IMF Voting Reform: Need, Opportunity and Options

Paper for the G24 Technical Meeting, 12 March 2007

David Woodward, nef (the new economics foundation)[1]

February 2007

[1] The author is very grateful to Peter Chowla of the Bretton Woods project, for his invaluable assistance in sharing his calculations of quotas and votes under different reform options, which have been used as the basis for the assessments in Sections 6-9 of this paper, and to his colleagues Stephen Mandel and Stephen Spratt for assembling the data required for Section 12.

Introduction

The primary purpose of this paper is to assess the alternative options available for voting reform in the IMF from the perspective of developing countries, as a first step towards establishing a common developing country position in the current (and future) Quota Reviews. It assesses each of the major options against a number of criteria, developing and using statistical indicators wherever possible.

While it is primarily a technical paper, however, the political nature of the underlying objective requires it to extend beyond a purely technical analysis. In order to establish criteria and to make an assessment of the available options, it therefore also considers:

- the reasons underlying the need for voting reform;
- the political and institutional obstacles to voting reform, and to the establishment of a common position among developing countries; and
- a possible long-term political strategy for developing countries, as a broader context for their short-term positioning.

1. Asymmetry in Voting Weights in the IMF

The Fund's economically weighted voting system is a central feature of its governance structure. Each country's vote is equal to a quota, based on its weight in the global economy (which also determines its financial contribution to, and access to borrowing from, the Fund), and a basic vote which is equal for every country. This was a (rather unequal) compromise between two factions at the Bretton Woods Conference, respectively preferring a one-member-one-vote system and voting based purely on the size of each country's economy.

While basic votes significantly increase the votes of a few very small economies compared with a purely quota-based voting system, the failure to increase their relative size since 1944, while Fund quotas have increased by a factor of 37 and membership only by a factor of four, has greatly reduced their significance (Buira, 2003c). Basic votes currently account for just 2.1% of the votes in the IMF, compared with 11.3% originally (IMF, 2003a, Table 4). The relative decline in the basic vote "has substantially shifted the balance of power in favour of large-quota countries.... Consequently, the voice of small countries in discussions has been substantially weakened and their participation in decision-making made negligible" (Buira, 2003c, p15).

The result of the weighted voting system is that the developed countries[2], which account for 20% of Fund members and 15% of the world's population, have a substantial majority (60.4%) of the votes. The developing countries, by contrast, are seriously under-represented relative to their share both of membership of population. The whole of Sub-

[2] The term "developed countries" is used throughout to mean the USA, Canada, Western Europe, Japan, Australia and New Zealand. The term "high-income countries" is used according to the World Bank definition. Other countries in this category include Hong Kong, Israel, Korea, Kuwait, Macao, Saudi Arabia, Singapore, Slovenia and the United Arab Emirates.

Saharan Africa has only 4.6% of the votes in the Fund, fewer than the US, Japan, Germany, France or the UK, while Luxembourg (population 500,000) has twice as many votes as Ethiopia (population 70,000,000).

The weighted voting system also gives the US alone, and any four other G7 members acting together without the US, sufficient votes to block policy decisions in the 18 areas requiring a qualified majority of 85% of the votes. The use of such vetoes is by no means unknown:

> Special majorities have been used to block decisions supported by an absolute majority of votes on increases in the size of the IMF (that is, quota increases) and on SDR allocations, sales of the IMF's vast gold holdings and policies on access to IMF resources. The special-majority requirement has had the effect of inhibiting the discussion of even the important and difficult issues.
>
> (Buira, 2003c, p18)

By contrast, all Sub-Saharan African countries (including South Africa) and all other low-income countries (including India), though accounting for nearly one-third of the Fund's membership and 40% of the world's population, together have only 8.3% of the vote – little more than half of what would be required to block a vote on the most stringent qualified majority requirement.

2. Additional Sources of Asymmetry Related to Weighted Voting

The inequality in power between developed and developing countries in the Executive Board resulting from the weighted voting system is compounded by a number of other features of the Board's operation.

2.1 Constituencies

Representation on the Executive Boards of the Fund and the Bank substantially reflects the weighted votes of the members. The holders of the five largest IMF quotas – the US, Japan, Germany, France and the UK – are entitled to appoint their own Executive Directors in both the Fund and the Bank. Other Directors are "elected" by the Board of Governors every two years at the Annual Meetings, through a constituency system (although there are currently three countries – China, the Russian Federation and Saudi Arabia – which each forms a constituency in its own right in the Bank and the Fund, and is consequently able to "elect" its own Executive Director).

Voting power analysis indicates that the weighted voting system gives the US greater power even than its share of votes. Leech and Leech (2003) estimate the US voting power as 20.4% in the Board of Governors and 21.5% in the Executive Board, compared with a voting share of 17.1%. The voting power of all other countries and of all other Executive Directors is found to be less than their respective voting weights.

Many developing countries are in constituencies which also include developed countries – and their relative voting power within these constituencies is diminished by the weighted voting system. The under-representation of developing countries is thus further exacerbated by the inability of Executive Directors to split their votes, particularly as "the Director's position will normally reflect that of his country or the majority of the votes in the constituency" (Buira, 2003c), and developed countries also tend to dominate the position of Executive Director by virtue of their larger votes. Thus the Commonwealth Caribbean countries are represented by a Canadian Director in a constituency overwhelmingly dominated by Canada and Ireland, while Kazakhstan, Belarus and Turkey are represented by a Belgian Director in a constituency dominated by EU members.

In all but one such "mixed" (developed/developing country) constituencies, high-income countries have both the largest single vote and an absolute majority of the total constituency votes, in three cases exceeding 90% of the total (Rustomjee, 2005). The sole exception is the constituency including Spain, Venezuela and Mexico. As a result, eleven Executive Directors are currently from developed countries, two from other high-income countries, five from upper-middle-income countries, four from lower-middle-income countries, and only two from low-income countries. Directors representing only high-income countries, or constituencies dominated by them, account for 66.7% of the total votes.

A large proportion of the membership is entirely disempowered by the constituency system. Applying voting analysis, Leech and Leech (2003) find that, even if constituencies operated on a democratic basis, the need to cast votes as a single block would leave 41 countries (22.3% of the membership, with 4.4% of the votes in the Fund and 5.5% in the Bank) entirely powerless. Three of these (Portugal, Ireland and Greece) are developed countries; the remaining 38 are developing countries.

Even in the case of constituencies made up entirely of developing countries, there is generally a mix of income levels, circumstances and interests among the members, making coordination of positions even within the constituency a complex, time-consuming and potentially intractable task. This is again exacerbated by the very small votes attributable to developing (especially low-income) countries, which requires a considerable number of countries to establish sufficient votes to form a viable constituency.

Thus the countries of Sub-Saharan Africa (except Ghana) are divided between two constituencies, with 24 and 19 members respectively. The former, though the largest constituency, also has the smallest share of votes by a substantial margin, at 1.41%. The latter has a larger vote (3.00%) largely by virtue of South Africa and Nigeria being members. However, this creates a potential tension between the interests of South Africa, as an upper-middle-income emerging market economy with 29% of the constituency vote, Nigeria as a large low-income oil exporter with 27% of the vote, and 17 other mostly low-income and oil-importing countries with a total of 44% of the vote.

While constituency practices vary, large constituencies may also limit the ability of elected Directors to hold the management and staff to account, through the rotation of the Directorship among member countries. This usually occurs every two or four years depending on the constituency, while staff and Management typically remain in position for longer. This gives the latter the additional advantages of greater continuity, stronger and longer-standing networks and greater familiarity with the institution.

2.2 Asymmetric Accountability

While Executive Directors are appointed (or "elected") by, and effectively cast the votes of, particular member countries in the Executive Boards, "there are virtually no mechanisms for holding an elected Director to account within the IMF itself, or among the members of a constituency, once a Director has been elected" (Woods and Lombardi, 2006). Moreover, while an appointed Directorship remains within the control of the appointing government, "a member that elected or helped to elect an executive director has no right to terminate his service" (Gold, 1974).

More generally, according to the IMF's Chief Counsel, Executive Directors are not representatives of these countries, but rather officials of the Fund or Bank.

> The fact that [an Executive Director] has been selected by certain member states does not create an obligation for him to defer to their views or to cast his vote in accordance with their instructions.
>
> (Gianviti, 1999, p48)

Appointed Directors, however, typically receive (and follow) instructions on the positions they should take in Board meetings from the governments which appoint them, and face the sanction of removal (as well as risks to future career prospects, since most are career public servants). While some elected Directors (notably the Director for the Scandinavian-Baltic constituency) also receive instructions from their constituents, in practice they have much greater discretion in how they interpret (and whether they follow) such instructions; and consultation with constituency members is often informal and sporadic, making the representation of constituents' interests and views much more indirect and less assured (Woods and Lombardi, 2006).

Since all appointed Directors are from developed countries, the different relationship of appointed and elected Directors to the governments which appoint and elect them further shifts the balance of representation away from developing countries (and other developed countries), as their interests are less directly and reliably represented.

2.3 Workload and Resources

A further important consideration for Executive Directors with constituencies including a substantial number of developing countries is workload, as Directors and their staffs have considerable additional responsibilities in relation to programme/project negotiations and reviews, staff missions and country-specific Board discussions. While staffing levels to some extent reflect the number of countries in each constituency, they do not take

account of the very different nature and intensities of IMF and World Bank relationships with different countries (Rustomjee, 2005).

As a result,

> those Directors each representing 20 countries or more are barely able to attend to the copious amounts of bilateral business with the IMF of the countries they represent.... This provides little time to devote to the consideration of systemic policy issues.
>
> (Buira, 2003a, p233)

While this constraint may have been eased to some extent by the appointment in 2003 of an additional three technical advisers to each of the two African Executive Directors' offices, it is unclear how effectively this has resolved the problem.

The workload issue makes it particularly difficult for Directors whose very limited votes make them dependent on moral suasion and building a compelling case to undertake the analysis and networking with other Board members necessary to do so (Rustomjee, 2005). An appointed Director for a developed country, by contrast, has a comparatively minimal workload arising from constituency business, and generally considerably more technical support from his or her authorities, allowing a much more substantive and considered input into policy discussions.

2.4 Coordination

A major consideration in the political dynamics of the Executive Board – as in other decision-making bodies – is coordination between groups of Directors; and this further increases the inequality between developed and developing countries, as coordination among developing countries is more limited, less cohesive and less effective than that of the G7 and the EU (Woods and Lombardi, 2006). The developing country Executive Directors to the Fund meet periodically as the "Group of 11" (G11), to discuss their respective positions, and their Governors also meet informally at the Spring and Annual Meetings. However, the Group's ability to coordinate its position is limited by the heterogeneity of developing countries interests on many issues, compounded by problems of workload and intra-constituency coordination (Woods and Lombardi, 2006). In total, the G11 Directors account for only 30.4% of the votes in the IMF, and in order to secure even a simple majority in the Board would need, not only to be unanimous in their position, but also to secure the support of at least five of the other six non-G7 Directors.

3. Systemic Inertia

As well as disempowering IMF's developing country membership, the weighted voting system also gives rise to a major problem of systemic inertia, as those countries on which it confers power are able to use that power to preserve those aspects of the system which benefit them. This is particularly problematic in a context where the beneficiaries have a substantial absolute majority of the total votes, and the most powerful single player has a *de facto* veto over any decision which would substantially change the distribution of power.

Thus

> However clear the argument, the obstacles to achieving [institutional reform] are very significant indeed. Meaningful change can only be made with the consent of the industrial countries, which hold a majority of the voting power in the IMF Executive Board and of course in the IMF Board of Governors. And these members currently see little benefit in changing the status quo.
>
> (Rustomjee, 2005)

Rustomjee (2005) cites as an example the completion of the Twelfth Quota Review in 2003 without increasing quotas (or therefore making any progress in correcting quota imbalances), which, he argues "highlights the considerable inertia in the quota and voting process and the reluctance of the largest shareholders to make changes to the quota and voting arrangements". He concludes:

> All potential options require political consensus among the membership and the preservation of the factors to which creditors attach significant importance, including the principle of creditor majority, the US and European veto power and relative ranking among creditors.
>
> (Rustomjee, 2005)

As Buira observes,

> The challenge is... to overcome the vested interests and resistance of major industrialised countries to giving up control, and of some others to giving up certain 'acquired rights', particularly regarding voting power and representation on the Executive Board.

Such “acquired rights” include, for example, the *ad hoc* quota increase in 1983, which selectively doubled the quotas (and thus nearly doubled the votes) of major oil exporting countries in the light of the 1970s oil price increases, and the decisions to allow Saudi Arabia, China and Russia, though not entitled to appointed Executive Directors, to form constituencies in their own right, and thus have their own "elected" Directors.

The quota system, and in particular the extent of discretion available to the Executive Board and the use of weighted votes in the setting of quotas, is central to this inertia, as the Executive Board exercises a considerable degree of discretion in setting new quotas.

Despite the use of formulae in quota reviews, their outcome is less the product of a technical exercise than of a political bargaining process among the major members. Thus, for example, the last change in quotas, in 2003, resulted in the UK and France each having exactly 107,635 votes, and Canada and China exactly 63,942 votes, while the Ninth General Quota Review in 1990 gave Germany and Japan equal votes. These are not merely the coincidental results of a set of objective calculations, but rather the carefully managed result of political negotiations between the governments concerned, none of which was willing to accept a result which gave it fewer votes than another member with which its government felt it should (at least) have parity.

This phenomenon, of quotas being politically determined, but justified *ex post* by reference to ostensibly neutral formulae specifically designed to produce the intended result, dates back to the origins of the Fund. Raymond Mikesell, who produced the formula for the initial allocation of quotas in 1943 (which is still one of the five formulae in use today, and from which the other four differ only in the relative weights of different variables), received instructions from chief US negotiator Harry Dexter White

> to give the United States a quota of approximately $2.9 billion; the United Kingdom (including its colonies), about half the U.S. quota; the Soviet Union an amount just under that of the United Kingdom; and China, somewhat less, [and for] the total of the quotas to be about $10 billion.
>
> (Mikesell, 1994, p22)

Mikesell duly followed these instructions, later recalling that, when asked how the figures were arrived at,

> I... gave a rambling twenty-minute seminar on the factors taken into account in calculating the quotas, but I did not reveal the formula. I tried to make the process appear as scientific as possible, but the delegates were intelligent enough to know that the process was more political than scientific.
>
> (Mikesell, 1994, pp 35-6)

In principle, a large enough block of developing country members would be able to block a quota review if it were not in their interests. However, the size of the block required would be much greater for smaller and poorer than for larger and better-off developing countries. Thus a coalition of the nine largest "emerging" economies in terms of IMF votes (China, Russia, India, Brazil, Venezuela, Mexico, Argentina, Indonesia, South Africa and Korea), acting together, could in principle prevent a quota review from securing the requisite 85% majority. By contrast, the entire of Sub-Saharan Africa (excluding South Africa, whose interests in this respect are closer to those of the "emerging markets") has only one-quarter (3.72%) of the 15% of votes required for a blocking majority, and all low-income countries (excluding India, for similar reasons) less than one-third (4.91%). By contrast, as noted above, even a coalition of all Sub-Saharan and all low-income countries (including India and South Africa) would have little more than half the votes required (8.3%).

It is noteworthy in this context that the resolution of the Board of Governors on developing countries' voice and votes was approved against the opposition of 23 countries accounting for 9.6% of the votes. This is more opposition than could have been mustered by unanimous opposition by all Sub-Saharan and low-income countries.

Even if those adversely affected by the weighted voting system could, in principle, assemble a large enough coalition to block a quota review, the situation is complicated by the multi-functional nature of IMF quotas, in simultaneously determining voting power, access to lending, and financial contributions to the two agencies, because of the incentives this creates for developed and developing countries with respect to quotas, as discussed in Section 13.1 below.

The problem of political inertia is illustrated by the resistance by major shareholders to efforts to protect or restore the level of basic votes. While the issue of the erosion of basic votes has been recognized as a source of concern in the IMF since the Eighth Quota Review in 1983, only now are there signs that it is being even partially addressed. It should also be noted that even doubling the basic vote to 4.2% of the total, as pledged at the 2006 Annual Meetings, would leave it well below its level when concern was first expressed about the issue (5.6%).

The 23-year delay in addressing the issue of the erosion of basic votes appears to be a direct result of opposition from major developed countries whose domination of voting would be somewhat reduced as a result. Thus in 2003, the then US Executive Director to the World Bank wrote:

> We reject the proposal to increase the number of basic votes…. The increase in developing countries' share of votes… would do more harm than good and, in our view, would be inconsistent with the principle that shares in the IFIs [international financial institutions] should reflect economic weights in the world economy…. Giving population and other factors a weight in voting strength would create a radically different, less desirable and non-financial structure for the Bank.
>
> (Brookins, 2003, quoted in Wade, 2005)

4. The Need and Opportunity for Reform

IMF voting reform is a critically important issue for the developing world. The dominance of developed countries within the Fund largely determines the nature of its activities, which in turn influences the nature of the international financial system and its implications for development (in terms of the availability, stability and cost of external financing, the effectiveness of crisis avoidance and response, etc). Through its central role both in establishing the principle of conditionality and in determining the way in which it has been applied (in general and in individual programmes), the Fund's voting structure also has major implications for economic and social policies in countries which borrow from the Fund. For some developing countries, notably in Sub-Saharan Africa, borrowing from the Fund, and therefore the IMF role in policy-making, has been more or less continuous for 20-25 years.

IMF voting reform is also important as a precedent. Although there is no formal link, changes in voting weights in the World Bank have historically followed those in the IMF. Moreover, the strength of criticism of the WTO's decision-making processes (eg Jawara and Kwa, 2004), and the highly problematic course of the current round of trade negotiations, arguably make the WTO an institution in search of a viable governance structure. If a solution could be found for the IMF which combined the smaller and more effective decision-making structure of the Fund's Executive Board with an appropriate balance of power between developed and developing countries (and between developing regions and country groupings), it could in principle provide a more viable alternative model for the international trading system.

The current IMF Quota Review, scheduled for completion by January 2008 provides a major opportunity for reform, with substantial changes more firmly on the agenda perhaps than ever before. The issue of governance reform in the IMF and World Bank is also receiving much greater attention than in the past, as a result, partly of the Quota Review, but also of other developments, such as the controversial appointment (in effect by the US government, following historical "tradition") of Paul Wolfowitz as President of the World Bank, and the divided vote on the "voice and vote" resolution at the 2006 Annual Meetings.

The financial problems facing the IMF, as a result of the reluctance of many developing countries to accept IMF conditionality, also provides an important opportunity, both in terms of public awareness of the issue, but also more directly. Together with the large and growing foreign exchange reserves of many emerging market economies, notably in Asia, and major oil exporting countries, this makes a scenario in which major economies "walk away" from the Fund both a possibility and a threat to its continued operation, at least in its current form. This possibility would probably be viewed with serious concern by developed country governments, who value the IMF in part as a means of exerting policy pressure on developing countries, and particularly successful emerging market economies. Perhaps for the first time in its history, at least some developing countries are in a position to create a credible and viable alternative to the IMF; and this gives them the potential for considerable negotiating power, if they are willing to use it.

The position of supporters of democratic reform is further strengthened by the growing role and rhetoric of parts of the international community in relation to democracy. As well as the commitment of developed countries to democratic principles domestically, the IMF and World Bank are placing increasing emphasis on the importance of "good governance" in developing countries; and the US, in particular, regularly refers to an objective of "spreading democracy" in defence of its foreign policy. The stark contrast of the democratic principles they observe, and claim to promote internationally, with the lack of democracy in the system they seek to defend (and from which they benefit) internationally, is potentially a major weakness in their position. Moreover, the principles of democracy are well understood, and almost universally accepted among electorates in developed countries, so that this weakness is much easier to exploit in order to generate public pressure than on more technical economic issues such as debt cancellation or trade policies.

The implications of these considerations are discussed further in Section 14.1.

5. Reform and Assessment Criteria

The following sections assess a number of options for voting weights in the IMF. These are divided between:

- the *minimal* commitment following the 2007 IMF Annual Meeting in Singapore: continuation of current quotas, with *ad hoc* adjustments for four countries (China, Korea, Mexico and Turkey), together with a doubling of the basic vote;

- a larger increase in the basic vote, considering three alternative levels (11.3%, 25% and 50% of total votes);
- alternative quota formulas (those proposed by the Cooper Commission, the European Union, and Ariel Buira);
- proposals based on democratic principles (votes directly proportional to population, or to the square or cube root of population, and alternative splits between a basic vote and a population-weighted vote); and
- the "mixed" approach proposed by Mirakhor and Zaidi (2006), which combines a modified quota with two basic votes, based respectively on a one-country-one vote principle and direct proportionality to population.

In the sections which follow, each of the above proposals is assessed, using the first (the minimal post-Singapore scenario as a baseline for comparison

Much of this assessment is necessarily subjective in nature. However, in order to make the assessment as rigorous as possible, a number of specific criteria are proposed, and statistical indicators have been developed to assess the proposals against these criteria wherever possible. These criteria and indicators are outlined in the remainder of this section.

5.1 Congruence with democratic principles

A key feature of any system of governance is the extent of its conformity with basic principles of democracy. Here we propose that the standards applied should be those commonly accepted in democratic processes at the country level. These can be divided into three broad principles:

(a) representation broadly proportional to population, through either:
  - division of the population into approximately equal groups, usually by geographical area, each of which has an equal number of representatives (eg the US Congress or the UK House of Commons); or
  - division of the population into unequal groups, each with a number of representatives approximately proportional to its population;

(b) equal representation between historically or culturally defined geographical areas, irrespective of population (eg the US Senate); and

(c) pooling of votes from all geographical areas on an equal basis (eg US Presidential elections).

At the international level, (b) is also used in the United Nations system and (in principle) the WTO. Another option also arises at the international level (for example in the European Union), between (a) and (b):

(d) votes varying broadly in line with population, but increasingly less than proportionally, or with a minimum number of votes per country, so that smaller

countries have a share of the vote greater than their population share, and larger countries have a share less than their share of population, possibly with additional protection offered by a veto for every country.

In the following sections, each option is assessed, first, according to the proportion of the vote which is based explicitly on one or more of these principles; and second, according to the extent to which its outcomes conform to the implications of the principles. The latter is judged by a **"democratic shortfall"**, defined as 100% minus the proportion of the vote which is explicitly based on one-member- or one-person-one vote principles, minus the remaining proportion of the vote multiplied by the correlation coefficient between countries' residual votes and their population.

5.2 Adequate representation for all individual countries

A second important consideration is that every country should have adequate representation to enable it to have a potential influence on decisions. Rigorous assessment of this requires a voting power analysis, which is beyond the scope of the present paper (and would in any case depend critically on the exact composition of constituencies). Discussion is therefore necessarily indicative rather than definitive.

In our assessment, we consider as indicators the smallest share of the vote of any country, and those at the 90^{th} and 80^{th} percentiles.

5.3 Avoidance of domination by one country or country grouping

A third criterion is that no one country or small group of countries should be able to determine the outcome of decisions, to the exclusion of others, including by veto power, unless this is shared on an equal basis. (NB how many countries constitute a "small" group in this context is a matter of subjective judgment.)

In order to assess options against this criterion, the following indicators are applied:

- the shares of the vote attributable to the G7 and the EU (as the most pro-active country groupings in terms of coordination of IMF positions) and of the OECD; and
- the smallest number of countries required to achieve a majority (50%+1) of the votes, or a blocking majority on major policy issues (15%+1).

5.4 Proportionality of difference between countries

A further factor for consideration is the scale of differences between the votes of different countries between the top and the bottom of the scale. Again, this is a matter of subjective judgment, requiring consideration of what is likely to be accepted as equitable and/or politically feasible.

In order to provide a basis for such a judgement, two indicators are used:

- the inter-quartile range of country votes produced by each option; and
- in the case of population-based voting systems, the inter-quartile range of votes divided by the ratio between the populations of the countries concerned.

(The latter is considered an unreliable indicator in the context of quota-based systems, as the ranking of countries does not correspond with population rankings. This means that the value of this indicator is critically dependent on which countries are located at the 25th and 75th percentiles.)

Asymmetries in the differentiation of votes at the top and bottom of the scale are also considered on an *ad hoc* basis where these are substantial.

5.5 Appropriate balance between "creditor" and "borrowing" countries

While the Fund began as a credit union, all of whose members were both creditors and potential borrowers, as it has expanded and evolved, its membership has become polarized between a group of (developed and other high-income) creditors and actual or potential (low- and middle-income) borrowers. (See Section 13.2.) On many issues, such as the size of the Fund and the terms and conditions of lending, there are fundamental differences of interest between these two groups. This dichotomy makes the question of the balance of power between the two groups a fundamental consideration.

What represents an appropriate balance between "creditor" and "borrowing" countries is again a matter for subjective judgment, which may be guided by different principles. We therefore consider three indicators under this heading (taking high-income countries as a proxy for structural creditors, and low- and middle-income countries as a proxy for borrowers): the proportion of votes accounted for by high-income countries; and the ratio of the average vote of high-income countries relative to low- and middle-income countries on a *per country* and a *per capita* basis.

5.6 Adequacy of representation for all country groups

Among "borrowing" countries in particular, there are also important sub-groups affected by the Fund's activities and operations in different ways. This is partly a product of eligibility for the Fund facilities currently available (eg the PRGF and the HIPC Initiative). While these are in turn a product of the current voting system, they are nonetheless a useful way of considering this issue, as a reflection of more fundamental divisions between countries with different needs in terms of their levels of development and financial situations (particularly in terms of liquidity versus solvency problems).

Adequacy of representation for each category is important to ensure that decisions applying to a particular group of countries (eg those eligible for a particular facility) have a sufficient influence over decisions to ensure that they take full account of their concerns and interests.

Here, we consider four indicators – the proportion of votes attributable to:

- countries in principle eligible for the HIPC Initiative
- countries eligible for the PRGF but not for the HIPC Initiative;
- low- and middle- income countries not eligible for the PRGF; and
- transition economies (defined as countries in Eastern Europe and the Former Soviet Union).

Each of these indicators is considered in relation to the share of each group in the membership of the IMF and the total population of IMF member countries, and to the 15% vote required to block major policy decisions. In the last case, however, it should be noted that both HIPC countries and transition economies have a population share well below 15% (at 8.7% and 6.3% respectively), the former also constituting slightly less than 15% of the membership (14.7%).

5.7 Symmetry of constituencies

If we take as given the Executive Board structure (or more generally the need for a decision-making body representing the whole membership, but without all members having their *own* representatives), the nature of the constituency system which can be supported with a particular distribution of votes is also of importance. This is highlighted by the considerations of work-load and asymmetric accountability discussed above.

This paper takes this to require the possibility of combining three potentially conflicting features:

- relative equality of voting shares between constituencies;
- relative equality of workloads between Directors (taken to imply relative equality between constituencies in terms of numbers of countries); and
- all constituencies containing few enough countries to allow each Director to be effectively accountable to all constituents.

To assess the symmetry of constituencies, we assume implicitly that the membership is divided into constituencies which are as equal as possible in size. This is done as follows.

- Country votes are placed in descending order.
- If the largest vote is greater than one-twenty-fourth of the total (assuming an Executive Board of the current size), the country concerned is designated as a **"single-country constituency"**.
- The largest vote is deducted from the total, which is divided by 23, to establish the average size of the remaining constituencies.
- The second largest vote is compared with the resulting figure. If larger, the country concerned is again designated as a "single-country constituency".
- This process is repeated, until the next country's vote is less than the calculated average for the remaining constituencies.

- Countries other than "single-country constituencies" which have a vote greater than half the average for all such countries are designated as **"constituency-dominant countries"**.
- Finally, the cumulative total of votes is estimated, starting from the bottom of the distribution, to determine at what point it reaches one-twenty-fourth of the total. This indicates the maximum number of countries which could be required to form a constituency of average size.

From this process, three indicators are used to assess the extent of asymmetry in the constituency system:

- the number of "single-country constituencies";
- the number of "constituency-dominant countries"; and
- the maximum number of countries required to form a constituency of average size.

5.8 Broad acceptability to developing countries

The above criteria assess the *appropriateness* of alternative voting systems. However, if the objective is to establish a common position among a broad coalition of developing countries, then its acceptability among their governments is a key consideration.

In part, this will be influenced by the overall effects of each proposal, as assessed by the criteria outlined in sections 6.1 to 6.7. However, the effects on each individual country's vote is also likely to be a significant consideration in its support or opposition to a particular proposal. Acceptability is therefore assessed on the basis of:

- the number of countries whose votes would be reduced;
- their total share in world population (as an indicator of the extent to which exclusion from a consensus would weaken its legitimacy); and
- their total share in current IMF votes (as an indicator of the effect on a potential coalition's voting power in the current Quota Review).

Consideration is also given to the potential political significance of countries which are negatively affected to a hypothetical coalition of developing countries.

5.9 Other political considerations

The final consideration is an assessment of the political factors which may contribute to or impede the approval of a particular option. This includes the total votes represented by countries which would be negatively affected. It should be noted that this necessarily skews this criterion towards the interests of those countries which have the greatest votes within the system as it currently operates.

Thus, if the self-interest of individual countries were the sole determinant of their support or opposition to a particular option, then any change which reduced the share in the total votes of countries with a total vote in excess of 15% would be considered infeasible. This necessarily includes any proposal which would reduce the share of the vote of the US, or shifts votes significantly away from high- or middle-income (but not low-income) countries.

It should be noted, however, that the concept of political feasibility is also, in some respects, more complex than the other criteria, as it may change significantly over time, as political attitudes and dynamics change. As awareness of the issue rises, the strength of morally-based criteria such as democracy and institutional effectiveness may increase relative to national self-interest. This process could be significantly enhanced by activities of the G24, international NGOs, etc, over the course of the current quota review.

The indicator used here for political is the total proportion of votes held by countries whose votes would be lower under a particular option than in the *status quo*. This is accompanied by a qualitative discussion of other factors which may strengthen or weaken opposition to or support for a particular proposal.

6. The Singapore Baseline

The agreement reached at Singapore on the Quota Review process is presented here as a baseline for comparison of the other options. This represents the status quo ante, modified by ad hoc quota adjustments for four countries (China, Korea, Mexico and Turkey), together with a doubling of the share of the basic vote, from 2.1% of the total vote to 4.2%.

The results of the assessment of the baseline are summarised in Table 6.1.

Table 6.1: Post-Singapore (Baseline) Scenario: Summary Indicators

		Baseline	*Memo*	
			% of population	*% of members*
Democratic principles	Explicit democratic link (%)	*4.2*		
	"democratic shortfall" (%)	*62.7*		
Individual country representation	Smallest vote (%)	*0.02*		
	90th percentile vote (%)	*0.03*		
	80th percentile vote (%)	*0.05*		
Non-dominance	G7 vote (%)	*43.7*	*11.3*	*3.8*
	EU vote (%)	*31.7*	*7.7*	*14.7*
	OECD vote (%)	*63.2*	*18.3*	*16.3*
	Countries for 15% +1	*1*		
	Countries for 50% +1	*9*		
Proportionality	Inter-quartile range	*7.8*		
	IQR relative to population	*1.2*		
Debtor/creditor balance	High-income country vote (%)	*65.3*	*15.4*	*21.2*
	HIC/LMIC per country (ratio)	*7.0*		
	HIC/LMIC ratio relative to population	*10.3*		
Country group representation	HIPC vote (%)	*3.1*	*8.7*	*21.7*
	Other PRGF vote (%)	*5.7*	*29.6*	*20.7*
	Other developing countries vote (%)	*26.0*	*46.3*	*36.4*
	Transition economies vote (%)	*7.7*	*6.3*	*14.7*
Symmetrical constituencies	single-country constituencies	*6*		
	constituency-dominant countries	*7*		
	Maximum countries for average constituency	*84*		

6.1 Congruence with democratic principles

The explicitly democratic component of the vote in the current IMF system is limited to the basic vote, which is allocated equally to all countries. Under the minimal Singapore commitment, this will be doubled from 2.1% of the total vote to 4.2%. While quotas are significantly correlated with population, the correlation coefficient following the *ad hoc* quota increases approved for four countries in Singapore is relatively low at 0.346. This indicates a democratic shortfall, as defined above, of 62.7%.

6.2 Adequate representation for all individual countries

The smallest vote in the IMF at present is that of Palau, at 0.02%. Those at the 90th and 80th percentiles are respectively 0.03% for Grenada and 0.05% for the Central African Republic.

6.3 Avoidance of domination by one (or a few) country(s)

The voting system in the baseline scenario is heavily dominated by developed country groupings. The OECD has a substantial overall majority of the vote, at 63.2%, and the G7 alone has 43.7%. (This is further increased by the fact that both G7 member countries without the right to appoint their own Directors occupy the Board seat for their constituencies on a permanent basis.) The 27 members of the EU have 31.7% of the total vote. The US alone has sufficient votes to block votes requiring an 85% majority; and the nine largest votes (those of the G7 members, plus Saudi Arabia and China) are sufficient for an absolute majority.

6.4 Proportionality of difference between countries

The inter-quartile range of votes in the post-Singapore scenario is higher than most of the alternative proposals, at 7.8. While the inter-quartile range relative to population is an unreliable indicator for systems based on economic weighting, as discussed above, the figure of 1.21 is again higher than most proposed alternatives.

6.5 Appropriate balance between "creditor" and "borrowing" countries

The current system weights votes strongly in favour of "creditor" countries. The high-income countries together have a substantial majority (65.3%) of the votes. The average high-income country's vote is 7.0 times that of the average low- or middle-income country, and their average vote per capita is 10.3 times as great.

6.6 Adequacy of representation for all country groups

All developing country groupings considered (HIPCs, other PRGF-eligible countries, non-PRGF LMICs and transition economies) are under-represented relative to their respective shares of the membership, and all but the last are under-represented relative to

their shares of population. (Transition economies account for 6.3% of population, but 7.7% of the vote.)

HIPCs and other PRGF countries are most seriously under-represented, with just 3.1% and 5.7% of the vote respectively. This means that, even together, they have little more than half the votes needed to block a vote under the most stringent special majority requirement (8.8% compared with 15%), despite making up 42.4% of the membership and accounting for 38.3% of population. HIPCs are under-represented by a factor of seven relative to their share of the membership, and by a factor of nearly three relative to population. Other PRGF countries are under-represented by a factor of nearly four relative to membership, and more than five relative to population

6.7 Symmetry of constituencies

As discussed above, the current constituency system is very asymmetric, seven countries having their own Directors. Abstracting from the current constituencies, and applying the indicators outlined in the previous sectors to the post-Singapore distribution of votes, indicates six "single-country constituencies" and a further seven "constituency-dominant countries", together accounting for more than half the Board places. It would take the smallest 84 countries – 46% of the entire membership – to make up a single average-sized constituency.

6.8 Overall Assessment

Even with the *ad hoc* quota adjustments agreed in Singapore, and a doubling of the basic vote, the current system is skewed heavily in favour of "creditor" countries as a whole, and the developed countries in particular. Both groups have a substantial absolute majority of the votes, as does the OECD, and "creditor" countries are over-represented relative to borrowing countries by a factor of 7-10. The US, and the US alone, has a veto over major policy decisions.

At the other end of the scale, it would take nearly half the Fund's members with the smallest votes to form a single constituency with an average vote. All PRGF countries combined, though accounting for around 40% both of the membership and of total population and being most affected by many of the Fund's decisions, have only 8.8% of the votes, far short of what is needed to block a decision on the most stringent special majority requirement.

This indicates a very serious inconsistency with democratic principles and outcomes, captured by the estimated "democratic shortfall" of 62.7%.

7. Increased Basic Votes

The proposal is that the basic vote should be increased beyond the doubling to which the Fund is currently committed. Three options are considered:

(a) an increase to 11.3% of the total vote (ie a return to the original 1944 ratio between basic votes and quotas);

(b) an increase to 25% of the total vote, as an intermediate option; and

(c) an increase to 50% of the total vote (ie parity between basic votes and quotas).

The effect of increasing the share of basic votes is broadly to increase the votes of countries with below-average quotas, and to reduce those of countries with above-average quotas, with the greatest effect on those with the smallest quotas. This has the effect of

- reducing the voting share of developed countries as a whole, and of all developed country groupings;
- increasing the voting shares of developed countries as a whole, and all of all developing country groupings except for OPEC; and
- narrowing considerably the gap between the countries with the smallest and the largest votes.

The indicators for this option are summarised in Table 7.1. The effects of other levels of basic votes can broadly be interpolated or extrapolated from these results.

7.1 Congruence with democratic principles

Increasing the basic vote represents a movement towards democratic principles (in the form of the Westphalian principle), but stops well short of achieving a democratic outcome. The relationship with population is confined to the (relatively limited) statistical relationship between quotas and population.

The shift towards congruence with democratic principles is relatively small. Applying the correlation coefficient between post-Singapore quotas and population (0.346) to the share of the quota-based vote indicates a reduction in the "democratic shortfall" from 62.7% in the baseline scenario only to 58.0% at 11.3%, and 49.0% at 25%. Only when the basic vote is increased to 50% does the democratic shortfall fall substantially (to 32.7%).

Table 7.1: Increased Basic Votes: Summary Indicators

		baseline	11.3%	25%	50%	memo:	
						% of population	% of members
Democratic principles	Explicit democratic link (%)	*4.2*	11.3	25	50		
	"democratic shortfall"	*62.7*	58	49	32.7		
Individual country representation	Smallest vote (%)	*0.02*	0.06	0.14	0.27		
	90th percentile vote (%)	*0.03*	0.07	0.14	0.27		
	80th percentile vote (%)	*0.05*	0.08	0.16	0.28		
Non-dominance	G7 vote (%)	*43.7*	40.7	35	24.6	11.3	3.8
	EU vote (%)	*31.7*	30.4	28	23.6	7.7	14.7
	OECD vote (%)	*63.2*	59.7	53	40.7	18.3	16.3
	Countries for 15% +1	*1.0*	1	2	3		
	Countries for 50% +1	*9.0*	11	15	34		
Proportionality	Inter-quartile range	*7.8*	4.7	2.8	1.6		
	IQR relative to population	*1.2*	0.73	0.43	0.26		
Debtor/creditor balance	High-income country vote (%)	*65.3*	62	55.7	44.2	15.4	21.2
	HIC/LMIC per country (ratio)	*7.0*	6.1	4.7	2.9		
	HIC/LMIC relative to population	*10.3*	9	6.9	4.4		
Country group representation	HIPC vote (%)	*3.1*	4.5	7.1	12	8.7	21.7
	Other PRGF vote (%)	*5.7*	6.8	8.9	12.8	29.6	20.7
	Other developing countries vote (%)	*26.0*	26.8	28.3	31	46.3	36.4
	Transition economies vote (%)	*7.7*	8.2	9.2	11	6.3	14.7
Symmetrical constituencies	single-country constituencies	*6.0*	5	5	1		
	constituency-dominant countries	*7.0*	8	6	5		
	Maximum countries for average constituency	*84.0*	55	30	16		
Developing country losers	Number of countries		20	20	20		
	% of population		57.9	57.9	57.9		
	% of total votes		25	25	25		
Political feasibility	Total losers		37	37	37		
	% of total votes		81.4	81.4	81.4		
	% of population		71.2	71.2	71.2		

7.2 Adequate representation for all individual countries

Because of its disproportionate effect on countries with the smallest quotas, increasing the basic vote is an excellent option from this perspective. The share of the country with the smallest quota – Palau – in the total triples from 0.02% to 0.06% even in the 11.3% scenario, increasing further to 0.14% in the 25% scenario, and 0.27% in the 50% scenario. However, as the basic vote is increased, so the absolute effect of increasing quotas at the lower end of the scale is reduced, so that the relative increase is reduced still more sharply. Thus the vote at the 80th percentile is only 0.02% higher than the smallest vote with the basic vote at 11.3% or 25%, and only 0.01% higher at 50%. Nonetheless, while this represents a marked reduction in the variation in votes among countries with the smallest quotas, it represents a substantial increase in votes in all cases.

7.3 Avoidance of domination by one (or a few) country(s)

By redistributing votes from countries with the largest quotas to those with the smallest, increasing the basic vote also reduces the dominance of the countries with the largest quotas. The largest single-country share in the vote – that of the US – falls from 16.5% in the baseline to 15.3% in the 11.3% scenario, 13.0% in the 25% scenario, and 8.8% in the 50% scenario. This implies that the US would retain its veto on votes requiring an 85% majority unless the basic vote were increased beyond its original level. While the number of countries required for an overall majority of the votes is increased only slightly in the 11.3% scenario, from nine to 11, and to 15 in the 25% scenario, it increases much more, to 34 with the basic vote at 50%.

The reduction in the voting shares of the major developed country groupings also becomes significant only when the basic vote reaches 50%. The G7's vote is most affected, because of their very large quotas per member. While this falls only from 43.7% to 40.7% with the basic vote at 11.3%, it falls more significantly to 35.0% with the basic vote at 25%, and to 24.6% at 50%. The total vote of the 27 EU members would decline from 31.7% in the baseline scenario to 30.4%, 28.0% and 23.6% in the three scenarios. That of the OECD would fall only from 63.2% to 59.7% with the basic vote at 11.3%, and 53% in the 25% scenario. Only with a basic vote of 50% would the effect of quotas be diluted sufficiently for the OECD to lose its overall majority of the votes, reducing their total voting share to 40.7%

Similarly, the dominance of the developed countries as a whole is diluted, but to a relatively limited extent. The developed countries as a whole would maintain their overall majority of the vote (though reduced from 60.4% to 50.6%) even if the basic vote were increased to 25%; and their total vote would remain at 38.8% even if the basic vote were increased to 50% of the total.

7.4 Proportionality of difference between countries

A major effect of increasing the basic vote is to reduce differences in votes between countries. This effect is substantial even at 11.3%, the inter-quartile range of votes being

reduced from 7.8 in the baseline scenario to 4.7. It is compressed substantially further, to 2.8, at 25%, and to just 1.6 at 50%. The last figure is almost certainly untenable politically and this may also be true of the 25% level.

The extent of this reduction can be further demonstrated by the illustrative country examples shown in Table 7.1. The narrowing within income bands is very pronounced in the 50% scenario. For example, the ratio between India's vote and that of the Solomon Islands is reduced from 69 in the post-Singapore scenario to 27 with the basic vote at 11.3%, 11 at 25%, and 4.5 at 50%. The ratio between China's vote and Cape Verde's is similarly reduced from 137 in the baseline to 7.8 with the basic vote at 50%; and that between the US and Luxembourg from 649 to 26. (It should be noted that the narrowing of the gap becomes more limited as per capita income rises, reflecting increasing quotas, and the consequent reduction in the share of the basic vote in the country's total vote.)

While the ideal ratio is a matter of subjective judgement, the ratio between the respective populations of these pairs of countries (between 650 and 2,500) would seem to suggest that the 25% and 50% scenarios, at least, may narrow the gap between the largest and smallest votes among developing countries at similar income levels further than is justified in terms of proportionality.

While increasing the basic vote also narrows the gap between higher- and lower-income countries with similar population levels, this effect is more limited. (Again, larger quotas in absolute terms mean the effect is in principle most limited in larger countries.) Thus the ratio between the US vote and that of Indonesia is reduced only from 17 to 12 even in the 50% scenario; that between the votes of Germany and Ethiopia from 71 to 11; that between Belgium and Chad from 44 to 4.7; and that between Luxembourg and the Solomon Islands from 5.4 to 1.2.

7.5 Appropriate balance between "creditor" and "borrowing" countries

The vote of the high-income countries is reduced relatively little in the 11.3% and 25% scenarios, from 65.3% in baseline to 62.0% and 55.7% respectively. Only in the 50% scenario does it fall below an overall majority, to 44.2%. Interpolation suggests that an increase in the basic vote to around 37-38% of total votes would be required to attain parity between high-income and low-/middle-income countries countries.

This means that the high-income countries remain substantially over-represented relative to their shares of membership and of population. Their votes per member are 6.1 times those of low- and middle-income countries at 11.3%, 4.7 times at 25%, and 2.9 times even at 50% (reduced from 7.0 in the baseline scenario). Relative to population, their over-representation is reduced from 10.3 in the baseline to 9.0, 6.9 and 4.4 in the three scenarios.

Table 7.2: Increased Basic Votes: Illustrative Countries

Share of Vote															
	11.3%	***25%***	***50%***		***11.3%***	***25%***	***50%***		***11.3%***	***25%***	***50%***		***11.3%***	***25%***	***50%***
India	1.76%	1.57%	1.23%	**China**	3.37%	2.93%	2.14%								
				Indonesia	0.91%	0.85%	0.75%					**US**	15.25%	12.98%	8.83%
Ethiopia	0.12%	0.18%	0.30%	**Egypt**	0.45%	0.46%	0.49%	**Turkey**	0.55%	0.55%	0.55%	**Germany**	5.38%	4.63%	3.27%
Chad	0.08%	0.15%	0.28%	**Tunisia**	0.18%	0.23%	0.34%	**Hungary**	0.49%	0.49%	0.51%	**Belgium**	1.94%	1.73%	1.33%
Solomon Is	0.07%	0.14%	0.27%	**Cape Verde**	0.06%	0.14%	0.27%	**Eq Guinea**	0.07%	0.15%	0.28%	**Luxembourg**	0.18%	0.23%	0.34%

Change in Share of Vote															
India	-0.10%	-0.29%	-0.63%	**China**	-0.23%	-0.67%	-1.46%								
				Indonesia	-0.03%	-0.09%	-0.19%					**US**	-1.20%	-3.47%	-7.62%
Ethiopia	0.03%	0.10%	0.22%	**Egypt**	0.01%	0.02%	0.05%	**Turkey**	0.00%	-0.00%	-0.00%	**Germany**	-0.39%	-1.14%	-2.50%
Chad	0.04%	0.11%	0.24%	**Tunisia**	0.03%	0.09%	0.19%	**Hungary**	0.01%	0.01%	0.03%	**Belgium**	-0.11%	-0.33%	-0.73%
Solomon Is	0.04%	0.11%	0.25%	**Cape Verde**	0.04%	0.11%	0.25%	**Eq Guinea**	0.04%	0.11%	0.24%	**Luxembourg**	0.03%	0.09%	0.19%
Vote Relative to Population															
India	0.10	0.09	0.07	**China**	-0.01	-0.03	-0.07								
				Indonesia	-0.01	-0.02	-0.05					**US**	3.27	2.79	1.90
Ethiopia	0.10	0.16	0.27	**Egypt**	0.01	0.02	0.04	**Turkey**	0.48	0.48	0.48	**Germany**	4.15	3.58	2.52
Chad	0.55	1.01	1.86	**Tunisia**	0.19	0.55	1.20	**Hungary**	3.07	3.12	3.22	**Belgium**	11.82	10.51	8.11
Solomon Is	8.74	18.57	36.51	**Cape Verde**	4.89	14.17	31.09	**Eq Guinea**	9.44	18.58	35.27	**Luxembourg**	24.45	32.37	46.81

7.6 Adequacy of representation for all country groups

As noted above, the voting shares of all developing country groupings except OPEC are increased in all three scenarios. These increases are also broadly proportional to the extent of their current under-representation, with the arguable exception of countries with a population of less than 1 million, whose votes are increased disproportionately. However, even in the 50% scenario, representation of the 40 HIPC-eligible countries (12.0%) and of the 38 non-HIPC PRGF countries (12.8%), though quadrupled and nearly doubled respectively, remains well below the 15% threshold, as does that of the transition economies, at 11.0%. Extrapolation indicates that an increase in the basic vote to around 65% of the total would be required for HIPCs and other PRGF countries to attain the 15% threshold. (Since transition economies represent only 14.7% of the membership, even a 100% basic vote would not give them 15% of the vote.)

It should be noted, however, that the 12.0% of votes attained by the HIPC countries in the 50% scenario, though less than their share of membership (21.7%) is substantially greater than their share in population (8.7%). The same applies to the transition economies. Other PRGF countries remain substantially under-represented relative to population, largely as a result of India's presence in the group.

The total vote of low- and middle-income countries not eligible for the PRGF increases from 30.7% in the baseline scenario to 36.3% with basic votes at 50%. This is in line with their share of membership (36.4%) but less than their share of population (46.3%), largely reflecting China's presence.

7.7 Symmetry of constituencies

By increasing the votes of the countries with the smallest votes, increasing the basic vote helps to make the constituency system less asymmetrical. However, this effect is relatively limited at the top end of the distribution. Using the approach outlined above, the 11.3% option would reduce the number of single-country constituencies only from six in the baseline scenario to five, while increasing the number of dominant countries from seven to eight. The 25% option would reduce the number of dominant countries to six, while leaving the number of single-country constituencies at five. Only in the 50% case would the number of single-country constituencies be reduced substantially (to one); and five dominant countries would remain.

At the other end of the scale, however, the effect would be dramatic. The maximum number of countries required to form an average-sized constituency is reduced from 84 in the baseline scenario to 55 at 11.3%, 30 at 25% and just 16 at 50%.

7.8 Broad acceptability to developing countries

As noted above, all three scenarios for increased basic votes result in increased votes for all developing country groupings considered here, with the exception of OPEC (largely as a result of their high quotas). However, the same is not true of all individual developing countries, as those with relatively high quotas are also adversely affected. As shown in Table 7.2, there are 20 countries in this category. These include, notably, eight OPEC countries, three of them high-income, one other

high-income country (Korea), and a number of the largest middle-income and better-off low-income countries. To summarise geographically, the losers include

- in **Asia**, China, India, Indonesia, Korea and Malaysia;
- in **Latin America**, Brazil, Mexico, Argentina and Venezuela;
- in **Sub-Saharan Africa**, Nigeria and South Africa;
- in **Europe**, Russia, Ukraine, Turkey and Poland; and
- in the **Middle East**, Saudi Arabia, Iraq, Iran, Algeria and Kuwait.

Table 7.3: Increased Basic Votes: Developing Country Losers

	Change in vote:		
	11.3%	**25%**	**50%**
Algeria	-0.003%	-0.007%	-0.016%
Argentina	-0.031%	-0.091%	-0.199%
Brazil	-0.062%	-0.179%	-0.393%
China	-0.230%	-0.667%	-1.464%
India	-0.099%	-0.288%	-0.631%
Indonesia	-0.030%	-0.087%	-0.191%
Iran	-0.011%	-0.031%	-0.067%
Iraq	-0.000%	-0.001%	-0.002%
Korea	-0.058%	-0.169%	-0.370%
Kuwait	-0.007%	-0.020%	-0.043%
Malaysia	-0.010%	-0.030%	-0.065%
Mexico	-0.066%	-0.190%	-0.418%
Nigeria	-0.019%	-0.055%	-0.122%
Poland	-0.006%	-0.018%	-0.040%
Russia	-0.159%	-0.460%	-1.009%
Saudi Arabia	-0.194%	-0.560%	-1.230%
South Africa	-0.023%	-0.067%	-0.146%
Turkey	-0.000%	-0.001%	-0.003%
Ukraine	-0.006%	-0.019%	-0.041%
Venezuela	-0.049%	-0.143%	-0.313%
Total countries	**20**	**20**	**20**

This means that the overwhelming majority of developing countries, and particularly of low- and middle-income countries, gain from increasing basic votes, which in principle provides substantial scope for a developing country coalition. However, while fewer in number than for most other options, the losers include a disproportionate number of countries of particular importance to a politically effective developing country coalition. This represents a significant obstacle to the adoption of this option as the basis for a common developing country position. Since the countries with the largest quotas are worst affected, the losers also account for a large proportion both of votes (25.0% of the total) and of population (57.9%).

7.9 Other political considerations

A key advantage of the basic votes approach is that it is already on the agenda. Not only are the principle of, and mechanisms for, basic votes already in place, but the Fund is already committed to "at least doubling" the share of basic votes in the total. This means that the size of basic votes is automatically part of the negotiation. There are no technical or legal problems, and no data requirements involved. There is also arguably a precedent for increasing basic votes to 11.3% of the total (as the level established at the Fund's foundation), though not beyond.

However, is an important political obstacle is that this option has a systematically negative effect on precisely those countries with the greatest say in the Quota Review – those with the largest quotas. In total, only 37 countries will lose from an increased basic vote, one-fifth of the total membership; but they account for more than four-fifths (81.4%) of the vote – more than any other option considered here.

While the principle of increasing the basic vote has been conceded, it has taken more than 20 years to get to this point; and the commitment to at least doubling the share of votes is likely to be presented as a major concession in itself. A few developed countries may go as far as supporting a move to 11.3%, but they will be a small minority, and seem unlikely to press the case very hard. Importantly, it is only when the basic vote reaches 25% or even 50% that there are substantial benefits to developing countries.

7.10 Overall Assessment

Increasing the basic vote offers significant benefits to developing countries, and especially to those with the smallest votes. However, the effects on developing countries as a whole, on the concentration of power, and on the symmetry of the constituency system become significant only at a basic vote of 25%, and substantial only at 50%. At this level of the vote, however, the dispersion of the vote becomes extremely compressed, and very asymmetrical between the top and the bottom of the quota scale. Politically, there is some impetus behind increasing the basic vote; but, by itself, it would result in reduced votes for a number of very important developing countries.

Increasing the basic vote therefore cannot be considered to provide a complete solution to the problem of IMF voting reform. Nonetheless, the fact that it is on the agenda, and that there are few objective (rather than self-interested) arguments that developed countries can adduce against it, makes it worth considering for inclusion as part of a broader package of demands. Since it can readily be combined with other changes, for example in quota formulae, its inclusion in such a package would not cause any loss of coherence.

8. Alternative quota formulae I: the Cooper and EU Proposals

The Cooper and EU options are those preferred respectively by the US and the European Union.

- The Cooper option is the proposal put forward by the Quota Formula Review Group (QFRG), created in 1999, and chaired by Professor Richard Cooper of

Harvard. It recommends a quota using only GDP and absolute variability of receipts, in a ratio of 2:1.

- The EU option is based on GDP and openness, also in a ratio of 2:1.

Both these options imply an increase in the US quota. However, the US is on the record as having agreed not to increase its share in the total votes in the Fund from its pre-Singapore level. Each option is therefore also considered with the application of such a ceiling.

The results of the assessment of these options are summarised in Table 8.1.

8.1 Congruence with democratic principles

Like the *status quo*, the explicitly democratic component of alternative quota-based approaches is limited to the basic vote, assumed here (for ease of comparison) to be 4.2%, as in the baseline. In addition, quotas based on both the Cooper and the EU approaches are more weakly correlated with population than post-Singapore quotas, increasing their "democratic shortfalls" to 67.7% and 66.1% respectively, compared with 62.7% for the baseline. A ceiling on the US quota share reduces these figures to 62.9% and 62.0%, respectively just above and just below the baseline. Thus, the EU and Cooper approaches represent a further step away from democratic principles, and no significant improvement even with a US quota ceiling.

8.2 Adequate representation for all individual countries

The smallest vote under both approaches is virtually identical to the baseline scenario, at 0.022%, though increasing fractionally to 0.025% with a US quota ceiling. However, the gradient in the bottom quintile of votes is substantially flatter than in the baseline, the vote remaining at only 0.03% in both cases even at the 80th percentile (and even with a US quota ceiling), compared with 0.05% in the baseline scenario. Again, this represents a significant deterioration from the *status quo*.

8.3 Avoidance of domination by one (or a few) country(s)

Both alternative quota formulae result in a substantial further increase in the total vote of the G7, to give them a substantial overall majority (55.4% in the Cooper formula and 57.3% in the EU formula, compared with 43.7% in the baseline). They also increase the total vote of OECD members to more than three-quarters of the total (75.1% and 77.5% respectively, as compared with 63.2%). All these figures remain considerably above baseline levels even with a US ceiling.

The formulae differ, however, in their effects on the EU vote (in the absence of a US ceiling). While the Cooper formula reduces the EU vote from 31.7% to 29.8%, the EU proposal unsurprisingly increases it to 34.0%. A ceiling on the US quota share reverses the reduction under the Cooper formula (resulting in an increase to 33.4%) and accentuates the increase using the EU formula (to 37.3%).

Table 8.1: Cooper and EU Proposals: Summary Indicators

		Baseline	Cooper	EU	*with US ceiling*		*Memo:*	
					Cooper	EU	*% of population*	*% of members*
Democratic principles	Explicit democratic link (%)	*4.2*	4.2	4.2	4.2	4.2		
	"democratic shortfall"	*62.7*	67.7	66.1	62.9	62		
Individual country representation	Smallest vote (%)	*0.02*	0.02	0.02	0.03	0.02		
	90th percentile vote (%)	*0.03*	0.02	0.02	0.03	0.03		
	80th percentile vote (%)	*0.05*	0.03	0.03	0.03	0.03		
Non-dominance	G7 vote (%)	*43.7*	55.4	57.3	50.1	53.1	*11.3*	*3.8*
	EU vote (%)	*31.7*	29.8	34	33.4	37.3	*7.7*	*14.7*
	OECD vote (%)	*63.2*	75.1	77.5	72.2	75.3	*18.3*	*16.3*
	Countries for 15% +1	*1*	1	1	1	1		
	Countries for 50% +1	*9*	5	5	7	6		
Proportionality	Inter-quartile range	*7.8*	8.6	7.8	8.6	7.8		
	IQR relative to population	*1.2*	0.88	0.88	0.88	0.88		
Debtor/creditor balance	High-income country vote (%)	*65.3*	74	76.3	70.9	74	*15.4*	*21.2*
	HIC/LMIC per country (ratio)	*7.0*	10.6	12	9.1	10.6		
	HIC/LMIC relative to population	*10.3*	15.7	17.7	13.4	15.6		
Country group representation	HIPC vote (%)	*3.1*	1.8	1.4	2	1.5	*8.7*	*21.7*
	Other PRGF vote (%)	*5.7*	3.6	3.3	4	3.6	*29.6*	*20.7*
	Other developing countries vote (%)	*26.0*	20.6	19	23.1	20.9	*46.3*	*36.4*
	Transition economies vote (%)	*7.7*	4.9	4.4	5.5	4.8	*6.3*	*14.7*
Symmetrical constituencies	single-country constituencies	*6*	7	9	6	9		
	constituency-dominant countries	*7*	10	8	9	8		
	Maximum countries for average constituency	*84*	103	109	98	104		
Developing country losers	Number of countries		135	146	116	130		
	% of population		54.6	58.6	54.1	58.2		
	% of total votes		30.9	33.2	29.4	32.2		
Political feasibility	Total losers		147	158	128	138		
	% of total votes		53.1	51.2	51.6	40.7		
	% of population		58.3	61.3	57.7	59.2		

Both options result in the US retaining more than 15% of the vote; and both almost halve the number of countries required for an overall majority to five (from nine in the baseline scenario). While this effect is moderated by a US quota ceiling, the number of countries required remains substantially lower than in the baseline at six (EU) or seven (Cooper).

8.4 Proportionality of difference between countries

The inter-quartile range of votes remains unchanged from the baseline level (7.8) in the EU formula, and is increased slightly to 8.6 in the Cooper formula. Coincidentally, the inter-quartile range relative to population is 0.88 in both cases, a reduction from 1.21 in the baseline (although the significance of this indicator for quota-based approaches is limited).

8.5 Appropriate balance between "creditor" and "borrowing" countries

Both the absolute and relative advantage of "creditor" countries is substantially increased by both formulae, with or without a US quota ceiling. The high-income countries' share of the vote is increased further, from 65.3% in the baseline to 74.0% (70.9% with a US ceiling) in the Cooper approach, and still further to 76.3% (74.0% with a US ceiling) in the EU approach.

High-income countries' average vote per country relative to low-/middle-income countries is increased from 7.0 to 10.6 under Cooper, and 12.0 under the EU option (9.1 and 10.6 with a US ceiling). Their over-representation relative to population is increased from a factor of 10.3 to 15.7 (Cooper) and 17.7 (EU), again only slightly moderated by a US quota ceiling (to 13.4 and 15.6 respectively).

8.6 Adequacy of representation for all country groups

Representation of all developing country groups is reduced substantially from the baseline levels in both options, with or without a US quota ceiling, and is consequently substantially further below their respective shares of both population and membership. For HIPCs, the reduction is from 3.1% to between 1.4% and 2.0%; for other PRGF countries from 5.7% to between 3.3% and 4.0%; for transition economies, from 7.7% to between 4.4% and 5.5%; and for non-PRGF countries from 26.0% to between 19.0% and 23.1%. In all instances, the reduction is greater under the EU formula, and less with a US quota ceiling than without it, and pushes the country groups' votes still further below their respective shares in membership and population.

8.7 Symmetry of constituencies

Reflecting the increased polarisation between developed and developing countries, the asymmetry of the constituency system is also increased somewhat from the baseline level. The number of single-country constituencies is increased from six to seven in the Cooper formula and nine in the EU formula, and the number of constituency-dominant countries is increased from seven to ten and eight respectively. While this is unaffected by a US quota ceiling in the EU case, both figures are reduced by one in the Cooper case.

At the other end of the scale, the shallower gradient of votes at the lower end of the distribution also results in substantial increases in the maximum number of countries required to form an average-sized constituency, from 84 in the baseline to 103 for Cooper (98 with a US ceiling) and 109 for the EU (104 with a ceiling). In all cases, this represents a significant majority (between 53% and 59%) of the total membership.

8.8 Broad acceptability to developing countries

Almost all developing countries – between 135 and 146 in total – lose votes using either the Cooper or the EU formula. This is reduced only to 116-130 even with a US quota ceiling. The developing countries adversely affected represent a significant majority (54-59%) of the world population. Despite the current under-representation of most developing countries, they also have sufficient votes (29-33%, in the various scenarios) to block either of these options, provided they can develop and maintain a united position.

8.9 Other political considerations

In principle, these options have a head start politically, in that they are backed by the US and the EU respectively. The Cooper formula also has some advantage in originating with an ostensibly neutral body. (The EU option, conversely, loses credibility through being rather too obviously self-serving.)

However, both options lose considerable credibility by compounding the most conspicuously undemocratic features of the current system, and by imposing losses on a large majority of the membership, including a significant number of developed countries as well as almost the entire developing world. As a result, the only scenario which does not have an adverse effect on countries with a majority of the current vote is the EU formula with a US voting ceiling, which reduces the votes of 138 countries casting 40.7% of the votes. Nonetheless, the strong skewing of the benefits towards those countries which are already most over-represented means that this is the smallest voting share for losing countries of any of the options considered here.

8.10 Overall Assessment

The Cooper and EU formulae actually compound almost all of the problems of the *status quo*, by increasing the over-representation of (most) developed countries at the expense of (almost all) developing countries, increasing the imbalance between creditor countries and borrowing countries, the concentration of power and the asymmetry of the constituency system. Clearly, they do not provide a basis for a common developing country position. Equally clearly, it is important that developing countries unite behind a common position of strong opposition to both of these formulae.

Beyond this, almost all developing countries have a strong shared interest in ensuring that neither of these formulae is used as the starting point for discussion, and especially that the discussion does not degenerate into a debate between these two options. The result of negotiations on this basis would be to lower still further the

starting point for developing countries, who would find themselves having to make concessions even to retain the very limited votes they have at present. This scenario should be avoided at all costs.

9. Alternative quota formulae II: the BUIRA Proposal

Former Mexican Executive Director Ariel Buira has proposed another alternative quota formula, based on GDP at purchasing power parity and volatility, in a ratio of 4:1. As one might expect, in contrast with the Cooper and EU formulae, this has the effect of strengthening rather than weakening the position of developing countries.

The results of the assessment of this option are summarised in Table 9.1.

9.1 Congruence with democratic principles

As with other quota-based proposals, this paper assumes the maintenance of a basic vote equivalent to 4.2% of the total, which is therefore the explicitly democratic component of this option. Unlike the Cooper and EU proposals, however, the Buira quotas are much more closely correlated with population than the post-Singapore distribution. This almost halves the "democratic shortfall" compared with the baseline, from 65.3% to 34.1%. This is lower than any other option considered here which includes the use of quotas, with the exception of an increase in the basic vote to 50% (32.6%).

It should also be noted that the shortfall could be reduced further by combining the use of the Buira quota formula with an increased basic vote – for example to 26.7% with the basic vote at 25% or 17.8% at 50% - and/or the addition of a second basic vote proportional to population.

9.2 Adequate representation for all individual countries

The smallest vote in the Buira proposal is approximately three times that in the baseline, at 0.06% compared with 0.02%. Those at the 90th and 80th percentiles are increased by a larger absolute margin (0.06% in both cases), but in the latter case a smaller relative margin (being doubled rather than tripled). This indicates a substantial increase in representation for those countries with the smallest share of the votes.

9.3 Avoidance of domination by one (or a few) country(s)

While the votes of developed country groupings remain far above their respective shares in the membership and population, they are reduced by between about a quarter and a third from their baseline levels. That of the G7 falls from 43.7% to 33.6%, that of the EU from 31.7% to 19.7% and that of the OECD from 63.2% to 46.8%. However, the US maintains its vote of more than 15%; and the minimum number of countries required for an overall majority increases only from nine to ten, indicating only a modest reduction in the overall concentration of voting power.

Table 9.1: Buira Proposal: Summary Indicators

		Baseline	Buira	*Memo:*	
				% of population	*% of members*
Democratic principles	Explicit democratic link (%)	*4.2*	4.2		
	"democratic shortfall"	*62.7*	34.1		
Individual country representation	Smallest vote (%)	*0.02*	0.06		
	90th percentile vote (%)	*0.03*	0.09		
	80th percentile vote (%)	*0.05*	0.11		
Non-dominance	G7 vote (%)	*43.7*	33.6	*11.3*	*3.8*
	EU vote (%)	*31.7*	19.7	*7.7*	*14.7*
	OECD vote (%)	*63.2*	46.8	*18.3*	*16.3*
	Countries for 15% +1	*1*	1		
	Countries for 50% +1	*9*	10		
Proportionality	Inter-quartile range	*7.8*	3.2		
	IQR relative to population	*1.2*	19.34		
Debtor/creditor balance	High-income country vote (%)	*65.3*	46.4	*15.4*	*21.2*
	HIC/LMIC per country (ratio)	*7.0*	3.2		
	HIC/LMIC relative to population	*10.3*	4.8		
Country group representation	HIPC vote (%)	*3.1*	7.7	*8.7*	*21.7*
	Other PRGF vote (%)	*5.7*	11.8	*29.6*	*20.7*
	Other developing countries vote (%)	*26.0*	34.1	*46.3*	*36.4*
	Transition economies vote (%)	*7.7*	7.8	*6.3*	*14.7*
Symmetrical constituencies	single-country constituencies	*6*	5		
	constituency-dominant countries	*7*	5		
	Maximum countries for average constituency	*84*	44		
Developing country losers	Number of countries		34		
	% of population		13.4		
	% of total votes		18.6		
Political feasibility	Total losers		52		
	% of total votes		74.5		
	% of population		26.3		

9.4 Proportionality of difference between countries

The inter-quartile range of votes under the Buira approach is much lower than any other quota-based option (other than increasing the basic vote), at 3.2, compared with 7.8 in the baseline scenario (and 7.8-8.6 in the Cooper and EU proposals), indicating a marked reduction in the dispersion of votes. However, it remains higher than with a basic vote of 25% or more, or in any population-based approach other than direct proportionality.

9.5 Appropriate balance between "creditor" and "borrowing" countries

The Buira proposal reduces the total vote of the high-income countries below half of the total, from 65.3% in the baseline scenario to 46.4%. However, this remains more than double these countries' share in the IMF membership, and more than triple their share in population. As a result, relative to low-/middle-income countries, they are over-represented by a factor of 3.2 in terms of votes per country, and by a factor of 4.8 relative to population. Nonetheless, these figures represent a reduction of more than half from the post-Singapore distribution.

9.6 Adequacy of representation for all country groups

Representation of all developing country groups is increased by the Buira proposal with the exception of the transition economies, whose total vote is increased only from 7.7% to 7.8%. The HIPC countries benefit most, with an increase in vote from 3.1% to 7.7%, while the vote of other PRGF countries is more than doubled from 5.7% to 11.8%. The total vote of non-PRGF countries is also increased from 26.0% to 34.1%. However, the votes of all three groups remain below their respective shares of membership and of population. The vote of the transition economies, at 7.7%, is somewhat above their share of population (6.3%), but well below their share of membership (14.7%).

9.7 Symmetry of constituencies

By substantially increasing the smallest votes, the Buira proposal almost halves the maximum number of countries required for an average-sized constituency, from 84 in the baseline scenario to 44. However, the improvement in the symmetry of the constituency system at the top end of the scale is much more limited: the number of single-country constituencies falls only from six to five, and the number of constituency-dominant countries from seven to five.

9.8 Broad acceptability to developing countries

Perhaps the greatest disadvantage of the Buira proposal as a basis for common developing country position is that it reduces the votes of a substantial number (34) of individual developing countries (Table 9.2). These include a number of important players politically, including Argentina, Chile, Malaysia, Nigeria, Russia, South Africa and Venezuela. It is noteworthy that there are also several other Sub-Saharan African countries on the list, in contrast with the non-quota-based options. Together, these countries account for 13.4% of (total) population, and 18.6% of the total vote.

Table 9.2: Buira Proposal: Developing Country Losers

	Change in vote:
Algeria	-0.19%
Argentina	-0.17%
Belarus	-0.01%
Bolivia	0.00%
Bulgaria	-0.13%
Chile	-0.08%
Côte d'Ivoire	-0.06%
Croatia	-0.02%
Czech Republic	-0.02%
Ghana	0.00%
Hungary	-0.16%
Iraq	-0.32%
Israel	-0.12%
Jamaica	-0.01%
Kenya	-0.03%
Kuwait	-0.45%
Libya	-0.25%
Malaysia	-0.19%
Morocco	-0.05%
Nigeria	-0.48%
Peru	-0.02%
Romania	-0.16%
Russia	-0.67%
Saudi Arabia	-2.60%
Senegal	-0.01%
Slovenia	-0.01%
South Africa	-0.08%
Sri Lanka	-0.03%
Syria	-0.02%
Trinidad and Tobago	-0.05%
Ukraine	-0.15%
United Arab Emirates	-0.06%
Venezuela	-0.89%
Zambia	-0.08%
Total Countries	**34**

9.9 Other political considerations

Like any proposal which reduces the votes of the major developed countries, the Buira proposal has adverse effects on countries accounting for the majority (in this instance 74.5%) of the vote. These countries can therefore be expected to seek pretexts for opposing the proposal, or seeking to change it in their own favour. The Achilles heal of the Buira proposal in this context may be its use of GDP at purchasing power parity, which also largely drives its favourable effects. The problems associated with estimation the estimation of PPP exchange rates and limited data availability may well be used as an argument against this approach. If this option is to be pursued, it will be necessary to prepare a solid defence against such arguments.

9.10 Overall Assessment

While the Buira proposal retains some of the problems of the quota system as a whole, unlike the Cooper and EU proposals, it represents a significant improvement in voting patterns in most respects. The two potential stumbling blocks are, on a practical level, the problems of developing a complete, reliable and accurate data set for purchasing power parity exchange rates; and, on a political level, its negative effects on a number of major developing countries.

If it appears possible to overcome the former problem, further consideration should be given to options for overcoming the latter, while also, ideally, strengthening its overall positive effect on developing countries as a whole. Such options might include, for example, combining a switch to Buira quotas with an increase in the basic vote, or adding a population-related component, either as part of the quota, or as a separate component of the vote. (See section14.5.)

10. Democratic Principles I: Population-Weighting

"One-person-one vote" is perhaps the most fundamental principle of democratic decision-making. Making votes directly proportional to population is therefore an obvious option for IMF voting reform. In practice, however, as discussed below, the extreme range from the population of the smallest IMF member (Palau, with 20,000 people) to the largest (China, with 1.3bn) makes this option problematic in several respects in the present context.

There are two possible ways of dealing with this problem within a strictly democratic paradigm: to use a declining non-linear function of population; or to combine a component of the vote directly proportional to population with a component based on the Westphalian principle of "one-country-one vote". This section considers two non-linear functions of population – the square root and the cube root – while the following section considers combinations of proportional and Westphalian votes with alternative weights.

The results of the assessment of these options are summarised in Table 10.1.

10.1 Congruence with democratic principles

The basis of these options exclusively on population means that they are explicitly (if unconventionally, in the case of the square- and cube-root approaches) founded on economic principles. Using the "democratic shortfall" method outlined above, for consistency of comparison, the proportional option by definition has a zero shortfall, while the non-linear nature of the square and cube root options give rise to measured shortfalls of 11.2% and 23.6% respectively. These are, unsurprisingly, lower than for any quota-based option considered here.

Table 10.1: Population-Only Approaches: Summary Indicators

		Baseline	proportional	square root	cube root	*memo:*	
						% of population	*% of members*
Democratic principles	Explicit democratic link (%)	*4.2*	100	100	100		
	"democratic shortfall"	*62.7*	0	11.2	23.6		
Individual country representation	Smallest vote (%)	*0.02*	0.0003	0.02	0.07		
	90th percentile vote (%)	*0.03*	0.005	0.08	0.16		
	80th percentile vote (%)	*0.05*	0.02	0.14	0.24		
Non-dominance	G7 vote (%)	*43.7*	11.3	9.4	7.6	*11.3*	*3.8*
	EU vote (%)	*31.7*	7.7	13.5	14.6	*7.7*	*14.7*
	OECD vote (%)	*63.2*	18.3	21.6	20.6	*18.3*	*16.3*
	Countries for 15% +1	*1*	1 (x2)	5	10		
	Countries for 50% +1	*9*	6	34	50		
Proportionality	Inter-quartile range	*7.8*	12.3	3.7	2.4		
	IQR relative to population	*1.2*	1	0.27	0.17		
Debtor/creditor balance	High-income country vote (%)	*65.3*	15.4	19.9	20.5	*15.4*	*21.2*
	HIC/LMIC per country (ratio)	*7.0*	0.68	0.92	0.96		
	HIC/LMIC relative to population	*10.3*	1	1.37	1.42		
Country group representation	HIPC vote (%)	*3.1*	8.7	18.7	21	*8.7*	*21.7*
	Other PRGF vote (%)	*5.7*	29.6	21.1	19.7	*29.6*	*20.7*
	Other developing countries vote (%)	*26.0*	46.3	40.3	38.7	*46.3*	*36.4*
	Transition economies vote (%)	*7.7*	6.3	12.1	13.7	*6.3*	*14.7*
Symmetrical constituencies	single-country constituencies	*6*	5	2	0		
	constituency-dominant countries	*7*	6	2	2		
	Maximum countries for average constituency	*84*	97	46	30		
Developing country losers	Number of countries		86	15	10		
	% of population		10.6	5	26.7		
	% of total votes		21.9	12.2	15.8		
Political feasibility	Total losers		110	36	28		
	% of total votes		79.8	69.6	72.7		
	% of population		24.3	18.4	40.1		

10.2 Adequate representation for all individual countries

The proportional option by definition gives very small countries very small votes. Due to the extreme disparities in population size between countries, the smallest vote (for Palau) is just 0.0003%, little more than one-hundredth of that in the baseline scenario, while those at the 90th and 80th percentiles are respectively 0.005% (for Iceland) and 0.02% (for Timor-Leste). This means that around one-fifth of the membership has a vote smaller than the smallest in the baseline scenario, and one-tenth less than a quarter of the smallest baseline vote.

In the square-root option, the smallest vote is marginally smaller than in the baseline scenario, at 0.020% (as compared with 0.023%), but increases more quickly as one moves up from the bottom of the scale, to 0.08% (compared with 0.03%) at the 90th percentile and 0.14% (compared with 0.05%) at the 80th. It is only the smallest vote (that of Palau in both cases) which is larger in the baseline scenario.

In the cube-root option, the smallest vote is substantially greater at 0.07%, and votes again increase more quickly above the bottom of the scale, to 0.16% at the 90th percentile and 0.24% at the 80th.

This suggests that the square-root, and especially the cube-root, option gives significantly greater representation to countries with small votes than in the *status quo*, except for the smallest vote using the square root.

10.3 Avoidance of domination by one (or a few) country(s)

Once again, the proportional option performs very poorly by this criterion, due to the extreme disparities in population size between countries. Uniquely among the options considered here, this option gives each of two countries (China and India) more than 15% of the votes. It also requires only six countries' votes to form an absolute majority, compared with nine in the baseline.

Again, the square-root option performs better, and the cube-root option better still. It requires at least five countries' votes to reach 15% of the total in the square root option, and ten in the cube-root option; and the numbers of countries required for an overall majority are 34 and 50 respectively.

Dominance by developed country groupings disappears in all three options, the total vote of the G7 being between 7.6% and 11.3%, that of the EU between 7.7% and 14.6%, and even that of the OECD between 18.3% and 20.6%. In the proportional option, however, domination by developed country groupings is replaced by domination by China and India with votes of 20.5% and 17.2% respectively.

10.4 Proportionality of difference between countries

The inter-quartile range of votes is exceptionally wide in the proportional option at 12.3 (the highest of any of the options considered here), once again due to the wide disparity in country populations. By definition, this range is directly proportional to population. This figure is narrowed considerably in the square-root option, to 3.7 (0.27 relative to population), and further in the cube-root option, to 2.4 (0.17 relative

to population). As in the case of a 25% basic vote, where the figure is 2.8, this degree of narrowing of differentials between country votes may render the cube-root option politically unviable.

10.5 Appropriate balance between "creditor" and "borrowing" countries

All of these options shift the balance of representation strongly from "creditor" countries to "borrowing" countries. The share of high-income countries in the total vote is reduced to 20.5% in the cube-root option, 19.9% in the square-root option, and 15.4% in the proportional option, in all cases between their shares in membership and population. The proportional option gives equal representation to high- and low-/middle-income countries relative to population (by definition), but results in the former being significantly under-represented relative to membership (by 32%). The non-linear options result in a much smaller degree of under-representation of high-income countries relative to membership (by 4-8%) and significant over-representation (by 37-42%) relative to population.

10.6 Adequacy of representation for all country groups

In the proportional option, both HIPCs and transition economies remain well below the 15% threshold at 8.7% and 6.3% respectively. The votes of both are also less than half their respective shares in membership. Both the "other PRGF" and the non-PRGF groups, by contrast, remain above both the 15% threshold and their membership shares, in the latter case reflecting the membership of India in the first group and of China in the second.

The non-linear options even out this pattern considerably, and with relatively little differentiation between the two.

- HIPCs have 19-21% of the vote, well above their population share, but slightly below their share of membership;
- transition economies have 12-14% of the vote, below the 15% threshold, but again between their share of population and of membership;
- the "other PRGF" group have 20-21% of the vote, broadly in line with their membership share, but less than their population share (29.6%); and
- non-PRGF countries have 39-40% of the vote, again between their membership and population shares.

10.7 Symmetry of constituencies

The polarisation of votes in the proportional option unsurprisingly gives rise to a markedly asymmetrical pattern of constituencies. There are five single-country constituencies and six constituency dominant countries, slightly better than in the baseline scenario (although this masks the very large votes of India and China); and it would take the smallest 97 votes – more than half the membership – to form a constituency of average size.

The non-linear approaches again fare considerably better. The square-root option gives rise to only two single-country constituencies (India and China), and two

constituency-dominant countries (the US and Indonesia), while the cube root option – uniquely among the options considered here – has no single-country constituencies, although China and India remain constituency-dominant. The maximum number of members required for an average-sized constituency declines from 84 in the baseline scenario to 46 in the square-root option and 30 using the cube root.

10.8 Broad acceptability to developing countries

The severe effects of the proportional approach on smaller countries results in no fewer than 86 developing countries losing – more than in any other option except the Cooper and EU proposals. These countries account for 10.9% of total population, and 21.9% of total votes.

Once again, however, the square-root and cube-root options perform much better (Table 10.2). In the square root option, only 15 developing countries lose, accounting for 5.0% of total population, and 12.2% of the vote. In the cube root option, the number of developing countries which lose declines further, to ten. However, China and Mexico, both of which gain under the square-root option, lose with the cube root. As a result, the share of population accounted for by losing developing countries increases to 26.7%, and the share of total votes to 15.8%.

All three indicators for the square-root option are better than for any of the other approaches considered here (except for the number of countries under the cube-root option).

Table 10.2: Population-Only Approaches: Developing Country Losers

	Change in votes	
	Square root	**Cube root**
Argentina	-0.08%	-0.13%
Brunei	-0.03%	
China		-0.93%
Hungary	-0.03%	
Israel	-0.06%	
Korea	-0.33%	-0.43%
Kuwait	-0.41%	-0.30%
Libya	-0.18%	-0.08%
Mexico		-0.27%
Mongolia	-0.02%	
Palau	0.00%	
Qatar	-0.01%	
Russia	-0.96%	-1.37%
Saudi Arabia	-2.41%	-2.40%
Singapore	-0.11%	0.00%
Trinidad and Tobago	-0.01%	
Venezuela	-0.47%	-0.47%
Total countries	**15**	**10**

As in other cases, the list of developing countries who would lose under the square-root option includes some of political importance, notably Argentina, Korea, Russia and Venezuela. However, this list is significantly shorter than for any other option; and three of these four would also lose under any other option favourable to developing countries as a whole, while the fourth would lose under any favourable option other than the Buira proposal.

10.9 Other political considerations

While a substantial majority of the overall membership (110 countries, accounting for 79.8% of total votes) lose from the proportional option, relatively few lose from the square root (36) and the cube root (28). However, the fact that these include most of the major developed and other high-income countries inevitably means that the losers account for a large proportion of the votes (69.6% and 72.7% respectively).

On a practical level, a formula based only on population is the most clearly democratic and transparent, and has the fewest data problems of any option besides a pure Westphalian approach. It also has clear appeal intuitively, on the basis of widely accepted democratic principles. However, there are three key sticking points.

- The abandonment of the principle of economic weighting will be strongly resisted by the developed countries who benefit from it.
- Because population does not reflect the ability of countries to contribute to the Fund, it would require a decoupling of votes from quotas.
- While direct proportionality is widely used and accepted, the use of non-linear formulae is not; and their proposal gives rise to the risk of disputes over which non-linear formula should be used, even if the general principle were accepted.

10.10 Overall Assessment

The proportional option, though the simplest and in some respects the most appealing intuitively, is seriously problematic in practice, given the scale of the disparities in country size among IMF member countries. Coupled with the negative effects on the majority of developing countries, and of the membership as a whole, this effectively rules this option out. It might, however, be possible to reduce these problems by using it in combination with a substantial basic vote (see section 11) or a revised quota formula (see section 12).

The results of the non-linear formulae, however, appear much more favourable. As well as conforming to democratic principles, they have substantial effects in reducing the dispersion of votes and concentration of power, and increasing the representation of under-represented groups. They also have negative effects on fewer (and less politically critical) developing countries, and are among the best options in terms of the total number of countries adversely affected (though not their total votes).

The cube root option may be seen as reducing the degree of variation of votes too far, in view of their direct relationship to population. More pragmatically, unlike the square-root option, it has a negative effect on China – a major obstacle in view of

China's importance to the political process. This suggests that the square-root option may in practice be preferable. In view of its other advantages, this option merits serious consideration as a basis for a common developing country position.

11. Democratic Principles II: Basic Vote plus Population

An alternative to non-linear functions of population as a means of dealing with the problem of the direct proportionality approach is to combine a component of the vote directly proportional to population with an equal vote per country, following the principle of the current basic vote. Three possible combinations are considered here, setting the basic vote at 25%, 50% and 75% of the total. The effects of alternative percentages can be estimated by interpolation (or extrapolation) from these results.

The assessment of these options is summarised in Table 11.1.

11.1 Congruence with democratic principles

This approach is based exclusively on the two democratic principles of "one-person-one vote" and "one-country-one-vote". By definition, it therefore has a "democratic shortfall" as defined above, of zero.

11.2 Adequate representation for all individual countries

The smallest vote is increased considerably even in the 25% option, to 0.14% (compared with 0.02% in the baseline. As the basic vote increases to 50% and 75%, the minimal population component for the smallest country means that this figure increases almost exactly pro rata, to 0.27% and 0.41% respectively. Equally, however, the very limited role of population differences in determining the vote at the lower end of the scale means that the votes at the 90th and 80th percentiles are not significantly larger.

11.3 Avoidance of domination by one (or a few) country(s)

As in the "population-only" options, dominance by developed country groupings disappears in all three options. The share of the G7 declines from 9.4% in the 25% option to 5.7% in the 75% option; that of the EU increases from 9.4% to 12.9%; and that of the OECD declines slightly, from 17.8% to 16.8%. (By definition, all are between the shares of the group concerned in membership and in population.)

In terms of the concentration of votes, the 25% option performs somewhat better than the baseline. One country (China) still has a vote in excess of 15%; but the number of countries required for an overall majority is increased from nine to 14. The 50% options improves both indicators substantially, and the 75% option considerably: the number of countries required for a 15% vote increases to two and six respectively, and the number required for a 50% vote to 34 and 66.

Table 11.1: Population Plus Westphalian Options: Summary Indicators

		Baseline	75-25	50-50	25-75	*memo:*	
						% of population	*% of members*
Democratic principles	Explicit democratic link (%)	*4.2*	100	100	100		
	"democratic shortfall"	*62.7*	0	0	0		
Individual country representation	Smallest vote (%)	*0.02*	0.14	0.27	0.41		
	90th percentile vote (%)	*0.03*	0.14	0.27	0.41		
	80th percentile vote (%)	*0.05*	0.15	0.28	0.41		
Non-dominance	G7 vote (%)	*43.7*	9.4	7.5	5.7	*11.3*	*3.8*
	EU vote (%)	*31.7*	9.4	11.2	12.9	*7.7*	*14.7*
	OECD vote (%)	*63.2*	17.8	17.3	16.8	*18.3*	*16.3*
	Countries for 15% +1	*1*	1	2	6		
	Countries for 50% +1	*9*	14	34	66		
Proportionality	Inter-quartile range	*7.8*	2.7	1.6	1.2		
	IQR relative to population	*1.2*	0.2	0.12	0.09		
Debtor/creditor balance	High-income country vote (%)	*65.3*	16.8	18.3	19.7	*15.4*	*21.2*
	HIC/LMIC per country (ratio)	*7.0*	0.75	0.93	0.91		
	HIC/LMIC relative to population	*10.3*	1.11	1.23	1.35		
Country group representation	HIPC vote (%)	*3.1*	12	15.2	18.5	*8.7*	*21.7*
	Other PRGF vote (%)	*5.7*	27.3	24.1	22.9	*29.6*	*20.7*
	Other developing countries vote (%)	*26.0*	43.9	41.4	38.9	*46.3*	*36.4*
	Transition economies vote (%)	*7.7*	8.4	10.5	12.6	*6.3*	*14.7*
Symmetrical constituencies	single-country constituencies	*6*	3	2	2		
	constituency-dominant countries	*7*	7	2	0		
	Maximum countries for average constituency	*84*	31	16	11		
Developing country losers	Number of countries		22	19	17		
	% of population		10.2	9.9	13.7		
	% of total votes		18.4	17.7	18.2		
Political feasibility	Total losers		44	40	34		
	% of total votes		76.6	75.7	74.7		
	% of population		24	23.7	27.1		

11.4 Proportionality of difference between countries

The inter-quartile range of votes declines from 2.7 (comparable to the cube-root option) in the 25% option to 1.6 (comparable to the 50% basic vote option) at 50%, and 1.2 (the lowest of any option considered here) in the 75% option. As in these other cases, this degree of compression might prove problematic. The last two figures are also the lowest relative to population of any option considered here, at 0.12 and 0.09, reflecting a considerable degree of compression of the range of country votes compared to population. (The corresponding figure for the 75% option is 0.2, slightly higher than the cube-root option.)

A key feature of the population plus basic vote option is that, while differences are very marked at the top end of the population scale, they are extremely small at the bottom. Thus, in the 25% option, the US (population 296m) has slightly more than double the vote of Bangladesh (population 142m), while Portugal (population 10.6m) has less than double the vote of Palau (population 20,000). While differentiation narrows among higher population countries as the basic vote increases, it also narrows still further among the smallest countries. With a basic vote of 75%, the US vote is somewhat more than double that of the Philippines (population 83m); but even Mexico (population 103m) has less than double Palau's vote.

While this is a matter of subjective judgement, this asymmetry between differentiation at the top and the bottom of the population distribution would seem to represent a significant disadvantage of this approach relative to non-linear functions of population.

11.5 Appropriate balance between "creditor" and "borrowing" countries

As in the population-only options, the absence of economic weighting means that "creditor dominance" disappears in the basic vote plus population approach. The share of high-income countries in the total vote, by definition, lies between their share in membership and their share in population, increasing from 16.8% in the 25% option to 19.7% in the 75% option. Compared with low-/middle-income countries, they are thus slightly under-represented relative to population (by 25% in the 25% option, declining to 9% in the 75% option) and slightly over-represented on a per-member basis (by a margin increasing from 11% to 35%).

11.6 Adequacy of representation for all country groups

Representation of all developing country groups considered here is increased in all three options, in most cases substantially. The HIPC countries fare best, their vote being increased by a factor of nearly four from the baseline scenario in the 15% option, rising to six at 75%, and exceeding the 15% threshold at 50% and 75%. Least favourably affected are the transition economies, whose vote is increased only marginally by the 25% option, from 7.7% to 8.4%, rising further to 12.6% (but remaining below the 15% threshold) in the 75% option.

Other developing country groups, however, do somewhat better with a smaller than a larger basic vote, once again largely reflecting the presence of India and China. The

total vote of the "other PRGF" countries increases by a factor of nearly five (to 27.3%) in the 25% option, falling back to four (22.9%) at 75%; that of the non-PRGF group increases from 26.0% to 43.9% in the 25% option, but only to 38.9% in the 75% option.

11.7 Symmetry of constituencies

The number of single-country constituencies, though much smaller than in the baseline scenario (six) is relatively little affected by the size of the basic vote. India and China have a sufficient vote to form their own constituencies in all three scenarios, and are joined by the US with the basic vote at 25%. The number of constituency-dominant countries is reduced much more sharply, however, from seven at 25% to two at 50% and zero at 75%.

The basic vote plus population approach performs particularly well in terms of the maximum number of countries required to form an average constituency, which falls from 84 in the baseline scenario to 31 with the basic vote at 25%, 16 at 50%, and 11 at 75%.

11.8 Broad acceptability to developing countries

Relatively few developing countries lose on the basis of the basic vote plus population approach. 22 countries lose in the 25% scenario, 19 in the 50% scenario, and 17 in the 75% scenario. This is broadly in line with the increased basic vote options (20 countries), and slightly more than the non-linear population functions (10-15). However, while the shares of population and of votes represented by these countries decline slightly between 25% and 50%, it increases between 50% and 75%, and the population share is substantially higher at 75% than at 25% (13.7% compared with 10.2%). It is noteworthy that the minimum figures for population and votes are respectively double and 50% higher than those for the square-root option.

Importantly, however, these include a number of potentially key players politically. (See Table 11.2.) These include Argentina, Korea, Malaysia, Mexico, Russia, South Africa and Venezuela at all three levels of basic vote, with Chile also losing at 25% and 50%, and Iran and Brazil at 75%. This would appear to be problematic from a political perspective. There is also a notably strong Latin American presence on this list: while the total vote of Latin American and Caribbean countries is increased, this masks a strong shift of votes from the larger mainland countries to the smaller countries of Central America and the Caribbean as the basic vote increases.

11.9 Other political considerations

On a practical level, the basic vote plus population approach shares with the population-only approaches the advantages of conformity with recognised democratic principles, transparency, and the absence of data problems. It has further advantages relative to the square- and cube-root approaches of greater simplicity and consequently intuitive appeal.

In terms of the voting calculus, the total number of losers from this approach is also more limited than for the quota-based options (or the proportional approach), ranging

between 34 and 44. However, the inclusion of the countries with the largest quotas among the losers means that they account for a large proportion of the total vote (75-77%).

Table 11.2: Population Plus Westphalian Options: Developing Country Losers

	75-25	**50-50**	**25-75**
Algeria	-0.05%	-0.05%	-0.04%
Argentina	-0.37%	-0.38%	-0.40%
Brazil			-0.22%
Bulgaria	-0.08%		
Chile	-0.07%	0.00%	
Czech Republic	-0.13%	-0.03%	
Hungary	-0.23%	-0.13%	-0.03%
Iran			-0.01%
Iraq	-0.06%	-0.04%	-0.02%
Israel	-0.22%	-0.11%	
Korea	-0.61%	-0.67%	-0.72%
Kuwait	-0.47%	-0.34%	-0.22%
Libya	-0.31%	-0.20%	-0.09%
Malaysia	-0.24%	-0.21%	-0.17%
Mexico	-0.07%	-0.33%	-0.60%
Poland	-0.04%	-0.06%	-0.07%
Romania	-0.09%	-0.04%	
Russia	-0.83%	-1.26%	-1.68%
Saudi Arabia	-2.69%	-2.65%	-2.61%
Singapore	-0.22%	-0.10%	
South Africa	-0.18%	-0.22%	-0.26%
Trinidad and Tobago	-0.02%		
Ukraine			-0.04%
United Arab Emirates	-0.10%		
Venezuela	-0.75%	-0.72%	-0.69%
Total Countries	**22**	**19**	**17**

11.10 Overall Assessment

The basic vote plus population approach offers considerable advantages to developing countries as a whole, and to all developing country groups (with the notable exception of OPEC). It also has the advantage over the non-linear approach of clarity and simplicity. However, it has two significant disadvantages, one technical, and one political.

- On a technical level, this approach not only entails a high degree of compressions of country differentials, but is extremely asymmetric in the degree of differentiation between countries at the top, and at the bottom of the population scale. This can also be expected to give rise to reluctance and/or resistance among countries other than those near the very top or towards the bottom of the scale.

- Politically, a number of major developing countries would face a reduction in their votes from this approach. There is also a disproportionate effect on Latin America in this regard.

These issues – particularly the latter – would seem to suggest a case for preferring the square root option over the basic vote plus population approach.

12. Mixed Approaches: Mirakhor and Zaidi

In a recent IMF working paper (Mirakhor and Zaidi, 2006), the Iranian Executive Director to the IMF (and Dean of the Board) Abbas Mirakhor and his colleague Iqbal Zaidi propose an approach which combines three factors:

- an increase in the basic vote;
- a second basic vote, proportional to population; and
- a modified quota formula, which combines indicators of countries' ability to finance the Fund ("supply variables") with indicators of their potential need to borrow from the Fund ("demand variables").

It has not been possible to undertake a rigorous assessment of this approach due to time constraints, the limited amount of detail on the application of the quota formula in the paper, and data constraints. This section therefore presents only a first, tentative and very approximate, attempt at assessment. These limitations should be borne in mind throughout.

The components of the Mirakhor and Zaidi approach are set out in Table 12.1, and the modifications made for the purposes of this paper are indicated in the final column. These are primarily a result of data constraints, with the exception of the short-term debt/reserves indicator. (It has also been necessary to fill a small number of gaps in the readily available data with approximations or averages.)

The short-term debt/reserves indicator has been excluded because, while it differentiates well between developing countries with different levels of risk, as intended, the ratio is generally much higher in developed than in developing countries. Its inclusion therefore has the perverse effect of indicating much higher demand for resources in developed than in developing countries.

The two "supply" variables were converted into indices (maximum = 100), and given equal weight to determine the supply-side component of the quota. On the "demand" side, current payments/receipts and variability of current receipts were combined similarly, and multiplied by a factor combining the three ratio/index indicators (past IMF-supported programmes, credit ratings and reserves/monetary base), similarly scaled and again given equal weight. It should be noted that this is not necessarily the only way in which these variables could be applied, and that different approaches could give rise to significantly different results.

The weights applied to the different components have been selected from the proposed ranges with the objective of maximising the potential benefits to developing countries. Therefore the maximum levels proposed have been used for the Westphalian and Democracy principles (15% and 10% respectively); the minimum

for the "supply" component of the quota formula (45%); and the residual (30%) for the "demand" component.

The assessment indicators for this proposal, estimated on the basis of the above assumptions, are summarised in Table 12.2.

Table 12.1: Mirakhor and Zaidi: Basic Votes and Variables for Quota Formulas

	Percent of vote	Modifications
Basic vote I (Westphalian Principle)	4-15	
Basic vote II (Democracy Principle)	5-10	
Quota Formula		
(a) Supply Variables	45-55	
PPP-Based GDP		
International reserves		
(b) Demand Variables	25-35	
Current payments or receipts		Total of current payments and receipts
Variability of current receipts		
Past IMF-supported programs		Proportion of years in which IMF resources disbursed, 1980-2006
Capital flows/GDP		Omitted due to data problems
Subinvestment grade credit rating		Index, based on Fitch credit ratings
Sovereign bond spreads		Omitted due to data problems
Reserves/short-term debt		Omitted due to perverse effects (see text)
Reserves/financing gap		Omitted due to data/definition problems
Reserves/monetary base		Reserves/M2

12.1 Congruence with democratic principles

The explicitly democratic component of the vote in the Mirakhor and Zaidi proposal (as considered here) is the 25% accounted for by the two basic votes. The correlation coefficient between the quota and population is 0.542 – between the baseline level (0.346) and that for the Buira proposal (0.644). This gives a "democratic shortfall" of 34.3%, almost identical to the Buira proposal, the larger explicitly democratic component off-setting the lower correlation coefficient.

12.2 Adequate representation for all individual countries

The smallest vote is increased fourfold in this proposal, from 0.02% to 0.08%; but the absolute gradient of the vote is slightly less than in the baseline in the bottom quintile, so that the vote increases only to 0.09% at the 90^{th} percentile, and 0.11% at the 80^{th}. Nonetheless, this represents a substantial improvement overall.

Table 12.2: Mirakhor and Zaidi: Summary Indicators

		Baseline	Mirakhor	*Memo*	
				% of population	*% of members*
Democratic principles	Explicit democratic link (%)	*4.2*	25.0		
	"democratic shortfall" (%)	*62.7*	34.3		
Individual country representation	Smallest vote (%)	*0.02*	0.08		
	90th percentile vote (%)	*0.03*	0.09		
	80th percentile vote (%)	*0.05*	0.10		
Non-dominance	G7 vote (%)	*43.7*	35.7	*11.3*	*3.8*
	EU vote (%)	*31.7*	24.7	*7.7*	*14.7*
	OECD vote (%)	*63.2*	54.0	*18.3*	*16.3*
	Countries for 15% +1	*1*	2		
	Countries for 50% +1	*9*	11		
Proportionality	Inter-quartile range	*7.8*	3.9		
	IQR relative to population	*1.2*	0.45		
Debtor/creditor balance	High-income country vote (%)	*65.3*	55.4	*15.4*	*21.2*
	HIC/LMIC per country (ratio)	*7.0*	4.6		
	HIC/LMIC ratio relative to population	*10.3*	6.8		
Country group representation	HIPC vote (%)	*3.1*	4.9	*8.7*	*21.7*
	Other PRGF vote (%)	*5.7*	9.2	*29.6*	*20.7*
	Other developing countries vote (%)	*26.0*	30.5	*46.3*	*36.4*
	Transition economies vote (%)	*7.7*	7.6	*6.3*	*14.7*
Symmetrical constituencies	single-country constituencies	*6*	4		
	constituency-dominant countries	*7*	7		
	Maximum countries for average constituency	*84*	46		
Developing country losers	Number of countries		27		
	% of population		17.0		
	% of total votes		18.3		
Political feasibility	Total losers		43		
	% of total votes		67.5		
	% of population		27.7		

12.3 Avoidance of domination by one (or a few) country(s)

The Mirakhor and Zaidi proposal reduces the votes of the major developed country groups to a moderate extent compared with the baseline scenario: that of the G7 from 43.7% to 35.7%, the EU's from 31.7% to 24.7%, and the OECD's from 63.2% to 54.0%. It will be noted, however, that the OECD retains a significant overall majority of the vote.

The number of countries required for a majority vote is increased, but only from nine to 11. More positively, however, no country has 15% of the vote.

12.4 Proportionality of difference between countries

The dispersion of votes is reduced substantially by the Mirakhor and Zaidi option, being halved from 7.8 in the baseline option to 3.9. While the inter-quartile range relative to population is an unreliable indicator for quota-based options, its value of 0.45 is roughly in line with the 25% basic vote option.

12.5 Appropriate balance between "creditor" and "borrowing" countries

As presented here, the Mirakhor and Zaidi option results in a moderate shift of voting power from "creditor" to "borrowing" countries, reducing the high-income countries' share of the vote from 65.3% to 55.4%. However, high-income countries retain a substantial overall majority of the vote, and remain considerably over-represented relative to low-/middle-income countries, both on a per member basis (by a factor of 4.6) and per capita (by a factor of 6.8).

12.6 Adequacy of representation for all country groups

Developing country groupings' representation is increased significantly by the Mirakhor and Zaidi option, and increases are broadly in inverse proportion to levels of development. The HIPC countries' votes are increased from 3.1% to 4.9%; those of other PRGF countries from 5.7% to 9.2%; and those of non-PRGF countries from 26.0% to 30.5%. However, all remain substantially below their shares of membership and of population; and the vote of the transition economies is reduced marginally, from 7.7% to 7.6%.

12.7 Symmetry of constituencies

The Mirakhor and Zaidi proposal reduces the asymmetry of the constituency system primarily at the bottom of the scale, through its substantial positive effect on the smallest votes. Thus the maximum number of countries required to form a constituency with an average vote is reduced from 84 in the baseline scenario to 46. There is also a more modest effect at the top of the distribution: the number of single-country constituencies is reduced from six to four, while the number of constituency-dominant countries remains unchanged at seven.

12.8 Broad acceptability to developing countries

In total, 27 developing countries lose voting share under the Mirakhor and Zaidi proposal, as presented here, accounting for 18.3% of the total vote and 17.0% of population (Table 12.3). Once again, these include a large number of countries of importance to any potential developing country coalition. Almost all the major countries of Latin America are particularly adversely affected, as are some Sub-Saharan countries, while Asian countries (with the exception of Sri Lanka) gain consistently.

Table 12.3: Mirakhor and Zaidi: Developing Country Losers

Argentina	-0.31%
Brazil	-0.13%
Bulgaria	-0.10%
Chile	-0.05%
Colombia	-0.02%
Congo (Dem Rep)	-0.06%
Egypt	-0.02%
Ghana	-0.04%
Hungary	-0.11%
Iran	-0.02%
Iraq	-0.15%
Jamaica	-0.03%
Kuwait	-0.17%
Libya	-0.08%
Nigeria	-0.19%
Peru	-0.02%
Romania	-0.19%
Russia	-0.52%
Saudi Arabia	-1.70%
Serbia and Montenegro	-0.02%
South Africa	-0.39%
Sri Lanka	-0.04%
Trinidad and Tobago	-0.02%
Ukraine	-0.26%
Uruguay	-0.02%
Venezuela	-0.58%
Zambia	-0.11%
Total countries	**27**

12.9 Other political considerations

If one takes as given the threefold role of quotas (see Section 13), a strong case can be made for the two key features of the general approach proposed by Mirakhor and Zaidi – the additional population-weighted basic vote and the explicit inclusion in the quota formula of "demand" variables. However, as for other options benefiting developing countries as a whole, there are a substantial number (43) of losers, who account for a large majority (67.5%) of the total votes.

These countries can therefore be expected to focus on potential weaknesses of this proposal. The most vulnerable aspects, given the tenor of discussions to date in the Quota Review, are its complexity and potential data problems. Consideration could usefully be given to modifying the proposal to increase its simplicity and transparency, and to ensure that comprehensive and up-to-date data are readily available for all the variables included.

12.10 Overall Assessment

The broad approach proposed by Mirakhor and Zaidi – the addition of a second, population-weighted, basic vote, and the incorporation of "demand variables" in the quota formula – have potentially substantial advantages to developing countries within the existing quota system. This makes it potentially valuable as a fall-back from a democratic option coupled with a separation of voting from financial contributions and access to Fund resources. (See Section 14.5.)

The estimated effects of the Mirakhor and Zaidi proposal, as presented here, are somewhat disappointing relative to other options. In particular, the shift of votes from developed/"creditor" countries to developing/"borrowing" countries, and the increase in representation for PRGF-eligible countries are significantly weaker than for the Buira option. Given the positive effects of the higher basic vote (15% as against 4.2%) and the inclusion of a population-based vote, this suggests that the Mirakhor and Zaidi *quota formula*, as it has been applied here, performs substantially less well than the Buira version.

However, as emphasised at the beginning of this section, the assessment here is highly imperfect, due to time and data constraints; and alternative formulations, using the same variables would also be possible. These results should not, therefore, be interpreted as indicating a case for rejecting the Mirakhor and Zaidi option. Rather, they indicate a need for further analysis, using alternative formulations and combinations of indicators on the "demand" side of the quota formula, to bring the results more closely into line with actual borrowing needs. Depending on the results of such analysis, an alternative would be to retain the principle of an additional, population-weighted, basic vote with an alternative quota formula such as that proposed by Buira.

13. Challenging the Triple Role of Quotas

Unsurprisingly, the only options which increase the voting power of developing countries significantly are those based on the democratic principles of one-country-one-vote or population-weighted voting rather than economic weighting. As long as the principle of economically-weighted voting remains, it will inevitably skew voting power to those countries with the greatest economic weight – that is the developed countries – and away from developing, and especially low-income, countries.

However, basing quotas on democratic principles is fundamentally problematic as the Fund is currently constituted because of the triple role of quotas as the determinant, not only of voting power, but also of access to Fund resources (and most problematically) of financial contributions to the Fund.

As long as each country's share of votes is equal to its share of total financial contributions, a democratic basis for decision-making will result in the Fund being inadequately financed, because all members' contributions will be constrained by the financial capacity of the poorest members. Democratisation therefore requires a separation of the three roles which quotas now perform.

(A similar tension also arises between the roles of quotas as a determinant of financial contributions and of access to Fund resources. To the extent that total quotas represent the total capacity of the Fund to lend, this means that the majority of its notional lending capacity is for (developed and other creditor) countries, who have not borrowed from the Fund for 25 years, and are unlikely to do so in future.)

The question of whether the threefold purpose of quotas remains appropriate is therefore central to the consideration of IMF voting reform. Beyond the issue of democratic principles, a strong case can be made for delinking voting power from financial contributions and access to Fund resources on the basis of three other considerations:

- the incentive effects generated by the combination of the three roles in the context of quota reviews;
- the fundamental changes which have occurred in the nature of the Fund and the context in which it operates since the system was established in 1944; and
- the subsequent adoption and intensification of policy conditionality attached to the use of Fund resources.

13.1 Incentive Effects

Since developed countries are no longer dependent on borrowing from the Fund, they have no incentive to increase quotas beyond the need to ensure that the Fund is able to lend sufficiently to developing countries in the event of debt or financial crises; and a disincentive, to the extent that increases would increase their financial contributions.

Moreover, the developed countries have succeeded in reducing their own need for quota increases by increasingly emphasising the Fund's "catalytic role" in facilitating access to resources from other sources over its direct financing role. While this has no basis in the Fund's Articles of Agreement, it allows the total resources available to deal with financial crises to be increased, and the Fund's policy leverage over borrowing countries to be maintained, without increasing quotas. This further strengthens the incentive of developed countries to resist quota increases.

For most developing countries, by contrast, their actual or potential dependency of on IMF resources gives them a strong interest in increasing quotas. However, their limited voting power means that their only political option is, at best, to block a quota review which is not in their interests; and the result of doing so is for quotas (and thus the ability to borrow) to remain unchanged in nominal terms, while the distribution of voting power remains unchanged.

The developed countries, by threatening to block any quota review which does not protect their voting power, are thus in a position to force on developing countries a

choice between, on the one hand, a quota review which increases their access to Fund resources, but perpetuates a voting system weighted against them; and, on the other, a freeze (in nominal terms) of the amounts they can borrow, coupled with a continuation of the current voting weights, for the following five years. In these circumstances, borrowing countries have little incentive to choose the latter option, making it very difficult to hold together any potential coalition of borrowing members.

Should there nonetheless be a potential challenge, the option of *ad hoc* quota increases for selected developing countries provides an opportunity for the developed countries to "buy off" developing countries accounting for sufficient of the vote to allow the quota review to be agreed. Moreover, the weighted voting system skews this process towards those countries which already have the largest quotas – primarily other high- and middle-income countries. Thus the current proposal on quotas (IMF, 2006a) provides for *ad hoc* increases, with initial partial increases ahead of agreement on the overall review, for four large high- and middle-income developing countries (China, Korea, Mexico and Turkey) together accounting for 5.35% of the votes in the IMF.

By contrast, the primary concern of smaller and poorer developing countries – increases in the basic vote in the Fund – was the subject only of a commitment to limited future action (a doubling of basic votes). While this is a condition for the completion of the review, this was achieved only as a result of a public protest by the African Executive Directors, which resulted in media and civil society pressure on developed country Directors.

The incentive of developed countries to limit quota increases, coupled with their ability largely to determine the outcome of quota reviews has limited the extent of quota increases. Five of the twelve quinquennial quota reviews have resulted in quotas remaining unchanged, the overall increase in other reviews being between 30.7% and 50.9% (IMF, 2003a, Table 2). As a result, they have fallen far behind the growth of the global economy. Despite the fourfold increase in the membership of the Fund, total quotas declined from 4% to 1% of world gross domestic product, and from 58% to 4% of world imports between 1944 and 2000 (Buira, 2003c, Table 3).

13.2 The Fund's Changing Nature and Context

The weighted voting system is partly a reflection of the dramatic changes in the political culture since the Fund was founded in the 1940s, when much of the developing world remained under colonial rule. This both meant that most of the poorest countries in the world were excluded from the negotiations which led to the foundation of the Fund, and thus the design of its governance structures, but also no doubt coloured attitudes among the participants to what could be considered acceptable.

As important, however, are the fundamental changes which have occurred in the nature and role of the Fund and the global economic context in which it operates, and the failure of its governance structures to adapt accordingly. Both phenomena, in turn, are in large measure attributable to the Fund's governance structure, and particularly the weighted voting system itself.

The IMF was established following the 1944 Bretton Woods Conference primarily by and for developed countries and better-off developing countries, mostly in Latin America[3], while most of the poorer developing countries (including almost the entire of Africa, South Asia and the Anglophone Caribbean) remained under colonial rule. It was essentially a "club" made up of a minority of countries, but has since been transformed into an institution whose membership is almost universal and, for most (developing) countries, virtually inescapable. The only countries of significant size which are not now members of the IMF are Cuba and North Korea.

The Fund's primary role was to provide occasional financial support to its members when they faced temporary balance of payments problems as a result of current account imbalances, pending adjustment of their economic policies to restore more lasting balance, within a global financial system characterized by fixed exchange rates (linked to gold) and strict capital controls.

This context has changed fundamentally. The fixed exchange rate system and the link with gold were abandoned in the 1970s; and the original system of capital controls, inscribed in the Fund's Articles of Agreement, has given way to widespread capital account liberalisation (actively promoted by the Fund itself). Party as a result, international financial transactions are incomparably larger in volume, and radically different in nature, from the 1940s. Total foreign exchange transactions reached $1,800 billion per day in 2004 (16 times the value of global production, and 35 times that of global trade in goods), including forms such as derivatives which were unthought-of when the Fund was founded (BIS, 2005).

The combination of these changes in membership and context has led to equally fundamental changes in the nature of the Fund's role. Firstly, as developed countries have become more financially secure, they have ceased to require borrowing from the Fund. While IMF support to developed countries was commonplace until the 1970s, it has not lent to a developed country since the end of Iceland's programme in the early 1980s. Following the controversial response to the 1990s financial crisis, there are clear signs that this trend is broadening, as governments in "emerging market" economies in Asia are building their international reserves to unprecedented levels and developing regional crisis prevention mechanisms to avoid the need to rely on IMF support in the future, while major borrowers in both Asia and Latin America are repaying their debts to the Fund ahead of schedule.

This has resulted in a polarisation of the Fund's membership, giving rise to a fundamental change in its nature.

> It has gone from being a credit cooperative from which all members draw resources from time to time, and therefore have an interest in credit being available on reasonable terms and conditions, to being an institution formed by two distinct groups of countries – industrial country creditors and developing country debtors.
>
> (Buira, 2003a, p229)

[3] The Fund's 45 founder members comprised 17 developed countries (accounting for 80.4% of quotas), 19 countries in Latin America, and three each in Asia, Sub-Saharan Africa and the Middle East.

Secondly, the expansion of the Fund's membership has brought in a large number of countries at a much lower level of development in relative terms than was originally the case. Together with the economic shocks of the 1970s and subsequent decades, this means that, beyond the temporary liquidity problems for which the Fund was designed, a large part of its membership is facing solvency problems requiring debt cancellation rather than new lending – a problem the Fund was not designed to address. While there has been some evolution in the instruments available to the Fund to deal with insolvency (concessional lending and partial debt cancellation), the continuation of the debt crisis of low-income countries after 25 years indicates that this remains inadequate. A strong case can be made that this is attributable in part to the dominance of creditor countries in the Fund's decision-making.

13.3 Conditionality and Policy Influence

Perhaps the most important change in the Fund's role from the perspective of voting reform is in the nature of its support to its borrowing members. This reflects in large measure the shift of its operations from developed to developing countries, and its very different power relations with the two groups. Specifically, the Fund has taken a much more active role in determining the economic policies of member countries when they borrow, setting increasingly detailed conditions for continued disbursement.

While this is now effectively the Fund's primary role, particularly as the development of its "catalytic role" has reduced the relative importance of its own lending, it was not a feature of the Fund's original role, as US pressure for policy conditionality was almost universally opposed by other countries.

> In the discussions in Atlantic City in June 1944, prior to the Bretton Woods conference, the US delegates raised the subject of requiring member countries that requested financial support to give certain policy undertakings to the Fund, which would decide whether the currency purchase was consistent with the purposes of the Fund; this notion was strongly rejected. Virtually all other countries believed that access to Fund resources should be automatic and unchallenged. Moreover, they felt that Fund intrusion into their internal affairs would be intolerable.
>
> (Buira, 2003c, p84)

While an Executive Board decision in 1952 established a link between use of IMF resources and national policies, the principle of conditionality was incorporated into the Articles of Agreement only in 1969. This was primarily a reflection of the concern on the part of creditor countries to "preserve the revolving character of the Fund's resources" (Buira, 2003c).

Moreover, the scope of the Fund's role in policy conditionality has extended considerably since. The average number of conditions in IMF programmes increased from about six in the 1970s to ten in the 1980s (Kapur and Webb, 2000), continuing to increase through the 1990s. The programmes for Indonesia, Korea and Thailand in the wake of the 1997 Asian financial crisis, each included between 73 and 140 conditions, and that for Turkey in 2002 included 42 (Buira, 2003c). This is partly a reflection of the extension of IMF conditionality from the strictly macroeconomic to a much broader range of structural policy issues, such as trade and investment liberalisation, market deregulation and privatisation since the 1980s, and to

governance issues since the mid-1990s, particularly in low-income countries and "transition" economies. The average number of structural conditions per programme year increased from two in 1987 to a peak of 16 in 1997, falling back only to 12 in 1999 (Buira, 2003c, Figure 1, p61).

The proliferation of conditionality has arguably undermined the Fund's effectiveness in performing its original (ie financing) role, leading to a corresponding increase in incidence of programme failure since the mid-1980s (Buira, 2003c, Table 2). The Meltzer Report found that "detailed conditionality (often including dozens of conditions) has burdened IMF programs in recent years, and made such programs unwieldy, highly conflictive, time consuming to negotiate, and often ineffectual" (Meltzer, 2000).

There is no question, however, that conditionality, and its continued extension long after its failings became clear, represents an imposition by developed countries on developing countries, by virtue of their dominance of decision-making. As Rustomjee observes,

> Despite clear and mounting evidence over many years that programme conditionality had become excessive, irrelevant and counter-productive to the interests of the programmes themselves, decisions approved by the Executive Board continued, over several years, to favour excessive conditionality in IMF-supported programmes. This was despite repeated and well-argued objections by the debtor countries in the board, both to the IMF's policy on conditionality, and to the manner in which it was being implemented.
>
> (Rustomjee, 2005)

This significance of the increasing role of conditionality is greatly reinforced by the change in the nature of the negotiation process associated with the shifting balance of bargaining power between the Fund and borrowing members. When the Fund lent mainly to developed countries, they had relatively strong economies (notwithstanding temporary shocks), strong and well-resourced governments with considerable technical capacity, substantial votes in the Fund (and a commensurate share in its financing), and at least partial access to external financing even without their support. The result was something akin to the Fund's notional role (since its adoption of conditionality) of merely deciding whether or not to support a set of policies designed and adopted voluntarily by the national government.

In the case of developing countries, and especially smaller and poorer developing countries, however, the circumstances, and therefore the dynamics of negotiation, are fundamentally different. Their long-term economic position is typically extremely weak, and their solvency often compromised; they are critically dependent on securing IMF approval in order to secure either external financing or debt cancellation; their governments are typically chronically under-resourced, with very limited technical capacity (much of it provided by the Fund or donors); and, with the exception of the largest and richest developing countries, they have a minimal role either in financing the Fund or in its weighted voting system. The result is a process in which policies are in practice very largely designed by the IMF staff, and approved by the government, rather than the reverse; and continued support from the Fund (and, through cross-conditionality – the concomitant of the Fund's "catalytic role" – from

other funders) is subject to detailed conditions based on these policies, which are regularly monitored and strictly enforced.

Coupled with the cessation of borrowing from the Fund by developed countries, this gives rise to a serious asymmetry, between a relatively small minority of the membership whose policies are only indirectly and relatively little affected by its activities and decisions, but which have a substantial majority of the votes; and a large majority whose government policies and economic performance are directly and strongly affected by the Fund's operations, in many cases for decades, but which even collectively have little influence in its decision-making.

13.4 The Quota System: an Assessment

In the Fund's early years, given its limited membership and role, the quota system was reasonably functional. In a system of relatively equal countries, which was broadly in balance over the long term, both potential financial needs and capacity to finance the organization varied broadly in line with the size of the economy; and, in a voluntary association of selected countries, exercising little power over its members, a weighted voting system based on financial contributions could arguably be justified.

However, the expansion of the Fund's membership has simultaneously increased the economic disparities between members (compounded by economic divergence between the richest and poorest countries), shifted the balance of membership from richer to poorer countries, and incorporated countries with a need for continuous financial support for development over the long term rather than only occasional and temporary balance of payments support, and latterly with problems of insolvency rather than illiquidity.

Coupled with the adoption and subsequent institutionalisation of the Fund's role in policy conditionality, and the very unequal bargaining power between the Fund and borrowing (developing) countries, this gives the Fund a profound influence over national policies across much of the developing world.

At the same time, the amount developing countries can borrow from the Fund has been constrained by the declining level of quotas relative to the global economy, greatly increasing the role of the Fund in catalysing the resources they need from other multilateral and bilateral sources – largely as a result of the dominance of structural creditors (primarily developed countries) in determining quota increases. The Fund has thus become a "gatekeeper" to most major sources of international finance for most low-income countries; and a large proportion of the new financing and debt cancellation to which they can gain access is conditional on the IMF's lending and "seal of approval", and thus on its policy conditions. This adds considerably to the costs attached to non-compliance with IMF conditions on both macroeconomic and structural economic policies.

In addition, as noted above, many low-income countries have, for the last 25 years, faced long-term solvency problems requiring debt cancellation, rather than short-term liquidity problems which can be resolved through new lending. However, the debt cancellation available to such countries has consistently lagged behind what has been needed to restore solvency in many cases, as the effect of continuing over-

indebtedness has further undermined insolvent countries' economies, and thus their debt-servicing capacity. This has been compounded by the delays built in to the HIPC Initiative.

The result has been to increase dependency on new lending from official lenders over the long term in order to maintain liquidity in spite of continued insolvency. In consequence, the Fund's financial support, and thus its involvement in economic policy in borrowing countries, far from being limited to one or two years, as originally envisaged, now extends over decades in many countries.

Thus the role of the Fund in the determination of its borrowing members' policies – non-existent in its early years – has since the 1980s become considerably more extensive, much more detailed and of much longer duration, while failure to comply with policy conditions, because of the cross-conditionality of funding from other sources and the much greater dependency on such funding, is backed by more serious sanctions. The Fund, through policy conditionality, now exercises considerable influence over a broad range of economic and social policies in a (very large) sub-group of its members over a very long period, but minimal influence over the rest of its membership.

In this context, the quota system is considerably more problematic than it was in the early years of the Fund. It confers *de jure* power over the Fund on one relatively small set of (mostly developed country) members, while the Fund itself has simultaneously acquired considerable *de facto* power over another much larger set of (developing country members). Moreover, almost every element in the above process can itself be attributed, to a greater or lesser extent, to the dominance of the developed countries in the Fund's decision-making – that is, to the economically-weighted voting system associated with the threefold role of quotas. This might, with some justification, be considered as a form of institutionalised quasi-colonialism.

14. Towards a Common Developing Country Position: Political Considerations

As noted above, economic weighting of votes systematically advantages those countries with the greatest economic weight (primarily the developed countries) and disadvantages those with the least (broadly low- and lower-middle-income countries). Those with average economic weight (broadly speaking, upper-middle-income countries) are generally split between those gaining and losing, the balance between the two depending on the specific option under consideration.

However, in the present context, two factors can be expected to skew the preferences even of those middle-income countries which gain only slightly from democratic reform towards economic weighting.

(a) Voting reform will be decided on the basis of the current voting system, which gives a majority of votes to those countries which benefit from economic weighting, and a small minority to those who lose. It might therefore be expected that it will be easier to secure approval for a proposal which accepts the principle of economic weighting than for one which rejects it.

(b) Many middle-income countries are growing faster than the world economy as a whole, and expect to continue doing so. This means, firstly, that substantial benefits could be obtained (relative to the *status quo*) by bringing votes more closely into line with actual economic weights; and secondly, that the net costs/benefits to them of economic weighting can be expected to become more favourable over the long term.

This creates a potentially important tension between low-income and "emerging market" countries, as low-income countries benefit relatively little from quota-based approaches. Moreover, the relatively weak performance of most low-income countries, most notably in Sub-Saharan Africa, means that the costs of economic weighting to these countries will increase still further over time.

At the same time, however, the systematic disadvantage of the developing countries under any economically weighted voting system means that solidarity, and a common position among developing countries as a whole is imperative if substantial reform is to be secured. Resolving this dilemma will therefore be critical to their success.

14.1 The Need for a Common Position

The need for a common position among developing countries arises partly because of the size of the vote which would be necessary even to block a proposal by the developed countries. However, it is greatly reinforced by the need to combine the very different political strengths of "emerging markets" and low-income countries.

Many "emerging market" countries have built up very large foreign currency reserves, partly as a result of a lack of faith in the IMF to prevent or resolve future financial crises effectively, in the light of the experience of the Asian and other financial crises of 1997-2000. This gives them both the opportunity and the incentive (particularly given the substantial financial and opportunity costs of holding large reserves) to "walk away" from the Fund. There has been widespread discussion of the development of alternative regional structures to the IMF, and some first steps in this direction in Asia under the Chiang Mai Initiative.

This represents a substantial threat to the developed country governments, who value developing countries' membership of the Fund (especially that of "emerging markets") as a means of influencing their economic and commercial policies, and to maintain a degree of control over international financial markets in which "emerging markets" play an increasing role. At the same time, the current weak financial position of the Fund, as a result of limited borrowing and early repayment of loans by middle-income countries in Asia and Latin America, means that the defection of a substantial group of countries could jeopardise the future of the Fund as a whole. The "walk-away" option is therefore critically important as a political lever in negotiations.

Low-income countries, by contrast, are in no position financially or economically to "walk away" from the Fund, at least without financial support or crisis protection from other developing countries. However, they have a much stronger moral case for increased representation. Many such countries, particularly in Sub-Saharan Africa, have been subject to IMF conditionality for 20-25 years, and can fully expect to

continue in this position for at least a decade, and quite possibly indefinitely; and yet their voting power, acting collectively, is insufficient even to block major policy changes which affect them directly under the most stringent special majority requirement.

This provides potentially important political leverage of a different kind, for several reasons.

(a) There is a conspicuous injustice in countries' economic and social policies being dictated by an institution in which they have no effective say.

(b) The policies which have been imposed by IMF conditionality are widely seen as at least partly responsible for poor performance in economic and social indicators, particularly in Sub-Saharan Africa.

(c) The Make Poverty History/Global Call for Action against Poverty campaign has given rise to a greatly increased level of public awareness and concern about the position of Sub-Saharan Africa in at least some developed countries.

(d) The similarity of the current situation of low-income countries in the IMF with the colonial era provides highly emotive ammunition for political pressure. This may be given added resonance by the coincidence, in 2007, of the 50th anniversary of the first Sub-Saharan country to gain Independence and the 200th anniversary of the abolition of the slave trade in the UK.

(e) Northern-based development NGOs represent a highly influential constituency, whose support would be much more effectively galvanised by a proposal which would benefit the poorest countries rather than entrenching their disadvantage. A large number of major European NGOs have already signed up to a collective statement calling for "a truly democratic structure [in the IMF], which would satisfy the standards of democracy expected at the national level" (Bretton Woods Project, 2006)

In view of the uphill task of securing real reform through the existing system, it is essential politically to combine these two potentially important weapons against the developed countries – the self-interest dimension of the "walk-away" threat, and the public pressure of the moral case.

14.2 A Common Demand: the Democratic Option

As noted above, the benefits of economic weighting even to "emerging market" economies are at best limited, and the costs to low-income countries are substantial and increasing. Therefore the need to combine the strengths of low-income and "emerging" countries suggests that the strongest basis for developing country governments would in principle be a democratic option, calculated, as far as possible, to ensure benefits for middle-income countries.

Adopting a democratic model in itself has several additional advantages in terms of public pressure on Northern governments.

(a) An argument between economic weighting and democratic principles presents a much clearer choice than a choice between alternative principles of economic weighting.

(b) It is easier to engage the media, the public and politicians in a debate between basic principles than in a debate between specific allocations of votes between countries other than their own.

(c) Unlike economic issues such as debt cancellation and trade, basic democratic principles are widely understood and supported among the public in developed countries.

(d) The contrast between economically weighted voting and the basic principles of democracy which are taken for granted at the national level (and among countries within the European Union) provides a powerful argument. For example, demonstrating what economic weighting would mean in the US, the UK or France would highlight the issue in a very tangible way in these countries – as would applying the principle into EU decision-making for countries in the smaller and poorer member countries.

(e) The increasing emphasis by the IMF (and World Bank) and some development ministries (eg DFID) on governance issues in developing countries could readily be used to highlight the inconsistency of simultaneously defending a fundamentally undemocratic system in a global institution of which these countries are members.

(f) In some countries, government rhetoric about "spreading democracy" could be used similarly.

The foregoing discussion, applying the criteria adopted in this paper to the various options, suggests that the population-based option of choice from a developing country perspective is to divide votes proportionally to the square root of population. However, this raises two issues from a political perspective: the position of the minority of countries which would lose from such an approach; and the fact that any option which advantages the developing countries as a whole necessarily disadvantages developed countries, who have a large majority of the votes.

14.3 Winners and Losers: Individual Votes versus Collective Votes

The above analysis suggests that it is likely, and possibly inevitable, that the option selected as a basis for a common developing country position would give one or more better-off developing countries fewer votes than either the *status quo* or an alternative which accepts the principle of economic weighting. This may apply particularly to the members of OPEC, which received, and still benefit from, a major *ad hoc* quota increase following the oil price increases of the 1970s.

As discussed above, both the number and the political importance of developing countries which lose from reform can be minimised by adopting the square root approach. However, a few countries, including four of potential political importance will still lose.

Even for these countries, however, a strong case can be made that the primary consideration, even for individual governments, is the voting power for *blocks* of

countries rather than that of their own country. Setting aside considerations of national status, the size of an individual country's vote only allows a country to influence the outcome of decision-making processes if it confers a veto (ie, on current IMF rules for special majorities, 15% of the total). The only countries which could feasibly qualify for such a vote are China and India, and only if at least 70% of the vote were directly proportional to population.

In practice, however, it is not politically realistic – or arguably reasonable – for such countries to insist on a vote sufficient to confer a veto. It would also seem politically unwise. Apart from any concerns about the possible future dominance of China and/or India, a major weak point in the credibility of the current system is that it gives a veto to a single country (the US). This makes it politically more fruitful to propose a system which removes this veto than one which transfers to another country (or two countries).

When a country's vote does not provide it with a veto, it can only affect decision-making outcomes as part of a broader coalition. The primary consideration is therefore the collective votes of each country *together with others with which it might wish to form a coalition on a particular issue*, which would total at least 15% of the votes. It should therefore be a sufficient condition for a country to support an option that the collective votes of such coalitions should not be reduced.

Taken together, these considerations suggest a compelling case for a united developing country position behind a mutually acceptable proposal based on democratic principles rather than economic weighting – that is one in which votes are a function *only* of population.

14.4 Towards a Long-Term Strategy

A proposal based only on population would not be readily accepted by the developed country governments, and is unlikely to be implemented as a result of the current Quota Review. However, voting reform in the IMF needs to be viewed as a long-term process; and the application of democratic principles represents a reasonable and realistic long-term aspiration.

In any negotiation between unequal parties, there is, of course, a question as to whether it is better to ask for what one really wants or what one might realistically hope to get. In the present case, there is a very strong case for developing countries to adopt the former approach. The key tactical argument for a disadvantaged party to limit its demands in negotiations is the threat of non-engagement by the other party(s). A credible "walk-away" threat, and its potential consequences for the developed countries' objectives, give them little choice but to engage, irrespective of developing countries' demands. Despite their institutional disadvantage as a result of weighted voting, politically the developing countries are, in this respect, negotiating from a position of some strength.

Secondly, given the need of the developed countries to engage, adopting an "ideal" rather than a "feasible" option as a starting point shifts the political centre of gravity towards greater reform. By emphasising that any deviation from the "ideal" option is a concession, it should be possible to secure greater movement from the developed

countries' own "ideal" position. To adopt a "feasible" or "pragmatic" option *at the outset* would, in this sense, be to give away potentially important bargaining chips for no real return.

Thirdly, regular Quota Reviews are institutionalised by the IMF's Articles of Agreement, making voting reform necessarily and inescapably a long-term negotiation process. As a result, the developed countries have no choice but to engage on this issue on a continuing (or at least recurrent) basis, unless and until the Articles are amended to remove this requirement.

In this longer-term context, adopting a (short-term) "feasible" option which accepts economic weighting as a starting point risks helping to legitimise the principle, and thus to undermine the developing countries' bargaining position in the future.

Much of the discussion of IMF voting reform has been conditioned by the presumed political impossibility of democratic options because of the dominance of developed countries in the current system, and/or a perceived "walk-away" threat by some or all creditor countries.

Thus, for example, the Treasury Select Committee of the UK House of Commons identifies the US veto on major policy decisions in the Fund as seriously problematic. However, it limits its recommendations in light of "the political difficulties in achieving reform of the voting structure", based on the evidence they received from Professor Richard Portes that "The US is not going to give up its blocking veto and that is clear. That is just not on the table. We cannot expect that" (Treasury Select Committee, 2006, paragraph 21).

Cyrus Rustomjee likewise sees the "walk-away" threat as a block to any proposal which would remove the developed countries' built-in majority.

> Without an assured majority, creditors would inevitably leave the institution and the financing which underpins a major aspect of the institution's work would disappear.
>
> (Rustomjee, 2005)

Similarly, Buira rejects a one-member-one-vote system on the grounds that, even with equal voting power,

> larger countries that make larger contributions would tend to condition these on the adoption of certain policies, as is the case of the United Nations (UN) and several other UN agencies and programs, for example UNESCO, International Criminal Court, Kyoto Protocol on Global Warming, etc.
>
> (Buira, 2003c, pp 15-16)

However, there is a danger that such pragmatism will serve to legitimise the *status quo*, allowing the developed countries to focus the debate on the *details* of the weighting system rather than the *principle* of weighting votes according to economic strength. Thus the UK government takes as the starting point that "There is broad agreement… that members' representation should broadly reflect their economic weight" (HMT, 2006) (even though such "broad agreement" clearly does not extend to European civil society –Bretton Woods Project, 2006). Similarly the IMF

Managing Director's Report on Implementing the Fund's Medium-Term Strategy refers to "The question of a fair distribution of quotas, *reflecting the important changes in the weight and role of countries in the world economy*" (IMF, 2006b, emphasis added).

Merely to ensure that democratic principles are on the agenda therefore requires a clear and strong statement at the outset that the reform process will be complete only when the basic principle of IMF voting is that of democracy rather than economic weighting. Maintaining this view throughout the process could help considerably in sustaining momentum towards reform.

This could be further helped by emphasising, not only that any proposal falling short of generally recognised democratic principles does not represent a definitive solution to the issue, and that even partial acceptance of economic weighting represents a concession, but also that it has been imposed on developing countries by virtue of the existing (undemocratic) voting system. To the extent possible, a public indication should be given of the proportion of IMF member countries, and of the proportion of total population they represent, which oppose any option presented. (Given the secrecy of Executive Board discussions, however, this would require the cooperation of one or more Executive Directors.)

14.5 The Need for a Common Fall-Back

As well as an agreed starting point, the developing countries also need a common fall-back position, or at least agreement on the direction in which they are willing to fall back, if are to negotiate effectively as a block. There are several possible approaches here. These include:

(a) improvement in the quota formulae through changes which disproportionately benefit developing countries (eg using PPP rather than market exchange rates to calculate GDP);

(b) incorporating population into the quota formula, to add a democratic aspect;

(c) a larger increase in the basic vote;

(d) partial delinking of votes from quotas, through the addition of a second, population-related, basic vote, as proposed by Mirakhor; or

(e) a dual majority requirement for some or all votes, based on (current or improved) quota-based votes and votes based democratic principles.

Most combinations of these options would also be feasible.

As discussed above, the strongest of these options, in terms of increasing the votes of developing countries as a whole, and of most individual countries are those involving the use of population ((b) and (d)). These also have the advantage over the use of PPP exchange rates that data problems provide a limited defence.

A dual majority requirement is very much a two-edged sword. While it would represent a means of preventing the developed countries from *imposing changes* in IMF rules and policies, it would leave in place a block on any changes they oppose.

This would entrench existing policies which have come about through the dominance of the developed countries; and, more importantly, it would risk legitimising them by creating the semblance of democracy.

While including population in the quota (b) and adding a population-based basic vote (d) are in principle equivalent in terms of their effects on the distribution of votes, there is a strong case for the latter in the context of a long-term strategy. By establishing more clearly a duality of the vote between democratic and financial dimensions, it becomes more difficult for developed countries to justify allocating the overwhelming majority of the votes on the basis of financial criteria. Thus, once the principle was established, it would be a potential thin end of a wedge, providing the opportunity to increase the weight given to the democratic options in successive quota reviews. (It would be highly desirable also to allow the democratic vote to be increased in subsequent reviews without an amendment of the articles.)

It should be possible, over time, to push towards equality between the democratic and financial principles. If basic and population-related votes were kept separate, it might even be possible to push towards one-third of the vote being determined by each of the three principles, even without challenging the inclusion of an economic weighted component in the vote.

This represents a significant case for treating a population-related vote as *additional to* the basic vote as currently defined; and this may in turn suggest the use of a vote directly proportional to population rather than a non-linear function, as the latter is designed to incorporate the basic vote principle of providing a larger vote, relative to population, for smaller countries.

15. Conclusion

There is both a pressing need for fundamental reform to the IMF's voting system, and a very strong justification for it on a number of grounds. The current circumstances also present a rare opportunity to achieve at least some immediate change, due to the combination of the current quota review with the Fund's current financial position, the position of the major "emerging market" economies and the current political climate.

However, the effect of reform will be at best limited unless the link between IMF votes and economic strength can be at least considerably diluted, if not entirely broken; and securing substantial change will remain a slow process. This means that the current opportunity needs to be viewed strategically, as part of a long-term process.

If it is to be successful, such a strategic approach will require a strong degree of solidarity among developing country governments, to combine their political (and economic) strengths. This requires the development, both of a common demand, and of a common fall-back strategy.

This paper has proposed, as a common demand and long-term objective, the complete separation of voting weights in the IMF from financial contributions and access to Fund resources; and the basis of votes exclusively on democratic (ie one-country-one-

vote and/or population-related) principles, in such a way that votes increase less than proportionally with population. It has also proposed arguments to justify such a demand; and it has identified the square-root of population as the most promising option for such an initial demand, in terms of its effects on the distribution of votes and its potential for developing-country solidarity.

As a common fall-back, the paper has proposed supplementing the existing basic vote with a second basic vote, directly proportional to population. Once established, it is proposed that the expansion of the basic vote and the population-weighted vote, in parallel, should be a common objective of developing country governments in quota reviews.

There is, of course, no guarantee of success – not least because of the ability of the developed countries to use their weighted votes to block any reduction of their power. However, by providing a strong moral case, based on principles well understood and widely supported by the public in developed countries, this provides the best option for tackling the one way in which opposition can be overcome: through pressure on developed country governments from their own electorates, opinion formers and pressure groups. This will be further enhanced, at least in the current Quota Review, by the existence of a credible threat that some or all developing countries may leave the Fund and establish their own parallel arrangements if the problem is not resolved to their satisfaction.

References

BIS (2005) *Triennial Central Bank Survey: Foreign exchange and derivatives market activity in 2004.* Bank for International Settlements, Basle, March.

Bretton Woods Project (2006) "European CSO open statement on governance reform of the IMF". http://www.brettonwoodsproject.org/art.shtml?x=539161 (co-signed by 52 other European civil society organisations and networks).

Brookins C (2003) "Enhancing the voice of developing and transition countries at the World Bank". EDS2003-0389, Office of the US Executive Director, World Bank, Washington D.C., 20 June.

Buira A (2003a) "The governance of the International Monetary Fund". In Kaul I, Conceição P, le Goulven K and Mendoza RU, eds. *Providing Global Public Goods: Managing Globalization*, New York/Oxford: UNDP/OUP.

Buira A (2003b) "Introduction". In Ariel Buira (ed.) *Challenges to the IMF and World Bank: Developing Country Perspectives*. London: Anthem Press.

Buira A (2003c) "An Analysis of IMF Conditionality". In Ariel Buira (ed.) *Challenges to the IMF and World Bank: Developing Country Perspectives*. London: Anthem Press.

Gianviti, François (1999) "Decision-Making in the International Monetary Fund". In IMF (ed.) *Current Developments in Monetary and Financial Law*. Washington D.C.: International Monetary Fund.

Gold, Joseph (1974) Membership and Nonmembership in the International Monetary Fund: a Study in International Law and Organzation. Washington D.C.: International Monetary Fund.

HMT (2006) *The UK and the IMF 2005: Meeting the challenges of globalisation for all*. HM Treasury, London, March. accessed 1 August, 2006.

IMF (2003a) "Quota Issues: Selected Issues". International Monetary Fund, Washington D.C., 17 July.

IMF (2006a) "Quotas and Voice Reform in the International Monetary Fund". Report of the Executive Board to the Board of Governors, International Monetary Fund, Washington D.C., 31 August.

IMF (2006b) "The Managing Director's Report on Implementing the Fund's Medium-Term Strategy". International Monetary Fund, Washington D.C., 5 April. http://www.imf.org/external/np/pp/eng/2006/040506.pdf.

Jawara F and Kwa A (2004) *Behind the Scenes at the WTO: the Real World of International Trade Negotiations.* London: Zed Books.

Kapur D and Webb R (2000) "Governance-Related Conditionalities of the International Financial Institutions". G24 Discussion Paper 6, August.

Leech D and Leech R (2003) "Voting Power in the Bretton Woods Institutions". Warwick Economic Research Papers No. 718, Department of Economics, Warwick University.

Meltzer A (2000) *Report of the International Financial Institution Advisory Commission*. http://www.house.gov/jec/imf/meltzer.pdf

Mikesell RF 1994. "The Bretton Woods Debates: A Memoir". Essay in International Finance No. 192. Princeton, NJ: Princeton University.

Mirakhor A and Zaidi I (2006) "Rethinking the Governance of the International Monetary Fund". Working Paper WP/06/273, International Monetary Fund, Wasington D.C. http://www.imf.org/external/pubs/ft/wp/2006/wp06273.pdf

Rustomjee C (2005) "Improving Southern voice on the IMF Board: Quo vadis shareholders?". In Carin B and Wood A eds. *Accountability of the International Monetary Fund*. Ottawa: International Development Research Council.

Treasury Select Committee (2006) *Globalisation: the Role of the IMF*. Ninth Report of Session 2005–06, House of Commons, London, July.

Wade RH (2005) "Tighter IMF accountability? Some dangers". In Carin B and Wood A eds. *Accountability of the International Monetary Fund*. Ottawa: International Development Research Council.

Woods N and Lombardi D (2006) “Uneven patterns of governance: how developing countries are represented in the IMF”. *Review of International Political Economy*, 13(3), August.

Annex 1: Overview of Summary Indicators

		Democratic principles		Individual country representation			Non-dominance				
		Explicit democratic link (%)	"democratic shortfall" (%)	Smallest vote (%)	90th percentile vote (%)	80th percentile vote (%)	G7 vote (%)	EU vote (%)	OECD vote (%)	Countries for 15% +1	Countries for 50% +1
Post-Singapore (baseline)		***4.2***	***62.7***	***0.02***	***0.03***	***0.05***	***43.7***	***31.7***	***63.2***	***1***	***9***
Increased basic vote	**11.3%**	11.3	58.0	0.06	0.07	0.08	40.7	30.4	59.7	1	11
	25%	25.0	49.0	0.14	0.14	0.16	35	28	53	2	15
	50%	50.0	32.7	0.27	0.27	0.28	24.6	23.6	40.7	3	34
Population-related	**proportional**	100.0	0.0	0.0003	0.005	0.02	11.3	7.7	18.3	1 (x2)	6
	square root	100.0	11.2	0.02	0.08	0.14	9.4	13.5	21.6	5	34
	cube root	100.0	23.6	0.07	0.16	0.24	7.6	14.6	20.6	10	50
Population+ Westphalian	**75-25**	100.0	0.0	0.14	0.14	0.15	9.4	9.4	17.8	1	14
	50-50	100.0	0.0	0.27	0.27	0.28	7.5	11.2	17.3	2	34
	25-75	100.0	0.0	0.41	0.41	0.41	5.7	12.9	16.8	6	66
Quota formulae	**Cooper**	4.2	67.7	0.02	0.02	0.03	55.4	29.8	75.1	1	5
	(US ceiling)	*4.2*	*62.9*	*0.03*	*0.03*	*0.03*	*50.1*	*33.4*	*72.2*	*1*	*7*
	EU	4.2	66.1	0.02	0.02	0.03	57.3	34	77.5	1	5
	(US ceiling)	*4.2*	*62.0*	*0.02*	*0.03*	*0.03*	*53.1*	*37.3*	*75.3*	*1*	*6*
	Buira	4.2	34.1	0.06	0.09	0.11	33.6	19.7	46.8	1	10
Mirakhor and Zaidi		25.0	34.3	0.08	0.09	0.10	35.7	24.7	54.0	2	11
Memo	***% population***						***11.3***	***7.7***	***18.3***		
	% members						***3.8***	***14.7***	***16.3***		

		Proportionality		Debtor/creditor balance			Country group representation			
		Inter-quartile range (ratio)	IQR relative to population	High-income country vote (%)	HIC/LMIC per country (ratio)	HIC/LMIC relative to population	HIPC vote (%)	Other PRGF vote (%)	Other developing countries vote (%)	Transition economies vote (%)
Post-Singapore (baseline)		***7.8***	***1.21***	***65.3***	***7***	***10.3***	***3.1***	***5.7***	***26***	***7.7***
Increased basic vote	**11.3%**	4.7	0.73	62	6.1	9	4.5	6.8	26.8	8.2
	25%	2.8	0.43	55.7	4.7	6.9	7.1	8.9	28.3	9.2
	50%	1.6	0.26	44.2	2.9	4.4	12	12.8	31	11
Population-related	**proportional**	12.3	1	15.4	0.68	1	8.7	29.6	46.3	6.3
	square root	3.7	0.27	19.9	0.92	1.37	18.7	21.1	40.3	12.1
	cube root	2.4	0.17	20.5	0.96	1.42	21	19.7	38.7	13.7
Population+ Westphalian	**75-25**	2.7	0.2	16.8	0.75	1.11	12	27.3	43.9	8.4
	50-50	1.6	0.12	18.3	0.93	1.23	15.2	24.1	41.4	10.5
	25-75	1.2	0.09	19.7	0.91	1.35	18.5	22.9	38.9	12.6
Quota formulae	**Cooper**	8.6	0.88	74	10.6	15.7	1.8	3.6	20.6	4.9
	(US ceiling)	*8.6*	*0.88*	*70.9*	*9.1*	*13.4*	*2*	*4*	*23.1*	*5.5*
	EU	7.8	0.88	76.3	12	17.7	1.4	3.3	19	4.4
	(US ceiling)	*7.8*	*0.88*	*74.0*	*10.6*	*15.6*	*1.5*	*3.6*	*20.9*	*4.8*
	Buira	3.2	n/a	46.4	3.2	4.8	7.7	11.8	34.1	7.8
Mirakhor and Zaidi		3.9	0.45	55.4	4.6	6.8	4.9	9.2	30.5	7.6
Memo	***% population***			***15.4***			***8.7***	***29.6***	***46.3***	***6.3***
	% members			***21.2***			***21.7***	***20.7***	***36.4***	***14.7***

		Symmetrical constituencies			Developing country losers			Political feasibility		
		Single-country constituencies	Constituency-dominant countries	Maximum countries average for constituency	Number of countries	% of population	% of total votes	Total countries losing	% of total votes	% of population
Post-Singapore (baseline)		***6***	***7***	***84***						
Increased basic vote	**11.3%**	5	8	55	20	57.9	25	37	81.4	71.2
	25%	5	6	30	20	57.9	25	37	81.4	71.2
	50%	1	5	16	20	57.9	25	37	81.4	71.2
Population-related	**proportional**	5	6	97	86	10.6	21.9	110	79.8	24.3
	square root	2	2	46	15	5	12.2	36	69.6	18.4
	cube root	0	2	30	10	26.7	15.8	28	72.7	40.1
Population+ Westphalian	**75-25**	3	7	31	22	10.2	18.4	44	76.6	24
	50-50	2	2	16	19	9.9	17.7	40	75.7	23.7
	25-75	2	0	11	17	13.7	18.2	34	74.7	27.1
Quota formulae	**Cooper**	7	10	103	135	54.6	30.9	147	53.1	58.3
	(US ceiling)	*6*	*9*	*98*	*116*	*54.1*	*29.4*	*128*	*51.6*	*57.7*
	EU	9	8	109	146	58.6	33.2	158	51.2	61.3
	(US ceiling)	*9*	*8*	*104*	*130*	*58.2*	*32.2*	*138*	*40.7*	*59.2*
	Buira	5	5	44	34	13.4	18.6	52	74.5	26.3
Mirakhor and Zaidi		4	7	46	27	17.0	18.3	43	67.5	27.7

Annex 2: Share of Votes by Country under Alternative Options

Country	*Post-*	Increased Basic Votes			Population-related			Population + Westphalian			Cooper		EU		Buira	Mirakhor
	Sing.	11.3%	25%	50%	prop	sq root	cu root	75/25	50/50	25/75		*US clg*		*US clg*		
Afghanistan	***0.09%***	0.13%	0.19%	0.31%	0.49%	0.79%	0.77%	0.50%	0.52%	0.53%	0.07%	*0.08%*	0.04%	*0.04%*	0.38%	0.20%
Albania	***0.04%***	0.08%	0.15%	0.28%	0.05%	0.25%	0.36%	0.17%	0.30%	0.42%	0.04%	*0.05%*	0.04%	*0.04%*	0.09%	0.12%
Algeria	***0.58%***	0.57%	0.57%	0.56%	0.52%	0.81%	0.78%	0.52%	0.53%	0.54%	0.29%	*0.33%*	0.21%	*0.23%*	0.39%	0.65%
Angola	***0.15%***	0.18%	0.23%	0.34%	0.25%	0.57%	0.62%	0.32%	0.40%	0.47%	0.19%	*0.21%*	0.08%	*0.09%*	0.42%	0.35%
Antigua and B	***0.03%***	0.07%	0.14%	0.27%	0.00%	0.04%	0.11%	0.14%	0.27%	0.41%	0.02%	*0.03%*	0.03%	*0.03%*	0.06%	0.09%
Argentina	***0.96%***	0.93%	0.87%	0.76%	0.61%	0.88%	0.83%	0.59%	0.58%	0.56%	0.58%	*0.65%*	0.37%	*0.40%*	0.79%	0.65%
Armenia	***0.06%***	0.10%	0.17%	0.29%	0.05%	0.25%	0.35%	0.17%	0.30%	0.42%	0.03%	*0.03%*	0.03%	*0.03%*	0.08%	0.10%
Australia	***1.45%***	1.38%	1.25%	1.02%	0.32%	0.64%	0.67%	0.38%	0.43%	0.49%	1.27%	*1.43%*	1.31%	*1.44%*	0.89%	0.94%
Austria	***0.85%***	0.83%	0.78%	0.70%	0.13%	0.41%	0.49%	0.23%	0.34%	0.44%	0.71%	*0.79%*	0.92%	*1.00%*	0.43%	0.65%
Azerbaijan	***0.09%***	0.13%	0.19%	0.31%	0.13%	0.41%	0.50%	0.23%	0.34%	0.44%	0.05%	*0.06%*	0.05%	*0.05%*	0.14%	0.12%
Bahamas	***0.08%***	0.11%	0.18%	0.30%	0.01%	0.08%	0.17%	0.14%	0.27%	0.41%	0.04%	*0.04%*	0.04%	*0.05%*	0.09%	0.11%
Bahrain	***0.08%***	0.12%	0.18%	0.30%	0.01%	0.12%	0.22%	0.14%	0.28%	0.41%	0.11%	*0.13%*	0.07%	*0.08%*	0.31%	0.22%
Bangladesh	***0.26%***	0.28%	0.32%	0.39%	2.23%	1.69%	1.28%	1.81%	1.39%	0.96%	0.14%	*0.15%*	0.15%	*0.16%*	0.39%	0.40%
Barbados	***0.05%***	0.09%	0.16%	0.29%	0.00%	0.07%	0.16%	0.14%	0.27%	0.41%	0.03%	*0.04%*	0.03%	*0.04%*	0.10%	0.10%
Belarus	***0.19%***	0.22%	0.27%	0.36%	0.15%	0.44%	0.52%	0.25%	0.35%	0.45%	0.09%	*0.10%*	0.09%	*0.10%*	0.18%	0.20%
Belgium	***2.06%***	1.94%	1.73%	1.33%	0.16%	0.46%	0.54%	0.26%	0.35%	0.45%	0.94%	*1.05%*	1.31%	*1.44%*	0.52%	1.00%
Belize	***0.03%***	0.07%	0.14%	0.28%	0.00%	0.08%	0.16%	0.14%	0.27%	0.41%	0.03%	*0.03%*	0.03%	*0.03%*	0.11%	0.09%
Benin	***0.05%***	0.09%	0.16%	0.29%	0.13%	0.41%	0.50%	0.24%	0.34%	0.44%	0.03%	*0.03%*	0.03%	*0.03%*	0.06%	0.10%
Bhutan	***0.02%***	0.06%	0.14%	0.27%	0.01%	0.14%	0.24%	0.15%	0.28%	0.41%	0.02%	*0.03%*	0.02%	*0.03%*	0.10%	0.09%
Bolivia	***0.10%***	0.13%	0.20%	0.31%	0.14%	0.43%	0.51%	0.24%	0.34%	0.44%	0.05%	*0.05%*	0.04%	*0.05%*	0.10%	0.12%
Bosnia and H	***0.10%***	0.13%	0.19%	0.31%	0.06%	0.28%	0.39%	0.18%	0.30%	0.42%	0.06%	*0.07%*	0.05%	*0.06%*	0.21%	0.15%
Botswana	***0.05%***	0.09%	0.16%	0.29%	0.03%	0.19%	0.30%	0.16%	0.29%	0.41%	0.05%	*0.06%*	0.05%	*0.05%*	0.17%	0.16%
Brazil	***1.36%***	1.30%	1.19%	0.97%	2.93%	1.93%	1.40%	2.33%	1.74%	1.14%	1.54%	*1.72%*	1.23%	*1.35%*	2.15%	1.24%
Brunei	***0.12%***	0.15%	0.21%	0.32%	0.01%	0.09%	0.18%	0.14%	0.27%	0.41%	0.09%	*0.10%*	0.05%	*0.05%*	0.45%	0.15%
Bulgaria	***0.31%***	0.32%	0.36%	0.42%	0.12%	0.39%	0.48%	0.23%	0.33%	0.44%	0.10%	*0.11%*	0.09%	*0.10%*	0.18%	0.20%
Burkina Faso	***0.05%***	0.09%	0.16%	0.29%	0.21%	0.51%	0.58%	0.29%	0.38%	0.46%	0.03%	*0.04%*	0.03%	*0.03%*	0.09%	0.12%
Burundi	***0.06%***	0.09%	0.16%	0.29%	0.12%	0.39%	0.48%	0.22%	0.33%	0.44%	0.03%	*0.03%*	0.02%	*0.03%*	0.16%	0.10%
Cambodia	***0.06%***	0.10%	0.17%	0.29%	0.22%	0.53%	0.59%	0.30%	0.38%	0.46%	0.07%	*0.08%*	0.04%	*0.04%*	0.36%	0.18%
Cameroon	***0.10%***	0.14%	0.20%	0.31%	0.26%	0.57%	0.62%	0.33%	0.40%	0.47%	0.07%	*0.07%*	0.06%	*0.06%*	0.11%	0.13%
Canada	***2.84%***	2.67%	2.34%	1.74%	0.51%	0.80%	0.78%	0.52%	0.53%	0.53%	2.25%	*2.52%*	2.65%	*2.91%*	1.45%	1.87%
Cape Verde	***0.03%***	0.07%	0.14%	0.27%	0.01%	0.10%	0.20%	0.14%	0.28%	0.41%	0.03%	*0.03%*	0.02%	*0.03%*	0.12%	0.09%
CAR	***0.05%***	0.08%	0.16%	0.28%	0.06%	0.28%	0.39%	0.18%	0.30%	0.42%	0.03%	*0.03%*	0.03%	*0.03%*	0.11%	0.09%
Chad	***0.05%***	0.08%	0.16%	0.28%	0.15%	0.44%	0.52%	0.25%	0.35%	0.45%	0.04%	*0.04%*	0.03%	*0.03%*	0.16%	0.12%
Chile	***0.40%***	0.41%	0.43%	0.47%	0.26%	0.57%	0.62%	0.33%	0.40%	0.47%	0.28%	*0.32%*	0.25%	*0.28%*	0.32%	0.35%
China	***3.60%***	3.37%	2.93%	2.14%	20.49%	5.11%	2.67%	15.51%	10.52%	5.53%	3.90%	*4.36%*	4.55%	*4.99%*	10.02%	7.03%

Country	*Post-Sing.*	Increased Basic Votes			Population-related			Population + Westphalian			Cooper		EU		Buira	Mirakhor
		11.3%	25%	50%	prop	sq root	cu root	75/25	50/50	25/75		*US clg*		*US clg*		
Colombia	***0.36%***	0.38%	0.40%	0.45%	0.72%	0.96%	0.87%	0.67%	0.63%	0.59%	0.26%	*0.30%*	0.24%	*0.26%*	0.50%	0.35%
Comoros	***0.03%***	0.07%	0.14%	0.27%	0.01%	0.11%	0.21%	0.14%	0.28%	0.41%	0.02%	*0.03%*	0.02%	*0.03%*	0.07%	0.08%
Congo DR	***0.26%***	0.28%	0.32%	0.39%	0.90%	1.07%	0.95%	0.81%	0.72%	0.63%	0.22%	*0.24%*	0.04%	*0.04%*	1.16%	0.20%
Congo Rep	***0.06%***	0.10%	0.17%	0.29%	0.06%	0.28%	0.39%	0.18%	0.30%	0.42%	0.05%	*0.05%*	0.04%	*0.04%*	0.21%	0.12%
Costa Rica	***0.09%***	0.13%	0.19%	0.31%	0.07%	0.29%	0.40%	0.19%	0.31%	0.42%	0.08%	*0.09%*	0.08%	*0.09%*	0.13%	0.17%
Côte d'Ivoire	***0.17%***	0.19%	0.25%	0.35%	0.29%	0.60%	0.64%	0.35%	0.41%	0.48%	0.06%	*0.07%*	0.07%	*0.07%*	0.10%	0.17%
Croatia	***0.18%***	0.21%	0.26%	0.36%	0.07%	0.30%	0.40%	0.19%	0.31%	0.43%	0.13%	*0.14%*	0.12%	*0.13%*	0.17%	0.20%
Cyprus	***0.08%***	0.12%	0.18%	0.30%	0.01%	0.13%	0.23%	0.15%	0.28%	0.41%	0.08%	*0.09%*	0.07%	*0.07%*	0.13%	0.13%
Czech Rep	***0.38%***	0.40%	0.42%	0.46%	0.16%	0.45%	0.53%	0.26%	0.35%	0.45%	0.37%	*0.41%*	0.36%	*0.40%*	0.37%	0.44%
Denmark	***0.75%***	0.73%	0.70%	0.65%	0.09%	0.33%	0.43%	0.20%	0.31%	0.43%	0.76%	*0.86%*	0.72%	*0.79%*	0.33%	0.89%
Djibouti	***0.03%***	0.07%	0.14%	0.28%	0.01%	0.13%	0.23%	0.15%	0.28%	0.41%	0.02%	*0.03%*	0.02%	*0.03%*	0.09%	0.09%
Dominica	***0.03%***	0.06%	0.14%	0.27%	0.00%	0.04%	0.10%	0.14%	0.27%	0.41%	0.02%	*0.03%*	0.02%	*0.03%*	0.14%	0.08%
Dominican Rep	***0.12%***	0.15%	0.21%	0.32%	0.14%	0.42%	0.51%	0.24%	0.34%	0.44%	0.08%	*0.09%*	0.09%	*0.09%*	0.16%	0.17%
Ecuador	***0.16%***	0.19%	0.24%	0.34%	0.21%	0.51%	0.58%	0.29%	0.38%	0.46%	0.18%	*0.20%*	0.09%	*0.10%*	0.26%	0.16%
Egypt	***0.44%***	0.45%	0.46%	0.49%	1.16%	1.22%	1.03%	1.01%	0.85%	0.70%	0.28%	*0.31%*	0.24%	*0.26%*	0.49%	0.42%
El Salvador	***0.10%***	0.13%	0.20%	0.31%	0.11%	0.37%	0.47%	0.22%	0.33%	0.43%	0.07%	*0.07%*	0.07%	*0.07%*	0.11%	0.14%
Eq. Guinea	***0.04%***	0.07%	0.15%	0.28%	0.01%	0.10%	0.19%	0.14%	0.28%	0.41%	0.04%	*0.05%*	0.04%	*0.04%*	0.22%	0.12%
Eritrea	***0.03%***	0.07%	0.14%	0.28%	0.07%	0.30%	0.40%	0.19%	0.31%	0.42%	0.03%	*0.03%*	0.02%	*0.03%*	0.34%	0.10%
Estonia	***0.05%***	0.09%	0.16%	0.29%	0.02%	0.16%	0.27%	0.15%	0.28%	0.41%	0.06%	*0.06%*	0.06%	*0.07%*	0.11%	0.13%
Ethiopia	***0.08%***	0.12%	0.18%	0.30%	1.12%	1.19%	1.01%	0.98%	0.83%	0.69%	0.13%	*0.14%*	0.04%	*0.05%*	0.51%	0.31%
Fiji	***0.05%***	0.09%	0.16%	0.29%	0.01%	0.13%	0.23%	0.15%	0.28%	0.41%	0.03%	*0.03%*	0.03%	*0.03%*	0.07%	0.09%
Finland	***0.58%***	0.58%	0.57%	0.56%	0.08%	0.32%	0.43%	0.20%	0.31%	0.43%	0.51%	*0.57%*	0.51%	*0.56%*	0.28%	0.39%
France	***4.77%***	4.45%	3.85%	2.75%	0.95%	1.10%	0.96%	0.85%	0.75%	0.65%	4.10%	*4.59%*	4.73%	*5.19%*	2.53%	2.95%
Gabon	***0.09%***	0.12%	0.19%	0.31%	0.02%	0.17%	0.27%	0.15%	0.28%	0.41%	0.06%	*0.06%*	0.04%	*0.05%*	0.17%	0.15%
Gambia	***0.04%***	0.07%	0.15%	0.28%	0.02%	0.17%	0.28%	0.15%	0.28%	0.41%	0.02%	*0.03%*	0.02%	*0.03%*	0.17%	0.09%
Georgia	***0.09%***	0.12%	0.19%	0.31%	0.07%	0.30%	0.40%	0.19%	0.31%	0.43%	0.04%	*0.04%*	0.03%	*0.04%*	0.10%	0.10%
Germany	***5.78%***	5.38%	4.63%	3.27%	1.30%	1.29%	1.07%	1.11%	0.92%	0.73%	6.36%	*7.12%*	6.99%	*7.67%*	3.36%	5.01%
Ghana	***0.19%***	0.21%	0.26%	0.36%	0.35%	0.67%	0.69%	0.40%	0.45%	0.49%	0.06%	*0.06%*	0.05%	*0.05%*	0.18%	0.15%
Greece	***0.39%***	0.40%	0.42%	0.46%	0.17%	0.47%	0.55%	0.27%	0.36%	0.45%	0.62%	*0.69%*	0.48%	*0.53%*	0.42%	0.41%
Grenada	***0.03%***	0.07%	0.14%	0.27%	0.00%	0.05%	0.12%	0.14%	0.27%	0.41%	0.02%	*0.03%*	0.02%	*0.03%*	0.11%	0.08%
Guatemala	***0.12%***	0.15%	0.21%	0.32%	0.20%	0.50%	0.57%	0.28%	0.37%	0.46%	0.09%	*0.10%*	0.09%	*0.10%*	0.13%	0.16%
Guinea	***0.07%***	0.11%	0.17%	0.30%	0.15%	0.43%	0.52%	0.25%	0.35%	0.44%	0.03%	*0.04%*	0.03%	*0.03%*	0.10%	0.11%
Guinea-Bissau	***0.03%***	0.07%	0.14%	0.28%	0.02%	0.18%	0.29%	0.15%	0.28%	0.41%	0.03%	*0.03%*	0.02%	*0.03%*	0.60%	0.09%
Guyana	***0.06%***	0.10%	0.17%	0.29%	0.01%	0.12%	0.22%	0.14%	0.28%	0.41%	0.03%	*0.04%*	0.03%	*0.03%*	0.45%	0.10%
Haiti	***0.06%***	0.09%	0.16%	0.29%	0.13%	0.41%	0.50%	0.24%	0.34%	0.44%	0.04%	*0.04%*	0.03%	*0.04%*	0.14%	0.11%

Country	*Post-Sing.*	Increased Basic Votes			Population-related			Population + Westphalian			Cooper		EU		Buira	Mirakhor
		11.3%	25%	50%	prop	sq root	cu root	75/25	50/50	25/75		*US clg*		*US clg*		
Honduras	***0.08%***	0.11%	0.18%	0.30%	0.11%	0.38%	0.47%	0.22%	0.33%	0.44%	0.04%	*0.05%*	0.05%	*0.05%*	0.10%	0.13%
Hungary	***0.48%***	0.49%	0.49%	0.51%	0.16%	0.45%	0.53%	0.25%	0.35%	0.45%	0.32%	*0.36%*	0.34%	*0.37%*	0.32%	0.37%
Iceland	***0.07%***	0.11%	0.18%	0.30%	0.00%	0.08%	0.16%	0.14%	0.27%	0.41%	0.06%	*0.06%*	0.05%	*0.06%*	0.09%	0.10%
India	***1.86%***	1.76%	1.57%	1.23%	17.19%	4.68%	2.52%	13.04%	8.87%	4.71%	1.29%	*1.44%*	1.36%	*1.50%*	4.54%	3.13%
Indonesia	***0.94%***	0.91%	0.85%	0.75%	3.46%	2.10%	1.48%	2.74%	2.00%	1.27%	0.78%	*0.88%*	0.66%	*0.73%*	1.14%	1.14%
Iran	***0.68%***	0.67%	0.65%	0.62%	1.06%	1.16%	1.00%	0.93%	0.80%	0.67%	0.36%	*0.40%*	0.37%	*0.41%*	0.73%	0.67%
Iraq	***0.55%***	0.55%	0.55%	0.55%	0.46%	0.77%	0.76%	0.48%	0.50%	0.52%	0.17%	*0.19%*	0.11%	*0.12%*	0.23%	0.39%
Ireland	***0.39%***	0.40%	0.43%	0.47%	0.07%	0.29%	0.39%	0.18%	0.30%	0.42%	1.27%	*1.42%*	0.80%	*0.88%*	0.46%	0.85%
Israel	***0.43%***	0.44%	0.46%	0.49%	0.11%	0.37%	0.47%	0.22%	0.33%	0.43%	0.40%	*0.45%*	0.39%	*0.43%*	0.31%	0.52%
Italy	***3.14%***	2.95%	2.58%	1.90%	0.90%	1.07%	0.94%	0.81%	0.72%	0.63%	3.15%	*3.52%*	3.85%	*4.22%*	2.34%	2.44%
Jamaica	***0.14%***	0.17%	0.23%	0.33%	0.04%	0.23%	0.34%	0.17%	0.29%	0.42%	0.06%	*0.07%*	0.05%	*0.06%*	0.13%	0.12%
Japan	***5.91%***	5.51%	4.74%	3.34%	2.01%	1.60%	1.23%	1.64%	1.28%	0.91%	9.73%	*10.90%*	9.38%	*10.30%*	5.27%	9.49%
Jordan	***0.10%***	0.13%	0.19%	0.31%	0.09%	0.33%	0.43%	0.20%	0.31%	0.43%	0.07%	*0.08%*	0.07%	*0.07%*	0.15%	0.16%
Kazakhstan	***0.18%***	0.21%	0.26%	0.36%	0.24%	0.55%	0.61%	0.31%	0.39%	0.47%	0.15%	*0.17%*	0.13%	*0.14%*	0.25%	0.27%
Kenya	***0.14%***	0.17%	0.23%	0.33%	0.54%	0.83%	0.80%	0.54%	0.54%	0.54%	0.07%	*0.07%*	0.06%	*0.07%*	0.12%	0.17%
Kiribati	***0.02%***	0.06%	0.14%	0.27%	0.00%	0.04%	0.11%	0.14%	0.27%	0.41%	0.02%	*0.03%*	0.02%	*0.02%*	0.25%	0.08%
Korea	***1.32%***	1.26%	1.15%	0.95%	0.76%	0.98%	0.89%	0.71%	0.65%	0.60%	1.89%	*2.12%*	1.84%	*2.02%*	1.42%	2.30%
Kuwait	***0.63%***	0.63%	0.61%	0.59%	0.04%	0.23%	0.33%	0.17%	0.29%	0.42%	0.24%	*0.26%*	0.18%	*0.20%*	0.19%	0.46%
Kyrgyz Rep	***0.06%***	0.10%	0.17%	0.29%	0.08%	0.32%	0.42%	0.20%	0.31%	0.43%	0.03%	*0.04%*	0.03%	*0.03%*	0.14%	0.10%
Laos	***0.05%***	0.08%	0.15%	0.28%	0.09%	0.34%	0.44%	0.21%	0.32%	0.43%	0.03%	*0.03%*	0.03%	*0.03%*	0.11%	0.10%
Latvia	***0.08%***	0.11%	0.18%	0.30%	0.04%	0.21%	0.32%	0.16%	0.29%	0.42%	0.06%	*0.06%*	0.06%	*0.07%*	0.11%	0.12%
Lebanon	***0.11%***	0.14%	0.21%	0.32%	0.06%	0.27%	0.37%	0.18%	0.30%	0.42%	0.15%	*0.16%*	0.10%	*0.11%*	0.20%	0.31%
Lesotho	***0.04%***	0.08%	0.15%	0.28%	0.03%	0.19%	0.30%	0.16%	0.29%	0.41%	0.03%	*0.03%*	0.03%	*0.03%*	0.14%	0.09%
Liberia	***0.03%***	0.06%	0.14%	0.27%	0.05%	0.25%	0.36%	0.17%	0.30%	0.42%	0.03%	*0.03%*	0.02%	*0.03%*	0.42%	0.09%
Libya	***0.52%***	0.52%	0.52%	0.53%	0.09%	0.34%	0.44%	0.20%	0.32%	0.43%	0.18%	*0.20%*	0.11%	*0.12%*	0.27%	0.44%
Lithuania	***0.09%***	0.12%	0.19%	0.30%	0.05%	0.26%	0.37%	0.18%	0.30%	0.42%	0.08%	*0.09%*	0.08%	*0.09%*	0.13%	0.15%
Luxembourg	***0.15%***	0.18%	0.23%	0.34%	0.01%	0.10%	0.19%	0.14%	0.28%	0.41%	0.35%	*0.39%*	0.32%	*0.35%*	0.43%	0.48%
Macedonia FYR	***0.05%***	0.09%	0.16%	0.29%	0.03%	0.20%	0.31%	0.16%	0.29%	0.42%	0.04%	*0.05%*	0.04%	*0.04%*	0.13%	0.11%
Madagascar	***0.08%***	0.11%	0.18%	0.30%	0.29%	0.61%	0.65%	0.36%	0.42%	0.48%	0.04%	*0.05%*	0.04%	*0.04%*	0.13%	0.15%
Malawi	***0.05%***	0.09%	0.16%	0.29%	0.20%	0.51%	0.57%	0.29%	0.37%	0.46%	0.03%	*0.03%*	0.03%	*0.03%*	0.08%	0.11%
Malaysia	***0.68%***	0.67%	0.65%	0.61%	0.40%	0.71%	0.72%	0.43%	0.47%	0.51%	0.59%	*0.66%*	0.58%	*0.64%*	0.49%	1.00%
Maldives	***0.03%***	0.06%	0.14%	0.27%	0.01%	0.08%	0.17%	0.14%	0.27%	0.41%	0.02%	*0.03%*	0.03%	*0.03%*	0.09%	0.09%
Mali	***0.06%***	0.10%	0.17%	0.29%	0.21%	0.52%	0.58%	0.30%	0.38%	0.46%	0.03%	*0.04%*	0.03%	*0.04%*	0.07%	0.12%
Malta	***0.07%***	0.10%	0.17%	0.30%	0.01%	0.09%	0.18%	0.14%	0.27%	0.41%	0.05%	*0.05%*	0.05%	*0.05%*	0.14%	0.12%
Marshall Is.	***0.02%***	0.06%	0.14%	0.27%	0.00%	0.04%	0.10%	0.14%	0.27%	0.41%	0.02%	*0.03%*	0.02%	*0.02%*	0.17%	0.08%

Country	*Post-Sing.*	Increased Basic Votes			Population-related			Population + Westphalian			Cooper		EU		Buira	Mirakhor
		11.3%	25%	50%	prop	sq root	cu root	75/25	50/50	25/75		*US c/g*		*US c/g*		
Mauritania	***0.05%***	0.09%	0.16%	0.29%	0.05%	0.25%	0.36%	0.17%	0.30%	0.42%	0.03%	*0.03%*	0.03%	*0.03%*	0.17%	0.09%
Mauritius	***0.07%***	0.10%	0.17%	0.30%	0.02%	0.16%	0.26%	0.15%	0.28%	0.41%	0.04%	*0.05%*	0.04%	*0.05%*	0.10%	0.12%
Mexico	***1.42%***	1.35%	1.23%	1.00%	1.62%	1.44%	1.15%	1.35%	1.08%	0.81%	1.85%	*2.08%*	1.84%	*2.02%*	1.47%	1.65%
Micronesia	***0.02%***	0.06%	0.14%	0.27%	0.00%	0.05%	0.12%	0.14%	0.27%	0.41%	0.02%	*0.03%*	0.02%	*0.03%*	0.20%	0.08%
Moldova	***0.08%***	0.11%	0.18%	0.30%	0.07%	0.29%	0.40%	0.19%	0.30%	0.42%	0.03%	*0.04%*	0.03%	*0.03%*	0.16%	0.11%
Mongolia	***0.04%***	0.08%	0.15%	0.28%	0.04%	0.03%	0.08%	0.14%	0.27%	0.41%	0.03%	*0.03%*	0.03%	*0.03%*	0.15%	0.09%
Morocco	***0.28%***	0.30%	0.34%	0.41%	0.47%	0.78%	0.76%	0.49%	0.51%	0.53%	0.14%	*0.16%*	0.15%	*0.17%*	0.23%	0.33%
Mozambique	***0.07%***	0.11%	0.18%	0.30%	0.31%	0.63%	0.66%	0.37%	0.43%	0.49%	0.04%	*0.04%*	0.04%	*0.04%*	0.11%	0.13%
Myanmar	***0.14%***	0.17%	0.23%	0.33%	0.79%	1.01%	0.90%	0.73%	0.67%	0.61%	0.06%	*0.07%*	0.05%	*0.06%*	0.19%	0.20%
Namibia	***0.08%***	0.12%	0.18%	0.30%	0.03%	0.20%	0.31%	0.16%	0.29%	0.42%	0.04%	*0.04%*	0.04%	*0.04%*	0.09%	0.11%
Nepal	***0.05%***	0.09%	0.16%	0.29%	0.43%	0.74%	0.74%	0.46%	0.48%	0.51%	0.04%	*0.05%*	0.04%	*0.04%*	0.13%	0.15%
Netherlands	***2.31%***	2.17%	1.92%	1.46%	0.26%	0.57%	0.62%	0.33%	0.40%	0.47%	1.39%	*1.55%*	2.03%	*2.23%*	0.79%	1.34%
New Zealand	***0.42%***	0.43%	0.45%	0.48%	0.06%	0.29%	0.39%	0.18%	0.30%	0.42%	0.24%	*0.26%*	0.24%	*0.26%*	0.19%	0.24%
Nicaragua	***0.08%***	0.11%	0.18%	0.30%	0.09%	0.33%	0.43%	0.20%	0.31%	0.43%	0.04%	*0.04%*	0.04%	*0.04%*	0.12%	0.11%
Niger	***0.05%***	0.09%	0.16%	0.29%	0.22%	0.53%	0.59%	0.30%	0.38%	0.46%	0.03%	*0.03%*	0.03%	*0.03%*	0.10%	0.11%
Nigeria	***0.80%***	0.78%	0.74%	0.68%	2.07%	1.62%	1.24%	1.69%	1.31%	0.92%	0.28%	*0.31%*	0.19%	*0.20%*	0.32%	0.61%
Norway	***0.76%***	0.75%	0.71%	0.66%	0.07%	0.30%	0.41%	0.19%	0.31%	0.43%	0.79%	*0.88%*	0.68%	*0.75%*	0.33%	0.72%
Oman	***0.11%***	0.14%	0.20%	0.32%	0.04%	0.23%	0.34%	0.17%	0.29%	0.42%	0.11%	*0.13%*	0.10%	*0.11%*	0.16%	0.29%
Pakistan	***0.48%***	0.48%	0.49%	0.51%	2.45%	1.77%	1.32%	1.97%	1.50%	1.02%	0.26%	*0.29%*	0.24%	*0.26%*	0.51%	0.53%
Palau	***0.02%***	0.06%	0.14%	0.27%	0.00%	0.02%	0.07%	0.14%	0.27%	0.41%	0.02%	*0.03%*	0.02%	*0.02%*	0.34%	0.08%
Panama	***0.11%***	0.15%	0.21%	0.32%	0.05%	0.25%	0.36%	0.17%	0.30%	0.42%	0.08%	*0.09%*	0.06%	*0.07%*	0.14%	0.12%
Papua NG	***0.08%***	0.12%	0.18%	0.30%	0.09%	0.34%	0.44%	0.21%	0.32%	0.43%	0.04%	*0.05%*	0.04%	*0.04%*	0.16%	0.11%
Paraguay	***0.07%***	0.10%	0.17%	0.29%	0.10%	0.35%	0.45%	0.21%	0.32%	0.43%	0.05%	*0.06%*	0.04%	*0.05%*	0.18%	0.14%
Peru	***0.30%***	0.32%	0.36%	0.42%	0.44%	0.75%	0.74%	0.47%	0.49%	0.52%	0.22%	*0.25%*	0.17%	*0.19%*	0.28%	0.28%
Philippines	***0.41%***	0.42%	0.44%	0.47%	1.30%	1.29%	1.07%	1.11%	0.92%	0.73%	0.35%	*0.39%*	0.32%	*0.35%*	0.61%	0.61%
Poland	***0.63%***	0.62%	0.61%	0.59%	0.60%	0.87%	0.82%	0.59%	0.57%	0.56%	0.72%	*0.81%*	0.65%	*0.72%*	0.74%	0.71%
Portugal	***0.41%***	0.42%	0.44%	0.47%	0.17%	0.46%	0.54%	0.26%	0.35%	0.45%	0.48%	*0.53%*	0.46%	*0.51%*	0.36%	0.39%
Qatar	***0.14%***	0.17%	0.23%	0.33%	0.01%	0.13%	0.23%	0.15%	0.28%	0.41%	0.12%	*0.14%*	0.10%	*0.11%*	0.15%	0.26%
Romania	***0.48%***	0.48%	0.49%	0.51%	0.34%	0.66%	0.68%	0.39%	0.44%	0.49%	0.21%	*0.24%*	0.20%	*0.21%*	0.32%	0.29%
Russia	***2.65%***	2.49%	2.19%	1.64%	2.25%	1.69%	1.28%	1.82%	1.40%	0.97%	1.54%	*1.72%*	1.25%	*1.37%*	1.98%	2.13%
Rwanda	***0.06%***	0.09%	0.16%	0.29%	0.14%	0.43%	0.51%	0.24%	0.34%	0.44%	0.03%	*0.03%*	0.03%	*0.03%*	0.15%	0.10%
Samoa	***0.03%***	0.07%	0.14%	0.27%	0.00%	0.06%	0.14%	0.14%	0.27%	0.41%	0.02%	*0.03%*	0.02%	*0.03%*	0.10%	0.08%
San Marino	***0.03%***	0.07%	0.14%	0.28%	0.00%	0.02%	0.07%	0.14%	0.27%	0.41%	0.03%	*0.03%*	0.03%	*0.03%*	0.25%	0.09%
São Tomé and P	***0.03%***	0.06%	0.14%	0.27%	0.00%	0.06%	0.13%	0.14%	0.27%	0.41%	0.02%	*0.03%*	0.02%	*0.02%*	0.15%	0.08%
Saudi Arabia	***3.11%***	2.92%	2.55%	1.88%	0.39%	0.70%	0.71%	0.43%	0.46%	0.50%	0.68%	*0.77%*	0.68%	*0.74%*	0.51%	1.42%

Country	*Post-Sing.*	Increased Basic Votes			Population-related			Population + Westphalian			Cooper		EU		Buira	Mirakhor
		11.3%	25%	50%	prop	sq root	cu root	75/25	50/50	25/75		*US c/g*		*US c/g*		
Senegal	***0.09%***	0.13%	0.19%	0.31%	0.18%	0.48%	0.56%	0.27%	0.36%	0.45%	0.04%	*0.04%*	0.04%	*0.05%*	0.08%	0.12%
Serbia and M	***0.23%***	0.25%	0.30%	0.38%	0.13%	0.40%	0.49%	0.23%	0.34%	0.44%	0.11%	*0.12%*	0.08%	*0.09%*	0.24%	0.21%
Seychelles	***0.03%***	0.07%	0.14%	0.27%	0.00%	0.04%	0.11%	0.14%	0.27%	0.41%	0.03%	*0.03%*	0.03%	*0.03%*	0.15%	0.09%
Sierra Leone	***0.07%***	0.10%	0.17%	0.30%	0.09%	0.33%	0.43%	0.20%	0.32%	0.43%	0.03%	*0.03%*	0.02%	*0.03%*	0.15%	0.09%
Singapore	***0.40%***	0.41%	0.43%	0.47%	0.07%	0.30%	0.40%	0.19%	0.31%	0.42%	0.86%	*0.97%*	0.60%	*0.66%*	0.43%	1.24%
Slovak Rep	***0.18%***	0.21%	0.26%	0.35%	0.08%	0.33%	0.43%	0.20%	0.31%	0.43%	0.14%	*0.15%*	0.15%	*0.17%*	0.19%	0.26%
Slovenia	***0.12%***	0.16%	0.22%	0.33%	0.03%	0.20%	0.31%	0.16%	0.29%	0.42%	0.10%	*0.11%*	0.12%	*0.13%*	0.12%	0.19%
Solomon Is	***0.03%***	0.07%	0.14%	0.27%	0.01%	0.10%	0.19%	0.14%	0.28%	0.41%	0.02%	*0.03%*	0.02%	*0.03%*	0.15%	0.09%
Somalia	***0.04%***	0.08%	0.15%	0.28%	0.13%	0.40%	0.49%	0.23%	0.33%	0.44%	0.02%	*0.03%*	0.02%	*0.03%*	0.07%	0.10%
South Africa	***0.85%***	0.83%	0.78%	0.70%	0.71%	0.95%	0.87%	0.67%	0.63%	0.59%	0.47%	*0.52%*	0.46%	*0.50%*	0.77%	0.46%
Spain	***1.37%***	1.31%	1.19%	0.97%	0.68%	0.93%	0.86%	0.65%	0.61%	0.58%	2.15%	*2.40%*	2.39%	*2.62%*	1.53%	1.54%
Sri Lanka	***0.20%***	0.23%	0.28%	0.37%	0.31%	0.63%	0.66%	0.37%	0.43%	0.48%	0.08%	*0.08%*	0.08%	*0.09%*	0.18%	0.17%
St. Kitts and N	***0.03%***	0.07%	0.14%	0.27%	0.00%	0.03%	0.09%	0.14%	0.27%	0.41%	0.02%	*0.03%*	0.02%	*0.03%*	0.07%	0.08%
St. Lucia	***0.03%***	0.07%	0.14%	0.28%	0.00%	0.06%	0.13%	0.14%	0.27%	0.41%	0.02%	*0.03%*	0.02%	*0.03%*	0.09%	0.09%
St. Vincent and G	***0.03%***	0.06%	0.14%	0.27%	0.00%	0.05%	0.12%	0.14%	0.27%	0.41%	0.02%	*0.03%*	0.02%	*0.03%*	0.12%	0.08%
Sudan	***0.10%***	0.13%	0.19%	0.31%	0.57%	0.85%	0.81%	0.56%	0.56%	0.55%	0.07%	*0.07%*	0.06%	*0.07%*	0.14%	0.17%
Suriname	***0.06%***	0.10%	0.17%	0.29%	0.01%	0.09%	0.19%	0.14%	0.28%	0.41%	0.03%	*0.03%*	0.03%	*0.03%*	0.27%	0.09%
Swaziland	***0.04%***	0.08%	0.15%	0.28%	0.02%	0.15%	0.26%	0.15%	0.28%	0.41%	0.03%	*0.04%*	0.03%	*0.03%*	0.18%	0.10%
Sweden	***1.08%***	1.04%	0.96%	0.82%	0.14%	0.43%	0.51%	0.24%	0.34%	0.44%	0.85%	*0.95%*	0.99%	*1.08%*	0.43%	0.73%
Switzerland	***1.55%***	1.48%	1.33%	1.07%	0.12%	0.39%	0.48%	0.22%	0.33%	0.44%	1.06%	*1.18%*	1.13%	*1.24%*	0.42%	0.98%
Syria	***0.15%***	0.18%	0.24%	0.34%	0.30%	0.62%	0.65%	0.36%	0.42%	0.48%	0.23%	*0.26%*	0.23%	*0.25%*	0.13%	0.23%
Tajikistan	***0.06%***	0.10%	0.17%	0.29%	0.10%	0.36%	0.46%	0.21%	0.32%	0.43%	0.03%	*0.03%*	0.03%	*0.03%*	0.15%	0.11%
Tanzania	***0.11%***	0.14%	0.20%	0.32%	0.60%	0.88%	0.83%	0.59%	0.57%	0.56%	0.06%	*0.06%*	0.05%	*0.05%*	0.11%	0.19%
Thailand	***0.50%***	0.50%	0.51%	0.52%	1.01%	1.13%	0.98%	0.89%	0.78%	0.66%	0.64%	*0.71%*	0.57%	*0.62%*	0.80%	0.85%
Timor-Leste	***0.03%***	0.06%	0.14%	0.27%	0.02%	0.14%	0.24%	0.15%	0.28%	0.41%	0.03%	*0.03%*	0.02%	*0.03%*	0.37%	0.09%
Togo	***0.05%***	0.09%	0.16%	0.29%	0.10%	0.35%	0.45%	0.21%	0.32%	0.43%	0.03%	*0.03%*	0.03%	*0.03%*	0.12%	0.10%
Tonga	***0.03%***	0.06%	0.14%	0.27%	0.00%	0.05%	0.11%	0.14%	0.27%	0.41%	0.02%	*0.03%*	0.02%	*0.03%*	0.19%	0.08%
Trinidad and T	***0.17%***	0.20%	0.25%	0.35%	0.02%	0.16%	0.27%	0.15%	0.28%	0.41%	0.06%	*0.07%*	0.06%	*0.06%*	0.12%	0.15%
Tunisia	***0.15%***	0.18%	0.23%	0.34%	0.16%	0.45%	0.53%	0.25%	0.35%	0.45%	0.10%	*0.11%*	0.10%	*0.11%*	0.17%	0.18%
Turkey	***0.55%***	0.55%	0.55%	0.55%	1.14%	1.21%	1.02%	0.99%	0.84%	0.69%	0.98%	*1.10%*	0.67%	*0.74%*	0.84%	0.87%
Turkmenistan	***0.06%***	0.09%	0.16%	0.29%	0.08%	0.31%	0.41%	0.19%	0.31%	0.43%	0.06%	*0.07%*	0.06%	*0.06%*	0.49%	0.17%
Uganda	***0.10%***	0.14%	0.20%	0.31%	0.45%	0.76%	0.75%	0.48%	0.50%	0.52%	0.05%	*0.05%*	0.04%	*0.04%*	0.15%	0.15%
Ukraine	***0.63%***	0.62%	0.61%	0.59%	0.74%	0.97%	0.88%	0.69%	0.64%	0.59%	0.21%	*0.24%*	0.20%	*0.22%*	0.48%	0.37%
UAE	***0.29%***	0.31%	0.35%	0.41%	0.07%	0.30%	0.41%	0.19%	0.31%	0.43%	0.37%	*0.41%*	0.30%	*0.33%*	0.23%	0.60%
UK	***4.77%***	4.45%	3.85%	2.75%	0.95%	1.10%	0.96%	0.85%	0.74%	0.64%	3.90%	*4.36%*	5.24%	*5.75%*	2.60%	2.54%

Country	*Post-Sing.*	Increased Basic Votes			Population-related			Population + Westphalian			Cooper		EU		Buira	Mirakhor
		11.3%	25%	50%	prop	sq root	cu root	75/25	50/50	25/75		*US clg*		*US clg*		
US	***16.45%***	15.25%	12.98%	8.84%	4.66%	2.44%	1.63%	3.63%	2.60%	1.57%	25.95%	*17.10%*	24.48%	*17.10%*	16.07%	11.40%
Uruguay	***0.16%***	0.19%	0.24%	0.34%	0.05%	0.26%	0.37%	0.18%	0.30%	0.42%	0.10%	*0.11%*	0.06%	*0.06%*	0.22%	0.13%
Uzbekistan	***0.14%***	0.17%	0.23%	0.34%	0.42%	0.73%	0.73%	0.45%	0.48%	0.51%	0.07%	*0.08%*	0.05%	*0.06%*	0.21%	0.17%
Vanuatu	***0.03%***	0.07%	0.14%	0.28%	0.00%	0.07%	0.15%	0.14%	0.27%	0.41%	0.02%	*0.03%*	0.02%	*0.03%*	0.24%	0.09%
Venezuela	***1.20%***	1.15%	1.06%	0.88%	0.42%	0.73%	0.73%	0.45%	0.48%	0.51%	0.41%	*0.46%*	0.28%	*0.31%*	0.31%	0.62%
Vietnam	***0.17%***	0.20%	0.25%	0.35%	1.30%	1.29%	1.07%	1.11%	0.92%	0.73%	0.13%	*0.15%*	0.17%	*0.19%*	0.35%	0.37%
Yemen	***0.13%***	0.16%	0.22%	0.33%	0.33%	0.65%	0.68%	0.38%	0.44%	0.49%	0.14%	*0.15%*	0.06%	*0.07%*	0.33%	0.32%
Zambia	***0.24%***	0.26%	0.30%	0.38%	0.18%	0.48%	0.56%	0.27%	0.36%	0.45%	0.05%	*0.05%*	0.04%	*0.04%*	0.16%	0.13%
Zimbabwe	***0.04%***	0.08%	0.15%	0.28%	0.20%	0.51%	0.57%	0.29%	0.37%	0.46%	0.05%	*0.06%*	0.06%	*0.06%*	0.07%	0.13%