members (France, Iran, Egypt, Paraguay and the Philippines) received ad hoc increases between 1947 and 1959. The main factor underlying these increases was the view that the initial quotas of these members at the time of the Bretton Woods conference had been set at unduly low levels. Between 1959 and 1969, the quotas of another nine countries were adjusted on an ad hoc basis. All of the foregoing increases occurred outside the context of a general review.
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> Since 1969, there have been only three ad hoc increases in quotas outside the framework of a general review. Ad hoc increases in the quotas of China in 1980 and of Cambodia in 1994 were associated with the resumption of active relations of these members with the Fund, given the fact that China's quota had never been increased and Cambodia's quota had not been increased since 1970. Saudi Arabia received an ad hoc increase in 1981. A major factor underlying Saudi Arabia's ad hoc increase was the desire to strengthen the Fund's liquidity position. For each of the post-1969 cases, the quota formulas played a role in determining the extent of the ad hoc increase.
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> Japan received an ad hoc increase within the Ninth General Review. In this case, the seven largest countries agreed to redistribute quota increases among themselves in such a manner that the quota increases for the rest of the membership were unaffected.[4] The quota formulas were not used to reallocate the quota shares of these countries.

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[1] Since the Eighth Review in 1982/83, all members have received a selective increase so that each member has received an increase comprised of an equiproportional element and a selective element that reflected a member's share in calculated quotas.

[2] The Executive Board determined that "out of line" should apply to those countries with ratios of calculated to actual quotas above unity. Thirty-eight members met this criterion.

[3] Under Article III, Section 2, the Fund "may if it thinks fit, consider at any other time the adjustment of any particular quota at the request of the member concerned".

[4] As a result of this redistribution among the seven largest industrial countries to accommodate an ad hoc increase in the quota of Japan, the new quotas for Germany and Japan were equalized, as were the quotas of France and the United Kingdom (ranked just below those of Japan and Germany), and adjustments were made to the quotas of the United States, Canada, and Italy so that the total quotas for the seven countries as a group was maintained unchanged.

increases for a substantial subset of the membership, all other members would see their quota shares decline without a compensating increase in the absolute amount of their respective quota, which might represent a formidable obstacle to obtaining the 85 percent majority required for the approval of any quota increase.

7. **In practice, it has proved easier to rearrange quota shares through the third method, i.e., within the context of a general quota increase. However, such a general increase would appear to be some way off.** The next general quota review is scheduled to be completed by early 2003 and the strength of the Fund's current and prospective liquidity position does not provide a basis for advancing the timing of the next general review.[4] In these circumstances, the staff believes that consideration should be given to a work program, based on the QFRG report, that focuses on the conceptual underpinnings for a formula, with a view to deriving a formula that could form the basis for a broadly acceptable rearrangement of quotas shares within the context of a future general increase in quotas.

8. **The staff notes that the QFRG's desire to focus on conceptual issues has led to its reluctance to undertake quota calculations based on its proposed formula**. The experience of previous quota formula reviews and quota negotiations suggests that a premature focus on outcomes can detract from a reasoned consideration of first principles on which quota shares should be based. On the other hand, quota shares are a highly sensitive issue for members, and the acid test for any formula is that it must produce results that are reasonable and widely accepted. Therefore, staff believes that full and judicious consideration of the QFRG recommendation would call for quantification of the distribution of quota shares which would result from it.

9. On this basis, and because of numerous inquiries from Executive Directors regarding the implications of the QFRG's proposed quota formula for the quota distribution, **this commentary includes a quantification of an incomplete version of the proposal based on the data base from the Eleventh Review, which ends in 1994 and does not include data for all required variables**. In particular, the quantification does not include the variability of net long-term capital flows, which represents a major innovation of the proposal. Once a data base is assembled for all required variables, with series extending to the end of the 1990s, it would be possible to examine in detail the quota distribution resulting from the QFRG's proposed formula. While at this point it is difficult to judge the effort that would be required to assemble such a data base, staff would caution Directors that such an endeavor will entail

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[4] The Twelfth General Review of Quotas is to be completed by January 30, 2003, five years after the conclusion of the Eleventh Review. At least one year prior to the time when a general review of quotas is to be completed, the Executive Board must appoint a Committee of the Whole to study the matter and report to the Board of Governors. However, it is possible to extend the completion date of a review, as was done during both the Ninth Review (by two years and three months) and the Tenth Review (by one year and nine months). Moreover, as under the Tenth Review, quotas do not have to be increased in a general review.

a very substantial and resource-intensive effort that, even if begun forthwith, would be unlikely to bear significant fruit for some time.

III. SELECTION OF A QUOTA FORMULA: GENERAL CONSIDERATIONS

A. Normative Approach

10. **The QFRG has taken a "normative" approach to reforming the quota formulas** based on *a priori* criteria for assessing alternative proposals rather than deriving formulas which produce a particular outcome (¶84).[5] However, successful implementation of a normative approach requires a broad consensus among diverse constituencies. The QFRG has also undertaken extensive econometric analysis in an effort to determine the factors that have driven actual quotas over time, and has also investigated (including through hypothetical simulations) the degree and pace of convergence of actual to calculated quota shares over time (Chapter V). However, this empirical work has not been used in support of the QFRG's conclusions and recommendations. Instead, based on the criteria which it has outlined, the QFRG has recommended a single linear formula with only two variables.

11. **A normative approach has a number of attractions, even if a quota formula is to be judged ultimately on the calculated quota distribution it produces.** First, it elicits a reasoned examination of the principles on which quotas should be based. Second, it calls for a clear statement of the ultimate objectives to be achieved by the quota structure, while allowing for separate consideration of the pace at which to approach such a structure. Third, it allows for the reform to be forward looking and to provide a formula that is more likely to stand the test of time. Finally, it avoids some of the problems associated with the "positive" approach of trying to find a formula which explains current quotas, including, as the QFRG econometric analysis demonstrates, the difficulty of econometrically fitting present quotas to purely economic variables when such quotas have also been determined by judgmental or political factors which are very difficult to quantify.

12. **Under a normative approach, the Board would continue to decide the speed at which the actual quota distribution would move toward a new distribution of calculated quotas.** While, as the QFRG notes, "provision can be made for convergence toward any chosen quota formula over a period of time" (¶112), it should be noted that, to the extent that quota share redistributions are made within the context of general quota increases, the pace of convergence would be faster, the larger are: (i) the proportion of a quota increase which is allocated selectively (i.e., according to the formula) and; (ii) the size of the overall quota increase. Also, since calculated quotas evolve over time, a rate of "convergence" which is too slow could in fact result in a further divergence of the actual and calculated quota distributions.

[5] Paragraph references are to the QFRG Report.