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THE CASE FOR A GENERAL ALLOCATION OF SDRs DURING THE ELEVENTH BASIC PERIOD

May 23, 2016

EXECUTIVE SUMMARY

This paper lays out the principles for an allocation or cancellation of special drawing rights (SDRs) in the Eleventh Basic Period (2017–21). Using the existing framework, the paper follows a two-step process:

- **First, the paper estimates the global demand for reserve assets.** It presents a range of estimates based on two methodologies. The paper then discusses caveats to these estimates, including country coverage, forecast uncertainty, access to elements of the global financial safety net that could mitigate the demand for reserves, and other changes in the global economy that could affect preferences by member countries for accumulating reserves.
- **Second, the paper discusses considerations relevant for using SDRs to cover some of this demand.** This includes outlining the qualitative advantages and disadvantages of an SDR allocation.

The paper does not present a proposal for an SDR allocation or cancellation, given the pending upcoming work on broadening the role of the SDR. This work could have a bearing on the extent to which the global demand for reserve assets should be met through an SDR allocation. Pending discussion of this work, it could be premature to determine whether there is a case for making a proposal during the Eleventh Basic Period.

Under the Articles of Agreement, the Managing Director must determine whether there is a case for a proposal regarding an SDR allocation or cancellation for the Eleventh Basic Period and report to the Board of Governors by June 30, 2016.

Taking into account the Board's discussion of this paper, the Managing Director will circulate a draft of her report to the Executive Board. If the Managing Director does not make a proposal at this time, it would remain open to the Managing Director to make a proposal later at her own initiative, or at the request of the Board of Governors or of the Executive Board, if the Managing Director is satisfied at that time that the conditions under the Articles of Agreement are fulfilled.

Approved By
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INTRODUCTION¹

1. **Special Drawing Rights (SDRs) are an international reserve asset created in 1969 to supplement existing global reserve assets.** The SDR was envisaged to serve as a reserve asset that can be accumulated without the “usual” costs—in the sense that reserves are allocated at no cost and do not need to be borrowed or accumulated through current account surpluses. The SDR is neither a currency, nor a claim on the IMF. Rather, it is a potential claim on the freely usable currencies of IMF members (Box 1). In a general allocation, SDRs are allocated to participants in the SDR Department, in proportion to their quotas. A general SDR allocation requires a finding of a long-term global need to supplement existing reserve assets in such a manner as will promote the attainment of the IMF’s purposes and will avoid economic stagnation and deflation as well as excess demand and inflation. The Fund has allocated a total of SDR 204 billion under the special and general allocations.²

2. **The Decisions by the Fund on general allocations or cancellations of SDRs take place in the context of consecutive basic periods of normally five years (Article XVIII, Section 2).**³ The Tenth Basic Period (2012–16) will end on December 31, 2016, and the Eleventh Basic Period (2017–21) will commence on January 1, 2017. The Managing Director must make a proposal to the Board of Governors no later than six months before the end of each basic period regarding a general allocation or cancellation in the next basic period, if the Managing Director is satisfied that there is a proposal that, in her view: (i) is consistent with the objective of meeting the long-term global need to supplement existing reserve assets as described in Article XVIII, Section 1(a); and (ii) would have broad support among participants (Article XVIII, Section 4(b) and (c)). A decision of the Board of Governors approving such a proposal of the Managing Director requires an 85 percent majority of the total voting power of participants in the SDR Department (Article XVIII, Section 4(d)). If the Managing Director ascertains that there is no proposal consistent with Article XVIII, Section 1(a) that has broad support among participants, she must so report to the Board of Governors and to the Executive Board. The Managing Director is required to hold consultations with SDR Department participants in order to make this judgment. If the Managing Director does not make a proposal six months before the end of the current basic period, it would still remain open to the Managing Director to make proposals for an allocation or cancellation later, at her own initiative or at the request of the Board of Governors or of the Executive Board, if the Managing Director is satisfied that the conditions under the Articles are fulfilled, including the requirement for broad support of participants.

¹ Prepared by a team led by Camilo E. Tovar (SPR), Maria Albino-War (FIN), and Gabriela Rosenberg (LEG), with inputs from Robert Gregory, Neil Meads, Frank Wallace (SPR), Ceyda Oner, Rina Bhattacharya, Elena Budras, Elodie Goirand, Diana Mikhail, Rachel Saperstein (FIN), and Anjum Rosha (LEG) under the guidance of Kristina Kostial (SPR), Donal McGettigan (FIN), and Bernhard Steinki (LEG).

² See SDR Factsheet, <http://www.imf.org/external/np/exr/facts/sdr.htm>.

³ See IMF, [Articles of Agreement](#), Article XVIII: Allocation and Cancellation of Special Drawing Rights.

3. **The paper does not present a proposal for an SDR allocation or cancellation, given upcoming Board discussions on the broader role of the SDR.** Ongoing discussions on reforming the international monetary system (IMS)—including on the adequacy of the global financial safety net (GFSN), the size of the Fund, Fund lending facilities, and on the role of the SDR—are expected to revisit the SDR’s function as a source of global liquidity. This could have a bearing on the assessment of whether the SDR should play a role in meeting the global demand for reserves. Therefore, it is considered premature to make a proposal as further analysis might be needed on the role that an SDR allocation could have in meeting the projected global demand for reserves during the Eleventh Basic Period.

4. **The paper is structured as follows.** Section II outlines the historical context of SDR allocations; identifies key principles and considerations for making the case for a general allocation or cancellation of SDRs; reviews the global environment and its impact on the demand for reserves; estimates long-term global reserve demand; and discusses key considerations related to an SDR allocation. Section III proposes issues for discussion.

Box 1. SDR as a Global Reserve Asset

The SDR was created as a supplementary international reserve asset, in the context of the Bretton Woods fixed exchange rate system.

SDRs are not a currency and are allocated (i.e., accumulated without contributing either to global imbalances through current account surpluses or to downward pressure on reserve issuers’ financing costs). They are also more stable in their value than assets denominated in a single currency, and can help eliminate or, at least, reduce, distortions arising from accumulations of (precautionary and non-precautionary) reserve positions. Participants in the SDR department can obtain freely usable currencies from other participants in exchange for their SDRs in two ways: (i) through the arrangement of voluntary exchanges between them; and (ii) by the IMF designating participants with strong external positions to purchase SDRs from participants with weak external positions.

The SDR is valued based on a basket of currencies, which currently includes the U.S. dollar, euro, the Japanese yen, and pound sterling. The basket will be expanded to include the Chinese renminbi, effective October 1, 2016. This will improve the SDR’s representativeness and enhance its attractiveness as a reserve asset. A new weighting formula, among other things, aims at better capturing the large and growing role of international financial flows. The SDR carries an interest rate determined by the rate on three-month treasury bills of the component currencies, making its return comparable to that of an asset of the highest credit quality.

The SDR Department is a closed system: participants receive interest on their holdings of SDRs and pay charges on their cumulative allocations at the same rate (the SDR interest rate). The payment charges by members with SDR holdings below their cumulative allocation equals the net interest receipts of other holders. The Articles of Agreement allow for cancellations of SDRs, but this provision has never been used.¹

¹ For a discussion on the statistical treatment of the SDR see <http://www.imf.org/external/np/exr/faq/pdf/sdrfaqsta.pdf>.

CASE FOR A GENERAL ALLOCATION OR CANCELLATION

A. Historical Context

5. **To date, there have been three general SDR allocations and one special allocation for a combined total of SDR 204.1 billion (\$288 billion).**⁴ The first general allocation for SDR 9.3 billion was made in 1970–72 and the second for SDR 12.1 billion in 1979–81. The most recent general allocation, for SDR 161.2 billion, was made in 2009 (Annex I on its impact and use).⁵ There was also a special one-time allocation of SDR 21.5 billion when the Fourth Amendment to the Articles of Agreement became effective in August 2009.⁶

6. **The Board last discussed the case for a general SDR allocation in 2011.** At that time staff found that a case could be made for a general allocation in the range of SDR 219–250 billion (\$350–400 billion).⁷ The assessment was based on an estimate of reserve demand of between SDR 0.5–1.0 trillion (\$0.8–1.6 trillion) for a sample of 118 Emerging Market and Developing Countries (EMDCs) over the Tenth Basic Period.⁸ At an informal Board meeting, there was no broad support for an allocation, and the Managing Director did not put forward a proposal.

B. Principles and Considerations

7. **Article XVIII, Section 1(a) sets out the principles and considerations governing an allocation or cancellation of SDRs.** The framework for considering a general allocation of SDRs revolves around whether (i) there is a “long-term global need as and when it arises, to supplement existing reserve assets in a manner that will promote the attainment of the Fund’s purposes and will avoid economic stagnation and deflation as well as excess demand and inflation in the world;” and (ii) there is broad support among SDR Department participants for such a proposal. The Articles of Agreement do not specify the basis on which the Fund shall establish that there is or is not a “long-term global need.”

⁴ Conversions to and from SDRs are based on an exchange rate of 1.41 U.S. dollars per SDR, which corresponds to the exchange rate as of May 16, 2016.

⁵ IMF, 2009, *“Proposal by the Managing Director of the International Monetary Fund for an allocation of special drawing rights for the ninth basic period,”* July.

⁶ See Schedule M, *special one-time allocation of special drawing rights*, in the [Articles of Agreement](#).

⁷ IMF, 2011, *“The case for a general allocation of SDRs during the tenth basic period,”* June. Estimate in SDR based on an exchange rate of 1.60 \$/SDR as of May 31, 2011.

⁸ The sample excluded China and fuel exporters. Reserve holdings for this sample actually dropped by SDR 28 billion between end-2011 and end-2015.

8. **Past experience and legislative history provide guidance on the concept of “long-term global need to supplement reserves.”**⁹ Since 1978, the Fund has followed a two-step process.

First, the demand for reserves is projected, and second, an assessment is made about the extent to which this demand could, and should, be met through an SDR allocation.

- The first step, has traditionally been interpreted as a broad assessment of whether the current level of reserves in the world as a whole, is sufficient to meet standard benchmarks of reserve coverage over the next basic period.¹⁰ Establishing a demand for reserves helps to determine if there is a global need to supplement reserves. A global need does not mean all or even most IMF members have inadequate reserves, but reflects an assessment that the level of global reserves, in the absence of supplementation with SDRs, would be inadequate or sub-optimal for the global economy. A global need can occur as long as the group of countries with reserve needs account for a significant share of the world economy. The emphasis on “long-term” global need also implies that SDR allocations are not intended to respond to, or deliberately seek to ameliorate, cyclical or short-term fluctuations in the global economy. In this regard, the five-year horizon of the basic periods for considering SDR allocations has been taken as guidance, including for assessing risks of global inflation and deflation.
- The second step makes an assessment of the appropriateness of SDR allocations to meet any identified long-term global need. SDR allocations could be deemed appropriate even in the presence of alternative ways for supplementing reserves—for instance, borrowing from markets. To make this decision, previous analyses have taken into consideration the intrinsic characteristics of SDRs, in particular, the distinction between owned and borrowed reserves and the SDR’s contribution to the functioning of the IMS.¹¹

This paper focuses on the first step while outlining issues for consideration regarding the second step.

C. Global Context

9. **Structural factors could amplify the demand for reserves in the next basic period.**

Global economic and financial linkages have increased dramatically over the past two decades, reflecting an unprecedented rise in cross-border trade and, particularly, financial flows. As a result, global financial cycles have become more synchronized, increasing countries’ exposures to common

⁹ IMF, 2001, “[SDR Allocation in the Eight Basic Period—Basic Considerations](#),” November.

¹⁰ See, for example, IMF, 2009, “[Proposal by the Managing Director of the International Monetary Fund for an allocation of special drawing rights for the ninth basic period](#),” July.

¹¹ The cost of holding reserves for individual countries has been estimated at 200 basis points (bps) for emerging market economies, and to range between 400 and 600 bps in low income countries. However, the total costs for the IMS are likely to be higher than the sum of the individual costs. See IMF, 2011, “[Assessing Reserve Adequacy](#),” IMF Policy Papers, February, and IMF, 2013, “[Assessing Reserve Adequacy—Further considerations](#),” February.

shocks. Moreover, the channels of shock transmission across borders have multiplied—contributing to an upward trend in the magnitude of financial spillovers. In this highly interconnected world, contagion and herding behavior are likely to amplify shocks. Against this backdrop, even localized financial shocks can quickly spread, increasing the likelihood of a large-scale need for financing across the world. Moreover, coordinating policy responses may be more difficult in an increasingly multipolar system. While the GFSN has grown significantly since the global financial crisis (including through an expansion of bilateral swap lines), it has also become more multi-layered and countries are not evenly covered.¹²

10. The demand for reserves also is likely to be influenced by unusually high levels of uncertainty and risks arising from a number of ongoing economic transitions. The recoveries in advanced economies (AEs) are expected to proceed at different paces, leading to a divergence in monetary stances. Over a longer time horizon, financial markets will also need to absorb the staggered reversal of the significant central bank balance sheet expansions in reserve-currency economies. In this process, intermittent risk-on and risk-off periods of high volatility could well become the new normal. In addition, China’s economic rebalancing could be bumpy and generate large spillovers. As a result, bouts of heightened volatility could increase and asset markets across the globe could be affected—as recent episodes of broad-based price corrections have already shown. Also, lower commodity prices have added to the uncertain outlook for growth and financial stability. The risk of further large commodity price swings—that could prove disruptive, both for commodity exporters and importers—remains high. Finally, the global economy is facing shocks of non-economic origin (e.g., geopolitical conflicts, refugee flows, climate change, and global epidemics) which could add to medium-term uncertainty.

11. At the same time, vulnerabilities across the membership remain elevated and could rise further in the next basic period.

- *Growth prospects remain weak in many economies.* In AEs, population aging and protracted crisis legacies—notably financial sector weakness, high public debt ratios, private debt overhangs, and hysteresis effects in labor markets—are expected to weigh on potential growth rates. In addition, EMDCs are facing major headwinds. The external conditions that supported more rapid income convergence over the last decade—buoyant global trade and high commodity prices, driven in part by strong growth in China and easy financing conditions—are not expected to prevail in the coming years.
- *Financial vulnerabilities remain elevated.* Despite substantial progress on the financial regulatory reform agenda, there has been uneven implementation and progress has been slower in expanding the regulatory perimeter to encompass the rapid rise of non-banks. Furthermore, legacy issues in AEs, such as high public and private debt, remaining gaps in the euro area architecture, and potential political tensions, could generate additional headwinds by denting confidence. In EMDCs, reliance on rapid credit creation allowed these economies to sidestep the worst impacts of the global crisis, but it also contributed to rising

¹² See IMF, 2016, “[Adequacy of the Global Financial Safety Net](#),” March.

leverage ratios in the private sector, and to the buildup of currency mismatches in private sector balance sheets. Moreover, a significant share of the credit growth was financed by surging cross-border capital flows to EMDCs, resulting in significant increases in gross external liability positions.¹³ During risk-off episodes, these positions could unravel quickly on a large scale, resulting in more frequent and widespread financial stress, including liquidity shortages in foreign currency.

12. **The low-growth environment and the narrow room for policy maneuver will tend to amplify existing and emerging vulnerabilities.** For example, public and private balance sheet vulnerabilities will take far longer to work out when productivity and profitability are low, and when the policy space to support demand has narrowed. Under such circumstances, any adverse shift in market sentiment could escalate and cause major capital outflows, sudden losses in liquidity and funding pressures, thus making economies more prone to crises.

D. Estimating Long-Term Global Demand for Reserves

13. **This paper uses two methodologies to assess the long-term global need for reserves.** First, traditional reserve adequacy metrics are used to capture specific vulnerabilities. These metrics, while simple and with some drawbacks, allow for broad country coverage. Second, estimates are calculated based on the Fund's assessing reserve adequacy (ARA) metric (Box 2). This metric helps correct for some of the shortcomings of the traditional metrics but is not appropriate for AEs (see discussion below). This section outlines the different methodologies; presents the mechanistic estimates they produce; and, based on these estimates, discusses how to calculate a range for the long-term global need for reserves.

Methodologies

14. **For both AEs and EMDCs, reserve demand estimates can be computed using traditional reserve adequacy benchmarks based on i) import coverage; ii) short-term external debt; and iii) broad money.** These metrics proxy for vulnerabilities related to external income, short-term debt rollover, and resident capital outflow risks. They are calculated by aggregating components across country groupings (in this paper, non-reserve currency issuing AEs¹⁴ and EMDCs). The projections use WEO forecasts of key variables to provide the estimated stock of reserves consistent with maintaining current benchmark ratios (*revealed preference*) for AEs and EMDCs over a period of 5 and 10 years.¹⁵ This methodology was also used in assessing the case for an allocation during the Ninth and Tenth Basic Periods.

¹³ See IMF, 2016, "[Strengthening the International Monetary System—A Stocktaking](#)," March.

¹⁴ Reserve-issuing AEs according to COFER (i.e. Australia, Canada, Euro Area, Japan, Switzerland, the United Kingdom, and the United States).

¹⁵ Absent WEO forecasts, variables beyond 2021 are projected using their average growth rates over the previous three years.

Box 2. Reserve Adequacy Metric (ARA)

The ARA metric is designed to measure the balance of payments vulnerabilities that might arise if a country were subject to an exchange market pressure (EMP) event. The metric captures vulnerabilities arising from four possible sources: (i) lower export income (X); (ii) lower rollover rates of short-term debt (at remaining maturity) (STD); (iii) non-resident capital outflows proxied by longer-term debt and equity liabilities (OL); and (iv) resident capital flight proxied by broad money (M2).

Each of these potential vulnerabilities has proved important in past episodes of EMP, in particular, in emerging markets. These episodes demonstrate that, not only do countries lose significant export income and have difficulty rolling over part of their short-term debt, but they also suffer losses due to outflows from non-residents selling their debt and equity holdings and residents liquidating domestic assets in favor of foreign ones. Past cross-country experiences were used (in event study analysis) to measure the risk arising from a given set of country characteristics, and thereby develop the metric. These risks are seen to vary depending on a country's exchange rate regime and the existence of capital controls.

The ARA metric combines each country's vulnerabilities (based on its exports and asset-liability structure), and the risks of related capital outflows based on those past cross-country experiences of EMP in a "risk-weighted" measure of liabilities. The current ARA metric is calculated as follows:¹

Fixed exchange rate: Metric = 30% of STD + 20% of OL + 10% of M2 + 10% of X

Floating exchange rate: Metric = 30% of STD + 15% of OL + 5% of M2 + 5% of X

where the exchange rate regime is based on the IMF's Annual Report of Exchange Arrangements and Exchange Restrictions. As a rule of thumb, reserves within 100–150 percent of the metric are considered adequate.

Empirical studies suggest that capital flow management (CFM) measures reduce the risk of resident outflows during times of stress. ARA (2015) suggests halving the weights on broad money for countries with long-standing CFM measures.

In Fund surveillance, the analysis of reserve adequacy should take into account country-specific factors, and may call for tailored analyses (ARA, 2013 and ARA, 2015). This can be particularly relevant for credit constrained economies, where capital account pressures might be less relevant, and for mature economies, where buffers might best be assessed using scenario analyses (seeking to capture market dysfunction and balance sheet risks from foreign exchange funding shortfalls) rather than a specific metrics (ARA, 2015). Relevant indicators for this analysis may require detailed bank and market data usually outside the public domain.

¹ The 2011 "[Assessing Reserve Adequacy](#)," Board paper introduced the metric for assessing the adequacy of reserves held by emerging markets. The metric's weights were later revised in the 2015 "[Assessing Reserve Adequacy—Specific Proposals](#)," paper. Additional technical information can be found in the [supplement](#) to the 2013 "[Assessing Reserve Adequacy—Further considerations](#)."

15. **For EMDCs, the ARA metric provides an estimate of projected reserve needs to address possible external sector risks, based on past episodes of market pressure by EMDCs.** Projections of reserve adequacy are calculated on a country-by-country basis using WEO forecasts for the requisite data inputs. Because this paper provides a global assessment, there is no attempt to pursue country-specific tailored assessments. Instead, the metric is applied mechanistically to all EMDCs according to their current exchange rate regime and de jure indicators of capital controls (capital controls lower the risk of capital outflows by residents and therefore reduce the level of the

reserve adequacy metric). Estimates of reserve demand are then aggregated (a bottom-up approach). Estimates based on an early version of the ARA were reported in making the case for an allocation in the Tenth Basic Period.

Mechanistic estimates

16. **For AEs, additional demand for reserves is estimated at SDR 0.1-0.4 trillion over the next basic period based on traditional benchmark ratios.** Table 1 shows the demand for additional reserve assets, calculated as the difference between end-2015 reserves and the projected level of reserves required to maintain traditional benchmark ratios of reserve coverage. The upper end of the range reflects broad money based estimates—a proxy for vulnerabilities associated with resident outflows. ARA estimates are not appropriate for AEs. This partly reflects that AEs may not require the same level of reserves as less mature markets whose experiences informed the ARA metric. For example, to the extent that AE markets remain deep and liquid, fewer buffers are likely to be needed to stabilize exchange rates against shocks.

Table 1. Projected Demand for Reserve Assets: Traditional Metrics
(In trillions of SDRs)

	Global		AEs 1/		EMDCs 2/		EMDCs ex. China 3/	
	5-year	10-year	5-year	10-year	5-year	10-year	5-year	10-year
Imports	1.8	4.2	0.1	0.3	1.7	3.9	0.9	1.9
Short-term external debt	1.7	4.1	0.2	0.4	1.5	3.7	0.9	2.0
Broad Money	4.9	8.6	0.4	0.7	4.5	7.9	1.6	2.9
Range	1.7-4.9	4.1-8.6	0.1-0.4	0.3-0.7	1.5-4.5	3.7-7.9	0.9-1.6	1.9-2.9
<i>Memo:</i>								
2015 level of reserves	6.2		0.9		5.2		2.8	

Source: Fund staff calculations based on WEO.

Note: Projections calculate the gap between the current level of reserves and the projected level of reserves required to maintain benchmark ratios of reserve coverage for each country grouping. 5 and 10-year ahead projections correspond to 2021 and 2026, respectively.

1/ Reserve adequacy benchmark for AEs excluding reserve-issuing countries: 5.8 months of imports (average of 2013–15); 145 percent of short-term debt (as of end-2015); and 23 percent of broad money (as of end-2015).

2/ Reserve adequacy benchmark for EMDCs: 10.8 months of imports; 253 percent of short-term debt; and 21.7 percent of broad money.

3/ Reserve adequacy benchmark for EMDCs excluding China: 7.8 months of imports; 212 percent of short-term debt; and 33 percent of broad money.

17. **EMDCs' demand is estimated at SDR 0.4-1.9 trillion over the next basic period.** This estimate is based on ARA thresholds of 100-150 percent (Table 2). It is sensitive to changes in the degree of openness of the capital account. For example, if all countries were to remove restrictions on their capital account, the estimated demand for reserves would be SDR 1.8-4.4 trillion. As a comparison, the demand for EMDCs based on traditional metrics is estimated at SDR 1.5-4.5 trillion (Table 1), driven mostly by large broad money holdings of just a few EMDCs.

Table 2. Projected Demand for Reserve Assets: ARA-Based
(In trillions of SDRs)

	EMDCs		EMDCs ex. China	
	5-year	10-year	5-year	10-year
100% ARA threshold	0.4	2.3	0.4	1.1
125% ARA threshold	1.0	3.9	0.8	1.7
150% ARA threshold	1.9	5.5	1.2	2.4
Range	0.4-1.9	2.3-5.5	0.4-1.2	1.1-2.4
<i>Memo:</i>				<i>5-year</i>
<i>a) AEs reserve demand: standard metrics reported in Table 1:</i>				<i>0.1-0.4</i>
<i>b) Global reserve demand: a) + EMDCs 100-150% ARA threshold:</i>				<i>0.5-2.3</i>
<i>c) Global reserve demand: a) + EMDCs 100-125% ARA threshold</i>				<i>0.5-1.4</i>
Source: WEO, Fund staff calculations.				
Note: For each individual country, projections calculate the gap between the <i>current</i> (2015) level of reserves and the 5 or 10-year ahead ARA metric. Individual country estimates are then aggregated.				

Considerations for estimating global reserve demand

18. **Applying judgment to the mechanistic estimates is required.** On balance, one could argue for combining the traditional metrics for AEs with an ARA metric of 100-125 percent for EMDCs, resulting in an estimate of SDR 0.5-1.4 trillion for the global demand for reserves over the next basic period. Considerations for estimating global demand and the uncertainties surrounding these estimates are discussed below.

19. **First, there are arguments for using different metrics for the different country groups.** Estimates based on traditional metrics rely on judgments in setting the benchmarks for reserve ratios. Those judgments, for example, whether the current level of those metrics is a revealed preference, are sensitive to the selected country sample and base period. The ARA metric for EMDCs, while with its own limitations, overcomes these shortcomings of the traditional metric, by providing an estimate of the projected reserve needs to address a set of possible external sector risks estimated on historical evidence. The use of traditional benchmark metrics may also provide an imprecise estimate of non-reserve issuing AE reserve demand, but the ARA metric does not extend to AEs.

20. **Second, judgment is required as to the appropriate ARA thresholds for reserves.** Uncertainty about the appropriate reserve coverage is to some extent captured through the 100-150 percent adequacy range. Judgment at the country level is needed to determine what weights should be placed on different sources of risk and also how much of the resulting metric is reasonable to hold. Therefore, assuming that all countries hold 100 percent of the metric might be

too low on an individual country basis, while assuming 150 percent for all countries might be excessive.

21. **Third, judgment needs to be made on the scope of the country coverage.** While assessments for earlier basic periods were based on universal coverage, the Ninth and Tenth Basic Periods focused on a narrower benchmark group of 118 EMDCs (excluding China and fuel exporters) to better identify demand for precautionary motives—i.e., for those countries most likely to face difficulties accessing external liquidity.¹⁶ However, recent developments suggest that a broader approach may be more appropriate:

- **AEs.** AEs have more liquid markets and a higher tolerance for foreign exchange volatility, and episodes of market dysfunction are relatively rare and tend to be of short duration. But the global financial crisis served as a reminder that mature economies are not immune to foreign exchange and funding market stress. Indeed, several AEs with flexible exchange rates used reserves for intervention purposes (e.g., Australia and Sweden) in the immediate aftermath of Lehman's failure in 2008. Therefore, international reserves can serve as an important buffer for mature market countries that are not reserve currency issuers—or do not have predictable access to swap lines.
- **Fuel exporters.** The accumulation of reserves by many fuel exporters is a consequence of large public savings to ensure intergenerational equity. There may be merit to consider such non-precautionary demand when assessing the global demand for reserves, in particular, if it contributes to suboptimal performance of the global economy. Going forward, the adjustment to lower oil prices in a more difficult environment could warrant greater attention to fuel exporters' reserve coverage for precautionary purposes. That said, many fuel exporters hold large liquid positions in sovereign wealth funds that could be employed as reserve complements to meet external shocks.^{17,18}
- **China.** China constitutes an important part of EMDCs' projected demand for reserves, and an issue arises on potential structural changes in its demand. Staff's assessment is that, given the current economic and policy framework in China and its ramifications for global demand for reserve assets, it is prudent to include China in estimates of demand for reserves. The size of China's demand is subject to considerable uncertainty as it will hinge on the speed of and interaction between capital account liberalization, increased exchange rate flexibility, and continued internationalization of the renminbi (RMB). On the one hand, capital account liberalization with an unchanged foreign exchange regime would increase demand for reserves. Without any other action, this increase would add SDR 1.3-2.0 trillion to the estimates for ARA

¹⁶ See footnote 9 on IMF, 2011, "[The case for a general allocation of SDRs during the tenth basic period](#)," June.

¹⁷ Overall, fuel exporters' estimated demand consistent with reaching ARA thresholds of 100-125 percent is estimated at SDR 53-119 billion over the next basic period.

¹⁸ More generally, the accumulation of non-precautionary reserves via protracted one-sided intervention can impose a negative externality on the IMS—possibly warranting wider consideration of an SDR allocation to help diversify the supply of reserve assets. See IMF, 2010, "[Reserve accumulation and international monetary stability](#)," April.

thresholds of 100-125 percent in Table 2. But, a greater degree of exchange rate flexibility—which is the authorities’ policy goal—would reduce demand for reserves, potentially absorbing capital outflow pressures. Increased internationalization of the RMB and its ascension to reserve currency status (following its inclusion in the SDR basket from October 2016 onward), would tend to increase global acceptance of RMB in international transactions and reduce China’s need for other reserve assets.

22. **The estimates are also subject to considerable uncertainties:**

- *Forecast uncertainty:* Projections for key variables are from baseline (modal) WEO forecasts and, therefore, do not consider potential changes in the demand or need for reserves that could occur should downside (or upside) risks materialize. Also, ten year-ahead forecasts are subject to large forecasting uncertainties.
- *Changes in reserve behavior:* There may be mitigating influences from possible changes in reserve behavior. For example, ongoing discussions on the IMS and possible reforms to the GFSN or revisions to the Fund’s lending toolkit, could result in lower reserves required for precautionary purposes. Also, estimates do not consider the extent to which reserves held primarily for non-precautionary purposes (including in sovereign wealth funds) may be utilized to address shorter-term liquidity needs. Finally, estimates do not take into account the possible effect that Fund lending facilities, central bank bilateral swap arrangements and membership of regional financing arrangements, could have on countries’ need for reserves as self-insurance.

E. Use of SDRs to Supplement Reserves Assets

23. This section discusses initial considerations for assessing whether an SDR allocation would be appropriate to meet the identified long-term global need, including the extent to which, if any, a general allocation should play a role in supplementing other reserve assets (i.e., it provides the basis for the second step discussed in paragraph 8).

Covering the demand for reserves

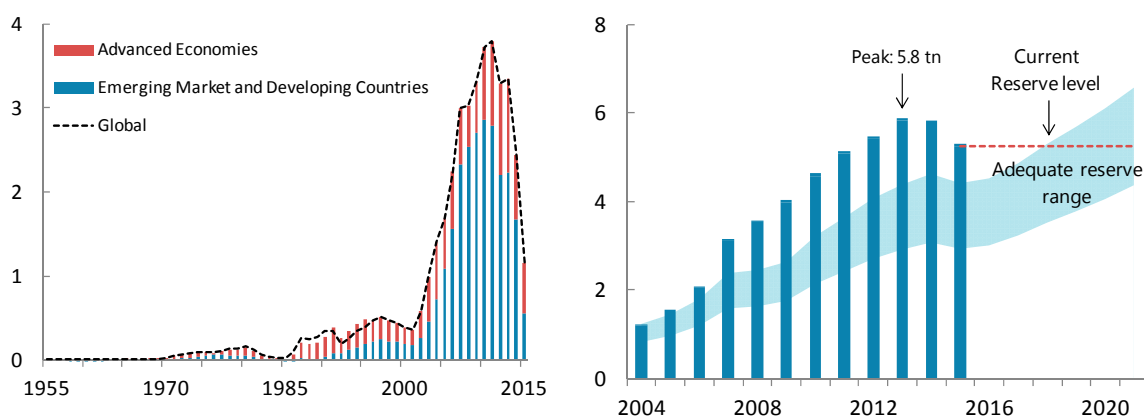
24. **The demand for reserves has largely been met endogenously in past decades.** Growth in global reserves has picked up since the late 1990s, driven predominantly by EMDCs (Figure 1). Most of this demand was met by capital and current account sources, but also supplemented by SDR allocations (Figure 2). In addition to WEO projections for EMDC demand of reserves, the normative ARA metric signals that further global accumulation of reserves would be prudent (Box 3).

Figure 1. Reserve Growth

(In trillions of SDRs)

Global reserve growth in overlapping 5-year periods 1/

EMDCs: Reserve holdings and estimated ARA projections



Source: IMF, International Financial Statistics; and Fund staff calculations.

1/ Excluding gold.

Box 3. EMDC Reserve Demand

Estimates for EMCD reserve demand^{1/} in Table 2 in the main text are 'gross' estimates, measuring the increase in reserves required to eliminate the shortfall between the end-2015 levels of reserve holdings and projected reserve needs to maintain reserve ratios or reach ARA thresholds. Those estimates can be decomposed into two components: (i) the endogenous, WEO consistent, creation of reserves expected over the period; (ii) a measure of 'net' demand—the shortfall between the projected (WEO consistent) level of reserves and projected reserve needs to maintain reserve adequacy ratios or reach given ARA thresholds. Estimates place the reserve asset demand required to meet 'net' needs in the range of SDR 0.3–0.9 trillion in the next basic period consistent with meeting the 100–125 percent reserve adequacy thresholds (see text table). In short, the WEO consistent creation of reserves is SDR 0.1 trillion.

Projected 'Net' Demand for Reserve Assets: ARA-Based
(In trillions of SDRs)

	EMDCs		EMDCs ex. China	
	5-year	10-year	5-year	10-year
100% ARA Threshold	0.3	2.0	0.3	0.8
125% ARA Threshold	0.9	3.4	0.6	1.3
150% ARA Threshold	1.8	4.9	1.0	1.9
Range	0.3-1.8	2.0-4.9	0.3-1.0	0.8-1.9

Source: Fund staff calculations based on WEO.

Note: For each individual country, projections calculate the gap between the *projected* level of reserves and the 5 or 10-year ahead ARA metric. Individual country estimates are then aggregated.

1/ Demand can be influenced by recourse to the GFSN such as regional financial arrangements or bilateral swap arrangements.

SDR-specific considerations

25. **A general SDR allocation could potentially strengthen the IMS.** SDRs are not a currency, are allocated (i.e., accumulated without contributing either to global imbalances through current account surpluses or to downward pressure on reserve issuers' financing costs), and are subject to less fluctuations in their value than assets denominated in a single currency. They also can help eliminate or, at least, reduce, distortions arising from accumulations of (precautionary and non-precautionary) reserve positions. Moreover, the decision to include the RMB in the SDR basket with effect from October 1, 2016 and to adopt a new formula for determining currency weights will make the SDR more representative of currencies used in global trade and financial systems.

26. **However, there are also important architectural shortcomings that have limited the usability of the SDR.** If official holders continue to see the SDR as an imperfect substitute for other reserves due to its limited usability, an allocation will likely have a low impact on excessive reserve accumulation.¹⁹ Also, because SDRs provide unconditional liquidity, they can be used to accommodate unsustainable policies.

27. **A forthcoming Board paper will look into the evolution of the SDR and its potential future role in addressing some of the IMS's vulnerabilities.** In particular, the paper will analyze if greater use of the SDR—including SDR-denominated assets, which could be both issued and held by any parties—could help reduce global imbalances and mitigate the impact of financial market volatility. The outcome of this discussion could result in proposals to modify the existing framework set forth in the Fund's Articles of Agreement for general SDR allocations or cancellations. The paper will also review whether there is scope for the SDR to strengthen the capacity of the GFSN, complementing other work streams, including on the Fund's lending facilities.

28. **The Articles of Agreement require a general allocation of SDRs to be consistent with "avoiding economic stagnation and deflation as well as excess demand and inflation in the world."** An allocation per se has no monetary effect—simply providing monetary authorities with an additional claim on freely usable currencies of IMF members. An inflationary impact could potentially occur only if the central bank of a reserve-issuing country creates money in exchange for SDRs without sterilizing it.²⁰ Overall, no significant risks of inflation arising from an SDR allocation were identified in 2009 or 2011. That assessment continues to apply. Furthermore, while there are some pockets of inflationary pressures among emerging economies, these remain low in AEs. And, with a weak growth outlook, widespread pressures are unlikely to surface anytime soon.

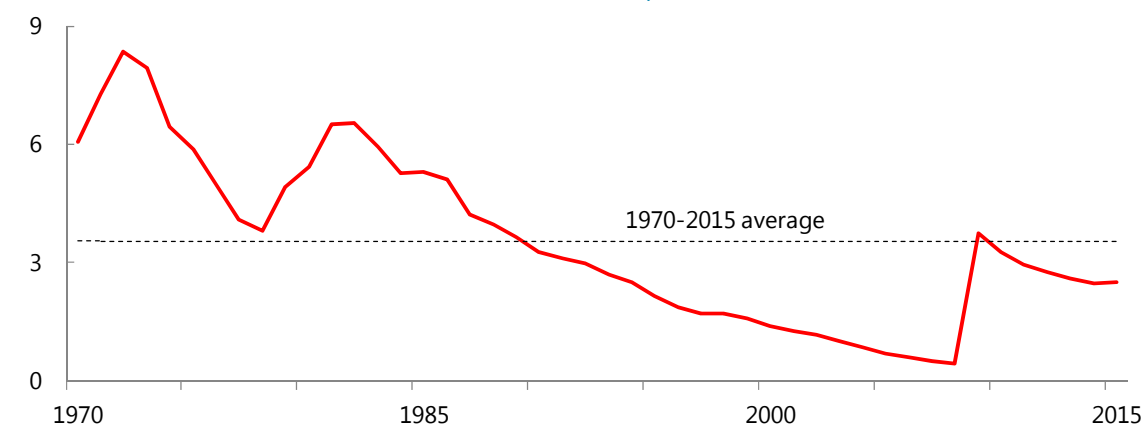
29. **A general allocation of SDRs is made to participants in the SDR Department in proportion to their quotas in the Fund (Article XVIII, Section 2(b)).** With the 14th General Review of Quotas shifting more than 6 percent of quota shares to dynamic EMDCs, around two-fifths of any allocation would now go to EMDCs. As an illustration, doubling the current stock of allocated SDRs

¹⁹ See IMF, 2011, "[Enhancing International Monetary Stability – A Role for the SDR?](#)" January.

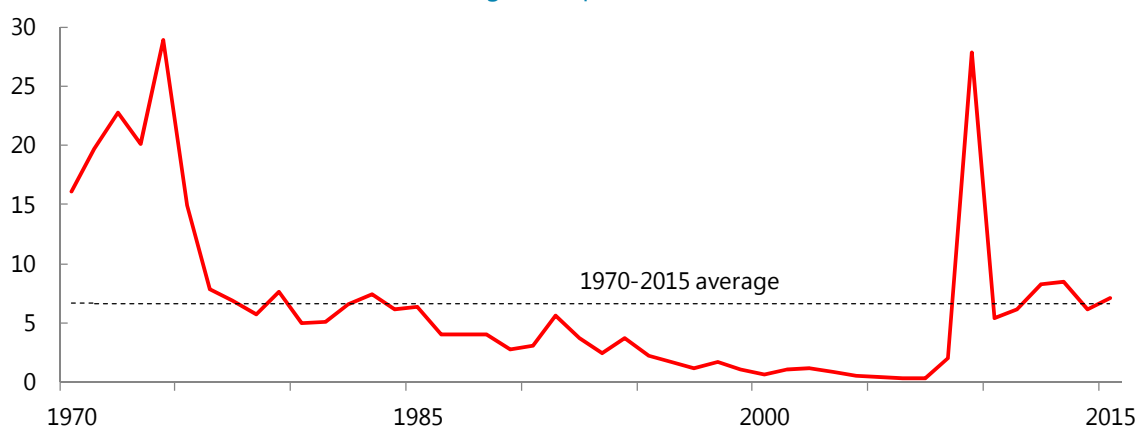
²⁰ See Cooper, Richard, 2011, "[Is SDR creation inflationary?](#)" Report by an Independent Expert Consultant.

Figure 2. Long-Term Perspective of SDR Holdings

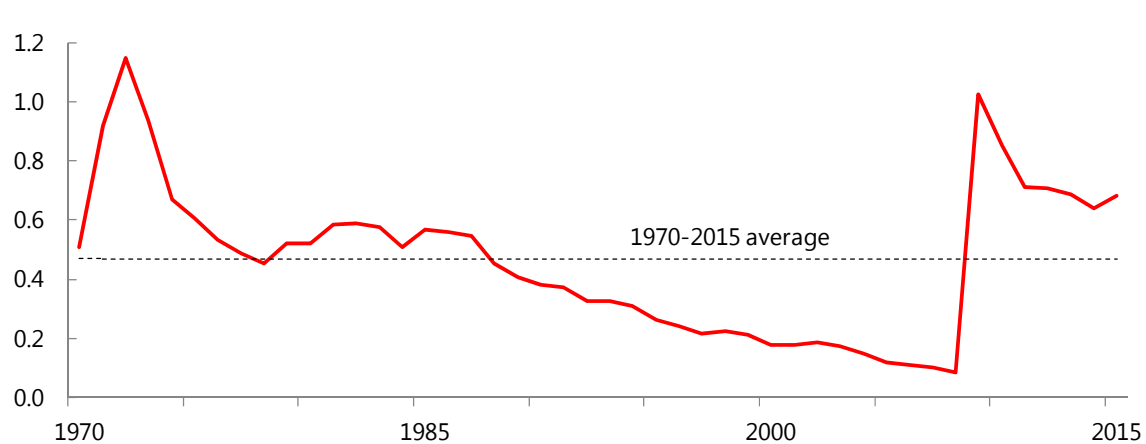
(In percent of)
Global reserves 1/



Global gross capital flows



Global trade 2/

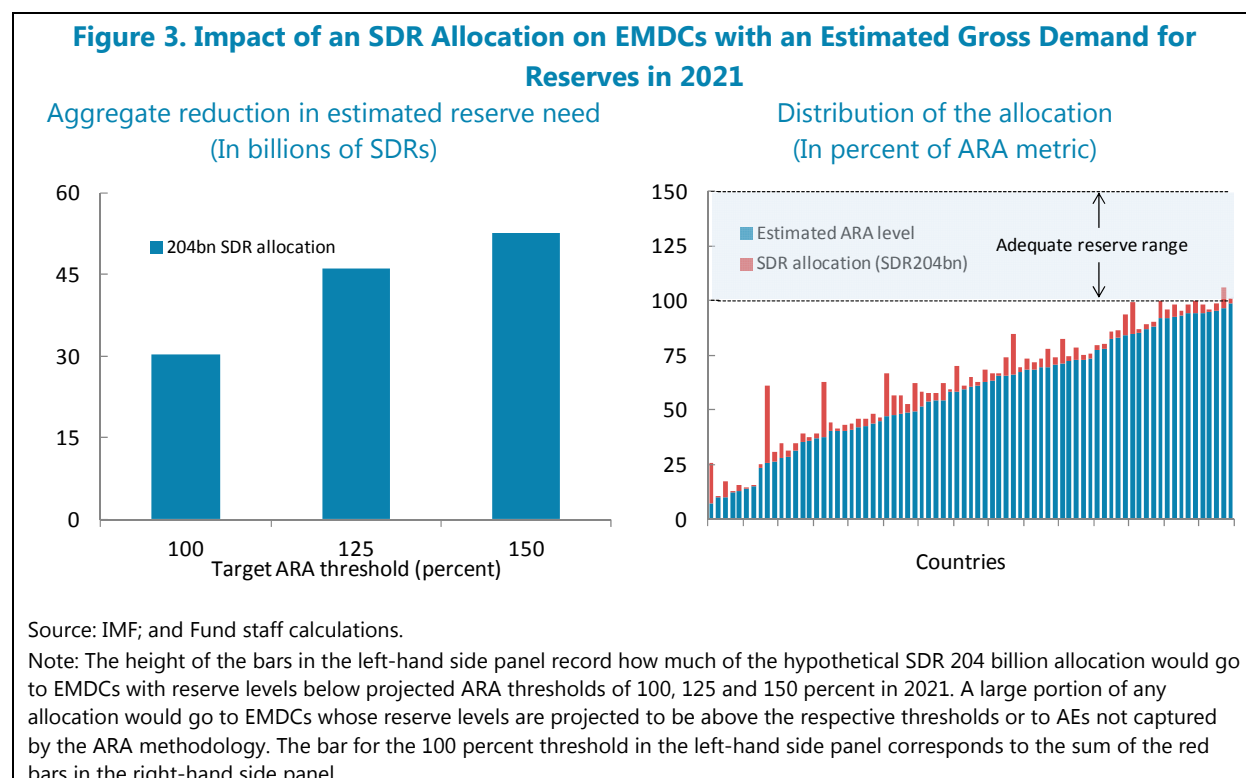


Source: IMF, International Financial Statistics, IMF, World Economic Outlook; and Fund staff calculations.

1/ Excluding gold.

2/ Goods and services.

would provide over SDR 30 billion to EMDCs that are projected to have reserves below 100 percent of the ARA metric in 2021—covering around 7 percent of their projected need for reserves (Figure 3).²¹



CONCLUSION AND ISSUES FOR DISCUSSION

30. This paper provides background for an initial discussion on the case for a general SDR allocation during the Eleventh Basic Period. The analysis indicates that the demand for reserves is likely to rise substantially in the medium to long term—a demand that could potentially be met, in part, by a general SDR allocation. The paper concludes, however, that it seems premature to make a specific proposal for an allocation at this stage, as further work and consultations are needed on the potential for greater use of the SDR and thus on the role that an SDR allocation can play in meeting the estimated global demand for reserves.

31. Executive Directors may wish, among others, to touch on the following issues:

- i. Do Directors agree with the staff analysis that the demand for global reserves is likely to rise substantially during the Eleventh Basic Period?

²¹ It would also be necessary to consider whether any allocation be made in a single step or in a staggered manner. In 2011, staff proposed to make an allocation in three equal annual tranches to minimize any inflationary pressures.

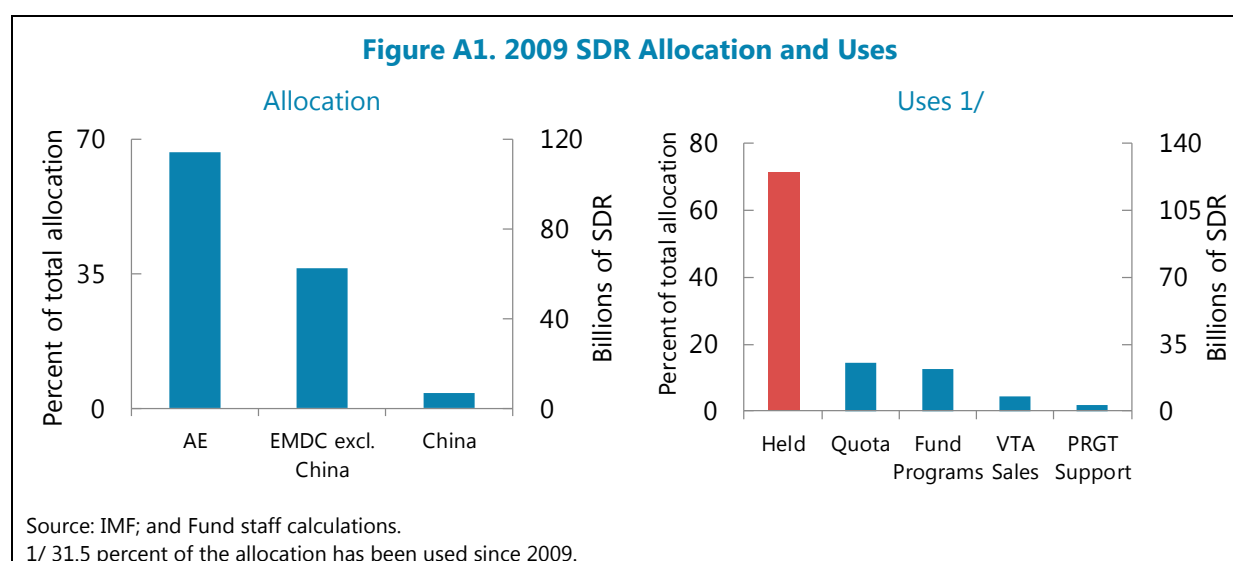
SDR ALLOCATION

- ii. Do Directors agree that it is premature, at this time, to make a proposal on an SDR allocation during the Eleventh Basic Period, pending further work on the greater use of the SDR and thus the role that an SDR allocation could play in meeting the demand for reserves?
- iii. If Directors support a general allocation at this time, what are their views on its possible size and modalities?

Annex I. 2009 SDR Allocation Impact and Use

The 2009 SDR allocation aimed to provide liquidity to the global economic system by supplementing members' reserves and thereby supporting members in the aftermath of the global crisis. The allocation announcement came in April 2009 at the height of the global financial crisis as part of the G20 efforts that included tripling the IMF's lending capacity to \$750 billion and revamping the IMF's lending facilities. It was almost nine times the size of the SDR stock and was disbursed in a single step rather than in tranches characterizing previous allocations. Markets reacted favorably to the overall package and, six months after the announcement, external credit and credit default swap spreads on emerging market sovereigns had tightened and foreign currency funding constraints had eased considerably.¹

Most of the allocation went to countries that already had adequate reserves. The allocation was expected to meet a global need for reserve assets of SDR 254–571 billion (\$400–900 billion) over the following five years. Close to two-thirds of the SDR allocation went to AEs, reflecting their larger quota shares, with more than half going to reserve currency-issuing AEs (Figure A1, left hand panel).² Sales peaked at just SDR 2 billion in the immediate aftermath of the allocation and have been smaller since.



Use of SDRs post-allocation has been moderate. The main use of SDRs is in supplementing existing reserves, which is fulfilled by holding onto the allocation. Members have for the most part passively held onto their SDRs as part of their official reserves (Figure A1, right hand panel), with non-program countries generally holding onto a larger proportion of their SDR allocations than program countries. Indeed, SDR holdings by non-program AEs are close to their cumulative SDR

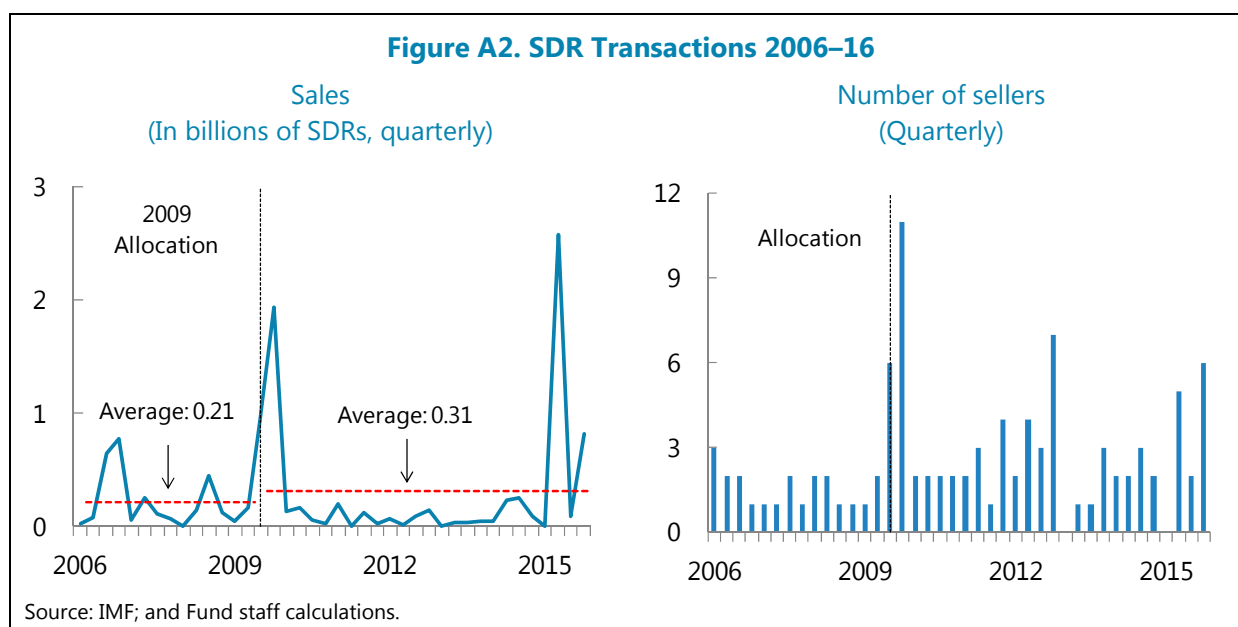
¹ See [Global Financial Stability Reports](#) from April and October 2009.

² For details on the country distribution, see <https://www.imf.org/external/np/tre/sdr/proposal/2009/0709.htm>.

allocations. SDR holdings by non-program EMDCs also remain relatively high at about 80 percent of the allocation, despite declining since mid-2011 to meet payments for Fund transactions and some sales as mentioned before. SDR holdings by program countries fell substantially after the 2009 allocations and have continued to decline in recent years, remaining below 60 percent of their allocations. The use of SDRs by program countries has likely helped meet external payment obligations and, in some cases, smooth the impact of policy adjustments. EMDCs that have used GRA credit have the lowest SDR holdings in percent of their allocation (almost 30 percent).

Voluntary Trade Agreements (VTA) Sales

After increasing briefly following the allocation, sales of SDRs have since remained limited (Figure A2). SDRs are sold or converted into freely usable currencies in most cases to pay for imports or meet external obligations. Sales tripled (to SDR 2.9 billion) and involved 16 participants over the four months after the allocation (from an average of SDR 1 billion and seven participants in the previous three years).³ The volume of sales and number of sellers subsequently fell and have remained largely subdued—well below the maximum capacity of the VTAs.⁴



While emerging markets (EMs) sold more SDRs in volume terms than any other country group, low income countries (LICs) sold by far the largest share (almost half) of their allocation. Sales initiated by EMs accounted for three quarters of total sales since the 2009 allocations, but this represented only about 6 percent of the total allocation to EMs. Within the EM group the more active sellers were countries without Fund supported programs (27 out of 34). Sales

³ Sales through VTAs were expected to reach between SDR 10-25 billion.

⁴ The maximum capacity of VTAs automatically increased to SDR 84 billion following the quota increase under the 14th Quota Review.

by LICs were modest in volume terms (about a fourth of total sales, in SDRs, over the same period) but accounted for almost half of their allocation. Similar to EMs, most of the sales by LICs were non-program cases.

Use in Quota Payments

SDRs were also used to make quota payments. Between October 2009 and February 2016 approximately SDR 25 billion (around 44 percent of the total SDRs used and 14 percent of the 2009 allocation) was used by member countries to pay the reserve asset portion of the ad hoc quota increases agreed under the 2008 Quota and Voice Reforms and, more recently, the quota increases agreed to under the 14th General Review of Quotas. Just over half of these payments were made by AEs. Non-program AEs and EMDCs used a significantly larger share of their SDR allocations for the quota payments to the Fund relative to program countries. This in turn has led to record Fund holdings of SDRs (SDR 32 billion) well in excess of targeted SDR holdings (SDR 1–1.5 billion).

Program-related Payments to the Fund

Program countries at all income levels used SDRs for repurchases and payments of charges to the Fund. As a group, these countries channeled about SDR 18 billion post-allocation to meet repurchases and payments of charges to the Fund, with the bulk of the payments associated with GRA repurchases. This amount represents 12 percent of the total 2009 allocation, about a third of the total SDRs used, and almost half of the SDR allocation to these country groups. Similarly, non-program LICs with expired arrangements made use of SDRs for repayments to the Fund, channeling about two thirds of their allocation for this purpose. The non-program EMDCs, in contrast, devoted only a small share of SDRs for repurchases and payments of charges, focusing the use of SDRs on quota payments.

Poverty Reduction and Growth Trust (PRGT) Support

Several donor countries used SDRs to support the loan and subsidy accounts of the PRGT.

These commitments were part of the implementation of the 2009 comprehensive reform of the IMF's concessional facilities. Currently there are 8 loan and note purchase agreements with the PRGT to provide loan resources in SDRs, amounting to SDR 7.5 billion (around 13 percent of the total SDRs used or 4 percent of the 2009 allocation). The Fund has standing VTAs in place with each of these lenders. To date less than half of this amount – SDR 3.1 billion – has actually been disbursed in PRGT loans. In addition, a number of donor countries have provided PRGT subsidies in SDRs.