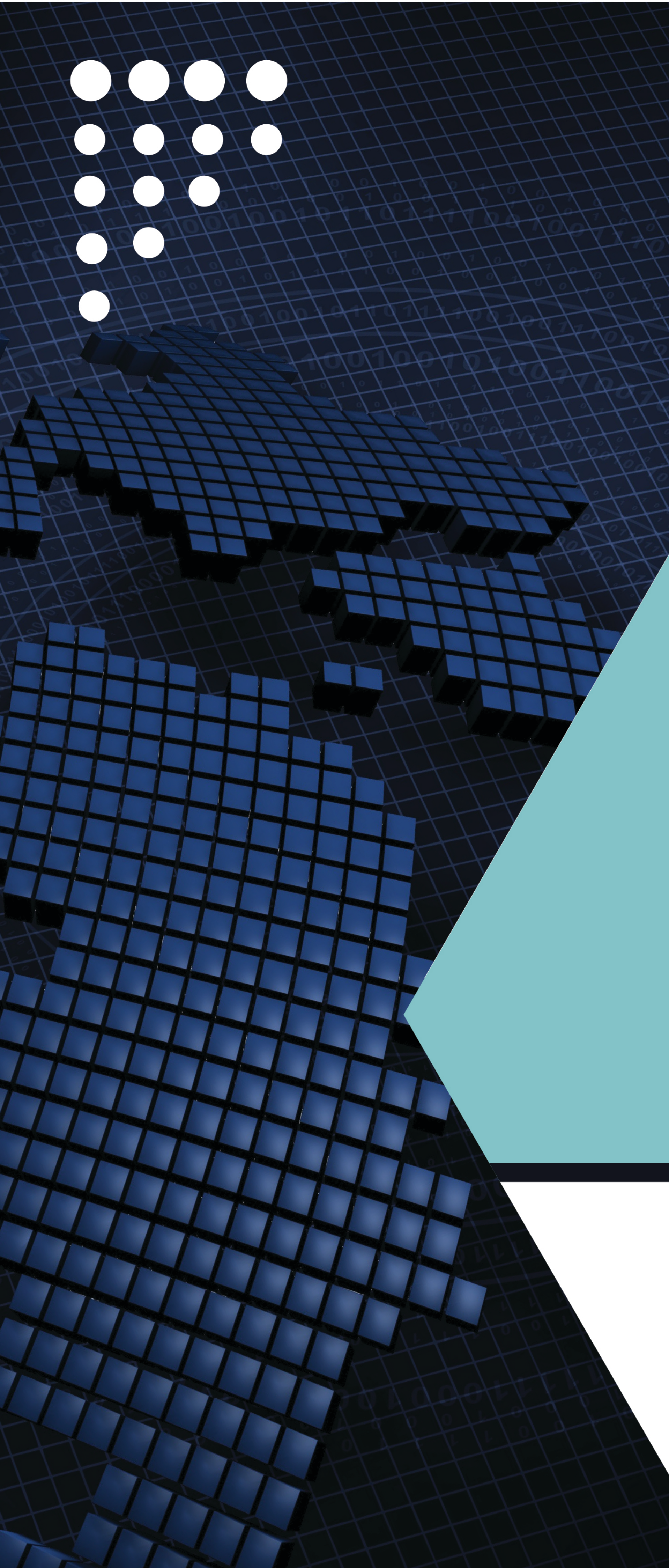

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Emerging Markets Forum

Reforming the International Monetary and Financial System—More Urgent Than Ever

Chapter 8

Bernard Snoy

'As Jean Monnet used to say, politics is not merely the art of the possible. It is also the art of making possible to-morrow what still seems impossible.'
—Robert Triffin

Introduction[1]

The major shift in monetary policies that lies ahead is likely to focus renewed attention on the international dimension—both regulatory and systemic—of monetary and financial policies. During 2021, the dollar had already appreciated significantly against most Emerging Market Economies (EME) currencies, and financial conditions have tightened in most emerging markets. Entering 2022, the Fed is set to curb their bond purchases, and the funds rate is likely to begin rise. Global liquidity conditions seem likely to tighten, although the timing and extent of this are unknown.[2] Such a renormalization of benchmark dollar interest rates would bring to light the latent vulnerabilities of borrowers who have become over-extended during more than decade of near-zero interest rates. In addition, international regulatory attention is now focussed on non-bank financial intermediaries and on dysfunctions in international capital markets. The combination of tighter monetary policy and new financial regulations in the advanced economies over the next few years could have major implications for EMEs.

The last period of monetary tightening in the main financial centres (from mid-2004 to the end of 2006) revealed how earlier regulatory shortcomings (e.g., the blind spots of Basel II, inadequate oversight of short-term dollar exposures of non-US banks, the failure in the advanced economies to develop a macroprudential policy framework, and so on) had weakened the global financial system. Once the US housing market turned, dollar funding markets became illiquid, and several major banks faced the threat of insolvency.[3] It also showed that central banks were not prepared to ease monetary policy quickly enough to counter this shock. Nor were they prepared for the severity of the dollar liquidity squeeze, which would freeze capital markets and hit banks hard.

How the coming transition to higher interest rates will be managed at the international level matters greatly for the emerging markets. In December 2019, the Robert Triffin International (RTI) Association released a report of an RTI working party on 'Managing global liquidity as a global

1. The author is Chairman of Robert Triffin International (RTI), an association dedicated to the preservation and the promotion of the intellectual heritage of the Belgian-American economist Robert Triffin (1911–93). This chapter benefitted from very substantial comments and suggestions of Christian Ghymers, Vice Chairman of RTI and from Philip Turner, Member of the RTI Board.
2. Higher and higher rates of inflation during 2021 served to bring forward expected future monetary tightening. See also de Larosière and Marsh (2017) and de Larosière (2021).
3. For a summary analysis of these developments, see Turner (2021, 79–90).

public good' (RTI 2019). Using data from the BIS and the IMF, this report documented the scale of the expansion of global liquidity since the financial crisis. This extraordinary expansion has been driven by the international capital markets.[4] All this has been conditioned by domestic policies in both the monetary and regulatory spheres—especially policies in the advanced countries. But much of the impact has fallen on the emerging markets. As Alexandre Lamfalussy concluded in his Yale lectures, financial crises in the emerging market have so often been driven by 'the exuberant behaviour of lenders and investors in the developed world … which raises leverage and asset prices to levels that eventually become unsustainable'.

The report showed an unprecedented decade-long surge in international lending to the EMEs and especially to non-financial companies. Much of this lending has taken place through dollar bond markets. The dollar debts of EME companies have risen much faster than exports increasing their currency mismatches. The more heavily indebted companies tend to buy dollars whenever they fear a depreciation of their local currency, and this can destabilize forex markets.

As for other and more important policy shortcomings of the international monetary and financial system itself, the report expressed concern that the IMF's financial capacities had not kept up with the increased vulnerabilities that much greater dollar borrowing had created. And the role of the Special Drawing Right (SDR) had remained far too limited. While the extensive use of Fed swap lines after the financial crisis had defused potential dollar liquidity squeezes in the main financial centres, there was no lender of last resort (LOLR) in dollars.

A fundamental systemic problem is that interest rate policies suited for US economic developments may not suit other countries which use the dollar for a large proportion of their financial transactions (Bordo and McCaulet 2018).[5] Because the US economy in late-2019 seemed near full employment, the RTI report was concerned that increases in dollar interest rates would damage those economies (especially in the emerging markets) heavily dependent on dollar international financing. There were also worries that the Fed would be less forthcoming in dollar lending to central banks under pressure.

In recent events, however, the nature of the shock was totally unexpected—the spread of the COVID-19 virus. Since the US was itself directly threatened, the Fed rapidly eased monetary policy, took new measures to support private markets (notably for corporate bonds), and ramped up dollar liquidity support for central banks, including those not covered by swap agreements. The worry about a US-led tightening did not materialize.

But the result—a renewed and substantial expansion in dollar lending, notably to EME borrowers—has reinforced the underlying worries expressed in the RTI's December 2019 report. COVID-19 led to unexpected developments but made the fundamental imbalances ever more dangerous.

In particular, the need to identify the systemic dysfunctions in the international monetary and financial system was once again highlighted. What reforms could address such dysfunctions remains a live issue and is the essential subject of this chapter. It begins by summarising various proposals associated directly or indirectly with RTI over the past decade. It then considers

4. See Figures 5 and 6 in RTI (2019) for data on the scale of this development. Figure 7 shows that currency mismatches were concentrated in the private sector (notably because of dollar borrowing of non-financial companies) while the official sector built up a large stock of dollar assets.
5. This is perhaps the most general form of the Triffin dilemma.

other drivers of IMFS reform, including some new ideas, which now might seem impossible but which, as Monnet put it, may one day become possible.

Proposals to Reform the International Monetary and Financial System: The Palais Royal and Other RTI Supported Initiatives and Their Aftermath

Since the collapse of the Bretton Woods system in 1971, one of the great paradoxes about the reform of the international monetary system is that although so much has been said and written about it, for instance on the occasions of the seventieth and the seventy-fifth anniversaries of the Bretton Woods Conference,[6] little concrete action has taken place. Interest for the subject has waned as if the advent of a new international monetary system was an impossible endeavour, at least in the foreseeable future. Even the IMF, which should be the foremost institution dedicated to the advent of a reformed system, seems to carefully avoid touching on this sensitive subject. In his contribution to the book edited by the Reinventing Bretton Woods Committee (RBWC), Harold James, Professor of History and International Affairs at Princeton University, concludes, in a disillusioned way, that 'the sad lesson of Bretton Woods is that things need to be extremely dangerous before a political dynamic of reform develops. It may be that today's world, for all its anxieties, is simply not obviously dangerous enough' (James 2016).

Cross-border financial flows and international financial markets have received much more attention, particularly since the outbreak of the 2008 Great Financial Crisis. Regulation and supervision of financial institutions have improved, with, among others, the creation of a new international institution—the Financial Stability Board (FSB). The FSB, however, has no political authority. Its task is to coordinate national financial authorities and international standard-setting bodies as they work toward developing strong regulatory, supervisory, and other financial sector policies. It fosters a level playing field by encourageing coherent implementation of these policies across sectors and jurisdictions. The creation in 2008[7] of the G20 was also an important step. Questions related to the International Monetary and Financial System (IMFS) have been frequently on its agenda; there was progress on regulatory issues, but there was no significant advance towards addressing the systemic weaknesses in its architecture nor toward strengthening institutionally the IMF, the only embryo at the global level that can assert authority on the IMFS and play the most important role to ensure its stability, namely the role of global LOLR.

A major landmark for reflections on reform was the Palais Royal Initiative[8] (PRI) in 2011 (Boorman and Icard 2011). This was a very wide-ranging report, which brought many

6. See for instance: Uzan (2016); On the occasion of the French Presidency of the G7, Banque de France organized in Paris on 16 July 2019, a major conference on 'Bretton Woods: 75 years later—Thinking about the next 75', the proceedings of which are available on the Internet, and a virtual book was also produced on that occasion by Reinventing Bretton Woods Committee (RBWC) - *The Spirit of Bretton Woods: Past, Present and Future.*

7. The G20 has been working at Finance Minister and Central Bank level since 1999 but was upgraded at Heads of State and Government in November 2008 in the context of the global financial crisis on a joint proposal from France and the UK.

8. In October 2010, Michel Camdessus, former Managing Director of the IMF, Alexandre Lamfalussy, former General Manager of the BIS and Chairman of RTI, and Tommaso Padoa-Schioppa, former Minister of Economy and Finance of Italy and former Member of the Executive Board of the European Central Bank (ECB), convened a group of 18 former Ministers, Governors, Heads of International Institutions, and Senior Officials, which took the name of Palais Royal Initiative (PRI) to evaluate the international monetary system and to propose changes that might be needed to stabilize it and reduce the likelihood of future failures. The eighteen signatories of the PRI report included also eminent personalities such as Paul A. Volcker, former Chairman of the US Federal Reserve Board, Edwin Truman, former Assistant Secretary for International Affairs of the US Treasury, Xiaolian Hu, Vice President of China Society of Finance and Banking, Horst Köhler, former Managing Director of the IMF and former President of Germany, Andrew Crockett, former General Manager

perspectives to the analysis of this controversial issue. Two key messages can be identified. The first one is that the collective failure in establishing over four decades an IMFS truly worthy of this name had been one of the key factors of the 2007–08 crisis. The second is that if no credible responses were given to the absence of effective discipline, to weak and ineffective surveillance, and to excesses of all kinds, the increasingly integrated world economy would become all the more vulnerable as it simultaneously engaged in a process of transition toward a multicurrency regime. In addition, the report pointed to the lack of effective global governance. Suffering from a 'legitimacy deficit', the IMF has not been able to play its expected role of catalyst to ensure that major economic and financial policy decisions made nationally, including exchange rate policies, are mutually consistent and contribute to world stability.

The PRI report suggested that the IMF and the BIS should work together to develop a set of indicators to measure global liquidity. This led central bank governors to direct the BIS to develop an extensive set of Global Liquidity Indicators, which are published quarterly.[9] The Landau Report, which introduced these indicators, demonstrated that private liquidity was considerably larger than official liquidity. Of great systemic significance is the fact that the destruction of liquidity, related as it often is to the forced deleverageing by private institutions, can be sudden and brutally procyclical.[10]

In addition to advocating for stronger surveillance and benchmarks for globally consistent exchange rates and for a greater role for the SDR, the PRI made three main policy proposals:

- National macroprudential policies should take account of global liquidity conditions;
- capital flows need to be managed because they are key to the transmission of risks; and
- A permanent crisis financing mechanism akin to a global LLOR should be put in place, requiring also important changes in IMF governance.

There has been significant progress on the first two proposals. The development and improvement of macroprudential policies has been one of the successful policy innovations since the financial crisis; although, by focusing on banks, these policies contributed to the expansion of non-bank financial intermediation, especially through the repo market, which still escapes most regulations. There has also been progress on capital flow management. This had been a bone of contention between the IMF and the emerging markets. But over the past decade or so, the IMF has become more pragmatic about the adoption of such measures. Nevertheless, a recent review by the IMF Independent Evaluation Office (IEO) suggested that further movement was necessary. In particular, the pre-emptive and long-lasting measures should in some circumstances be allowed (IEO 2020). Unfortunately, there was no progress on the more important third one. The onset of the sovereign debt crisis in the eurozone in some ways led to a crowding out of discussions of reforms of the IMFS that would be of a more systemic nature.

As a follow-up to the PRI, the RTI Association set up in 2013 a working party under the leadership of André Icard in view of defining more specific proposals towards using the SDR as a lever to reform the international monetary system (RTI 2014). In view of enhancing the international public role of the SDR, the Working Party Report recommended that the IMF's accounts should be placed on an all-SDR basis, requiring an amalgamation of the General

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of the BIS, Sergey Aleksashenko, former Deputy Director, Central Bank of Russia, Y. Venugopal Reddy, former Governor of the Reserve Bank of India, and Guillermo Ortiz, former Governor of Banco de Mexico, among others. RTI was indirectly involved in the initiative.

9. See BIS (2011).

10. The IMF and BIS indicators are summarized and assessed in RTI (2019, 12–17).

Resources Account with the SDR account and that future lending would all be in SDRs. It suggested that the IMF resume SDR allocations and be enabled to issue SDRs at last resort in a crisis situation. The SDR should be made more attractive, and the composition of the basket should reflect more closely the relative importance of economies in international trade and financial transactions. The report proposed an orderly diversification of reserves, which would be facilitated through a mechanism allowing their conversion into SDR-denominated claims. In particular, periodical substitution account facilities should be offered to member countries, and currency exchange operations against the SDRs should be organized between the IMF and its members. Another important set of proposals relates to the promotion of a private SRD market. Official support (e.g., significant private SDR operations by the public sector) is needed to jumpstart the private SDR market, in the same way that public policy actions helped the private ECU bond market reach a critical mass in the 1980s and 1990s before the advent of the euro. The official sector should take the lead in providing appropriate structures suited to the functioning of an active SDR market. A multilateral clearing of SDR operations should be set up on the model of the former ECU clearing operated in the past by the BIS. To enable central banks to use their official holdings directly on private markets, it is necessary to create a link between private and official SDRs. This could be achieved either by allowing private banks to hold SDRs or by allowing the official SDRs to be converted into claims that central banks and private banks could hold.

In a subsequent contribution entitled Reforming the IMS—A sequenced agenda prepared in 2016 for the Emerging Markets Forum, Michel Camdessus and Anoop Singh[11] (2016) proposed the following sequenced agenda in three critical steps:

- IMF Reforms in several major areas: Reinforcing the IMF's surveillance function, developing guidelines of acceptable imbalances, broadening the surveillance of the capital accounts, and developing a statutory mechanism for sovereign debt resolution; making countries' obligations of exchange rate policies more specific through the use of benchmarks; adjusting IMF quotas and voting rights to reflect the increasing importance of emerging countries and entrusting final decision-making power to a Ministerial Council or to the existing IMF's International Monetary and Financial Committee (IMFC), comprising ministers and central bank governors rather than the present Executive Board of senior officials; and reforming the make-up of the G20, restructuring it along the lines of the IMFC, based on the twenty-four Bretton Woods constituencies, to ensure that the full membership of the IMF is represented.
- Introduction of a reliable mechanism to monitor and manage global liquidity:[12] This would involve the development of measures for calibrating global liquidity and the creation of a high-level group able to monitor movements in global liquidity. One aim would be to ensure that SDR allocation could be used much more flexibly, responding as needed to the global liquidity situation. This high-level group, which could, for instance, include the governors of the central banks whose currencies are included in the SDR

11. Anoop Singh is a former Director, Western Hemisphere and Asia Pacific at the IMF and more recently Member of the Indian fifteenth Finance Commission

12. See RTI (2020), which addresses the serious vulnerabilities in the way global liquidity is managed and makes a few specific recommendations addressed in particular to the IMF, the BIS, and the FSB. See also sub-section A in Section 4 below.

currency basket, would periodically submit to the IMFC a report on global liquidity and measures for calibrating global liquidity.

- Convening of a Bretton Woods II Conference, completing ongoing negotiations on the reform of the IMF, concluding parallel work on the governance and collaboration with other organizations in the IMFC (such as the World Bank, the FSB, the BIS, the WTO, etc.): The ultimate ambition would be that the IMF become the 'supranational bank that would have similar relations with the national central banks to those that exist between each central bank and its subordinate banks' envisaged by Keynes in the 1930s and proposed again by him at the Bretton Woods conference of July 1944. As national central banks issue their national currency, the IMF would issue a multilateral currency—the revamped SDR becoming the Multilateral Drawing Right—a liquid liability that would not be a debt of any individual country. The IMF would be empowered to become a genuine global LOLR.

Reactions to the reform proposals of the PRI have been mixed. A prominent US intellectual figure, Joseph Stiglitz, former Chief Economist of the World Bank and Chair of the International Commission of experts on Reforms of the IMFS appointed by the President of the UN General Assembly in the aftermath of the 2008 crisis has come up with conclusions very close to those of the PRI, asserting, among others, that a global reserve system is doable (Stiglitz 2016, 349). Another important academic figure, John Williamson, Senior Fellow at the Peterson Institute for International Economics, who passed away in 2021, endorsed broadly in his last book the PRI conclusions, placing emphasis on three key ingredients of IMFS reform: (i) giving the IMF unlimited possibilities of bail out in extreme situations; (ii) introducing a mechanism capable of disciplining surplus countries by limiting the freedom to set exchange rates; and (iii) making the SDR a vibrant private sector asset, benefitting from public support for clearing and conversion into official SDRs (Williamson 2018). Other prominent figures, coming from EMEs such as Raghuram Rajan (2016), former Governor of the Reserve Bank of India, or Jose Antonio Ocampo (2016a; 2016b), former Minister of Finance of Columbia, have called for new rules of the monetary game or proposed their own version of a program of reform of the IMFS.

These issues have frequently been on the agenda of the G20. As a result of a momentum created under Chinese chairmanship of the G20 in 2016, the ensuing German chairmanship launched in 2017 the G20 Eminent Persons Group (EPG) on Global Financial Governance chaired by Tharman Shanmugaratnam, Deputy Prime Minister of Singapore. The EPG' report submitted in October 2018 tackled several important but controversial issues. First, and echoing a major theme in the PRI report, it noted several shortcomings in international surveillance. It therefore proposed that the surveillance efforts of the IMF, the FSB, and the BIS be integrated into a coherent global risk map, a proposal endorsed by the IEO of the IMF. But it warned that any joint process' must avoid converging on a diluted consensus.' Secondly, taking account of the views of many EMEs on the need to manage capital flows, it concluded that the IMF should be ready to countenance measures needed to contain the financial risks from capital flows. Thirdly, the EPG recognized the critical need to plug the gap in the Global Safety Net for systemic crises in the future. The international community needs mechanisms to be able to quickly access a large amount of liquidity to ensure or restore financial stability. Disappointingly, members of the EPG could not agree on the specific mechanisms through which this could be achieved, nor did they dare to consider any institutional transformation of the IMF that would make it a genuine global LLOR. In particular, there was no consensus on possible innovative options for IMF funding in large and severe global crises, including on-lending of unused SDRs from member country savings, market borrowing by the IMF, and replenishing and expanding the New Agreements to Borrow (NAB). What was particularly puzzling was that this 2018 report did not even mention among the options a significant SDR allocation as was decided by the IMF in 2009 and now in 2021.

- Just before COVID-19 struck, a working party of RTI took stock of a key issue in the IMFS—the management of global liquidity. Its report, released in December 2019, argued that there was an immediate need to establish some pragmatic global liquidity framework. Building on existing arrangements, it proposed that the FSB brief the G20 Ministers and Governors about the systemic vulnerabilities coming from global liquidity developments. It recommended paying particular attention to the risks generated by the growing activities of non-bank financial intermediaries (NFBIs). Regulatory reforms after the financial crisis concentrated on banks, which had the effect of driving international financial intermediation into bond markets.[13] The report also highlighted the inadequacy of the Global Financial Safety Net; adding many elements together, it estimated that the official capacity of international support amounted to only one-fifth of outstanding international credits.[14]
- A string of episodes of instability in core and normally liquid markets—notably in September 2019, March 2020, and February 2021—has set alarm bells ringing. The further growth of the dollar debts of non-US borrowers has drawn more attention to these issues by the G20, by EME authorities, and by the FSB.[15] By the summer of 2021, the FSB had completed their long and very comprehensive consultation process. The huge international expansion of credits, especially dollar credits, via bond markets represents a major threat to global financial stability. Bond funds, often leveraged and disguising substantial liquidity mismatches, have been a major driver of this development. But the FSB did not yet agree on any global minimum standards for such funds. National regulators, however, are preparing new rules. The outgoing chairman, Randal Quarles, then-vice president of the Federal Reserve, said it was not just 'jurisdiction-specific circumstances' but also 'cross-border spill overs', and he stressed the need to avoid regulatory arbitrage.
- Shortly later, in an unusual and well-publicized step, the head of the BIS, Agustin Carstens (2021),[16] used the *BIS's Quarterly Review* of December 2021 to warn in strong terms about the financial stability risks created by NBFIs. Such institutions, he noted, have been the main cause of several episodes of extreme market dysfunction, and the regulatory framework governing them is not 'fully fit for purpose'. What happens to NBFIs could have a first-order impact on EMEs. In particular, the combination of new regulations aimed at constraining risky bond issuance and Fed monetary tightening will alter the international financing possibilities for EME non-financial companies. Liquidity and credit risks may rise, perhaps appreciably.

13. See Turner (2021, 90–100) for why bond market exposures constitute at present the greatest risk to global financial stability. See also Hung Tran (2019).
14. Details of this calculation are found in RTI (2019, 26).
15. A good summary is provided by Hinge (2021).
16. See also Lewrick (2021).

In the meantime, the new global economic and financial crisis linked to the COVID-19 pandemic has prompted the IMF to react through the establishment of several new facilities, and the advent of the Biden Presidency made it possible for the G20 to agree on a substantial SDR allocation equivalent to US$650 billion, which is a very positive step. But neither IMF management nor any member G20 dared to put the broader issue of IMF reform and IMF potential LLOR role on the agenda.

The Mutations of the Triffin Dilemma and the Worsening Unsustainability of the Present IMFS

In 1960, the Belgian–American economist Robert Triffin (1911–93) shed light on the inadequacy and the unsustainability of the Bretton Woods system, based on the US dollar, convertible into gold, and on fixed exchange rates, that could nevertheless be adjusted under the supervision of the IMF (Triffin 1960). He explained that if a national currency is used as a global currency, there is an irremediable contradiction between the issuing country's internal domestic requirements and the external requirements of the world using it. In the context of growing US public expenditures, associated with the Vietnam War and the financing of the Welfare State, Triffin formulated as follows his famous dilemma.

Either the United States controls its budget and current account balances by restricting domestic consumption and the world runs the risk of a recession, or it finances on credit its growing deficit and the abundance of dollars thus created will one day show the impossibility to ensure the convertibility of the dollar into gold. It was the second branch of this alternative that came about, and, on 15 August 1971, the United States put an end to the gold convertibility of the dollar. Shortly thereafter, the international monetary system gave up the system of fixed exchange rates.

Did the new system, with flexible exchange rates and theoretically more freedom for sovereign countries to conduct independent fiscal and monetary policies, bring about a more sustainable framework? Surely not when one observes its dominant features: massive global indebtedness, generating a succession of ever more severe financial crises; serious and persistent misalignments of the exchange rates among the major currencies; continued asymmetry in the burden of adjustment between deficit and surplus countries; a preference for holding liquid assets rather than long-term investments so badly needed; maintenance of the 'exorbitant privilege' of the dollar—US deficits remain the central element supplying the world with reserves, and the richest country in the world, the US, continues to live on credit being financed even by the poorest countries; diminution of the authority of the IMF, concentrating on developing countries and endowed with insufficient resources to play a genuine role of LOLR; dominance of private over public liquidities; and absence of any mechanism to ensure that global liquidity would be managed as it should, namely as a global public good.

In the meantime, the fiscal dimension of the Triffin dilemma has worsened. In a world characterized by huge uncertainties and strict limits to the capacity of the IMF to bail out countries in sudden difficulties, there is, particularly in EMEs, an unsatiable appetite for safe assets, the satisfaction of which depends on the constant increase of liabilities issued by the US Treasury. Demand for safe and liquid assets is rising faster than the capacity of the United States to supply them, where that capacity is limited by the ability of the US government to raise taxes and service the government debt securities that are held as reserves and used in cross-border transactions by other countries. How long will confidence in the dollar be compatible with the illimited expansion of US indebtedness?[17] According to Andrew Sheng (2021), the net external liability of the USA is equivalent to 65 per cent of US GDP and to 16.7 per cent of world GDP.

It was also Robert Triffin (1991), who, at the end of his life, foresaw the development of a vicious circle of disequilibria, which he named a 'built-in destabilizer', relying upon two intertwined mechanical channels—(i) the weakening of the external constraint on the issuer of the reserve currency, exacerbating macroeconomic imbalances and pushing down its saving rate and (ii) the 'spill overs' to the rest of the world of the monetary conditions prevailing in the United States. EME central banks are threatened with destabilizing inflows and outflows of short-term capital unless they align themselves on the US monetary policy. To avoid excessive inflows, these central banks are inclined to pile up additional reserves, resisting appreciation of their currency and reinjecting their dollar reserves in the international capital markets, thus creating a multiplier effect and driving down interest rates. All this contributes to the endogenous generation of pro-cyclical monetary waves and growing monetary instability with boom-and-bust episodes. In this context, we can view the Great Financial Crisis (GFC) of 2008–09 as a result of the system's inability to address the Triffin Dilemma and the related 'built-in destabilizer.' Of course, international policy coordination might theoretically make up for the policy spill overs, but experience shows that coordination attempts of the past were not only ineffective but asymmetric, carrying much more weight in countries having to rely on IMF assistance—generally emerging markets or developing countries—while authorities of countries issuing reserve currencies were paying scant attention to the IMF recommendations.

Triffin's 'built-in destabilizer' must also be seen in the light of the hypotheses developed by Hyman Minsky and Michel Aglietta concerning financial markets' intrinsic propensity to instability (see explanations in Annex 1). It is true that, in view of limiting this instability, there was major progress in international banking regulation and supervision since the GFC. Nevertheless, as shown in the previously mentioned recent RTI (2019), a number of new vulnerabilities have emerged, namely an increasing and opaque part of intermediation on global capital markets is taking place through NBFIs and greater reliance on international bond markets, through bond funds active in the supply of global credit, has created new, opaque risks (liquidity illusion) that largely escape regulation. Any unexpected shock could create a dollar liquidity crunch. Furthermore, only recently has the FSB begun a wide consultation on how to address these issues (FSB 2020). There has also been an aggravation of the second major failing of the current international monetary system, namely the absence of a genuine and clearly designated Global LOLR. The firepower (quota plus pre-arranged agreements to borrow), the authority and the legitimacy of the IMF, as it stands today, for taking this role did not keep pace with the continuing explosion of global liquidity and risks. As explained by Christian Ghymers (see Annex 2), the increased role of non-banks has two other systemic implications—(i) the pro-cyclical behaviour of Repo markets affects the monetary policy tools, especially when a liquidity crisis disrupts the intermediation capacity of the repo markets, in which case conventional monetary policies

17. See Eichengreen, Mehl, and Chitu (2018, 197), which formulates as follows the twenty-first century version of the Triffin Dilemma: Either the United States will limit its issuance of debt securities, in which case other countries will be starved of international liquidity, or the US government will increase issuance along with foreign demand, in which case confidence in its ability to service that debt, and therefore the safety and liquidity of the latter, will be cast into doubt.

cannot prevent fire-sales on the repo markets and (ii) a huge structural increase in the demand for 'safe assets' as collaterals, leading to a global shortage of USD safe assets, which might be the new form of the Triffin Dilemma.

The global deflationary effect of the mercantilist policies pursued by surplus countries and their refusal to pursue expansionary fiscal policies has induced the most important central banks to adopt unconventional quantitative easing policies, leading to an exponential increase of their balance sheets and of global liquidities that compounded the above structural changes in global capital markets. With the advent of a genuine inflationary threat, the same central banks will find themselves obliged of tapering their assets buying programs, which creates a dangerous context of instability, with what Mohamed El-Erian (2021), President of Queens' College, Cambridge and Adviser to Allianz and Gramercy, calls 'pockets of illiquidity amid generalized liquidity' that could degenerate into a global liquidity crisis. 'Until now, episodes of sudden illiquidity amid liquidity have proved to be temporary and reversible, and for good reason—the Fed's constant flooding of financial markets with liquidity reinforced the market's conditioning to buying the dip for "fear of missing out". With such high market confidence in the "Fed put", every bout of localized illiquidity encouraged the private sector to extend its leverage to take advantage of a reversible market drop.' But of course, no one knows when the bubble might burst.

In the farewell speech he gave on 23 August 2019 at the annual Jackson Hole Symposium, Mark Carney (2019), Governor of the Bank of England and former Governor of the Bank of Canada, focussed on how the nature of the IMFS challenges monetary policy. Without referring to Triffin's 'built-in destabilizer', he talked about a growing

> 'destabilizing asymmetry at the heart of the IMFS' and the increasing risk of a global liquidity trap. In his view, 'the IMFS is structurally lowering the global equilibrium interest rate, r*, by—(i) feeding a global savings glut, as EMEs defensively accumulate reserves of safe US dollar assets against the backdrop of an inadequate and fragmented global financial safety net; (ii) reducing the scale of sustainable cross border flows, and as a result lowering the rate of global potential growth; and (iii) fattening of the left-hand tail and increasing the downside skew of likely economic outcomes.
>
> In an increasingly integrated world, global r* exerts a greater influence on domestic r*. As the global equilibrium rate falls, it becomes more difficult for domestic monetary policy makers everywhere to provide the stimulus necessary to achieve their objective.' (Carney 2019)

Further to this lucid diagnosis, Mark Carney examined what could be done in the short term, for instance, asking those at the core of the IMFS to incorporate spill overs and spillbacks in their flexible inflation targeting. But in the medium-term, he saw no other solution than having the policymakers 'reshuffle the pack', that is improve the structure of the current IMFS and rebuild an adequate global safety net. 'In the longer term,' says Mark Carney (2019), 'we need to change the game. There should be no illusions that the IMFS can be reformed overnight or that market forces are likely to force a rapid switch of reserve assets. But equally blithe acceptance of the status quo is misguided. Risks are building, and they are structural. As Rudi Dornbusch warned, "In economics, things take longer to happen than you think they will, and then they happen faster than you thought they could."' Mark Carney is also probably the first senior central banker to come out with a view of what the alternatives might be: ‘When change comes, it shouldn’t be to swap one currency hegemon for another. Any unipolar system is unsuited to a multi-polar world. We would do well to think through every opportunity, including those presented by new technologies, to create a more balanced and effective system’

Other Drivers of Reform of the IMFS

A. Structural Change Needed in the IMFS to Finance the Ecological Transition

Is the current IMFS suitable for the mobilization of the huge amounts of capital required to achieve the ecological transition, in particular the move of the global economy towards carbon neutrality? The financial dimension of the challenge of moving to carbon neutrality is indeed daunting. For example, the International Energy Agency (IAE) (2017) estimates that the low-carbon transition could require US$3.5 trillion in energy sector investments alone every year for decades—twice the rate at present. Climate-resilient infrastructure could reach an estimated US$90 trillion of infrastructure expected between 2015 and 2030. Furthermore, EMEs and less developed countries would need a higher volume of investments as they are less advanced in their development. This means that advanced nations need to expand the scope of their financing farther than the limits of their own nations. Economic development in the twenty-first century can be sustainable only if it is inclusive.

The experience so far is disappointing as the COVID-19 crisis has considerably reduced global energy and infrastructure investment volumes while the world’s richest nations have so far failed to make good on a US$100 billion-a-year commitment they took in Cancun in 2010 and reaffirmed in Paris to help developing nations cope with climate change.

Several structural or systemic features, including in the current IMFS, make it particularly difficult to implement the commitment taken by the Parties in Article 2 of the Paris Agreement, namely making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

In addition to what Mark Carney calls the tragedy of the horizon, namely the short-sightedness prevailing in financial markets and electoral cycles and the classical environmental problems of the tragedy of the commons and of free riders, the financing of the required huge capital-intensive investments is made difficult by the instability of the IFMS caused by the ‘built-in destabilizer’ in the absence of solution to the Triffin dilemma, global over-indebtedness, and the liquidity trap into which the global financial markets have fallen. The systemic evolution in financial markets, with the emergence of non-bank intermediation, the predominance of the dollar repo markets and the insatiable appetite for the safest of the safe assets are creating an unfavourable environment for raising funds of the magnitude required. Refinancing existing debts on a short-term basis or speculating in the stock market might always be more attractive to investors and assets managers. This constitutes an emergency situation. How quickly can responsible investing replace the dominant mentality of the asset management profession aiming at making money with money? Behind all the above obstacles, stands the persistent infeudation of the Western elites to the neo-liberal ideology, with its obsession about shareholders value and its excessive confidence in the efficiency of financial markets, as if the market value of a commodity, an asset, or a currency was always right.

The reduction of GHGs being a public good and the returns to investments being by definition long-term, uncertain, and subject to political risks, a large part of the investments will have to be made by public actors (Griffith-Jones 2020), many of whom are already overindebted and would need to issue long-term bonds on an unprecedented scale (Griffith-Jones 2020). A very high degree of international cooperation will be needed, and a much more important role will be expected from multilateral financial institutions. As pointed out by Aglietta and Coudert (2019), this will imply, in the long-term if not the short-term, a key role for the IMF, a bigger role for the SDR, and ultimately, the move to a multilateral currency. The strategy proposed by the IMF (2021) to help its members address climate change-related policy challenges by incorporating them in Article IV consultations and into financial stability assessments and by channelling additional resources to developing countries using the Poverty Reduction and Growth Trust and the recently established Resilience and Sustainability Trust are all valuable initiatives but remain insufficient. In fact, as pointed out by Aglietta and Coudert (see Annex 3), the change of energy paradigm could lead us to a corresponding change in the international monetary system.

B. Geopolitical Changes Pointing in the Direction of International Monetary Reform

Robert Triffin and his successors underestimated the resilience of the dollar and the willingness of central banks and private banks and non-banks worldwide to accumulate dollar-denominated assets despite the severe and persistent imbalances in the US budget and current account balances and the exorbitant privilege this entailed. The dollar crash never materialized. During the 2007-08 crisis, which originated in the US, the world still viewed the dollar as a safe haven and the pivot international currency. The US dollar has appreciated in recent years despite the imbalances.

Nevertheless, we must examine, in a prospective way, the geopolitical shifts at work in today's world. There is a weakening in the theoretical and practical justifications in the status of the USD as hegemonic key currency. The Trump presidency raised doubts on the benevolent nature of the US hegemony. There has been unease and sometimes outright indignation at the way in which the US instrumentalized the dollar for geopolitical purposes. Uncertainty is expressed about the continued capacity and willingness of the Federal Reserve to play the role of LOLR in future global USD shortage. More profoundly, there is a lack of intellectual leadership. The US does not appear to have a long-term vision on how the international role of the dollar should evolve. In a nutshell, the status quo does not serve anybody well.[18] There is an aspiration for change despite the inertia or stickiness supporting the continued dominance of the dollar.

What about the evolution, which appears inescapable, towards a multi-reserve currency system? Already, today, the euro is the second most important international payment and reserve currency. The international role of the euro is set to increase. The Juncker Commission launched in 2018 a strategy 'Towards a stronger international role of the euro' (European Commission 2018). There are nevertheless significant risks involved in the internationalization of the euro, in particular unwanted currency appreciation and tensions between the ECB's domestic mandate and the international consequences of its monetary policy decisions (Hudecz et al. 2021). Similar considerations could be developed with emerging economies currencies, which, given the increasing weight of their economies in the world, would aspire to share the USD's

18. See Tett (2019, 9), which comments a recent seminar on this subject organized in Zurich by the IMF and the Swiss National Bank.

international currency status and possibly one day replace it. If we take a long-term perspective, China looks set to become the dominant economic and political power of the twenty-first century. The question is how quickly it would be able to internationalize its currency and how responsibly it would handle the resulting exorbitant privilege and exorbitant burden.

Of course, a multipolar reserve currency world could be combined with a network of regional or inter-regional safety net arrangements, such as the European Stability Mechanism (ESM) in the EU, the Chiang Mai Initiative Multilateralization (CMIM), the Fondo Latinoamericano de Reservas (FLAR), the Arab Monetary Fund (AMF), the Eurasian Fund for Stabilization and Development (EFSD), and the BRICS Contingent Reserve Arrangements (BRICS-CRA). These Regional Financial Arrangements (RFAs) are surely useful for regional crises. Their respective strength[19] depends largely on their funding strategies, their capital structures, and their resulting creditworthiness and lending capacity. In a serious global crisis, there is no doubt that their effectiveness would depend on their capacity to coordinate their actions with the global safety net, which can be provided only at the global multilateral level. The alternative is the fragmentation of the globalization into regional blocks, relying on specific reserve currencies and regional safety nets. This would entail a huge cost to the global economy and global welfare.

In fact, a multiplicity of national currencies playing the role of global currency does not solve the Triffin dilemma, leaving alive problems of asymmetry in balance of payments constraints, the 'built-in destabilizer' and monetary policy spill overs, and the differences in perceived 'moneyness' in times of crisis, as explained by Christian Ghymers (see Annex 2).

Furthermore, history tells us that risks to global stability are greatest in periods of transition when economic leadership passes from one country to another. There are indeed reasons to believe that the transition would not be smooth, and the US would offer a strong resistance (Rickards 2011).

China gave the impression in 2009 it could support a multilateral currency system,[20] but recently, it has shown less enthusiasm for the SDR cause—a circumstance that can be interpreted as revealing that its 2009 proposal was mostly motivated by the protection of the value of its huge stock of dollar-denominated reserves. In the meantime, the renminbi has been incorporated in the SDR basket, and a few international bond issues in SDRs have been placed in China.

The internationalization of the renminbi, although still in an early phase, is part of a long-term strategy of international opening and liberalization of the Chinese economic and financial system adopted by the Chinese authorities at the highest level in 2014 for both internal and geopolitical reasons.[21] The Chinese government is determined to enhance its international financial influence as an instrument to integrate commercially and financially East Asia around the Chinese economy, to guarantee its security of supply in raw materials, and to structure its trade flows

19. See interesting study by Cheng and Alvise Lennkh (2019).

20. The President of China's People Bank, Governor Zhou Xiaochuan (2009), strongly chastised a system based on nationally issued reserve currencies, stating that the frequency and increasing intensity of financial crises … suggest the cost of such a system to the world may have exceeded its benefits. He referred to Robert Triffin. More specifically, he envisaged an international reserve currency with three characteristics: an international reserve currency should first be anchored to a stable benchmark and issued according to a clear set of rules to ensure orderly supply; second, its supply should be flexible enough to allow timely adjustment according to the changing demand; and third, such adjustments should be disconnected from economic conditions and sovereign interests of any single country. These are indeed the characteristics of the SDR as envisioned by Triffin.

21. For a detailed account of this new strategy, see Aglietta and Valla (2021).

with Europe and other parts of the world. This new phase of reform, destined to re-establish China's historical place in the world, that of the Middle Kingdom, implies a decoupling of the renminbi from the USD. At the same time, Beijing is reinforcing the institutional framework allowing the internationalization of the renminbi and presenting itself to emerging countries as an alternative to the Fed in the case of a new liquidity crisis (SWIFT 2019).

A new important development is the progress achieved by China towards developing its own Central Bank Digital Currency (CBDC), allowing it potentially to challenge the US-dominant influence on the SWIFT payment infrastructure and to bypass the sanctions imposed by the US through its de facto control of the SWIFT payment rails (Bansal and Singh 2021). China could become the standard setter in the CBDC relatively new technology, which would have significant geopolitical implications.

Unless emerging conflict can be defused, the world could see a rise of geopolitical forces analogous to those that destroyed the first globalization at the beginning of the twentieth century.

It is essential to prevent the US and China from falling into the so-called Thucydides trap,[22] under which trade and currency wars could lead to a fully-fledged arms race and a military conflict. Such an outcome would doom global efforts towards implementing the Paris climate agreement.

A reform of the IMFS, involving a new power sharing in the IMF and the World Bank between the US, the EU, China, and other advanced or emerging countries, as well as the subsuming of currency rivalry through the move to a genuine multilateral currency, could be part of a global package deal, involving other advances in multilateralism, including shared responsibilities in moving to carbon neutrality. For such a win-win solution, there is no need to create a new institution. The IMF exists but needs to recuperate the monetary role it lost since the Jamaica Agreement to become the linchpin of global monetary governance and multilateral cooperation. The multilateral currency exists already in embryonic form through the SDR created in 1969. The blueprint for reform of the IMFS and for a sequenced agenda leading to it are already available and as argued in the final section, the new climate created by the recent SDR allocation opens a window of opportunity for it.

Towards the Urgent Reform of the IMFS: A Silver Lining

After a difficult start in 2020, the global response to the pandemic has involved a higher degree of multilateral cooperation than earlier. It led, after the election of President Joe Biden, to an unprecedented SDR allocation equivalent to US$650 billion. Despite its big global size, the SDR allocation will send only about US$55 billion directly to 82 highly debt-vulnerable developing economies, which is equivalent to only about 1.8 per cent of their gross public debt stock, but the allocation has placed the SDR in the limelight. The need to find a way to channel part of the advanced countries' shares of the SDR to developing countries has led to several innovative

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22. Graham Allison coined this expression in a 2012 article for the *Financial Times*. It is based on a quote by ancient historian and military general Thucydides in his *History of the Peloponnesian War* positing that 'it was the rise of Athens and the fear that this instilled in Sparta that made war inevitable', Allison used the term to describe a tendency towards war when a rising power (exemplified by Athens) challenges the status of a dominant power (exemplified by Sparta); Yet, stressing that war is not inevitable, Allison also reveals in her book *Destined for War*, London, Scribe, 2017, how clashing powers have kept the peace in the past—and what painful steps international leaders can and must take to avoid disaster. More specifically, he recommends clarifying vital interests, understanding what the rival power is trying to do, to 'do strategy', and making domestic challenges central, i.e., to grasp the seriousness of the problems both rivals face on the home front, e.g. failures of governance, and the ways to address them.

proposals, which are steps in the right direction.[23] This channelling of SDRs raises a number of issues (Sobel 2021) pointing in the direction of an overhaul of the SDR legal framework, with the potential to transform it into a much more effective instrument in the IMFS. Paradoxically, the current unsatisfactory intermediate situation is bound to stimulate the reconsideration of previous proposals that had not received sufficient attention[24] and the formulation of new ones,[25] enhancing the SDRs' impact and using them as a lever to reform the IMS. Finally, the SDR could be used much more proactively in support of regional integration, particularly in Africa,[26] underpinning regional monetary unions, 'payments union' agreements similar to those implemented in Europe after WWII and promoting the choice of the SDR as a 'unit of account'.[27]

As has been seen, the blueprint for a comprehensive reform of the IMFS has been on the table since the publication of the PRI Report in 2011—complemented by several RTI reports—and a roadmap to achieve the reform, step by step, has also been available for more than five years. Neither the features of the blueprint, nor the relevance of the sequenced agenda have been seriously challenged. What has been lacking has been the political will to move ahead, as the G20 has remained blocked by its internal divisions. Nevertheless, the recent SDR allocation and the cooperative climate of the negotiation about its distribution look like a silver lining at a moment when a fundamental reform of the system appears more urgent than ever. Indeed, the present depressing situation could evolve due to several interconnected drivers for change:

The Triffin dilemma is no more an academic concept; it is an increasingly unsustainable situation that sooner rather than later will oblige global decision makers to act. Even for the US, the dangers of inaction exceed now by far the more and more dubious advantages of the status quo, as US monetary policy might become hostage of the world's insatiable appetite for the safest of the safe assets, namely the USD Treasury bills. The worsening of the 'built-in destabilizer', linked to the structural changes in financial markets under the present system, might at any time trigger a new financial crisis of unknown magnitude, with potentially catastrophic consequences for the real economy as well as for the survival of democratic regimes.

The status quo would likewise not allow the IMFS to mobilize, on a timely basis, the long-term resources to finance the huge investments required to address Climate Change and adaptation, which are becoming the most threatening global challenge for the survival of human civilization. A new currency paradigm will be needed based on the adoption of a common global price for carbon reduction.

Although the world appears to move in the direction of a multipolar system of reserve currencies, competition among currencies could lead to dangerous instability and currency wars.

23. For a preliminary global assessment of the response before the change in the US Administration, see G30 Working Group on Sovereign Debt and COVID-19 (2020). In 2020, the IMF mobilized and almost immediately exhausted its concessional lending capacity, which was not designed for a global shock of the magnitude of the pandemic or for countries prone to large scale capital outflows. It increased disbursements to low-income countries through the concessional Rapid Credit Facility (RCF) and covered payments on existing IMF loans to the poorest low-income countries through the Catastrophe Containment and Relief Trust. However, the RCF is designed to support a steady-state lending capacity of only between US$1.5 billion and US$2 billion a year, not for widespread shocks and large-scale outflows. Also, the IMF's non-concessional capacity has remained underutilized, with the IMF disbursing in 2020 only US$30 billion, i.e., less than a third of its US$100 billion envelope for pandemic-related financing through the Rapid Financing Instrument (RCI).
24. Such as RTI Working Party (2014).
25. Such as Ocampo (2021).
26. See Masini (2021), in which the author suggests that the EU member States should consider pooling part of the SDRs recently received to launch Next Generation Africa, a major investment plan, of both grants and loans, aiming at triggering endogenous growth in Africa and at strengthening African integration. See also (Flor 2020).
27. See (De Rambures, Iozzo and Viterbo 2020).

The exacerbation of the Sino–American economic rivalry could find a solution in the context of the negotiation of a package deal involving the move to a multilateral currency system, acknowledging the upgraded status of China and of other EMEs, combined with their agreement to cooperate fully in the ecological transition.

The old Triffin-Keynes plan aimed at establishing a rational system for global liquidity management could become feasible, based on a more ingenious use of the SDR to face the world multiple financing challenges and pave the way for the transformation of the SDR into the principal reserve asset in the international monetary system, as foreseen under Article XXII of the IMF Articles of Agreement.

The situation is not hopeless. Both the dangers we have identified for the world monetary and fiscal stability and the opportunity for a negotiation on new terms create a window of opportunity. The purpose of this contribution is to stimulate the debate, putting on the table concrete reform proposals. The US, the EU, Japan, Canada, Australia, and the other OECD countries, as well as China and the other EMEs have all huge stakes in a successful comprehensive reform of the IMFS as an indispensable underpinning to sustainable globalization and the achievement of the United Nations Sustainable Development Goals.

Annex 1: The Financial Instability Hypothesis of Minsky and Aglietta

The 'built-in destabilizer' effect has to be seen also in the light of the financial instability hypothesis—combined with the preponderance of the financial cycle hypothesis—as developed by economists such as Hyman Minsky[28] and Michel Aglietta (2019). The key reason for financial instability is that the pivot of financial markets is not fundamental value: it is liquidity but liquidity, by acting upon both demand and supply of credits, generates self-fulfilling fluctuations that impede free financial markets to ensure inner stability. Financial markets do not operate like ordinary markets. In the latter, the two sides of the market have opposing interests regarding prices, which guarantees a supply curve that rises with prices and a demand curve that falls. In financial markets, any actor can be seller or buyer any time, alternating euphoria and panic, whereby the demand and supply curves are not independent and move up or down with asset prices.

Annex 2: The New Form of the Triffin Dilemma According to Christian Ghymers: How the Increasing Role of the Repo Markets Contributes to a Global Shortage of USD Safe Assets

As explained in this chapter, a key feature of the recent structural changes is the shift from bank loans to borrowing from the wholesale money markets, i.e., the relative growing importance taken by the non-bank intermediaries (or the so-called 'shadow banks'), which are less or not regulated and therefore do not have direct access to refinancing by their central bank. The consequent higher liquidity risks are individually covered by an intensive use of collateral assets (repo and asset-backed commercial papers) whereas the co-variation of collaterals with the cycles raises a global systemic risk. This increased role of non-banks has two other systemic implications: (i) the pro-cyclical behaviour of repo markets affects the monetary policy tools, especially when a liquidity crisis disrupts the intermediation capacity of the repo markets, in which case conventional monetary policies cannot prevent fire-sales on the repo markets; and (ii) a huge structural increase in the demand for 'safe assets' as collaterals that constitute the basis of the reversed pyramid of global liquidity.

As shown by Christian Ghymers (2019 and 2021), such a basis is necessarily pro-cyclical and submitted itself to an unstable, reversible multiplier in the present working of the IMFS because it does not benefit from a multilateral LOLR but only from national LOLRs whose efficiency is decreasing. In normal times, in the case of liquidity squeeze, banks can feed this wholesale market by borrowing reserves from their central banks and intermediate this liquidity to non-banks on their repo-market, which is able to create additional safe assets. However, the value of these collaterals used to co-vary more with the financial cycle triggers a dangerous

28. Hyman Philip Minsky (1919–96) was an American economist, a professor of economics at Washington University in St. Louis, and a distinguished scholar at the Levy Economics Institute of Bard College. Minsky proposed theories linking financial market fragility in the normal life cycle of an economy with speculative investment bubbles endogenous to financial markets. Minsky stated that in prosperous times, when corporate cash flow rises beyond what is needed to pay off debt, a speculative euphoria develops, and soon thereafter debts exceed what borrowers can pay off from their incoming revenues, which in turn produces a financial crisis. As a result of such speculative borrowing bubbles, banks and lenders tighten credit availability, even to companies that can afford loans, and the economy subsequently contracts. Minsky opposed some of the financial deregulation policies popular in the 1980s, stressed the importance of the Federal Reserve as a lender of last resort and argued against the over-accumulation of private debt in the financial markets. Minsky's economic theories were largely ignored for decades, until the subprime mortgage crisis of 2008 caused a renewed interest in them.

global liquidity crisis according to the following scenario: bigger 'haircuts'[29] lead to downgrading, especially of non-dollar collaterals, disrupting the intermediation of the repo, as they are unable to feed the non-bank with liquidity from banks received through the national monetary policies. These haircuts make suddenly visible the effective scarcity of the genuine basis of the inversed pyramid of global liquidity, which is narrowing under the discrimination created by a 'Gresham law' among collaterals, favouring a run to the higher quality of dollar safe assets at the detriment of non-dollar ones.

Ghymers explains this fragility by the impossibility of ensuring a stable liquidity basis for this inversed pyramid with only safe assets issued in national currencies because, not only their volume is endogenous with the cycle, but essentially because safe assets in USD enjoy a higher quality of liquidity than those of non-dollar safe assets. The destabilizing factor comes from the pro-cyclical amplification of the difference in the degree of 'moneyness' across currencies: during the upward phase of the cycle, this difference is minimized and hidden, but is suddenly amplified when the cycle turns downwards, exposing the global liquidity reversed pyramid to boom-bust cycles in private liquidity. In case of stress, a run to dollar safe assets provokes an abrupt narrowing of the liquidity basis, which destroys private liquidity with a multiplicative impact. He shows that this structural shortage of dollar safe assets is nothing else than the present form of the Triffin Dilemma and his 'built-in destabilizer'—the logical impossibility for the liquid debt of a national economy to ensure a stable basis for global liquidity while respecting domestic stability criteria.

The combination of these new unsustainable features of large and long-term uncertainties and of the higher returns of speculation has led to the global liquidity trap witnessed today. The large scale injection of liquidities is not achieving its objective of stimulating long term investment in the real economy; rather, they are massively invested in short term instruments, driving interest rates further down, driving stock exchanges and real estate prices up, and worsening social inequalities. Meanwhile, the world remains direly short of long-term investments, such as those required to fund the environmental transition and attain the UN Sustainable Development Goals (SDGs).

Annex 3: Could the Change of Energy Paradigm Lead Us to a Corresponding Change in the International Monetary System?

According to Michel Aglietta and Virginie Coudert (2019), relying themselves on analysis by Timothy Mitchell (2011), there has been a link in the two eras following the Industrial Revolution between the key currency system and the primary source of energy. In the age of classical capitalism up to 1913, the sterling gold standard prevailed as the key currency system with coal as the most important source of energy; in the Bretton Woods system, it was the dollar standard with oil as the dominant energy source. The dominant source of energy being the most traded commodity worldwide, it is not surprising that its price be denominated in the key currency, becoming the anchor of the international price system. Exporting countries recycle revenues for investment in the most secure financial system—that of the country issuing the key

29. The haircut is loss of value of the collateral (or the risk-premium spread in term of yield), representing the lower degree of moneyness (liquidity) of the internally generated collaterals by the Repo dealers with respect to the value of the external 'first-quality' collaterals.

currency. The reasoning of Aglietta and Coudert is that the shift to renewables and electricity, which are also much more diversified geographically than coal and oil, might give rise to a new international payment system. In the new ecological era, the anchor will be the social price of mitigation action, i.e., the tutelary price required to undertake massive, long, and risky investments. As carbon pricing would be the most important variable of this mitigation action, one might expect this price to replace the price of oil as the anchor of the new economy. This price would express what the collective is prepared to pay to restore an ecosystem of common interest (Carbon Pricing Leadership Coalition 2017). This price should be the outcome of a global agreement and be expressed in an international currency, which logically should be the SDR.