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The International Monetary Fund and its Role as a Guarantor of Global Financial Stability

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Abstract

Given the growing real and financial integration of economies worldwide, there is a need for the presence of supranational mechanisms to address crisis situations. The International Monetary Fund (IMF) is the multilateral institution at the core of the global financial safety net (GFSN). The swift development of other elements of this net since the last global financial crisis, such as the regional financing arrangements, has made the system sounder but also poses fresh challenges. The broad membership of the IMF, the volume of its resources and its accumulated global experience in crisis management make the organisation key to shoring up global monetary and financial stability. However, the IMF is subject to recurrent discussions about its governance and lending policies, including the size and composition of its resources, and the distribution of power within the organisation. The IMF is currently immersed in the Fifteenth General Review of Quotas. The backdrop to this negotiation is the risk that, in the absence of a satisfactory agreement on the size and distribution of its resources, the IMF's financial sufficiency and its degree of representativeness among its members may be diminished in the coming years. This might significantly undermine the stabilising capacity of the GFSN.

Keywords: IMF, Global Financial Safety Net, Review of Quotas, systemic crises.

JEL codes: F3, F32, F38, F42, F65, G28.

THE INTERNATIONAL MONETARY FUND AND ITS ROLE AS A GUARANTOR OF GLOBAL FINANCIAL STABILITY

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Introduction

Over recent decades, the degree of real and financial cross-country interdependence and integration has increased rapidly. Against this background, the global financial crisis revealed the high vulnerability of economies exposed to global shocks, in the face of which national insurance policies and mechanisms, such as foreign currency reserves, afford insufficient defence, in addition to their high cost. The crisis also confirmed the fundamental role played by the multilateral support mechanisms and, in particular, by the International Monetary Fund (IMF, or the Fund). Indeed, and in parallel with the growing degree of global integration, the supranational mechanisms (bilateral, regional and multilateral alike) offering financial support to the countries affected by external crises have been progressively reinforced, giving substance to an ever more powerful global financial safety net (GFSN).

At the core of this safety net is the IMF. The nature and size of the GFSN and the interrelations between its components have given rise to debate and an extensive literature. In the case of the Fund, and given its central role in the GFSN, discussion is particularly intense and, while this is not new, it has taken on particular importance at a time at which the IMF's Fifteenth General Review of Quotas is under way. Quota reviews take place every five years and are a forum for reflection by all the members (189 countries) on the sufficiency of the Fund's resources to provide an appropriate level of insurance in respect of global monetary and financial stability; moreover, the reviews are used to decide on any potential redistribution of voting power to reflect countries' changing weight globally.

This article reviews the extensive literature on the size of the IMF, its workings and its involvement in the GFSN. The aim is to provide key information so as to understand the terms of the debate currently under way on the occasion of the Fifteenth General Review of Quotas, which should be completed in the course of 2019. The following sections describe the component parts of the GFSN and assess their functionality. Thereafter the role of the IMF in this safety net is analysed, along with its size and the composition of its resources. The GFSN, despite being stronger and more diversified today than before the financial crisis, needs to be improved in several respects. Such aspects include the absence of a mechanism for the immediate provision of liquidity to countries with sound fundamentals in cases of contagion arising from global crises, and appropriate coordination among the different components comprising this global safety net. Further, the IMF, and the GFSN as a whole, would count at present on sufficient resources to withstand a broad range of adverse scenarios, although this result might not hold up in the case of "extreme" global crises. What is more, over the next three or four years the Fund might lose half of those resources if the temporary loans with which it finances itself, along with the quotas, are not rolled over. That poses a risk of under-insurance for many countries that are not suitably covered by other components of the GFSN; and, at the same time, that might generate greater pressure on these latter countries, whose crisis management and resolution capacity and experience is less, in many cases, than that of the IMF.

Development and current configuration of the Global Financial Safety Net

The GFSN is the set of institutions and prevention, support and financing mechanisms to which a country facing an external crisis may resort.[1] As the IMF indicates, this net is not there merely to provide insurance and financial assistance; its aim is also to encourage suitable macroeconomic policies allowing behaviour associated with moral hazard to be minimised.[2] This global safety net is, therefore, essential for supporting the sound functioning and stability of the international monetary system, in both its preventive and crisis-management facets, supporting the countries affected, limiting the costs of crises and containing their external effects.

The GFSN typically comprises four elements, which offer different levels of insurance, according to their characteristics, mandates and degree of interconnection:[3] (i) international reserves; (ii) bilateral liquidity facilities between countries, essentially swap facilities between central banks; (iii) regional financing arrangements (RFAs); and (iv) the IMF, the multilateral institution entrusted with watching over the stability of the international monetary system. Foreign currency reserves are the traditional means of self-insurance for countries, while bilateral (such as the swap facilities), plurilateral (such as the RFAs) and multilateral (such as the IMF) mechanisms incorporate different degrees of pooled decision-making and risk-taking, with the multilateral elements being those which most authentically infuse the financial safety net with a “global” dimension.

There are various political, economic and historical factors behind the emergence, development and characteristics of the different elements of the GFSN.[4] The net has taken shape through an unplanned and decentralised process, influenced on many occasions by domestic or regional interests more than global ones, and where the relative importance of its different components has changed over time[5] (see Chart 1). Following the crises experienced by various emerging countries during the 1990s, international reserves grew at a high rate, increasing from close to $2.5 billion in 2000 to $12 billion in 2017. RFAs began to expand in the wake of the global financial crisis, both in number and in diversity and size; hence, the total resources of RFAs increased tenfold between 2007 and 2017, rising to $1.2 billion, a similar level to the IMF’s current financial capacity. At the bilateral level, the crisis also prompted the emergence of a network of swap facilities between central banks that played a crucial role in liquidity provision, especially the facilities made available by the US Federal Reserve, which enabled the high demand for dollars by banking systems at the global level to be covered.

These changes have come about in parallel with those experienced by the IMF itself in the past decade: the Fund’s resources have increased substantially and, in tandem, its internal policies and governance have been reformed (see the fourth section). The approval of the Fourteenth General Review of Quotas and the writing of bilateral loans with certain member countries tripled the Fund’s resources to a figure close to $1.4 billion. Notwithstanding, the relative importance of the Fund in the GFSN has diminished compared with the pre-crisis

1 Regarding the GFSN, see ECB (2016) and IMF (2016).

2 The problem of moral hazard in the context of the GFSN becomes manifest in the event of debtors and creditors potentially taking excessive risks with respect to a situation marked by a lack of insurance, at the expense of the taxpayers of the creditor country, and it would increase cases of crisis by contagion to other countries. One way of mitigating this problem is through the surveillance of macroeconomic policies and conditionality linked to financial assistance programmes. See Di Mauro and Zettelmeyer (2017) for a more in-depth analysis.

3 See IMF (2016) and Garrido et al. (2012).

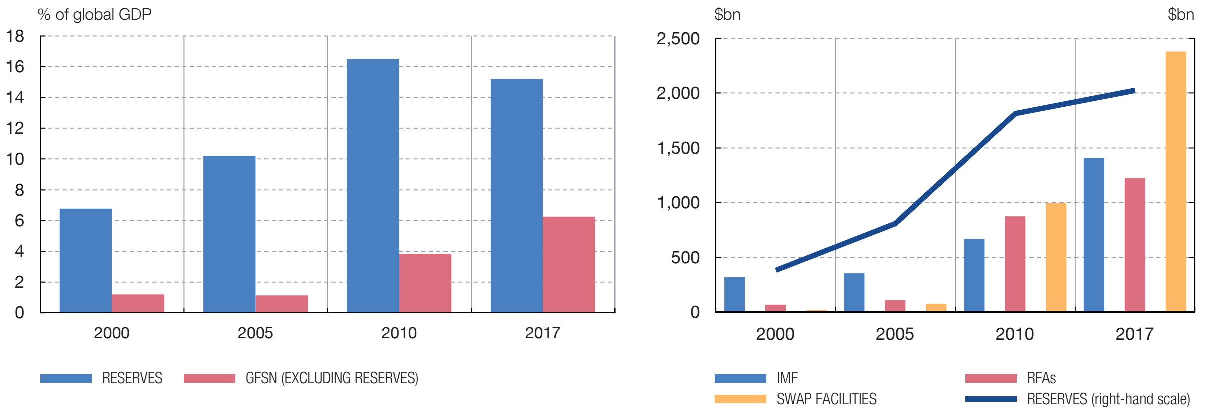
4 See, for example, Weder di Mauro and Zettelmeyer (2017), Fernández-Arias and Levy-Yeyati (2010), and Scheubel and Stracca (2016).

5 A more detailed description of the development of the GFSN can be consulted, inter alia, in ECB (2018a), Garrido et al. (2012, 2016) and L´Hotellerie-Fallois and Moreno (2014).

THE SIZE OF THE GFSN HAS INCREASED WHILE THE RELATIVE WEIGHT OF ITS MAIN COMPONENTS HAS CHANGED

CHART 1

The expansion of the GFSN, both in terms of resources available to address a crisis and the diversity of its component parts, has been most significant in recent decades. Beyond reserves, the GFSN's pooled resources have increased sixfold to 6.25% of the global GDP while the IMF plays less of a leading role as a source of insurance in respect of swap facilities and RFAs.



SOURCES: IMF, RFA websites and ECB (2018b).
NOTES: Exchange rate (end of year). Global GDP from the October 2018 WEO (IMF) database. The size of the swap facilities is estimated on the basis of the maximum use made of these facilities in the past.

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period: in 2005, its size was equivalent to 470% of total existing RFA resources,[6] a proportion that fell to 116% in 2017 (see Chart 2).

Assessment of the current configuration of the Global Financial Safety Net

The previous section has illustrated how, at present, the GFSN is more multipolar, decentralised and complex than in the past, when the IMF was practically the sole international lender in cases of external crises. This new configuration allows crises to be tackled more securely, since a greater number of mechanisms and a higher volume of resources are involved. However, the recent experience has also highlighted certain inefficiencies in the GFSN, which has been characterised in different circles as uneven (with significant coverage gaps, especially in respect of emerging market countries deemed systemic), fragmented (owing to the lack of coordination among its elements) and costly (owing to the economic cost of some of its elements, such as international reserves, or the political cost, such as the stigma associated with IMF programmes),[7] along with being prone to moral hazard. Despite broad consensus around the need to improve the GFSN,[8] the solutions put forward are disparate and there only appears to be agreement about the importance of promoting suitable domestic policies as the first line of defence against a financial crisis.

To assess the adequacy of the GFSN, factors such as the environment in which it operates, the coverage it provides and the readiness with which it provides for access to sufficient resources should be taken into account. The current international setting is characterised

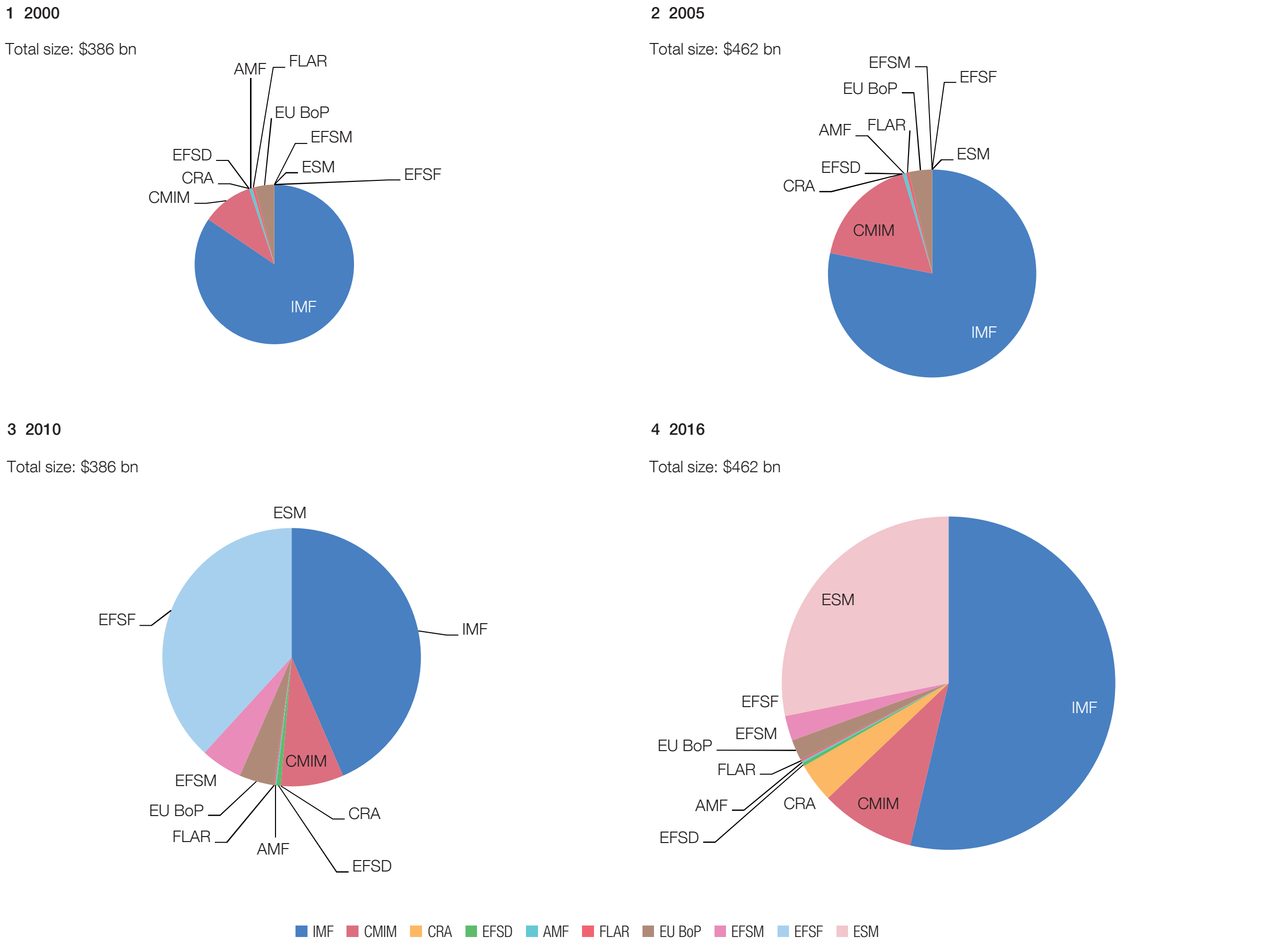
6 The following RFAs are considered: Chiang Mai Multilateral Initiative (CMIM), BRICS Contingent Reserve Arrangement (CRA), Eurasian Fund of Stabilisation and Development (EFSD), Fondo Latinoamericano de Reservas (FLAR), Arab Monetary Fund (AMF), European Stability Mechanism (ESM), European Financial Stability Facility (EFSF), European Financial Stabilisation Mechanism (EFSM) and EU BoP Assistance Facility (EU BoP). For a more detailed analysis of these arrangements, see IMF (2017) and ECB (2018a).

7 See IMF (2016) for an assessment of the current GFSN.

8 See IMF (2016) and the recent report by the Eminent Persons Group (EGP) under the auspices of the G20, EPG (2018).

THE RELATIVE IMPORTANCE OF THE IMF HAS DIMINISHED OVER TIME, WHILE RFAs ARE EMERGING IN VARIOUS GEOGRAPHICAL AREAS **CHART 2**

The IMF, despite being at the heart of the GFSN owing to its multilateral nature, experience in crisis resolution and technical capacity has seen its importance diminish following the emergence of numerous plurinational regional agreements, the most important of which promoted by the European Union and the Asian countries, led by China.



SOURCES: IMF and RFA websites.
NOTES: IMF includes quotas, NABs and BBAs. The RFAs considered are: Chiang Mai Multilateral Initiative (CMIM), BRICS Contingent Reserve Arrangement (CRA), Eurasian Fund of Stabilisation and Development (EFSD), Fondo Latinoamericano de Reservas (FLAR), Arab Monetary Fund (AMF), European Stability Mechanism (ESM), European Financial Stability Facility (EFSF), European Financial Stabilisation Mechanism (EFSM) and EU BoP Assistance Facility (EU BoP). EFSF is included in 2010, when it was agreed upon, although it came into force in 2011. ESM is included in 2017, as it came into force in 2012.

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by a high degree of financial integration, with sizeable cross-border capital flows, subject to bouts of great volatility and largely steered by a global financial cycle, unconnected to the specific macroeconomic conditions of many countries.[9] In this interconnected world, where the possibilities of contagion and spillovers are high, even towards economies with sound fundamentals, the presence of a multilateral insurance element such as the IMF, with sufficient resources and performing systemic crisis-monitoring, prevention and resolution tasks, is pivotal.[10] At the other extreme would be foreign currency reserves, as a pure element of self-insurance. However, from a global standpoint, reserves would not be efficient, since they do not allow insurance sources to be diversified and nor do they provide for a coordinated framework of response to a crisis. This coordination problem

9 See Eichengreen and Gupta (2017). Concerning the global financial cycle, see Rey (2013).
10 See Scheubel and Stracca (2016).

would prompt an excessive build-up of reserves and an inefficient level of overall insurance. At the same time, the use (loss) of reserves by the authorities is limited by the fear of sending an adverse signal to the market. Moreover, an excessive accumulation of reserves may entail significant financial costs for the country, arising in part from sterilisation costs, but it may also impose costs on other countries, if the accumulation is for competitive purposes.

Nonetheless, the growing financial interconnection between countries raises the probability of a global shock with widespread contagion, against which even the Fund's intervention capacity might fall short. Unquestionably, the recent global financial crisis has been an example in this respect. One of the problems posed in situations of systemic crises, with contagion to countries with sound fundamentals, is the need to provide large-scale liquidity at sufficient speed to those countries. One possible solution, considered on many occasions, is the establishment of a rapid credit facility granted by the IMF with ex ante conditionality; however, this possibility has not successfully become a reality. Indeed, during the last crisis, the role of international lender of last resort was covered, to some extent, by the reserve currency-issuing central banks by means of swap facilities. Several authors have proposed ways of tackling such liquidity provision by means of an organised and multilateral network of swap facilities, either coordinated by the IMF itself, or by the central banks, endowing the functioning of this network with the principles of transparency, continuity and clear rules of access, and enabling it to function without involving the IMF.[11]

However, the moral hazard associated with this type of lender of last resort solution is considerable. This risk could be mitigated by establishing ex ante rating criteria, as is done for the IMF's precautionary credit lines, or by leaving the opening of bilateral swap lines to the discretion of central banks (which is known as "constructive ambiguity"). However, there are in fact doubts as to whether it is appropriate for central banks to play a risk-pooling role as international lenders of last resort, arising from both conceptual considerations (the need to preserve their independence) and practical ones (the existing bilateral swap network worked well during the global financial crisis). Nevertheless, it is also true that a global crisis resolution mechanism needs to include elements ensuring a degree of certainty and universality that are absent from purely bilateral swaps.

In the case of RFAs, the presence of these decentralised insurance mechanisms can boost the GFSN's resources and resilience, provided they are mechanisms complementary to a global multilateral institution. Specifically, RFAs can improve the design of financial assistance programmes through a better understanding of regional idiosyncrasies. Furthermore, the existence of shared interests among a region's countries facilitates the exchange of information, promotes closer mutual vigilance, and can be a more effective way of exerting pressure to conduct sound policies.[12] Therefore, one of the ways of enhancing the global safety net is to strengthen collaboration between the RFAs and the IMF.[13] Nevertheless, regional networks also have shortcomings that need to be addressed. For example, some RFAs lack sufficient political independence and technical capacity to perform surveillance tasks or design programmes. Without progress in this regard, an excessive proliferation of regional networks could create additional challenges for cooperation with the IMF, and even result in overlaps in resources and functions.[14]

11 Regarding the matter of last-resort liquidity provision, see Farhi et al. (2011), Fernández-Arias and Levy-Yeyati (2011) and Destais (2014).

12 See Garrido et al. (2016) and ECB (2018a) for a comprehensive review of RFAs.

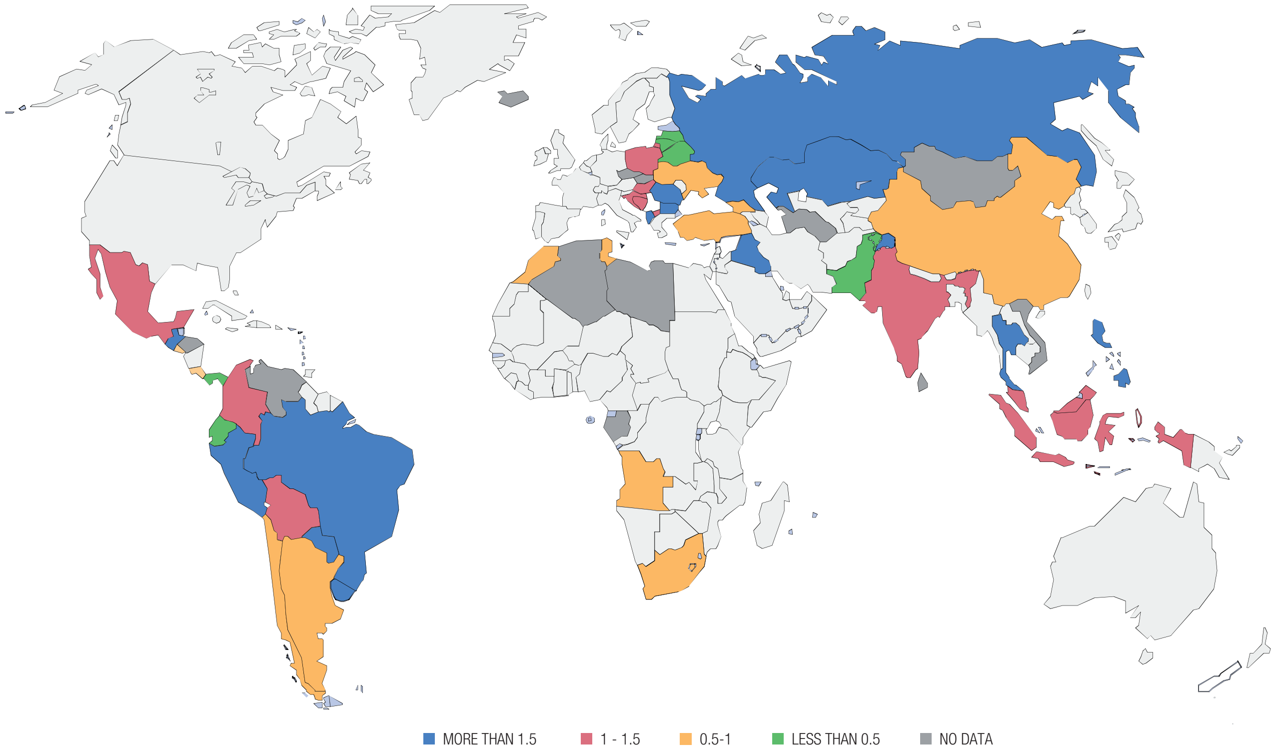
13 In 2016 the G20 defined the general principles of this cooperation and the IMF published a report on coordination between the two types of institution (IMF, 2017).

14 See IMF (2016) and Weder di Mauro and Zettelmeyer (2017).

THE DISTRIBUTION OF EXTERNAL RESERVES IS UNEVEN AND IN SOME CASES THEIR LEVEL WOULD NOT BE ADEQUATE

CHART 3

Despite the strong expansion in external reserves as a source of self-insurance, the reliability of this element of the GFSN is limited in the event of a global crisis since its distribution across countries is uneven and it also entails a high cost for the system owing to excessive accumulation in some systemic countries, making for an inefficient volume of insurance.



SOURCES: IMF. ARA 2018.
NOTE: The figures refer to the ratio of the level of external reserves to the ARA (Assessing Reserve Adequacy) metric estimated by the IMF. A ratio between 1 and 1.5 is considered sufficient.

So far experience has shown there to be certain practical problems in RFAs' collaboration with the IMF,[15] and it has been suggested that cooperation needs to be placed on a more formal footing and even that arbitration procedures need to be set up to deal with possible disputes.[16] From a less demanding standpoint, cooperation could also be enhanced by information exchange or technical assistance from the IMF to develop the RFAs' capabilities. Other areas, such as country supervision, lending policy or programme design, appear to be more difficult to coordinate.[17] In any event, there is a consensus that cooperation must respect the institutions' mandates and independence.

Another measure of the GFSN's robustness is its coverage of countries and regions to which it provides protection. From this standpoint, a system based solely on individual, bilateral and regional elements would be more prone to leaving countries or regions insufficiently insured. Indeed, the distribution of foreign currency reserves by country is uneven and, in many cases, their levels are inadequate on the metric used by the

15 For instance, after evaluating the IMF's conduct during the euro crisis, the IMF's Independent Evaluation Office (IEO) recommended better coordination between the IMF and the RFAs and a clarification of the guidelines on programme design in monetary unions (IEO, 2014). In general, although the IEO considered the cooperation mechanism with the European authorities (the Troika) to be efficient, it also detected shortcomings in its configuration. In particular, the possibility of its being subject to political pressures, and the lack of a clear demarcation of responsibilities, a policy for information exchange, a unified framework for analysis and conditionality, or a mechanism to resolve differences of opinion.

16 See EPG (2018) and De Gregorio et al. (2018).

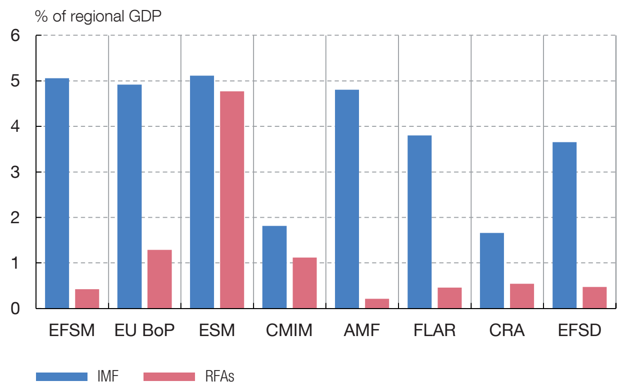
17 See ECB (2018a).

POTENTIAL SUPPORT IN THE EVENT OF CRISIS AND IMF FINANCIAL CAPACITY

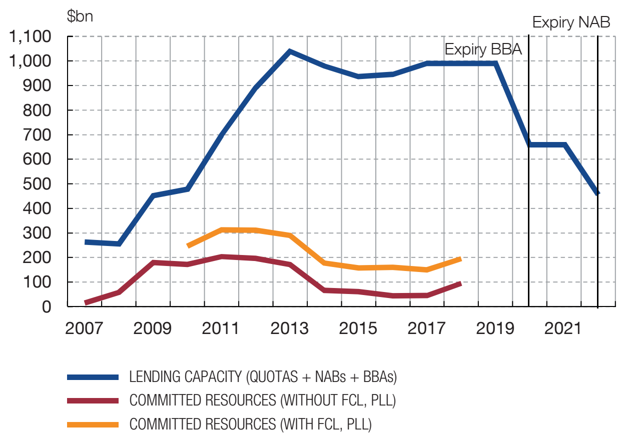
CHART 4

The potential support across regions of the various RFAs is uneven and, in most cases the IMF remains the main lender of last resort in the event of crisis. The IMF has been able to adapt its financial capacity at times of need, such as after the last financial crisis, but the forthcoming expiry of its temporary resources may weaken confidence in the GFSN, especially in the least insured regions.

1 POTENTIAL SUPPORT OF THE IMF AND THE RFAs IN THE EVENT OF CRISIS



2 IMF FINANCIAL CAPACITY AND COMMITTED RESOURCES



SOURCES: IMF and RFA websites.
NOTES: Potential support figures for 2017. End-of-year exchange rate. Regional GDP from the October 2018 WEO (IMF) database. Lending capacity will fall from 2020 if the loanable resources are not renewed.

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IMF[18] (see Chart 3). The same is true of the RFAs, as a considerable number of countries either do not belong to any of these arrangements, as in the case of many African countries, or belong to arrangements with limited resources and insufficient technical capacity to withstand systemic crises (see Chart 4.1).[19]

Finally, the appropriateness of the GFSN also depends on the resources available. The size of the global economy and its degree of interconnectedness are key determinants of the necessary level of resources. There are a number of ways of approaching this question quantitatively, for example by using stress scenarios. Some recent exercises suggest that the current size of the safety net would be sufficient in a wide range of adverse scenarios.[20] Nevertheless, there are other considerations that are difficult to incorporate in these exercises, such as the fact that excessive insurance can lead to moral hazard. Determining the optimal size of each of the elements of the GFSN is perhaps an even more complicated exercise, as it is subject to judgement and stricter constraints.[21] In the case of RFAs, the difficulty is exacerbated by the fact that, when implementing its own programmes, many of them also require IMF involvement.

The arguments set out suggest that all the components of the GFSN can play an important role, while there are means of improving the operation of the system as a whole and leveraging synergies that arise through cooperation between its constituent parts.

18 The IMF's assessment of a country's level of reserves, known as Assessing Reserve Adequacy (ARA), comprises a framework for analysing the appropriate level of reserves depending on an economy's specific characteristics, including quantitative indicators (the ARA metric) and assessments of the motivations for the accumulation of reserves and the costs entailed. In the case of emerging market economies, the metric comprises four (weighted) indicators representing the potential drain on the balance of payments in the event of a crisis: export earnings, a broad money aggregate, short-term foreign debt and other portfolio liabilities.

19 See IMF (2017).

20 See Denbee et al. (2016) and ECB (2018b).

21 For instance, there is an ongoing debate about whether advanced economies ought to be able to resolve crises by themselves, with IMF loans mainly being targeted on other economies.

The IMF in the Global Financial Safety Net

In the wake of the last global crisis, and against the background of the changes in the GFSN described above, in 2009 the IMF launched a series of major reforms to its policies in order to maintain its central role in the global network.[22] The IMF's resources have tripled since 2008 and its governance, including the representation of emerging market economies, has improved.[23]

One of the key reforms carried out affected the IMF's lending policy, with a simplification of the number of facilities available, a substantial increase in the normal access limits to this financing,[24] greater flexibility as to the pace of disbursements, broadening of the policy of exceptional access (i.e. for amounts above the normal limits) and a review of conditionality. Moreover, the establishment of the flexible credit line (FCL) in 2009 and the precautionary and liquidity line (PLL) in 2011 gave the IMF the tools it needed to bolster the precautionary component of its insurance, which had previously been very limited.[25] These precautionary lines are a recognition that countries with sound fundamentals may be affected by external shocks and that tools are needed that are able to provide them with financial support and guarantee global financial stability.

The IMF has also strengthened its bilateral and multilateral surveillance policy, with greater emphasis on risk analysis and macro-financial aspects. The surveillance review carried out in 2017 recommended that, looking ahead, analysis of systemic economic spillovers be strengthened, the analysis framework for fiscal space and the external sector be enhanced, the IMF's messages be made more consistent, more emphasis be placed on comparative cross-country analyses, and policy advice be made more persuasive in order to help put its policy recommendations into practice.

As regards the treatment of sovereign debt, since 2014 the IMF has supported the inclusion of collective action clauses (CACs) in sovereign debt contracts, which would facilitate debt restructuring processes when necessary, by limiting the veto power of holdouts when the majority of bondholders have agreed to a restructuring. This would make it easier for the private sector to complement official finance in the event of a crisis. These clauses are now included in most new sovereign debt issues, including those of emerging market economies.

Despite progress on all these fronts, key aspects of how the IMF operates continue to be questioned, such as its coordination with other GFSN components (particularly the RFAs), governance reform, finding ways of overcoming the stigma attached to its programmes, or supplying liquidity in cases of systemic contagion. In the case of governance, there is a series of aspects that are still subject to review, largely related to the search for a quota formula for representation of member countries that reflects their relative importance in the global economy and international monetary system in a way that is satisfactory to all.[26] In practice, emerging market economies, particularly those that have grown most in recent decades, have built up a considerable misalignment –if we compare their effective quota in the IMF with their weight in the global economy– which poses a serious problem of

22 See, inter alia, IMF (2009) and Moreno (2013).

23 For details of the resource increase between 2009 and 2013, see L'Hotellerie-Fallois and Moreno (2014).

24 Access limits, i.e. the maximum size of loans from IMF resources, are set as a percentage of the country quota in the IMF's capital. This percentage varies depending on the type of facility used and the level of access: normal or exceptional.

25 Previously there was only the Contingent Credit Line (CCL), which was never used.

26 The current formula determining member countries' quota is a combination of four variables: GDP, commercial openness, variability of current and capital account flows and balance of payments, and foreign currency reserves.

institutional legitimacy. The G20 has driven a process of change in the representation in the IMF since 2010, but some of the main misalignments have not been sufficiently corrected, the case of China being the most significant. As well as quota reform, other initiatives have also been proposed to balance the distribution of power between the IMF's Executive Board and its management, with a view to limiting the influence of national interests in the institution's decision-making.[27]

There is also a consensus that the IMF should continue to revise its lending facilities. As mentioned, precautionary liquidity lines have met with only limited interest from members.[28] In part, this may be due to the stigma many countries still associate with IMF involvement, and all the more so at "quiet times". Moreover, the protracted use of some of these lines has also come in for criticism, but so far none of the proposed reforms has generated sufficient interest or support.[29]

In the area of the rapid provision of liquidity to countries affected by global spillovers, in 2010 IMF staff proposed the creation of a "Global Stabilisation Mechanism" (GSM) to channel resources in the event of large-scale liquidity problems. However, both this proposal and the more modest one, discussed in 2017, to replace the PLL with a line of short-term liquidity swaps (SLS) were rejected by the IMF's Executive Board. A recent proposal by external authors to introduce a Fast Qualification Facility (FQF) for countries with sound fundamentals[30] has some of the advantages of bilateral swaps (immediacy, ample provision of liquidity), without some of the drawbacks, such as discretionality. Moreover, access to this facility would not require prior certification of good fundamentals (as the FCL and PLL do). Instead, qualification would be obtained at the time of applying for financial assistance, thereby reducing the stigma. Additionally, it would reduce the need for beneficiary countries of these lines of support to accumulate reserves. Nevertheless, the proposal again highlights the importance of the IMF's having sufficient resources, given that a significant volume of resources would be needed to stem a speculative attack and potential contagion. In short, the debate on the IMF's ideal size is still ongoing, as is that on its optimal resource composition. These are points that will be explored in the following sections.

Optimal size of IMF resources

Determining the optimal size of the IMF, or in other words, of the loanable funds that would be needed to withstand a crisis, is a complex task that demands both quantitative and qualitative considerations. At the same time the IMF belongs to the GFSN, whose growth, diversity and availability, and the complementarity among its elements, are key factors when it comes to determining whether or not the resources are adequate.

Traditionally, the methodology used to assess the size of the IMF's resources consists in benchmarking them against an economic or financial indicator and comparing the resultant ratio with a historical reference value. The indicators generally used (for example, global GDP, cross-border capital flows or external debt stocks) seek to proxy financing needs in the event of a crisis. The ECB (2018) shows that this methodology does not provide conclusive results as to the adequacy of the IMF's current resources. Specifically, the present level of resources would be sufficient when compared with long-term global GDP or capital inflow metrics, but insufficient, for example, when compared with the size of

27 See, for example, De Gregorio et al. (2018).
28 Only three countries (Mexico, Colombia and Poland) have applied for an FCL and one (Morocco) for a PLL.
29 A good review can be found in De las Casas and Serra (2008).
30 See De Gregorio et al. (2018).

external liabilities, which possibly better capture the scale of global financial interconnections and their propagation potential.

More recently, the quantitative methods have gradually been fine-tuned, with more complex models based, for example, on the analysis of stressed scenarios.[31] However, this quantitative approach also has limitations, since the results obtained depend on the assumptions used. In addition, the estimates provide a wide range of results. For example, in ECB (2018) it is estimated that in the event of a moderate crisis, financing needs not covered by international reserves and RFAs, and which therefore should be met by the IMF, would be almost $670 billion; in the event of a severe crisis, these funding needs would be almost $990 billion (see Table 1). These figures indicate that the IMF's present level of resources would be sufficient to meet financing needs in various moderate crisis scenarios, but insufficient in more severe global shock scenarios.

Moreover, there are certain significant qualitative considerations that the models cannot factor in and whose impact on the optimal size of the IMF is difficult to quantify. For example, the progress made since the crisis to make the global economy more resilient and strengthen key aspects of financial regulation and risk management, or the continuous growth of trade and, especially, financial interconnections worldwide. The first factor should reduce the demand for IMF funds, while the second exerts constant upward pressure on those funds. It is difficult to foresee whether or not the greater duration and magnitude of financial cycles, the higher volume and volatility of capital flows and the new risks (climate change, digital transformation, geopolitical factors) will prevail over the factors that would point to lower resource requirements. Indeed, the existence of a more decentralised global financial safety net with more players and more resources, as at present, could strengthen the IMF's catalytic power and reduce its resource requirements, provided that there is consistency and sufficient coordination between the different elements of the safety net and that no areas are left underinsured.

Lastly, the effect of the changes in lending policy on the size of the IMF is uncertain: on the one hand, more countries will have access to the IMF's facilities and resources, but on the other its enhanced design and more realistic conditionality should help reduce global financial stability risks.

Desirable composition of IMF resources

The IMF's financial structure comprises quotas (permanent funds) and loans (temporary funds). Quotas are mandatory contributions from member countries; they grant voting rights and both their size and distribution are reviewed every five years. In the last review (the Fourteenth, agreed in 2010 but not implemented until 2016), a substantial increase in resources was approved and progress was made in the redistribution of votes in favour of emerging market countries. The Fifteenth General Review of Quotas is currently being negotiated and is due to be completed in 2019.

Loans are voluntary financing arrangements between the IMF and its members. These arrangements are temporary and arose as a supplement to the quotas at times of severe international crisis. They fall into two categories: New Arrangements to Borrow (NABs), which are multilateral loans created in 1998 as a second line of defence after quotas; and Bilateral Borrowing Agreements (BBAs), which are bilateral loans first arranged in 2012 as a third line of funding after quotas and the NABs. The NABs have to be renewed every five

31 For a review of the different models see, for example, Ghosh et al. (2008), ECB (2018) and Denbee et al. (2016).

years (the next expiry is in 2022), while the BBAs, with a duration of two years, will expire at the end of 2019 and may be renewed for one more year, up to end-2020, at most. Given their temporary nature, these loans might not be renewed, which would reduce the IMF's present resources by almost half over the next three to four years.

Quotas have traditionally made up the bulk of the IMF's resources. They determine not only contributions to the IMF but also access to its funds, since the amount that a member may borrow in the event of a crisis is calculated as a percentage of its quota. However, after the last global financial crisis, as a result of the urgent need to provide the IMF with more resources, the balance was shifted towards loans, so that at present they account for almost half of the total funds. In any event, although loans played a key role in sustaining the IMF's lending capacity in recent years, to date the quotas have been sufficient to finance most of its programmes, including the precautionary credit lines (see Chart 4.2).[32]

The IMF's financial structure must be appropriate to withstand a range of stress situations. The optimal composition of its financial resources will partly depend on the kind of crises it may face in the future. In a setting of periodic crises, it would seem logical for the IMF to have a permanent and sufficient funding base to withstand such crises, with no need to mobilise ad hoc funds through loans, which entails delays and could in some cases be subject to political constraints.

Nevertheless, although the permanent resources should be sufficient to address crises in normal situations, the IMF should also be able to draw on supplementary loans to act as additional lines of defence against tail risks (i.e. the onset of a major global crisis). Indeed, this is the thinking behind the IMF's current financial structure, since the existing loans act as a second line of defence behind the quotas. However, as Box 1 illustrates with an approximation based on a scenario analysis, the relative proportion of these loans (50% of the total) could be excessive under these criteria. In addition, in a changing environment, marked by growing financial integration, classifying risks between normal and extreme (and, therefore, assessing the optimal funding structure) is a complex task. For that reason it is essential, in any event, that the IMF has at its disposal flexible borrowing mechanisms that allow it to adjust the size and composition of its funds as required. Review of the governance of its borrowing arrangements or direct recourse to the financial markets could be options in this respect.[33]

Lastly, it should be noted that the composition of the IMF's resources has ramifications that affect its governance. On the one hand there is consensus between the members that the IMF should be a quota-based organisation, to provide it with greater legitimacy, but its own history reflects the practical difficulties involved in reaching agreements on raising quotas and on their distribution.[34] In addition, the IMF's decision-making body is the Executive Board, where member countries are represented according to their quotas. Given the current high proportion of loans, there is a potential dissociation between decision-making and members' financial contributions, since the composition of loans provided by country is not the same as the composition of quotas.

32 In fact the BBAs have never been used to fund IMF programmes, while the NABs have, but only marginally, and at present neither the BBAs nor the NABs are used to fund new programmes.

33 This latter option, which is provided for in the IMF's Articles of Agreement, has never been approved by the Executive Board.

34 The delays in approving the Fourteenth General Review of Quotas and the slow progress of the Fifteenth Review are examples of the kind of situations in which the renewal of borrowing arrangements becomes unrelenting and generates internal strains.

Conclusions

Given the growing real and financial integration of economies worldwide, there is a need for supranational mechanisms to address crisis and stress situations. The crisis that erupted in 2008 clearly highlighted this need. Indeed, in the wake of that episode, the international financial stability support mechanisms at both the domestic and the supranational level were reinforced, giving rise to a more powerful and diversified global financial safety net.

Nevertheless, there is scope for improvement in various aspects of the GFSN. The absence of a mechanism to provide immediate international liquidity to countries with sound fundamentals affected by a systemic crisis, and the difficulties of coordination among different components of the global safety net (especially between the IMF and RFAs) are two of the most salient concerns, although the various solutions proposed include controversial aspects and there is resistance to their implementation on different fronts.

The IMF is the multilateral organisation at the core of the GFSN. In view of its broad membership, the scale of its resources, the quality of its surveillance and the experience gained in crisis management, it is the key component to ensure global monetary and financial stability. However, the IMF faces almost ongoing controversy regarding aspects of its governance and its lending policies, on which it is difficult to reach a consensus. The size and composition of its funds and the distribution of power within the organisation, linked to the quotas, are matters that members discuss and negotiate from very different standpoints. The estimates of the appropriate size of the IMF to withstand crises yield results that are subject to a high degree of uncertainty. Both the IMF and the GFSN as a whole currently have sufficient resources to withstand a wide range of adverse scenarios, but in the event of "extreme" global shocks their joint capacity might not be sufficient.

The IMF is currently negotiating the Fifteenth General Review of Quotas. The stances adopted by the members reflect emerging market countries' aspirations to continue to improve their position in the organisation, and reluctance on the part of some advanced countries to reduce their weight and increase even further the IMF's permanent funds. As a backdrop to these negotiations there is also the risk that, if there is no increase in quotas, and if the loans provided to the IMF are not renewed, its financial power would be noticeably diminished in coming years. This prospect could significantly damage the stabilising power of the GFSN.

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This box presents an estimate of the optimal composition of the Fund's resources by means of an analysis of stress scenarios, taking as a basis ECB (2018), where the optimal size of the Fund is calculated without addressing its composition. First, global external funding needs in the event of a crisis are estimated according to different scenarios; the appropriate (optimal) size of the IMF would be that enabling uncovered needs to be met after use of the foreign currency reserves and of the financing extended by the RFAs. If the Fund's loanable resources were less than this optimal size, we would say that there is a financing gap (see accompanying table).

The study considers a plausible type of crisis for each type of economy (advanced or emerging, taken independently), and different scenarios that represent the severity of such shocks. Specifically, advanced economies are assumed to be more exposed to sovereign crises, while emerging economies are more prone to undergo sudden stops in external funding. The different scenarios are calibrated on the basis of past experience in episodes of crises, i.e. according to the behaviour of the key variables (budget deficit, current account, external investment flows, debt rollover ratio, etc.) during these episodes. This allows us to calculate a range of scenarios based on the intensity of the change in these variables during the shocks (the percentiles of the distribution).

The study presents two main scenarios for each group of countries: a baseline scenario, which represents a moderate shock, according to the median values of the distribution; and another, severe scenario, which represents an extreme crisis, with more stressed values situated in higher percentiles of the distribution. In particular, in the case of the advanced economies, a moderate shock represents a reduction in the rollover of sovereign debt held by non-residents for two years, and a domestic fiscal adjustment. In the case of the emerging economies, the moderate shock entails a sudden stop for two years, which takes the form of a partial rollover of external debt (public and private), a change in foreign direct investment flows and a domestic adjustment calibrated in line with past experience.

Aggregating the result of the simulations, we obtain a financing need to be covered by the IMF (following the use of reserves and RFAs) of close to $670 billion in the baseline scenario and $990 billion in the severe scenario. There is some consensus that quotas should serve to cater for crises in most situations, whereas, in extreme cases, the Fund should have temporary and readily accessible resources that supplement the quotas. If we consider that the permanent resources should suffice to cover the baseline scenario, whereas under the severe scenario they should be supplemented by temporary resources, we would arrive at an estimate of $670 billion for the size of the quotas; meanwhile, borrowed resources should amount to $320 billion, representing a ratio of 68% between permanent and temporary resources, far higher than that prevailing today (50%). In any event, this ratio is a point of reference and should be taken with due caution, as it might change depending on whether more or less stressed scenarios are considered.

Table
RESULTS OF THE ESTIMATE

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		Total financial needs	Remaining needs (after reserves and RFAs) (a) A	IMF lending capacity (b) B	Financing gap (c) C = A – B
Shock scenarios (2015-2016)	Moderate AEs	947.2	345.5	563.4	0
	Moderate EMEs	1,310.3	323.1	734.8	0
	Total moderate (d)	**2,257.5**	**668.5**	**491.4**	**177.1**
	Severe AEs	1,050.4	448.6	563.4	0
	Severe EMEs	1,836.7	537.6	677.2	0
	Total severe (d)	**2,887.1**	**986.2**	**434.3**	**552.1**

SOURCE: ECB (2018b).

a Under this approach, uncovered financial needs after the use of reserves and RFA financing are what is called the optimal size of the IMF.
b The IMF's total resources include quotas, NABs and BBAs. These resources are adjusted to calculate the IMF's real lending capacity (loanable resources), since, for example, the contributions (quotas) of member countries that undergo a crisis are not available to finance programmes and, therefore, they should be deducted from total resources. Moreover, the IMF assigns 20% of its resources to a prudential reserve to ensure their cashability.
c If the lending capacity exceeds the remaining needs, the gap is considered to be zero.
d Informative results. A global shock cannot be calculated as the mere aggregation of two shocks to different groups of countries.