BRICS Chairmanship Research

IMPROVEMENT OF THE INTERNATIONAL MONETARY AND FINANCIAL SYSTEM

THE MINISTRY OF FINANCE OF THE RUSSIAN FEDERATION

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Strengthening Multilateralism for Just Global Development and Security

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EXECUTIVE SUMMARY

1. **The current IMFS has reached its peak and needs improvements to better serve the evolving global economy.** Recent crises have underscored the current IMFS's fundamental shortcomings and destabilizing potential that stems from excessive reliance on a single currency and centralized financial infrastructure. Failure to correct this imbalance will continue to be reflected in poorer economic performance and social environment, as well as lagging progress towards SDGs.

2. **Global volumes of cross border trade are increasingly tilting towards EMDEs; this dynamic, however, is not directly reflected in the sphere of cross-border investments.** This kind of disconnect between goods and investment flows is indicative of a potential that EMDEs are missing out on; their economies remain underfunded as profits generated from growing trade are invested abroad into more liquid and accessible markets rather than benefiting domestic economies.

3. **IMFS must be adapted to better address challenges posed by the fragmentation of the world trade.** Reversal of the core principles that guided the IMFS over the past years, in particular, re-emergence of trade barriers (from less than 500 in 2010, to over 2,500 in 2022) is resulting in fragmentation across non-financial (including commodities, labour and technology) and financial markets which will most adversely impact low-income countries and less well-off consumers in AEs.

4. **The future model of IMFS should revolve around the core principles of security, independence, inclusion and sustainability.** We propose a set of new principles, all of which carry an equal degree of importance, in order to ensure that the new system protects its participants from loss of their capital and assets, remains independent, ensures non-discriminatory access and is developed with a long-term view.

5. **The existing cross-border payments infrastructure lacks competition and, therefore, the ability to adapt to its participants' demands.** The current prevailing model of utilizing centralized settlement mechanisms and reserve currencies for the purpose of conducting cross-border payments is a legacy 'overhang' that is no longer optimal in the 21st century. This component of IMFS is effectively monopolized by a single institution, impeding its participants of having a feasible alternative.

6. **The future cross-border payments infrastructure could be developed along two dimensions – the messaging system, and the network with a focus on settlement in national currencies and in line with the proposed core principles.** Proposals include developing a network of global commercial banks that can conduct cross-border transactions in local currencies, with settlements supported by the information exchange via alternative mechanisms.

7. **Payments system could be protected from external influence by putting central banks in the middle of transactions.** Establishing direct links between individual countries' central banks may minimize risks; in essence this mechanism builds on the approach that commercial banks continue to utilize the correspondent network that is linked via the central bank. This means that no single commercial entity that is part of the network can be excluded from the system as that would entail restricting the central bank itself.

8. **BRICS Cross-Border Payment Initiative (BCBPI) project offers a potential option for cross border settlement.** The Bank of Russia as the acting Chair of the BRICS Payment Task Force has presented to the BRICS countries' central banks a proposal to explore the establishment of a common multilateral settlement platform based on modern technologies named BCBPI – the new supranational infrastructure could greatly reduce risks and accelerate cross-border payments initiatives.

9. **The established infrastructure serving capital markets also became too rigid to accommodate the needed changes.** As the size and complexity of capital markets increased, the interchangeability of its individual components reduced, meaning that replacing or integrating an alternative component became increasingly difficult, if not

impossible, in practical terms. This, in turn, results in suboptimal outcomes for the EMDEs as excessive centralization means that, for example, in order to reach a capital market of a developing country one must route their investment flow via the dominant investment hubs such as London or New York, even if both the investor and the recipient are in geographical proximity.

10 **To stimulate cross-border investment flow among EMDEs, efforts must be directed towards exploring the possibility of creating an architecture that, due to its size and depth, is able to effectively compete with the existing set up.** Russian BRICS Chairmanship proposes to create an electronic system of inter-depository interaction - BRICS Clear platform - in addition to the existing international depository institutions.

11 **High concentration of US dollars as a component of sovereign reserves needs to be reassessed on a sovereign level.** This concentration results in a growing asymmetry at the heart of the IMFS that puts the global economy under increasing strain as the interests of the United States are not always aligned with the interests of other participants of the IMFS given the United States' outsized role in the current system.

12 **The current development funding model predominantly utilized by EMDEs puts them in a vulnerable position and must be reviewed.** Developing regions are continuing to borrow at rates that are significantly higher than those of developed countries – even if factual risk profiles are at comparable levels. This kind of premium is subsequently reflected in ballooning interest servicing costs – net interest payments in developing countries, on average, accounted for 7.8% of government revenues in 2023 (up from 4.2% in 2010). The structure of the debt itself also carries a premium in the form of often poorly understood risks when borrowing in foreign (e.g., USD or EUR) rather than national currencies.

13 **MDBs play an important role in providing EMDEs with concessional financing, however their resources and governance structure are called into question.** Current criticism of MDBs is centered around insufficient voice and representation of EMDEs and lagging rates of replenishment. The New Development Bank's operating model could be adapted in line with the proposed core principles and serve as an example to other MDBs.

14 **GFSN's core component – the IMF, and its international reserve asset – the SDR, have not evolved in line with the changing global economy.** The governance aspect of the IMF has been called into question - the system provides significant advantage to high-income economies, which hold key stakes in the IMF. The interests of 35 advanced economies are represented by 12 directors, while the remaining 155 countries are either represented by 12 directors from developing countries, or are included in constituencies with advanced economies, where their opinions and interests considered secondary. The overall effectiveness of SDR, the original purpose of which was to become the alternative reserve asset and even the new global currency, remains limited. We propose further collective discussion on how SDR could play a role in the global economy and in the context of private sector.

15 **BRICS CRA is facing its own complexities that must be addressed in order to remain relevant and provide its participants with adequate liquidity as intended.** Its activity has been hindered by third-party restrictions as a consequence of its reliance on USD as key component of its operational architecture, additionally, the lack of in-depth analytical capacity (compared to other RFAs) for macroeconomic diagnostics vis-à-vis requesting member-country results in natural limitation.

16 **IMFS alone is not the single root cause of the current shortcomings in the global economy.** However, its structure is critical as it determines its ability to facilitate changes that are being sought and which are aimed at correcting specific concerns that have largely arisen as a consequence of collective reliance on legacy mechanisms that have failed to adjust as the time went by, ultimately resulting in a growing economic imbalance between the developed and developing economies, lagging SDG progress, and fragmenting GFSN.

ABBREVIATIONS

AE	Advanced Economies
AML	Anti-Money Laundering
BCBPI	BRICS Cross-Border Payment Initiative
BDB	Bilateral Development Bank
BF	Blended finance
BRICS CRA	BRICS Contingent Reserve Arrangement
CBDC	Central Bank Digital Currency
CRA	Credit Rating Agency
CSDs	Central Securities Depositories
DIA	Digital Investment Asset
DLT	Distributed Ledger Technology
DTCC	Depositary & Trust Clearing Corporation
EMDE	Emerging Markets & Developing Economies
EM	Emerging Markets
GFC	Great Financial Crisis
GFSN	Global Financial Safety Net
GRQ	General Review of Quotas
IFC	International Finance Corporation
IFI	International Financial Institution
ICSD	International Central Security Depository
IMF	International Monetary Fund
IMFS	International Monetary & Financial System
MDB	Multilateral Development Bank
MVP	Minimum Viable Product
NDB	New Development Bank
NSD	National Security Depository
NRA	National Regulatory Authorities
RFA	Regional Financing Arrangement
RTGS	Real-Time Gross Settlement
SWF	Sovereign Wealth Fund
SWIFT	Society for Worldwide Interbank Financial Telecommunications
VTA	Voluntary Trading Arrangements
WBG	World Bank Group

INTRODUCTION

Following the 1st BRICS Finance Ministers and Central Bank Governors meeting that took place on February 27, 2024, we prepared a Research on "Improvement of the International Monetary and Financial System ("IMFS")", which includes proposals for the purpose of further research and discussion, with the overarching aim to improve current IMFS.

The current system has reached its peak level during the globalization period with recent crises underscoring its fundamental shortcomings and destabilizing potential that stems from excessive reliance on a single currency and centralized financial infrastructure. On the other hand, open, inclusive and fair International Monetary and Financial System would benefit all participating economies.

Before we embark on the task of advancing the IMFS into a new era, we should first reflect on its core features that have supported the system over the course of its last iteration – the past 53 years following the collapse of Bretton Woods System. After all, this is the system that has facilitated shared growth (albeit to various degrees) and helped to lift billions of people out of poverty.

This period was characterized by globalization - liberalization of trade, flexible exchange rates and increased capital mobility. The US government securities market became the largest single-asset capital market in the world, coupled with gradual deregulation that started in the 1980s, and has been fueled with capital inflows at an enormous scale. At the same time, the global economy has witnessed explosive growth especially with regards to the emerging markets, which, as of 2023, account for 50.1% of global GDP, and 66% of global GDP growth over the past 10 years. BRICS countries have grown from representing 22% of global GDP (in terms of PPP) in 2006, to 32% as of beginning of 2024 (and 36,2% including the new joiners).

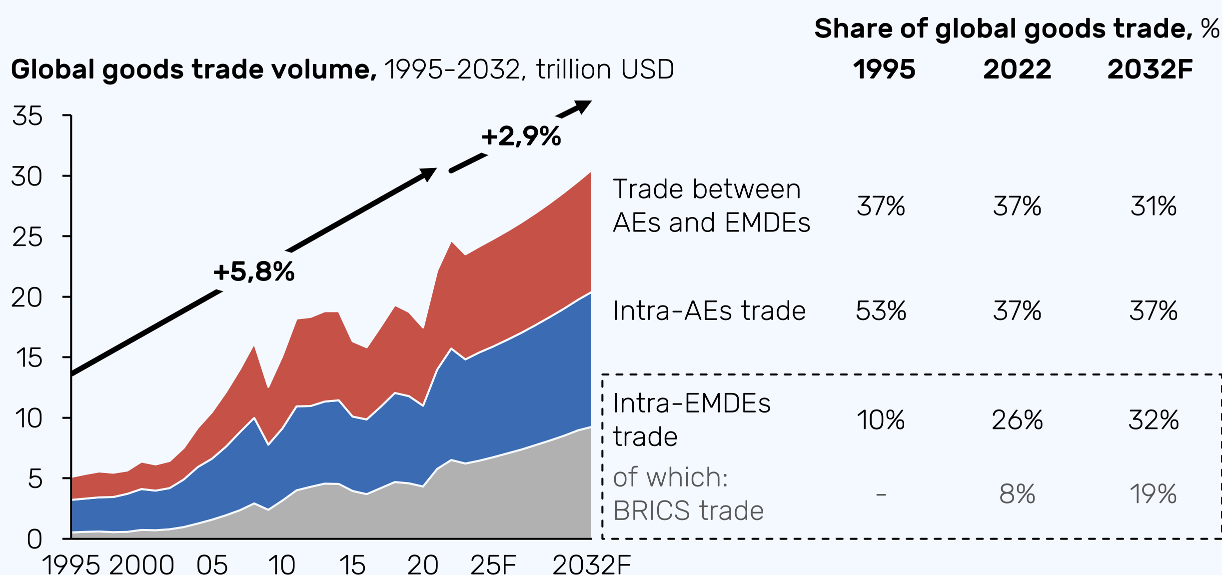
At the same time, the existing IMFS has been characterized by frequent crises, persistent trade and current account imbalances, elevated and rising public debt levels, and destabilizing volatility of capital flows and exchange rates. The current IMFS is primarily serving interests of AEs underpinned by collective reliance on legacy mechanisms that have failed to adjust and ultimately resulting in a growing economic imbalance between AEs and EMDEs, lagging SDG progress, and fragmenting GFSN.

SECTION 1. TRENDS AND KEY CHALLENGES

1.1 Macroeconomic potential of the upcoming changes

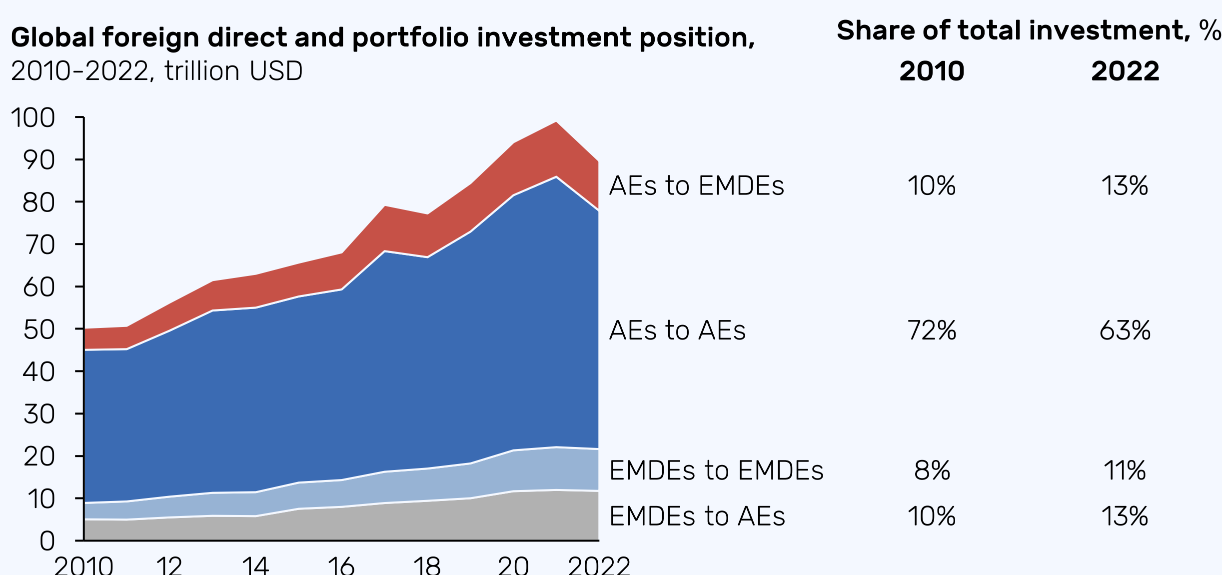
Global volumes of cross-border trade are not only growing (in both physical and financial terms), but are increasingly tilting towards EMDEs – over the past three decades the share of EMDEs' intra-trade has grown from 10% to 26% and will grow further to 32% by 2032 (Figure 1); BRICS intra-trade as of 2023 makes up 8% of that flow, and by 2032 will more than double to 19%. This dynamic, however, is not directly reflected in the sphere of cross-border investments that remained relatively stable with 63% of global portfolio and direct investments confined to AEs markets', with another 13% flowing to AEs from EMDEs (in 2022); meanwhile the share of investments into EMDEs (from AEs) has only grown by 3 percentage points over the past 10 years (Figure 2).

Figure 1. Volume of global goods trade[1]



Share of global goods trade, %	**1995**	**2022**	**2032F**
Trade between AEs and EMDEs	37%	37%	31%
Intra-AEs trade	53%	37%	37%
Intra-EMDEs trade	10%	26%	32%
of which: BRICS trade	-	8%	19%

Figure 2 Investment flows[2]



Share of total investment, %	**2010**	**2022**
AEs to EMDEs	10%	13%
AEs to AEs	72%	63%
EMDEs to EMDEs	8%	11%
EMDEs to AEs	10%	13%

[1] Source: UNCTAD, BCG, YnP analysis
[2] Source: IMF

This kind of disconnect between goods and investment flows is indicative of a potential that EMDEs are missing out on; their economies remain underfunded as profits generated from growing trade are invested abroad into more liquid and accessible markets rather than benefiting domestic economies.

If EMDEs continue to use the existing IMFS system, which channels capital to established rather than emerging markets, much of the financial resources generated by trade will remain confined to a system that ultimately serves advanced economies.

Therefore, it is in the EMDEs' interest to develop and scale their own payment and investment infrastructure as swiftly as possible; this includes the financial architecture itself (including venues, messaging systems etc.,) along with a robust legal framework that will protect the system's members and act as a backbone for attracting and growing inward investments.

Under the current IMFS, large swathes of the global economy are bound by conditions that could be described as the 'path dependence problem' theory; nations continue to rely on legacy arrangements that no longer suit their needs as they were developed before current EMDEs had the capacity to participate in the global trade on an equal footing with AEs. These emerging economies have failed from the 'rentier-led' growth model to the 'investment-led' model that would put them on a path towards sustainable economic growth accompanied by increasing labour and capital productivity.

This transition, in the context of current state of IMFS, could be aided by ensuring that EMDEs' excessive savings (i.e., savings arising from above-trend savings rates) are re-invested into either domestic or other EMDEs' economies as opposed to being channeled to AEs markets. As of 2023[3], the accumulated stock of such savings in EMDEs stood at 4% to GDP[4], which, actually, almost equals those levels achieved by AEs.

Given the nature of savings accumulation in the emerging economies, where the historic average level of accumulated stock of excess savings is actually nearer[5] to 0% of GDP due to periods of recession that drove down savings' volume, measures aimed at routing these funds into preferred areas (i.e., into domestic or other EMDEs economies) must already be in place to ensure timely allocation. In other words, when EMDEs are enjoying positive economic growth, domestic private investors must have the ability to freely and promptly invest their funds into their own, or other EMDEs' before the next economic downturn.

At present, the investments in EMDEs are constrained by the following issues[6]:

1. Illiquid domestic capital markets (for example, median weighted bid/offer spreads on 10-year government bonds of AEs is 0.1% vs 0.53% for EMDEs).
2. High volatility of domestic (non-reserve) currencies (on average, currencies of emerging economies are 61% more volatile than those of developed countries[7]).
3. High and non-transparent transactional costs (especially for cross-border flows, covered later in the document).

[3] https://www.federalreserve.gov/econres/notes/feds-notes/accumulated-savings-during-the-pandemic-an-international-comparison-with-historical-perspective-20230623.html
[4] Home country's
[5] https://www.federalreserve.gov/econres/notes/feds-notes/accumulated-savings-during-the-pandemic-an-international-comparison-with-historical-perspective-20230623.html
[6] YnP analysis
[7] When measured in monthly increments, 2000-2024, developing countries' currencies – BRICS currencies, developed – USD, EUR, GBP, JPY, CAD, AUD, CHF

Whilst the volume of investment portfolio[8] flows from EMDEs (excl. China) and AEs into each other's economies is comparable in nominal terms (USD 9.7 trillion EMDEs to AEs, and USD 10.1 trillion from AEs to EMDEs as of 2022), over the past decade the volume of developed countries investments into EMDEs went from representing 15% of home countries' GDP to 18%. At the same time EMDEs investments into developed economies grew from 23% to 39% (of home countries' GDP), indicating that EMDEs are more inclined to invest into AEs markets than other way round.

When examining family offices' portfolio allocations[9] as a global proxy for investment strategies, it is evident that EMDEs still represent a small fraction of overall allocations – investments into EM equities account for only 4% of the overall portfolio (vs. 24% for developed markets) and investments into fixed income instruments account for 3% into EMDEs vs. 16% for developed markets.

Market volatility that accompanied the COVID period and contractionary monetary policies that followed have exacerbated this effect as the US has attracted[10] almost 1/3 of all global cross-border investment flows – compared to only 18% before the pandemic.

The failure to correct this imbalance, whereby a large portion of the added value is absorbed by AEs through the established IMFS framework, will result in further detriment to the developing economies, including, but not limited[11] to:

- Poor economic performance[12] – real GDP growth lagging by 0.5-1 pp per annum (3.4% vs. 3.9-4-4%).
- Poor social environment[13] – higher unemployment rates by 0.3-0,6 pp (5.4% vs 4.8-5.1%), and reduced life expectancy by 0.8-1.5 years by 2050 (76.2 vs 77.0-77.7 years on average).
- Lack of/insufficient financing needed for climate change mitigation and adaptation efforts.

Ultimately, by seeking solutions to advance the IMFS into a new era, we are seeking ways to correct this trajectory, towards a more equitable world economy.

Our common initiatives, as outlined in this Research, are expected to yield the following benefits, not only for the BRICS countries, but for the global economic participants as a whole:

1. Lower transactional costs and increased levels of inter-regional trade allowing EMDEs to capture greater levels of added value within the products' value chain.
2. Greater liquidity and improved price discovery for capital investments at regional level, allowing local and foreign investors to better weather any economic volatility at local and global levels; better investment conditions have the potential to double current levels of inward mutual investment into BRICS countries.
3. A fairer and more stable framework for sovereign reserves that is independent from outside influence and overall volatility provided by greater degree of asset diversification; the diversification of sovereign FX reserve currencies is encouraged.

[8] Source: IMF

[9] Using UBS Global Family Office Report 2024 - https://advisors.ubs.com/mediahandler/media/563297/ubs-gfo-report-2024.pdf

[10] https://www.bloomberg.com/news/articles/2024-06-16/how-the-us-mopped-up-a-third-of-global-capital-flows-since-covid?sref=U3dOGIDF&embedded-checkout=true

[11] YnP analysis

[12] Calculation model is based on an assumption of a 98% reduction in cross-border transaction fees via DLT model (vs. the 6.3% average settlement cost for conventional transfers); improved credit ratings that lead to cheaper debt funding (assumption 4% spread between the cost of funding between AEs and EMDEs), total public debt of BRICS countries at 23 trillion USD, and increased mutual investment flow between EMDEs with the ultimate economic effect of 130bn – 260bn USD per annum

[13] Unemployment rate - there are many studies (Khan 2007, Kapsos 2005, etc.) and concepts (Okun's Law) indicating a connection between GDP and unemployment. For example, GDP growth of 1 p.p. leads to an increase in employment by 0.3-0.7 percentage points. Thus, if the effect of changes in the IMFS equals 1% of GDP, this then leads to a decrease in unemployment by 0.3-0.7 percentage points. Life expectancy - there is a relationship between GDP per capita growth, population and life expectancy (LE). Using a regression model and elasticity analysis, we estimated the relationship with GDP per capita. population and life expectancy in a scenario without IMFS reform, and then built a forecast taking into account GDP growth of 0.5-1 percentage points. which resulted in an increase in life expectancy by 0.8-1.5 years

4. Faster and more sustainable growth for EMDEs provided by a more agile system of development and rescue funding allocation; these changes may add 0.5 to 1 pp in additional annual GDP growth.

1.2 Fragmentation as a challenge for the current IMFS

What we are seeing now, is the reversal of the core principles that guided the IMFS over the past years, in particular, re-emergence of trade barriers (from less than 500 in 2010, to over 2,500 in 2022) resulting in fragmentation across non-financial (including commodities, labour and technology) and financial markets which will most adversely impact low-income countries and less well-off consumers in AEs. The extent of such fragmentation may stretch beyond the commonly discussed value chains but also impact existential issues such as the transition towards a "green" economy through the collapse of global supply chains of critical minerals.

Depending on modeling assumptions[14], the cost to global output from trade fragmentation could range from 0.2% to up to 7% of GDP; with the addition of technological decoupling, the loss in output could reach 8 to 12% in some countries.

At the same time, we should not perceive these changes only as unrivaled threats, but rather as an opportunity to improve the way we operate which could lead to an even stronger growth than what we have seen so far. A lot of the current major value and supply chains operate the way they do, not because they are superior, but rather because of their legacy – this includes global shipping ports, distribution networks and countless other elements of our supply chains. By seeking new ways of doing business, we may transform this status quo to find better, more efficient ways that lead to greater economic and social prosperity.

Ultimately, we should be adequately prepared as ongoing changes will impact every component of the IMFS from the way payments are made, and development is funded, to the way countries protect themselves in the event of a financial crisis.

1.3 Lagging performance of sustainable-finance arrangements

As stated in Johannesburg II Declaration of 2023, the BRICS community recognizes the need to enhance the financial and investment mechanisms aimed at the implementation of environment and climate change programs – an increased momentum to reform these mechanisms is required.

Upon further examination of this seemingly clear goal in the context of the IMFS, it becomes apparent that the matter is complicated by a number of issues that have to be addressed before considering the actual reform of the mechanisms that we are talking about, in other words, we need to clearly define the purpose that these mechanisms are meant to serve.

As the subject of climate change took its rightful place at the top of the international agenda, the complexity of the issue itself and the associated fundamental changes sought by the individual public and private entities (governments, NGOs, investment communities etc.), resulted in an enormously complicated web of frameworks and interests pursuing their own versions of the end goal makes it harder to navigate and agree on collective actions.

The overarching position for BRICS is that we support, along with other initiatives in this space, the G20 Sustainable Finance Roadmap, with a mission of "helping scale up sustainable finance to support the objectives of the 2030 Agenda and goals of the Paris Agreement".

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[14] Geoeconomic Fragmentation and the Future of Multilateralism, IMF, 2023

At present, there remains an adaptation finance gap which is estimated at USD 194bn – 366bn per annum with developing countries' needs "likely to be 10-18 times as great as finance flows[15]"; in part, this underperformance can be explained by the shortfalls caused by the current state of IMFS. Collective failure to adjust existing mechanism is likely to result in enormous economic and social costs as it is estimated that every 1 USD invested into risk reduction and prevention can save up to 15 USD in post-disaster recovery efforts[16].

The aim, of including the subject of sustainable finance in this research, is to critically assess the way in which the IMFS could be adapted to better serve the common climate-related agenda goals.

1.4 Prerequisites for building an alternative payment and financial infrastructure

The cross-border payments infrastructure, in its current form, possesses one distinct drawback – the lack of viable competition. This, in turn, gives rise to two challenges – the rise of monopolistic rent, and an unchallenged centralized decision-making authority. The former results in a purely economic cost that weighs on the developmental potential of the global economy; whereas the latter also carries non-economic costs associated with limited transparency and accountability. In other words, participants are not only facing higher transactional costs, but also risk of being excluded from the system altogether.

It can be argued that, akin to the previously mentioned reliance on the established value & supply chains, the current prevailing model of utilizing centralized settlement mechanisms and reserve currencies for the purpose of conducting cross-border payments is also a legacy 'overhang' that is no longer optimal in the 21st century. Historically, the universal search for a 'world currency' (in our era, represented by the reserve currencies) was a direct consequence of global information asymmetry – which was a natural state for trade participants that had no effective way of communicating with each other on a 'live' basis. Therefore, relying on a single, accepted medium of exchange was the safest and most predictable way of conducting business.

Now, the information asymmetry has all but disappeared – participants are able to effectively work out all major commodity and currency pairs on a live basis; arbitrage opportunities exist for fractions of a second in liquid markets and minutes in illiquid. The growth of a 'tradable' universe in terms of its breadth[17] and depth[18] is being fueled by an inflow of capital (private and public, in line with the growing global economy) and is aided by technological advances.

Some of those advances are aimed at the institutional side of the flow – API enabled applications, HFT[19] strategies, advanced analytics that utilize 'live' metrics (weather, satellite imagery etc.). Other technological advances are there to 'democratize' the current process - this can be demonstrated by the rapid entry of retail investors into capital markets via 'app-brokers', emergence of P2P exchanges that facilitate exchange between currencies and crypto assets[20]. These developments are contributing to the reduction of the global information asymmetry which means that the need in a 'world currency' is also disappearing.

[15] The Adaptation Gap Report 2023: Underfinanced, Underprepared
[16] United Nations Office for Disaster Risk Reduction, "International Cooperation in Disaster Risk Reduction: Target F."
[17] Represented by growth in numbers and types of tradeable instruments
[18] Represented by liquidity in those instruments (lots and b/o spreads)
[19] High frequency trading
[20] Including crypto-currencies, stable coins, digital assets

The cross-border investment flow is showing signs of a market failure whereby the highly concentrated nature of the existing investment infrastructure and the dominance of USD-denominated instruments is resulting in a misallocation of capital at the expense of EMDEs. In a global economy where EMDEs are playing a greater role which is continuously increasing, alternative regional financial institutions are struggling to gather sufficient liquidity especially at times of high volatility when available capital is swiftly withdrawn to AEs markets.

This matter is further amplified by the absence of efficient market infrastructure within EMDEs that prevents the inflows of the required capital in the first place – this includes legislation, venues, rating agencies and financial instruments that are needed to attract and accommodate domestic & foreign capital investments.

As a direct consequence of the above, the global system of sovereign FX reserves continues to heavily rely on one or two currencies (59% for the US dollar, and 20% for the Euro in 2023[21]) and dollar- and euro-denominated debt instruments as the core store of value. This means that we are facing a growing asymmetry at the heart of the IMFS whereby the US is unable to balance between the needs of its monetary policy and the needs of the global economy where the US plays a steadily diminishing role[22].

The global and regional financial safety nets, as components of the IMFS, have been struggling to provide adequate level of resources to keep up with the rapidly growing needs of the global economy. The rigidity of management of the GFSN was recently demonstrated by the failure to redistribute quotas at the 16th GQR. Allocation of resources for sustainable development in EMDEs also remains insufficient and poorly coordinated especially in Africa and Latin America. This, in turn, leads to greater reliance on the GFSN as EMDEs struggle to stave off the onset financial difficulties effectively resulting in a vicious cycle that frequently hinges on politicized rescue packages.

1.5 Principles and components of the future IMFS

We believe that the future model of the IMFS should revolve around the following principles that would carry equal levels of importance:

1. **Security** – this includes technological and legal security, shielding its participants from unlawful loss of their capital and assets.
2. **Independence** –a solution that will perform based on mutual-reliance thus preventing any single party from establishing an overarching control.
3. **Inclusion** – non-discriminatory access and minimization of entry barriers; it ensures equal access to the IMFS facilities regardless of the advancement of the home economy (EMDEs / AEs) and prevents the imposition of restrictions by external parties that are not part of the transaction.
4. **Sustainability** – the solution must be designed with a long-term view and remain adaptable to the changing economic environment (e.g., shifting balances of payment, new models of financing etc.), thus retaining its participants within the system and allowing it to achieve a network effect.

[21] https://www.reuters.com/markets/currencies/us-dollar-share-global-fx-reserves-stays-flat-q2-imf-2023-09-29/

[22] If measured as % of global GDP, from 33% in 1984 to 24.3% in 2021, albeit partially compensated by the expected rise to 26% in 2024 (IMF World Economic Outlook 2024). If measured as % of global exports US share went from 12.3% in 1993 to 8.7% in 2023.

These principles are then used to formulate the criteria for the core components of the future model of IMFS:

1. **Cross-border payments** – a fast, cheap, transparent and inclusive mechanism that is built around the principle of minimizing trade barriers and non-discriminatory access.
2. **Cross-border investments** – an increasingly seamless environment that allows for efficient and sustainable capital allocation that does not hinge on a single-currency centric infrastructure.
3. **Reserves** – sovereign reserve system that is supported by diversification across currencies, commodities and alternatives; protected from any outside will.
4. **Stabilization & Development** – consisting of development mechanisms via Multilateral Development Banks (MDBs) that include the World Bank Group (WBG) and other regional institutions that are supporting developing economies, and the Global Financial Safety Net (GFSN) such as the IMF, Regional Financing Arrangements (RFAs), central banks' bilateral swap lines – to provide adequate financial support against economic shocks (crises).
5. **Innovation (as the underlying principle)** – implementation of fast, cost-effective and protected means of settlements that rely on innovative solutions such as central bank digital currencies (CBDCs).

In the light of the rapidly changing global economy, and the growing role that EMDEs play in it, the existing components of IMFS are not fully meeting these criteria, and whilst we recognize the scale of the required changes, a failure to address them will leave EMDEs exposed to perpetual market failure, further depriving EMDEs of sustainable growth and prosperity.

SECTION 2. STRATEGIC INITIATIVES TO IMPROVE THE EXISTING IMFS

2.1 Key directions for infrastructure development

2.1.1 Cross-border payments

At the moment cross-border payments are executed via infrastructure that comprises multiple correspondent banks acting as intermediaries. The speed of payments' execution is limited by the accessibility of RTGS systems, which depends on their operating hours, and the conditions for performing payments may vary in accordance with specific national standards. Consequently, payments are executed slowly and inefficiently. Furthermore, performing payments in dominating currencies fosters dependence on the monetary policies of the countries issuing such currencies. The above issues are particularly pressing for developing countries.

The correspondent banking network is not static and has undergone some significant changes over the past decade. Following some high-profile AML compliance failures in a number of large institutions (and the accompanying multibillion USD fines), banks faced growing compliance-related costs which meant that they became much more selective when choosing what business-relationships they want to maintain. This ultimately resulted in a falling number of correspondent banks worldwide by 20% between 2012 and 2018[23]; over a quarter of IFC's survey's[24] responding banks noted restrictions in correspondent network service (more specifically, for operations in USD and EUR) – especially for entities in Sub Saharan Africa, Latin America, Caribbean, Europe and Central Asia.

In part, the correspondent banking network has shifted[25] away from the US and Europe (whose market share reduced from 73% in 2013 to 60% in 2019) to other parts of the world, however this shift has not entirely compensated the overall reduction in participants thus resulting in longer and costlier transaction chains. This dynamic not only carries a negative effect for the cross-border trade and remittances, but also impacts trade in crucial commodities such as wheat.

A separate important topic related to cross-border payments is financial messaging. Despite the internationalization of several financial mechanisms, the inter-bank information exchange practice is still represented by cross-border corresponding account settlement supported by SWIFT that is subject to a centralized legislative framework, entrenched institutions and dated[26] technology. Even though in 2023 SWIFT claimed that 89% of cross-border payments are completed within an hour, the BRICS cross-border payment survey[27] showed that key pain points of the current system for the constituents are time delays, high costs (Brazilian respondents cited FX spreads of 2.5% on cross-border payments, in Africa this figure is 8.5% and may even reach 20%), and a lack of pricing transparency. As EMDEs continue to advance, a more efficient solution is needed to allow them to capture a greater share of the economic utility that they generate for the global economy.

The few emerging alternatives are facing an uphill struggle to gather sufficient momentum due to an overwhelming network effect that accompanies the established model. This is likely to continue to be the case as for a challenger system to have the opportunity to succeed it must undertake a mammoth task of integrating itself within a hugely complex network of international banks and its regulators. This task is made more difficult as some of the alternatives are effectively stifled by extra territorial sanctions – even if the transaction takes place between two non-US counterparties and involves no US currency and non-US financial infrastructure.

[23] (Lui, Fernando, 2020)
[24] Financial Research Institute of the Ministry of Finance of the Russian Federation – "Analysis of approaches to reforming the international financial architecture with an emphasis on strengthening the role of BRICS", 2024
[25] Borchert et al. (2023)
[26] SWIFT messaging technology was developed over 50 years ago that relies on a centralized architecture; whilst it is secure and reliable, it is also criticized for its slowness, rigidity and lack of decentralization
[27] Carried out by Brazil in 2019 – "BRICS SURVEY ON CROSS-BORDER PAYMENT SYSTEMS"

This results in a market distortion, as this component of IMFS is effectively monopolized by a single institution, impeding its participants of having a feasible alternative and penalizing its most vulnerable members – the EMDEs, as transactional costs reduce their net income. This means that in the context of the proposed core principles for improving the IMFS, the current system is falling short on the Independence and Inclusion components.

In search of a solution, as introduced in section 1.4, global participants may choose to rethink their approach towards cross-border payments with the use of 'world currency', and rather than trying to find one or two alternative currencies that meet their requirements (in terms of access, stability and supporting infrastructure), participants may leverage the existing technology to maximize the transparency and optimize the price discovery mechanism[28] that would allow them to convert whichever unit of value they hold at a particular point in time, into another unit of value sought by the trade counterpart. This new approach essentially shifts the focus away from looking for an ideal medium of exchange, towards perfecting the method of an exchange itself.

In this instance, the unit of value itself does not have to be limited by national currencies but can actually be a range of 'things' – CBDCs, asset-backed tokens, currency baskets etc.

The viability of this mechanism will ultimately hinge on the effectiveness of the price discovery process. True price discovery can only happen when participants are obliged to commit to a trade if the exchange level that they are offering is matched by a counterpart, in other words, the matching mechanism must take form of an exchange / trading venue.

2.1.2 Cross-border investments

As the US and UK economies emerged at the forefront of global capital markets in the 1980s, their financial market infrastructure including exchanges, clearing houses, rating agencies and depositories also came to play the dominant role. This arrangement offered its rapidly expanding circle of participants the most efficient way to conduct investment activity as liberalized market access and high liquidity concentration reduced costs and facilitated effective price discovery.

As the size and complexity of capital markets increased, the interchangeability of its individual components reduced, meaning that replacing or integrating an alternative component became increasingly difficult, if not impossible, in practical terms. In other words, the system became too rigid to efficiently serve the needs of the changing global economy. As EMDEs continue to grow, they seek to invest as well as attract more capital, the flow of which, remains constrained by the existing IMFS.

This rigidity results in higher costs for its participants and the misallocation of resources since domestic capital markets are failing to reach sufficient depth with liquidity directed away towards dominant financial markets – especially during times of high volatility (during the heights of COVID, EMDEs were facing outflows of over USD 100 billion per day that were transferred out by foreign investors[29]).

The composition of capital markets needs to be reviewed, as evidence[30] shows that whilst the share of developing and BRICS countries in global capital markets[31] has grown from 15% to 25% (during the period 2012 to 2022); with debt growing from 8% to 23% of the global volume, and equity remaining relatively unchanged at 27%, they continue to remain "domestic" as more than 94% of the holdings[32], in BRICS countries, belong to the residents, in a stark contrast to developed markets where resident-holders make up only 69% of the total (and this figure continues to reduce, as in 2012 share of resident holdings was 72%). This demonstrates that EMDEs, including the BRICS, are failing to make full use of

[28] Concept refers to the process that allows buyers & sellers to find the 'true' price or value of the offered security/currency/unit; the more efficient the process, the more 'perfect' the market becomes
[29] Sergey Storchak - Half a century later: have lessons been learned?
[30] YnP analysis of IMF and SIFMA data
[31] Equity and FI
[32] By volume, in USD

globalization benefits that should include increased inflow of foreign capital into domestic markets – higher demand means lower funding costs (via debt) and greater ability to raise money through equity offerings.

When examining AEs capital markets' performance since the Great Financial Crisis (GFC) it is evident that their structure allowed for effective, flexible capital allocation across the asset classes. For example, during the period of 2008 to 2022 that is closely associated with quantitative easing and loose monetary policies in the developed markets (Figure 3) their debt and equity markets reacted accordingly with equity market tripling in size whereas outstanding debt market only growing by 50%[33] during the same period. At that time non-resident ownership of equity instruments went from 29% to 38%, meanwhile debt ownership remained steady at around 27%-29%. On the other hand, during the same period, EMDEs markets witnessed a drop in equity and debt holdings alike by the non-residents - for equities the reduction has been gradual - from 18% in 2008 to 15% in 2022, whereas for debt it was quite sudden from 16% in 2008 to just 7% in 2022 (albeit with a limited uptick during 2010-2015 when it reached 23%). Had EMDEs not faced exodus of non-resident investors from their debt markets, their current market cap could have been up to 7% to 12% higher than it is now.

Figure 3. AEs markets performance since GFC

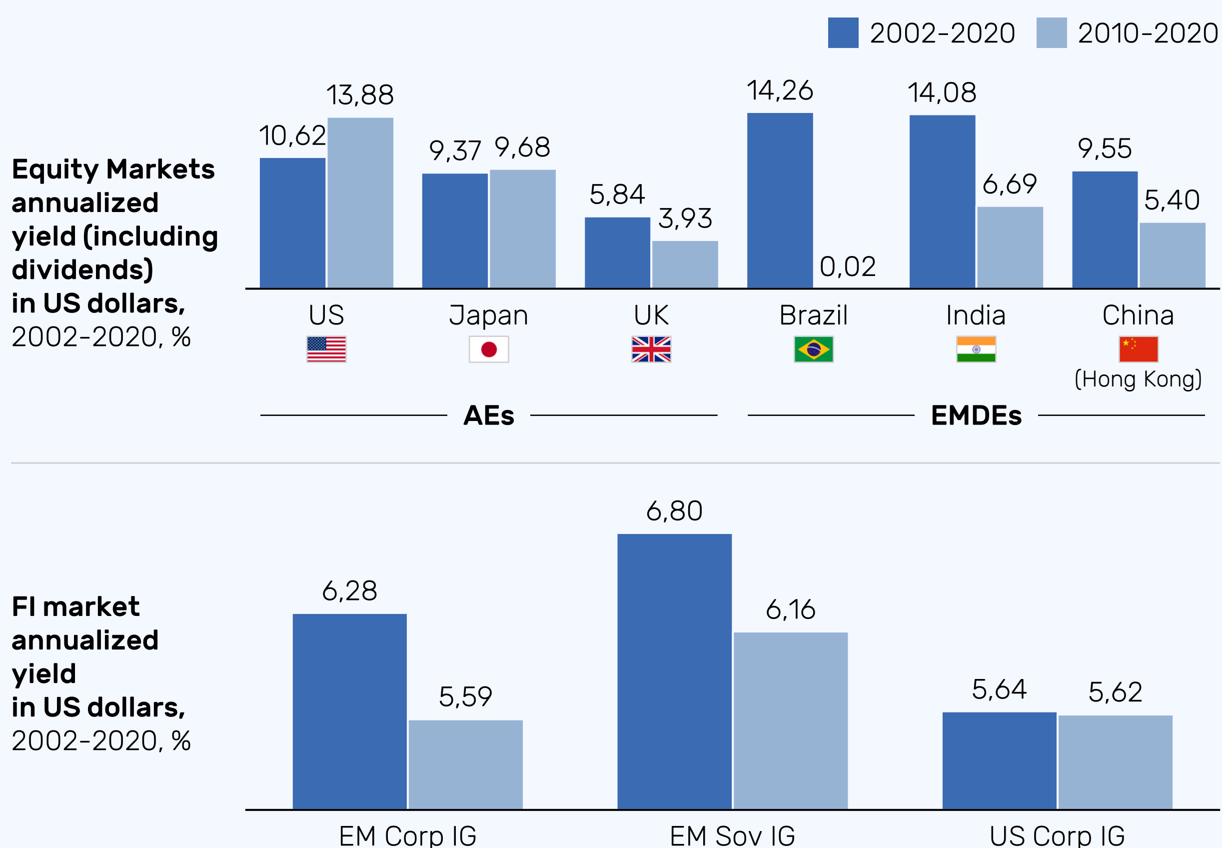
Whilst it remains customary to divide the 'investable' universe into developed and emerging markets, it is also well-understood that countries inside these blocks are not homogenous – there are significant disparities across economies and their performance. Upon closer examination, it is evident that financial return derived from some of the emerging economies over the past ten and twenty years, on average, surpasses that earned in some of the developed markets.

[33] Measured in nominal volume

For example, whilst the US equity markets[34] have produced annualized returns of 10.6% and 13.8% over periods 2002-2020 and 2010-2020 respectively, UK's markets[35] have only managed returns of 5.8% and 3.9% (adjusted for FX). Meanwhile Indian equity market has generated annualized returns of 14% and 6.6% over the same timeframe (adjusted for FX). The same logic applies to corporate (non-HY[36]) debt markets where some EMDEs portfolios[37] have managed to produce better annualized returns over a long run (2002-2020), even when adjusted for FX, than, for example, US [38] – 6,2% vs. 5,6% (Figure 4).

This kind of a variation in financial performance is not a revelation and, naturally, it is not the aim of this research to provide favorable metrics for the purpose of promoting EMDEs as a superior destination for capital allocation, however, this analysis underscores the importance of facilitating equal market access to all viable destinations for the non-resident investors.

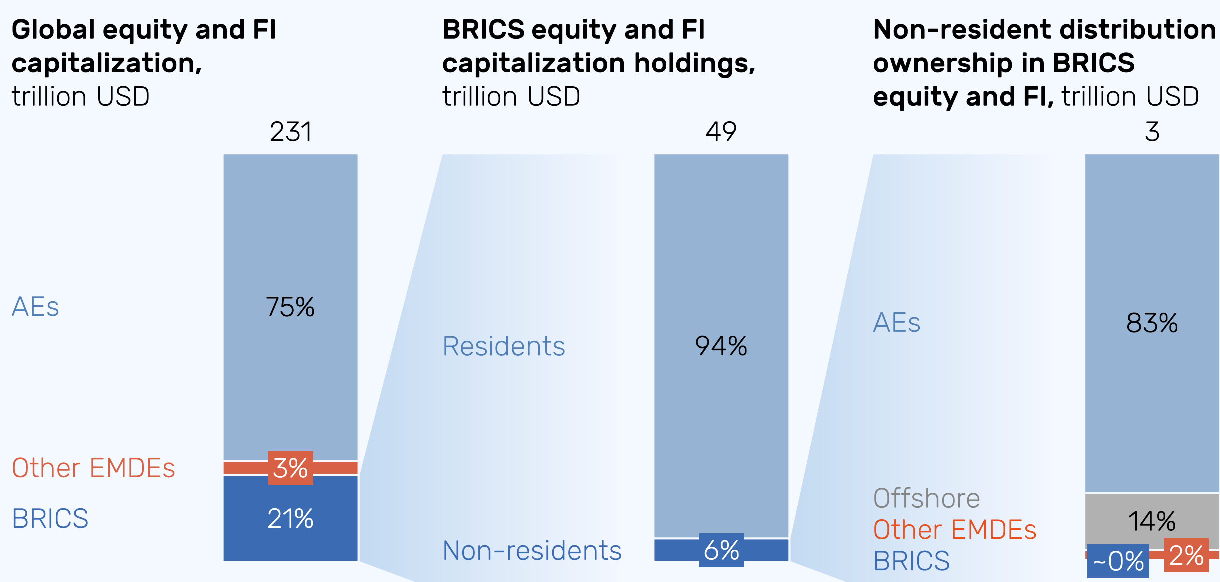
Figure 4. Market performance across since 2002



The profile of non-resident investors in EMDEs markets is also quite telling – they are almost exclusively AE buyers that account for 83% of the total non-resident holdings, with another 14% made up of offshore participants (in 2022). Mutual holdings of portfolio investments between BRICS countries stands at mere 0.4% (Figure 5).

[34] S&P 500
[35] FTSE100
[36] Non-high-yield i.e. investment grade
[37] JP Morgan CEMBI Broad Diversified Investment Grade
[38] BoA ML US Corporate

Figure 5. Share of non-residents in BRICS capital markets, 2022



Whilst the matter of elementary financial returns and assumed risk can explain lower levels of non-resident engagement in EMDEs, it does not explain why EMDEs investors do not invest into other EMDEs (unlike their associates from developed markets). The theory explaining this phenomenon is centered around the notion of excessive centralization whereby in order to reach a capital market in a developing country one must route their investment flow via the existing investment hubs such as London or New York. Therefore, it is actually much easier to allocate capital in AEs due to the existence of direct links, rather than trying to find a suitable arrangement to accommodate investment flows in-between countries that do not have established 'foreign-facing' investment facilities. In other words, an investment flow between EMDEs requires two legs of a journey (even in the case of geographical proximity), whereas investment flow from AE into EMDE only one.

Shortening this journey for EMDEs' flows can be deemed imperative if, for example, developing markets intend to capitalize on the presently-turning sentiment towards their economies as sovereign wealth funds (SWFs) outside of the West are 'particularly bullish on the prospects of emerging markets over the next three years, anticipating outperformance relative to developed markets'[39].

Another significant factor that weighs on EMDEs' ability to attract non-resident investors is the issue of foreign credit agencies' bias. At present this space is dominated by the US' 'big three'[40] whose ratings are commonly utilized by institutional investors worldwide. Extensive research[41] in this field shows that there is a consistent rating bias (for sovereign bonds) favoring the developed countries and disfavoring emerging markets – this, in the context of US-based institutions, takes various forms from home and proximity, to foreign bias.

[39] Invesco Global Sovereign Asset Management Study 2024 – https://www.invesco.com/content/dam/invesco/apac/en/pdf/insights/2024/july/invesco-global-sovereign-asset-management-study-2024.pdf
[40] Moody's, Fitch and S&P
[41] Gültekin-Karakas, D., Hisarcıklılar, M., Öztürk, H., 2011. Sovereign risk ratings: biased toward developed countries? Emerg. Markets Finance Trade 47 (2),69–87

This results in an informational distortion with the following effects:

1. Lower sovereign ratings create a knock-on effect for the corporates whose ratings will also suffer despite having sound financial fundamentals,
2. When the credit rating agencies downgrade sovereign bonds, all debt instruments in that country should be downgraded accordingly due to the sovereign ceiling doctrine, again resulting in an unfair burden for the corporates, and
3. Ultimately resulting in a higher cost of capital, widening CDS[42] spreads, and damaged domestic capital markets.

The root cause of the existing bias stems from several sources including business models, subjective bias, government lobby – not least of which, however, is the difficulty for rating analysts of US-based rating agencies to cope with incomplete data coverage data for the emerging markets that ultimately creates the uncertainty that subsequently results[43] in lower assigned ratings.

These observations are pointing towards a view that the current, domestic nature of EMDEs capital markets (among other factors) needs to change in order to see comparable growth to that of AEs markets.

This model of centralized capital-investment architecture, is further weakened by a situation whereby a single counterparty can be restricted from engaging with other, willing counterparties, via the existing "plumbing" and thus having to resort to other, often less efficient or riskier, solutions (i.e., abandoning clearing models in favor of more risky bilateral trades); it is especially harmful for smaller participants that lack resources and expertise, effectively leaving them unable to raise sufficient funds and efficiently manage capital risks (FX, interest rates etc.).

Extraterritorial restrictions are also damaging universal efforts of attracting long-term financing into developing markets, hindering transnational initiatives thus ultimately resulting in yet another market inefficiency.

In the context of the proposed core principles of the IMFS, the current system's rigidity and its level of concentration means that it is failing the Inclusion and Sustainability principles.

2.1.3 Cross-border investments – Sustainable Finance

The matter of proliferation of sustainable finance progresses along multiple axes including SDGs setting at national and global levels, taxonomies (i.e., what is "green" and what isn't), institutions, and the investment architecture which in turn includes an array of subjects such as ratings (e.g., ESG), trading venues (e.g., for green bonds or sustainability-linked bonds), and information disclosures. This research will only cover the latter elements, leaving the setting of SDG themselves aside.

At present, there exists a serious disparity in the way AEs and EMDEs are decarbonizing their economies. For example,[44] in the renewable energy sector much of the investment has been concentrated in the developed countries (36% of total), with the only exception among the EMDEs being China that accounts for a 47% of the total market[45]. The largest gaps remain in Africa and the Middle East, where capacity needs to grow more than tenfold by 2030, requiring cumulative investment of $1.36 trillion.

[42] Credit Default Swap

[43] Ferri, G., Liu, L.-G., 2005. Assessing the effort of rating agencies in emerging economies: some empirical evidence. Eur. J. Finance 11 (3), 283–295.

[44] FSDR 2024

[45] https://www.iea.org/data-and-statistics/data-product/world-energy-investment-2024-datafile

Similarly[46], the global labelled[47] bond market remains largely concentrated in high-income countries, much like other sustainable assets. Looking at the use-of-proceeds green, social and sustainability (GSS) bonds subset, for example, only 13% of the overall GSS bond market was issued by entities in developing countries in 2022 (further reducing to around 5% when not including China)."

Investments of AEs into EMDEs green bonds is also limited. For example, in India only 7% of the 'green' market is allocated to AEs firms' portfolios, while in Brazil this figure is 14% and one of the highest concentrations of AEs capital is in Saudi Arabia's market with 18%. When examined from the perspective of EMDE buyers, the numbers are even worse – hardly any institutional buyers from EMDEs buy green bonds in other EMDE markets, with their holdings making up less than 1% of the market[48].

This lack of foreign demand for domestic green bond issuances in EMDEs is damaging to the transition itself as issuers are not able to benefit from the concept called 'greenium' which, albeit not structural nor universal, arises as a result of demand and supply imbalances and usually means that issuers are able to raise money a little bit cheaper[49]. These kinds of offerings also tend to attract institutional, long-term investors which provides the market with additional stability. Egypt's expertise in this area demonstrated that whilst it is feasible for an EMDE country to successfully issue (issuance was five times oversubscribed)[50] 'green' instruments, the actual cost of financing may still exceed those levels that are normally achieved with conventional issuances – in part, this can be attributed to lacking domestic expertise and institutional base.

In part, such disparity can also be explained by the fundamental wealth and sophistication of capital markets in the developed countries that are able to utilize their own funds to fund domestic projects fostering a cleaner local environment. This can be demonstrated by the AEs dominance in the space of sustainable funds whose capital captures 94% of the market.

The other part of this disparity, however, can be attributed to factors other than the innate wealth and expertise of AEs.

An underdeveloped investment infrastructure and an uncertain investment climate often result in a disproportionate weight on the cost of capital, whereby the risk premium far exceeds the actual project risk. For example,[51] the weighted cost of capital for projects in developed countries may be 6.6% lower than for EMDEs (4% vs. 10.6%) despite the project risk being 1,4% higher for the developed countries (4.3% vs. 2.9%).

In other words, the *perceived* risk of investing in developing countries is frequently higher than the factual risk.

This perceived risk is driven by two fundamental factors – 1) lack of investment infrastructure & transparency (poor data, illiquid markets, limited number of prime brokers etc.) and 2) overall lack of commitment caused by limited familiarity and/or (lack of or a lower level of) trust in the recipient country. For example,[52] "bottlenecks to increasing GSS and sustainability-linked bond issuances in developing countries include illiquid domestic capital markets, … limited familiarity with international investors, complex public budgeting processes, and the high level and often voluntary nature of applicable global standards."

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[46] FSDR 2024

[47] Labelled meaning "sustainable-labelled'

[48] YnP analysis

[49] Austria's debut green bond issuance in 2022 attracted enough demand to lower the yield by 2.5 b.p. when compared to a conventional non-green issuance – AXA Investment Management

[50] Egypt issued the first sovereign green bonds in the Middle East and North Africa (MENA) area, worth $750 million and listed on the London Stock Exchange. The five-year bonds, which were auctioned at a 5.25 percent interest and were five times oversubscribed, will be used to finance green projects. https://www.sbfnetwork.org/wp-content/assets/policy-library/692_Egypt_Egyptian_Sovereign_Green_Bonds.pdf

[51] FSDR 2024

[52] FSDR 2024

This issue is further reinforced by the lack of long-term financing in the domestic markets of EMDEs – "to avoid maturity mismatches, banks require longer-term funding options to provide long-term lending. Despite progress in promoting domestic capital markets, these markets have stagnated in many developing countries, not (yet) reaching sufficient scale to provide sufficient amounts of long-term and local currency-denominated finance[53]".

Therefore, when considering the existing shortfalls of sustainable finance in the developing economies it is logical to pursue solutions aimed at two core areas - the familiarity/trust aspect, and the investment infrastructure and transparency aspect (albeit in the case of "green" or transition investments this factor is relevant for everyone – AEs and EMDEs alike).

In the global context, capital markets aimed at sustainable development are still in the process of maturity and remain fragmented across jurisdictional (i.e., legislative) and business (e.g., financial ratings) levels. Sustainable[54] finance legislation is being tailored to regional priorities, as seen by the different taxonomies adopted by the European Union, Latin America and the Asia-Pacific region, each emphasizing different social or environmental aspects reflecting the regions' unique local contexts. While this regionalization is legitimate and important, without effective coordination it risks causing fragmentation and high compliance burdens for investors, which would reverse progress made on the consolidation of standards.

The matter of ESG ratings such as those issued by major CRAs (MSCI, Fitch, S&P etc.) and claims of "greenwashing" has caused further loss of trust by the investors. A number of financial regulators (e.g., India's SEBI[55]) are already bringing the administration of such ratings within the regulatory perimeter or are offering a pathway towards clearer and more transparent methodologies (Russia's Central Bank proposal concerning ESG-ratings methodologies) – these initiatives should improve ratings' credibility in the eyes of the market.

Given the AEs dominant role in this area, it is not surprising that these markets tend to rely on the established institutions such as the abovementioned CRAs / benchmark administrators. The extent to which these administrators are able to accurately capture the specificities of local markets in EMDEs, or their penetration of these markets at all, is not guaranteed.

The current framework for facilitating sustainable finance is failing our Sustainability and Inclusion principles as the existing infrastructure is not able to provide accurate, global coverage of "green" or sustainable investment opportunities.

2.2 Key Directions for Global Financial Safety Net Improvement

2.2.1 Reserves

Today, the US dollar is a dominant currency and US Treasury bonds are the most widely held safe assets globally, essentially making its domestic government responsible for the stability and predictability of foreign exchange rates in the global trade, and even though the US dollar share of global FX reserves has been gradually declining (from 65% in 2010 to 59% in 2023) and the share of nontraditional reserve currencies has been rising over the years, the latter remains low[56].

[53] FSDR 2024
[54] FSDR 2024
[55] Securities and Exchange Board of India
[56] Geoeconomic Fragmentation and the Future of Multilateralism, IMF, 2023

This concentration results in a growing asymmetry at the heart of the IMFS that puts the global economy under increasing strain[57], as ultimately, the US-dollar is first and foremost the national currency of the United States, and its role as the dominant foreign reserve currency is secondary. This means that the interests of the United States are not always aligned with the interests of other participants of the IMFS given the United States' outsized role in the current system.

When examining the component of reserves in the IMFS, two core principles are considered – the financial efficiency of allocation, and its overall security; akin to a regular investment, parties are seeking to maximize their return, whilst minimizing the risk of loss and maintaining an acceptable level of liquidity in the event of a crisis, with a caveat that in the case of reserves, the latter two elements should take precedence.

There are endless options for a reserve composition that involve an array of asset classes that vary from conventional currencies, debt and gold to more novel[58] – all of which entail a trade-off in terms of costs, liquidity and security as well as requiring careful assessment of potential risks and opportunities.

Those countries that choose to shift their FX reserves away from the dominant currencies may gain some diversification benefits, but shall likely face higher transaction costs, higher riskiness of reserve portfolios, and potential difficulties in carrying out traditional central bank operations. Ultimately, however, reserve holders must remain flexible regarding their FX allocation since, even such established holdings as the US bonds may show effective losses due to inflation – estimated at approximately 0.9% per annum for the period 2011-2021 on average[59].

The existential risk to the overall security of the current model has been marked by the freezing of Russian international reserves in 2022, which was not the first (Table 1), but unprecedented in terms of volume and has impacted both the currency reserves and foreign debt.

Table 1. Frozen assets by country[60]

Year	Country	Volume of frozen assets
1979	Iran	12 billion USD
2005	Democratic People's Republic of Korea	24 million USD
2011	Libya	168 billion USD Central Bank's and LIA's reserves
2012	Syria	~ 14 billion USD
2018	Iran	100 - 120 billion USD
2018	Venezuela	31 t. gold
2019	Venezuela	342 million USD
2021	Afghanistan	~ 7 billion USD
2022	Russia	~ 300 billion USD

[57] "The Growing Challenges for Monetary Policy in the current International Monetary and Financial System" – Bank of England, M. Carney, 2019
[58] Including alternative investments in real estate, commodities
[59] Yakov & Partners analysis, 2023
[60] "New approaches to international reserves: The lack of credibility in reserve currencies" E. Vinokurov, 2022

This means that the currently prevailing model of sovereign reserves is failing to meet the core principle of Security.

2.2.2 Stabilization & Development

Overall financial safety, when it comes to sovereign states, is achieved via two (excluding their own reserves) parallel channels – development funding, which allows countries to maximize their financial utility and avoid being exposed to budgetary or balance-of-payment ("BoP") shortfalls, and the GFSN – which exists to provide mutual financial support in a crisis / near-crisis situation.

The nexus of these two channels, can be argued, exists in a form of expert assistance that is provided by institutions from both groups (IMF, WBG, MDBs and RFAs) to help countries better manage their finance flows and on the one hand prevent budgetary/BoP issues, and on the other, foster better macroeconomic environment that will aid further development.

Development funding

The current development funding model can be divided into two parts (if we were to exclude grants) – concessional (i.e., at preferential rates) and non-concessional financing; with the former part being represented by major stakeholders such as the World Bank Group, and several regional institutions[61] – MDBs, and Bilateral Development Banks (BDBs), and the latter part made up of an array of commercial and state institutions.

Non-concessional funding

As of 2022, 61% of developing countries' external public debt was provided by private creditors[62]. This kind of concentration presents several challenges when seeking a long-term developmental strategy - complexity of debt restructuring, high costs (when compared to concessional financing) and volatility (or lack of predictability).

The latter element – volatility, does not only concern local capital markets movements (that could be prone to swings in the local currencies, inflation etc.) but also encapsulates a more global perspective. In accordance with a study "Global Waves of Debt" prepared by the World Bank, the scale of borrowing by the EMDEs over the last 14 years presents a significant risk to the world economy – especially in the context of rising interest rates in AEs.

The previous three 'waves of debt' also began during periods of low real interest rates that promoted extensive borrowing and ended with financial crises as economic shocks led to investor risk aversion, higher premiums and higher costs, eventually resulting in capital inflow droughts and recessions.

Today, the EMDEs are even more vulnerable to such shocks than they were in the follow-up to the last crisis – "75% of them now have budget deficits, their foreign currency denominated corporate debt is significantly higher, and their current account deficits are four times as large as they were in 2007. Under these circumstances, a sudden rise in risk premiums could precipitate a financial crisis, as has happened many times in the past"[63].

The cost element is also of paramount importance in the context of EMDEs as higher risk profiles are reflected in significantly higher borrowing rates – "Developing regions borrow at rates that are 2 to 4 times higher than those of the United States and 6 to 12 times higher than those of Germany[64]". This kind of premium is subsequently reflected in ballooning interest servicing costs – net interest payments in developing countries, on average, accounted for 7.8% of government revenues in 2023 (up from 4.2% in 2010).

[61] The New Development Bank, however, can be argued carries a global remit similarly to that of the WBG
[62] "A world of debt" Report, 2024 - https://unctad.org/system/files/official-document/osgttinf2024d1_en.pdf
[63] Global Waves of Debt" by the World Bank - https://www.worldbank.org/en/research/publication/waves-of-debt
[64] "A world of debt" Report, 2024 - https://unctad.org/system/files/official-document/osgttinf2024d1_en.pdf

The structure of the debt itself also carries a premium in the form of often poorly understood risks when borrowing in foreign (e.g., USD or EUR) rather than national currencies – according to IMF survey, 50% of responding Debt Management Offices (DMO) do not perform stress tests on the local currency value of debt stock, or the interest and amortization payments[65]. In the event of crises, currency risk alone could cause debt/GDP ratios to shoot up to 35-50% in low incomes countries[66].

The absence of a transparent and predictable debt restructuring process may crystalize in a form of subdued economic performance and social hardships as developing economies end up facing a complex and an unpredictable path out of their accumulated debt pile.

Finally, it is important to recognize that developing countries aren't a homogenous block with equal access to non-concessional, private funding. Over the period 2022-2024, a sub-set of developing countries with the weakest credit ratings have faced a sharp increase[67] in their borrowing costs (with spreads against the global benchmark reaching 20%) due to an array of external factors incl. growth of US interest rates. In practice, this means that these countries were effectively excluded from the global capital markets all together. This kind of funding disruption, in turn, leads to an expected rise in sovereign defaults further worsening countries' credit rating and their well-being overall.

These factors, combined, lead us to a view that the current, prevalent development funding model for the EMDEs puts them in a vulnerable position that requires enhanced expertise in the areas of risk management (including FX and rates) and fiscal planning, in order to sustain long-term development.

Concessional funding

Even though the share of MDB's concessional finance has reduced to 13% of its overall lending[68] (in 2022, from 35% in 2004), these institutions still make up a major component of the concessional funding landscape for the purpose of this research.

Global portfolio[69]of MDBs went from approximately USD 466 bn. in 2010, to USD 833 bn., in 2022 with an average cost of financing hovering around 1.5-1.7%; more than a half[70] of this volume went to developing countries.

MDBs funding capacity and the cost of financing stems from their relationship with the member countries' governments – members subscribe MDBs' capital and commit to supplying the rest on demand; this paid-in capital allows MDBs to source funding from the "regular" capital markets with a good credit-worthiness, which, usually leads to much cheaper money than if it was raised by the recipient country, provided that it has access to such markets in the first place.

MDBs are deemed to be important financial institutions with a regional focus (as opposed to the WBG which carries a global approach, political and intellectual weight); their presence 'on the ground' is seen as a counterforce to the micro-macro paradox' theory that claims that the correlation between the volume of aid (which, actually, includes MDBs' financed projects) and the growth of per capita income is negligible or even reversed. In other words, MDBs strive to deploy 'smart' money using their knowledge of the local environment coupled with their understanding of 'larger' economic theories and the expertise of the WB.

[65] https://www.ft.com/content/ee0d8953-659d-4b7d-84b2-28915ff39b18
[66] https://www.imf.org/en/Publications/WP/Issues/2024/03/08/Debt-Surges-Drivers-Consequences-and-Policy-Implications-545492
[67] https://blogs.worldbank.org/en/voices/silent-debt-crisis-engulfing-developing-economies-weak-credit-ratings
[68] FSDR 2024
[69] World Bank
[70] 526 bn. USD

As emerging economies become more sophisticated, they gain the ability to widen their options when choosing a source of development funding and such consideration may not only include the cost of funding, but also the expertise and business relationships. This means that potential borrowers may accept higher cost of capital in exchange for commercial loans that are unattached to WB-linked conditionalities; the growing reliance on private, collateralized loans in African countries such as Angola is a commonly cited example demonstrating such pivot.

In 2015, the BRICS initiative in this space resulted in the establishment of the New Development Bank ('NDB') with the aim of providing financing for promising infrastructural and sustainable projects, regardless of their geographical location[71]. With USD 100 bn of authorized capital, so far[72], its total amount of approved financing stands at just USD 32.8 bn with two-thirds of that volume issued in USD currency and with all projects contained within the BRICS countries. Given the crucial importance that these projects play in supporting economic growth in the developing regions, the available financing volumes and the project pipeline itself must be substantially expanded.

Some of the current criticisms of MDBs are centered around the following areas:

1. Growing share of private financing which may come at the expense of immediate local needs such as poverty eradication.
2. Insufficient expert engagement with the recipients.
3. Lagging engagement with sustainable-finance projects.
4. Overall need to ramp up rates of replenishments (awaiting the results of 21st replenishment in 2024).
5. Insufficient voice and representation of EMDEs.
6. Shareholding misalignment in some MDBs.

Overall, the existing development funding model faces the following criticism:

1. Debt vulnerability is a concern; as the global economy faces the possibility of the fourth debt wave unfolding, the risk for EMDEs and the AEs alike is significant.
2. Excessive savings of the foreign reserves leads to misallocation of resources that could be better utilized in the EMDEs.
3. Despite doubling investments in EMDEs over the last decade (in real terms), the infrastructure investment gap continues to rise, as major MDBs are not up to the task of meeting the EMDEs demand for infrastructure investment.
4. Lack of expert engagement on behalf of regional MDBs – money alone cannot result in a sustainable path as recipients also require analytical / technical support to direct and implement changes.
5. Persisting funding gap for "green" / transition projects in EMDEs.
6. Low voice and representation of EMDEs and shareholding misalignment in some MDBs.

GFSN

GFSN is an international multilayered system of financial mechanisms and institutions with four elements: countries' reserve assets (IRAs), central bank bilateral swap arrangements (BSAs), regional financing arrangements (RFAs) and the IMF at the center. RFAs include the Arab Monetary Fund (AMF), the Eurasian Fund for Stabilization and Development (EFSD), the Latin American Reserve Fund (FLAT), the European Stability Mechanism (ESM), the BRICS Contingent Reserve Arrangement (BRICS CRA) and the Chiang Mai Multilateral Initiative (CMIM). RFAs are playing an increasingly important [73]role amidst stalling reforms of Bretton-Woods institutions. The GFSN's core requirement is to remain adequately prepared for emerging economic shocks and allow for swift access to financing.

[71] Financing remit stretches beyond the BRICS constituents
[72] As of September 2024
[73] Measured by approved financings, RFA support increased from around 0.1% of global GDP in 2009 to 1.2% in 2021.

In the case of EMDEs, both external stabilization and development channels are of primary importance to ensure their financial stability, whereas AEs would normally only rely on the GFSN elements. However, as EMDEs' economies grow and evolve, their focus gradually shifts away from satisfying basic financial shortfalls (e.g., BoP, as these tend to get resolved as the economy advances), towards more complex and global concerns – financial provisioning in the event of crises. Therefore, it is logical that EMDEs seek greater role in contributing to, as well as managing of, the GFSN; the absence of the opportunity to do so, creates a prerequisite for the emergence of an alternative structure that would seek to satisfy this imbalance.

The overall effectiveness of IMF's international reserve asset – the special drawing rights (SDRs), the original purpose of which was to become the alternative reserve asset and even the new global currency, remains limited. The asset itself was created in 1969, however, the U.S. unilateral decision in 1971 to revoke convertibility of U.S. dollar holdings into gold at a fixed price had fundamentally changed the conditions and goals for the SDRs.

Since the inclusion of the renminbi in the SDR basket in 2016, there has been some progress in the use of the SDRs as a unit of account and for denomination of financial instruments. China has begun reporting international reserves, balance of payments, and international investment position data in SDRs and renminbi. It has also issued SDR-denominated bonds. However, market participants (as opposed to sovereign) have not started using the SDRs as a unit of account, and market infrastructure for the SDRs remains elusive.

Meanwhile, due to the interest-bearing nature of the SDRs (when drawn), the cost associated with borrowing in SDR is impacted by the currently high-interest environment of the countries that make up the basket of currencies comprising the SDR, which means further limitation to the practical use of SDR.

Recent initiatives that entail using SDRs in the acquisition of hybrid capital instruments of MDBs (that are the SDRs prescribed holders) and aimed at increasing concession-lending arm are meant to create additional capital liquidity in the real economies, however this initiative is yet to prove itself.

Overall, it can be argued that if SDRs are to play an important role in the global economy, the private sector / 'real economy' must be involved.

The SDR can help to eliminate the inherent risks of credit based sovereign currency and make it possible to manage global liquidity. And when a country's currency is no longer used as the yardstick for global trade and as the benchmark for other currencies, the exchange rate policy of the country would be far more effective in adjusting economic imbalances. This will significantly reduce the risks of a future crisis and enhance crisis management capability.

The governance aspect of the IMF has also been called into question - the system provides significant advantage to high-income economies, which hold key stakes in the IMF. The interests of 35 advanced economies are represented by 12 directors, while the remaining 155 countries are either represented by 12 directors from developing countries, or are included in constituencies with advanced economies, where their opinions and interests considered secondary. Directors from high-income countries have 63% of the votes at the IMF, although at purchasing power parity these economies now account for only 46% of global GDP. Nonetheless, some improvements are underway, but more needs to be done. In 2024, the IMF has agreed to continue to improve the voice and representation of Sub-Saharan Africa with the creation of a 25th chair on the IMF Executive Board for Sub-Saharan Africa, while voting shares have not been changed.

When examined in the context of decision making, for example accepting changes in quotas, IMF's current mechanism is even more restrictive as it requires a qualified majority of 85% to pass, which grants the US (that holds approximately 17%) an effective veto power on any key decision.

At a regional level, the BRICS CRA is facing two types of challenges, first, an-externally induced challenge of its own; despite being a recognized[74] stability instrument, its activity has been hindered by third-party restrictions as a consequence of its reliance on USD as key components of its operational architecture; second, the lack of in-depth analytical capacity (in comparison to other RFAs) for macroeconomic diagnostics vis-à-vis requesting member-country. These kinds of limitation lead to additional stress and, in essence, create further 'holes' in the coverage of the GFSN in its current form.

Overall, the existing GFSN model faces the following criticism:

1. EMDEs are underrepresented in main multilateral institutions such as the IMF, which means that their relative positions in the world economy are not adequately reflected. Therefore, rescue financing decisions are being made by dominating AEs.
2. Insufficient levels of bilateral swap arrangements ("BSAs") - provision of BSAs in reserve currencies remains at the discretion of AEs' central banks (albeit the number of counterparts for Chinese yuan swaps has almost quadrupled since 2010, in contrast to USD and EUR that have almost doubled over the same period[75]).
3. Insufficient IMF lending capacity - capacity of approximately 695 bn US dollars[76] may not be enough in the event of another crisis with a similar magnitude to that of the GFC.
4. Politicized rescue package conditions – struggling jurisdictions may face a set of conditions that are political rather than economical in their nature, potentially forcing them to take inefficient measures that do not match the national interests in order to secure urgently needed funding.
5. Despite the growing role of EMDEs in the IMFS, RFAs provide only partial coverage of the EMDEs around the globe, particularly in Africa, Eurasia, and Latin America.
6. The applicability and effectiveness of SDRs in their current form remains limited and not in line with its original purpose; its exchange is also highly reliant on Voluntary Trading Arrangements (VTA) market.
7. Unilateral restrictions imposed by certain countries limiting and constraining the potential contribution of RFA to the stability of the IMFS, with recent example being BRICS CRA.

In essence, the current system is based around a legacy/historical model with the centralized decision-making power, which, as a consequence, leaves the most vulnerable economies, the EMDEs, more exposed in the event of a crisis. Therefore, we must conclude that the current-prevailing model of Stabilization & Development is failing to sufficiently meet the principle of Sustainability.

[74] By IMF
[75] https://econs.online/articles/ekonomika/globalnaya-set-likvidnosti-tsentralnykh-bankov/
[76] As of mid-December 2023

SECTION 3. ANALYSIS OF THE MOST EFFECTIVE PRACTICAL SOLUTIONS

3.1 Cross-border payments

The way to minimize the current market distortion, is to offer its participants an alternative that meets the following criteria:

1. Time and cost efficiency at least on par with the existing system
2. System based on mutual dependency, rather than centralized decision-making by a single entity

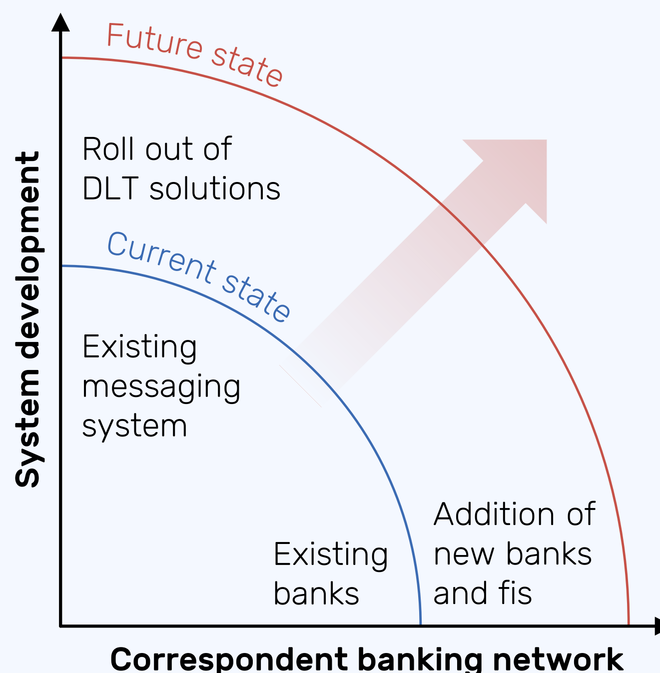
The cross-border payment infrastructure could be developed along the two axes (Figure 6) – the messaging system itself, and the network of foreign correspondent banks that will utilize this system to settle cross border payments.

In line with the proposed philosophy of widening the scope of units of value that can be used in cross-border transactions participants need to explore mechanisms that would allow them to exchange an array of instruments on a live basis with minimal 'friction', possibly building chains whereby end pairs are matched through connecting pairs (similarly to conventional currency trades such as RUB/USD via RUB/CNY to CNY/USD).

This model, in its target form, is likely to facilitate trading in a mixture of asset classes and with the use of fully electronic flow and STP[77] may build its own transaction-chains that are most suitable for client's need at that point in time.

In order to build a universe of these tradeable instruments, the system is likely to require participation of non-banks to supplement the available liquidity (and thus ensuring effective price discovery), this means designing a qualified-participant criteria that could capture an array of users from financial institutions and corporates to retail clients. Given that the extension of membership to qualified participants via traditional clearing model is likely to result in high costs and operational difficulties/delays, a DLT solution seems more appropriate as it will eliminate counterparty and credit risks.

Figure 6. Development of cross-border infrastructure



[77] Straight-through-processing

Initiatives in this space may take the following forms:

1. Developing a network of global commercial banks that can conduct cross-border transactions in local currencies, these settlements will be supported by the information exchange via alternative mechanisms and are insulated from activities that require additional compliance with external bodies (this approach relies on utilizing countries' own domestic payment-messaging systems).
2. Establishing direct links between individual countries' central banks that cannot be subjected to any external pressure – this set up can also utilize a currency netting system helping to drive down transactional costs; in essence this approach builds on the previously listed option but with the exception that commercial banks continue to utilize the correspondent network that is linked via the central bank. This means that no single commercial entity that is part of the network can be excluded from the system as that would entail restricting the central bank itself.
3. Introducing DLT solutions or a new multinational platform based on modern technologies, which would include a financial messaging component and allow to conduct settlement via tokens backed by national currencies, CBDCs, at the discretion of each participating country – this approach would allow a greater degree of decentralization.
4. Foundation of centers for mutual trade in commodity resources; grain, oil, natural gas and gold. This measure will ensure independent pricing and strengthen the sovereignty of the BRICS economies.

These alternatives are based on a notion that any involved institutions, even if faced with extraterritorial restrictions, will retain unchallenged access to their domestic market that will allow them to effectively facilitate domestic and cross-border transactions.

It also entails moving away from the US-dollar settlement model towards the one based on local-currencies which, in turn, calls for other considerations for the local banks/credit institutions around FX risk management practices and liquidity buffers and therefore, regardless of the chosen option, will entail close cooperation between national regulatory authorities.

At a more advanced stage, this could evolve into a network of national regulatory authorities ("NRAs") and cross-national regulatory bodies and associations. This will aid the flow of cross-border payments in a prompt, yet controlled manner as we seek to harmonize regulatory framework across the countries.

The third option – introduction of DLT solutions or establishing a new multinational platform for the purposes of cross border settlement needs to be examined in further detail due to its novelty, associated risks, and, potentially, game-changing economics.

The key advantage of utilizing DLT settlement model is the elimination of the credit risk (in a set up where a CBDC is utilized), that currently accompanies the conventional banking model. The other advantage is a major reduction in processing time and costs – it is achieved through the absence of correspondent entities, single-jurisdictional compliance checks (as opposed to multiple jurisdictions in a case of conventional correspondent model) and full automation of the settlement itself (as it excludes reconciliation errors).

The cumulative effect of these changes means that a DLT transaction will only cost 1-2% of the comparable, conventionally-settled one[78]. The economic effect, in the context of BRICS cross-border trade, might yield savings of up to USD 15 bn per annum in a scenario[79] where half of all cross-border transfers are done via DLT-solutions.

[78] McKinsey & Company, SWIFT, 2018

[79] On the assumption of 6.3% average settlement cost for conventional transfers - Financial Stability Board (2023) Annual Progress Report on Meeting the Targets for Cross-Border Payments: 2023 Report on Key Performance Indicators

It is important to note that in our pursuit of better ways to conduct cross-border payments we are not starting from zero; we see the emergence of bilateral arrangements in local currencies – a recent example being rupee-settled oil trades between India and UAE, this is happening at the same time as trade in ruble and yuan between Russia and China is also growing. On the DLT side work is progressing within the Project Dunbar; this activity is indicative of a greater than before level of trust and acceptance of digital instruments for conducting "mature" corporate transactions. In other words, there is demand, and therefore, a solution will inevitably follow.

Practical implementation of Cross-Border CBDC solutions

The process of implementation of DLT-based cross-border payments entails several stages of sophistication – varying from a bilateral CBDC model (i.e., Central Bank to Central Bank) to a multi-asset, multilateral platform utilizing smart contracts and live trading capacity supported by automated market makers.

Traditionally, DLTs are divided into three groups:

1. Public – representing an open-source database operating via proof-of-work algorithms and where everyone can view the added information
2. Federal – whereby a blockchain is managed by a group of authorized bodies thus providing a greater level of control and confidentiality
3. Private – operated by an authorized, centralized organisation - under this set-up, information can be open or restricted; model is easily customizable according to organisation's needs

BRICS countries are in a position to make a collective decision vis-à-vis which model they believe possess the right qualities that would allow the community to conduct cross-border payments in line with the core principles listed in this paper.

A number of countries are already piloting the use of 'retail' CBDCs (rCBDCs) in the 'real economy' sector, however, these rCBDCs are unlikely to be adopted for the purposes of cross-border payments due to the following specificities:

1. Balance limits of rCBDC wallets are likely to present a constraint when utilized for commercial transfers (e.g., invoice payments)
2. Scalability of the digital payment system limited by the validation mechanism and security expectations
3. Certain business-related processes that accompany cross-border trades entail, for example, a letter of credit service which cannot be readily replicated in the rCBDC environment (as it is issued by a commercial, rather than a central, bank)

Therefore, other prototypes that are better suited for commercial/wholesale transfers must be considered; such solutions are likely to revolve around institutional membership – for example, commercial banks and other financial institutions and are likely to be structured in one of the following ways;

1. Separate, but interoperable, national systems that operate on their own infrastructure but that allow its participants to interact with others on the basis of mutual agreements and operational standards
2. Integrated multi-currency system with a common infrastructure and one set of rules for all participants[80]

[80] Auer et al., 2021

The hierarchy of these systems must also be considered; whilst a hierarchical structure that is centered around several 'middle men' and partially replicates the existing correspondent network is seen as a simpler option, its downside is the natural concentration risk that arises from a single point of failure within the system. On the other hand, a 'flat' / peer-to-peer structure is designed to offer lower transactional costs and better stability due to its decentralized nature.

This multicurrency system will need to have the capacity to offer the following:

1. Ring-fence its participants from any external pressures such as extraterritorial sanctions
2. Conduct identification procedures
3. Clear architecture guiding its Interoperability and convertibility

A multinational payment mechanism – the BRICS Cross-Border Payment Initiative (BCBPI)

During the Russian BRICS Chairmanship in 2024 the Bank of Russia as the acting Chair of the BRICS Payment Task Force has presented to the BRICS countries' central banks a proposal to further enhance the cooperation on cross-border payments among BRICS countries.

The BCBPI could reduce current risks by achieving the following goals:

1. Accelerating and facilitating cross-border payments between the BRICS countries;
2. Developing common rules and regulations to create level conditions for payment facilitate AML|CFT procedures, and increase transparency of payments;
3. Supporting innovation by providing financial institutions with new opportunities and tools;
4. Expanding financial inclusion by establishing the interoperability of the BRICS countries' national payment infrastructures; and
5. Increasing the share of national currencies in cross-border settlements.

3.2 Cross-border investments

Efforts must be directed towards exploring the possibility of creating an architecture that, due to its size and depth, is able to effectively compete with the existing set up.

We consider it advisable to introduce the new system of securities accounting and settlement in parallel with the existing market infrastructure; it will lead to the de-monopolization of this component of IMFS, which over time will lead to increased benefits and efficiency for its participants - on the assumption that mobility of capital is provided/maintained.

In practical terms, these efforts could be supported by multilateral agreements between countries that will ensure a high degree of judicial protection of interests for the foreign investors, which in turn must be linked to the proposed guiding principles of the IMFS.

These arrangements must stretch beyond listed instruments/public markets but also cover varieties of private and public partnerships e.g., private equity arrangements, joint financing initiatives and others – to such extent that is permissible for the local authorities.

It is important to recognize that whilst the development and roll out of alternative mechanisms is likely to result in certain initial costs, these costs will be offset via the following benefits:

1. A greater level of certainty will aid the flow of trade and long-term investments that are currently hindered due to the growing risk of extraterritorial restrictions
2. Initial costs are likely to be limited and with a clearly defined scope; eventually they will be offset through greater market efficiencies that is unlikely to be achieved whilst relying on the current mechanisms

3. Whilst the benefit of 'security' is hard to accurately quantify, access to an alternative investment structure will act as a significant mitigating factor when considering risk weightings for capital allocations

Much like in the case of cross-border payments, we are not starting from scratch. The emergence of UAE as a global financial hub, volume growth of listed hedging contracts in national currencies, and overall drive towards digital assets are pointing towards a changing narrative in the world of cross-border investments.

The emergence of a sufficiently liquid capital market, that could compete with the existing US and EU centric markets, must be backed by the infrastructure itself, as well as by the available financial instruments:

1. Russian BRICS Chairmanship proposes to create an electronic system of inter-depository interaction - BRICS Clear platform - in addition to the existing international depository institutions, which will operate based on a supranational agreement. The supranational agreement will form the basis of the system and will be obligatory for the acceding member countries, together with an IT solution that will ensure that transactions between Central Securities Depositories (CSDs), or other depository institutions, of the member countries will be conducted in accordance with the rules of the BRICS Clear system, operating on the basis of the following key principles:
    - 1.1 The obligation to conduct transactions based on orders accepted using the BRICS Clear system;
    - 1.2 Compulsory execution of transactions through integration of the BRICS Clear system with the recordkeeping system of each depository and automated execution of orders received from the BRICS Clear system;
    - 1.3 Absence of officials making decisions on conducting or rejecting transactions using the BRICS Clear system;
    - 1.4 Openness of the rules and program code of the BRICS Clear system for its participants;
    - 1.5 Possibility to change the rules and code of the BRICS Clear system only by unanimous decision of all its participants. The Management Committee (which will include representatives of central banks and/or financial regulators, depositories, platform operators of member countries) will establish the rules of operation of this system. This infrastructure will minimize the risk of non-settlement of securities transactions between BRICS countries, ensure their continuity, a unified system and format of information exchange, and facilitate cooperation between BRICS members by providing investments in previously unavailable financial instruments and offering settlement and depository services. Additional benefits for BRICS Clear platform members include:
        - Creation and development of an investment hub on the continent of a platform member country;
        - Infrastructure independent of third-party influence;
        - Preservation of national depository systems;
        - Providing investors with access to new financial instruments;
        - Reducing operational risks in the reconciliation of securities balances in the depository systems;
2. Alongside, we should be enhancing communication and experience sharing among the credit rating agencies of BRICS countries, to improve mutual understanding and lay foundation for further cooperation. Both sovereign and corporate rating methodologies need to be prioritised equally, alongside benchmarking activities (for derivative and ESG instruments).
3. In parallel, we should seek to roll out new forms of debt issuance in place of the euro-denominated bonds – potentially denominated in national currencies of the participating countries. Such issuances must be accompanied by a suite of hedging instruments such as FX and IR swaps that will also be cleared via the new clearing entity.

4. Additionally, we propose to consider the development of interaction between the BRICS countries' depository infrastructure and the BRICS to establish an independent organisation on the basis of the BRICS, an alternative to ANNA (Association of National Numbering Agencies), or to initiate the status of a substitute numbering agency for one of the members of ANNA (from among the BRICS members). It will allow assigning and maintaining international ISIN, CFI and FISN codes for financial instruments denominated in the national currencies of the BRICS member states.
5. In order to ensure efficient, uninterrupted and transparent cross-border trading of commodities, Russian BRICS Chairmanship proposes to establish the grain (commodities) trading platform within the framework of the BRICS Grain Exchange and the associated pricing agency that will be tasked with providing pricing methodologies and market analytics.

Sustainable Finance

In search of a solution, a parallel can be drawn between the world as a whole and the BRICS; being a diverse group of nations, BRICS countries have differing economic profiles – including manufacturing base, energy consumption and climate conditions. This means that each country is likely to have its own, preferred, pathway towards decarbonization that is most suited for the country's current state of affairs – this may include changing energy profile (e.g., accelerating efforts towards the phasedown of unabated coal power), consumer habits (electric cars), manufacturing subsidies (e.g., phase-out of inefficient fossil fuel subsidies etc.).

This implies differing approaches to funding and implementation horizons and whilst the choice regarding the source of funding rests with the sovereign state, a more efficient approach could be constructed if it were to be treated as a common undertaking – as intended by the 2030 commitments.

The matter of decarbonization implies a tradeoff between the cost and the social/environmental good; for some countries this tradeoff is more affordable than for others and whilst there is a tentative deadline, the implementation of green initiatives it naturally hinges on the priorities of individual states.

The abovementioned factors must be considered when assessing possible solutions aimed at improving the investment infrastructure in the developing countries and addressing familiarity/trust concerns as described in the previous chapter.

Conventional capital markets

In order to move forward more effectively, a greater degree of coordination is required to mobilise private investment for infrastructure in emerging markets, the uptake of which has been relatively slow. Initiatives in this space need to focus on the following:

1. Improving transparency and comparability of disclosable data – for both public and private companies; a more universal and joined up taxonomy will lead to better results in this space. An example of this kind of undertaking is the "Common Ground Taxonomy" between China and the EU, and whilst this particular initiative is not a legal document that entails requirements or obligations, it is, nonetheless, a tool that can be used to address the transparency concern when it comes to 'green' initiatives and may act as an enabler for cross border capital flow into such initiatives
2. Greater effort by regulatory authorities to fight greenwashing on one hand (a code of conduct for UK's ESG ratings and data products providers being a recent example), and promoting investments in 'green' projects by considering favorable capital risk weightings for the purposes of prudential regulation (Russia's sovereignty stimulus program by the Central Bank being a recent example, albeit aimed at a different sector of the economy)

3. Creation of domestic Credit Rating Agencies and ESG ratings with a focus on local presence & expertise with the aim of better capturing local specificities and adaptation of methodologies to better serve developing countries – both components (ESG and Credit) are important as issuers ultimately seek the inclusion of their instruments in investment indexes (to maximize the demand) that are rapidly proliferating across the investment landscape. Alongside, creation of analytical institutes that assess investment attractiveness [81] would offer greater insights into developing economies

Blended Finance

Given the scale of the funding gap in some of the developing countries and the pressing timeframe of the required changes, placing a great deal of reliance on conventional capital markets that take decades to build investor confidence and attract sufficient flows, may no longer be viable.

An alternative, complementing funding source must be considered that, by design, combines private and public sector interests and has the capacity to fund sizeable, long-term projects – blended finance (BF).

In 2023[82] there was a total of almost 100 blended-finance transactions with an aggregate volume of USD 15bn. (with 40% of transactions over USD 100 million.). To date, combined volume of BF has reached USD 220 bn.; approximately 50% of this volume went to countries in the Sub-Saharan Africa and 20% to Latin America with 30% of the money allocated to energy projects.

At present, this volume makes up a small portion of the EMDEs overall financing needs and is definitely insufficient to adequately narrow the existing funding gap (if continued along the current trajectory). Some of the reasons explaining limited proliferation of BF globally include:

1. Legal and regulatory complexities surrounding BF transactions - an example of a regulatory barrier, could be argued, is the introduction of standardized approach to risk weighting that will replace proprietary models as part of Basel III accords (standards covering bank capital management) thus taking away some of the lee-way in determining bank's own risk component, this means that banks may no longer benefit from lowering their risk-weighted assets when investing in the senior tranches of blended vehicles[83]
2. Low levels of engagement from developing countries' governments - none appearing amongst the most active donor governments for 2015-2020 in BF sector[84]
3. Lack of financial intermediation in the private markets – this includes Credit Rating Agencies and ESG data products aimed at developing countries
4. Lack of transparency regarding BF activity – nearly 70% of transactions either do not report data publicly or have an unknown reporting status[85]
5. Complexity and wide variety of blended finance instruments limiting their standardization and scalability[86]

It can be summarized that, at present, there is an array of barriers that prevent effective proliferation of blended-finance projects; the majority of these barriers, however, can be addressed through effective, targeted cooperation between governments with the ultimate aim of achieving a better holistic approach towards BF.

[81] Similar to the World Governance Indicators
[82] State of Blended Finance 2024, Convergence Finance
[83] Marie-Aimee Boury, Head of Impact Based Finance at Société Générale - State of Blended Finance 2024, Convergence Finance
[84] The State of Blended Finance 2021
[85] The State of Blended Finance 2021
[86] NGFS – «Scaling Up Blended Finance for Climate Mitigation and Adaptation in EMDEs»

3.3 Reserves

One of the ways to reduce reliance on the US-dollar as the core share of international reserves, in a measured manner, is by offering viable alternatives that would allow states to diversify their reserve currency portfolios and still maintain acceptable levels of foreign exchange revaluation risk, maintenance / transaction costs and security.

This involves making other countries' currencies (or a basket of such currencies) more attractive as a store of value. At present, such choice is hindered by two factors – accessibility and volatility of alternative currencies; in search of a viable solution to address these challenges the following conclusions were made:

1. In order for a country's currency to become suitable as a component of FX reserves, a sufficient liquidity-provision mechanism must be created that would allow other countries to convert their holdings promptly and efficiently; this could be achieved by either creating an open market (trading venue) or assigning a sovereign-backed designated market marker(s) with sufficient capital reserves;
2. There must be a sufficiently liquid market of available fixed income instruments in the selected currency to serve as an investment vehicle (similar to T-bonds[87]). This must be accompanied by agreements that would ensure a mechanism that would allow conversion of the proceeds upon the maturity of the instruments;
3. The volatility component also requires a complex approach that ultimately hinges on the emergence of hedging instruments and thorough diversification of the FX reserve component.

This approach for a reduced role of a single currency as a core FX reserve component effectively rests on a notion that a partially liberalized capital market is needed to make national currencies into a viable option going forward; this, naturally, requires a sovereign will and the adaptation of the legislative / regulatory environment.

A number of countries in BRICS community are already managing to maintain stable (in FX terms) national currencies accompanied by moderate domestic inflation rates and conservative interest rate environments. The emergence of such currencies as a store of value within foreign reserves would allow these issuer-countries to utilize this function as a source of cheap funding (in the form of debt issuance) and as an additional lever to maintain the desired FX rate. On our part, we should seek appropriate mechanisms and infrastructure to ensure that this facility exists for those issuer-countries that are willing to exercise this option; this involves the following:

1. Proliferation of fixed income instruments denominated in local currencies to serve as an investment vehicle (similar to T-bonds) and, preferably, an array of hedging tools to aid in the volatility scenarios
2. Creation of mechanisms that ease market entry for foreign prime dealers
3. Seek harmonization of pre-trade and post-trade processes across the involved markets (including crucial regulatory elements such as reaching the equivalency regime for selected instruments)
4. Reassess and strengthen the role of SDRs as international reserve asset, provided that measures aimed at increasing their utilization in the real economy and means of its exchange are successful

Movement towards a more diversified portfolio of sovereign reserves varies greatly across the countries as the need for, and management of, such reserves is ultimately dictated by sovereign policy.

[87] With the idea of replicating characteristics of a liquid, standardized asset

3.4 Stabilization & Development

Development funding

Improving developing countries' funding model is a tremendously complicated undertaking that cannot be accomplished by adjusting the principles & mechanisms of the IMFS alone, but rather combines an array of reforms (including judicial, fiscal, regulatory etc.) that would create an investor-friendly climate in a country geared towards long term investments.

Nonetheless, there are parts of the IMFS that could be reviewed in order to make them better suited for conducting this sort of change. When it comes to non-concessional funding, the aim should be to re-direct a share of existing capital flows that are currently channeled into EMDEs debt markets into equity markets or the 'real economy' sectors instead – this could be achieved via the following means:

1. A voluntary measure aimed at rebalancing institutional investors' portfolio towards equity holdings – this approach could be adopted when pursuing an impact investment strategy in developing countries;
2. Regulatory measures aimed at facilitating blended finance projects that would attract investors' capital on the premise of shared risk and long-term commitment. Such measures may include preferential regulatory capital risk ratios for banks, or 'sandbox' environments;
3. Increasing overall access, transparency and reporting arrangements in order to attract domestic and foreign capital – in line with recommendations set out in the cross-border investments section of this research;

In order to optimize the concessional funding side, the BRICS countries could work to increase MDBs' financial capacity, and enhance the voice and representation of EMDEs within MDBs' and other IFIs' decision-making. In particular, BRICS countries anticipate the successful completion of 2025 Shareholding Review of the IBRD.

Greater effort must be made to utilize the available tools; as covered in section 2.2.2, there already is an MDB with a clear mandate – the New Development Bank.

The key motive for establishing the NDB was the recognition of financing constraints that the BRICS member countries and other EMDEs face in addressing their infrastructure challenges.

NDB's commitment to lend more in local currencies complements our current proposals, however the figure itself still remains relatively low (the share of approved loans denominated in local currencies is expected to reach 30% by the end of 2024). NDB is expected to increase its local currency lending and achieve the target of providing 30% of its total financing commitments over the strategy period of 2022-2026 in national currencies of member countries, and help clients to mitigate FX risk and reduce the reliance on the US dollar and its infrastructure.

In order for NDB to become fit for the new era of the IMFS it must reassess its reliance on the US dollar with the ultimate aim of migrating to alternative payment and investment infrastructure, and to optimize the overall share of its US-dollar portfolio.

One of NDB's strategic targets is to allocate 40% of its funding towards initiatives containing climate and climate-related causes – this ambition must be matched by real funding and its scope of possible projects reassessed in the light of this report in order to target "blind areas" that are overlooked as a result of the IMFS's current set-up.

Whilst the NDB's strategy for 2022-2026 does include exploration of blended finance in the form of possible financing arrangements, this medium of sustainable-financing must be considered as a major component of the NDB's strategy (rather than auxiliary).

All things considered; however, it can be stated that whilst fine-tuning the NDB's operational model is important, its existential goal will remain outside of its reach until it is able to commit much larger volumes of financing to a significantly wider scope of projects thus shifting its remit from regional to global.

To achieve this, Russian BRICS Chairmanship proposes to consider substantially increasing the NDB's financing capacity along with a simultaneous review of its principles and assessment criteria for the selection of projects with the aim of expanding the project pipeline. The new mandate will allow it to more actively pursue emerging financing opportunities across the globe. To facilitate the increase of NDB's financing capacity, its mechanism can be adapted to incorporate the newly proposed digital asset, the BRICS Digital Investment Asset ('DIA'), that will be backed by assets[88] committed by the BRICS constituents.

GFSN

Overall, there is consensus, at least among the EMDEs, that developing countries' interests must be adequately represented in the matters of global financial stability and their growing role in the global economy justifies this view.

Therefore, collective efforts must be guided towards the rebalancing of the IMF's governance structure with the aim of achieving a fairer voting distribution. The existing GRQ mechanism, so far, has failed to deliver appropriate results - the 15th GRQ, which was formally completed at the beginning of 2020, did not lead to any change in quotas at all. The 16th GRQ, approved in December 2023, stipulated that whilst quotas will be increased by 50%, their relative distribution will not change; as a result, respective voting power will have not changed for at least 11 years - after the 14th review (which became effective in 2016), until the next 17th review, which most likely will not take place before 2027.

The result of the 15th and 16th GRQs caused substantial disappointment in the developing countries. It has been exacerbated by the lack of evenhandedness in the IMF's decisions that are tilted toward the agenda of the stakeholders, representing developed economies. In recent years, the most glaring examples of the Fund's lack of even-handedness have been its treatment of some countries during the pandemic crisis. These countries were effectively denied any support from the Fund.

The BRICS countries should work closely at the IMF and in the G20 to advance the work on the IMF quota realignment under the 17th GRQ, including through a new quota formula, so as to increase the representation of EMDEs. It is essential for the IMF's governance, representativeness, and legitimacy.

Therefore, in order to ensure that developing countries receive their fair share of the voting power in the matters of international financial stability, and to further improve IMF governance and increase the representativeness of EMDEs, collective efforts may proceed along the following two, parallel routes:

1. To work out a collective approach (amongst EMDEs and all those willing to participate) to leveraging of the existing internal IMF mechanisms with the aim of persuading all IMF members and the Managing Director that a failure to adequately rebalance voting shares under the 17th GRQ will cause significant and an irreparable damage to the IMFs credibility as an institution;
2. To develop an alternative structure whose functionality will enable it to perform the original-intended task of the IMF.

[88] One of the possibilities, is leveraging the currently underutilized capacity in the form of BRICS Contingent Reserve Arrangement whose current volume stands at USD 100 billion

Additionally, efforts must be made regarding the utilization of SDRs in the real economy – a review must be conducted that takes into account SDR's historic performance and the current macroeconomic environment; a fair judgment, regarding the asset's performance must take into account the original purpose of SDR. Created as a supplementary international reserve asset, the SDR could have a bigger role to play. With features and potential to act as a super-sovereign reserve currency, the SDR might be a solution to the long-standing Triffin Dilemma. That is the issuing countries of reserve currencies cannot maintain the value of the reserve currencies while providing liquidity to the world. After the largest SDR allocation in the history, the scope of its use could be broadened:

1. Further improve the exchange between the SDR and other currencies, which now heavily rely on the Voluntary Trading Arrangements (VTA) market.
2. Promote the use of the SDR in international trade, commodity pricing, cross-border investment, and book-keeping.
3. Create more financial assets denominated in the SDR to serve as an investment vehicle.

At the BRICS level we have already created a complementary architecture that could be utilized to address some of the aforementioned deficiencies - BRICS CRA; its role, however, must be re-evaluated in light of the structural changes that we are seeking to drive.

The BRICS CRA was established to respond to short-term BoP pressures; participant countries ringfence a portion of their country's reserves for the purpose of the CRA, and are only required to transfer these reserves to another BRICS CRA member, after the receipt and approval of a request (essentially entering into a swap transaction). In the event of a request for financial support from the BRICS CRA, it might require additional, high quality macroeconomic expertise to assess potential volumes of financing, adequacy of conditionality vis-à-vis the risks.

The Johannesburg Declaration of the leaders of the BRICS countries following the XV Summit noted a "commitment to further strengthening the BRICS CRA." A possible direction could be strengthening the analytical capacity of the BRICS CRA - in the light of global trade fragmentation and recent geopolitical events, BRICS CRA would benefit from being reinforced with greater analytical and expert base in order to allow its aid recipients to leverage greater level of technical knowledge[89] via special tools such as Debt Sustainability Analysis (DSA), Early Warning Systems (EWS), macro-monitoring etc.

On a fundamental level, there are two elements within the CRA structure that must be re-examined in light of the aforementioned proposals – the US dollar centricity and overwhelming utilization of a single messaging system (SWIFT).

On the currency side, currently the process involves exchanging US dollars (from creditor's reserves) for the local currency of the requesting country for the duration of the swap. In other words, this model still operates on the assumption of US-dollar reserves which, as we have already highlighted, cannot no longer be assumed as a certainty for sovereign central banks.

On the messaging side, despite the fact that participating Central Banks have the freedom to use any suitable messaging service, we are still seeing an overwhelming utilization of a single messaging system – SWIFT, for messaging and testing the CRA mechanism with a real fund transfer. Meanwhile, the participants have no effective way of controlling or influencing the decision-making body that governs SWIFT's operation, thus creating a risk that may crystalize in a form of a barrier for conducting CRA operations.

Since 2020 the BRICS Central Banks have been reviewing and testing the CRA mechanism with respect to its flexibility by adding alternative eligible payment currencies into the CRA mechanism. The process itself is purely technical as it requires reconciliation of FX rates across multiple jurisdictions, time zones, rates etc. With the introduction of new BRICS members in 2024, focus will have to be placed on the incorporation of these countries in the

[89] Similar to the Chiang Mai AMRO initiative

CRA framework. This will require urgent work to be done on an agreed framework and strategy to operationalize the framework with participation from all parties involved.

Lastly, conditions for qualified assistance are ultimately dependent IMF surveillance procedures[90] - the treaty establishing the CRA limits the amount of resources that can be released without a parallel arrangement with the IMF to 30% of the maximum; other requirements include compliance with the IMF's obligation on surveillance and disclosure. This has the potential to result in a situation whereby a recipient, due to its current standing with IMF is deprived of a financial lifeline even if BRICS CRA members are in consensus regarding the provision of aid.

The abovementioned alternative mechanisms are capable of addressing most of the needs of the evolving IMFS, except for budgetary crisis funding – this component is still firmly placed in the domain of IMF, and despite the existing prerequisites (in the form of greater demand for contribution and management from EMDEs), an alternative institute is yet to emerge.

Proposed measures are aimed at the reassessment of the existing alternative systems and their adaptation to the proposed model, and the establishment of new entities within those areas of Stabilization & Development architecture that are currently dominated by single, legacy institutions.

[90] "Reforming Global Economic Governance – an unsettled order"

CONCLUSION

It is clear that the IMFS alone is not the single root cause of the current shortcomings in the global economy, however it is a tool whose characteristics can be adjusted to yield better, universal outcomes.

The changes that are sought are aimed at correcting specific concerns that have largely arisen as a consequence of collective reliance on legacy mechanisms that have failed to adjust as the time went by, ultimately resulting in a growing economic imbalance between the AEs and EMDEs, lagging SDG progress, and fragmenting GFSN.

These changes will be grounded in the core principles of security, independence, inclusivity and sustainability - this approach will ensure a fairer access to IMFS infrastructure that will support a more even economic growth, help address the excessive and destabilizing volatility of capital flows and exchange rates, and allow countries that are contributing to this growth to have an equal say in the matters of global economic development and stability.

The matter of inefficient and costly cross-border payments has been a topical subject for a while, however the entrenched nature of the correspondent-bank model coupled with the use of reserve currencies meant that its participants were left with no viable alternatives; this drawback is especially critical as those worst-affected are, typically, low-income countries whose limited generated economic value is further eroded by slow and expensive transactions. By utilizing new technologies and creating an alternative to the centralized correspondent models we are able to offer greater transparency, quicker settlement and lower fees.

The area of cross-border investments, evolved in a similar way, and is demonstrating similar dynamic to that of cross-border payments; the dominance of AEs meant that EMDEs came to rely on the established systems that are not always suited to their developmental objectives. Generated capital that could have been utilized on a domestic level to feed sustained development is oftentimes exported to developed markets in search of better yields, meanwhile domestic capital markets and real sector are struggling to gain sufficient momentum to 'spin' on their own. By developing an alternative, decentralized architecture we are seeking to establish viable channels to improve the flow of capital between developing economies and to eventually achieve greater international recognition of emerging institutions that will complement the established ones.

The notion of reserve diversification, whilst not a novel concept, remains topical in the context of fragmentation of the global economy. Ultimately, it remains an entirely sovereign matter that is based on a number of factors including the balance of payments and strategic priorities; this paper seeks to highlight the importance of considering countries' reserve allocations in the context of the proposed core principles and the practical solutions that will stem from it.

In a search of optimal solutions to address the shortcomings of the current IMFS in respect of stabilization & development several important conclusions were made – firstly, the current system of GFSN requires a reform, with a greater share of votes for the developing nations that are growing in their economic size and addressing the shareholding misalignment in some IFIs, including the IMF and the World Bank, secondly, an alternative system that exists in the form of several BRICS institutions requires reassessment in order to stay effective, and lastly, an overarching need to strike a proper balance between EMDE's debt and equity markets, or the 'real economy' sectors instead, in order to drive sustainable growth.

At the outset, we recognize natural constraints and the will of the free market and therefore we do not seek to replace the US-dollar as a medium of exchange as it represents a large share of the global economy; instead, we seek to offer a viable alternative that will aid the market in its perpetual mission of efficiency and in search of greater prosperity, and promote a universally beneficial and inclusive economic globalization.

The extent to which the current system has deviated from the proposed model means that the change will take time and will require collective effort across the countries; involving expertise and resources from both private and public sectors to scale the proposed initiatives in a timely and effective manner.

The important thing is that the process has already begun – alternative payment systems and financial messaging mechanisms are already here, the use of national currencies for bilateral settlement is growing and new ways of transacting, including digital assets, are emerging. The recently established IFIs with the support of BRICS countries should also contribute to further improvements in the GFSN. What is required of us, is to facilitate and support this drive whilst adequately assessing risks and opportunities.

Practical implementation of the aforementioned initiatives will take a phased approach; we recognize that real benefits can only be achieved through network effect and sufficient liquidity in the alternative currencies and instruments that are integral to the new IMFS.

APPENDIX: A.I. IN THE CONTEXT OF IMFS

At present, due to the breadth and novelty of A.I. development, it remains impossible to accurately predict the impact of emerging A.I.-driven applications on the state of IMFS in general and its components, that are covered in this research paper, in particular. Nonetheless, the imposing scale of the anticipated changes means that it is important that at least some of the emerging A.I. trends are considered in this document with the aim of ensuring that the proposals that are being put forward are also assessed against the core principle of Sustainability which states that the solutions must be designed with a long-term view.

For the purpose of this research, effects from the implementation of A.I. solutions can be divided into three broad categories:

1. Elevated level of productivity,
2. Greater degree of security, and
3. Greater level of independence

At a productivity level, it is already apparent that generative A.I. solutions are capable of producing a material shift in the way entities utilize their labour force – greater automation of low-skilled roles via multimodal solutions (e.g., natural language processing, image-to-text technology, etc.), and increased productivity of high-skilled roles through deployment of A.I. aid (e.g., coding assistants, synthesis tools, advanced analytics etc.).

Greater degree of security via A.I. is achieved through multiagent models that rely on a consensus mechanism that, in essence, requires multiple intelligent agents to sense, learn, and act autonomously to achieve individual and collective goals. Albeit reliance on multiagent models also increases operational risk in the form of additional entry points into the system and potential data leakage.

The independence quality of this new technology also stems from the A.I.'s ability, in line with the term itself, to make fact-based decisions without external (human) input. This means that in a rule-based environment, it should be able to produce outcomes that are not hindered by bias or *political influence* that can often be attributed to institutions within the current IMFS.

The abovementioned qualities are complementing the proposed core principles of the emerging IMFS and, from the practical standpoint, could be utilized in the following areas:

1. Crisis forecasting – A.I. tools are likely to be utilized by the components of GFSN as well as by the MDBs in order to enhance their analytical capabilities such as the DSA and EWS. This, in turn, should optimize the capital flow (in terms of volume and time) towards jurisdictions that have the most need for it – by reducing the time lag between identifying problematic area and deploy the needed resource, the participating entities may reduce the volume of resource that is safeguarded for crisis prevention as each currency unit will now be deployed in a smarter (i.e., more effective) manner;
2. Transaction processing – overall, advancement in A.I. products may impact multiple segments of the transaction processing chain starting from order management system to AML checks to clearing and settlement. The overarching effect is expected in the form of shortened processing time and greater degree of control against illegitimate transactions;
3. Infrastructure interoperability and harmonization – by democratizing the process of coding via A.I.-driven coding assistants, developing countries are likely to speed up the roll out of their own fintech solutions – this may include trading venues, cross-border transaction services and others. Ultimately, this will also aid countries in the mission of building electronic liquidity and expanding an array of tradeable instruments thus improving its capital investment environment on both domestic and international levels;

4. A.I. calculated ratings and benchmarks – A.I. may help to remove human bias in the rating process that currently stifles the emerging markets; an impartial tool will be able to gather and analyze and increasingly large dataset to make a fair assessment on the state of, for example, country's sovereign state of creditworthiness removing home and foreign bias. This is likely to benefit the EMDEs due to reasons covered in this research.

At present, it is not certain that these solutions will deliver prompt practical effects due to the following issues that, depending on the particular product and jurisdiction, remain unaddressed:

1. Security & Safety – information security risks, such as data leakage and other cybersecurity threats, arise throughout different stages of ML models' lifecycle. Moreover, the use of A.I. solutions could potentially result in harm to involved parties and their property;
2. Transparency – ML models are complex and hard to understand even at forensic level, in a case of dispute resolution or critical decision it will be difficult to substantiate the logic behind the produced result;
3. Fairness & Ethics – ML models learn from the available datasets, if the information source is bias to begin with, it is likely that this logic will then be reproduced by the model itself. This can exacerbate the existing problem, rather than fixing it;
4. Accountability & Liability – there is a lack of clear liability rules for developers, deployers, distributors or importers of A.I. solutions. There is also uncertainty regarding accountability of separate divisions or employees of such entities, which further complicates the issue;
5. Legal & regulatory frameworks – regulation and legislation that guide the application of A.I. tools are likely to take a while to be developed; this can lead to some level of uncertainty for institutions that operate internationally.

Another cause for concern is demonstrated by low level of 'A.I. preparedness' by the low-income countries that is likely to leave them behind (in terms of relative productivity) even further if emerging A.I. solutions deliver the claimed outcomes – according to IMF's "AI preparedness Index[91]" most countries in Middle East and Africa regions rank 0.2-0.4 on the scale, in contrast to the prevalent 0.4-0.8 for the rest of the world.

At BRICS level, there are several platforms / working groups that can be used to facilitate knowledge and experience sharing amongst the participant countries in order to provide ourselves with additional comfort in the sphere A.I.-driven, cross-border financial initiatives.

[91] AI Preparedness Index (AIPI) assesses the level of AI preparedness across 174 countries, based on a rich set of macro-structural indicators that cover the countries' digital infrastructure, human capital and labor market policies, innovation and economic integration, and regulation and ethics.