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THE DANGEROUS INADEQUACIES OF THE WORLD'S CRISIS-RESPONSE MECHANISMS

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ABSTRACT

The paper war-games crisis scenarios based on past crises to test the adequacy of the global financial safety net: the international institutions and arrangements designated to help economies facing an economic or financial crisis. It calculates the size of the safety net in aggregate terms and from the perspective of each G-20 economy. It explores whether the safety net is large enough, how the different components of the safety net would need to interact during a crisis and how this differs for different countries and regions. For some widespread shocks, the paper finds that the safety net struggles to provide even the same level of support as it has in the past. Even for smaller shocks, multiple components of the safety net need to be coordinated, a process complicated by the differing objectives, mandates and interdependencies of each component. The paper shows how the safety net's coverage has become patchier, leaving many emerging market and developing economies exposed. It explores what the G-20 could do to strengthen the safety net, reporting the results from in-depth interviews with 61 leaders, central bank governors, ministers and officials from across the G-20, including Janet Yellen, Kevin Rudd, Ben Bernanke, Haruhiko Kuroda, Jack Lew, Mark Carney and 55 others.

Key words: Macroeconomics, monetary policy, central banks, economic integration, foreign exchange, international monetary arrangements, international policy coordination.

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CONTENTS

ABSTRACT	3
I. INTRODUCTION	5
II. HOW BIG IS THE GLOBAL FINANCIAL SAFETY NET?	7
2.1 What is the safety net?	7
2.2 Adding together the safety net's components	8
2.3 The safety net is large, but can it be accessed?	9
III. IS THE GLOBAL FINANCIAL SAFETY NET BIG ENOUGH?	14
IV. WAR GAMING THE GLOBAL FINANCIAL SAFETY NET	16
4.1 The Asian financial crisis in 2017	16
4.2 The Latin American debt crisis in 2017	18
4.3 The European debt crisis in 2017	19
4.4 Economy-specific crises	20
4.5 War gaming conclusions	21
V. THE POLITICS OF REFORMING AND ACCESSING THE SAFETY NET	22
5.1 Do policymakers think the safety net is adequate?	23
5.2 The political challenges of strengthening the safety net	25
5.3 How would policymakers like to see the safety net strengthened?	29
5.4 Conclusion: Strengthening the safety net	32
VI. Conclusion	33
REFERENCES	36
APPENDIX A. CALCULATING THE SIZE OF THE SAFETY NET	41
APPENDIX B. IN-DEPTH INTERVIEWS METHODOLOGY	44

I. INTRODUCTION

A debate took place in the early 2000s, which is perhaps unthinkable in 2018. The debate was about whether the International Monetary Fund (IMF) and the global financial safety net were still relevant, with some calling for them to be scrapped.

The managing director of the IMF published an article in 2005 titled: “Is the IMF’s mandate still relevant?” In it, he defended the relevance of the IMF arguing that, despite the lack of crises for it to respond to, the IMF could still play a useful role in providing analysis and surveillance (Rato, 2005).

In early 2007, the economics journal, *The International Economy*, ran a symposium titled “Is the IMF obsolete?” (*The International Economy*, 2007). It asked participants what should be done with the IMF and the global financial safety net given narrowing risk spreads, more efficient risk management and increased self-insurance by many countries. Ideas ranged from having the IMF focus purely on technical assistance and surveillance, having it merged with the World Bank or simply abolishing it altogether.

The notion that the safety net had fallen into disuse was a commonly held view before 2008. Andrew Rose argued in 2006 that there was no role for the safety net in the new global system that developed post-Bretton Woods. Inflation-targeting, independent and transparent central banks with predominantly floating exchange rates produced a durable global system, which, he argued, no longer relied on safety nets or international coordination for its stability (Rose, 2006).

This view, of course, proved to be incorrect. With the onset of the global financial crisis from late 2007, the IMF and the global financial safety net roared back into fashion. The consequences of neglecting the safety net for many years was on display for all to see, threatening the stability of the global economy and the global financial system.

Whole economies, one after the other, went into crisis. Each of these economies required an amount of external assistance that was multiples of the meagre funds that the IMF had to offer. Global liquidity evaporated. Major economies faced shortages of U.S. dollars with no means through which to access more. Financing for critical projects in developing countries dried-up. Credit froze, global trade seized and it was left to the newly-minted G-20 leaders’ forum to fix it.

The G-20 played a critical role in strengthening the global financial safety net. It was at the G-20’s first meeting as a leaders forum that Prime Minister Aso and other leaders proposed an immediate increase in funding for the IMF—*Haruhiko Kuroda, Governor of the Bank of Japan, interviewed June 21, 2017.*

The G-20 took bold steps in reviving the global financial safety net. It tripled the IMF’s lending capacity to \$750 billion. It increased the development financing available to the World Bank and other development banks by \$235 billion. It boosted support for trade finance by \$250 billion (G-20, 2009). With an intensifying crisis in Europe, it agreed to a further \$460 billion of bilateral loans to the IMF in 2010 (G-20, 2010). As part of a comprehensive work program over many years, the G-20 supported reforms to the IMF’s governance, new precautionary lending facilities, an expanded Special Drawing Rights (SDR) basket of currencies and developed principles to boost cooperation between the IMF and regional mechanisms (G-20, 2011).

The G-20 was a fresh pair of eyes looking into the issue of the IMF’s voice, representation and governance. It was very important in getting the 2010 IMF governance reforms through and it should continue to play a very important role for the current review of quotas—*Alexandre Tombini, former governor of the Central Bank of Brazil, interviewed September 19, 2017.*

The strengthening of the global financial safety net was not just at the global level. Europe created the European Stability Mechanism (ESM) with lending capacity of \$600 billion. Although they have never

been used, Asia created what became the Chiang Mai Initiative Multilateralization with current lending capacity of \$240 billion and the BRICS countries¹ created their own \$100 billion currency reserve pool.²

G-20 countries were even more ambitious bilaterally. The U.S. Federal Reserve created a global network of bilateral currency swap lines to address the critical shortfall in access to U.S.-dollar funding. These swap lines went from \$24 billion in 2007, to \$385 billion in 2008 to being unlimited in size with some economies by 2009.³ Others acted, too. The European Central Bank established swap lines with nine European economies⁴ and, more recently, the People's Bank of China has extended \$470 billion of swap lines to over 30 countries.⁵ All of this built on the \$7.9 trillion of self-insurance through foreign exchange and gold reserves held by G-20 economies.⁶

G-20 countries have achieved a great deal in strengthening the global financial safety net. The question for this paper is whether the G-20's job is complete, or whether there is more work to be done. Circumstances, after all, have changed since the crisis. Fiscal and monetary policy space is much more limited across most of the G-20.⁷ And while the resilience of macro-financial systems has improved, particularly in the emerging economies,⁸ the misplaced optimism in the lead-up to the 2008 crisis shows the dangers of complacency.

This paper calculates the size of the safety net by adding together its global, regional, and bilateral components. It considers the implications of domestic reserves, too, but treats these as domestic buffers—much like a country's fiscal and monetary policy space—rather than part of the global financial safety net (see Sterland, 2017).⁹ The paper calculates the size of the safety net in both aggregate and from the perspective of each G-20 country. It then war-games crisis scenarios based on nine past crises. These include three regional crises: the Asian financial crisis, the European debt crisis and the Latin American debt crisis, and six country-specific crises in Argentina (2002), Turkey (2001), Ecuador (1999), Russia (1998), Mexico (1994), and Chile (1982).

The paper finds that the safety net is often unable to provide even the same level of support as it has in the past, particularly for widespread shocks. But even for small crises, multiple components of the safety net need to be engaged and coordinated to deliver financial support. This coordination is complicated by the differing objectives, mandates, and interdependencies between each component of the safety net. Many of the safety net's institutions and arrangements are intimately linked. Some parts of the safety net can only be accessed up to a limit. Some are conditional on other parts of the safety net also being engaged and some aspects of the safety net are only available to provide liquidity and are not available during balance of payments challenges (although, as discussed below, this distinction is not always clear). This highlights the critical importance of such war gaming exercises.

Finally, the paper reports the results from in-depth interviews with 61 leaders, central bank governors, ministers, and officials from across all G-20 countries. These are the individuals who make up the G-20 and are responsible for shaping the policies in their countries. The findings of this paper are testament to the generosity and openness of these policymakers in discussing their experiences in global economic cooperation. Participants included Kevin Rudd, Janet Yellen, Haruhiko Kuroda, Ben Bernanke, Jack

¹ Brazil, Russia, India, China and South Africa

² See Appendix A for sources on these figures.

³ Federal Reserve (2008-2013).

⁴ See Appendix A for sources on these figures.

⁵ Council for Foreign Relations (2015).

⁶ See CIA (2016).

⁷ See Triggs (2018) on the decrease in monetary policy space and increase in public debt among G-20 countries.

⁸ Banks are well-capitalised and supervisory frameworks are strong, exchange rates are more market determined and able to absorb shocks, inflation is much lower, large current account imbalances have narrowed and Asian economies are much more able pursue countercyclical policies that buttress stability and can increasingly issue bonds denominated in their own currencies (see Triggs, 2018; Sterland, 2017; The Economist, 2017).

⁹ In some instances these foreign exchange reserves are also part of regional agreements, such as the CMIM, in which case including them in the safety net also constitutes double-counting.

Lew, Mark Carney, and 55 other politicians and officials to whom I am deeply grateful. A breakdown of the sample and details of the research methodology are available in Attachment B.

The paper shows that the safety net exists within a complex web of economic and political considerations which differ between countries and between components of the safety net. These political considerations cannot be overlooked. They shape the safety net's response in a crisis and what the G-20 can and cannot deliver in strengthening it. Based on the war gaming and political analysis, the paper outlines a near- and long-term agenda for the G-20 on safety net reform.

The U.S. certainly paid a cost for the delay on IMF reform. It helped fuel the demand for competing forums and also weakened the U.S. in negotiations with the emerging market economies on other issues. There were sessions in multilateral and bilateral meetings that would be entirely devoted to berating the U.S. for its delay in approving quota reform—*Jacob Lew, former Treasury Secretary, United States, interviewed September 7, 2017.*

II. HOW BIG IS THE GLOBAL FINANCIAL SAFETY NET?

2.1 What is the safety net?

The safety net supports stability in the global economy. It acts as a financial backstop by providing emergency financing where a country is unable to meet its external payments and cannot access markets (Sterland, 2013). It reduces the cost of crises. It allows crises to be resolved faster and limits contagion (see IMF, 2011).

The global financial safety net is typically divided into three components: the global component, the regional component and the bilateral component.

The global component consists predominantly of the IMF. Along with its surveillance and technical assistance activities, the IMF lends to countries with balance of payments difficulties to provide temporary financing and to support policies aimed at correcting the underlying problems. The global component also includes the World Bank: a development bank which has provided financial support during the Asian Financial Crisis, the 1994 Tequila crisis and crises in Turkey (2001), Chile (1982), Russia (1998) and many more (see Montiel, 2014).

The safety net's regional component consists of the funds and mechanisms created to assist countries within a specific region. The largest are the European Stability Mechanism for euro area countries, the Chiang Mai Initiative Multilateralization for ASEAN+3 countries and the BRICS currency reserve pool for Brazil, Russia, India, China and South Africa.¹⁰

Development banks have also provided assistance during many crises, usually alongside the IMF, such as the Asian Development Bank's assistance during the Asian financial crisis. The largest development banks are the Asian Development Bank, the Asian Infrastructure Investment Bank and the New Development Bank.¹¹

The bilateral component consists of currency swap lines between central banks and loans between finance ministries. The number of bilateral currency swap lines between central banks has increased dramatically since 2007. But not all swap lines can be used in all crises. In many cases, the agreement between the two central banks only allows the swap line to be used when there is difficulty in obtaining foreign exchange from the markets that is not crisis-related, rather than during balance of payments difficulties. This is true for many swap lines, including those from the United States, the European

¹⁰ Other regional mechanisms include the Arab Monetary Fund, the Latin American Reserve Fund, the North America Framework Agreement and the EU Balance of Payments Assistance Facility.

¹¹ Other development banks include the Inter-American Development Bank, the Development Bank of Latin America, the African Development Bank, the Islamic Development Bank and the European Bank for Reconstruction and Development.

Central Bank and Australia (see Section 5). Other swap lines, such as those from China and some from Japan, are available and, in some cases, have already been used in balance of payments crises.

The swap lines are there to ensure that financial institutions providing credit to American households and firms have access to liquidity. I know the thought has occurred to many policymakers overseas that swap lines with the Fed might serve as a safety net for countries encountering balance of payments pressures. But expanding the swap lines to serve this broader purpose is not within the Fed's mandate and therefore is a complete non-starter for us—*Janet Yellen, chair of the Federal Reserve, United States, interviewed September 30, 2017.*

The distinction between liquidity shortages and balance of payments challenges, however, can be ambiguous given a liquidity shortage can often cause, be caused by, or occur simultaneously with, a balance of payments crisis. Section 5 discusses this issue in more detail, including the need for greater clarity on when a swap line can and cannot be accessed.

2.2 Adding together the safety net's components

Adding together the global, regional and bilateral components finds that the global financial safety net is \$4.6 trillion in size (Figure 1). Appendix A gives a full breakdown of the figures. This is larger than the estimate from IMF (2016) of \$3.7 trillion, because the IMF included fewer regional mechanisms and no development banks. This paper includes more regional mechanisms and the development banks because, as outlined in Section 2.1, this is historically accurate. If anything, the figure in this paper would act to overstate the safety net's capacity to respond to shocks: something to keep in mind in the war gaming scenarios.

But not all these resources are immediately available. Some of the funding of global and regional institutions is tied-up in existing programs, and not all swap lines are available during a crisis. Measured by resources, which are immediately available, the safety net is almost half the size: \$2.5 trillion.¹²

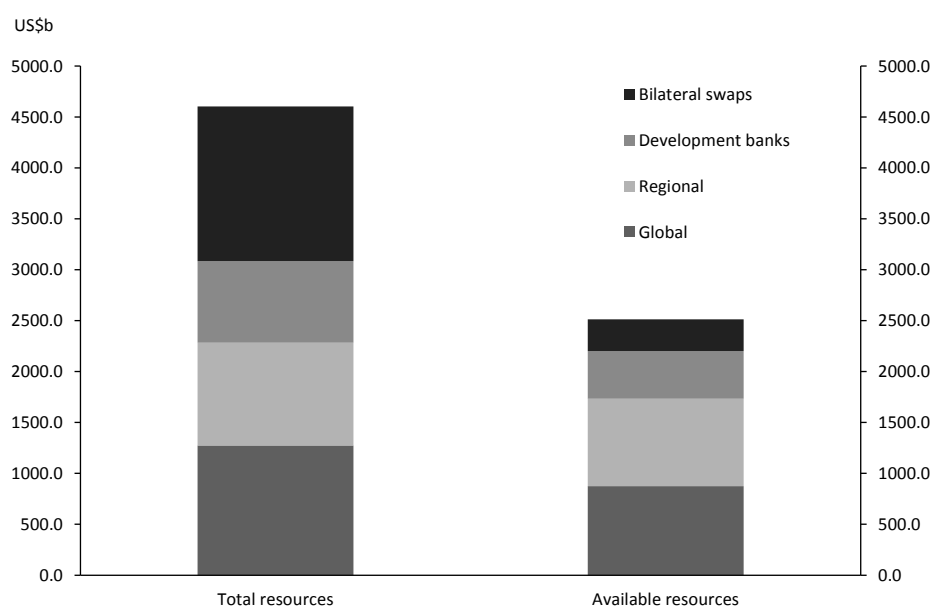
It should also be noted that the above figures refer to the size of the safety net in 2017. Not only is this figure a more generous estimate compared to IMF (2016), it also does not account for a number of processes, which will likely see the safety net reduce significantly in size over the coming years.

Around half of the IMF's funding comes through bilateral loans and its New Arrangements to Borrow (NAB). These sources of funding will expire in 2020 and 2022 respectively (see Sterland, 2017, for a discussion). Renewing these bilateral loans requires many countries to continue to fund the IMF despite receiving no increase in their voting power as a result. Many emerging market economies, such as China, are already grossly under-represented in terms of their IMF voting power relative to their share of global GDP and the resources they contribute to the IMF (see Sterland, 2017). The political likelihood that they will continue this arrangement into perpetuity is low (Section 5 reports the results from in-depth interviews which explore this issue). Renewing the IMF's NAB will similarly face substantial political hurdles, requiring approval from the U.S. Congress. The analysis in Section 5 suggests prospects for such an approval may be unlikely. If the bilateral loans and the IMF's NAB were not renewed, the IMF's lending resources fall by half.¹³

¹² Of course, if foreign exchange and gold reserves are included, the size of the safety net is much larger: \$12.7 trillion in total resources and \$10.6 trillion in available resources. But, as discussed above, these are domestic resources and are not strictly part of the safety net. The role of foreign exchange reserves is considered in more detail below.

¹³ Domestic foreign reserves are also in decline in many countries. China, which has the world's largest stock of foreign exchange reserves, has seen its reserves fall by 20 percent from 2013 to 2016 (CIA World Factbook, 2015 and 2016). The ability to accumulate foreign exchange reserves is also intimately linked to a country's exchange rate arrangement. A country with a purely market-determined exchange rate (which implies no intervention in foreign exchange markets) cannot accumulate foreign exchange reserves. With exchange rates becoming more market-determined across the world's major economies (see Triggs, 2018), the global stock of foreign exchange reserves is unlikely to grow.

Figure 1. The size of the global financial safety net



Source: See Appendix A for detailed information on the size of each component and relevant source and assumptions.

2.3 The safety net is large, but can it be accessed?

The size of the safety net can also be misleading because not all these resources are available to all countries. The size of the safety net from the perspective of each country will depend on which regional mechanisms a country participates in and the size and number of its bilateral swaps.¹⁴

The safety net, as an aggregate, is adequate if you sum it up. But being able to access it is a different story—*Subir Gokarn, Executive Director, International Monetary Fund, former deputy governor of the Reserve Bank of India, interviewed November 9, 2017.*

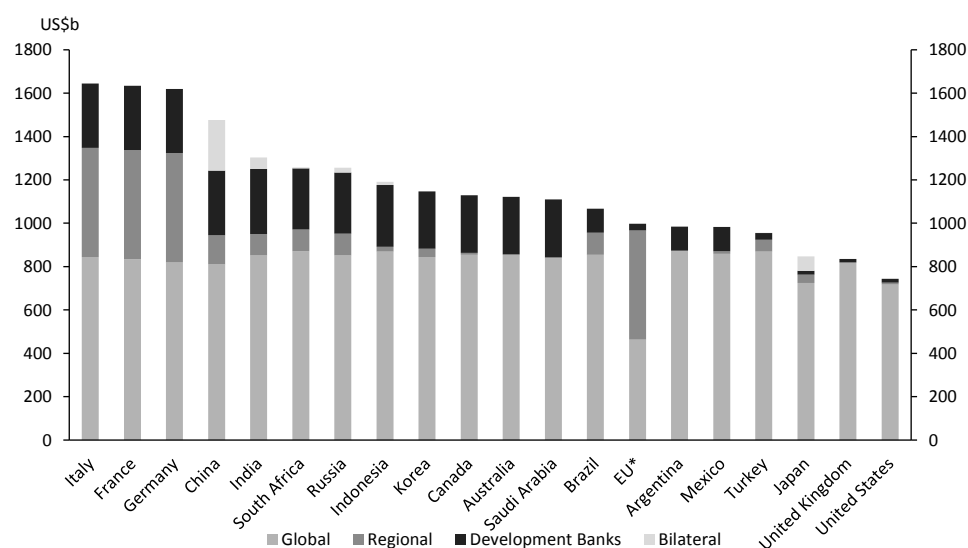
The scale of support available from the IMF also differs between countries for two reasons. First, unless the IMF provides exceptional access, countries can only access a multiple of their quota. Countries with a smaller IMF quota therefore cannot access as much as countries with a larger quota.

Second, even when exceptional access is available, the total amount of financing available from the IMF needs to account for the fact that the country (or countries) experiencing the crisis is no longer contributing resources to the IMF.

Figure 2 shows the size of the safety net from the perspective of each G-20 country, based on available resources. It shows that the safety net can be twice as large for some countries compared to others. The safety net is largest for those countries covered by the European Stability Mechanism and the EU Balance of Payments facility. It is also large for the countries that participate in the Chiang Mai Initiative Multilateralization and the BRICS currency reserve pool. Bilateral swaps generally add little, given not all countries have access to them and many are for liquidity purposes rather than crisis assistance (see Appendix A).

¹⁴ Korea, for example, received a currency swap line from the United States during the crisis but Indonesia did not (Federal Reserve, 2008).

Figure 2. The size of the safety net for each G-20 economy



Source: See Appendix A for detailed information on the size of each component and relevant source and assumptions.

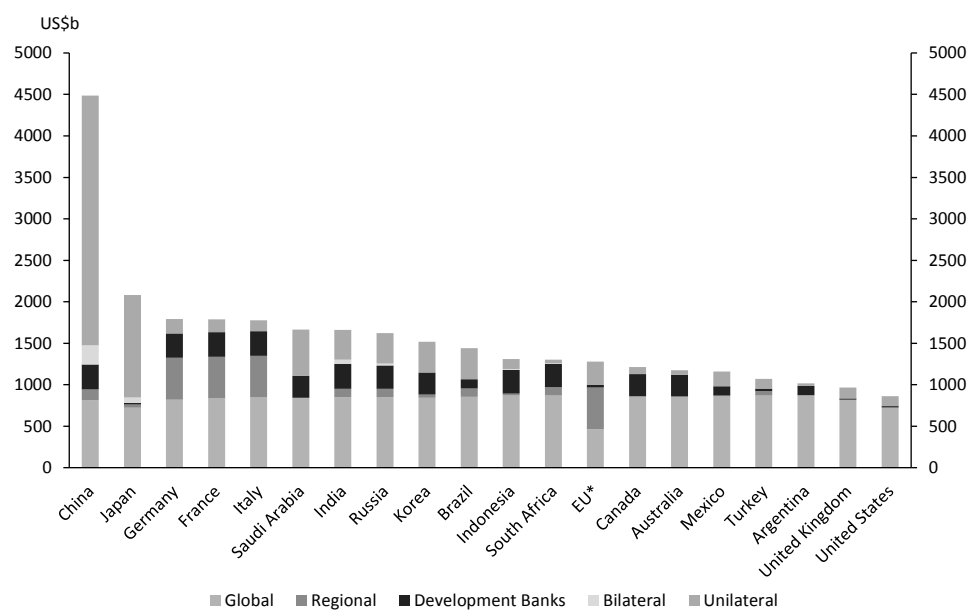
The countries that tend to have the smallest safety net are the western advanced economies like the United States, the United Kingdom, Japan, Australia and Canada. These countries tend to rely on a combination of their floating exchange rates, the depth of their capital markets, the reserve-status of their currencies and the strength of their institutions for their resilience to shocks, rather than through bilateral or regional mechanisms (see Sterland, 2017).

Australia’s safety net is its floating exchange rate. Our exchange rate has been critical to protecting the Australian economy from the global financial crisis, the Asian financial crisis and other global and regional shocks—*Guy Debelle, deputy governor of the Reserve Bank of Australia, interviewed February 14, 2018.*

But several G-20 emerging market and developing economies—including Turkey, Argentina, Mexico, and Brazil—have more limited safety nets as well, and they cannot rely on the same supports as countries like the United States or the United Kingdom. The IMF (2016) and Denbee et al (2016) reached a similar conclusion: it is often the emerging market economies that are least adequately protected by the safety net.

The safety net’s patchy coverage is compounded when domestic foreign exchange and gold reserves are included (Figure 3). The size of the safety net now varies by more than four-fold from one country to the next. The most dramatic changes are for China, Japan, and Saudi Arabia. China’s safety net was already big, but balloons when reserves are included. Conversely, the safety net for Japan and Saudi Arabia was comparatively small without reserves, but rise considerably when reserves are included.

Figure 3. The size of the safety net for each G-20 economy, including domestic reserves



Source: See Appendix A for detailed information on the size of each component and relevant source and assumptions

Figures 2 and 3 show that some countries are reliant on unilateral, bilateral, and regional resources while others are reliant on global resources. A critical policy insight that flows from this is that it is misleading to justify a smaller global component (namely a smaller IMF) by arguing that the unilateral, bilateral, and regional components are now much larger. For the many countries unable to access non-global resources, a smaller IMF would leave them with little or no safety net compensation.

As Figures 2 and 3 suggest, the safety net’s patchy coverage is caused by its increased reliance on regional and bilateral resources over time. Figure 4 shows that the safety net has grown substantially since 1980. The safety net was around \$390 billion in 1980 (in 2017 dollars). In 2017, it is almost seven times larger, at \$2.5 trillion.

With this increase in size has come increased fragmentation, which, in turn, makes for patchy safety net coverage. In 1980, the IMF and World Bank collectively accounted for 78 percent of the safety net. In 2017, it was only 35 percent (Figure 5). The increase in the size of the safety net has been driven by the growth in regional and bilateral resources, which are only available to participating countries. In 1980, the regional component of the safety net (plus development banks) represented only 22 percent of the safety net. In 2017, it is 53 percent. Many of these regional mechanisms, however, remain contingent on IMF involvement. This is highlighted in detail in the war gaming analysis in Section 4. There has been a substantial increase in the bilateral component, too. Although data in 1980 are not available, the number of bilateral swap lines increased from “just a few” in the 1980s (see IMF, 2016) to around 70 as of 2017.

Figure 4. The change in size of the safety net from 1980 to today

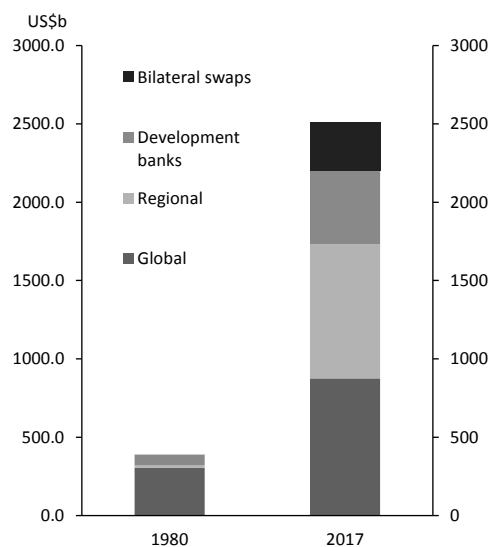
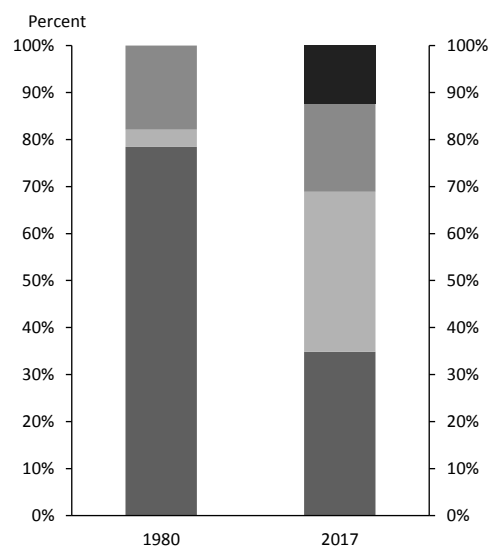


Figure 5. The change in composition of the safety net from 1980 to today



Source: See Appendix A for detailed information on the size of each component and relevant source and assumptions

Increased fragmentation not only means a patchier safety net—it also creates the need for multiple institutions and mechanisms to be simultaneously coordinated in a crisis. IMF (2016) has warned that seamless coordination between these arrangements is a “very strong assumption,” particularly as many of these arrangements, such as the Chiang Mai Initiative Multilateralization, have never been used before. The IMF has undertaken dialogues and test-runs with some regional financing arrangements and has signed a memorandum of understanding with the ASEAN+3 Macroeconomic Research Office (AMRO, 2017). But, discussed in Section 5, the level of cooperation is shallow, lacking sufficient detail and clarity (see IMF, 2017; Sterland, 2017).

Some Asian countries have the CMIM too. But it is untested. There is probably enough to support a country for a relatively small shock. But if a situation like the Asian financial crisis (AFC) or global financial crisis (GFC) were to occur I don’t think the CMIM would suffice. Also, if you want to borrow the money beyond 30 percent, you need IMF surveillance, and that is politically difficult. So the most plausible option is currency bilateral swaps—*Muhamad Basri, former finance minister, Indonesia, interviewed November 6, 2017.*

The need to coordinate multiple institutions and mechanisms during a crisis can mean a slower and less consistent safety net. This can have significant costs. IMF staff found that the longer it takes to respond to a crisis, the larger the ultimate size of relief program required (IMF, 2011).

When there is a crisis, you have to get in front of it. You need to be framing the problem and be getting ahead of it. If you are only reacting to the problem then you’re in trouble. Giving more resources to the IMF during the crisis was about this—getting in front of the crisis—*Gordon de Brouwer, former Sherpa, Australia, interviewed February 23, 2017.*

Increased fragmentation can also mean less consistency in what the safety net provides in terms of the size of the relief program, its duration, and the extent of conditionality. The European debt crisis, for example, represented the first time the IMF has cooperated with a modern-sized regional mechanism

(the European Stability Mechanism¹⁵) in response to a large, systemic crisis. It was also the first time in history the IMF was the minority lender.¹⁶

In having to coordinate its program with the European Commission and European Central Bank, many, including the IMF's Independent Evaluation Office, have argued that the IMF was inconsistent, slower and less agile in its approach compared to previous crises (see Subramanian, 2012; IMF-IEO, 2016). For the first time, the IMF entered into a program (with Greece) with no restructuring agreement in place¹⁷ (Boughton, et al, 2014; IEO-IMF, 2016). Analysis has found that the IMF's programs in Europe have been less rigorous and more generous compared to other crises, notably in Asia (Truman, 2013), and lacked accountability and transparency (IMF-IEO, 2016). The significant and public disagreement between the IMF and the European Commission and European Central Bank also resulted in a slower response of the safety net (see Spiegel, 2016).

Finally, the safety net's fragmentation can also mean a less efficient safety net through a greater reliance on inadequate substitutes for the IMF. Table 1 summarizes the trade-offs. Regional mechanisms are largely untested, have a much narrower resource base, and are less effective at surveillance. They can also be less effective if the crisis is impacting the whole region. If countries are busy defending their own economies, they may be less able to provide support to others. The IMF, by contrast, has near universal membership, meaning the risks to its funding-base are much more diversified. Countries may also be less politically willing to impose conditionality on their neighbours than the IMF, which is much more experienced in requiring countries to remedy the causes of the crisis as a condition of receiving financial assistance.

Bilateral swaps, while more flexible than institutional arrangements, are highly selective in terms of which countries receive them. They also raise moral hazard concerns and are less effective when crises afflict multiple countries in a given region. Issuing high-yielding local currency debt to purchase foreign exchange reserves is also a costly exercise, which, according to staff at the Bank of England, results in an annual cost to emerging economies of around 0.5 percent of GDP (Shafik, 2015). The accumulation of foreign exchange reserves, which requires intervention in foreign exchange markets, can also distort global trade and capital flows and inflame political tensions (see King, 2016).

Table 1. The relative trade-offs of different components of the safety net

Characteristics	Reserves	Swaps	International Monetary Fund	Regional mechanisms
Predictability	Good	Average	Good	Average
Speed	Good	Good	Average	Bad
Reliability	Average	Average	Average	Average
Cost	Bad	Good	Bad	Average
Policies	Bad	Average	Good	Average

Source: IMF (2016)

¹⁵ Formerly the European Financial Stability Fund.

¹⁶ The IMF provided around one-third of financing, while the other two-thirds have come from the EC and ECB.

¹⁷ It is reported that several IMF Executive Board members expressed surprise when they realised the rule was being changed allowing the IMF to enter into a program without a restructuring agreement (Blustein, 2015).

III. IS THE GLOBAL FINANCIAL SAFETY NET BIG ENOUGH?

Different approaches have been taken to assess the adequacy of the safety net. IMF analysts (2016) used a general equilibrium framework to calculate the financing shortfall that could arise from different shocks. This was made possible by confidential vulnerability ratings available to the IMF. Financing needs were estimated based on a set of assumptions on the prevalence and severity of shocks. The prevalence of a systemic crisis was captured by a threshold of crisis probability (which is based on the IMF's confidential vulnerability ratings) above which especially vulnerable countries were assumed to face funding shocks. The severity of a given crisis is reflected in the shock assumptions to FDI inflows, rollover rates of short- and medium-term external debt, as well as deposit outflows.

IMF staff (2016) concluded that the global financial safety net was not large enough to deal with widespread shocks, but was adequate to deal with smaller shocks. As above, the IMF (2016) raised concerns over patchiness, particularly as regards coverage for smaller emerging market economies. While the safety net serves reserve-currency advanced economies well, non-systemic non-gatekeeper¹⁸ emerging market and developing economies were served poorly.¹⁹ The IMF also warned that its analysis rested on the very strong assumption that all components of the safety net could be accessed and coordinated at the same time.

Denbee et al (2016) at the Bank of England reached similar conclusions. They ran a series of stress scenarios through partial-equilibrium models and found that the safety net is insufficient for severe crises but sufficient for smaller crises. Like the IMF (2016), they warned that this relies on the strong assumption of seamless coordination.

Sterland (2017) explored the adequacy of the safety net in Asia. While he noted a strengthening in the resilience of Asian economies and an increase in the size of their buffers, he warned that there were a range of gaps in crisis response mechanisms that could mean many of these crisis-fighting resources may not be deployed, exposing the region to significant risks.

Assessing whether the safety net is big enough is a fraught exercise. The results depend heavily on what shocks are likely to occur in the future. It requires a prediction of which countries, and how many countries, are likely to be impacted. It requires a detailed assessment of whether those economies could withstand those shocks which, to a large extent, hinges on the reactions of investors and households and the impacts on market confidence—all of which can be difficult to predict.

The burden that these future crises might place on the safety net is also largely unpredictable. It depends on whether investors agree to take a “haircut” and have some or all of their debt written off. It depends on the capacity of fiscal authorities and monetary authorities to respond to the crisis domestically. It depends on whether debt is restructured or re-securitized. It depends on whether the safety net acts to crowd-in private investment or whether it inadvertently gives investors an opportunity to withdraw their capital, transferring the financial shortfall from the private sector to the resources of the safety net.

Is the safety net big enough? You only really know when there is a crisis. And when you do have a crisis, if you find it is not big enough, then the response is to try to make it bigger—*Hugo Gobbi, former sous Sherpa, Argentina, interviewed May 12, 2017.*

The overall burden that a crisis can place on the safety net is also shaped by ad hoc policy decisions. In the European debt crisis, the European Central Bank's Outright Monetary Transactions program played a critical role in stabilizing markets and reducing the burden that could have fallen onto the safety net. In the Asian financial crisis, it was pressure from the U.S. government on foreign banks to rollover their

¹⁸ Non-gatekeeper is defined by the IMF as meaning the economy is unable to transmit systemic shocks.

¹⁹ IMF (2016) finds that systemic and gatekeeper emerging markets also have inadequate predictability and reliability (from their reliance on swap lines and regional arrangements), and high financial costs (from reserve accumulation) or political costs (from stigma associated with IMF financing).

short-term loans to South Korea that represented a critical turning point in the escalating crisis. In the Latin American debt crisis, it was the creation of Brady Bonds and debt restructuring that ultimately contributed to the resolution of the crisis, putting a cap on the total external financing required (see Montiel, 2014, for a discussion on these crises).

It doesn't matter how much you have right now, some improvisation will still be required—
Jjianxiong He, Central Bank deputy, China, interviewed June 13, 2017.

Given these complexities, this paper takes a novel approach. Rather than trying to predict what crises might occur in the future, it assesses whether the safety net in 2017 is able to provide the same level of financing that has been demanded of it in the past. This provides a useful, albeit stylistic, benchmark for war gaming how the different components of the safety net would interact, and need to be engaged, to provide a given level of financial support. It also provides an answer to what might be a good rule of thumb for policymakers in thinking about how large the safety net should be: can the safety net provide at least the same level of support in 2017 that has been required of it in the past?

Interestingly, the results reported below are not far off what was found in the partial equilibrium analysis of Denbee et al (2016) at the Bank of England. They found that the external financing required to support emerging market economies suffering a widespread balance of payments crisis, for example, was between \$432 billion and \$1.3 trillion. For a banking sector and sovereign debt crisis in the advanced economies, external support was estimated to be between \$569 billion and \$1.1 trillion. Similar results are found in this paper.

The analysis in this paper uses nine previous regional and country-specific crises: the Asian financial crisis (1997), the European debt crisis (2008), the Latin American debt crisis (1982), and the crises in Russia (1998), Mexico (1994), Chile (1982), Ecuador (1999), Turkey (2001), and Argentina (2002).

Comparing the financing that was required in these past crises to the size of the safety net in 2017 requires two adjustments. The first is to convert the past financing packages into 2017 dollars. The second is to adjust the size of these financing packages for the fact that these economies are now larger and often more reliant on global capital markets. Two alternative scales are used, drawing on the approaches taken by Sterland (2017). These can be thought of as a lower- and upper-bound for how much larger financing packages might be today compared to when these crises occurred in the past.

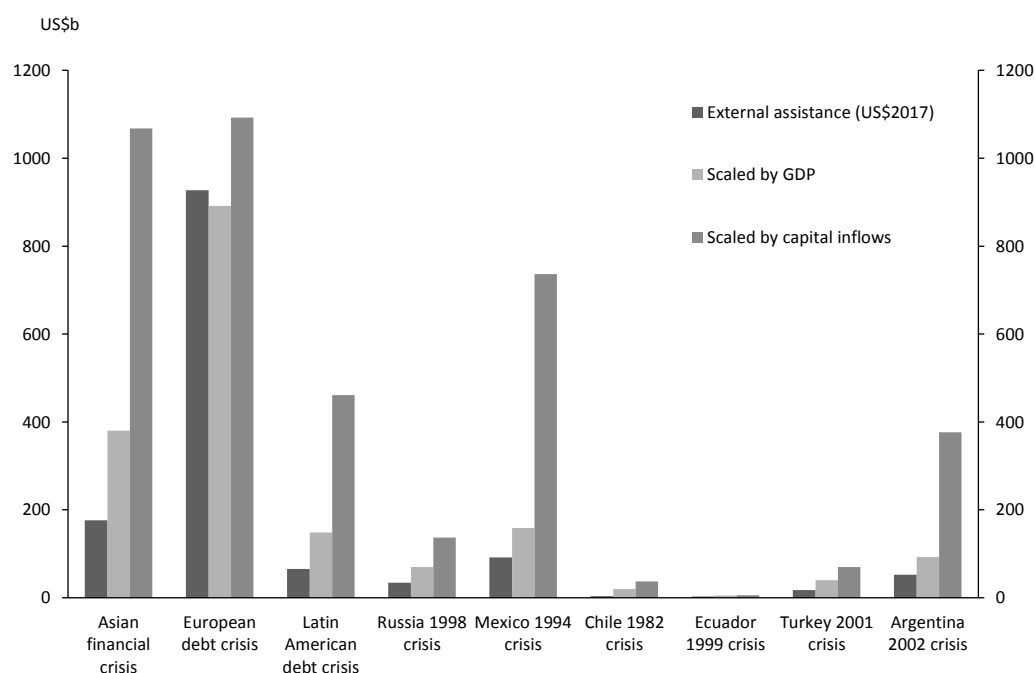
The first scale—which is the lower bound—is to scale-up financing packages by GDP growth. This rests on the stylised assumption that, all else equal, larger economies would likely require more external financial support in the event of a crisis than smaller economies.

The second scale—which is the upper-bound for how much larger financing packages might be—is to scale these financing packages by the growth in capital inflows for these economies since their respective crises.²⁰ Capital inflows represent the extent to which a country relies on foreign savings. In the event of a crisis, the inflow of these savings can stop suddenly, leaving a shortfall in domestic financing. IMF (2011) and Lagarde (2016) also use capital inflows as a benchmark for thinking about the potential burden that could fall onto the safety net.

For each crisis, Figure 6 shows the size of the original external assistance provided in 2017 dollars, the external assistance scaled by GDP growth, and the external assistance scaled by the growth in capital inflows. Even at the upper-bound, these estimates are often smaller than those found by Denbee et al (2016) and, to that extent, represent conservative estimates (noting also that the size of the safety net estimated in this paper is more generous than IMF (2016)).

²⁰ Capital flows data is sourced from the IMF International Financial Statistics, October 2017.

Figure 6. Scaling the external financing needs that arose in past crises



Source: Data on the size of financial packages is from Montiel (2014). Data on the growth in GDP is from the IMF World Economic Outlook Database, October 2017. Data on capital inflows is from the IMF International Financial Statistics Database (2017).

IV. WAR GAMING THE GLOBAL FINANCIAL SAFETY NET

4.1 The Asian financial crisis in 2017

The size of the external financing package that was provided during the Asian financial crisis to Indonesia, Korea, Malaysia, the Philippines, and Thailand more than doubles to \$400 billion when scaled-up by GDP growth. When scaled-up by the increase in capital inflows since then, it is almost \$1.1 trillion (Figure 6).

Interviews with leaders, finance ministers, central bank governors, and officials in the region (reported in Section 5) suggest that bilateral currency swap lines are likely to be the first line of defence (foreign exchange reserves are considered separately below). Importantly, many of the swap lines within Asia are designated for use during a balance of payments crisis, which is not the case for many advanced economies (see Section 5 and Appendix A). Indeed, swap lines were used by these countries in both the Asian and global financial crises.

The value of these swap lines for the countries affected by the Asian financial crisis is \$55.5 billion (Figure 7). This does not provide an adequate level of financial support for an external financing package of between \$400 billion and \$1.1 trillion. More components of the safety net would therefore be required.

Policymakers suggest that regional mechanisms would be the next preferred choice, given the strong preference in Asia to avoid IMF-engagement (Section 5), noting, however, that these were not used during the global financial crisis and remain untested. For the countries affected by the Asian financial crisis, this is the Chiang Mai Initiative Multilateralization (CMIM), which has total resources of \$240 billion. Complicating this, only 30 percent of each country's resources can be accessed outside of an IMF program. The total financing available from the CMIM outside of an IMF program, combined with the above swap lines, is \$94 billion.

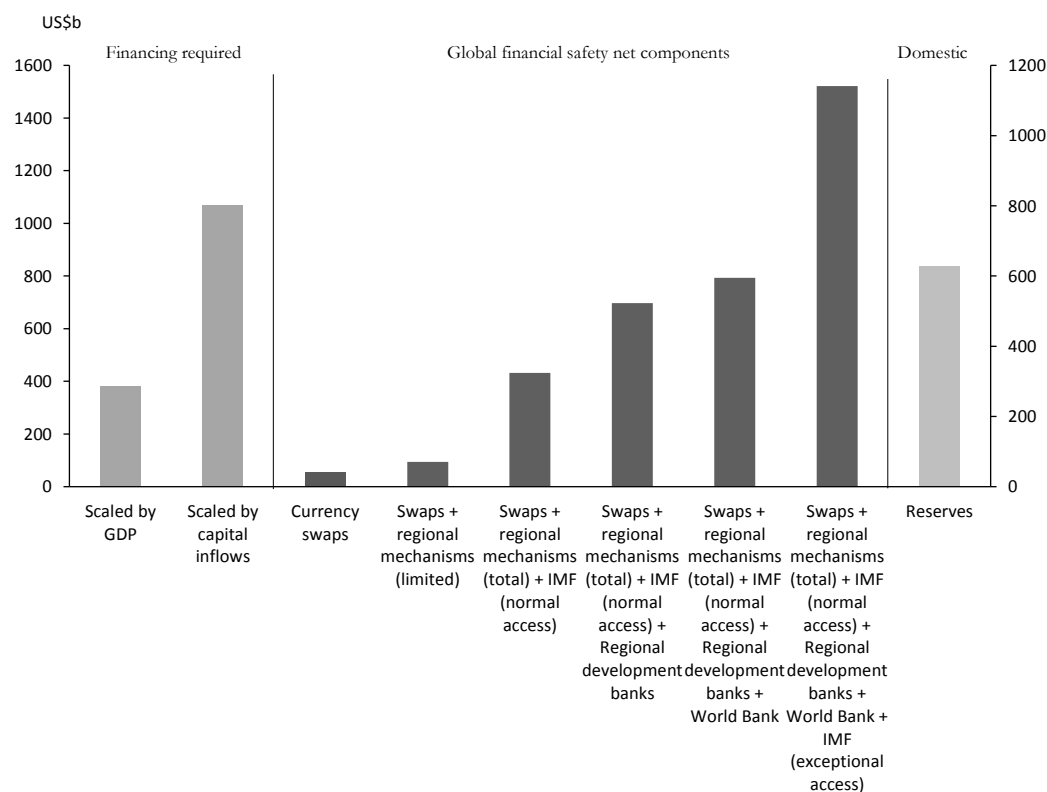
Given \$94 billion is still insufficient, countries would need to access further components of the safety net. Countries could seek assistance from the IMF, which would provide both IMF funding and unlock additional funding from the CMIM. Alternatively, countries may seek bilateral support from the fiscal authorities of countries in the region (as was the case in the Asian financial crisis—see Sterland, 2017). But given this bilateral support would be ad hoc and therefore difficult to predict, this analysis assumes that these countries instead go to the IMF.

For these countries, the IMF’s assistance under its normal access provisions would be \$137 billion. But importantly, this would also unlock the rest of the CMIM’s resources. The combined value of the swap lines, the full resources of the CMIM, and the resources from the IMF under its normal access provisions amount to \$432 billion.

This level of financing would satisfy the lower-bound estimate of what was provided during the 1997 crisis. But this is indeed a low estimate. It is much lower than what was found by analysis from Denbee et al (2016), for example. For the upper-bound estimate of \$1.1 trillion, further components of the safety net would need to be accessed.

The most likely option, according to policymakers, would be support from the regional and global development banks that these countries participate in. These options unlock substantial pools of funding: \$265.2 billion from regional development banks and \$96 billion from the World Bank. Still, however, this would likely be insufficient. As a result, these countries would require exceptional access to IMF resources. It is only with exceptional access to IMF resources, plus currency swaps, along with maximum support from the CMIM and assistance from regional development banks and the World Bank that the total level of necessary financing can be obtained.

Figure 7. The Asian financial crisis (Indonesia, Korea, Malaysia, the Philippines, Thailand)



All this analysis, of course, ignores the role of domestic self-insurance through foreign exchange and gold reserves. Interview participants suggest that domestic reserves would obviously play a critical role in the response to any crisis. These reserves have grown significantly among ASEAN+3 countries since 1997. But almost 80 percent of them are in China and Japan. For the countries affected by the Asian financial crisis, foreign exchange reserves are smaller, but still substantial: amounting to \$837.5 billion in 2017.

This would cover the financing requirements that arose in the Asian financial crisis if scaled by GDP, but would fall short of the upper-bound estimate based on the growth in capital inflows. This means that the safety net would still need to be accessed despite these domestic buffers. Swaps and regional mechanisms will still be insufficient, meaning the IMF resources would need to be called upon. A critical insight from this is that, despite the significant increase in foreign exchange reserves among Asian economies, the purpose of which was to prevent them from having to go to the IMF, these economies are nevertheless still required to seek IMF support.

The above analysis does not include China and Japan. If the crisis was to engulf the broader ASEAN+3 region, a substantial amount of additional resources would be unlocked (primarily through the BRICS currency reserve pool, the New Development Bank and a larger pool of bilateral swaps and unilateral reserves), but the additional burden on the safety net would also be much larger. This analysis also ignores the fact that foreign exchange reserves are declining and the possibility that the IMF will be half its size by 2022, as discussed earlier. The analysis is also biased in the sense that it is analysing countries that have already experienced a crisis and have therefore been proactive in building their domestic, bilateral and regional buffers. Other countries in Asia that did not experience the Asian financial crisis as severely have sometimes not been so proactive.

Overall, this exercise shows that the safety net in Asia is large—much larger than in the scenarios that follow—but highly fragmented. Multiple components of the safety net would need to be accessed, and coordinated, during a crisis. It shows that this is still the case even when large domestic foreign exchange and gold reserves are considered.

This analysis also shows that, despite regional mechanisms, Asian countries are heavily reliant on their domestic buffers. If domestic buffers were to be depleted over time, or if the crisis disproportionately impacted those with much smaller domestic buffers (such as Laos, Myanmar, Vietnam, and Cambodia) countries would find themselves needing to simultaneously engage and coordinate central bank swap lines, the CMIM and the IMF to achieve just the lower-bound estimate of the financial support required.

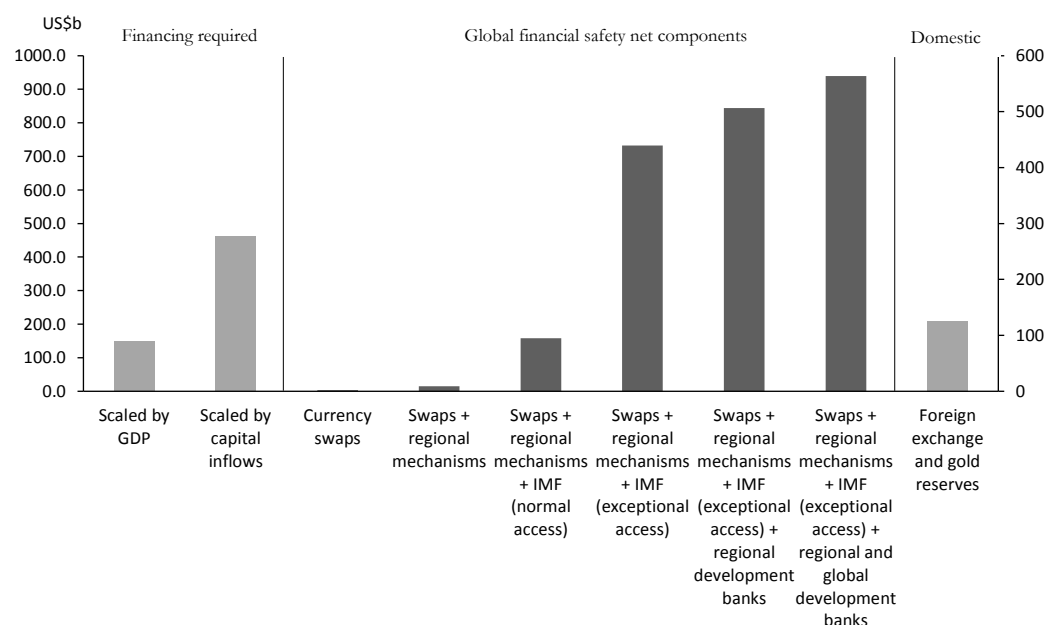
4.2 The Latin American debt crisis in 2017

Swap lines and regional mechanisms are minimal in Latin America. This means there is a much greater reliance on global resources and, outside of the safety net, domestic buffers (Figure 8).

Providing the same level of external assistance in 2017 that was provided in the 1982 Latin American debt crisis implies a financing package of between \$150 billion and \$460 billion. Policymakers suggest the first line of defence would be currency swap lines (\$3.3 billion) and regional mechanisms: the Latin American Reserve Fund (\$2.3 billion) and the NAFTA North American Framework Agreement (\$9 billion). But, combined, these resources (\$14.6 billion) fall far short of even the lower-bound estimate of the financing that might be required.

It follows that the IMF would need to be engaged. Under its normal lending provisions, the IMF could provide an additional \$143 billion, taking the total package to \$158 billion. This satisfies the lower-bound estimate of the financing package but not the upper-bound estimate of \$460 billion. For the upper-bound estimate, exceptional access to IMF resources would be necessary. This would require an additional \$303 billion from the IMF, approximately 34 percent of its available resources. Additional resources could also be obtained from regional development banks (\$111 billion) and the World Bank (\$96 billion).

Figure 8. Latin American debt crisis: Mexico, Brazil, and Argentina



As in Asia, domestic reserves would play a critical role. For the countries affected by the Latin American debt crisis, total reserves amount to \$209 billion. This would satisfy the lower-bound estimate of the external financing requirements but only half of the upper-estimate. It follows that, even with reserves, swaps and regional mechanisms, some IMF engagement would be required.

A critical insight from this scenario, as in the scenario for Asia, is that a high-level of coordination between safety net components would be required. And even with the increase in bilateral and regional buffers, countries are still reliant on the IMF in the event of shocks impacting multiple countries. In the case of Asia, this is primarily due to the requirement under the CMIM that countries be part of an IMF program if they want funding above the 30 percent threshold. In Latin America it is due to the limited funding available in bilateral and regional mechanisms.

4.3 The European debt crisis in 2017

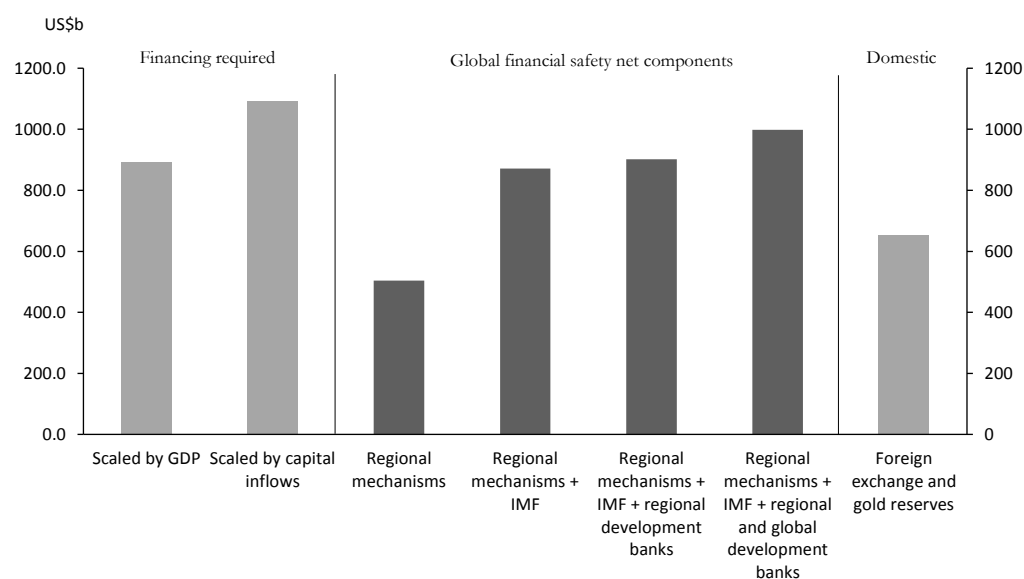
The most troubling scenario is for the European debt crisis, given the sheer size of these economies. Since this crisis was comparatively recent, the scaling effects are not substantial. In fact, when scaled by GDP, the total financial support provided during the European debt crisis is smaller because euro area GDP has declined since the crisis. Total financial support is estimated to be between \$900 billion and \$1.1 trillion when scaled by GDP and capital inflows, respectively (Figure 9).

The European Central Bank states that its swap lines with other countries are designated for liquidity, meaning that the ECB could not draw on the currencies of other central banks.²¹ As a result, countries would be reliant on regional mechanisms, namely the European Stability Mechanism and the EU Balance of Payments facility. Together, these amount to around \$500 billion in available resources, leaving a shortfall of between \$400 and \$600 billion.

An added complexity is that euro area countries are required to seek assistance from the IMF at the same time as the ESM. The articles of the ESM state that “in all circumstances, the active participation of the IMF will be sought, at both a technical and a financial level” (ECB, 2011).

²¹ See Appendix A.

Figure 9. European debt crisis



Given the size of these economies' IMF quota shares, the amount available under normal conditions is the same as what would be available under exceptional access: around \$536 billion. This would exhaust all the IMF's resources, but still falls short of the financing required at the upper-limit. Interview participants suggest the most likely course of action would be to increase the available funding of the ESM. Alternatively, resources from both regional development banks (\$31 billion) and the World Bank (\$96 billion) may be required.

The European debt crisis is the first scenario that exhausts the entire safety net. This means the dependency on domestic reserves is particularly critical. The foreign exchange and gold reserves of euro area countries amount to around \$650 billion. If these reserves were fully depleted, resources would still be required from the ESM and IMF but the total burden, particularly on the IMF, would be smaller.

4.4 Economy-specific crises

When it comes to crises that affect individual economies, rather than whole regions, the size of the safety net in 2017 appears adequate. In the case of the external financing provided to Russia in 1998 (Figure 10), Argentina in 2002, Turkey in 2001, Ecuador in 1999, and Chile in 1982, the IMF can provide the level of financing required even under its normal access conditions.

Figure 10. Russia 1998 crisis

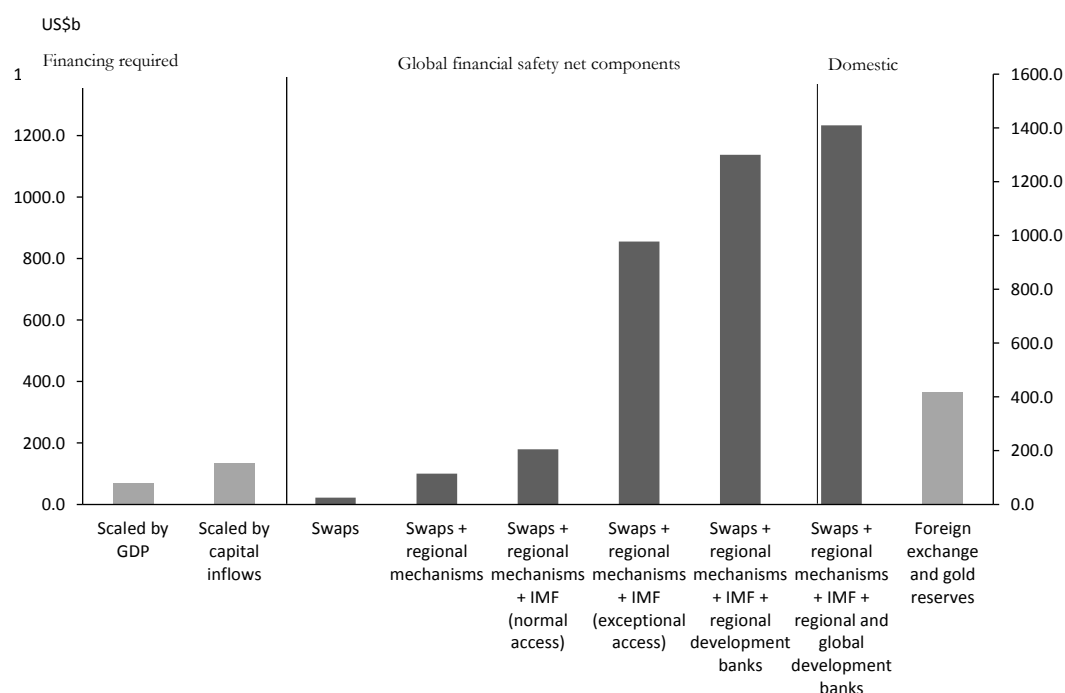
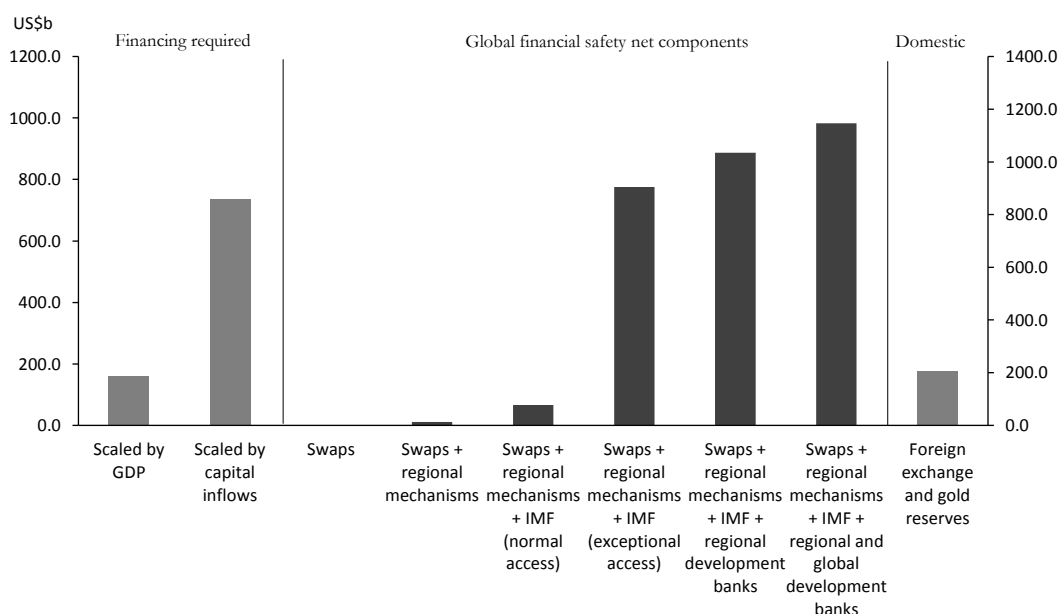


Figure 11. Mexico 1994 crisis



The exception is Mexico (Figure 11). Given the size of its economy, the growth of its GDP, capital inflows since 1994, and its comparatively small IMF quota, providing the same level of financial support to Mexico that was provided in 1994 requires exceptional access to IMF resources.

4.5 War gaming conclusions

The above simulations provide several insights. First, the adequacy of the safety net depends significantly on the countries involved and whether the shock is widespread. The safety net is generally well-equipped to provide assistance when those shocks only impact an individual economy. But this is not necessarily the case for more widespread shocks. If policymakers can agree that the safety net as it

stands in 2017 should at least be able to provide the same level of assistance that it has been required to provide in the past, then the above simulations suggest that policymakers have a problem.

Second, the above simulations give some insights into the composition of the safety net. In all these simulations, even for some economy-specific shocks, multiple components of the safety net need to be simultaneously accessed and coordinated. This highlights just how important coordination between these components will be. It should also be noted that many of these simulations do not involve some of the major economies of the world in 2017, such as China and Japan in Asia.

Third, the analysis shows that, for many shocks, the IMF is no longer capable of providing assistance alone, something, which has not been the case in the past. Countries are increasingly reliant on regional mechanisms and domestic buffers that are not available to all countries. This highlights a critical bias of the above simulations. Most (although not all) of the countries, which experienced the above crises have responded by increasing their unilateral, bilateral, and regional buffers. This has often not been the case for countries that have not experienced a crisis. Hence, by focusing on the countries that have experienced crises in the past, the size of the safety net is larger than might often be the case.

Fourth, while the IMF is often no longer able to provide financial support on its own, the reverse is also true: despite the growth in unilateral, bilateral, and regional resources, countries are often still required to go to the IMF. This is partly because of the direct linkages between regional mechanisms and the IMF, but is also because the resources offered via these mechanisms, while large, are still not big enough in the face of substantial shocks. This is particularly the case for Latin America. In many instances, the reason countries built-up their domestic, bilateral, and regional buffers was so they would not need to go to the IMF. This analysis suggests that, despite these buffers, IMF involvement would often still be required.

Finally, countries are increasingly dependent on domestic buffers. For many economies, the large domestic stocks of foreign exchange and gold reserves mean accessing regional safety nets may not even be necessary. But for others, such as in the stimulation of the European debt crisis, the inadequacies of the safety net mean countries require domestic reserves or require an increase in global, regional, or bilateral resources.

V. THE POLITICS OF REFORMING AND ACCESSING THE SAFETY NET

It is difficult to understand the evolution of the safety net over time, the challenges it faces, or the prospects for reforming it without understanding the complex politics that underpin its components: whether it is the IMF, regional institutions or bilateral swap lines.

To explore these political considerations, in-depth interviews were undertaken with 61 leaders, central bank governors, finance ministers and officials from across all G-20 countries. The breakdown of the sample and research methodology are available in Appendix B. The interviews explored whether policymakers believe the safety net is adequate, what they believed its deficiencies were and the politically feasible options for reforming it.

The meeting in Cannes resolved to ramp up the IMF's war chest and I made a pledge on Australia's behalf. Despite the severity of the European and global challenges and Australia's clear interest in the fortunes of the global economy, the decision was criticized by the Opposition, though appropriately welcomed by business—*Julia Gillard, former prime minister, Australia*.²²

²² Gillard (2014)

5.1 Do policymakers think the safety net is adequate?

All G-20 countries agreed that the adequacy of the safety net has been significantly enhanced since the global financial crisis. They also recognised the critical importance that the G-20 played in this process.

The global financial safety net is vast relative to what it used to be. The G-20 played a critical role, particularly in increasing the resources of the IMF. Are they large enough? I don't know. But they are certainly much larger than they were—*Former senior official, United States, interviewed September 12, 2017.*

In many ways, strengthening the safety net is a never-ending process. You will never reach a point at which it is finished. You will never reach a point in time when everything is done—*Ksenia Yudaeva, deputy governor of the Bank of Russia, interviewed March 27, 2017.*

Yet, while the safety net is stronger than it was, all G-20 countries considered there were deficiencies to be addressed to make the safety net more adequate (Figures 12 and 13).

The most common concern was that the IMF's governance was outdated because the voting shares of the emerging market economies were much smaller than their GDP share of the global economy. Other IMF-related concerns were that: it lacks adequate permanent funding given its reliance on bilateral loans and new arrangements to borrow (see Section 2.2); that there is a negative stigma which makes countries reluctant to go to the IMF (relying instead on less efficient and effective alternatives); and the IMF's toolkit for responding to crises is insufficient, referring specifically to the need for greater precautionary funding.²³

The global safety net does not have sufficient firepower, particularly the IMF. This is a key reason why these regional arrangements have proliferated. Instead of rolling the NAB into quotas after the crisis, the G-20 should have increased quotas and kept the NAB to give the IMF more firepower—*Senior G-20 official, Italy, interviewed February 18, 2017.*

A critical aspect to strengthening the safety net is to prepare and provide more precautionary instruments. The flexible credit line (FCL) and precautionary liquidity line (PLL) are important steps in this direction but there is more to be done—*Heenam Choi, former finance deputy, Korea, interviewed August 21, 2017.*

A constraint on the adequacy of the safety net is on the demand-side. Countries will do anything to avoid Fund-engagement. Strategies to reduce that stigma would go far in improving the adequacy of the safety net—*Tom Scholar, former Sherpa, United Kingdom, interviewed March 29, 2017.*

Governments are not running to the IMF to ask for facilities. On the contrary, the IMF is having difficulty finding clients—*Hugo Gobbi, former sous Sherpa, Argentina, interviewed May 12, 2017.*

The second most common set of concerns related to the safety net's composition. Policymakers were concerned that the safety net's patchy coverage creates risk for those countries less covered by the safety net, and for the global economy as a whole. They were also concerned that there is inadequate cooperation between the safety net's components, risking a slower, less consistent response to crises and "jurisdiction shopping" where countries seek out the largest financing available with the fewest conditions attached.

²³ Precautionary funding means countries can be approved for IMF support before a crisis occurs (on a precautionary basis) which can help reduce the stigma and negative market-responses that can be associated with going to the IMF. The IMF already has precautionary facilities but their take-up has been small and there are several proposals for how they could be strengthened (IMF, 2018).

Multiple layers of the global safety nets have been created, which I think is an important improvement for the emerging economies, given the lack of a single global safety net. Whether the multilayer global safety nets would be a better system is a different issue that warrants more research and discussion—*Chang Yong Rhee, former secretary general and Sherpa of the Presidential Committee for the 2010 G-20 Seoul Summit, Republic of Korea, interviewed August 17, 2017.*

We’ve seen significant growth in regional safety nets, which has increased the size of total resources available. But the question now is how these different safety nets will work together in case of a crisis. Since 2011, the European Union has had joint programs, joint missions and joint communications strategies, but this can still be further developed—*Senior official, European Commission, interviewed April 10, 2017.*

If you end up in a situation where each part of the safety net has different criteria for access then you get jurisdiction shopping which makes responses in a crisis harder and worse—*Martin Parkinson, secretary of the department of the prime minister and Cabinet, Australia, interviewed May 30, 2017.*

Although less common, policymakers were also concerned that the safety net, in aggregate, was too small. Others were more concerned about domestic issues, such as the need to make economies and financial systems more resilient to shocks. Some feared the safety net creates moral hazard whereby countries fail to adequately manage risks knowing the safety net will assist them if needed.

Figure 12. Policymakers views on the safety net’s deficiencies (advanced and emerging)

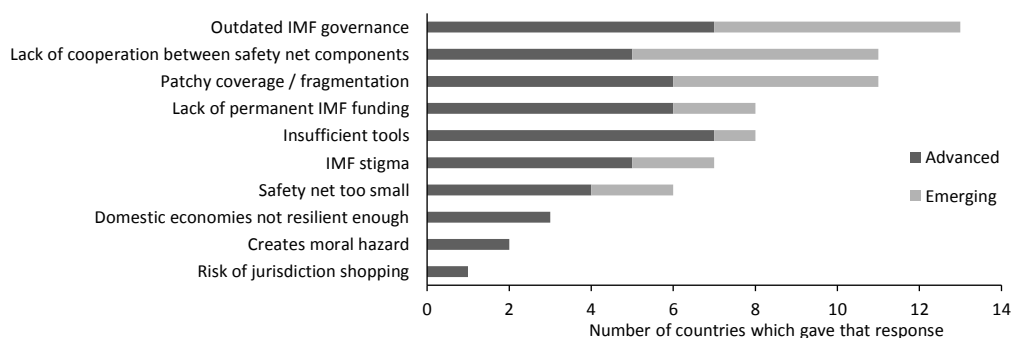
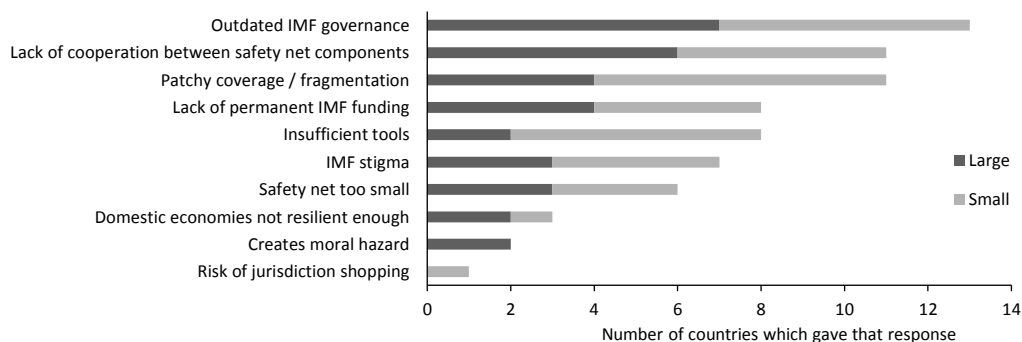


Figure 13. Policymakers views on the safety net’s deficiencies (large and small)



There were some notable differences between the concerns of advanced and emerging market economies, highlighted in Figures 12 and 13. The emerging market economies were concerned by the IMF’s outdated governance, the safety net’s patchy coverage, and the lack of cooperation between its components. The advanced economies shared these concerns, but were also concerned about domestic resilience, moral hazard, IMF stigma and the IMF toolkit. Smaller economies were more worried about the safety net’s patchy coverage, which is perhaps a logical result given they are most impacted by it.

5.2 The political challenges of strengthening the safety net

Policymakers were asked whether they faced political challenges domestically in contributing resources to the IMF. Countries were split. Eleven said that contributing resources to the IMF was politically challenging while nine said it was not. The differences were starker between country blocks—advanced and emerging (Figure 14) and large and small (Figure 15).

Across all countries, the biggest political challenge to contributing resources to the IMF was the public's opposition based on cost. This opposition, of course, is misguided, considering that the contributions countries make to the IMF are repaid with interest. But nevertheless, policymakers reported difficulties explaining how the IMF's funding worked to constituents concerned about the financial cost and the lack of discretion governments had over the finances once given to the IMF.

However, policymakers suggest that challenges around the image and reputation of the IMF go deeper than a misunderstanding of how it uses countries' resources. Among the emerging economies, particularly those in Asia and Latin America said there is a continuing distrust over the IMF in response to its perceived mishandling of the crises in those regions in the past. Policymakers suggest the IMF's outdated governance structure also makes it difficult to give it resources if they do not obtain any additional voting power (as is the case for their bilateral loans to the IMF).

It is still politically difficult to give money to the IMF in Indonesia. This is why it is important for the G-20 to keep-up the momentum in reforming the IMF. For regional mechanisms, it is not politically difficult. Often the political rhetoric for regional mechanisms is that 'well, you don't want to have to go to the IMF'. This is what made the ASEAN safety net in the first place—*Mahendra Siregar, former Sherpa, Indonesia, interviewed May 22, 2017.*

I recall when we gave additional resources to the IMF. It went down very badly in the media because of a lack of understanding about what the commitment meant. Media houses wanted to know how we could be so-called "giving" this money to the IMF when there are so many domestic needs at home—which was not the case at all—*Sheldon Moulton, former member of the Sherpa's team, South Africa, interviewed May 31, 2017.*

Politically? Of course it is hard. There are some academics and newspapers who argue that it is a rich man's problem and why are poor people having to help the rich? So yes, it is very politically difficult—*Jjianxiong He, Central Bank deputy, China, interviewed June 13, 2017.*

It can be politically difficult to give money to the IMF—it needs to be clear that your country is just doing its fair share—*Wayne Swan, former Treasurer, Australia, interviewed March 21, 2017.*

Politically, it is not possible for Indonesia to borrow money from the IMF. There is a significant problem of stigma in Indonesia going to the IMF after the 1999 crisis, as is the case for Korea and Thailand—*Muhamad Basri, former Finance Minister, Indonesia, interviewed November 6, 2017.*

Figure 14. Political challenges associated with the safety net (advanced and emerging)

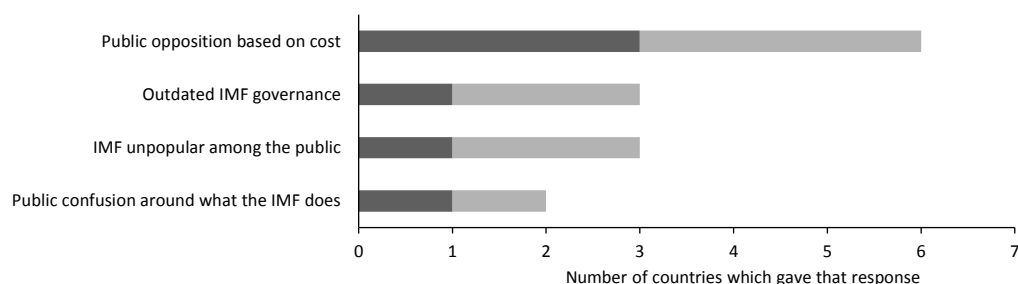
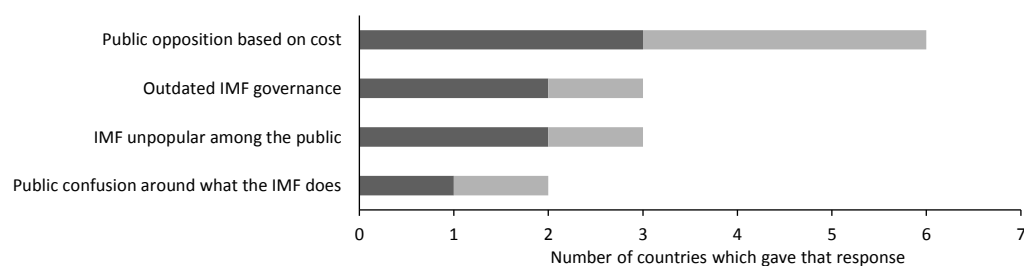


Figure 15. Political challenges associated with the safety net (large and small)



Policymakers suggest the IMF has a reputational problem in the advanced economies, too, but for different reasons. Many report that there is a coalition of left-wing and right-wing entities in their political systems who oppose the IMF’s role. For some in the left, the IMF is seen as an institution that oppresses developing countries and is a vehicle for an unpalatable form of conservatism, austerity, and extreme capitalism. For some in the right, the IMF is seen as subverting democratic institutions and sovereignty.

There are some in the U.S. political system who have an aversion to multilateralism through institutions like the IMF. On the political left, there are some who see the IMF as an instrument of extreme orthodox conservative economic thought. On the political right, there are some who see the IMF as pursuing an almost socialist agenda—*Former senior official, United States, interviewed September 12, 2017.*

When it comes to the political challenges around the IMF, special attention must be given to the United States because it is the only country with a veto over IMF decisions given its dominant quota share. This means that any substantial IMF reform cannot proceed without approval from the United States, which requires approval from both the Administration and the Congress.

Policymakers suggest the politics in the United States of contributing resources to the IMF is difficult in 2017 and has been for many years. Although Congress approved the increase in IMF resources in the immediate aftermath of the global financial crisis, this approval came with legislative changes which increased Congressional oversight, making it harder for future IMF reforms to be approved (Locke, 2000).

Getting the New Arrangements to Borrow through Congress after the crisis was achieved because Congress raised the bar of getting any other measures through the House in the future. But quota reform has always been hard in the United States, right back to the IMF’s foundation at Bretton Woods, and it is becoming harder in this age of populism—*Former senior official, United States, interviewed September 12, 2017.*

It took until 2015 for the United States Congress to pass the quota reforms agreed by the G-20 in 2010, despite strong support and lobbying from the Obama Administration. Some in Congress oppose IMF

reform based on a perceived cost to taxpayers. Others see it as a dilution of U.S. influence in the institution.

Mary Locke tracked Congressional views through time while at the IMF. The concerns raised vary from the role of the IMF in increasing moral hazard to the perceptions that the IMF overthrows governments, intervenes in free markets, promotes dangerous austerity, weakens labour standards, and can damage the environment (Locke, 2000).

Getting the 2010 reforms through Congress was extraordinarily difficult and time consuming. It required intense lobbying from the Administration. My message to Congress was that quota reform was fundamentally a matter of U.S. economic and national security interests—*Jacob Lew, former treasury secretary, United States, interviewed September 7, 2017.*

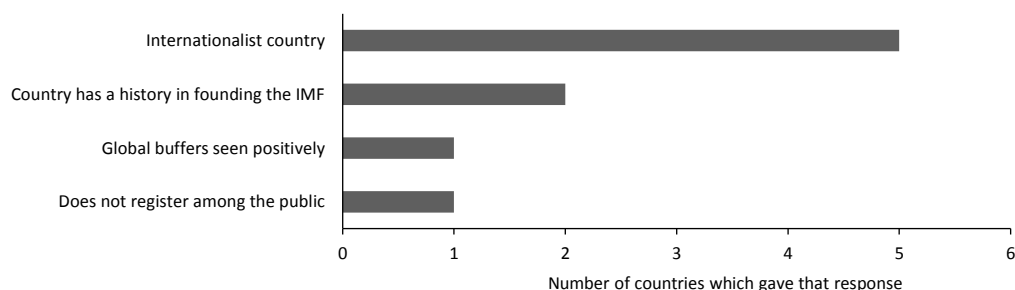
We don't believe [the IMF 2010 quota reforms] are just a book-keeping entry. This puts the \$63 billion significantly at risk, whereas currently it is not. In this era of budget cuts, there's a lot of concern—*Rep. John Campbell (R-Calif.) to Secretary Jack Lew at a hearing in December 2012.*

The IMF is already perfectly capable of managing the task at hand, as estimates have shown that Ukraine aid would consume no more than 5 percent of its current resources. While we are all eager to assist Ukraine on its path to freedom and prosperity, injecting IMF governance issues into this debate—and undermining U.S. influence on the IMF—is not the way to accomplish this end—*Sen. Ted Cruz, Sen. Mike Enzi, Sen. Mike Lee, Sen. Rand Paul, and Sen. Pat Roberts, letter dated March 21, 2014.*

We are here today, among other things, to find out if the IMF is an institution that serves the interests of the working people and the middle class of the United States—the vast majority of our citizens—or whether the IMF is simply a front group for giant banks, global corporations, and wealthy investors. Who does the IMF represent? Has the IMF helped countries who come to it for loans become more self-sufficient, or has it turned them into loan junkies?—*Sen. Bernie Sanders questioning Timothy Geithner, April 21, 1998.*

Of course, not all countries said it was politically difficult to contribute resources to the IMF. Nine countries said it did not raise any significant political challenges. The most common reasons for this (Figure 16) were that the politics in those countries tended to be more internationalist, there is a general acceptance of that country's role in international affairs, that the country in question played an important role in creating the IMF or has a substantial role in its governance, that the role of the IMF simply does not register as an issue within the domestic political system, or that the contribution to global and regional buffers is considered prudent.

Figure 16. Reasons why the safety net did not raise political concerns



Supporting the IMF has never been a problem in the United Kingdom because of the belief among policymakers and commentators that we created it—*Tom Scholar, former Sherpa, United Kingdom, interviewed March 29, 2017.*

There is no resentment of giving resources to the IMF in France. There is support for international and institutional cooperation, the Managing Director is French and we have a good memory of our involvement in the creation of the Bretton Woods institutions—*Bruno Cabrillac, central bank deputy, France, interviewed April 11, 2017.*

I think the public generally understands and accepts our involvement in these institutions so it hasn't been the flash point it has been in other countries—*Central Bank official, advanced economy, interviewed August 17, 2017.*

Many economies, particularly the emerging markets, suggest it is politically much easier to contribute safety net resources through regional and bilateral institutions and arrangements. Policymakers said these institutions do not raise governance or representational challenges and do have negative historical legacies. Policymakers suggest that an underfunded IMF, the slow progress in reforming the institution and the abovementioned political challenges have acted to fuel the creation of many of these regional bodies.

Regional safety lines are essentially a departure from the notion that you must have a credible multilateral lender of last resort. Of course, if the international community is unwilling to create a credible multilateral mechanism then countries are forced into the second-best solutions such as building excess reserves and creating regional substitutes. I do not think these should be called signs of progress. They are actually signs of failure—*Montek Ahluwalia, former Sherpa, India, interviewed June 10, 2017.*

The decision made by the G-20 during the global financial crisis to inject capital into the ADB and World Bank helped us a lot. It allowed us to go around the IMF. If we needed to go to the market to finance our deficit because of spiking bond yields then we could borrow money from the ADB or the World Bank instead. At the time it helped us a lot—*Muhamad Basri, former finance minister, Indonesia, interviewed November 6, 2017.*

The U.S. certainly paid a cost for the delay on IMF reform. It helped fuel the demand for competing forums and also weakened the U.S. in negotiations with the emerging market economies on other issues. There were sessions in multilateral and bilateral meetings that would be entirely devoted to berating the U.S. for its delay in approving quota reform—*Jacob Lew, former treasury secretary, United States, interviewed September 7, 2017.*

After the crisis, for the first time there was an embracing of other stabilization mechanisms, such as the Chiang Mai Initiative, which was partly in response to the IMF's indifferent response to the Asian financial crisis and the slow pace of reform in that institution—*Kevin Rudd, 26th prime minister of Australia, interviewed September 8, 2017.*

Is it politically hard to give money to the IMF? It would be difficult on account of the IMF's governance structures. These institutions do not reflect the global reality in terms of the strength of the emerging market economies. Unless that is corrected, you will find that there would be greater reluctance on part of the emerging market economies to participate more effectively in funding. Contributing resources to regional institutions is much easier politically because our country has a greater say in these institutions—*Arvind Mayaram, former finance deputy, India, interviewed June 7, 2017.*

Like others, Japan has a dilemma. We have to be politically accountable to our people so for any financing arrangement to be effective, there should be discipline and conditionality on the borrowing countries. The dilemma is that conditionality is hard to assess—the easiest way is to

use the IMF. But at the same time, Asian countries want to steer away from the IMF as much as possible. So this is the dilemma for the Japanese Government—*Kazou Momma, former central bank deputy, Japan, interviewed June 19, 2017.*

My ideal world is one in which a global body like the IMF is providing the insurance rather than regional bodies. But that requires the IMF to impose reasonable conditions and having countries be willing to go to the IMF and feel they are properly represented—*Phil Lowe, Governor of the Reserve Bank of Australia, Australia, interviewed April 29, 2017.*

Bilateral currency swap lines raise their own distinct institutional and political issues, depending on the country in question. For some countries, including China, Japan, and India, official documents state that swap lines can be used during a balance of payments crisis and, in some cases, have already been used in such contexts (Appendix A). In other economies this is not the case. For the United States, the European Central Bank and Australia, swap lines are only available in the event of difficulty in obtaining foreign exchange from the market and are not available during a balance of payments crisis.

I think a lot of the analysis of swap lines in regards to the safety net could be sharper. Swap lines often have nothing to do with the safety net. Australia's swap lines are about ensuring markets have liquidity, not providing foreign exchange during a balance of payments crisis—*Phil Lowe, governor of the Reserve Bank of Australia, Australia, interviewed April 29, 2017.*

The swap lines are there to ensure that financial institutions providing credit to American households and firms have access to liquidity. I know the thought has occurred to many policymakers overseas that swap lines with the Fed might serve as a safety net for countries encountering balance of payments pressures. But expanding the swap lines to serve this broader purpose is not within the Fed's mandate and therefore is a complete non-starter for us—*Janet Yellen, chair of the Federal Reserve, United States, interviewed September 30, 2017.*

The swap lines proved very effective and many countries asked for them. We had to turn away many requests, beyond the 14 countries we had lines with, because we felt the benefits in those cases did not justify the costs of extending them, including potential credit risk—*Ben Bernanke, former chair of the Federal Reserve, United States, interviewed August 7, 2017.*

Bilateral currency swaps between countries was something that Argentina used with China when market-access was limited. For us, these swaps were the safety net in a context of preference for bilateral swaps, particularly given the conditionalities and reputation of the IMF programs—*Cecilia Nahón, former Sherpa, Argentina, interviewed October 2, 2017.*

Much of this relates to the domestic mandates of central banks. But policymakers suggest that political pressures on central banks also play an important role. Even if a central bank's domestic mandate could be interpreted as allowing a swap line to be extended or used during a balance of payments crisis (on the basis of policy spillbacks, for example) the political likelihood that these tools would then be taken away by the legislature can prevent them from being used in that way.

5.3 How would policymakers like to see the safety net strengthened?

Policymakers were asked how they would like to see the safety net reformed. These reforms related primarily to the IMF's funding and governance, strengthening regional and bilateral initiatives, and improving cooperation between all three (Figures 17 and 18).

On the IMF, countries want to see quota and governance reform to strengthen the IMF's permanent funding and have its governance better represent the reality of the world economy. Countries want a greater focus on reducing the stigma associated with going to the IMF and, related to this, have a greater focus in the IMF on precautionary funding. Although the 2010 quota reforms have now been approved, other aspects of the G-20's 2010 agreement remain outstanding, including quota formula reform, steps

to free-up seats in the executive board for emerging market economies, and moving to an all-elected Board.

The need for IMF reform is of great importance, both for the effectiveness and legitimacy of the institution. The IMF needs to reflect the global reality—*Jjianxiong He, Central Bank deputy, China, interviewed June 13, 2017.*

If you look at many Asian countries, we are accumulating huge reserves because we need insurance. We know that if something happens it is not easy to go to the IMF given the stigma associated with that. This is getting better over time, but it is still there. The Fund itself has changed a lot. It is much more open now. It listens to criticisms. In 1998, capital controls were a dirty word whereas now days they support this idea through macroprudential measures—*Muhamad Basri, former finance minister, Indonesia, interviewed November 6, 2017.*

The IMF is a very useful institution but it needs to be improved to make it more democratic and inclusive—*Hugo Gobbi, former sous Sherpa, Argentina, interviewed May 12, 2017.*

The key objective needs to be IMF reform—to increase its resources, increase its permanent resources and make it more representative of countries' shares of global GDP—*Gordon de Brouwer, former Sherpa, Australia, interviewed February 23, 2017.*

There is an important political consideration in the U.S. If Congress perceives there to be huge buffers in the IMF's resources then this can be counterproductive and reduce political support for additional resources in the future—*Jacob Lew, former treasury secretary, United States, interviewed September 7, 2017.*

The key issue during the GFC was that there was distrust in financial markets between firms which is what contributed to the credit freeze, particularly around the quality of capital and the quality of balance sheets. The work of the Financial Stability Board (FSB) and the G-20 has gone a long way in fixing these problems, which is key to strengthening global resilience—*Joe Hockey, former treasurer, Australia, interviewed August 18, 2017.*

We'll never know whether the safety net is adequate because nobody will ever use it given the stigma associated with accessing it. International reserves are your insurance policy—*Catherine Mann, former chief economist of the OECD, interviewed April 11, 2017.*

We need a better early warning system of indicators that shows us the materiality of risks ahead. Currently, we have some measures but those measures are far from correctly predicting the events, and the consequences of their failure are generally large—*Senior official, central bank, emerging market economy, interviewed May 17, 2017.*

Reflecting their concerns about the safety net's patchy coverage, countries want to see improved cooperation between the safety net's components. The need for greater cooperation was recognised by the G-20 in 2011 in developing a set of high-level principles to guide cooperation between the IMF and regional mechanisms. These principles have not been further developed. However, the IMF has held several joint exercises with the Chiang Mai Initiative Multilateralization aimed at ensuring better cooperation in the event of a crisis (IMF, 2017).

The IMF (2013) recommended that detailed procedural guidelines be developed on IMF cooperation with regional mechanisms, building on the high-level principles developed by the G-20. These guidelines would: (1) align lending terms; (2) clarify how qualification for precautionary instruments would be applied; (3) establish avenues for regular dialogue between the staffs of the IMF and regional financial arrangements (RFAs) outside of crises; and (4) create the expectation that co-financing operations would be subject to certain principles and safeguards similar to the IMF's lending framework, such as debt sustainability, market access, and capacity to repay. This proposal has received

broad support in the literature (see Pickford, 2011; Lamberte and Morgan, 2012; Pisani-Ferry et al, 2013).

An important focus is to have greater cooperation between the IMF and regional mechanisms. We have seen this in Europe on a number of program countries. This cooperation theme is an important issue—*Senior official, European Commission, interviewed April 10, 2017.*

There is still the valid question of whether the IMF should have a bigger pot of money, but coupled with more consistent rules on how and when these different instruments would be used and coordinated. It emerged from the late 1990s Asian financial crisis as a priority and it still hasn't really been addressed—*Central Bank official, advanced economy, interviewed August 17, 2017.*

It is important that the Bretton Woods institutions cooperate with the newly created financial institutions by emerging economies, such as the Asia Infrastructure Investment Bank and New Development Bank, to work together for a better global and shared future—*Lyu Jin, Counsellor, deputy chief of policy section, Embassy of China in the U.S., interviewed November 13, 2017.*

Many countries also want to see a strengthening of regional and bilateral mechanisms. Emerging markets, in particular, want to see a greater emphasis on extending and better coordinating swap lines, given they often have less access to them than the advanced economies. Similar proposals are common in the literature (see Pickford, 2011; Obstfeld, 2009; Levy-Yeyati and Cordella, 2010 and the Palais Royal Initiative, 2011). Farhi, Gourinchas, and Rey (2011) have argued for the need to systematize swap agreements between central banks. But many, including the former Managing Director of the IMF, have noted that this would require a significant leap in international cooperation (Strauss-Kahn, 2011) and would be inconsistent with both the monetary policies and domestic mandates of central banks (Weber, 2011). This latter view is more consistent with the political concerns raised earlier.

I would like to see a fast and direct access to hard currency swap lines for all systemically important countries. Currently, there are some ad hoc facilities. But these lines are mostly arbitrary and their coverage is not as large as it should be—*Senior official, central bank, emerging market economy, interviewed May 17, 2017.*

Figure 17. How policymakers would like to reform the safety net (advanced and emerging)

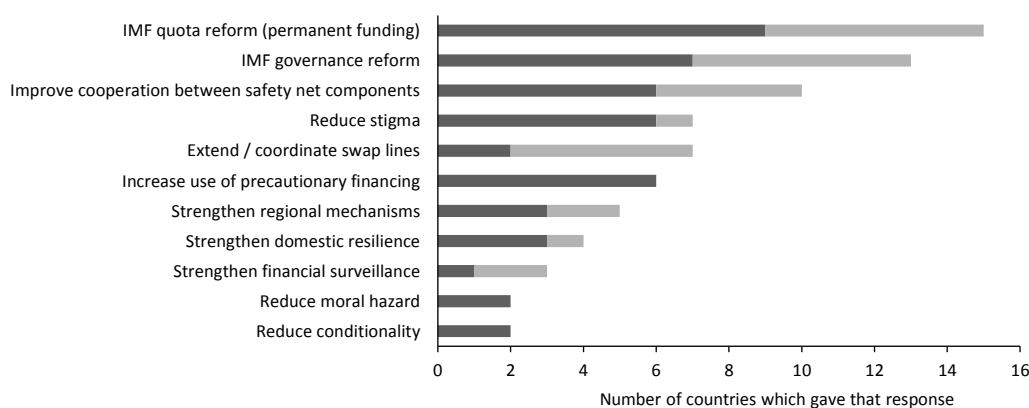
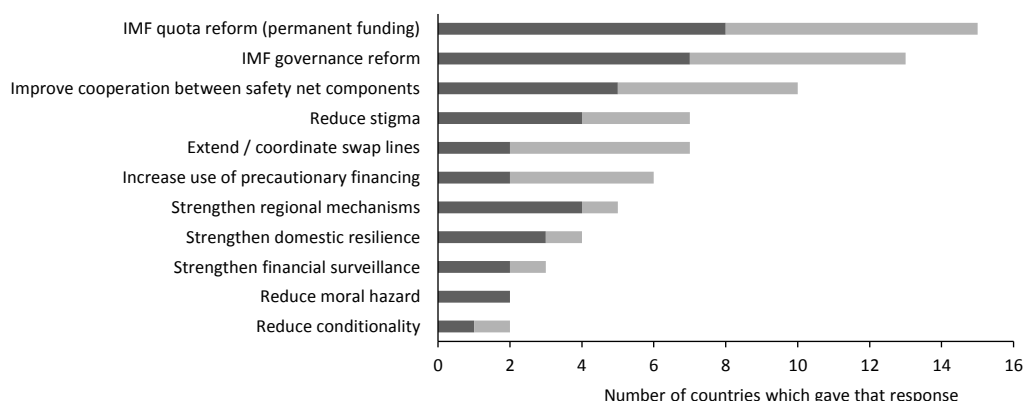


Figure 18. How policymakers would like to reform the safety net (large and small)



5.4 Conclusion: Strengthening the safety net

The in-depth interviews with policymakers shows that the safety net exists within a complex web of political considerations. These considerations differ from one country to the next, and from one component of the safety net to the next. These political considerations cannot be overlooked. They fundamentally shape what the G-20 can and cannot achieve in strengthening the safety net in the short- to medium-term.

Policymakers voiced strong support for a reformed IMF. This includes reforms to improve the representativeness of it is governance, to increase its resource base, and make its resources more permanent and sustainable. But these desires cannot be divorced from political realities. The U.S. political system in 2017 is perhaps not conducive to IMF reform and this has been the case for some time. Without support from the U.S. administration and Congress, no substantial IMF reform can proceed. While renewed contributions to the IMF through bilateral loans and new arrangements to borrow can, and should, fill this gap in the short-term, these resources are not permanent and, for the emerging market economies, it is politically challenging for them to contribute resources to an institution in which their representation is poor. This suggests different priorities in the medium- and short-term.

The G-20’s medium-term focus should be continuing the push for quota and governance reform, but also improving the image and reputation of the IMF to shift the political status-quo. Policymakers suggest this would strengthen the core of the safety net and reduce some of the forces driving the fragmentation in the first place. Better communication to the public and domestic political systems on how the IMF works, how it is financed and how its members funds are used and repaid should be key objectives. The IMF’s continued focus on the importance of ensuring inclusive economies can also play an important role in improving its image in the eyes of some policymakers.

The above results suggest reducing the stigma of going to the IMF should be another critical objective in the medium-term. Policymakers and the literature suggest expanding the IMF’s precautionary facilities and encouraging more countries with sound fundamentals to adopt those facilities will be key— although finding countries that are willing to do this appears to be more difficult. The G-20 could also look for innovative ways to improve the representation of the emerging markets that do not require legislative approval from its members, such as freeing-up additional seats on its Executive Board.

Given these political challenges, these goals can realistically only be achieved in the medium- to-long term. Near-term solutions will also be required.

Policymakers expressed strong support for having better cooperation between the different components of the safety net. The G-20 could build on the principles it developed in 2011 and seek to implement

formal guidelines on how the IMF would work with regional mechanisms during a crisis. Recent test-runs between the IMF and CMIM identified gaps in cooperation that should be addressed, including inconsistencies between the time frames of the lending instruments of the different institutions, and the lack of a clear coordinating mechanism or structure (see Sterland, 2017).

A related near-term measure could be to strengthen the capacity and readiness of regional mechanisms. In Europe, euro area countries should take stock of the lessons learned from the approach and coordination of the European Central Bank, European Commission and the IMF in response to the European debt crisis. In Asia, the CMIM members should focus on increasing the operational readiness of the mechanism and its market credibility, including through increased transparency of policies and procedures. There is also scope to improve the technical capacity and surveillance activities of the ASEAN Macroeconomic Research Office, as outlined in Sterland, (2017).²⁴

In Latin America, the absence of regional mechanisms should be addressed. The region could explore options for developing its own regional financial agreement and, in the near-term, explore options for a larger network of bilateral swap lines, both within and outside of the region.

Bilateral resources through currency swap lines are a near-term solution for other regions, too. But they are not the panacea some suggest. Bilateral swap lines from many advanced economies are not available during a crisis and calls for them to be made available run counter the domestic mandates of central banks and are often inconsistent with the political environments in many of those countries.

Many countries have, however, shown a willingness to extend these swap lines for use during a crisis. Where feasible, these swap lines should be expanded and strengthened. There should be more transparency around the purpose of these swap lines and under what circumstances they would be made available. On the fiscal side of these bilateral relationships, there is also scope for more countries to strengthen their legislative frameworks to allow fiscal authorities to have more flexibility in extending loans quickly and effectively during a crisis (see Sterland, 2017, in the context of Australia).

VI. Conclusion

A dangerous sense of complacency emerged in the years leading up to the global financial crisis. The Great Moderation left many believing that the IMF and the global financial safety net were no longer relevant. This view, of course, proved to be spectacularly wrong.

The concern is that, since the global financial crisis, this complacency may have emerged once again. The actions of G-20 countries in response to the crisis increased the size of the safety net significantly. But the G-20's success may be producing a false sense of security.

The analysis in this paper found that the global financial safety net is around \$4.6 trillion in size. While only \$2.5 trillion of this is immediately available, this is still a significant number. But this number, regardless of how large it is, conceals a variety of dangerous inadequacies in the safety net. Perhaps the most pressing issue is what happens after 2020 when around half of the IMF's funding is set to expire. But even based on its size in 2017, the safety net faces several shortfalls.

While the safety net is large, being able to access it is an entirely different question. The growth in the safety net since 1980 has come primarily from the growth in regional mechanisms, like the Chiang Mai Initiative Multilateralization, and the growth in bilateral arrangements through currency swap lines. As a consequence, the increased size of the safety net has come at the cost of increased fragmentation which, in turn, makes the safety net increasingly patchy. The size of the safety net from the perspective of an individual country depends on the extent of its participation in regional and bilateral arrangements. The paper showed that the size of the safety net can be more than four times larger for some G-20 countries compared to others. This leaves many economies, particularly smaller economies

²⁴ See Rhee, Sumulong and Vallee (2013).

and emerging market economies, dangerously exposed to global shocks and more likely to transmit them to others.

A fragmented safety net also puts more pressure on the need for seamless coordination between its components. But, as shown in the paper, this cooperation is lacking, making the safety net slower and less predictable in how it responds to crises. This, in turn, often increases the financial burden that is placed on the safety net and the overall costs to crisis afflicted economies.

The paper war-gamed crisis scenarios to test the adequacy of the safety net and highlight these deficiencies in practice by taking a novel approach. Rather than trying to predict what crises might occur in the future and what financial burden they may or may not impose on the countries that may or may not be impacted, the paper asks a simple question: Can the safety net in 2017 provide the same level of financial support as it has in the past?

More often than not, the safety net struggles to do so. The simulations showed that the adequacy of the safety net depends significantly on the countries involved and whether the shock is widespread. The safety net is generally well-equipped to provide assistance when those shocks only impact an individual economy. But this is not necessarily the case for more widespread shocks. If policymakers can agree that the safety net as it stands in 2017 should at least be able to provide the same level of assistance that it has been required to provide in the past, then the above simulations suggest that policymakers have a problem.

The simulations gave some insights into the composition of the safety net. In all these simulations, even for some economy-specific shocks, multiple components of the safety net need to be simultaneously accessed and coordinated. This highlights just how important coordination between these components will be.

The analysis also shows that, for many shocks, the IMF is no longer capable of providing assistance alone, something which has not been the case in the past. Countries are increasingly reliant on regional mechanisms and domestic buffers, which are not available to all countries. But the reverse is also true: Despite the growth in unilateral, bilateral, and regional resources, countries are often still required to go to the IMF. This is partly because of the direct linkages between regional mechanisms and the IMF, but is also because the resources in these mechanisms, while large, are still not large enough in the face of substantial shocks.

So what can the G-20 do to stitch the safety net back together? Combining the political analysis from the paper's in-depth interviews with 61 politicians and officials with the paper's war gaming analysis, this paper recommended a two-pronged approach from the G-20.

In the medium-term, the G-20's focus must be on strengthening the core of the safety net—the IMF. This means continuing the push for IMF quota and governance reform, increasing its permanent resource base, better communicating the role of the IMF to the public, and reducing the stigma of seeking IMF assistance through a greater use of precautionary financing. These reforms will help alleviate many of the pressures fuelling the safety net's fragmentation.

In the short-term, the safety net's fragmentation and the political status will be harder to shift. The G-20 should therefore focus on strengthening cooperation between its components, including, to the extent possible, through formalised ex ante guidelines on how cooperation would proceed during a crisis. The G-20 should implement the rest of its 2010 commitments—including freeing up seats for emerging market economies on its Executive Board. It should support a strengthening of the capacity of regional institutions and, where possible, the strengthening and extension of bilateral currency swap lines to countries that are inadequately covered by the existing safety net.

The G-20 is increasingly seen as the premier forum for global governance reform. With limited macroeconomic policy space and increasing risks in many economies, strengthening the global financial safety net should represent one of its top priorities.

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APPENDIX A. CALCULATING THE SIZE OF THE SAFETY NET

<i>US\$b</i>	Total resources	Available resources
Global	1275.3	876.0
International Monetary Fund	1012.0 ²⁵	780.3 ²⁶
World Bank	263.3 ²⁷	95.7 ²⁸
Regional	1006.9	856.3
Arab Monetary Fund ²⁹	3.8	1.4
Latin American Reserve Fund ³⁰	2.3	2.3
North America Framework Agreement ³¹	9.0	9.0
European Stability Mechanism ³²	597.2	449.1
EU Balance of Payments Assistance Facility ³³	54.5	54.5
Chiang Mai Initiative Multilateralization ³⁴	240.0	240.0
BRICS currency reserve pool ³⁵	100.0	100.0
Development banks	803.3	469.8
Asian Development Bank ³⁶	142.7	17.2
Inter-American Development Bank ³⁷	105.0	100.8
Development Bank of Latin America ³⁸	35.7	10.5
African Development Bank ³⁹	91.9	9.0
Asian Infrastructure Investment Bank ⁴⁰	250.0	248.0
New Development Bank ⁴¹	100.0	34.0
Islamic Development Bank ⁴²	26.0	19.3
European Bank for Reconstruction and Development ⁴³	52.0	31.0
Bilateral swaps	1518.4	311.1
United States ⁴⁴ - Euro area	313.8	0
United States - United Kingdom	95	0
United States - Switzerland	31	0
United States - Japan	127.6	0

²⁵ The sum of the IMF's quota resources, New Arrangements to Borrow and Bilateral Borrowing Commitments as at October 2017

²⁶ The sum of the IMF's forward commitment capacity (usable resources plus projected loan repayments over the next 12 months) and un-activated borrowed resources from the New Arrangements to Borrow and Bilateral Borrowing Commitments as at October 2017 (IMF, 2017a).

²⁷ Total subscribed capital (IMF, 2017a).

²⁸ Total subscribed capital less net loans outstanding (World Bank, 2017).

²⁹ AMF (2017).

³⁰ FLAR (2017).

³¹ US Federal Reserve (2017).

³² ESM (2017).

³³ EC (2017).

³⁴ AMRO (2017b).

³⁵ BRICS (2017).

³⁶ ADB (2016).

³⁷ IDB (2016).

³⁸ CAF (2017).

³⁹ AfDB (2016).

⁴⁰ Financial Times (2016).

⁴¹ Hooke (2014).

⁴² Reuters (2017).

⁴³ Fitch (2017).

⁴⁴ Federal Reserve (2008-2013). Interviews with the central bank suggest swap lines would not be available during balance of payments difficulty.

United States - Canada	9	0
United States - Mexico	39	0
United States - Singapore	30	0
United States - Korea	30	0
United States - Brazil	30	0
United States - New Zealand	15	0
United States - Norway	15	0
United States - Denmark	15	0
United States - Sweden	30	0
United States - Australia	30	0
United States - Canada	30	0
China ⁴⁵ - Tajikistan	0.075	0.075
China - Uzbekistan	0.105	0.105
China - Suriname	0.15	0.15
China - Albania	0.3	0.3
China - Iceland	0.525	0.525
China - Belarus	1.05	1.05
China - Kazakhstan	1.05	1.05
China - Pakistan	1.5	1.5
China - Turkey	1.5	1.5
China - Hungary	1.5	1.5
China - Sri Lanka	1.5	1.5
China - Mongolia	2.25	2.25
China - Ukraine	2.25	2.25
China - Chile	3.3	3.3
China - New Zealand	3.75	3.75
China - South Africa	4.5	4.5
China - UAE	5.25	5.25
China - Qatar	5.25	5.25
China - Argentina	10.5	10.5
China - Thailand	10.5	10.5
China - Indonesia	15	15
China - Russia	22.5	22.5
China - Switzerland	22.5	22.5
China - Malaysia	27	27
China - Brazil	28.5	28.5
China - Australia ⁴⁶	30	0
China - United Kingdom ⁴⁷	30	0
China - Canada ⁴⁸	30	0
China - Singapore ⁴⁹	45	0
China - European Union ⁵⁰	49	0

⁴⁵ Council on Foreign Relations (2015). Chinese swap lines have been used with Mongolia during a balance of payments crisis: Reuters (2015).

⁴⁶ Interviews with the central bank suggest swap lines would not available during balance of payments difficulty.

⁴⁷ Ibid.

⁴⁸ Ibid.

⁴⁹ Ibid.

⁵⁰ Ibid.

China - South Korea ⁵¹	54	0
China - Hong Kong	60	60
Japan - Australia	15.95	0
Japan - Singapore	11.14	11.14
Japan - India	50	50
Japan - Malaysia	3	3
Japan - Thailand	3	3
Euro area ⁵² - Latvia	1	0
Euro area - Hungary	5	0
Euro area - Poland	11	0
Euro area - Sweden	11	0
Euro area - Denmark	13	0
Euro area - United Kingdom	14	0
Euro area - Switzerland	25	0
Korea - Australia	4.5	0
Korea - UAE	5.4	0
Korea - Indonesia	10	0
Korea - Malaysia	5	0
India - Sri Lanka	2	2
India - Bhutan	0.7	0.7
Indonesia - Australia	8	0
Canada - Mexico	9	9
Unilateral⁵³	7875.1	7875.1
China	3010.0	3010.0
Japan	1233.0	1233.0
Saudi Arabia	553.7	553.7
Brazil	373.3	373.3
Korea	371.1	371.1
Russia	365.5	365.5
India	359.1	359.1
EU	282.7	282.7
Mexico	176.4	176.4
Germany	173.7	173.7
France	153.9	153.9
Italy	130.6	130.6
United Kingdom	129.6	129.6
United States	117.6	117.6
Indonesia	116.4	116.4
Turkey	115.0	115.0
Canada	82.5	82.5
Australia	54.3	54.3
South Africa	44.6	44.6
Argentina	32.1	32.1

⁵¹ Ibid.

⁵² Ibid.

⁵³ Figures from CIA (2016).

APPENDIX B. IN-DEPTH INTERVIEWS METHODOLOGY

The population for this research—referring to the group that the research intends to generalize its findings across—is summarized in Table A1. It can be organized by G-20 stream (left to right) and by seniority (top to bottom), multiplied by 20 countries. The objective was to interview the most senior policymakers possible in each G-20 stream from each G-20 country. This implies a total sample of 60 individuals. This minimizes bias by ensuring representation across all countries and streams of the G-20 given different streams often have different areas of responsibility and expertise.

Table A1. The theoretical population for the research

Leaders stream	Finance ministers stream	Central bank governors stream
Leaders	Finance ministers	Central bank governors
Sherpas (advisors to leaders)	Finance deputies	Central bank deputies
Sous-Sherpas	Finance deputy deputies	Central bank deputy deputies
Other officials	Other officials	Other officials

In total, 61 policymakers were interviewed. Table A2 shows the size of the sample and how it is distributed across countries and work streams. The identities of the policymakers who participated in this research are confidential, except for where they have been directly quoted. All quotes have been approved by those to whom they are attributed.

There are debates in the literature on the appropriate sample size when undertaking in-depth interviews, but a sample of 61 is more than adequate given the specialized nature of this research and the unique position of the policymakers.⁵⁴

Although interviewing multiple policymakers within a country is vital to reducing potential bias (see Baxter and Eyles (2010) on the importance of “triangulation”) the downside is that some countries are overrepresented in the sample (E.g. Australia). To address this, the accounts of policymakers are aggregated by country. Aggregation, however, requires that there be no significant disagreement between the policymakers within a country. This turned out to be the case. It was only in rare circumstances that the accounts of policymakers differed within the same country. Where inconsistencies did arise, they were addressed through follow-up conversations and through a weighting system based on the policymaker’s area of expertise (e.g. monetary policy), the time in which they served and their seniority.⁵⁵

Finally, any qualitative research entails the challenge of standardizing the data so that it can be reported in a way that is accurate but also digestible. This paper uses the commonly used technique, detailed by Diccio-Bloom and Crabtree (2006), and referred to as an “editing approach.” This is where the investigator reviews and identifies themes and text segments much as an editor does in organizing

⁵⁴ As summarised by Dorkin (2012), the concept of ‘saturation’ is the most important guide in determining the appropriate sample size (see also Mason, 2010). Saturation is defined as the point at which the data collection process no longer offers any new or relevant data or “when gathering fresh data no longer sparks new theoretical insights, nor reveals new properties of your core theoretical categories” (Charmaz, 2006, p. 113). Many factors are important in determining the appropriate size of a sample, including the quality of data, the scope of the study, the nature of the topic, the nature of the individuals being interviewed, the amount of useful information obtained from each participant and the qualitative method and study designed used (Morse, 2000).

⁵⁵ First, the accounts of policymakers who worked within the relevant G-20 work-stream were given preference over the accounts of policymakers who did not work in that policy stream. The accounts of central bank governors, for example, were given greater weight on the topic of monetary policy than the accounts of Sherpas. Second, the accounts of policymakers who worked on the G-20 at the time that an issue was discussed were given preference over the accounts of policymakers who did not work on the G-20 at that time. For example, the accounts of finance ministers who were present for the fiscal stimulus discussions in 2009 were given preference over the accounts of finance ministers who worked on the G-20 at a later date. Third, the accounts of more senior policymakers were given preference over the accounts of less senior policymakers. The view of a central bank governor, for example, was given preference over the view of a central bank deputy.

text.⁵⁶ This allows the results, reported in the sections that follow, to be partially standardized, complemented with direct quotes to flesh out what policymakers meant by their responses.

Table A2. Sample distribution for the interviews of G-20 politicians and officials

Country	Total	G-20 work stream		
		Leader	Finance	Central bank
Argentina	2	2		
Australia	9	4	3	2
Brazil	1			1
Canada	3	1	1	1
China	2	1		1
European Union	3	1	1	1
France	2	1		1
Germany	3	1	1	1
India	3	1	1	1
Indonesia	2	1	1	
Italy	4	1	1	2
Japan	2			2
Mexico	1	1		
Korea	2		1	1
Russia	3	1	1	1
Saudi Arabia	1	1		
South Africa	3	1	1	1
Turkey	2	1		1
United Kingdom	7	2	2	3
United States	6	2	2	2
Total	61	23	16	22

⁵⁶ A team from Ontario, Canada used this strategy to apply more than 100 codes in a study to understand the smoking experience and cessation process (see Diccio-Bloom and Crabtree, 2006).



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