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Commentary

China and Special Drawing Rights—Towards a Better International Monetary System

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Abstract: China and the international monetary system need each other. The international monetary system is strained, with crisis just around the corner, yet reform is not on anyone's agenda. Meanwhile China, deeply invested in the current system, faces narrowing options as trading partners question its moves abroad, debt levels rise at home, and its current account moves from surplus to deficit. RMB internationalization might appear to provide a way out, but the policy has its limits and tends to exacerbate rather than relieve tensions. We argue that a tension-reducing solution is at hand to the problems of both the international monetary system and China—IMF-style Special Drawing Rights (SDRs). If in a unilateral initiative China were to make the SDR central to its next phase of capital account opening, China's institutions, corporates and individuals—presently restricted in their access to international currency—would likely embrace it. Begun by China, with support from the international community and Hong Kong, promulgation of the SDR would usher in an era of lower tensions, providing space for development and avoidance of conflict within a reordered monetary system in which China would have a more prominent role.

Keywords: China; Special Drawing Rights (SDRs); international monetary system; RMB internationalization; Belt and Road Initiative; risk management

JEL Classification: F3; G1; P2

1. Introduction

In this commentary, drawing on ideas we first set out in Harrison and Xiao (2018), we argue that two major monetary problems, seemingly loosely connected, have a common solution. The two problems are, firstly, that of the international monetary system as a whole and, secondly, that of China's monetary relations with the rest of the world. We suggest a solution to these two problems in expanded use of the International Monetary Fund (IMF)'s Special Drawing Rights (SDRs). China would be in a position to unilaterally kick-start an SDR market, following which, broad international participation would likely snowball.

In the present paper, we firstly establish the nature of the two problems. Regarding the international monetary system, the signs of strain if not of imminent crisis are clear. Emerging markets were put under pressure by US interest rate rises, and Argentina and Pakistan have had to approach the International Monetary Fund (IMF). Global indebtedness has reached 225% of GDP—higher than in the aftermath of the Global Financial Crisis (GFC) (IMF 2019a). Central banks, which provided USD 10 trillion to the financial markets via monetary easing, have begun withdrawing their support (Fitch Solutions 2017). We argue that the current tensions in the international monetary system result from a systemic cause, namely reliance on a single national currency, the dollar, as the de facto global currency. Such a system is inherently prone to instability, yet unfortunately there is no prospect of systemic reform.

Regarding China's monetary relations with the world, there are again clear signs of building crisis, most obviously the US–China trade war and China's rising domestic indebtedness. There are also grounds for a more positive outlook, namely political will on both sides to resolve the trade war, China's huge accumulated foreign exchange reserves, and the policy of RMB internationalization, which creates new space outside the dollar arena. However, we argue that these factors at best defer the crisis. China will need to further open its capital account and, hence, step up its monetary relations with the world.

These two problems have a potential, common solution. Global imbalances would reduce if the world were to make wider use of SDRs as a fully-fledged currency. This is not a realistic prospect given that the willingness of states to cooperate on multilateral initiatives is diminishing, while the international monetary system is low among politicians' priorities. However, a currency version of SDRs would be useful to China as well in its capital account opening process. As a separate currency it would be easy to track and control, while its fungibility with the dollar and its inclusion of the RMB add further appeal. We argue for a unilateral initiative by China to promote use of the SDR by its own institutions, corporates, and individuals. With Hong Kong's help, this could kickstart a global SDR ecosystem to the benefit of all.

The remainder of our paper discusses the risks of the proposed SDR initiative to China and how these risks may be mitigated. The China authorities have more experience than most in the management of financial crises. Monetary quotas and geographical limits are among the tools available. Given China's prowess in FinTech there may even be a role for a cryptocurrency version of SDRs, which would in turn provide risk-mitigating control and transparency.

Neither the international community nor China have unlimited time to confront their respective monetary problems. The SDR is a solution whose time has come.

2. International Monetary System

2.1. Problems

The strains in the international monetary system are clear.

As we detail in Harrison and Xiao (2018), following the collapse in the early 1970s of the Bretton Woods arrangements under which global currencies were pegged to the US dollar, which in turn was pegged to the price of gold, the world gravitated to a de facto system centered on the US dollar. This de facto system is characterized by free-floating exchange rates, massive private capital flows, current account convertibility for most countries, and varying degrees of capital account convertibility for many, with the IMF available to lend balance of payments support to countries in difficulties. However, the post-Bretton Woods era has seen crisis after crisis, with defaults ranging through Latin America (1980s), East Asia (1997/98), Russia (1998) the developed West (2007/09), and emerging markets (2018–).

The present monetary setup has been described as 'a deficient non-system' (White 2015; see also Ocampo 2017). It is inherently crisis-prone because of the following drawbacks:

- Reliance on a national currency (the US dollar) as the de facto international currency. US dollar interest rates are determined with reference to US domestic conditions and may be too high for some other countries (currently) or too low (during the immediate post-GFC years). Moreover, the US authorities have 'weaponized' their currency by denying banking access to actors considered hostile to US national interests.
- Inequity. Poorer developing countries are obliged to accumulate precautionary dollar surpluses to insure against potential future balance of payments difficulties, so transferring resources to the world's richest country, the USA.

- Recessionary bias. Balance of payments debtors are forced to adjust when it is most painful for them to do so, while creditors face no such adjustment pressure.
- Lack of oversight. The IMF monitors developments and issues warnings but has little power to influence events until approached by a debtor nation.
- Limited policy coordination. The G20 is perhaps the closest to an economic policy coordinating mechanism, but it has not been very effective in this role.

The US benefits from the system and so has resisted change. However, while as issuer of the world's currency the US gains seigniorage, prestige, and even an instrument of foreign policy, these benefits come with costs. In order to provide the world with dollars, the US has to run extended current account deficits, while the (forced) willingness of other nations to buy its debt arguably encourages the US in fiscal irresponsibility, as exemplified in the Trump tax cuts of December 2017. In the long run, the present system may not be good for the US either.

We argue that the dollar-centric monetary system is in urgent need of reform. As Rickards (2015) puts it, 'If the dollar fails, the entire international monetary system will fail with it'.

2.2. Existing Reform Proposals

If the present global monetary system is deficient, why has it persisted for so long?

There has been no shortage of reform proposals. In 2009, then-governor of the People's Bank of China Zhou Xiaochuan (Zhou 2009) expressed dissatisfaction with the dollar-centric system and argued for more use of the SDR. The IMF (2011) took up the call and produced a paper on the potential of the SDR. Palais-Royal (2011) urged, ' ... the reconstruction of a fully-fledged international monetary order' with a central role for the SDR. Other commentators have called for a revival of Keynes' clearing union, a larger role for the IMF, development of the SDR as a true global currency, restrictions on private capital flows, and improved macro-economic coordination among others. Meanwhile, the IMF (2018a) continues to advocate a larger role for SDRs to moderate imbalances and counter weaknesses in the present system. However, none of these proposals has gained traction.

In line with Ocampo (2017) and Li (2016), we hope for an evolution of the international monetary system to a multicurrency one with a larger role for the SDR. However, even this evolutionary scenario is unlikely to materialize.

Firstly, geopolitical alignment is lacking. The US, although wielding veto power within the IMF, has lost moral authority because of the GFC, and in any case the world is now multipolar. With the GFC receding into memory, and with nationalism and populism on the rise, states have become less willing to cooperate in building a new monetary order.

Secondly, massive capital flows—often seen as the villain—can hardly be dismissed. Trading and investing freely across the world's markets and currencies has come to be seen as a right. The world's openness to private capital flows has, alongside its disbenefits, enabled multitudes of investors and institutions to diversify and improve returns in ways that in the Bretton Woods era would not have been possible. This is in many ways a good thing, and it is all but irreversible. The genie is out of the bottle.

Top-down reform of the international monetary system appears infeasible. Rather, we argue that any reform will have to be de facto and bottom-up, the initiative of a single state or group of states, and promulgated by the market process.

3. China's International Monetary Options

We now consider China's international monetary problem. Having established that there is a problem, we consider two possible solutions, namely RMB internationalization and the monetary implications of the Belt and Road Initiative (BRI), and argue that they cannot meet China's needs. In our view, a third solution is more promising for China—limited capital account opening via SDRs.

3.1. Need for Capital Account Opening

At first glance, it might appear that China does not have an international monetary problem, or at least not an unmanageable one. True, there is a building trade war with the US, but a settlement of some kind will surely be reached. Even if the trade war should go badly, China has cards to play. Internal consumption has room to take up the slack from exports; there are new trading partners cultivated by the BRI; the foreign exchange reserves provide a huge cushion; and while indebtedness is high at 266% of GDP, most of this debt is internal rather than external (Bloomberg 2018a). China's increasing technological prowess in areas ranging from FinTech to space exploration, supercomputing, and telecommunications opens up new areas of opportunity.

Our view, however, is that China is near the limits of its existing development model. Externally, that model is one of exploiting the openness of trading partners while keeping the domestic market relatively closed. Internally, notwithstanding the market reforms of the past forty years, China remains a state-permeated economy (Otero-Iglesias and Vermeiren 2015), even more so in recent years as the position of state-owned enterprises is boosted and control over opinion and information flow tightened.

Now, both dimensions of the development model are under threat. Externally, trading partners are pushing back against China's exports and overseas investments while demanding better access to China's domestic market. Even before these demands are addressed, rising consumption (including the overseas spending of Chinese tourists) has tilted China's current account balance towards deficit (The Economist 2019). Nor can the China authorities easily resist these trends without jeopardizing the high rate of economic growth on which their claim to legitimacy depends.

In order to finance its looming current account deficit, China must import capital. This would not be difficult, since China has a vast and diverse economy to which foreign investors are keen to gain exposure. However, given the restrictions and controls on capital movement, foreign investors tend to limit the amounts they invest, currently owning only 2% of China's bond market (CNBC 2018). In order to attract further capital on a large scale, China would need to substantially loosen capital account restraints. Yet this would allow China's own citizens to 'vote with their feet' financially, the resultant capital flight undermining the state-permeated system. Even the vast foreign exchange reserves might not be enough to stem the flood.

We argue that China has a pressing need to open its capital account but cannot readily do so without compromising the state-permeated system. Before turning to our preferred solution, we first explore two policies which appear to offer a way out—RMB internationalization and the monetary implications of the BRI.

3.2. RMB Internationalization

In the aftermath of the GFC, China embarked on a program of internationalizing its own currency, encouraging use of the RMB for trade, for reserve-holding, and for investment purposes, in order to reduce reliance on the dollar and in the longer run even supplant the dollar as a global currency. How has this initiative fared, and what are its prospects?

One school of thought, with Eichengreen (2014), expects the RMB to become an international currency alongside the US dollar relatively soon. Another school, with Frankel (2012), emphasizes the role of financial depth in determining a currency's international acceptability and sees RMB internationalization as a more distant prospect. Prasad (2018) considers that the RMB's potential will remain unrealized unless China embarks on a broad range of financial system and economic reforms.

China authorities have taken steps to support internationalization of their currency. To help ensure RMB supply, the People's Bank of China (PBoC) has concluded swap agreements with the central banks of some 36 countries (EIU 2018). These agreements appear to have supported bilateral trade between China and the countries concerned (Zhang et al. 2017). The IMF's inclusion of the RMB in its SDR basket provides justification for central banks to include the currency in their reserves. On 8 October 2015, China launched the Cross-border Inter-bank Payments System (CIPS) to rival the Society for Worldwide Interbank Financial Telecommunication, SWIFT (CCTV 2017). RMB has been allowed to accumulate offshore in Hong Kong and, to a lesser extent, other centers; in 2013, a link was set up between the Hong Kong Monetary Authority (HKMA)'s RMB Real-Time Gross Settlement System and the Shenzhen Financial Settlement System (HKMA 2016). Domestic financial markets have been opened somewhat with the launch of Stock Connect and Bond Connect, with quotas on these channels being relaxed over time. Meanwhile, the RMB was allowed to trade in a wider daily band, linked to an undisclosed basket of currencies rather than simply pegged to the US dollar (New York Times 2015). China also initiated the establishment of a new multilateral financial institution, the Asian Infrastructure Investment Bank (AIIB) launched in January 2016, in which it retained a 30% share (SCMP 2015).

From an almost negligible international profile the RMB contributed 1.7% of foreign exchange reserves in Q3 2018, ranking sixth globally (IMF 2019b), while in January 2019 it contributed 1.24% of SWIFT's international transactions, ranking eighth (SWIFT 2019). Russia has reduced the dollar share of its reserves and allocated 15% to RMB (Bloomberg 2019). However, there is still a long way to go to rival the dollar.

The above supporting initiatives have had limited impact so far. BRI lending has largely been in dollars (FT 2018), AIIB lending exclusively so (Global Times 2016). CIPS volumes are not disclosed[1], suggesting that they may not be too large. The RMB's international footprint is narrow, with 80% of RMB transactions passing through Hong Kong (SWIFT 2019). The Connect schemes (again through Hong Kong) are designed to prevent RMB straying outside the intended purposes. Offshore RMB (CNH) is not fungible with onshore RMB (CNY)—the two have a different price and a different interest rate, and approval is needed for conversion of one to the other (Currenxie 2016). Overall, as an international holder there are not too many things that one can do with one's RMB.

For RMB to become attractive enough for foreigners to want to hold it on a large scale, there would have to be much greater freedom to exchange it for other currencies and to spend or earn it within China or abroad. For there to be enough RMB in the international system, China would have to run large and extended trade deficits, as the US has done. For large-scale RMB investment and reserve holding by foreigners, China would need much deeper and more open financial markets. Long before these conditions were met, China would face capital flight, pressure on the exchange rate, and financial market turbulence—existential threats to the internal order.

Katada (2018) draws lessons from Japan's attempt to internationalize the Yen after the 1997/98 Asian Financial Crisis. Despite Japan's advantages in economic size and open, developed financial markets, the effort foundered on acceptance by the international community and domestic policy priorities. Although China today is bigger economically than Japan was then, in other respects it is less well-placed.

Moreover, the benefits of RMB internationalization for China are hard to find (Huang and Lynch 2013). The prestige or soft power accruing to the issuer of a global currency is a long-term and remote benefit; nor does China have fiscal deficits needing to be financed with international money. RMB internationalization would likely increase exchange rate volatility rather than reduce it; denominating trade in RMB rather than US dollars would create financial efficiencies but would not relieve China and its trading partners of the need to maintain international competitiveness by means such as wage cuts or unemployment.

In China's case, currency internationalization carries the further benefit of added impetus to domestic reforms (RBA 2018). Nonetheless, domestic imperatives carry greater weight. Facing internal financial instability, RMB depreciation and capital flight, the PBoC intervened in Hong Kong's offshore RMB market to buy up RMB and make offshore holding more difficult. This signaled readiness to

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[1] Statistics not apparently available on CIPS website, http://www.cips.com.cn/cipsen/, viewed on 25 February 2019; for example, the press release, 'CIPS runs smoothly and hits new record', 14 April 2017, has no statistics.

'sacrifice' the offshore market in order to manage expectations of the value of the RMB (Long and Kroeber 2016).

Overall, we do not see RMB internationalization as coherent with China's state-permeated system. RMB internationalization is perhaps more a response to crises such as the Asian financial crisis and the global financial crisis, a short-term problem-solver rather than coherent long-term strategy. At best, RMB internationalization could be described as a matter of 'currency normalization' rather than 'currency dominance' (Bowles and Wang 2013).

3.3. Belt and Road Initiative

If RMB internationalization is problematic, there is the alternative, lesser goal of RMB regionalization.

As China began its efforts to promote wider use of the RMB, there was scholarly discussion about the possible formation of an RMB region in East Asia as a staging post on the RMB's journey to international acceptance (e.g., Chow 2013). China has substantial trade ties with the region, from which it is a net importer; the countries concerned could naturally accumulate RMB deposits. In this narrative, the RMB would become a major or even the dominant currency for China's relations with its nearby trading partners, leading to the formation of an East Asian RMB bloc. RBA (2018) finds evidence that the Asian monetary system is becoming bipolar, influenced by both the US dollar and the RMB. Nevertheless, it concludes that, 'the US dollar is still by far the most important anchor currency for most economies in the region.'

Could the BRI foster an RMB region? Among its aims, the BRI was intended to further RMB internationalization, and it is expected to expand RMB usage for trade and investment (See Chan 2017; also City of London Corporation 2018). It could be argued that BRI countries would be to a certain extent under China's sway and, thus, less destabilizing to the state-permeated system than the rambunctious foreigners of the developed West.

However, we question how much the BRI can help the cause of RMB internationalization.

Firstly, most BRI lending to date has been in dollars, not RMB. There are initiatives by BRI countries to explore RMB facilities such as the March 2018 issue of Panda bonds by the Philippines (PDI 2018), but the disincentives to RMB usage discussed in Section 3.2 still apply.

Secondly, the BRI strategy itself is controversial. As rising great power, China was in the process of reaching out in manifold ways internationally; the BRI announced in 2013 was in part a relabeling of these efforts in response to the US-led TPP (Brookings 2017)—the latter being intended to exclude China but, in the event, not ratified by the US). The drivers of the BRI—whether commercial or in the nature of 'Marshall Aid'-type grants, whether win-win for the participant countries or 'debt-trap diplomacy'—have not been thought through. The BRI has evoked mixed responses abroad, in that while investment and infrastructure are generally welcomed, host countries have shown concern about debt sustainability (Pakistan, Myanmar, and Sri Lanka), corruption (Malaysia), and the influx of Chinese workers (SCMP 2019). Within China responses have also been mixed, with critics wondering whether the resources might be better spent at home (Economic Times 2018).

According to Zhang (2018), while the West tends to see the BRI as China's strategy to ultimately rule the world, Chinese and most developing nations see it as China's international cooperation strategy to foster a more balanced and equitable world system. Liu et al. (2018) also see the BRI as promoting more inclusive globalization. Nonetheless, to support this narrative China needs to better explain its initiative as well as match its words with its deeds, so as to win more trust and support from the international community.

Thirdly, the more than one hundred countries participating in the BRI (HKTDC 2019) are a broad church, many of them in regions geographically remote from China (South America, Africa, and Oceania). The motivations of these countries are also diverse, with most subscribing to the goal of infrastructure and connectivity, but not necessarily fealty to China. It remains to be seen whether China can steer so diverse and extended a group.

3.4. Special Drawing Rights (SDRs)—The Best Available Monetary Option

In our view, China has reached a stage in its development at which there is no obvious or easy way forward. The existing model of keeping the domestic market relatively closed and relying on the openness of trading partners is nearing its limits, while the newly assertive posture abroad is arousing concern. Domestically, the renewed focus on state-owned enterprises, triggered partly by national security concerns, will likely slow economic growth, while Made in China 2025 is not a sustainable solution, given pressures from trading partners, and has been downplayed by the leadership (Bloomberg 2018b). The BRI provides an opportunity for new sources of global growth that could also increase China's global influence, but it brings substantial geopolitical and cultural challenges, which have yet to be mastered. RMB internationalization provides only marginal help and raises new challenges as well.

In terms of China's broader economic development, we have detailed elsewhere our proposal for controlled opening via Hainan free port and other special zones and areas (Harrison et al. 2019)—going far beyond the limited vision released by the authorities for the Hainan and for Greater Bay Area (Shira and Associates 2019). In the monetary dimension, the concern of the present paper, we propose a similarly calibrated initiative, this time of controlled capital account opening via SDRs.

4. A Unilateral SDR Initiative by China

As per the IMF (2018a), the SDR is an accounting unit used to express members' reserve balances. It is a basket of five currencies, currently US dollar (41.73%), euro (30.93%), Chinese RMB (10.92%, added in October 2016), Japanese yen (8.33%), and British pound sterling (8.09%). SDR204.2 billion (USD 291 billion) is extant—equivalent to less than 3% of global foreign exchange reserves.

As we propose in Harrison and Xiao (2018), wider use of the SDR, not only as, "the principal reserve asset in the international financial system", as the IMF intended per its Articles of Agreement (IMF 2016), but as a fully-fledged currency for use by governments, institutions, firms and individuals, would be beneficial in reducing dollar-related imbalances. This in turn should create space and a more favorable environment for structural reforms such as an SDR clearing account at the IMF, more effective monitoring, and better policy coordination. However, efforts to promote the SDR have foundered on the 'liquidity premium' (IMF 2011, p. 15)—the higher interest rate that issuers of an SDR asset would have to pay to compensate buyers for its lower liquidity.

How can the liquidity premium be overcome? The IMF has proposed 'official institutions' committing to act as market makers (IMF 2011, p. 26), but it is doubtful that these institutions' members would be prepared to bear the costs. Even with deep-pocketed market makers, SDRs will remain unattractive to users with ready access to the dollar.

4.1. China's Pivotal Role

China's support for the SDR was voiced strongly by then-PBoC Governor Zhao Xiaochuan in 2009. As noted by Wang (2017), this advocacy of the SDR was in line with China's longstanding position that the international monetary system needs rebalancing away from the dollar. China's support for the SDR continued up to the RMB's inclusion in 2016 and was followed by limited SDR bond issuance in Shanghai—albeit that these issues were settled in RMB (Reuters 2016), rather defeating the purpose.

We suggest that it is now time for a fully-fledged SDR initiative from China. Crucially, China users would face a lower, or even negative, SDR liquidity premium because they do not enjoy unrestricted access to international currency. If an SDR component were included in the next round of capital account liberalization, China institutions, firms, and individuals would likely take up SDR issuance and investment activity. Ideally, there would be some facilitative support from the IMF (including reform of its own SDR quota system—Bird and Rowlands 2006) and acceptance by SDR-constituent currency polities. Once China's SDR activity took off, it would prompt participation from international players and the development of an ecosystem. Hong Kong would have a key role to play in channeling the related financial flows and providing supporting services.

With increasing use of SDRs by the international community, the liquidity premium would reduce. Given their relative stability, SDRs would become attractive for the pricing of long-term contracts and commodities, and for reserve-holding and investment purposes generally. Greater use of SDRs would help moderate the imbalances and inequities in the current international monetary system. Because the change would be market-led and gradual, all parties would have time to adjust. Reduced monetary tensions would lead naturally to peace in a broader sense, with less reason for trade wars or currency wars.

A meaningful SDR market would be good for the world. It would also be good for China.

In our view, promotion of the SDR would have several advantages from China's point of view. Firstly, promulgation of the SDR achieves RMB internationalization at a stroke. The RMB's 10.92% share of the SDR compares rather favorably with its present 1.7% share of global reserves. Secondly, the SDR also incorporates the currencies of four other top trading powers—the US, the EU, Japan, and the UK. Expanded use of the SDR would cast China as a friend of these powers and as a multilateralist. Thirdly, initiation of an active SDR market would create a global public good, which would again enhance China's reputation as well as making for a more favorable external environment. Fourth, as initiator, China would be a maker rather than taker of rules in the emerging new global monetary order.

4.2. Implementation

If SDRs are a good idea for China, as well as for the world, how could they be implemented?

In Harrison and Xiao (2018), we detail unilateral steps that China could take to initiate a market in SDRs. These steps can be summarized as follows:

- Policy opening. Incorporation of SDRs into the next round of capital account opening measures for state and local government entities, firms, institutions, and individuals. Essentially, all qualifying parties would be allowed to hold, issue, and otherwise transact in SDRs as appropriate, and ancillary to that in the SDR component currencies, subject to overall limits.
- Facilitative measures. Establishment of infrastructure such as clearing facilities for SDRs and the component currencies; introduction of risk management tools such as derivatives.
- 'Ice-breaking' issues of SDRs by state entities, both domestically and internationally.
- Communication of the initiative both domestically and internationally.
- Enlisting the support of Hong Kong to extend the domestic SDR market internationally.

We expect that strong policy endorsement and communication coupled with 'ice-breaking' issuance by state entities would be enough to kick-start the initiative. Development would thereafter be market-led, subject to government-imposed limits, monitoring, and controls. The key deterrent to SDR usage—the SDR liquidity premium—would be lower or even negative for China-based users who do not presently enjoy unrestricted access to international currency. The market should take off once users understand the aims and conditions. International players, when permitted under the policy framework, would welcome the chance to participate.

Endorsement and facilitation by the IMF and other multilateral organizations, the SDR-component currency-issuing entities, and ultimately the G20 would of course greatly assist the SDR initiative and, at some point, would be essential to its further progress. However, we believe that a good start can be made on a bottom-up market-led basis, provided the China authorities supply the initial policy impetus.

Given the very limited use of the SDR at present, the supporting infrastructure provided by the IMF—an interest rate determined weekly, settlement (between member states through IMF auspices) taking several days, and rebalancing every five years (IMF 2018b)—is rather basic. To support the proposed SDR initiative, it would be necessary to consider enhancements to the IMF's infrastructure and to set up additional infrastructure in China.

Hong Kong could provide support on the infrastructure side as well as more broadly helping to link China's SDR market with the global market. The HKMA already has real-time gross settlement systems (RTGS) for three of the five SDR underlying currencies—US dollar, euro, and RMB.

5. Risk Management

We have described above the opportunity for China to take the global lead on SDRs, the benefits to China as well as the rest of the world, and the implementation steps. The remaining considerations are around risk. What measures can the China authorities take to mitigate the risks of the proposed SDR initiative?

5.1. China's Overall Resilience

Following the Risk Governance Framework of the International Risk Governance Council (IRGC 2017), there are five stages in the approach to risk:

1. Pre-assessment—Identification and framing.
2. Appraisal—Assessing the perceived causes and consequences of the risk.
3. Characterization and evaluation—Making a judgment about the risk and the need to manage it.
4. Management—Deciding on and implementing risk management options.
5. Cross-cutting aspects—Communicating and engaging with stakeholders, considering the context.

Regarding items 1–3, advance consideration of risk, we acknowledge that any market-based initiative in China's state-permeated economy raises the dual risk of excess—since users may embrace the new freedom too eagerly—and undermining of state authority. This is even more true of financial liberalization initiatives because of finance's immediacy, intangibility, and far-reaching effects. In China, where a large financial system operates to its own dynamic behind a capital account wall, ill-considered financial liberalization could be catastrophic.

The IRGC (2013) identifies slow-developing catastrophic risk (SLDR)—such as the build-up of credit that gave rise to the GFC, or today's crisis of global warming—as a crucial risk category. SLDR, as the name indicates, builds slowly, but reaches a tipping point at which crisis suddenly breaks. Systems—whether financial, economic, or climatic—comprise multiple interlinked feedback loops that, on reaching a critical point, flip from positive to negative effects, avalanching out of control. SLDRs, the IRGC argues, are consequently very difficult to prevent, indeed from time to time will happen regardless of risk management. It is therefore necessary to build resilience, so that in crisis the system quickly finds a new equilibrium, if necessary, with changed institutions and policies.

The risks posed by our SDR initiative are of this catastrophic nature. However, any financial opening initiative for China carries risks like this. As Xu (2018) puts it, '... further financial openness will expose China's flawed financial system to international capital flows and endanger the nation's financial and economic stability. Financial openness needs a solid foundation, such as an efficient and robust banking sector, which China lacks.' Moreover, the status quo carries heavy costs in terms of inefficiency, and it is not sustainable either. Our proposed SDR initiative is in some senses less risky than the status quo in that the targeted outcome is increased stability while the risks are very much in view.

Moreover, the China system has resilience. China authorities have shown themselves able to manage through multiple financial crises. Crisis-fighting initiatives of recent years have included the spending surge following the GFC (which helped forestall a global recession as well as one in China), the clampdown on shadow banking, the scaling back of excess credit, the re-imposition of capital controls in 2016/17, and the clampdown on stock market abuse in the same period. These initiatives involved policy reversals, changes in regulatory personnel, and even changes in institutions—such as establishment of a Financial Stability and Development Committee to lead the PBoC and a merger of the banking and insurance regulators into the China Banking Insurance Regulatory Commission (EAF

2018). This is not to say that another crisis would be welcome, but the system has demonstrated the capability to handle a crisis.

Turning now to IRGC item four, Management of risk, we propose a layered approach incorporating monetary limits (quotas), geographical limits, the use (in part) of a cryptocurrency version of the SDR, monitoring, responsiveness if a threat does occur, and building resilience generally. Monetary limits, geographical limits, and a cryptocurrency SDR are discussed in turn below.

5.2. Monetary Limits

An obvious way to limit the risk of new financial facilities is to set monetary limits on their use. China has extensive experience of setting financial quotas for the interaction of its citizens and institutions with the wider world—and indeed for foreign participation in China's markets. A quota regime for SDR usage could include an overall cap on the amount of SDR in circulation in China (to which other quotas would be subject), limits on each institution's SDR holdings, and limits on individual holdings. An initial overall quota of SDR200 billion (USD 280 billion), equivalent to 1.1% of the monetary base M2 of USD 25,600 billion-equivalent (CEIC 2018), would not seem too large. Ideally, SDR usage within the quota limits should require no further permissions, merely compliance with existing regulations on banking, securities offering, and so on.

The authorities could raise the quotas subsequently as experience was gained. In this regard, it is worth noting the recent experience of Stock Connect, the bilateral linkage mechanism for mutual access across the Mainland and Hong Kong stock markets. On 1 May 2018, the daily quotas for Northbound trading (by foreigners in the Mainland market) and for Southbound trading (by Mainland investors in the Hong Kong market) were raised to RMB 52 billion and RMB 42 billion from RMB 13 billion and RMB 10.5 billion, respectively, for each of the Shenzhen and Shanghai markets (HKEX 2018)—a fourfold rise.

5.3. Geographical Limits

Given China's vast geographical extent, the enclave model—whereby new ideas and institutions are trialed in a limited area before any application to the nation as a whole—has obvious appeal and has been extensively used in both historical and recent times. In Harrison et al. (2019), we advocate deepening the experimentation in Hainan and other free trade zones (FTZs) and the Mainland municipalities of the Greater Bay Area, with the support of Hong Kong and Macau. This 'Hainan-plus' platform, comprising some 8% of China's GDP and 5% of its population, could be used as the launchpad for the proposed SDR initiative. Including the 11 Mainland-based FTZs in the platform, this has the further advantage of providing the rest of the country with filtered access to the new facilities.

Setting geographical limits to the use of SDRs makes the initiative easier to control. Earlier attempts to use FTZs to spearhead financial reforms failed either because the scope of the initiative was too small (Shanghai Waigaoqiao), or too large (when FTZ accounts could be opened across the nation) such that the capital account wall was threatened. We suggest that the Hainan-plus platform would be 'just right'. Hainan-plus would be large enough for meaningful financial activity while still being controllable.

5.4. Cryptocurrency SDR

In common with some other central banks, the PBoC has been examining the potential to issue a crypto version of its currency for domestic use. There have been conflicting messages, the central bank on the one hand clamping down on cryptocurrency operations nationwide, while on the other, the central bank itself filing numerous patents for blockchain-related applications (Bitcoin.com 2018).

We suggest that the experiment be tried first in respect of SDRs, thus limiting the risks to the mainstream financial system. Cryptocurrency SDRs—say, 'E-SDRs'—would be backed by, with their value tied to, a basket of the SDR underlying currencies in the SDR composite ratio. The E-SDR would be a 'stable coin'. E-SDRs would be based on blockchain technology, thus providing new functions to support the digital economy. E-SDRs would be created by PBoC-authorized banks against deposit of the underlying currencies, and they would be available to retail and business users as well as banks.

Barrdear and Kumhof (2016) see substantial benefits potentially flowing from a central bank-issued digital currency (CBDC) version of the national fiat currency. Such issuance could allow everyone, rather than just banks, to use central bank money for payments, remittances, and holding, thus reducing financial frictions. CBDC would also provide transparency over monetary transactions, yielding real-time data for policy-making and risk management.

Kumhof and Noone (2018, p. 5) set four core principles to minimize the risk of bank runs:

1. CBDC pays an adjustable interest rate.
2. CBDC and bank reserves are distinct, and not convertible into each other.
3. No guaranteed, on-demand convertibility of bank deposits into CBDC.
4. The central bank issues CBDC only against eligible (principally government) securities.

We suggest that the last of these, issuance against eligible securities, may not be necessary in respect of SDRs, since SDR and RMB deposits would not be fungible with one another.

E-SDRs would be created/redeemed against baskets of the underlying fiat currencies by the banks on behalf of themselves or their customers, thus rendering the creation/redemption process accessible to anyone with a bank account and the requisite currency. As with exchange-traded funds (ETFs), the redemption/creation process for E-SDRs would allow arbitrage by nominated banks (and their customers) if the E-SDR price should drift out of line with the prices of the underlying currencies. The currency baskets would be held by the creating banks, but visible to the PBoC as supervising authority—and, via the blockchain mechanism, to the nominated banks (and via them, to their customers and information vendors). E-SDRs would be traded on the existing interbank currency market China Foreign Exchange Trade System and National Interbank Funding Center (CFETS). Transactions in E-SDRs would be validated by the nominated banks (under a 'proof of stake', i.e., authority, model), rather than by competing 'miners' under Bitcoin's 'proof of work' mechanism, thereby avoiding excessive consumption of electricity.

E-SDRs would possess the following other advantages—albeit that the scale of the benefits would be proportionate to the scale of E-SDR issuance, which would be minor initially:

- E-SDRs would enable everyone, not just banks, to transact securely and immediately in central bank money. This could relieve users of dependence on layers of financial intermediaries, with significant reductions in costs and risks.
- Transactions in E-SDRs would be transparent as to amount and timing via the blockchain mechanism, providing a granular view of transactions in the economy as they take place—allowing real-time risk management and financial policy analysis.
- Transactions would be relatively secure and unhackable.
- Transactions would be anonymous to external viewers of the blockchain, although known to the nominated bank concerned.
- Particular E-SDRs could be 'colored' (distinguished as a separate class or category) and used as vehicles for securities issuance (initial coin offerings, ICOs). Colored E-SDRs would not be fungible with non-colored E-SDRs, and their value would diverge as well since they would have securities-like attributes (part-ownership of a company).

Overall, the SDR proposal, if adopted by China, would provide useful space for experimentation with CBDC. If the experiment should go well in respect of E-SDRs, the PBoC could consider proceeding with an equivalent initiative for the RMB itself.

6. Conclusions

The present dollar-based international monetary system is perennially unstable, with emerging market crisis never far away and developed markets also at risk. Reform of this problematic system is needed, but in the current climate international consensus appears almost unreachable. Meanwhile, geopolitical tensions such as the US–China trade war increase the risk of crisis.

One element of a solution would be wider use of the SDR as an international currency to supplement the US dollar. Efforts in this direction have foundered on the SDR liquidity premium. However, for China users the liquidity premium would be less off-putting, and China is large enough for a unilateral initiative to make a difference. China is therefore able to launch an SDR initiative that, with multilateral support, could help stabilize the global monetary system. China itself, hard-pressed to reconcile its need for greater openness with domestic political imperatives, would benefit from the delimited and controllable market opening that this proposal represents. Overall, an SDR initiative would have win-win outcomes for both China and the international community.

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