



July 2015

QUOTA FORMULA—DATA UPDATE

IMF staff regularly produces papers proposing new IMF policies, exploring options for reform, or reviewing existing IMF policies and operations. The following documents have been separately released:

- The **Staff Report** prepared by IMF staff and completed on June 19, 2015.
- **Staff Supplement** on Quota Formula—Data Update—Statistical Appendix.

These documents were prepared by IMF staff and were presented to the Executive Board in an informal session on July 10, 2015. Such informal sessions are used to brief Executive Directors on policy issues, and to receive feedback from them. No decisions are taken at these informal sessions. The views expressed in this paper are those of the IMF staff and do not necessarily present the views of the IMF's Executive Board.

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QUOTA FORMULA—DATA UPDATE

June 19, 2015

EXECUTIVE SUMMARY

Data update. The quota database has been updated by one year through 2013. Overall, the results of the update continue the broad trends observed in previous data updates. Using the current quota formula, the calculated quota share (CQS) of EMDCs as a group increases by 1.3 percentage points (pp) relative to the 2014 update to 48.7 percent.

Illustrative simulations. The paper also updates the illustrative simulations of possible reforms of the quota formula presented in the last data update paper in July 2014, using the new database. The simulations take as a starting point the outcome of the comprehensive review of the quota formula (QFR) and the informal discussions in June 2013 and July 2014. All simulations exclude variability and explore alternative methods to re-distribute the weight of this variable. Different options for the weight of PPP GDP in the GDP blend are considered, as well as alternative openness measures. The simulations also illustrate the impact of an increase in compression. The overall results are broadly similar to those illustrated in the July 2014 paper, though starting from a different base given the data update.

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INTRODUCTION

1. **This paper presents a further update of the quota database.** It includes the impact of updating the data on GDP, openness, variability, and reserves by another year through 2013.
2. **The paper also updates the illustrative simulations of possible reforms to the quota formula presented in the 2014 quota data update paper, using the new data.**¹ As in previous papers, the simulations are purely illustrative.² Recognizing that progress in narrowing the remaining differences and agreeing on a new quota formula is only likely in the broader context of work on the 15th General Review of Quotas, no staff proposals are made at this stage.

UPDATED QUOTA DATABASE

3. **Staff has updated the quota database through 2013.** The update advances by one year the data presented last July, using the same sources as in past updates (see Box 1 and the Statistical Appendix).³
4. **The new data continue the broad trends observed in previous updates.** The results in terms of calculated quota shares (CQS) for the main country groups and individual members are shown in Tables 1 and A1. These results and those presented in the rest of this section are based on the current quota formula. The CQS of emerging market and developing countries (EMDCs), as a group, increases by 1.3 percentage points (pp) relative to the 2014 update to 48.7 percent (Table 1).⁴ This increase is lower than in last year's data update (2.1 pp) but broadly in line with previous increases.⁵ The largest gains in EMDC shares continue to be recorded by Asia, followed by Africa, while remaining regions remain broadly stable. Among the advanced economies (AEs), the major advanced economies account for over five sixths of the 1.3 pp decline in global share—all countries in this group (except for France) record a decline. The share of other advanced economies as a group falls by 0.1 pp, compared to a decline of 0.5 pp in the previous update.

¹ *Quota Formula—Data Update and Further Considerations* (7/2/14)
<http://www.imf.org/external/np/pp/eng/2014/070214.pdf>

² Individual country data and simulation results, as well as some additional technical material, are presented in the Statistical Appendix (circulated separately).

³ *Quota Formula—Data Update and Further Considerations* (7/2/14)
<http://www.imf.org/external/np/pp/eng/2014/070214.pdf>

⁴ 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.

⁵ Last year's increase was significantly influenced by the change in the year base of the ICP-PPP factors, used to calculate the PPP GDP, from 2005 to 2011; using the 2005 ICP-PPP factors the increase was only 1.2 pp. In 2013, the updated data through 2011 resulted in a 1.3 pp increase for EMDCs relative to the 2012 data set.

5. Over a longer timeframe, there have been sizable shifts in CQS since the current quota formula was agreed in 2008. The aggregate CQS of EMDCs has risen by about 12.5 pp since the 2008 reform, which was based on data through 2005 (and by 6.9 pp since the 14th Review, based on data through 2008). Most of this increase has come at the expense of the major advanced economies as all major advanced economies recorded sizable declines, led by the US and Japan. At the same time, other advanced economies have recorded a more moderate decline (Figure 1). Within the group of EMDCs, the shifts in CQS have diverged significantly. China has accounted for close to half of the overall increase, while India, Saudi Arabia, Russia, and Brazil also recorded sizable increases. Also, the aggregate share of low income countries (LICs) increased by about one half.⁶ Some EMDCs have lost CQS over the same period (e.g., Korea and Mexico).

Box 1. Data Sources and Methodology 1/

The data sources and methodology remain closely 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, 2015 for incorporating new data in the quota database was employed for *IFS*; consistent with this cutoff, the Fall 2014 publication was used for *WEO* data.

The PPP GDP data are calculated by dividing a country's nominal GDP in its own currency by its corresponding PPP factor. The *2011 International Comparison Program (ICP)* PPP factors were extended to include 2012 and 2013 using *WEO* methodology.

The data for openness and variability reflect the ongoing implementation of BPM6, which was introduced in the 2013 quota data update. Country coverage has broadened with this update to include 81 BPM6-data reporting members compared with 42 previously. Under the BPM6 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 of *Quota Formula – Data Update and Further Considerations*, June 5, 2013, the overall impact of this change is relatively modest.

1/ See the Statistical Appendix for additional details.

⁶ LICs are defined as those members that are PRGT eligible plus Zimbabwe, which has been removed from the list of PRGT-eligible countries by a Board decision in connection with its overdue obligations to the PRGT.

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

	Quota Shares		Calculated Quota Shares 1/			
	Post Second Round 2/	14th Review 3/	2008 Reform (2005) 4/	14th General Review (2008)	Previous (2012)	Current (2013)
Advanced economies	60.4	57.6	63.8	58.2	52.6	51.3
Major advanced economies	45.3	43.4	47.6	42.9	37.9	36.8
United States	17.7	17.4	19.0	17.0	14.9	14.5
Japan	6.6	6.5	8.0	6.5	6.0	5.6
Germany	6.1	5.6	6.2	5.7	5.3	5.1
France	4.5	4.2	4.0	3.8	3.3	3.4
United Kingdom	4.5	4.2	4.4	4.7	3.5	3.4
Italy	3.3	3.2	3.3	3.0	2.7	2.6
Canada	2.7	2.3	2.6	2.3	2.2	2.1
Other advanced economies	15.1	14.3	16.2	15.3	14.7	14.5
Spain	1.7	2.0	2.3	2.2	2.0	1.9
Netherlands	2.2	1.8	1.9	1.9	1.9	1.8
Australia	1.4	1.4	1.3	1.4	1.6	1.5
Belgium	1.9	1.3	1.5	1.3	1.2	1.2
Switzerland	1.5	1.2	1.2	1.2	1.3	1.6
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	0.8	0.7
Denmark	0.8	0.7	0.9	0.7	0.6	0.6
Emerging Market and Developing Countries 5/	39.6	42.4	36.2	41.8	47.4	48.7
Developing countries	32.4	35.1	30.0	34.1	39.7	41.0
Africa	5.0	4.4	2.8	3.1	3.5	3.7
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	0.7
Asia	12.6	16.0	15.8	17.7	21.7	22.6
China 6/	4.0	6.4	6.4	7.9	10.5	11.3
India	2.4	2.7	2.0	2.4	3.0	3.0
Korea, Republic of	1.4	1.8	2.2	2.1	1.9	2.0
Indonesia	0.9	1.0	0.9	0.9	1.3	1.3
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	1.0	1.0
Middle East, Malta & Turkey	7.2	6.7	4.8	6.2	7.1	7.2
Saudi Arabia	2.9	2.1	0.8	1.3	1.7	1.7
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	0.8	0.8
Western Hemisphere	7.7	7.9	6.6	7.0	7.4	7.5
Brazil	1.8	2.3	1.7	2.2	2.4	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	0.7
Transition economies	7.1	7.2	6.2	7.7	7.7	7.7
Russian Federation	2.5	2.7	2.1	2.9	2.8	2.8
Poland	0.7	0.9	0.9	0.9	1.0	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Memorandum Item:						
EU 28	32.0	30.4	33.1	31.5	28.4	27.6
LICs 7/	4.4	4.1	2.2	2.5	3.0	3.3

Source: Finance Department.

1/ These results are based on the current quota formula: $CQS = (0.50 \cdot GDP + 0.30 \cdot Openness + 0.15 \cdot Variability + 0.05 \cdot Reserves) \cdot K$. GDP blend using 60 percent market and 40 percent PPP exchange rates. K is a compression factor of 0.95. The quota formula is typically used to inform discussions on the allocation of quota increases, but other considerations are also taken into account.

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, Somalia and Sudan, 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.

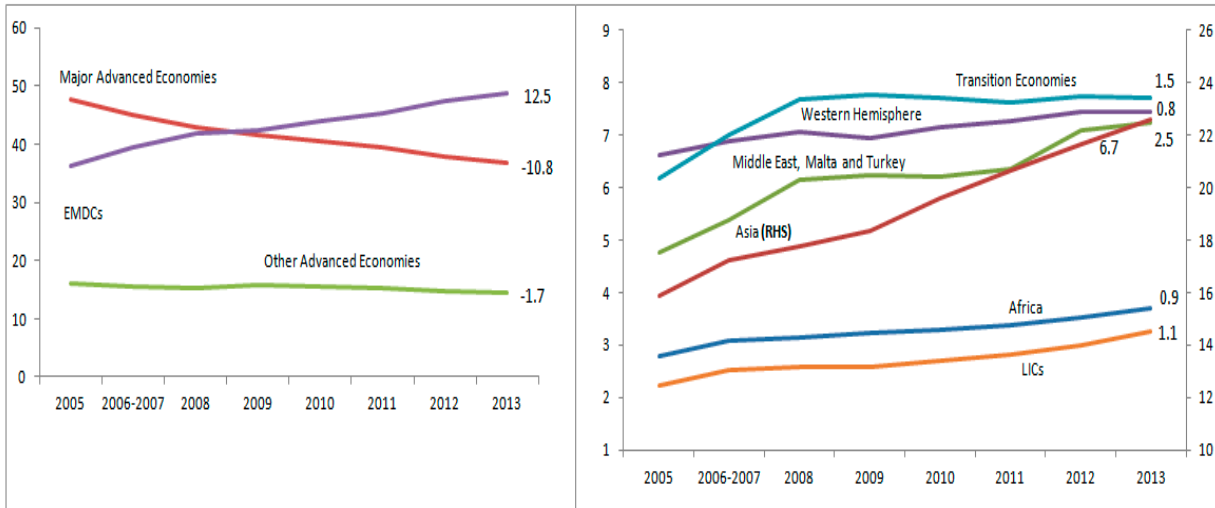
4/ Reflects the impact of adjustments to current receipts and payments for re-exports, international banking interest, and non-monetary gold.

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

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

7/ PRGT-eligible countries plus Zimbabwe.

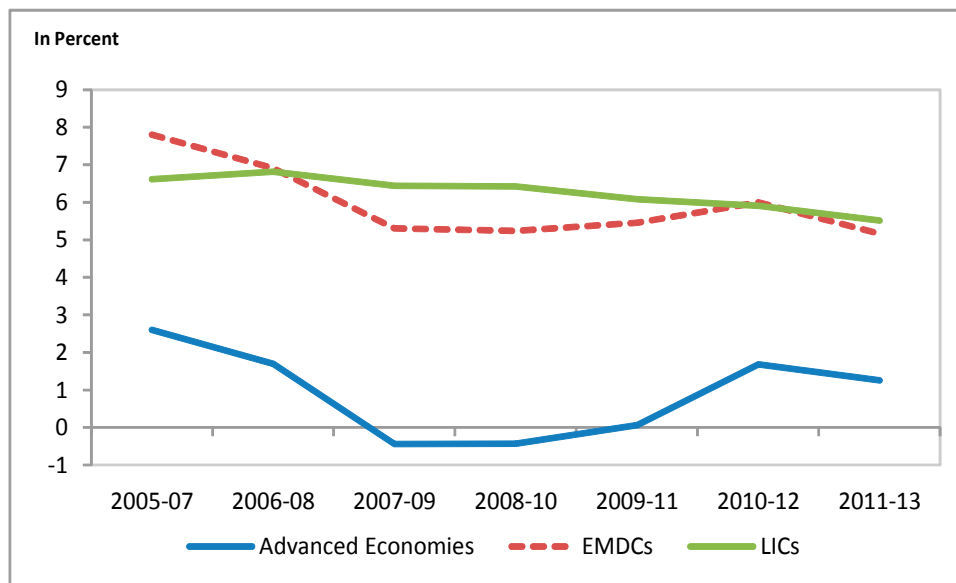
Figure 1. Evolution of CQS 2005 - 2013 1/
(In percent)



Source: Finance Department.

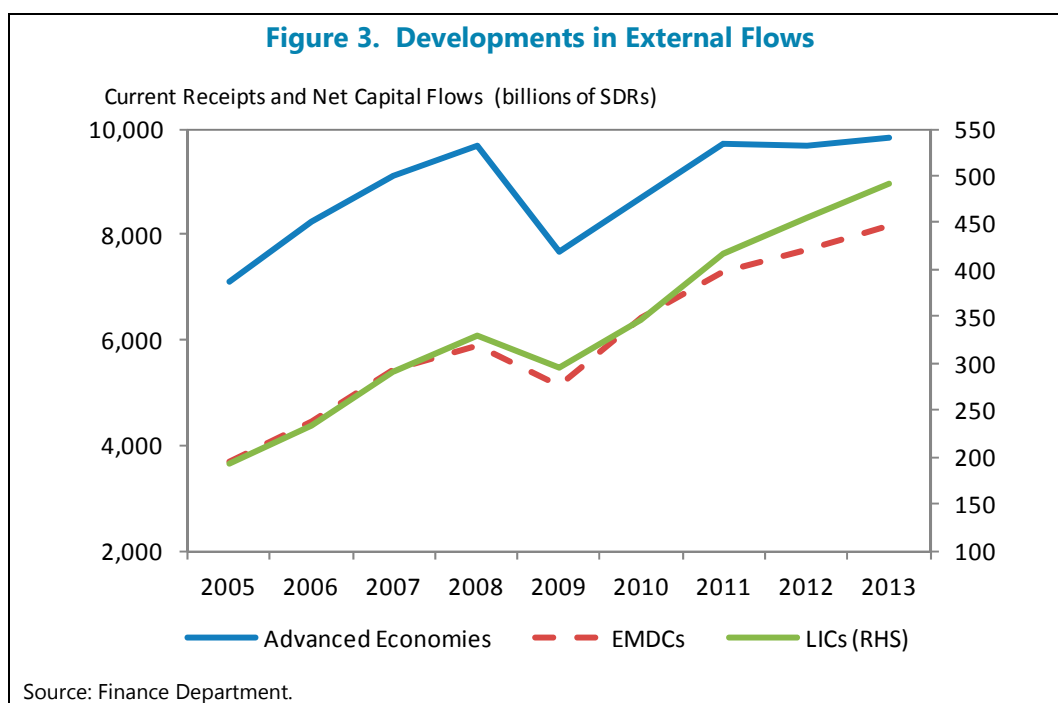
1/ Figures adjacent to each line denote the change in percentage points between the current CQS based on data through 2013, relative to the CQS based on data through 2005.

Figure 2. Average Real GDP Growth Rates



Source: Finance Department & WEO.

6. The gain in GDP share for EMDCs also reflects a continued divergence in global growth rates. As shown in Figure 2, the growth divergence has narrowed somewhat in the latest update, but nonetheless remains sizable. EMDCs also recorded gains in their share of global openness and, to a lesser extent, variability, associated with the rebound in external flows in the wake of the global financial crisis (Table 2a and Figure 3). The share of EMDCs in global reserves rose slightly to 76.1 percent from 75.7 percent, driven by an increase in China’s share of 0.8 pp.



7. As in previous updates, there were significant changes in CQS for some individual members. Most of the largest gainers were EMDCs. China again recorded the largest individual increase in CQS (0.75 pp) higher than in the last update but roughly in line with earlier years (0.71 pp in 2013 and 0.79 pp in 2012). Nigeria recorded an increase (0.16 pp) equivalent to one third of its previous CQS, reflecting mainly the revision of its National Income Accounts, while Argentina and Korea recorded more moderate increases (0.08 and 0.07 pp, respectively). Switzerland’s and France’s CQS increased significantly (0.27 and 0.07 pp, respectively) reflecting a higher share of variability and, for Switzerland, also of reserves. The 10 largest declines in CQS (except for Brazil) were recorded by AEs. The United States saw the largest individual decline (-0.4 pp), followed by Japan (-0.3), and Germany (-0.2) (Table 3).

8. Out-of-lininess based on the current formula has increased further compared to the last update. Comparing CQS with 14th Review quota shares, at the aggregate level AEs are over-represented and EMDCs under-represented by 6.3 pp, compared with 5.1 pp in the previous update (Table 4). The number of underrepresented members declined slightly to 72 compared with 74 in the previous update. These members are under-represented by 10 pp of total quota shares (over half of this shortfall is accounted for by China), compared with 8.7 pp in the previous update.

9. From a longer-term perspective, the CQS gains recorded by EMDCs in recent data updates reflect rising shares across all variables. Figure 4 shows the contributions of the five quota variables to CQS for major groups during the last five data updates.⁷ For EMDCs as a group, the contributions of market GDP, PPP GDP and openness are broadly similar in scale based on the latest data update (Figure 4, bottom panel). Over the five years combined, the increased contribution of PPP GDP to EMDCs' CQS is similar to that of market GDP. For advanced countries, the reverse applies as this group has steadily lost share across 3 variables (market GDP, PPP GDP, and openness). Market GDP makes the most important contribution for the major advanced economies (Figure 4, top panel), while openness is most important in the case of other advanced economies. PPP GDP makes a significantly smaller contribution in both cases.

⁷ The contribution of each quota variable is defined as each major group's aggregate share multiplied by its coefficient in the quota formula (i.e., 0.3 for market GDP and 0.2 for PPP GDP). The contributions will not equal the corresponding CQS due to compression.

**Table 2a. 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	51.4	53.0	57.7	59.2	56.2	56.8	23.9	24.3
Major advanced economies	43.4	41.8	43.2	38.5	39.6	37.1	38.0	15.5	16.6
United States	17.4	20.0	20.5	12.7	12.9	13.9	14.8	1.3	1.5
Japan	6.5	6.5	7.0	4.2	4.3	5.5	5.7	11.0	11.9
Germany	5.6	4.3	4.5	7.5	7.8	5.5	5.9	0.6	0.7
France	4.2	3.3	3.3	4.2	4.4	3.4	2.4	0.5	0.5
United Kingdom	4.2	3.1	3.1	4.4	4.7	4.0	4.2	0.8	0.8
Italy	3.2	2.6	2.7	2.9	3.1	2.9	3.0	0.5	0.5
Canada	2.3	2.1	2.1	2.5	2.5	1.9	2.0	0.6	0.6
Other advanced economies	14.3	9.6	9.8	19.2	19.6	19.2	18.8	8.4	7.8
Spain	2.0	1.7	1.9	2.2	2.3	2.2	2.2	0.3	0.3
Netherlands	1.8	1.0	1.0	2.9	3.0	2.6	2.8	0.2	0.2
Australia	1.4	1.7	1.7	1.5	1.5	1.4	1.4	0.4	0.4
Belgium	1.3	0.6	0.6	2.0	2.1	1.6	1.6	0.2	0.2
Switzerland	1.2	0.7	0.7	2.2	2.0	1.9	0.7	4.3	3.6
Sweden	0.9	0.6	0.6	1.2	1.2	1.4	1.5	0.5	0.4
Austria	0.8	0.5	0.5	1.1	1.1	0.9	0.9	0.1	0.1
Norway	0.8	0.5	0.5	0.8	0.9	1.3	1.4	0.5	0.5
Ireland	0.7	0.3	0.3	1.3	1.3	1.2	1.2	0.0	0.0
Denmark	0.7	0.4	0.4	0.8	0.8	0.7	0.7	0.8	0.8
Emerging Market and Developing Countries 6/	42.4	48.6	47.0	42.3	40.8	43.8	43.2	76.1	75.7
Africa	4.4	3.2	2.8	2.8	2.8	4.0	4.1	3.8	3.8
South Africa	0.6	0.6	0.6	0.5	0.5	0.3	0.3	0.4	0.4
Nigeria	0.5	0.8	0.4	0.4	0.4	0.5	0.6	0.4	0.4
Asia	16.0	24.6	23.5	20.8	19.7	15.5	14.7	45.0	44.8
China 7/	6.4	13.4	12.6	9.4	8.7	6.9	5.8	32.3	31.5
India	2.7	4.2	4.2	2.1	2.0	1.5	1.6	2.4	2.6
Korea, Republic of	1.8	1.7	1.6	2.6	2.5	1.0	1.1	3.0	3.0
Indonesia	1.0	1.6	1.6	0.8	0.8	0.7	0.8	0.9	1.0
Singapore	0.8	0.4	0.4	2.3	2.2	1.9	1.9	2.4	2.4
Malaysia	0.8	0.5	0.5	1.0	1.0	0.9	1.0	1.2	1.3
Thailand	0.7	0.7	0.7	1.1	1.0	1.3	1.3	1.5	1.6
Middle East, Malta & Turkey	6.7	6.1	6.1	5.9	5.8	8.8	8.7	11.9	11.0
Saudi Arabia	2.1	1.2	1.2	1.2	1.2	2.6	2.7	6.2	5.8
Turkey	1.0	1.2	1.2	0.9	0.9	1.1	1.2	1.0	0.8
Iran, Islamic Republic of	0.7	1.0	0.9	0.4	0.4	0.5	0.5	1.0	1.0
Western Hemisphere	7.9	8.3	8.2	5.3	5.2	6.3	6.5	7.2	7.4
Brazil	2.3	3.1	3.2	1.2	1.2	1.5	1.6	3.3	3.5
Mexico	1.9	1.8	1.8	1.6	1.6	1.6	1.7	1.5	1.5
Venezuela, República Bolivariana de	0.8	0.5	0.5	0.3	0.3	0.6	0.6	0.1	0.1
Argentina	0.7	0.9	0.7	0.4	0.4	0.5	0.5	0.3	0.4
Transition economies	7.2	6.4	6.4	7.4	7.4	9.2	9.3	8.2	8.5
Russian Federation	2.7	3.1	3.0	2.2	2.2	2.7	2.7	4.3	4.5
Poland	0.9	0.8	0.8	1.0	1.1	1.0	1.0	0.9	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Memorandum Items:									
EU 28	30.4	21.5	22.1	36.7	38.2	33.5	33.8	7.3	7.4
LICs 8/	4.1	3.0	2.5	2.5	2.3	3.1	3.1	2.1	1.9

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 2013.

3/ Based on *IFS* data through 2012.

4/ GDP blend using 60 percent market and 40 percent PPP exchange rates.

5/ Variability of current receipts minus net capital flows (due to change in sign convention in BPM6).

6/ Including Czech Republic, Estonia, Korea, Latvia, Lithuania, Malta, Singapore, Slovak Republic, and Slovenia.

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

8/ PRGT- eligible countries plus Zimbabwe.

**Table 2b. 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	51.3	58.5	60.4	40.7	41.9	51.4	53.0
Major advanced economies	43.4	36.8	47.2	48.9	33.5	34.5	41.8	43.2
United States	17.4	14.5	22.1	22.6	16.7	17.2	20.0	20.5
Japan	6.5	5.6	7.6	8.4	4.7	4.9	6.5	7.0
Germany	5.6	5.1	4.9	5.0	3.6	3.7	4.3	4.5
France	4.2	3.4	3.7	3.9	2.6	2.6	3.3	3.3
United Kingdom	4.2	3.4	3.6	3.5	2.3	2.4	3.1	3.1
Italy	3.2	2.6	2.9	3.0	2.1	2.2	2.6	2.7
Canada	2.3	2.1	2.5	2.5	1.5	1.6	2.1	2.1
Other advanced economies	14.3	14.5	11.2	11.4	7.2	7.4	9.6	9.8
Spain	2.0	1.9	1.9	2.0	1.5	1.6	1.7	1.9
Netherlands	1.8	1.8	1.1	1.2	0.8	0.8	1.0	1.0
Australia	1.4	1.5	2.1	2.1	1.0	1.1	1.7	1.7
Belgium	1.3	1.2	0.7	0.7	0.5	0.5	0.6	0.6
Switzerland	1.2	1.6	0.9	0.9	0.4	0.4	0.7	0.7
Sweden	0.9	1.0	0.8	0.7	0.4	0.4	0.6	0.6
Austria	0.8	0.8	0.6	0.6	0.4	0.4	0.5	0.5
Norway	0.8	0.8	0.7	0.7	0.3	0.3	0.5	0.5
Ireland	0.7	0.7	0.3	0.3	0.2	0.2	0.3	0.3
Denmark	0.7	0.6	0.4	0.5	0.2	0.3	0.4	0.4
Emerging Market and Developing Countries 7/	42.4	48.7	41.5	39.6	59.3	58.1	48.6	47.0
Developing countries	35.1	41.0	35.9	34.1	51.8	50.4	42.2	40.6
Africa	4.4	3.7	2.6	2.3	4.0	3.6	3.2	2.8
South Africa	0.6	0.6	0.5	0.6	0.7	0.7	0.6	0.6
Nigeria	0.5	0.7	0.6	0.4	0.9	0.6	0.8	0.4
Asia	16.0	22.6	20.1	18.7	31.4	30.6	24.6	23.5
China 8/	6.4	11.3	11.9	10.8	15.7	15.2	13.4	12.6
India	2.7	3.0	2.6	2.6	6.6	6.5	4.2	4.2
Korea, Republic of	1.8	2.0	1.7	1.6	1.7	1.6	1.7	1.6
Indonesia	1.0	1.3	1.2	1.2	2.3	2.3	1.6	1.6
Singapore	0.8	1.3	0.4	0.4	0.4	0.4	0.4	0.4
Malaysia	0.8	0.8	0.4	0.4	0.7	0.7	0.5	0.5
Thailand	0.7	1.0	0.5	0.5	0.9	1.0	0.7	0.7
Middle East, Malta & Turkey	6.7	7.2	5.2	5.1	7.5	7.5	6.1	6.1
Saudi Arabia	2.1	1.7	1.0	0.9	1.5	1.5	1.2	1.2
Turkey	1.0	1.1	1.1	1.1	1.4	1.4	1.2	1.2
Iran, Islamic Republic of	0.7	0.8	0.8	0.7	1.3	1.3	1.0	0.9
Western Hemisphere	7.9	7.5	7.9	7.9	8.8	8.7	8.3	8.2
Brazil	2.3	2.3	3.2	3.3	3.0	3.1	3.1	3.2
Mexico	1.9	1.7	1.6	1.6	2.1	2.1	1.8	1.8
Venezuela, República Bolivariana de	0.8	0.5	0.5	0.5	0.5	0.6	0.5	0.5
Argentina	0.7	0.7	0.8	0.6	0.9	0.7	0.9	0.7
Transition economies	7.2	7.7	5.7	5.6	7.5	7.6	6.4	6.4
Russian Federation	2.7	2.8	2.8	2.7	3.5	3.5	3.1	3.0
Poland	0.9	0.9	0.7	0.7	0.9	0.9	0.8	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Memorandum Item:								
EU 28	30.4	27.6	23.8	24.5	17.9	18.5	21.5	22.1
LICs 9/	4.1	3.3	2.2	1.8	4.1	3.5	3.0	2.5

Source: Finance Department.

1/ Including 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: $CQS = (0.50 \cdot GDP + 0.30 \cdot Openness + 0.15 \cdot Variability + 0.05 \cdot Reserves)^K$. 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 2013.

4/ Based on *IFS* data through 2012.

5/ Current PPP-GDP data were retrieved from the *WEO* database for 186 countries. For the country with no *WEO* data (Somalia and Syrian Arab Republic), PPP-GDP was estimated.

6/ GDP blend using 60 percent market and 40 percent PPP exchange rates.

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

8/ Including China, P.R., Hong Kong SAR and Macao SAR. PPP GDP only include China P.R. and Hong Kong SAR.

9/ PRGT-eligible countries plus Zimbabwe.

**Table 3. Top 10 Positive and Negative Changes in Calculated Quota Shares
(In percentage points)**

	Difference between Current and Previous Shares (In percent) 1/	Contribution of Variables to Change in CQS 2/					
		Calculated Quota Share	GDP	PPP	GDP Blend 3/	Openness	Variability
<i>Top 10: Positive Change</i>							
China 4/	0.747	0.336	0.098	0.434	0.211	0.171	0.038
Switzerland	0.271	0.013	-0.003	0.011	0.065	0.169	0.034
Nigeria	0.163	0.085	0.077	0.162	0.000	-0.005	0.002
Argentina	0.085	0.058	0.036	0.094	0.001	-0.006	-0.005
Korea, Republic of	0.074	0.037	0.020	0.057	0.036	-0.012	-0.003
France	0.072	-0.043	-0.004	-0.047	-0.031	0.158	-0.001
Saudi Arabia	0.043	0.014	0.005	0.019	0.007	-0.003	0.022
Qatar	0.039	0.005	0.001	0.007	0.012	0.014	0.004
India	0.034	0.003	0.021	0.025	0.029	-0.008	-0.008
United Arab Emirates	0.032	-0.003	0.000	-0.004	0.027	0.002	0.007
<i>Top 10: Negative Change</i>							
United States	-0.379	-0.157	-0.090	-0.247	-0.039	-0.140	-0.006
Japan	-0.338	-0.232	-0.036	-0.267	-0.031	-0.030	-0.042
Germany	-0.197	-0.040	-0.021	-0.061	-0.095	-0.055	-0.003
Italy	-0.147	-0.050	-0.025	-0.076	-0.054	-0.023	-0.002
Spain	-0.097	-0.039	-0.017	-0.056	-0.038	-0.006	-0.001
United Kingdom	-0.096	0.029	-0.016	0.013	-0.080	-0.034	0.000
Brazil	-0.070	-0.044	-0.015	-0.058	0.009	-0.011	-0.012
Netherlands	-0.065	-0.017	0.003	-0.014	-0.030	-0.022	0.000
Belgium	-0.048	-0.007	-0.004	-0.011	-0.024	-0.013	-0.001
Greece	-0.046	-0.014	-0.007	-0.021	-0.015	-0.008	0.000

Source: Finance Department.

1/ Current and previous calculations are based on data through 2013 and 2012 respectively, using the existing formula.

2/The difference between the current dataset through 2013 and the previous dataset through 2012, multiplied by the variable weight in the quota formula. The change in CQS also reflects the effect of compression.

3/ GDP blend using 60 percent market and 40 percent PPP exchange rates.

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

**Table 4. Under- and Overrepresented Countries by Major Country Groups 1/
(In percentage points)**

	14th General Review Quota Share 2/ (In percent)	Difference 3/		Number of Countries		Post Second Round Quota Share 6/ (In percent)	Difference 7/
		Current 4/	Previous 5/	Current	Previous		
Advanced economies	57.6	-6.3	-5.1	26	26	60.5	-2.2
Underrepresented	-	1.0	0.8	8	10	--	1.8
Overrepresented	-	-7.3	-5.9	18	16	--	-4.1
Emerging Market and Developing Countries	42.4	6.3	5.1	162	162	39.5	2.2
Underrepresented	-	9.0	7.9	64	64	--	8.9
Overrepresented	-	-2.7	-2.8	98	98	--	-6.7
Total Underrepresented Countries	35.8	10.0	8.7	72	74	30.7	10.7
Total Overrepresented Countries	64.2	-10.0	-8.7	116	114	69.3	-10.7
Memorandum Items:							
EU 28	30.4	-2.8	-2.0	28	28	32.0	-0.5
Underrepresented	-	0.7	0.8	12	13	--	2.2
Overrepresented	-	-3.5	-2.8	16	15	--	-2.8
LICs 8/	4.1	-0.9	-1.1	74	74	4.3	-1.8
Underrepresented	-	0.4	0.2	14	13	--	0.1
Overrepresented	-	-1.3	-1.3	60	61	--	-1.9

Source: Finance Department.

1/ Under- and over-represented countries for the two datasets, respectively.

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

3/ Difference between calculated quota shares and 14th General Review quota shares.

4/ Based on *IFS* data through 2013.

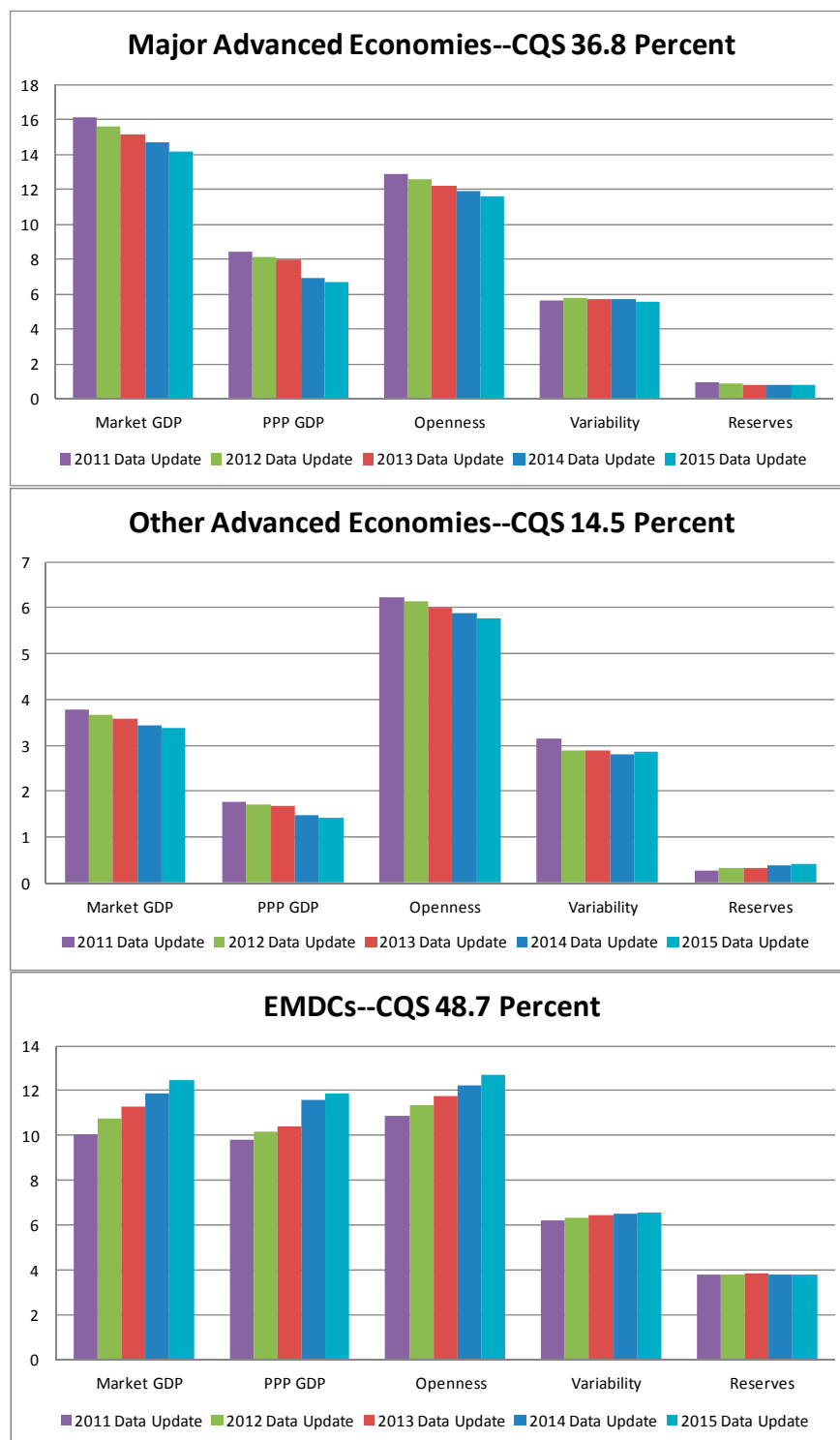
5/ Based on *IFS* data through 2012.

6/ The "post second round" reflects the ad hoc quota increases for 54 members under the 2008 reform, which became effective in March 2011. For the two countries that have not yet consented to and paid for their quota increase 11th Review proposed quotas are used.

7/ Difference between calculated quota shares based on *IFS* data through 2008 and post second round quota shares.

8/ PRGT-eligible countries plus Zimbabwe.

Figure 4. Contributions of Quota Variables to CQS by Vintages and Major Groups 1/



Source: Finance Department.

1/ The contribution of a quota variable to the CQS of each major group is defined as its share (for the relevant group) multiplied by its coefficient in the quota formula. The contributions will not add to the CQS due to compression.

QUOTA VARIABLES: TAKING STOCK

10. The Board’s deliberations on the quota formula review (QFR) provided important building blocks for agreement on a new quota formula that better reflects members’ relative positions in the world economy.⁸ It was agreed that the principles that underpinned the 2008 reform remained valid. Thus, the formula should be simple and transparent, consistent with the multiple roles of quotas,⁹ produce results that are broadly acceptable to the membership, and be feasible to implement statistically based on timely, high quality and widely available data. Other key results of the review were:

- Agreement that GDP should remain the most important variable, with the largest weight in the formula and scope to further increase its weight.
- Agreement that openness should continue to play an important role in the formula, and concerns regarding this variable need to be thoroughly examined and addressed.
- Considerable support for dropping variability from the formula, with some conditioning their support on other elements of the reform package, including how its weight is reallocated and the adequacy of measures to protect the poorest members.
- Considerable support for retaining reserves with its current weight.
- Consideration will be given to whether or not (i) the weight of PPP GDP in the GDP blend variable and (ii) the current level of compression should be adjusted.
- Consideration will be given to whether and how to take account of very significant voluntary financial contributions through ad hoc adjustments as part of the 15th Review.
- Agreement that measures should be taken to protect the voice and representation of the poorest members, with considerable support for addressing this issue as part of the 15th Review.

11. Directors have had further informal exchanges on these issues in the context of the 2013 and 2014 data updates. In light of the outcome of the QFR, the staff paper prepared as background for the June 2013 discussion presented additional work on the openness variable and on the links between variability and balance of payments difficulties that do not necessarily lead to use of Fund resources.¹⁰ It also presented illustrative simulations of possible reforms of the quota

⁸ See *Outcome of the Quota Formula Review—Report of the Executive Board to the Board of Governors* (1/30/13). <http://www.imf.org/external/np/pp/eng/2013/013013.pdf>

⁹ These include their key role in determining the Fund’s financial resources, their role in decisions on members’ access to Fund resources, their role in determining members’ shares in a general allocation of SDRs, and their close link with members’ voting rights.

¹⁰ See *Quota Formula—Data Update and Further Considerations* (6/5/13). <http://www.imf.org/external/np/pp/eng/2013/060513.pdf>

formula, building on the results of the QFR. The staff paper prepared as background for the July 2014 discussion presented additional work on PPP GDP (including an assessment of data quality following the update of the 2011 International Comparison Program), and updated staff's earlier examination of the openness variable based on the latest data.^{11,12} It also presented illustrative simulations of possible reforms of the quota formula, building on the QFR and earlier Board discussions.

12. Directors' views at the July 2014 discussion were broadly unchanged from those expressed previously. Differences remained on several issues, including the weight of GDP, the mix of market and PPP GDP in the GDP blend, the weight of openness, and whether to limit the overall boost that individual countries obtain from openness. The importance of agreeing on an integrated package of reforms was also reiterated.

ILLUSTRATIVE CALCULATIONS

13. Staff has updated the illustrative simulations of possible reforms of the quota formula presented in the July 2014 paper, using the latest data. Given the divergent views expressed at the last informal discussion, no new simulations have been introduced at this stage, though other variants and combinations of the approaches presented below could be considered. The simulations are purely illustrative and no proposals are made.

14. As noted in the last paper, the simulations take the outcome of the QFR as a starting point. Given the considerable support expressed for dropping variability, all simulations exclude this variable. As discussed in previous papers (and summarized in Annex II of *Quota Formula – Data Update and Further Considerations*, July 2, 2014), staff has undertaken extensive work to explore the links between variability and actual or potential demand for Fund resources and has found no evidence of such a link. Previous staff work has also highlighted the difficulties of identifying a superior measure. This said, it is recognized that some Directors have conditioned their support for dropping variability on other elements of the reform package. The simulations also maintain reserves with its current weight in line with the QFR.

15. Set 1 shows four different approaches to reallocate the weight of variability: (i) split evenly between GDP and openness (thereby increasing the relative weight of openness), (ii) split between GDP (2/3) and openness (1/3) leaving the relative weights of GDP and openness broadly unchanged, (iii) all to GDP (thereby increasing the relative weight of GDP), and (iv) all to GDP and a

¹¹ See *Quota Formula—Data Update and Further Considerations* (7/2/14).
<http://www.imf.org/external/np/pp/eng/2014/070214.pdf>

¹² Annex I updates previous staff analysis on the characteristics of PPP GDP and openness in light of the latest data update and notes that key conclusions from previous work remain broadly unchanged.

lower weight for openness (0.25), which would effectively increase the weight of GDP to 0.7 in the formula.

16. Set 2 shows a range of options for adjusting the weight of PPP GDP in the GDP blend.

These include increasing the weight of PPP GDP in the blend to 45 and 50 percent, respectively. A simulation is also shown with the weight of PPP GDP reduced to 35 percent. As noted previously, a combination of dropping variability and reducing the weight of PPP GDP would lead to a lower CQS for a large number of EMDCs, including LICs.

17. Set 3 explores the implications of introducing a cap that limits the overall boost individual countries can receive from openness.

As noted in Annex I, staff has explored the possible use of a cap to address one possible concern with the openness variable, namely that for some countries it can generate CQS that appear very large in relation to other measures of their relative economic positions. In line with the approach taken in the last two data update papers, two types of caps are illustrated: one capping the absolute level of openness in relation to market GDP (absolute cap) and the second capping the ratio of openness to GDP blend shares (share cap).

18. Set 4 illustrates the impact of introducing more compression into the formula. A compression factor of 0.925 is applied to the simulations presented in Set 1.

19. Summary results for the 35 members with the largest quotas and for major country groups are presented below. Table 5 provides an overview of the results for major country groups and detailed results for all members are presented in the Statistical Appendix (issued separately). The overall results are broadly similar to those illustrated in the July 2014 paper, though starting from a different base given the data update. The main results can be summarized as follows:

- *Set 1 – Simplification of the Current Formula – dropping variability, keeping current GDP and openness measures (Table 6).* Dropping variability and allocating part or all of the weight to GDP reduces (compared to the current formula) the CQS of other advanced economies and increases that of major advanced economies and EMDCs as a group. The shifts are larger when the weight of openness is also reduced. The majority of large countries gain from dropping variability, while less than one third of small countries gain.
- *Set 2 – Same as Set 1, but with different combinations of GDP blend (Tables 7-10).* Increasing the weight of PPP GDP in the GDP blend leads to a higher CQS for EMDCs relative to the current CQS. More EMDCs and small countries gain with an increased weight for PPP GDP relative to Set 1. Conversely, increasing the weight of market GDP in the GDP blend reduces the share of both EMDCs and LICs.
- *Set 3 – Same as Set 1, but with different openness measures (Tables 11-13).* Capping openness tends to reduce the CQS of other advanced economies and increases the CQS for major advanced economies and EMDCs as a group. Also, there are generally a larger number of gainers among both EMDCs and small countries compared with Set 1, including when the

weight of openness is reduced, as capping openness redistributes the very large boost received by some countries under the current measure across the rest of the membership.

- *Set 4— Same as Set 1, but with higher compression (0.925) (Table 14).* Higher compression reduces the share of the largest economies and increases the share of all other members. As a result, it leads to the largest number of gainers among EMDCs and LICs, as well as among small countries.

Table 5. Illustrative Calculations: Summary

	Calculated Quota Share (in percent)				Number of Gainers 1/	of which:			of which: 2/	
	Major Advanced	Other Advanced	EMDCs	LICs		AEs (26)	EMDCs excl. LICs (88)	LICs (74)	Large countries (18)	Small countries (170)
14th Review Quota Share	43.36	14.28	42.36	4.13						
Current CQS	36.80	14.52	48.68	3.27						
Set 1. Current GDP and openness measures, dropping variability										
1. Weight of variability split evenly between GDP and openness	37.29	13.82	48.88	3.20	63	6	27	30	12	51
2. Weight of variability split between GDP (2/3) and openness (1/3)	37.37	13.59	49.04	3.21	57	6	25	26	13	44
3. All weight of variability to GDP	37.53	13.12	49.36	3.24	52	5	26	21	12	40
4. Weight of openness reduced to 0.25	37.69	12.64	49.67	3.27	49	5	23	21	12	37
Set 2. Same as Set 1, but with different GDP blends										
1. <i>Weight of variability split evenly between GDP and openness</i>										
a. 50/50 GDP blend	36.56	13.59	49.85	3.31	72	3	35	34	10	62
b. 55/45 GDP blend	36.93	13.71	49.37	3.26	69	5	31	33	12	57
c. 65/35 GDP blend	37.66	13.94	48.40	3.14	55	9	24	22	14	41
2. <i>Weight of variability split between GDP (2/3) and openness (1/3)</i>										
a. 50/50 GDP blend	36.61	13.34	50.05	3.33	63	3	31	29	10	53
b. 55/45 GDP blend	36.99	13.46	49.55	3.27	62	5	30	27	12	50
c. 65/35 GDP blend	37.75	13.71	48.53	3.15	53	8	22	23	14	39
3. <i>All weight of variability to GDP</i>										
a. 50/50 GDP blend	36.70	12.85	50.46	3.37	56	1	29	26	9	47
b. 55/45 GDP blend	37.11	12.98	49.91	3.31	56	5	26	25	12	44
c. 65/35 GDP blend	37.94	13.25	48.81	3.18	45	6	20	19	13	32
4. <i>Weight of openness reduced to 0.25</i>										
a. 50/50 GDP blend	36.79	12.35	50.86	3.41	56	2	28	26	10	46
b. 55/45 GDP blend	37.24	12.50	50.27	3.34	55	4	27	24	11	44
c. 65/35 GDP blend	38.13	12.79	49.08	3.20	44	5	22	17	12	32

Source: Finance Department

1/ Countries with positive change in relation to current CQS.

2/ Countries are classified as "large" if their current GDP blend share exceeds 1.0 percent.

Table 5. Illustrative Calculations: Summary (concluded)

	Calculated Quota Share (in percent)				Number of Gainers 1/	of which:			of which: 2/	
	Major Advanced	Other Advanced	EMDCs	LICs		AEs (26)	EMDCs excl. LICs (88)	LICs (74)	Large countries (18)	Small countries (170)
14th Review Quota Share	43.36	14.28	42.36	4.13						
Current CQS	36.80	14.52	48.68	3.27						
Set 3. Same as Set 1, but with different openness measures										
<i>1. Weight of variability split evenly between GDP and openness</i>										
a. Nominal openness capped at 85th percentile	37.86	13.22	48.91	3.23	76	10	33	33	17	59
b. Nominal openness capped at 75th percentile	38.16	12.95	48.89	3.23	78	13	32	33	17	61
c. Openness share capped at 1.8	38.58	12.11	49.31	3.29	85	12	38	35	17	68
d. Openness share capped at 1.5	38.78	11.68	49.54	3.31	83	11	39	33	16	67
<i>2. Weight of variability split between GDP (2/3) and openness (1/3)</i>										
a. Nominal openness capped at 85th percentile	37.91	13.02	49.07	3.25	72	9	32	31	16	56
b. Nominal openness capped at 75th percentile	38.18	12.77	49.05	3.25	72	10	30	32	17	55
c. Openness share capped at 1.8	38.57	11.99	49.44	3.30	79	11	35	33	17	62
d. Openness share capped at 1.5	38.76	11.59	49.65	3.32	82	11	38	33	16	66
<i>3. All weight of variability to GDP</i>										
a. Nominal openness capped at 85th percentile	37.99	12.63	49.38	3.27	60	7	26	27	14	46
b. Nominal openness capped at 75th percentile	38.23	12.41	49.37	3.27	61	7	27	27	14	47
c. Openness share capped at 1.8	38.56	11.74	49.70	3.32	75	9	35	31	16	59
d. Openness share capped at 1.5	38.72	11.39	49.89	3.34	74	9	34	31	15	59
Set 4. Same as Set 1, but with higher compression (0.925)										
1. Dropping variability, weight split evenly between GDP and openness	36.30	14.15	49.55	3.46	120	9	57	54	10	110
2. Dropping variability, weight split between GDP (2/3) and openness (1/3)	36.38	13.92	49.70	3.48	113	6	55	52	11	102
3. Dropping variability, all weight to GDP	36.53	13.45	50.02	3.51	107	6	51	50	12	95
4. Dropping variability, weight of openness reduced to 0.25	36.69	12.98	50.33	3.54	106	5	49	52	12	94

Source: Finance Department

1/ Countries with positive change in relation to current CQS.

2/ Countries are classified as "large" if their current GDP blend share exceeds 1.0 percent.

CONCLUDING REMARKS

20. This paper presents the results of updating the quota data set by one year to cover the period through 2013. Overall, the results reflect a continuation of several broad trends observed in previous updates. In particular, based on the current formula, the calculated quota share of EMDCs as a group has increased further, and now stands at 48.7 percent compared with 47.4 percent at the last update and 41.8 percent at the time of the 14th General Quota Review. This implies that, on the same basis, EMDCs in aggregate would be under-represented by 6.3 pp when compared with the 14th Review quota shares.

21. The paper also updates the illustrative simulations of possible reforms of the quota formula presented in the July 2014 paper using the new data. These simulations build on earlier work and take as a starting point the outcome of the QFR. They are intended to be purely illustrative and other variants and combinations could also be considered.

22. Directors may wish to comments on the following issues:

- How do Directors assess the relative merits of alternative possible reforms of the formula in light of the latest data update? Have these views changed in light of the latest data update?
- Are there any areas where additional work would be useful?

Table 6. Illustrative Calculations—Current GDP and Openness Measures, and Dropping Variability (In percent)

	14th General Review Quotas	Current Formula	Formula w/o variability, and weight split:			Formula w/o variability and:
			Even split	GDP (2/3), openness (1/3)	All to GDP blend	Weight of openness reduced to 0.25
Advanced economies	57.6	51.3	51.1	51.0	50.6	50.3
Major advanced economies	43.4	36.8	37.3	37.4	37.5	37.7
United States	17.4	14.5	14.9	15.1	15.4	15.7
Japan	6.5	5.6	5.6	5.7	5.8	5.9
Germany	5.6	5.1	5.1	5.1	4.9	4.8
France	4.2	3.4	3.4	3.4	3.4	3.3
United Kingdom	4.2	3.4	3.4	3.4	3.3	3.3
Italy	3.2	2.6	2.6	2.6	2.6	2.5
Canada	2.3	2.1	2.2	2.2	2.2	2.1
Other advanced economies	14.3	14.5	13.8	13.6	13.1	12.6
Spain	2.0	1.9	1.9	1.9	1.8	1.8
Netherlands	1.8	1.8	1.7	1.7	1.6	1.5
Australia	1.4	1.5	1.6	1.6	1.6	1.6
Belgium	1.3	1.2	1.1	1.1	1.0	1.0
Switzerland	1.2	1.6	1.5	1.5	1.4	1.3
Sweden	0.9	1.0	0.9	0.9	0.8	0.8
Austria	0.8	0.8	0.7	0.7	0.7	0.7
Norway	0.8	0.8	0.7	0.7	0.7	0.7
Ireland	0.7	0.7	0.7	0.7	0.6	0.6
Denmark	0.7	0.6	0.6	0.6	0.6	0.5
Emerging Market and Developing Countries 1/	42.4	48.7	48.9	49.0	49.4	49.7
Africa	4.4	3.7	3.5	3.5	3.6	3.6
South Africa	0.6	0.6	0.6	0.6	0.6	0.6
Nigeria	0.5	0.7	0.7	0.7	0.7	0.7
Asia	16.0	22.6	23.6	23.7	23.9	24.1
China 2/	6.4	11.3	11.9	12.0	12.2	12.3
India	2.7	3.0	3.3	3.3	3.4	3.5
Korea, Republic of	1.8	2.0	2.1	2.1	2.1	2.0
Indonesia	1.0	1.3	1.3	1.4	1.4	1.4
Singapore	0.8	1.3	1.3	1.2	1.1	1.0
Malaysia	0.8	0.8	0.8	0.8	0.8	0.7
Thailand	0.7	1.0	0.9	0.9	0.9	0.9
Middle East, Malta and Turkey	6.7	7.2	6.8	6.8	6.8	6.9
Saudi Arabia	2.1	1.7	1.5	1.5	1.5	1.5
Turkey	1.0	1.1	1.1	1.1	1.2	1.2
Iran, I.R. of	0.7	0.8	0.8	0.8	0.9	0.9
Western Hemisphere	7.9	7.5	7.5	7.6	7.8	7.9
Brazil	2.3	2.3	2.4	2.5	2.6	2.7
Mexico	1.9	1.7	1.8	1.8	1.8	1.8
Venezuela, R.B. de	0.8	0.5	0.4	0.5	0.5	0.5
Argentina	0.7	0.7	0.7	0.7	0.7	0.8
Transition economies	7.2	7.7	7.4	7.3	7.3	7.2
Russia	2.7	2.8	2.8	2.8	2.9	2.9
Poland	0.9	0.9	0.9	0.9	0.9	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Memorandum items:						
EU28	30.4	27.6	27.0	26.6	25.9	25.1
LICs 3/	4.1	3.3	3.2	3.2	3.2	3.3
Coefficients for quota variables						
GDP		0.300	0.345	0.360	0.390	0.420
PPP GDP		0.200	0.230	0.240	0.260	0.280
Openness		0.300	0.375	0.350	0.300	0.250
Variability		0.150	0.000	0.000	0.000	0.000
Reserves		0.050	0.050	0.050	0.050	0.050
Compression factor		0.950	0.950	0.950	0.950	0.950

Source: Finance Department

1/ Including Czech Republic, Estonia, Korea, Latvia, Lithuania, Malta, Singapore, Slovak Republic, and Slovenia.

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

3/ PRGT-eligible countries plus Zimbabwe.

Table 7. Illustrative Calculations—Current Openness Measure, Dropping Variability, Weight Split Evenly Between GDP and Openness, and Different Combinations of GDP Blend (In percent)

	14th General Review Quotas	Current Formula	Formula w/o variability, current openness measure, weight split evenly between GDP and openness, and GDP blends:		
			50/50	55/45	65/35
Advanced economies	57.6	51.3	50.1	50.6	51.6
Major advanced economies	43.4	36.8	36.6	36.9	37.7
United States	17.4	14.5	14.6	14.8	15.0
Japan	6.5	5.6	5.5	5.5	5.7
Germany	5.6	5.1	5.1	5.1	5.2
France	4.2	3.4	3.4	3.4	3.5
United Kingdom	4.2	3.4	3.4	3.4	3.5
Italy	3.2	2.6	2.5	2.6	2.6
Canada	2.3	2.1	2.1	2.2	2.2
Other advanced economies	14.3	14.5	13.6	13.7	13.9
Spain	2.0	1.9	1.8	1.9	1.9
Netherlands	1.8	1.8	1.7	1.7	1.7
Australia	1.4	1.5	1.5	1.5	1.6
Belgium	1.3	1.2	1.1	1.1	1.1
Switzerland	1.2	1.6	1.5	1.5	1.5
Sweden	0.9	1.0	0.9	0.9	0.9
Austria	0.8	0.8	0.7	0.7	0.7
Norway	0.8	0.8	0.7	0.7	0.7
Ireland	0.7	0.7	0.7	0.7	0.7
Denmark	0.7	0.6	0.6	0.6	0.6
Emerging Market and Developing Countries 1/	42.4	48.7	49.9	49.4	48.4
Africa	4.4	3.7	3.6	3.6	3.5
South Africa	0.6	0.6	0.6	0.6	0.6
Nigeria	0.5	0.7	0.7	0.7	0.7
Asia	16.0	22.6	24.2	23.9	23.3
China 2/	6.4	11.3	12.1	12.0	11.8
India	2.7	3.0	3.5	3.4	3.2
Korea, Republic of	1.8	2.0	2.1	2.1	2.1
Indonesia	1.0	1.3	1.4	1.4	1.3
Singapore	0.8	1.3	1.3	1.3	1.3
Malaysia	0.8	0.8	0.8	0.8	0.8
Thailand	0.7	1.0	0.9	0.9	0.9
Middle East, Malta and Turkey	6.7	7.2	7.0	6.9	6.8
Saudi Arabia	2.1	1.7	1.5	1.5	1.5
Turkey	1.0	1.1	1.2	1.1	1.1
Iran, I.R. of	0.7	0.8	0.9	0.8	0.8
Western Hemisphere	7.9	7.5	7.6	7.6	7.5
Brazil	2.3	2.3	2.4	2.4	2.4
Mexico	1.9	1.7	1.8	1.8	1.7
Venezuela, R.B. de	0.8	0.5	0.5	0.5	0.4
Argentina	0.7	0.7	0.7	0.7	0.7
Transition economies	7.2	7.7	7.5	7.4	7.3
Russia	2.7	2.8	2.8	2.8	2.8
Poland	0.9	0.9	0.9	0.9	0.9
Total	100.0	100.0	100.0	100.0	100.0
Memorandum items:					
EU28	30.4	27.6	26.6	26.8	27.1
LICs 3/	4.1	3.3	3.3	3.3	3.1
Coefficients for quota variables					
GDP		0.300	0.288	0.316	0.374
PPP GDP		0.200	0.288	0.259	0.201
Openness		0.300	0.375	0.375	0.375
Variability		0.150	0.000	0.000	0.000
Reserves		0.050	0.050	0.050	0.050
Compression factor		0.950	0.950	0.950	0.950

Source: Finance Department

1/ Including Czech Republic, Estonia, Korea, Latvia, Lithuania, Malta, Singapore, Slovak Republic, and Slovenia.

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

3/ PRGT-eligible countries plus Zimbabwe.

Table 8. Illustrative Calculations—Current Openness Measure, Dropping Variability, Weight Split Between GDP (2/3) and Openness (1/3), and Different Combinations of GDP Blend (In percent)

	14th General Review Quotas	Current Formula	Formula w/o variability, current openness measure, weight split between GDP (2/3) and openness (1/3), and GDP blends:		
			50/50	55/45	65/35
Advanced economies	57.6	51.3	49.9	50.5	51.5
Major advanced economies	43.4	36.8	36.6	37.0	37.8
United States	17.4	14.5	14.8	14.9	15.2
Japan	6.5	5.6	5.5	5.6	5.8
Germany	5.6	5.1	5.0	5.0	5.1
France	4.2	3.4	3.4	3.4	3.4
United Kingdom	4.2	3.4	3.3	3.4	3.4
Italy	3.2	2.6	2.5	2.5	2.6
Canada	2.3	2.1	2.1	2.2	2.2
Other advanced economies	14.3	14.5	13.3	13.5	13.7
Spain	2.0	1.9	1.8	1.8	1.9
Netherlands	1.8	1.8	1.6	1.6	1.7
Australia	1.4	1.5	1.5	1.5	1.6
Belgium	1.3	1.2	1.1	1.1	1.1
Switzerland	1.2	1.6	1.4	1.5	1.5
Sweden	0.9	1.0	0.8	0.9	0.9
Austria	0.8	0.8	0.7	0.7	0.7
Norway	0.8	0.8	0.7	0.7	0.7
Ireland	0.7	0.7	0.6	0.7	0.7
Denmark	0.7	0.6	0.6	0.6	0.6
Emerging Market and Developing Countries 1/	42.4	48.7	50.1	49.5	48.5
Africa	4.4	3.7	3.6	3.6	3.5
South Africa	0.6	0.6	0.6	0.6	0.6
Nigeria	0.5	0.7	0.7	0.7	0.7
Asia	16.0	22.6	24.4	24.0	23.4
China 2/	6.4	11.3	12.2	12.1	11.9
India	2.7	3.0	3.5	3.4	3.2
Korea, Republic of	1.8	2.0	2.1	2.1	2.1
Indonesia	1.0	1.3	1.4	1.4	1.3
Singapore	0.8	1.3	1.2	1.2	1.2
Malaysia	0.8	0.8	0.8	0.8	0.8
Thailand	0.7	1.0	0.9	0.9	0.9
Middle East, Malta and Turkey	6.7	7.2	7.0	6.9	6.8
Saudi Arabia	2.1	1.7	1.5	1.5	1.5
Turkey	1.0	1.1	1.2	1.2	1.1
Iran, I.R. of	0.7	0.8	0.9	0.9	0.8
Western Hemisphere	7.9	7.5	7.7	7.6	7.6
Brazil	2.3	2.3	2.5	2.5	2.5
Mexico	1.9	1.7	1.8	1.8	1.7
Venezuela, R.B. de	0.8	0.5	0.5	0.5	0.5
Argentina	0.7	0.7	0.7	0.7	0.7
Transition economies	7.2	7.7	7.4	7.4	7.3
Russia	2.7	2.8	2.9	2.8	2.8
Poland	0.9	0.9	0.9	0.9	0.9
Total	100.0	100.0	100.0	100.0	100.0
Memorandum items:					
EU28	30.4	27.6	26.2	26.4	26.8
LICs 3/	4.1	3.3	3.3	3.3	3.2
Coefficients for quota variables					
GDP		0.300	0.300	0.330	0.390
PPP GDP		0.200	0.300	0.270	0.210
Openness		0.300	0.350	0.350	0.350
Variability		0.150	0.000	0.000	0.000
Reserves		0.050	0.050	0.050	0.050
Compression factor		0.950	0.950	0.950	0.950

Source: Finance Department

1/ Including Czech Republic, Estonia, Korea, Latvia, Lithuania, Malta, Singapore, Slovak Republic, and Slovenia.

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

3/ PRGT-eligible countries plus Zimbabwe.

**Table 9. Illustrative Calculations—Current Openness Measure, Dropping Variability,
All Weight to GDP, and Different Combinations of GDP Blend
(In percent)**

	14th General Review Quotas	Current Formula	Formula w/o variability, current openness measure, all weight to GDP, and GDP blends:		
			50/50	55/45	65/35
Advanced economies	57.6	51.3	49.5	50.1	51.2
Major advanced economies	43.4	36.8	36.7	37.1	37.9
United States	17.4	14.5	15.1	15.2	15.5
Japan	6.5	5.6	5.6	5.7	5.9
Germany	5.6	5.1	4.9	4.9	5.0
France	4.2	3.4	3.3	3.3	3.4
United Kingdom	4.2	3.4	3.3	3.3	3.4
Italy	3.2	2.6	2.5	2.5	2.6
Canada	2.3	2.1	2.1	2.1	2.2
Other advanced economies	14.3	14.5	12.8	13.0	13.3
Spain	2.0	1.9	1.8	1.8	1.9
Netherlands	1.8	1.8	1.5	1.6	1.6
Australia	1.4	1.5	1.5	1.6	1.6
Belgium	1.3	1.2	1.0	1.0	1.0
Switzerland	1.2	1.6	1.4	1.4	1.4
Sweden	0.9	1.0	0.8	0.8	0.9
Austria	0.8	0.8	0.7	0.7	0.7
Norway	0.8	0.8	0.7	0.7	0.7
Ireland	0.7	0.7	0.6	0.6	0.6
Denmark	0.7	0.6	0.5	0.6	0.6
Emerging Market and Developing Countries 1/	42.4	48.7	50.5	49.9	48.8
Africa	4.4	3.7	3.7	3.6	3.5
South Africa	0.6	0.6	0.6	0.6	0.6
Nigeria	0.5	0.7	0.7	0.7	0.7
Asia	16.0	22.6	24.6	24.2	23.6
China 2/	6.4	11.3	12.4	12.3	12.1
India	2.7	3.0	3.7	3.5	3.3
Korea, Republic of	1.8	2.0	2.1	2.1	2.1
Indonesia	1.0	1.3	1.5	1.4	1.4
Singapore	0.8	1.3	1.1	1.1	1.1
Malaysia	0.8	0.8	0.8	0.8	0.7
Thailand	0.7	1.0	0.9	0.9	0.9
Middle East, Malta and Turkey	6.7	7.2	7.0	6.9	6.8
Saudi Arabia	2.1	1.7	1.5	1.5	1.5
Turkey	1.0	1.1	1.2	1.2	1.1
Iran, I.R. of	0.7	0.8	0.9	0.9	0.9
Western Hemisphere	7.9	7.5	7.8	7.8	7.7
Brazil	2.3	2.3	2.6	2.6	2.6
Mexico	1.9	1.7	1.8	1.8	1.8
Venezuela, R.B. de	0.8	0.5	0.5	0.5	0.5
Argentina	0.7	0.7	0.7	0.7	0.7
Transition economies	7.2	7.7	7.4	7.3	7.2
Russia	2.7	2.8	2.9	2.9	2.8
Poland	0.9	0.9	0.9	0.9	0.9
Total	100.0	100.0	100.0	100.0	100.0
Memorandum items:					
EU28	30.4	27.6	25.5	25.7	26.1
LICs 3/	4.1	3.3	3.4	3.3	3.2
Coefficients for quota variables					
GDP		0.300	0.325	0.358	0.423
PPP GDP		0.200	0.325	0.293	0.228
Openness		0.300	0.300	0.300	0.300
Variability		0.150	0.000	0.000	0.000
Reserves		0.050	0.050	0.050	0.050
Compression factor		0.950	0.950	0.950	0.950

Source: Finance Department

1/ Including Czech Republic, Estonia, Korea, Latvia, Lithuania, Malta, Singapore, Slovak Republic, and Slovenia.

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

3/ PRGT-eligible countries plus Zimbabwe.

Table 10. Illustrative Calculations—Current Openness Measure, Dropping Variability, Weight of Openness Reduced to 0.25, and Different Combinations of GDP Blend (In percent)

	14th General Review Quotas	Current Formula	Formula w/o variability, weight of openness reduced to 0.25, and GDP blends:		
			50/50	55/45	65/35
Advanced economies	57.6	51.3	49.1	49.7	50.9
Major advanced economies	43.4	36.8	36.8	37.2	38.1
United States	17.4	14.5	15.4	15.5	15.9
Japan	6.5	5.6	5.7	5.8	6.0
Germany	5.6	5.1	4.7	4.8	4.8
France	4.2	3.4	3.3	3.3	3.4
United Kingdom	4.2	3.4	3.2	3.2	3.3
Italy	3.2	2.6	2.5	2.5	2.6
Canada	2.3	2.1	2.1	2.1	2.2
Other advanced economies	14.3	14.5	12.4	12.5	12.8
Spain	2.0	1.9	1.8	1.8	1.8
Netherlands	1.8	1.8	1.4	1.5	1.5
Australia	1.4	1.5	1.5	1.6	1.6
Belgium	1.3	1.2	1.0	1.0	1.0
Switzerland	1.2	1.6	1.3	1.3	1.4
Sweden	0.9	1.0	0.8	0.8	0.8
Austria	0.8	0.8	0.6	0.7	0.7
Norway	0.8	0.8	0.6	0.7	0.7
Ireland	0.7	0.7	0.5	0.5	0.6
Denmark	0.7	0.6	0.5	0.5	0.5
Emerging Market and Developing Countries 1/	42.4	48.7	50.9	50.3	49.1
Africa	4.4	3.7	3.7	3.6	3.5
South Africa	0.6	0.6	0.6	0.6	0.6
Nigeria	0.5	0.7	0.7	0.7	0.7
Asia	16.0	22.6	24.8	24.5	23.7
China 2/	6.4	11.3	12.6	12.5	12.2
India	2.7	3.0	3.8	3.7	3.4
Korea, Republic of	1.8	2.0	2.0	2.0	2.0
Indonesia	1.0	1.3	1.5	1.5	1.4
Singapore	0.8	1.3	1.0	1.0	1.0
Malaysia	0.8	0.8	0.7	0.7	0.7
Thailand	0.7	1.0	0.9	0.9	0.9
Middle East, Malta and Turkey	6.7	7.2	7.0	6.9	6.8
Saudi Arabia	2.1	1.7	1.5	1.5	1.5
Turkey	1.0	1.1	1.2	1.2	1.2
Iran, I.R. of	0.7	0.8	0.9	0.9	0.9
Western Hemisphere	7.9	7.5	8.0	7.9	7.9
Brazil	2.3	2.3	2.6	2.7	2.7
Mexico	1.9	1.7	1.8	1.8	1.8
Venezuela, R.B. de	0.8	0.5	0.5	0.5	0.5
Argentina	0.7	0.7	0.8	0.8	0.8
Transition economies	7.2	7.7	7.4	7.3	7.2
Russia	2.7	2.8	2.9	2.9	2.9
Poland	0.9	0.9	0.9	0.9	0.9
Total	100.0	100.0	100.0	100.0	100.0
Memorandum items:					
EU28	30.4	27.6	24.7	24.9	25.3
LICs 3/	4.1	3.3	3.4	3.3	3.2
Coefficients for quota variables					
GDP		0.300	0.350	0.385	0.455
PPP GDP		0.200	0.350	0.315	0.245
Openness		0.300	0.250	0.250	0.250
Variability		0.150	0.000	0.000	0.000
Reserves		0.050	0.050	0.050	0.050
Compression factor		0.950	0.950	0.950	0.950

Source: Finance Department

1/ Including Czech Republic, Estonia, Korea, Latvia, Lithuania, Malta, Singapore, Slovak Republic, and Slovenia.

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

3/ PRGT-eligible countries plus Zimbabwe.

Table 11. Illustrative Calculations—Current GDP Blend, Dropping Variability, Weight Split Evenly Between GDP and Openness, and Different Openness Measures
(In percent)

	14th General Review Quotas	Current Formula	Formula w/o variability, weight split evenly between GDP and openness, and different openness measures:			
			Nominal openness capped at the 85th percentile	Nominal openness capped at the 75th percentile	Openness shares capped at 1.8	Openness shares capped at 1.5
Advanced economies	57.6	51.3	51.1	51.1	50.7	50.5
Major advanced economies	43.4	36.8	37.9	38.2	38.6	38.8
United States	17.4	14.5	15.1	15.2	15.3	15.7
Japan	6.5	5.6	5.7	5.7	5.8	5.9
Germany	5.6	5.1	5.3	5.3	5.3	4.8
France	4.2	3.4	3.5	3.5	3.6	3.7
United Kingdom	4.2	3.4	3.5	3.5	3.6	3.5
Italy	3.2	2.6	2.6	2.6	2.7	2.8
Canada	2.3	2.1	2.2	2.3	2.3	2.4
Other advanced economies	14.3	14.5	13.2	12.9	12.1	11.7
Spain	2.0	1.9	1.9	1.9	2.0	2.0
Netherlands	1.8	1.8	1.6	1.5	1.3	1.2
Australia	1.4	1.5	1.6	1.6	1.6	1.7
Belgium	1.3	1.2	1.0	1.0	0.8	0.7
Switzerland	1.2	1.6	1.5	1.4	1.2	1.1
Sweden	0.9	1.0	0.9	0.9	0.9	0.8
Austria	0.8	0.8	0.7	0.8	0.7	0.6
Norway	0.8	0.8	0.7	0.7	0.7	0.7
Ireland	0.7	0.7	0.5	0.5	0.4	0.4
Denmark	0.7	0.6	0.6	0.6	0.5	0.5
Emerging Market and Developing Countries 1/	42.4	48.7	48.9	48.9	49.3	49.5
Africa	4.4	3.7	3.6	3.6	3.6	3.7
South Africa	0.6	0.6	0.6	0.6	0.6	0.6
Nigeria	0.5	0.7	0.7	0.7	0.7	0.7
Asia	16.0	22.6	23.4	23.4	23.7	23.8
China 2/	6.4	11.3	12.0	12.1	12.2	12.5
India	2.7	3.0	3.3	3.3	3.4	3.4
Korea, Republic of	1.8	2.0	2.2	2.2	2.2	2.1
Indonesia	1.0	1.3	1.4	1.4	1.4	1.4
Singapore	0.8	1.3	0.8	0.7	0.7	0.6
Malaysia	0.8	0.8	0.8	0.7	0.8	0.7
Thailand	0.7	1.0	0.9	0.9	1.0	0.9
Middle East, Malta and Turkey	6.7	7.2	6.9	6.9	6.9	6.9
Saudi Arabia	2.1	1.7	1.5	1.5	1.5	1.6
Turkey	1.0	1.1	1.1	1.2	1.2	1.2
Iran, I.R. of	0.7	0.8	0.8	0.8	0.8	0.9
Western Hemisphere	7.9	7.5	7.6	7.7	7.7	7.9
Brazil	2.3	2.3	2.4	2.5	2.5	2.5
Mexico	1.9	1.7	1.8	1.8	1.8	1.9
Venezuela, R.B. de	0.8	0.5	0.5	0.5	0.5	0.5
Argentina	0.7	0.7	0.7	0.7	0.7	0.7
Transition economies	7.2	7.7	7.4	7.4	7.4	7.4
Russia	2.7	2.8	2.8	2.8	2.9	2.9
Poland	0.9	0.9	1.0	1.0	1.0	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Memorandum items:						
EU28	30.4	27.6	26.5	26.4	25.9	25.0
LICs 3/	4.1	3.3	3.2	3.2	3.3	3.3
Coefficients for quota variables						
GDP		0.300	0.345	0.345	0.345	0.345
PPP GDP		0.200	0.230	0.230	0.230	0.230
Openness		0.300	0.375	0.375	0.375	0.375
Variability		0.150	0.000	0.000	0.000	0.000
Reserves		0.050	0.050	0.050	0.050	0.050
Compression factor		0.950	0.950	0.950	0.950	0.950

Source: Finance Department

1/ Including Czech Republic, Estonia, Korea, Latvia, Lithuania, Malta, Singapore, Slovak Republic, and Slovenia.

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

3/ PRGT-eligible countries plus Zimbabwe.

Table 12. Illustrative Calculations—Current GDP Blend, Dropping Variability, Weight Split Between GDP (2/3) and Openness (1/3), and Different Openness Measures (In percent)

	14th General Review Quotas	Current Formula	Formula w/o variability, weight split between GDP (2/3) and openness (1/3), and different openness measures:			
			Nominal openness capped at the 85th percentile	Nominal openness capped at the 75th percentile	Openness shares capped at 1.8	Openness shares capped at 1.5
Advanced economies	57.6	51.3	50.9	50.9	50.6	50.3
Major advanced economies	43.4	36.8	37.9	38.2	38.6	38.8
United States	17.4	14.5	15.2	15.3	15.5	15.8
Japan	6.5	5.6	5.7	5.8	5.8	5.9
Germany	5.6	5.1	5.2	5.2	5.2	4.8
France	4.2	3.4	3.5	3.5	3.6	3.6
United Kingdom	4.2	3.4	3.5	3.5	3.6	3.5
Italy	3.2	2.6	2.6	2.6	2.7	2.8
Canada	2.3	2.1	2.2	2.2	2.3	2.3
Other advanced economies	14.3	14.5	13.0	12.8	12.0	11.6
Spain	2.0	1.9	1.9	1.9	1.9	2.0
Netherlands	1.8	1.8	1.6	1.5	1.3	1.2
Australia	1.4	1.5	1.6	1.6	1.6	1.7
Belgium	1.3	1.2	1.0	0.9	0.8	0.7
Switzerland	1.2	1.6	1.5	1.4	1.2	1.1
Sweden	0.9	1.0	0.9	0.9	0.9	0.8
Austria	0.8	0.8	0.7	0.7	0.7	0.6
Norway	0.8	0.8	0.7	0.7	0.7	0.7
Ireland	0.7	0.7	0.5	0.4	0.4	0.3
Denmark	0.7	0.6	0.6	0.6	0.5	0.5
Emerging Market and Developing Countries 1/	42.4	48.7	49.1	49.1	49.4	49.7
Africa	4.4	3.7	3.6	3.6	3.6	3.7
South Africa	0.6	0.6	0.6	0.6	0.6	0.6
Nigeria	0.5	0.7	0.7	0.7	0.7	0.7
Asia	16.0	22.6	23.5	23.5	23.8	23.8
China 2/	6.4	11.3	12.1	12.2	12.3	12.5
India	2.7	3.0	3.4	3.4	3.4	3.5
Korea, Republic of	1.8	2.0	2.1	2.2	2.2	2.1
Indonesia	1.0	1.3	1.4	1.4	1.4	1.4
Singapore	0.8	1.3	0.7	0.7	0.7	0.6
Malaysia	0.8	0.8	0.8	0.7	0.7	0.7
Thailand	0.7	1.0	0.9	0.9	1.0	0.9
Middle East, Malta and Turkey	6.7	7.2	6.9	6.9	6.9	6.9
Saudi Arabia	2.1	1.7	1.5	1.5	1.5	1.6
Turkey	1.0	1.1	1.2	1.2	1.2	1.2
Iran, I.R. of	0.7	0.8	0.8	0.9	0.9	0.9
Western Hemisphere	7.9	7.5	7.7	7.7	7.8	7.9
Brazil	2.3	2.3	2.5	2.5	2.5	2.6
Mexico	1.9	1.7	1.8	1.8	1.8	1.9
Venezuela, R.B. de	0.8	0.5	0.5	0.5	0.5	0.5
Argentina	0.7	0.7	0.7	0.7	0.7	0.7
Transition economies	7.2	7.7	7.4	7.3	7.3	7.3
Russia	2.7	2.8	2.8	2.9	2.9	3.0
Poland	0.9	0.9	0.9	1.0	1.0	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Memorandum items:						
EU28	30.4	27.6	26.2	26.1	25.6	24.8
LICs 3/	4.1	3.3	3.2	3.2	3.3	3.3
Coefficients for quota variables						
GDP		0.300	0.360	0.360	0.360	0.360
PPP GDP		0.200	0.240	0.240	0.240	0.240
Openness		0.300	0.350	0.350	0.350	0.350
Variability		0.150	0.000	0.000	0.000	0.000
Reserves		0.050	0.050	0.050	0.050	0.050
Compression factor		0.950	0.950	0.950	0.950	0.950

Source: Finance Department

1/ Including Czech Republic, Estonia, Korea, Latvia, Lithuania, Malta, Singapore, Slovak Republic, and Slovenia.

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

3/ PRGT-eligible countries plus Zimbabwe.

**Table 13. Illustrative Calculations—Current GDP Blend, Dropping Variability,
All Weight to GDP, and Different Openness Measures
(In percent)**

	14th General Review Quotas	Current Formula	Formula w/o variability, all weight to GDP, and different openness measures:			
			Nominal openness capped at the 85th percentile	Nominal openness capped at the 75th percentile	Openness shares capped at 1.8	Openness shares capped at 1.5
Advanced economies	57.6	51.3	50.6	50.6	50.3	50.1
Major advanced economies	43.4	36.8	38.0	38.2	38.6	38.7
United States	17.4	14.5	15.5	15.6	15.7	16.0
Japan	6.5	5.6	5.8	5.9	5.9	6.0
Germany	5.6	5.1	5.0	5.1	5.0	4.7
France	4.2	3.4	3.4	3.5	3.5	3.6
United Kingdom	4.2	3.4	3.4	3.4	3.5	3.4
Italy	3.2	2.6	2.6	2.6	2.6	2.7
Canada	2.3	2.1	2.2	2.2	2.2	2.3
Other advanced economies	14.3	14.5	12.6	12.4	11.7	11.4
Spain	2.0	1.9	1.9	1.9	1.9	2.0
Netherlands	1.8	1.8	1.5	1.4	1.2	1.1
Australia	1.4	1.5	1.6	1.6	1.6	1.7
Belgium	1.3	1.2	1.0	0.9	0.8	0.7
Switzerland	1.2	1.6	1.4	1.3	1.1	1.1
Sweden	0.9	1.0	0.9	0.9	0.8	0.8
Austria	0.8	0.8	0.7	0.7	0.6	0.6
Norway	0.8	0.8	0.7	0.7	0.7	0.7
Ireland	0.7	0.7	0.5	0.4	0.4	0.3
Denmark	0.7	0.6	0.6	0.6	0.5	0.5
Emerging Market and Developing Countries 1/	42.4	48.7	49.4	49.4	49.7	49.9
Africa	4.4	3.7	3.6	3.6	3.6	3.7
South Africa	0.6	0.6	0.6	0.6	0.6	0.6
Nigeria	0.5	0.7	0.7	0.7	0.7	0.7
Asia	16.0	22.6	23.7	23.7	23.9	24.0
China 2/	6.4	11.3	12.3	12.3	12.4	12.6
India	2.7	3.0	3.5	3.5	3.5	3.5
Korea, Republic of	1.8	2.0	2.1	2.1	2.1	2.0
Indonesia	1.0	1.3	1.4	1.4	1.4	1.4
Singapore	0.8	1.3	0.7	0.7	0.6	0.6
Malaysia	0.8	0.8	0.8	0.7	0.7	0.7
Thailand	0.7	1.0	0.9	0.9	0.9	0.9
Middle East, Malta and Turkey	6.7	7.2	6.9	6.9	6.9	6.9
Saudi Arabia	2.1	1.7	1.5	1.5	1.5	1.6
Turkey	1.0	1.1	1.2	1.2	1.2	1.2
Iran, I.R. of	0.7	0.8	0.9	0.9	0.9	0.9
Western Hemisphere	7.9	7.5	7.8	7.9	7.9	8.0
Brazil	2.3	2.3	2.6	2.6	2.6	2.6
Mexico	1.9	1.7	1.8	1.8	1.8	1.9
Venezuela, R.B. de	0.8	0.5	0.5	0.5	0.5	0.5
Argentina	0.7	0.7	0.7	0.7	0.8	0.8
Transition economies	7.2	7.7	7.3	7.3	7.3	7.3
Russia	2.7	2.8	2.9	2.9	2.9	3.0
Poland	0.9	0.9	0.9	0.9	0.9	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Memorandum items:						
EU28	30.4	27.6	25.5	25.4	25.0	24.3
LICs 3/	4.1	3.3	3.3	3.3	3.3	3.3
Coefficients for quota variables						
GDP		0.300	0.390	0.390	0.390	0.390
PPP GDP		0.200	0.260	0.260	0.260	0.260
Openness		0.300	0.300	0.300	0.300	0.300
Variability		0.150	0.000	0.000	0.000	0.000
Reserves		0.050	0.050	0.050	0.050	0.050
Compression factor		0.950	0.950	0.950	0.950	0.950

Source: Finance Department

1/ Including Czech Republic, Estonia, Korea, Latvia, Lithuania, Malta, Singapore, Slovak Republic, and Slovenia.

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

3/ PRGT-eligible countries plus Zimbabwe.

Table 14. Illustrative Calculations—Current GDP and Openness Measures, Dropping Variability, and Higher Compression (0.925)
(In percent)

	14th General Review Quotas	Current Formula	Formula w/o variability, and weight split:			Formula w/o variability and:
			Even split	GDP (2/3), openness (1/3)	All to GDP blend	Weight of openness reduced to 0.25
Advanced economies	57.6	51.3	50.5	50.3	50.0	49.7
Major advanced economies	43.4	36.8	36.3	36.4	36.5	36.7
United States	17.4	14.5	14.2	14.3	14.7	15.0
Japan	6.5	5.6	5.5	5.5	5.6	5.8
Germany	5.6	5.1	5.0	5.0	4.8	4.7
France	4.2	3.4	3.4	3.4	3.3	3.3
United Kingdom	4.2	3.4	3.4	3.4	3.3	3.3
Italy	3.2	2.6	2.6	2.6	2.6	2.5
Canada	2.3	2.1	2.2	2.2	2.2	2.2
Other advanced economies	14.3	14.5	14.1	13.9	13.4	13.0
Spain	2.0	1.9	1.9	1.9	1.9	1.8
Netherlands	1.8	1.8	1.7	1.7	1.6	1.5
Australia	1.4	1.5	1.6	1.6	1.6	1.6
Belgium	1.3	1.2	1.2	1.1	1.1	1.0
Switzerland	1.2	1.6	1.5	1.5	1.4	1.4
Sweden	0.9	1.0	0.9	0.9	0.9	0.8
Austria	0.8	0.8	0.8	0.7	0.7	0.7
Norway	0.8	0.8	0.7	0.7	0.7	0.7
Ireland	0.7	0.7	0.7	0.7	0.6	0.6
Denmark	0.7	0.6	0.6	0.6	0.6	0.6
Emerging Market and Developing Countries 1/	42.4	48.7	49.5	49.7	50.0	50.3
Africa	4.4	3.7	3.8	3.8	3.8	3.8
South Africa	0.6	0.6	0.6	0.6	0.6	0.6
Nigeria	0.5	0.7	0.7	0.7	0.7	0.7
Asia	16.0	22.6	23.3	23.4	23.6	23.8
China 2/	6.4	11.3	11.4	11.5	11.7	11.8
India	2.7	3.0	3.2	3.3	3.4	3.5
Korea, Republic of	1.8	2.0	2.1	2.1	2.1	2.0
Indonesia	1.0	1.3	1.4	1.4	1.4	1.5
Singapore	0.8	1.3	1.3	1.2	1.1	1.0
Malaysia	0.8	0.8	0.8	0.8	0.8	0.8
Thailand	0.7	1.0	0.9	0.9	0.9	0.9
Middle East, Malta and Turkey	6.7	7.2	7.1	7.1	7.1	7.1
Saudi Arabia	2.1	1.7	1.5	1.5	1.5	1.5
Turkey	1.0	1.1	1.2	1.2	1.2	1.2
Iran, I.R. of	0.7	0.8	0.9	0.9	0.9	0.9
Western Hemisphere	7.9	7.5	7.8	7.8	8.0	8.1
Brazil	2.3	2.3	2.4	2.5	2.6	2.7
Mexico	1.9	1.7	1.8	1.8	1.8	1.8
Venezuela, R.B. de	0.8	0.5	0.5	0.5	0.5	0.5
Argentina	0.7	0.7	0.7	0.7	0.8	0.8
Transition economies	7.2	7.7	7.6	7.6	7.5	7.5
Russia	2.7	2.8	2.8	2.8	2.8	2.9
Poland	0.9	0.9	1.0	1.0	0.9	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Memorandum items:						
EU28	30.4	27.6	27.2	26.8	26.1	25.4
LICs 3/	4.1	3.3	3.5	3.5	3.5	3.5
Coefficients for quota variables						
GDP		0.300	0.345	0.360	0.390	0.420
PPP GDP		0.200	0.230	0.240	0.260	0.280
Openness		0.300	0.375	0.350	0.300	0.250
Variability		0.150	0.000	0.000	0.000	0.000
Reserves		0.050	0.050	0.050	0.050	0.050
Compression factor		0.950	0.925	0.925	0.925	0.925

Source: Finance Department

1/ Including Czech Republic, Estonia, Korea, Latvia, Lithuania, Malta, Singapore, Slovak Republic, and Slovenia.

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

3/ PRGT-eligible countries plus Zimbabwe.

Annex I. PPP GDP and Openness—Key Characteristics

This annex updates previous staff analysis on the characteristics of PPP GDP and openness in light of the latest data update and notes that key conclusions from previous work remain broadly unchanged.

PPP GDP

EMDCs and low income countries benefit from increasing the share of PPP GDP. Based on the latest data update, over 90 percent of EMDCs would stand to benefit from an increase in the share of PPP GDP in the blend variable, compared with no AEs. The benefits from a higher weight of PPP GDP in the blend are also inversely related to income—almost all countries in the bottom quartile of the income distribution benefit from a higher weight on PPP GDP relative to market GDP, and they also record the largest relative gains. This pattern is to be expected, as PPP GDP shares of countries with low per capita income tend to be significantly higher than their market-based GDP shares, reflecting in part low wage costs in services that are not tradable. Size does not appear to be strongly related to the benefits of a higher share of PPP GDP (Table I.1). These findings are fully consistent with previous data updates.

Table I.1. Countries that Benefit from PPP GDP and Compression

	By Size (Market GDP) 1/				By Income (GDP per Capita) 1/				By Grouping			Total
	Top Quartile	3rd	2nd	Bottom Quartile	Top Quartile	3rd	2nd	Bottom Quartile	AE (26)	EMDC excl. LIC (88)	LIC (74)	
<i>PPP / Market GDP Shares</i>												
Number of countries who benefit (ratio >1)	23	43	43	36	16	44	38	47	0	80	65	145
Median 2/	1.3	1.6	1.6	1.5	1.1	1.3	1.6	1.8	n.a.	1.4	1.7	1.5
Average 2/	1.5	1.6	1.6	1.5	1.2	1.4	1.7	1.9	n.a.	1.5	1.7	1.6
<i>CQS / uncompressed linear combination</i>												
Number of countries who benefit (ratio >1)	38	47	47	47	41	45	47	46	20	85	74	179
Median 2/	1.1	1.2	1.2	1.4	1.1	1.2	1.3	1.3	1.1	1.2	1.3	1.2
Average 2/	1.1	1.2	1.2	1.4	1.1	1.2	1.3	1.3	1.1	1.2	1.3	1.2

n.a.: Not available.
Source: Finance Department
1/ Each quartile includes 47 countries.
2/ Average or median ratio among the countries which have ratios greater than 1.

Openness

In light of the data update, the key characteristics of the openness variable remain unchanged compared with previous data updates:

- **Openness benefits many smaller economies.** More than two-thirds of the membership (129 countries based on the latest data update) gain from the inclusion of openness in the formula

relative to GDP (Table I.2). The number of countries that benefit from openness is inversely related to size.

- **The gains from openness are positively related to income.** Over 90 percent of countries (43 out of 47) in the top quartile in terms of per capita income gain from openness, compared with less than half (21 countries) in the bottom quartile. Among the gainers, high income countries also gain more on average than low income countries. These results are also reflected in the distribution of openness shares across major country groupings (Figure I.1). The main gainers from openness at the aggregate level are small advanced countries, whose openness share on average is roughly double their share in the GDP blend. Smaller EMDCs in aggregate gain modestly from openness (though some individual countries have large gains), while other country groups, including LICs as a whole, do not gain from openness.
- **Openness and variability shares are closely linked.** This can be seen from several angles. In terms of correlations among the quota variables, once the largest economies are excluded (their weight tends to dominate the comparisons of size-related variables), the correlation between openness and variability is 0.92, significantly above that between other variables (Table I.3). Similarly, the distribution of gainers from variability is broadly similar to that for openness, in terms of both size and income levels, as well as across the major country groupings (Table I.2). Regarding the latter, small advanced countries gain the most from variability, benefiting almost as much as from openness (Figure I.2). Smaller EMDCs and LICs also gain from variability relative to GDP, but the gains are more modest. At the individual country level, many of the countries that gain the most from openness also have relatively high shares in variability (Figure I.3).
- **The distribution of members' shares in openness relative to GDP is highly skewed.** While the median *ratio of openness to market GDP* for the membership as a whole is 1, 9 countries have ratios greater than 2 (with the highest being above 10) and 34 have ratios above 1.5 (Figure I.4a). In terms of *openness relative to GDP blend shares*, roughly two-thirds of members have shares of less than 1.5 (this group is divided roughly equally between countries that gain and lose from openness relative to GDP in the formula). However, 34 members have a share of openness that is more than double their share in the GDP blend variable, and one member has ratio of openness to GDP blend share above 18 (Figure I.4b).

In sum, while many countries benefit from the inclusion of openness in the formula, the gains for a narrower group of countries are very large. These gains arise from the very high shares of openness (relative to GDP) in some cases, and also from the combined effect of openness and variability, which are highly correlated and together have a 45 percent weight in the formula. The resulting CQS for some countries under the current formula appear large in relation to other measures of their relative economic positions.

Table I.2. Countries that Benefit from Openness and Variability

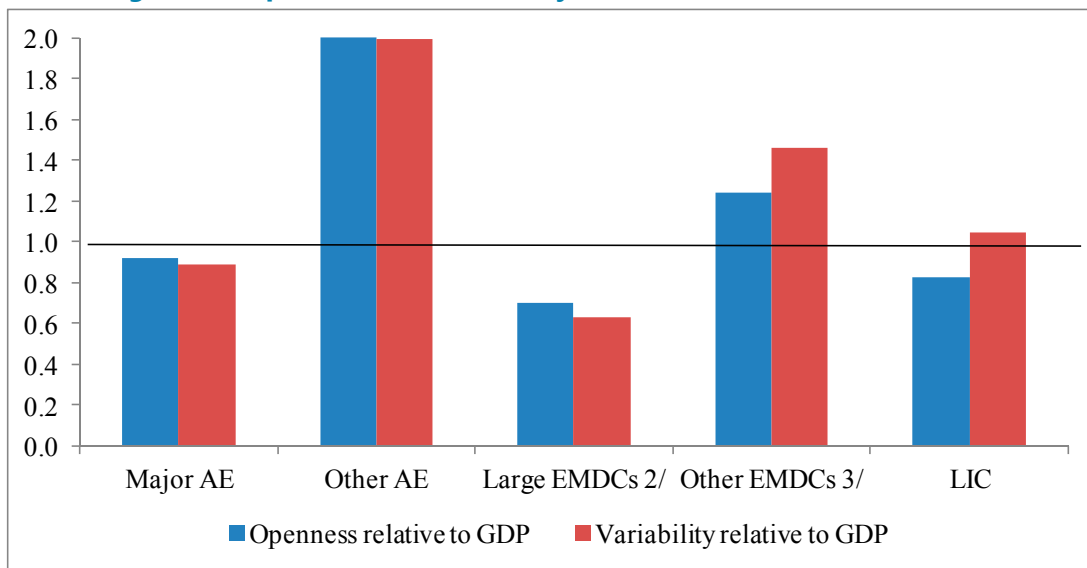
	By Size (Market GDP) 1/				By Income (GDP per Capita) 1/				By Grouping			Total
	Top Quartile	3rd	2nd	Bottom Quartile	Top Quartile	3rd	2nd	Bottom Quartile	AE (26)	EMDC excl. LIC (88)	LIC (74)	
<i>Openness / GDP Blend Shares</i>												
Number of countries who benefit (ratio >1)	27	26	36	40	43	30	35	21	23	61	45	129
Median 2/	1.6	1.5	1.4	1.8	1.8	1.6	1.5	1.4	1.7	1.6	1.5	1.5
Average 2/	2.0	2.3	1.6	2.1	2.6	1.7	1.8	1.5	2.8	1.8	1.8	2.0
<i>Variability / GDP Blend Shares</i>												
Number of countries who benefit (ratio >1)	26	32	39	42	41	34	35	29	21	65	53	139
Median 2/	1.8	1.8	2.0	2.0	2.2	1.8	1.6	2.0	2.1	1.9	2.0	1.9
Average 2/	2.0	2.7	3.5	3.0	3.9	2.2	2.2	3.1	4.7	2.3	2.8	2.9

Source: Finance Department

1/ Each quartile includes 47 countries.

2/ Average or median ratio among the countries which have ratios greater than 1.

Figure I.1. Openness and Variability Shares Relative to GDP Share 1/



Source: Finance Department

1/ The ratio of the openness share of the relevant group to its GDP blend share and the ratio of the variability share of the relevant group to its GDP blend share.

2/ Large EMDCs are those for which the GDP Blend share is greater than 1.0 percent.

3/ Other EMDCs excluding LICs.

Table I.3. Correlations between Quota Variables

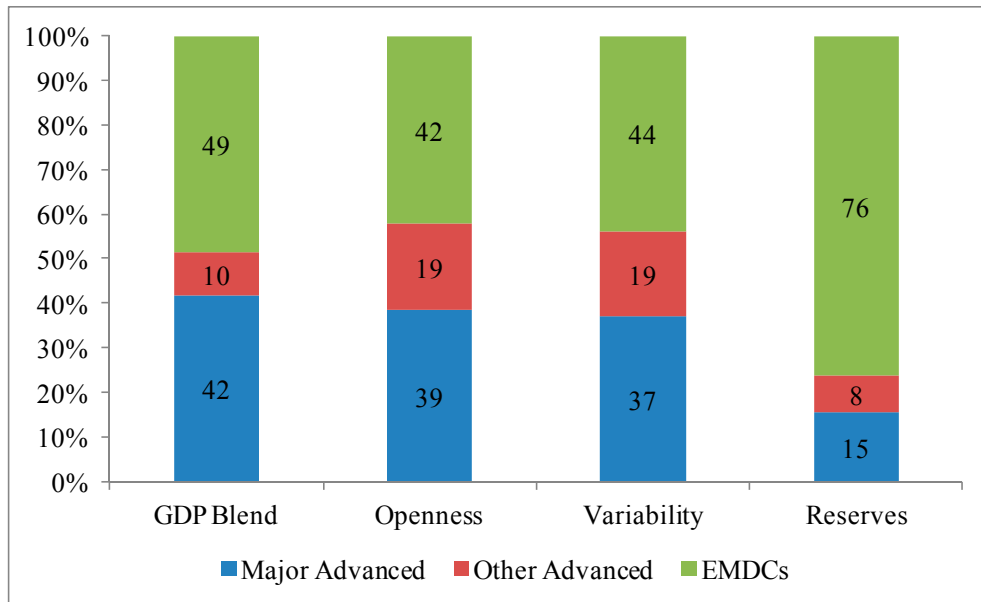
Advanced Economies				
	Blend GDP	Openness	Variability	Reserves
Blend GDP	1.00			
Openness	0.92	1.00		
Variability	0.97	0.98	1.00	
Reserves	0.30	0.25	0.33	1.00
EMDCs				
	Blend GDP	Openness	Variability	Reserves
Blend GDP	1.00			
Openness	0.95	1.00		
Variability	0.91	0.95	1.00	
Reserves	0.95	0.94	0.91	1.00
All Countries 1/				
	Blend GDP	Openness	Variability	Reserves
Blend GDP	1.00			
Openness	0.93	1.00		
Variability	0.94	0.97	1.00	
Reserves	0.60	0.56	0.50	1.00
All Members excluding Top 10 2/				
	Blend GDP	Openness	Variability	Reserves
Blend GDP	1.00			
Openness	0.81	1.00		
Variability	0.79	0.92	1.00	
Reserves	0.55	0.58	0.66	1.00

Source: Finance Department.

1/ Given the heterogeneity of data and differing distributions, it is possible for correlations for the full sample to fall outside of the range for the two sub samples.

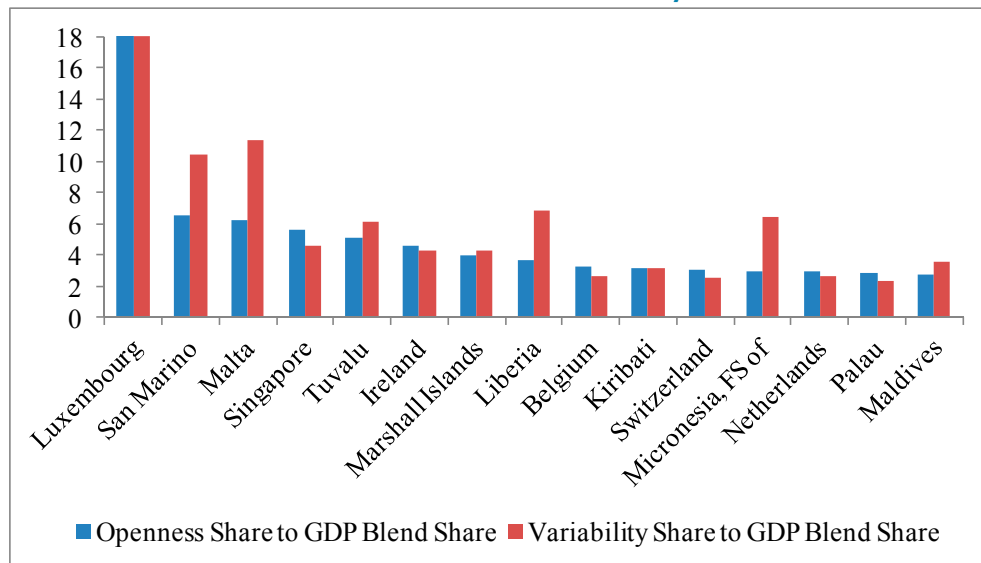
2/ Large members in terms of share of GDP blend (60 percent market GDP and 40 percent PPP GDP).

Figure I.2. Shares of Major Groups in Each Quota Variable



Source: Finance Department

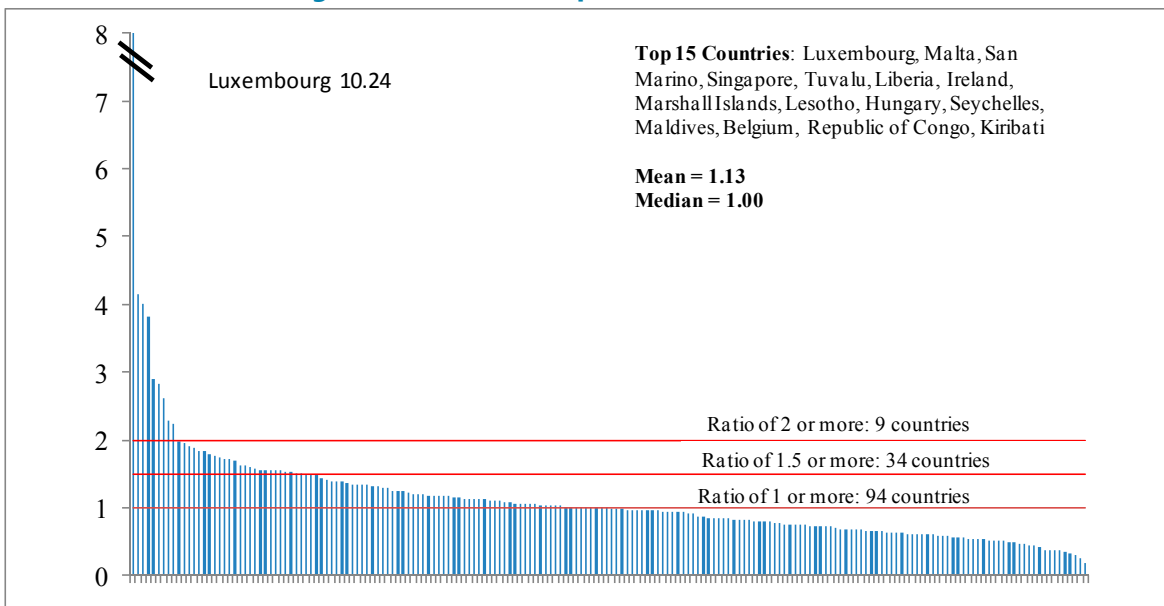
Figure I.3. Top 15 Countries—Ratio of Openness Share to GDP Blend Share and Variability Share to GDP Blend Share 1/



Source: Finance Department

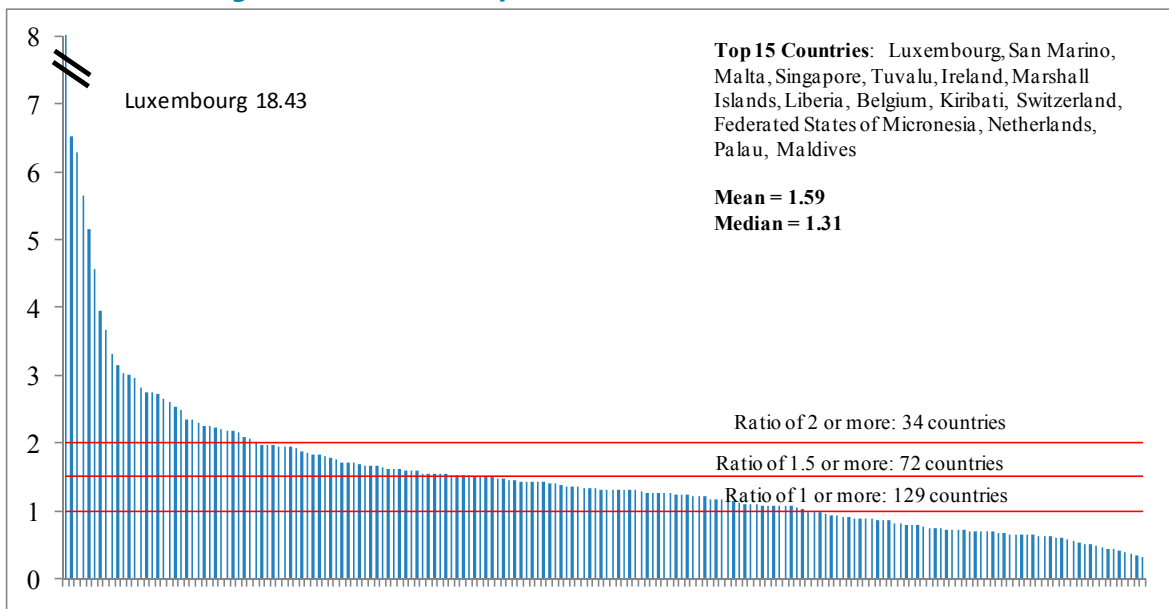
1/ Countries ranked by openness share to GDP blend share.

Figure I.4a. Ratio of Openness to Market GDP



Source: Finance Department

Figure I.4b. Ratio of Openness Shares to GDP Blend Shares



Source: Finance Department

Staff has also updated the results of approaches that were explored previously to address issues of openness. Two types of caps on openness have been explored: first is based on capping the absolute level of openness in relation to market GDP (absolute cap) and the second is based on capping the ratio of openness to GDP blend shares (shares cap).¹ Both approaches require an element of judgment in determining where to set the cap, and also add some complexity to the calculations. Staff also explored the approach of compressing the openness ratio. Table I.4 illustrates the impacts of capping and compressing openness. The thresholds are the same as in the July 2014 paper.² Further work to refine the threshold would be needed if there is interest in pursuing such an approach.

¹ See *Quota Formula – Data Update and Further Considerations – Annexes (6/6/13)*, Annex III for a detailed discussion. <http://www.imf.org/external/np/pp/eng/2013/060613.pdf>

² In the June 2013 paper, the 1.7 cap on the ratio of the openness share to GDP blend share was equivalent to the 75th percentile of the distribution of this ratio. In the July 2014 paper, the 1.8 cap was applied to maintaining the cap at a level broadly corresponding to the top quartile of the distributing based on the updated data. Based on the current data, 1.8 would still be very close to the 75th percentile (1.7 would be equal to the 73rd percentile).

**Table I.4. Openness Shares Under Caps and Compression 1/
(In percent)**

	Openness Shares	Capped Openness (Shares)			Capped Openness (Absolute)			Compressed Openness		GDP blend Shares
		2.0	1.8	1.5	95th 2/	85th 2/	75th 2/	0.95	0.7	
Advanced economies	57.74	56.98	56.72	56.09	57.85	57.73	57.79	57.76	57.89	51.36
Major advanced economies	38.51	41.60	42.05	42.56	39.48	40.08	40.90	39.06	41.62	41.76
United States	12.74	13.77	14.05	15.10	13.07	13.26	13.53	13.20	15.54	19.96
Japan	4.23	4.57	4.67	5.02	4.34	4.41	4.50	4.40	5.22	6.46
Germany	7.47	8.07	7.83	6.52	7.66	7.78	7.93	7.37	6.79	4.35
France	4.25	4.59	4.69	4.88	4.36	4.42	4.51	4.25	4.22	3.25
United Kingdom	4.41	4.77	4.87	4.64	4.52	4.59	4.69	4.40	4.29	3.09
Italy	2.87	3.10	3.16	3.40	2.94	2.99	3.05	2.89	2.96	2.57
Canada	2.53	2.73	2.79	2.99	2.59	2.63	2.68	2.54	2.59	2.08
Other advanced economies	19.23	15.38	14.67	13.53	18.36	17.66	16.90	18.69	16.27	9.60
Spain	2.18	2.35	2.40	2.58	2.23	2.26	2.31	2.18	2.15	1.75
Netherlands	2.91	1.96	1.76	1.47	2.98	2.69	2.36	2.79	2.24	0.98
Australia	1.48	1.60	1.63	1.75	1.52	1.54	1.57	1.52	1.69	1.66
Belgium	1.97	1.19	1.07	0.90	2.02	1.69	1.47	1.89	1.49	0.60
Switzerland	2.22	1.47	1.32	1.10	2.28	2.30	2.01	2.14	1.77	0.73
Sweden	1.18	1.26	1.13	0.94	1.21	1.23	1.25	1.16	1.07	0.63
Austria	1.06	0.98	0.88	0.73	1.08	1.10	1.12	1.03	0.90	0.49
Norway	0.84	0.91	0.93	0.82	0.86	0.87	0.89	0.84	0.82	0.54
Ireland	1.26	0.55	0.50	0.41	0.97	0.78	0.68	1.19	0.86	0.28
Denmark	0.80	0.73	0.66	0.55	0.82	0.83	0.85	0.78	0.69	0.37
Luxembourg	1.24	0.13	0.12	0.10	0.24	0.19	0.17	1.09	0.56	0.07
Emerging Market and Developing Countries 3/	42.26	43.02	43.28	43.91	42.15	42.27	42.21	42.24	42.11	48.64
Africa	2.78	2.97	3.01	3.12	2.85	2.88	2.91	2.79	2.79	3.20
South Africa	0.50	0.54	0.55	0.59	0.51	0.52	0.53	0.50	0.52	0.58
Nigeria	0.42	0.46	0.47	0.50	0.43	0.44	0.45	0.44	0.49	0.76
Asia	20.81	20.76	20.96	21.17	20.21	20.20	20.21	20.78	20.62	24.62
China 4/	9.40	10.15	10.36	11.13	9.63	9.78	9.98	9.58	10.43	13.44
India	2.07	2.23	2.28	2.45	2.12	2.15	2.20	2.11	2.29	4.21
Korea	2.63	2.84	2.90	2.54	2.70	2.74	2.80	2.60	2.39	1.70
Indonesia	0.83	0.89	0.91	0.98	0.85	0.86	0.88	0.85	0.95	1.63
Singapore	2.28	0.81	0.73	0.60	1.21	0.96	0.84	2.10	1.39	0.40
Malaysia	1.02	1.04	0.93	0.78	1.05	1.02	0.89	0.98	0.81	0.52
Thailand	1.08	1.17	1.20	1.02	1.11	1.13	1.08	1.05	0.89	0.68
Middle East, Malta and Turkey	5.95	6.10	6.06	6.01	6.06	6.13	6.05	5.92	5.73	6.13
Saudi Arabia	1.22	1.32	1.35	1.45	1.25	1.27	1.30	1.22	1.18	1.20
Turkey	0.89	0.96	0.98	1.05	0.91	0.92	0.94	0.90	0.97	1.22
Iran, Islamic Republic of	0.42	0.45	0.46	0.49	0.43	0.43	0.44	0.43	0.52	1.00
Western Hemisphere	5.34	5.75	5.84	6.22	5.47	5.55	5.65	5.46	6.06	8.27
Brazil	1.24	1.34	1.36	1.47	1.27	1.29	1.31	1.31	1.70	3.11
Mexico	1.60	1.73	1.76	1.89	1.64	1.66	1.70	1.61	1.67	1.81
Venezuela, República Bolivariana de	0.33	0.36	0.37	0.39	0.34	0.35	0.35	0.34	0.38	0.49
Argentina	0.39	0.42	0.43	0.46	0.40	0.40	0.41	0.41	0.50	0.86
Transition economies	7.38	7.45	7.40	7.40	7.57	7.50	7.39	7.31	6.91	6.42
Russian Federation	2.22	2.40	2.45	2.63	2.28	2.31	2.36	2.26	2.45	3.05
Poland	1.04	1.13	1.15	1.16	1.07	1.09	1.11	1.03	0.95	0.78
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Memorandum items:										
EU28	36.74	34.65	33.91	31.59	36.28	35.67	35.35	36.06	32.69	21.48
LICs 5/	2.45	2.62	2.66	2.70	2.51	2.53	2.53	2.45	2.40	2.97

Source: Finance Department

1/ Shading indicates countries with capped/compressed openness shares lower than their original openness shares.

2/ These correspond to the thresholds on absolute ratios of openness to market GDP of 1.97, 1.55, and 1.33 for the 95th, 85th and 75th percentile caps, respectively.

3/ Including Czech Republic, Estonia, Korea, Latvia, Lithuania, Malta, Singapore, Slovak Republic and Slovenia.

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

5/ PRGT-eligible countries plus Zimbabwe.