SM/13/138
Correction 1

June 25, 2013

To: Members of the Executive Board

From: The Secretary

Subject: **Quota Formula—Data Update and Further Considerations**

The attached corrections to SM/13/138 (6/6/13) have been provided by the staff:

Typographical Errors

Pages 2 and 3, table of contents: page numbering updated to reflect page changes due to the addition of Table 2.1 on page 8.

Page 5, para. 6, line 2: text reference to new Table 2.1 has been added

Page 6: corrected for overflow of text

Page 8: Table 2.1 (a supplementary table for Table 2) has been added which corresponds to Table A3 in Quota Formula—Data Update and Further Considerations—Statistical Appendix (SM/13/138, Sup. 2). Subsequent pages renumbered.

Page 28 (new page 29): Table 10 replaced. Due to a technical error, some of the values in Sets 1 and 3, in the table were incorrect.

Questions may be referred to Mr. Kumar (ext. 37771) and Ms. Bassett (ext. 34621) in FIN.

This document will shortly be posted on the extranet, a secure website for Executive Directors and member country authorities.

Att: (6)

Other Distribution:
Department Heads

INTERNATIONAL MONETARY FUND

June 5, 2013

QUOTA FORMULA—DATA UPDATE AND FURTHER CONSIDERATIONS

EXECUTIVE SUMMARY

The quota database has been updated by one year through 2011. The results continue the broad trends observed in previous data updates. In particular, the calculated quota share (CQS) of emerging market and developing countries (EMDCs) increases further by 1.3 percentage points (pps), reflecting gains in all quota variables. Compared with the data set used for the 14th Review, the aggregate CQS of EMDCs has risen by 3.5 pps (and by 9 pps since the 2008 reform, which used data through 2005). Asia accounts for more than half the increase, particularly China.

Following the outcome of the quota formula review (QFR), the paper examines the concerns that have been expressed about the openness variable, and explores possible approaches to addressing them. In this context, it takes stock of recent improvements in data availability and then explores the impact of various possible reforms, including use of a cap and a lower weight on the openness variable.

The paper also examines the possible links between variability and broader measures of balance of payments difficulties. This work extends that presented in previous papers, which focused on balance of payments difficulties involving use of Fund resources. The paper fails to identify any significant correlation between variability and these broader measures.

In addition, the paper presents a range of illustrative simulations involving possible reforms of the formula using the updated quota database. No proposals are presented at this stage, pending further feedback from Executive Directors.

Approved By
Andrew Tweedie

Prepared by the Finance Department (In consultation with the Statistics and other departments)

CONTENTS

INTRODUCTION[1]

1. **In January 2013, the Executive Board reported to the Board of Governors on the outcome of the quota formula review (QFR)**.[2] The report identified areas of common ground as well as areas where views differed among Board members and further discussions were needed. It was recognized that views on the key elements of the quota formula had evolved during the review and would continue to evolve as further work is undertaken and new data become available. The report noted that important progress has been made in identifying key elements that could form the basis for a final agreement on a new quota formula. It was agreed that achieving broad consensus on a new quota formula would best be done in the context of the 15th General Review of Quotas rather than on a standalone basis. This approach was subsequently endorsed by the IMFC and the G-20 Ministers and Governors at their April meetings.[3]

2. **This paper seeks to provide the basis for a further discussion of issues relating to the quota formula.** It first presents the results of updating the quota database by one year. After briefly reviewing the outcome of the QFR, it then discusses the results of further staff work on two existing quota variables: openness and variability. The following section presents some illustrative simulations of possible reforms of the quota formula using the new data. The paper then concludes and presents some issues for discussion. Individual country data and simulation results, as well as some additional technical material, are presented in the Statistical Appendix and Annexes (circulated separately).

UPDATED QUOTA DATABASE

3. **Staff has updated the quota database through 2011.** This advances by one year the data presented last June.[4] The update uses the same sources as in past updates (see Box 1, Annex I, and the Statistical Appendix). The results for country groups and individual members are shown in Tables 1 and A1. This update, like the previous ones, continues to be affected by the impact on quota variables of the global financial crisis.

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[1] This paper was prepared by a staff team led by M.S. Kumar and S. Bassett, and comprising H. Treichel, C. Janada, R. Rozenov, R. Zhang, J. Wong, S. Khan, F. Bacall, and A. Perez. T. Krueger also contributed.

[2] See *Outcome of the Quota Formula Review—Report of the Executive Board to the Board of Governors* (SM/13/13, 1/31/13, Rev. 2).

[3] *Communiqué of the Twenty-Seventh Meeting of the International Monetary and Financial Committee*, Press Release No. 13/129, April 20, 2013 and *Communiqué of G20 Meeting of Finance Ministers and Central Bank Governors*, Washington DC, April 19, 2013.

[4] *Quota Formula Review—Data Update and Further Considerations* (SM/12/163, 6/28/12).

Box 1. Data Sources and Methodology

The data sources and methodology remain broadly in line with past practice. The primary data source is the Fund's International Financial Statistics (IFS). Missing data were supplemented in the first instance by the World Economic Outlook (WEO) database. Remaining missing data were computed based on staff reports and, in very few instances, country desk data. As is customary, a cutoff date of January 31, 2013 for incorporating new data in the quota database was employed for IFS; consistent with this cutoff, the Fall 2012 publication was used for WEO data.

PPP GDP data were taken from the WEO database and were calculated by dividing a country's nominal GDP in its own currency by the PPP price level index. The WEO PPP price indexes are based on the data from the 2005 International Comparison Program (ICP) that were published in December 2007 and are extended through 2011 using WEO methodology. The results of the next 2011 ICP round are scheduled to be released in December 2013.

The only change in methodology reflects the introduction of BPM6, which affects the data for openness and variability. In August 2012, the IFS began publishing balance of payments and IIP data under BPM6 (Balance of Payments and International Investment Position Manual, sixth edition). Under this new methodology, the full value of goods for processing is no longer counted under the reported (gross) exports and imports (these are goods processed under contract for an explicit fee by a non-resident processing entity, where the goods being processed do not change ownership); rather only the fees from processing are recorded under services. As discussed in Annex I, the overall impact of this change is relatively modest.

4. **The data update reflects several broad trends observed in previous updates.** Based on the current formula, the calculated quota share (CQS) of emerging market and developing countries (EMDCs) as a group increases by a further 1.3 pps to 45.3 percent (Table 1).[5] Within the EMDCs, the largest gains continue to be recorded by Asia while most other regions register modest increases. Among the advanced economies (AEs), over 80 percent of the reduction is accounted for by the largest economies—all countries in this group record a decline. The share of other advanced economies as a group falls modestly by 0.2 pps—compared to a decline of 0.5 pps in the previous update.

5. **Reflecting these trends, the aggregate CQS of EMDCs has risen by 3.5 pps since the 14th Review and by 9.1 pps since the 2008 Reform.** More than half of the overall increase for EMDCs is accounted for by Asia, particularly China, while most other regions registered more modest increases. The share of major advanced economies has declined by 8.1 pps since the 2008 reform, while the share of other advanced economies has fallen by 1.0 pps (Figure 1).

6. **The aggregate share of EMDCs increased across all quota variables** (Table 2 and Table 2.1). The largest increase is in shares of the GDP blend variable, reflecting a continued marked divergence in growth trends between AEs and EMDCs—see Figure 2. EMDCs now account for 43.4 percent of total shares based on the current GDP blend measure. EMDCs also gained share of

[5] The current formula includes four variables (GDP, openness, variability, and reserves), expressed in shares of global totals, with the variables assigned weights totaling to 1.0. The formula also includes a compression factor that reduces dispersion in calculated quota shares. The formula is CQS = (0.50*GDP + 0.30*Openness +0.15*Variability + 0.05*Reserves)^K. GDP is blended using 60 percent market and 40 percent PPP exchange rates; K is a compression factor of 0.95.

global openness and, to a lesser extent, variability, associated with the rebound in external flows in the wake of the financial crisis (Figure 3). The share of EMDCs in global reserves also increased to almost 77 percent, reversing the decline observed in the previous data update.

Table 1. Distribution of Quotas and Calculated Quotas (In percent)

	Quota Shares		Calculated Quota Shares 1/			
	Post Second Round 2/	14th General Review 3/	2008 Reform 4/ (2005)	14th General Review (2008)	Previous (2010)	Current (2011)
Advanced economies	60.4	57.6	63.8	58.2	56.1	54.7
Major advanced economies	45.3	43.4	47.6	42.9	40.6	39.6
United States	17.7	17.4	19.0	17.0	15.8	15.6
Japan	6.6	6.5	8.0	6.5	6.2	6.1
Germany	6.1	5.6	6.2	5.7	5.7	5.4
France	4.5	4.2	4.0	3.8	3.6	3.5
United Kingdom	4.5	4.2	4.4	4.7	4.1	3.8
Italy	3.3	3.2	3.3	3.0	3.0	2.9
Canada	2.7	2.3	2.6	2.3	2.3	2.2
Other advanced economies	15.1	14.3	16.2	15.3	15.4	15.2
Spain	1.7	2.0	2.3	2.2	2.2	2.1
Netherlands	2.2	1.8	1.9	1.9	2.0	2.0
Australia	1.4	1.4	1.3	1.4	1.4	1.5
Belgium	1.9	1.3	1.5	1.3	1.3	1.3
Switzerland	1.5	1.2	1.2	1.2	1.2	1.3
Sweden	1.0	0.9	1.0	0.9	1.0	1.0
Austria	0.9	0.8	0.9	0.8	0.8	0.8
Norway	0.8	0.8	0.8	0.8	0.8	0.8
Ireland	0.5	0.7	1.2	1.1	0.9	0.8
Denmark	0.8	0.7	0.9	0.7	0.7	0.7
Emerging Market and Developing Countries 5/	39.6	42.4	36.2	41.8	43.9	45.3
Africa	5.0	4.4	2.8	3.1	3.3	3.4
South Africa	0.8	0.6	0.6	0.6	0.6	0.6
Nigeria	0.7	0.5	0.3	0.5	0.5	0.5
Asia	12.6	16.0	15.8	17.7	19.6	20.6
China 6/	4.0	6.4	6.4	7.9	9.4	10.1
India	2.4	2.7	2.0	2.4	2.6	2.8
Korea	1.4	1.8	2.2	2.1	2.0	2.0
Indonesia	0.9	1.0	0.9	0.9	1.0	1.1
Singapore	0.6	0.8	1.0	1.2	1.3	1.3
Malaysia	0.7	0.8	0.9	0.8	0.8	0.8
Thailand	0.6	0.7	0.8	0.8	0.9	0.9
Middle East, Malta & Turkey	7.2	6.7	4.8	6.2	6.2	6.4
Saudi Arabia	2.9	2.1	0.8	1.3	1.4	1.4
Turkey	0.6	1.0	1.0	1.1	1.1	1.1
Iran, Islamic Republic of	0.6	0.7	0.6	0.7	0.7	0.7
Western Hemisphere	7.7	7.9	6.6	7.0	7.1	7.3
Brazil	1.8	2.3	1.7	2.2	2.2	2.3
Mexico	1.5	1.9	2.0	1.8	1.7	1.7
Venezuela, República Bolivariana de	1.1	0.8	0.4	0.5	0.5	0.5
Argentina	0.9	0.7	0.6	0.6	0.6	0.6
Transition economies	7.1	7.2	6.2	7.7	7.7	7.6
Russian Federation	2.5	2.7	2.1	2.9	2.6	2.6
Poland	0.7	0.9	0.9	0.9	1.0	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Memorandum Items:						
EU 27	31.9	30.2	32.9	31.3	30.9	29.7
LICs 7/	4.3	4.0	2.2	2.6	2.7	2.8

Source: Finance Department.

1/ Based on the current formula: CQS = (0.50*GDP + 0.30*Openness +0.15*Variability + 0.05*Reserves)^K. GDP blended using 60 percent market and 40 percent PPP exchange rates. K is a compression factor of 0.95. Years in parentheses indicate end period for the IFS data used in the calculations.

2/ The "post second round" reflects the ad hoc quota increases for 54 members under the 2008 reform, which became effective in March 2011. Includes South Sudan which became a member on April 18, 2012. For the two countries that have not yet consented to and paid for their quota increases, 11th Review proposed quotas are used.

3/ Includes South Sudan which became a member on April 18, 2012; reflects the proposed doubling of its quota after the 14th Review becomes effective.

4/ Reflects the impact of adjustments to current receipts and payments for re-exports, international banking interest, and non-monetary gold.

5/ Including Czech Republic, Estonia, Korea, Malta, Singapore, Slovak Republic, and Slovenia.

6/ Including China, P.R., Hong Kong SAR, and Macao SAR.

7/ PRGT-eligible countries.

Table 2. Distribution of Quotas and Updated Quota Variables (in percent)

	14th General Review Quota Shares 1/	GDP Blend 4/		Openness		Variability 5/		Reserves	
		Current 2/	Previous 3/	Current 2/	Previous 3/	Current 2/	Previous 3/	Current 2/	Previous 3/
Advanced economies	57.6	56.6	58.2	60.7	62.2	57.0	57.9	23.2	23.9
Major advanced economies	43.4	46.1	47.4	40.7	41.8	37.8	38.7	16.3	17.3
United States	17.4	21.6	22.2	13.0	13.1	15.8	15.5	1.5	1.6
Japan	6.5	7.5	7.5	4.3	4.3	5.1	5.2	11.5	12.3
Germany	5.6	4.8	5.0	8.0	8.2	5.4	6.1	0.7	0.8
France	4.2	3.7	3.8	4.5	4.6	2.2	2.3	0.6	0.6
United Kingdom	4.2	3.4	3.6	5.1	5.6	4.4	4.5	0.8	0.7
Italy	3.2	3.0	3.1	3.2	3.4	2.8	3.0	0.5	0.6
Canada	2.3	2.2	2.2	2.6	2.6	2.1	2.1	0.6	0.7
Other advanced economies	14.3	10.5	10.8	20.0	20.4	19.2	19.2	6.9	6.7
Spain	2.0	2.1	2.2	2.4	2.5	2.1	2.1	0.2	0.2
Netherlands	1.8	1.1	1.2	3.1	3.2	2.9	2.9	0.2	0.2
Australia	1.4	1.6	1.6	1.4	1.3	1.4	1.5	0.4	0.4
Belgium	1.3	0.7	0.7	2.1	2.2	1.6	1.8	0.2	0.2
Switzerland	1.2	0.7	0.7	2.0	1.9	0.8	0.9	2.7	2.2
Sweden	0.9	0.6	0.6	1.3	1.3	1.6	1.5	0.5	0.5
Austria	0.8	0.6	0.6	1.1	1.2	0.9	0.9	0.1	0.1
Norway	0.8	0.5	0.6	0.9	0.9	1.5	1.3	0.5	0.6
Ireland	0.7	0.3	0.3	1.4	1.5	1.3	1.5	0.0	0.0
Denmark	0.7	0.4	0.4	0.9	0.9	0.7	0.7	0.9	0.9
Emerging Market and Developing Countries 6/	42.4	43.4	41.8	39.3	37.8	43.0	42.1	76.8	76.1
Africa	4.4	2.7	2.6	2.7	2.6	4.0	3.6	3.9	4.0
South Africa	0.6	0.6	0.6	0.5	0.5	0.3	0.3	0.4	0.4
Nigeria	0.5	0.4	0.4	0.4	0.4	0.6	0.5	0.4	0.5
Asia	16.0	21.4	20.0	18.9	17.9	15.4	14.9	46.2	44.5
China 7/	6.4	11.7	10.7	8.5	7.9	5.9	5.6	32.2	30.5
India	2.7	3.7	3.5	1.8	1.6	1.6	1.6	2.9	3.1
Korea	1.8	1.7	1.7	2.4	2.4	1.3	1.3	3.1	3.3
Indonesia	1.0	1.2	1.1	0.7	0.7	0.8	0.8	1.1	0.9
Singapore	0.8	0.4	0.3	2.1	2.1	2.3	2.2	2.4	2.4
Malaysia	0.8	0.5	0.4	1.0	1.0	0.9	0.9	1.3	1.1
Thailand	0.7	0.6	0.6	1.0	0.9	1.3	1.2	1.8	1.8
Middle East, Malta & Turkey	6.7	5.1	5.0	5.4	5.2	8.0	7.5	10.4	10.9
Saudi Arabia	2.1	0.8	0.8	1.1	1.1	2.7	2.8	5.0	5.0
Turkey	1.0	1.2	1.2	0.9	0.8	1.3	1.3	0.9	0.9
Iran, Islamic Republic of	0.7	0.9	0.8	0.4	0.4	0.3	0.3	0.9	0.9
Western Hemisphere	7.9	8.1	7.9	5.0	4.9	6.2	6.5	7.1	6.8
Brazil	2.3	3.1	3.0	1.1	1.1	1.5	1.6	3.4	3.1
Mexico	1.9	1.8	1.9	1.5	1.5	1.5	1.6	1.3	1.3
Venezuela, República Bolivariana de	0.8	0.5	0.5	0.3	0.3	0.6	0.6	0.1	0.2
Argentina	0.7	0.7	0.7	0.4	0.4	0.6	0.5	0.5	0.6
Transition economies	7.2	6.1	6.2	7.2	7.1	9.4	9.6	9.2	9.8
Russian Federation	2.7	2.7	2.7	2.1	2.0	2.8	2.9	4.8	5.2
Poland	0.9	0.8	0.9	1.1	1.0	1.0	1.0	1.0	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Memorandum Items:									
EU 27	30.2	24.1	25.3	39.6	41.1	33.2	34.7	7.6	8.1
LICs 8/	4.0	2.3	2.2	2.2	2.1	3.1	2.6	1.9	2.1

Source: Finance Department.

1/ Includes South Sudan which became a member on April 18, 2012; reflects the proposed doubling of its quota after the 14th Review becomes effective.
2/ Based on IFS data through 2011.
3/ Based on IFS data through 2010.
4/ GDP blend using 60 percent market and 40 percent PPP exchange rates.
5/ Variability of current receipts minus (instead of plus) net capital flows due to change in sign convention in BPM6.
6/ Including Czech Republic, Estonia, Korea, Malta, Singapore, Slovak Republic, and Slovenia.
7/ Including China, P.R., Hong Kong SAR, and Macao SAR.
8/ PRGT- eligible countries.

Table 2.1. Updated GDP Blend Variable
(In percent)

	14th General Review Quota Shares 1/	Calculated Quota Shares 2/ 3/	GDP		PPP GDP 5/		GDP Blend 6/	
			Current 3/	Previous 4/	Current 3/	Previous 4/	Current 3/	Previous 4/
Advanced economies	57.6	54.7	62.3	64.2	48.0	49.3	56.6	58.2
Major advanced economies	43.4	39.5	50.4	51.9	39.7	40.7	46.1	47.4
United States	17.4	15.6	22.8	23.5	19.7	20.1	21.6	22.2
Japan	6.5	6.1	8.6	8.5	5.9	6.0	7.5	7.5
Germany	5.6	5.4	5.3	5.6	4.0	4.1	4.8	5.0
France	4.2	3.5	4.2	4.4	2.9	3.0	3.7	3.8
United Kingdom	4.2	3.8	3.6	3.9	3.0	3.1	3.4	3.6
Italy	3.2	2.9	3.3	3.6	2.4	2.5	3.0	3.1
Canada	2.3	2.2	2.4	2.4	1.8	1.8	2.2	2.2
Other advanced economies	14.3	15.2	12.0	12.3	8.4	8.6	10.5	10.8
Spain	2.0	2.1	2.3	2.4	1.9	1.9	2.1	2.2
Netherlands	1.8	2.0	1.3	1.3	0.9	1.0	1.1	1.2
Australia	1.4	1.5	1.9	1.8	1.2	1.2	1.6	1.6
Belgium	1.3	1.3	0.8	0.8	0.5	0.6	0.7	0.7
Switzerland	1.2	1.3	0.9	0.8	0.5	0.5	0.7	0.7
Sweden	0.9	1.0	0.7	0.7	0.5	0.5	0.6	0.6
Austria	0.8	0.8	0.6	0.6	0.5	0.5	0.6	0.6
Norway	0.8	0.8	0.7	0.7	0.3	0.4	0.5	0.6
Ireland	0.7	0.8	0.3	0.4	0.2	0.3	0.3	0.3
Denmark	0.7	0.7	0.5	0.5	0.3	0.3	0.4	0.4
Emerging Market and Developing Countries 7/	42.4	45.3	37.7	35.8	52.0	50.7	43.4	41.8
Africa	4.4	3.4	2.3	2.2	3.3	3.3	2.7	2.6
South Africa	0.6	0.6	0.6	0.5	0.7	0.7	0.6	0.6
Nigeria	0.5	0.5	0.3	0.3	0.5	0.5	0.4	0.4
Asia	16.0	20.6	17.5	16.0	27.1	26.0	21.4	20.0
China 8/	6.4	10.1	10.0	8.9	14.2	13.4	11.7	10.7
India	2.7	2.8	2.5	2.3	5.5	5.2	3.7	3.5
Korea	1.8	2.0	1.6	1.5	2.0	2.0	1.7	1.7
Indonesia	1.0	1.1	1.1	1.0	1.4	1.4	1.2	1.1
Singapore	0.8	1.3	0.4	0.3	0.4	0.4	0.4	0.3
Malaysia	0.8	0.8	0.4	0.4	0.6	0.6	0.5	0.4
Thailand	0.7	0.9	0.5	0.5	0.8	0.8	0.6	0.6
Middle East, Malta & Turkey	6.7	6.4	4.8	4.7	5.6	5.5	5.1	5.0
Saudi Arabia	2.1	1.4	0.7	0.7	0.9	0.8	0.8	0.8
Turkey	1.0	1.1	1.1	1.1	1.3	1.3	1.2	1.2
Iran, Islamic Republic of	0.7	0.7	0.6	0.6	1.3	1.2	0.9	0.8
Western Hemisphere	7.9	7.3	7.7	7.3	8.7	8.7	8.1	7.9
Brazil	2.3	2.3	3.3	3.0	2.9	2.9	3.1	3.0
Mexico	1.9	1.7	1.6	1.7	2.1	2.2	1.8	1.9
Venezuela, República Bolivariana de	0.8	0.5	0.5	0.6	0.5	0.5	0.5	0.5
Argentina	0.7	0.6	0.6	0.6	0.9	0.8	0.7	0.7
Transition economies	7.2	7.6	5.4	5.5	7.2	7.3	6.1	6.2
Russian Federation	2.7	2.6	2.4	2.4	3.0	3.1	2.7	2.7
Poland	0.9	1.0	0.7	0.8	1.0	1.0	0.8	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Memorandum Items:								
EU 27	30.2	29.6	26.3	28.0	20.7	21.3	24.1	25.3
LICs 9/	4.0	2.8	1.7	1.7	3.1	3.0	2.3	2.2

Source: Finance Department.

1/ Includes South Sudan which became a member on April 18, 2012; reflects the proposed doubling of its quota after the 14th Review becomes effective.

2/ Based on the following formula: CQS = (0.50*GDP + 0.30*Openness +0.15*Variability + 0.05*Reserves)^K. GDP blended using 60 percent market and 40 percent PPP exchange rates. K is a compression factor of 0.95.

3/ Based on IFS data through 2011.

4/ Based on IFS data through 2010.

5/ Current PPP-GDP data were retrieved from the WEO database for 183 countries. For five countries with no WEO data PPP-GDP was estimated. PPP-GDP data reflect parity rates published by the International Comparison Program in December 2007.

6/ GDP blended using 60 percent market and 40 percent purchasing power (PPP).

7/ Including Czech Republic, Estonia, Korea, Malta, Singapore, Slovak Republic, and Slovenia.

8/ Including China, P.R., Hong Kong SAR, and Macao SAR.

9/ PRGT-eligible countries.

Table 10. Illustrative Calculations: Summary

	Change in CQS (p.p) Major Advanced	Other Advanced	EMDC	LIC	Number of Gainers
Set 1. Different Openness Measures, 60/40 GDP blend, dropping variability, all weight to GDP					
1. Existing openness measure	1.24	-1.27	0.02	-0.12	54
2. Nominal openness capped at the 85th percentile	1.75	-1.74	-0.01	-0.10	66
3. Nominal openness capped at the 75th percentile	1.98	-1.96	-0.02	-0.11	69
4. Openness shares capped at 1.7	2.39	-2.70	0.31	-0.06	78
5. Openness shares capped at 1.5	2.46	-2.94	0.48	-0.05	76
6. Weight of openness reduced to 0.25	1.50	-1.73	0.23	-0.12	52
Set 2. Same as Set 1, but weight split between GDP (2/3) and openness (1/3)					
1. Existing openness measure	0.99	-0.80	-0.19	-0.13	61
2. Nominal openness capped at the 85th percentile	1.58	-1.35	-0.23	-0.10	76
3. Nominal openness capped at the 75th percentile	1.84	-1.61	-0.24	-0.12	78
4. Openness shares capped at 1.7	2.32	-2.46	0.14	-0.05	88
5. Openness shares capped at 1.5	2.40	-2.75	0.35	-0.04	86
Set 3. Same as Set 1 with a 55/45 GDP Blend					
1. Existing openness measure	0.92	-1.39	0.47	-0.07	59
2. Nominal openness capped at the 85th percentile	1.43	-1.86	0.43	-0.05	74
3. Nominal openness capped at the 75th percentile	1.66	-2.08	0.42	-0.06	77
4. Openness shares capped at 1.7	2.06	-2.87	0.81	0.00	86
5. Openness shares capped at 1.5	2.12	-3.11	0.99	0.01	85
6. Weight of openness reduced to 0.25	1.15	-1.86	0.71	-0.06	56
Set 4. Same as Set 2 with a 55/45 GDP blend					
1. Existing openness measure	0.69	-0.91	0.22	-0.09	73
2. Nominal openness capped at the 85th percentile	1.28	-1.46	0.18	-0.06	84
3. Nominal openness capped at the 75th percentile	1.54	-1.72	0.17	-0.07	83
4. Openness shares capped at 1.7	2.01	-2.63	0.62	0.00	97
5. Openness shares capped at 1.5	2.08	-2.91	0.83	0.01	93
Set 5. Same as Set 1 with a 50/50 GDP Blend					
1. Existing openness measure	0.60	-1.51	0.91	-0.02	68
2. Nominal openness capped at the 85th percentile	1.10	-1.98	0.88	0.00	81
3. Nominal openness capped at the 75th percentile	1.33	-2.20	0.87	-0.01	81
4. Openness shares capped at 1.7	1.73	-3.04	1.31	0.05	92
5. Openness shares capped at 1.5	1.77	-3.28	1.51	0.07	91
6. Weight of openness reduced to 0.25	0.80	-1.99	1.19	-0.01	61
Set 6. Same as Set 2 with a 50/50 GDP blend					
1. Existing openness measure	0.39	-1.02	0.63	-0.04	78
2. Nominal openness capped at the 85th percentile	0.98	-1.57	0.59	-0.01	91
3. Nominal openness capped at the 75th percentile	1.25	-1.83	0.58	-0.02	87
4. Openness shares capped at 1.7	1.70	-2.80	1.10	0.05	102
5. Openness shares capped at 1.5	1.76	-3.08	1.33	0.07	96
Set 7. Same as Set 1 but with higher compression (0.925)					
1. Existing openness measure	0.12	-0.92	0.80	0.13	113
2. Nominal openness capped at the 85th percentile	0.62	-1.40	0.78	0.16	123
3. Nominal openness capped at the 75th percentile	0.85	-1.62	0.77	0.14	122
4. Openness shares capped at 1.7	1.25	-2.35	1.10	0.20	123
5. Openness shares capped at 1.5	1.32	-2.59	1.27	0.21	122
6. Weight of openness reduced to 0.25	0.37	-1.38	1.01	0.14	112
Set 8. Same as Set 3 but with higher compression (0.925)					
1. Existing openness measure	-0.19	-1.04	1.23	0.18	121
2. Nominal openness capped at the 85th percentile	0.31	-1.52	1.21	0.21	126
3. Nominal openness capped at the 75th percentile	0.54	-1.74	1.20	0.20	123
4. Openness shares capped at 1.7	0.93	-2.52	1.59	0.26	127
5. Openness shares capped at 1.5	0.99	-2.77	1.77	0.27	122
6. Weight of openness reduced to 0.25	0.04	-1.51	1.48	0.19	116

Source: Finance Department.

CONCLUDING REMARKS

32. **This paper presents the results of updating the quota data through 2011 and discusses the results of further staff work on openness and variability.** The data update advances by one year the data presented last June. The update reflects a continuation of several broad trends observed in previous updates. In particular, there is a further significant increase in the calculated quota share of EMDCs of 1.3 pps. This translates into a cumulative gain of 9.1 pps relative to their CQS based on data ending in 2005.

33. **The paper also revisits issues regarding openness and presents the results of additional staff work on variability.** On openness, the paper notes the highly skewed nature of the distribution of openness shares. While many countries benefit from openness, the gains for a narrower group are very large. In terms of aggregate shares, smaller advanced countries as a group are the main beneficiaries. The paper revisits a range of options for possible reforms. These include various approaches to capping openness, all of which add some complexity to the formula and require judgments on where to set the thresholds for the cap. Lowering the weight on openness could also be considered, which would have advantages in terms of simplicity and transparency. The paper also explores the relationship between variability and balance of payments difficulties that did not result in use of Fund resources but fails to find any significant link. This analysis complements earlier staff work which found virtually no correlation between variability and balance of payments difficulties involving use of Fund resources.

34. **The paper includes several sets of simulations based on the new data that illustrate the impact of possible reforms of the formula based on the earlier discussion.**

35. **Directors may wish to comment on the following issues:**

- How do Directors assess the relative merits of alternative reforms of the formula in light of the latest data update?
- What are Directors' views on the possible reforms of the openness variable explored in this paper? Do they see merit in continuing to explore some form of cap on openness? Alternatively, is there a case for leaving the definition of openness unchanged but reducing its weight in the formula? Are there any areas where additional work would be useful?
- Do Directors agree that the additional staff work presented in this paper further supports the case for dropping variability from the formula?
- What are Directors' views on the case for increasing the weight of PPP GDP as part of a reform of the formula? Do they see a possible case for an increase in compression or a combination of these two approaches?