Digital Government

New Transparency Principles for Infrastructure

Transforming Debt in Frontier Markets

PERSPECTIVES
PUBLIC SECTOR

Banking, Capital Markets and Advisory | 2019-2020

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Welcome

to Citi Perspectives for the Public Sector.

It is an understatement that technology has transformed our lives. We now take for granted the vast computing power in our smartphones and the immediate access we have to almost all the information and convenience of the contemporary world. Yet with some notable exceptions, the public sector in many countries has lagged the private sector in deployment of technological innovations.

That seems certain to change rapidly. Many governments are now focused on technology infrastructure as a core strategy to drive economic development. This is evident from the growing number of dedicated ICT ministries at cabinet level and ever-larger diplomatic missions in San Francisco to manage relations with Silicon Valley. Several governments are seeking to leverage the technologies of the fourth Industrial Revolution — artificial intelligence, blockchain, digital identity, big data and robotics. They understand the need to develop policies that enable this technology to be embedded in every aspect of society to drive transparent, sustainable and equitable economic growth.

The automation of many finance, treasury and procurement processes promises to deliver higher levels of productivity, lower error rates and create a safer operating environment with less room for fraud. Digitization can also help the public sector contend with increasingly agile global trade flows by tackling the laborious, paper-based routines. Innovations, such as optical character recognition (deployed by Citi to digitize 25 million trade-related pages of data), cut processing time, effort and errors.

Of course, technology will not provide solutions to all our challenges. Sometimes real progress is made by applying time-tested knowledge and best practices to new problems. We believe this is the case with recent Latin American corruption scandals, in response to which Citi has shaped the New Transparency Principles for Infrastructure based on our observation of analogous, successful industry initiatives.

Similarly, this edition features several articles that draw on our global experience and networks to provide insights into sovereign debt management, risk mitigation, revenue generation and cash optimization. While the innovations and trends in these articles might not be technological, they are no less powerful and important.

The wide-ranging thought leadership showcased in this 2019-20 edition of Citi Perspectives for the Public Sector reflects the breadth of expertise in our public sector banking team. Around the globe, we work to understand your challenges and opportunities and to help you exceed expectations. As always, we would be happy to discuss any of the issues raised in this edition and welcome feedback or suggestions for future content.

Julie Monaco
Global Head for Public Sector,
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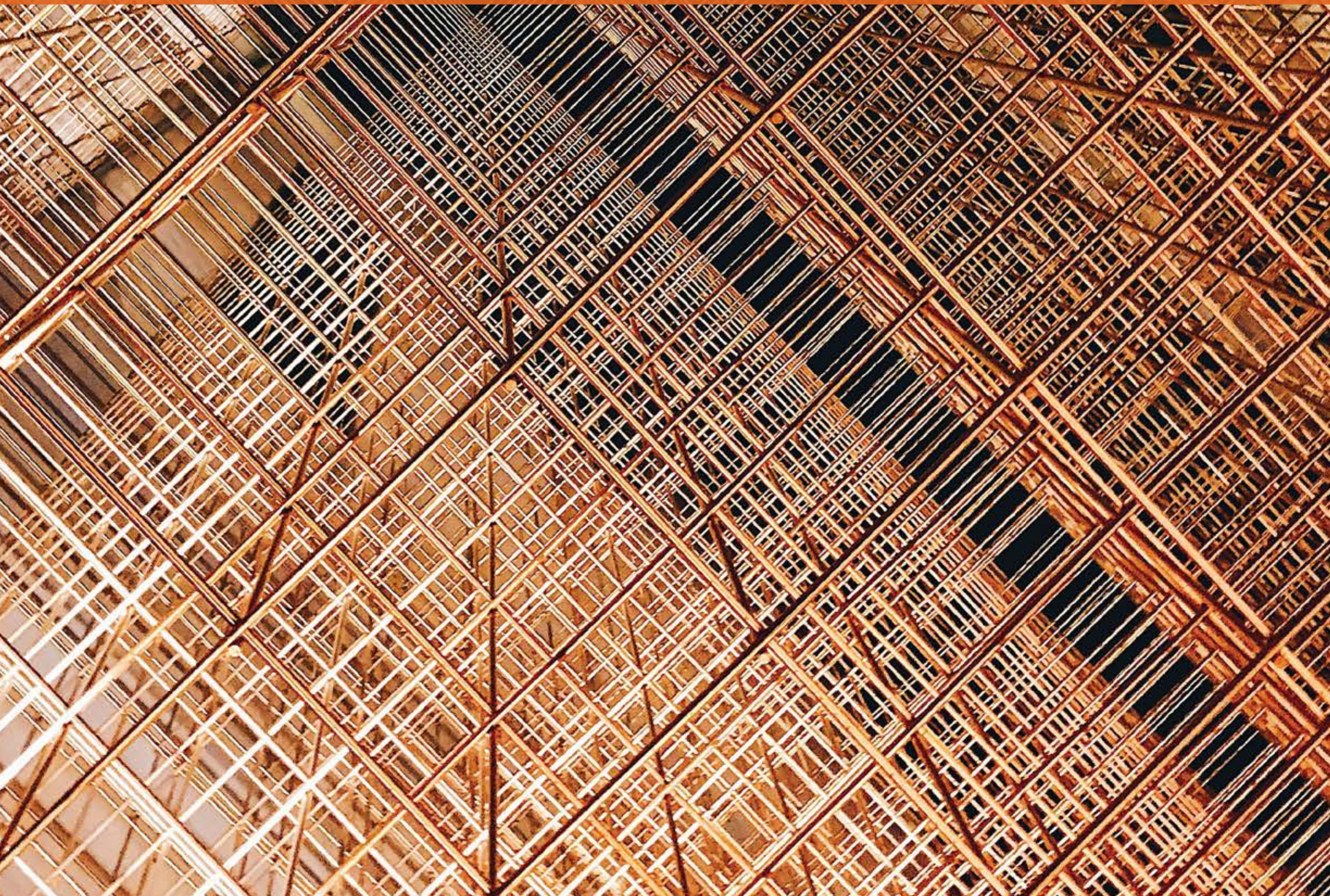
Corruption in the infrastructure and construction sectors, relating to both the award and execution of contracts, is a serious challenge for governments around the world.



New Transparency Principles for Infrastructure

Joaquin Jugo

Jorge Ordonez

An innovative industry-wide approach is essential to effectively address corruption in infrastructure projects and ensure project continuity.

Corruption in the infrastructure and construction sectors, relating to both the award and execution of contracts, is a serious challenge for governments around the world. The problem occurs for countries at all levels of economic development and at national and sub-national levels. Recent Latin American corruption scandals uncovered the lack of adequate anti-corruption controls and poor enforceability of existing legislation. They also revealed that governments, sponsors, banks and other relevant parties are unprepared to respond to major corruption events, putting project continuity at risk and, in some cases, leading to the delay or cancellation of critical projects.

Latin American countries responded in different ways to the corruption events in the region. Some countries implemented solutions to address and remedy the specific event; others put in place more comprehensive legislative changes to reduce corruption in the future. In Colombia, the government issued Law 1882 in January 2018, which builds on (and modifies) previous laws with the objective of strengthening the public contracting process for infrastructure projects. It also clarifies rules governing public private partnership (PPP) contracts, including the definition of a compensation formula and penalties in case of anticipated termination of PPP contracts by judicial or administrative order following a corruption event.[1]

In Peru, the government issued the Emergency Decree 003 in 2017, later replaced by Law 30737 in 2018, to guarantee the continuity of projects, safeguard the payment chain and make reparations to the government on the occurrence of a corruption event.[2] The government of Panama took administrative steps towards remediating corruption issues. These include a ban on a firm from bidding on future projects until all reparatory fines are paid to the government (and unless they cooperate effectively with ongoing investigations), the cancellation of a hydroelectric project without cost to the government, and the timely completion of projects under execution.[3]

The Need for a Wider Framework to Tackle Corruption

The measures described above were much needed to quickly mitigate the impact of material corruption events. However, it is necessary to take a wider infrastructure ecosystem approach that creates industry standards to ensure integrity throughout the project lifecycle and that reduces ambiguity about how to properly respond to future integrity events. Ideally, participating parties in the infrastructure sector should convene to discuss and agree on a set of New Transparency Principles for Infrastructure (NTPI) that can be applied across countries, situations and throughout the award and execution of contracts. These would serve a similar role to the Equator Principles or the Extractive Industries Transparency Initiative and provide a high level framework to respond to material post-integrity events to guarantee project continuity.

[1] Ley 1882 del 15 de Enero de 2018; http://es.presidencia.gov.co/normativa/normativa/LEY%201882%20DEL%2015%20DE%20ENERO%20DE%202018.pdf

[2] https://www.mef.gob.pe/es/por-instrumento/decreto-de-urgencia/15510-decreto-de-urgencia-n-003-2017/file
http://www.leyes.congreso.gob.pe/Documentos/2016_2021/ADLP/Normas_Legales/30737-LEY.pdf

[3] https://mire.gob.pa/index.php/en/noticias-por-meses/10764-comunicado-oficial-del-gobierno-de-la-republica-de-panama

Transparency in the pre-award phase of infrastructure projects, and more generally in public procurement processes, has been widely addressed both at an academic and normative level. Several entities such as the Organization for Economic Co-operation and Development (OECD), Transparency International, the World Bank and the United Nations (UN) have published extensively on best practices for public procurement and developed indexes, datasets and benchmarks comparing procurement systems globally. Similarly, at the normative level, the OECD, the UN, and the Organization of American States have all articulated binding conventions that define corrupt behavior, require states to criminalize those behaviors, and suggest ways for governments to eliminate them through reforms. However, while this abundant knowledge and thought leadership is widely available, there are clear failings of enforcement and application of these principles. It is necessary to consolidate and leverage existing best practices and recommendations to pre-define rigorous guidelines for due diligence and transparency in the tendering process.

Conversely, "corruption in the post-tender stage has attracted less research than corruption during auctions".[4] But one of the main entry-points for corruption in infrastructure projects — contract renegotiations — occurs during the post-tender stage. According to the Global Infrastructure Hub, in a sample of 250 PPP projects globally, approximately 45% were renegotiated within 10 years of financial closing.[5] While contract renegotiation is typical given the complexity and uncertainties of infrastructure projects, it is difficult to distinguish between legitimate renegotiations and abusive ones. However, recent empirical data shows a direct correlation between bribes and the size of contract renegotiations.[6] An analysis of evidence from documents issued by courts and prosecutors shows that total investment in projects where a leading Brazilian construction firm paid a bribe grew by 80.9% after renegotiations compared to 11.8% in those projects where a bribe was not paid.[7]

A novel approach to increase transparency in the pre- and post-award phases of infrastructure projects is to enforce independent third-party auditing of both the tender process and contract renegotiations. An integrity auditor can be engaged for the life of the project to certify the compliance with integrity principles and provide periodic opinions on transparency throughout the bidding, award and execution phases of a project. For example, in the pre-award stage it can be required that the integrity auditor provide a clean bill of health for the tender and certify that project sponsors have an adequate internal governance structure and anti-bribery and anti-corruption programs to reduce the risk of corrupt practices. The integrity auditor can also review contract execution on a periodic basis or on request of a contract renegotiation, triggered by modifications of a certain cost magnitude.

The figure of the integrity auditor is being pioneered by the government of Argentina in the context of the Financial Assistance Trust for the Highway and Safe Routes Network PPP Program. The government, with the support of the Inter-American Development Bank, developed an Integrity Framework that concessionaires must comply with if they want to access bridge financing from the Trust. In order to be deemed as qualified borrowers, an integrity supervisor has to certify that concessionaires comply with a number of integrity qualification requirements, including representations and warranties that the sponsor is in compliance with anti-corruption, anti-money laundering and sanctions laws, is not being investigated or sanctioned in relation to such laws and has an integrity program in place consistent with international best practices in those areas.[8] The integrity supervisor monitors that the concessionaires uphold adherence to the transparency requirements established in the Integrity Framework throughout the life of the financing.

[4] Nicolás Campos, Eduardo Engel, Ronald D. Fischer and Alexander Galetovic, *Renegotiations and Corruption in Infrastructure: The Odebrecht Case*, (2019), 6.

[5] Global Infrastructure Hub, https://www.gihub.org/blog/ppp-contract-management-renegotiation/

[6] Campos, Engel, Fischer and Galetovic, *Renegotiations and Corruption in Infrastructure: The Odebrecht Case*

[7] Ibid, 8

[8] https://www.argentina.gob.ar/sites/default/files/archivo_ppp_final.pdf

Addressing Post-Integrity Events

In addition to setting out a standardized approach to reduce corruption in the pre-award and post-award phases of a project, the NTPI should outline a high-level framework to respond to post-integrity events. A post-integrity event happens when corrupt practices remain undetected until a project is underway, or there is an event that damages the integrity of the sponsor/contractor and causes projects to stop, agreements to be undermined and legal arbitration/litigation to occur. Currently, as the aftermath of recent corruption investigations in the Latin American region demonstrated, there is no codified response or best practice for this situation, nor an agreed process for companies to recover their integrity in the eyes of their counterparties (mainly the government and the project lenders).

The recent corruption scandals illustrated the implications of systemic corruption practices for the continuity of infrastructure projects in Latin America. They reinforced the need to initiate a discussion in the infrastructure ecosystem to find ways to isolate, address and remedy material integrity events (MIEs) and allow the uninterrupted execution of infrastructure projects. MIEs relate to systemic corruption practices involving all or some equity shareholders in a consortium that have sufficient influence over management decisions. The definition of a MIE should be codified in debt covenants and/or any other governing PPP laws and regulations to differentiate it from isolated integrity events, committed by an employee for example, that can be remedied through discretionary managerial actions. A general framework to address post-integrity events would outline a protocol that sets in motion remediation actions once a MIE is flagged.

An approach to addressing MIEs is to make use of an administrator once the integrity auditor has flagged and documented a MIE. Similar to proceedings under a Chapter 11 bankruptcy process involving fraud, where a trustee or bankruptcy administrator is appointed to run the company to make sure the business stays afloat and creditors are paid,[9] an administrator would be appointed by the relevant authority to temporarily exercise the rights of the equity shareholders under investigation and continue the execution of the project until a judicial verdict is reached.

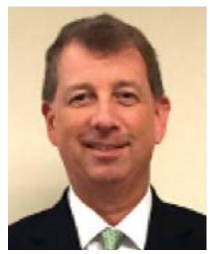
[9] United States Courts, https://www.uscourts.gov/services-forms/bankruptcy/bankruptcy-basics/chapter-11-bankruptcy-basics

The administrator would only be given rights equivalent to those of the equity shareholder in question. In other words, the administrator would only be able to influence management and board decisions to the same extent of the accused equity holder. Operationally, the shares and cash flows of the equity in question can be held in a trust until final adjudication, to be made available for debt service and fines or penalties ultimately rendered. To make subrogation of rights to the administrator uncontested and more expeditious, all equity contributions could be held in a trust from the beginning of the project.

In all cases, an integrity framework to address MIEs should have three main guiding principles:

1. **Flexibility to determine the materiality of an integrity event** and the corresponding remediating measures. Isolated integrity events, committed by an employee for example, can be remedied by the equity holders through discretionary actions such as termination of employment and fines, among others. In comparison, MIEs would require the appointment of an administrator as explained above.
2. **Guaranteed due process** for equity through full representation of its rights in arbitration procedures.
3. **Adherence to international transparency law**, to the extent possible, through the adoption or modeling of laws similar in scope and consequence to the US Foreign Corrupt Practices Act and the UK Bribery Act, in particular in relation to personal liability.

The ideas laid out in this article constitute the basis for the creation of the **New Transparency Principles for Infrastructure.** They are a starting point for discussion to tackle and address corruption in infrastructure projects. Leveraging existing best practices in public procurement and anti-corruption, third party integrity auditing and a framework to address post-integrity events are a solid basis for discussion by the wider infrastructure community. Action is required to address the most pressing issues relating to infrastructure and guarantee the continuity of strategic infrastructure projects that are critical for Latin America and beyond.



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Citi Q&A Interview:

The Future of Money: Cryptopia or Fiatland?

Dustin Ling

Tony McLaughlin

Money serves as a medium of exchange, as a store of value, and as a unit of account. Money's most important function is as a medium of exchange to facilitate transactions. Money is an officially issued legal tender that typically consists of notes and coins. Recently, many are talking about digital currencies both public and private — which leads us to ask what is the future of money? Are we destined for Cryptopia or will we evolve to Fiat 2.0? Dustin Ling, Director for Public Sector Banking, sat down with Tony McLaughlin, Managing Director for Citi Treasury & Trade Solutions to provide us some insights from both sides of the coin.

What is the Future of Money?

TONY MCLAUGHLIN: The future of money is the debate between two camps. On one hand we have a group of people, call them the 'Cryptopians' who believe that the future of money is based upon distributed ledger technology and cryptocurrency. This is a radical departure from the types of monetary systems that we have today. On the other there is a group of people, call them the 'Fiatlanders' who are engaged in making the existing systems work better. There is a lot at stake for all economic actors, for regulators, for users of monetary systems in terms of which one of these camps wins the day.

What is the Cryptoview of the world?

TM: The crypto view of the world is driven by criticisms of the existing fiat currency system. Some of these criticisms go back before the dissolution of the Gold Standard and exacerbated by recent events like Quantitate Easing and negative interest rates. The crypto community says that the new technology enables a completely new monetary system that will perform better than the existing system. Be less prone to rent-seeking behavior by intermediaries. Be faster, be cheaper, be more democratic and enable money to be moved internationally with privacy and as easy as sending an email.

What is the Fiat Currency Alternative?

TM: Fiat currency systems have been developing for decades. Fiat currency rests on a stack of capabilities and platforms including Real Time Gross Settlement Systems (RTGS), Automated Clearing Houses (ACH), international card networks, new real time payment systems and global wallets. All of these things are undergoing radical development, becoming more 24/7, more global and more inclusive as time moves on. And this story is less well known than the crypto story.

How can Crypto succeed?

TM: For crypto to succeed a number of conditions will have to be met. Some of them are practical and some of them are more ideological. On the practical side, crypto systems have to get faster and be more scalable. More deeply, crypto systems cannot be seen to introduce a new form of intermediation to replace old forms of intermediation, otherwise what is the point. For cryptocurrency to be accepted by governments, government would have to accept a different relationship with the monetary system. It would have to accept more privacy in terms of payments and less ability to monitor domestically and internationally where money is moving.

How do Fiat Currency Systems need to adapt?

TM: The stewards of the fiat currency system need to tell a narrative of fiat 2.0. They need to explain how RTGS systems are likely to go 24/7, how ACH systems are getting faster, how real time payment systems are providing a framework for completely new banking services, how open banking APIs provide a new infrastructure for fintechs to develop entirely new services. All of these developments are hidden in technical journals — only read by a specialized audience. For the debate about the future of money to be effective these subjects need to be brought to the surface and that narrative has to be explained so that crypto currency is not seen as the only alternative for the future of money.

Is a Synthesis possible?

TM: A synthesis between the crypto view of the world and the fiat view of the world may be difficult to achieve. There have been attempts. There are Initial Coin Offerings (ICOs), which as investments are neither fish nor fowl. There have been suggestions of Central Bank Digital Currencies (CBDC), which may undermine the commercial banking system. There are some 'Stablecoins' which are no more than e-money schemes. And there are suggestions of using private cryptocurrencies in international payments, which seem to only add inefficiency to the process. So the reason why a synthesis might be difficult to achieve is because crypto and fiat are complete different ways of running a monetary system. So time will tell but at the moment some of these systems have been worst of both worlds solutions rather than best of both worlds.

Is the Future of Money bright?

TM: The debate between the crypto view of the world and the fiat currency view of the world is extremely positive for the future of money because some of the criticisms of existing systems are well founded. And if the only service that the crypto community gives is to stimulate developments in the fiat currency systems and make them better, then that would be a great thing. Whatever happens, whoever is judged to be right in the fullness of time, the future of money is certainly more 24/7, more global, more real time — and that is to be welcomed by everyone.

Definitions Table

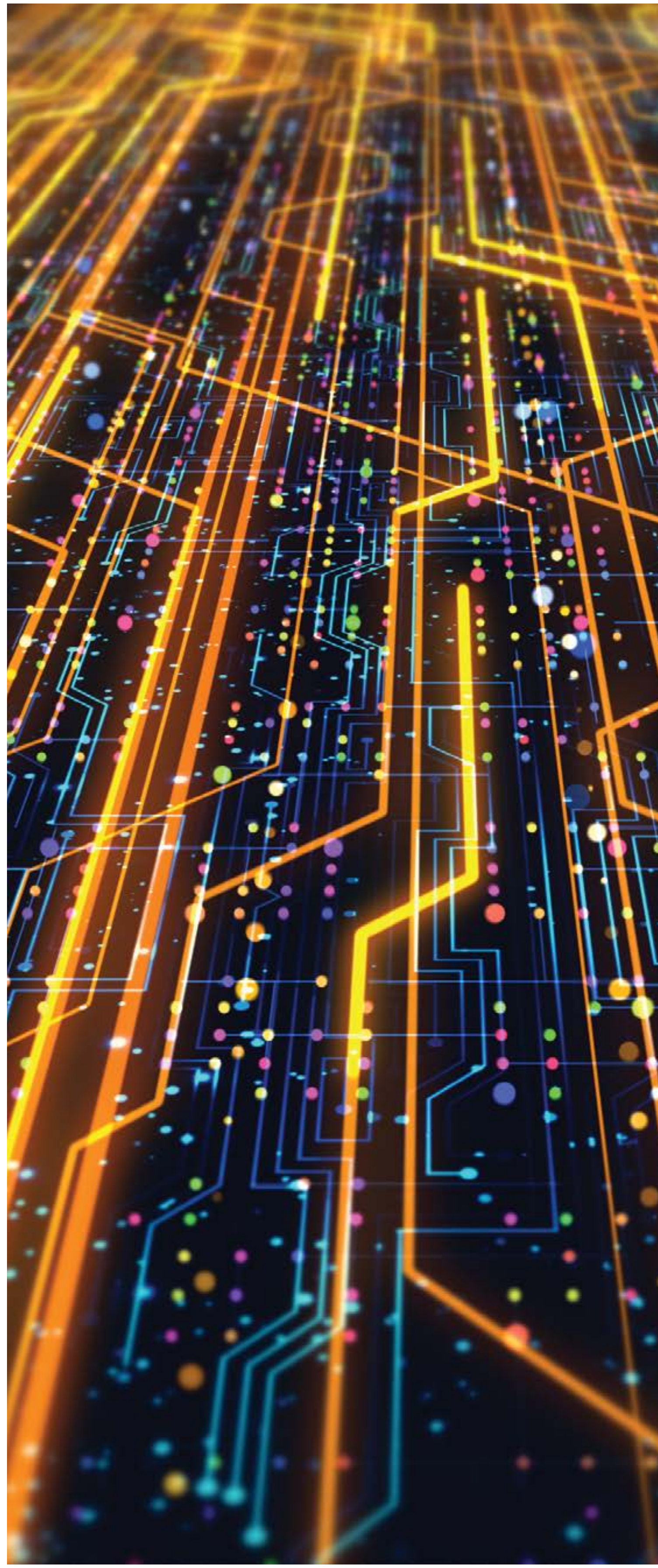
Cryptocurrency is a digital currency that is created and managed through the use of advanced encryption techniques known as cryptography. Cryptocurrency made the leap from being an academic concept to (virtual) reality with the creation of Bitcoin in 2009.

Fiat currency is government-issued currency that is not backed by a commodity such as gold. Fiat money gives governments' central banks greater control over the economy because they control how much currency is printed.

Initial Coin Offering (ICO) is the cryptocurrency space's rough equivalent to an Initial Public Offering (IPO) in the mainstream investment world. ICOs act as fundraisers of sorts; a company looking to create a new coin, app, or service launches an ICO.

Central Bank Digital Currency (CBDC) represents the digital form a fiat currency of a particular nation (or region), and is issued and regulated by the competent monetary authority of the country. Central bank digital currency is different from digital currency (or virtual currency and cryptocurrency), which are not issued by the state and lack the legal tender status declared by the government.

Stablecoin refers to a new class of cryptocurrencies which offer price stability and/or are backed by reserve asset(s). Stablecoins have gained traction as they attempt to offer the best of both world's — the instant processing and security of payments of cryptocurrencies, and the volatility-free stable valuations of fiat currencies



Dustin Ling
Public Sector Banking, Global Development Organizations, Citi

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Today, there is widespread recognition that investment in physical and social infrastructure is crucial to promoting economic and social growth.

Transforming Debt in Frontier Markets

John Finnigan Valentina Antill Gabriel Kimyagarov Vassiliy Tengayev Guocheng Zhong

Frontier market countries face significant challenges to meet the ambitious 2030 Agenda for Sustainable Development. By de-risking their FX exposure they can meet their budgetary needs, prudently manage debt and associated risks, and unlock financing on a grand scale.

The 2030 Agenda for Sustainable Development provides a shared blueprint for the future with its 17 Sustainable Development Goals (SDGs). The Agenda is "a plan of action for people, planet and prosperity" that integrates social, environmental and economic aspects of sustainable development.

The United Nations has been working with governments to integrate the interconnected SDGs into national development plans and policies.

Today, there is widespread recognition that investment in physical and social infrastructure is crucial to promoting economic and social growth.

Nevertheless, ageing infrastructure simply cannot keep pace with development, making it difficult for any frontier or emerging market to deliver an adequate standard of living — where the challenges addressed by the SDGs are most acute.

Financing the SDGs

Revenue generated from infrastructure investments is largely denominated in local currency, hence, requiring funding in local currency. This poses a notable challenge especially for the frontier market countries, invariably constrained in raising funds in local currency by the size of their economies, monetary systems, capital markets and number of players engaged in their currency markets. As a result, local currency capital formation in these countries is insufficient for their current capital investment needs. While some local markets are deepening, there is little prospect of sourcing local capital on the scale required to meet the SDG targets.

In Focus: Sustainable Development Goal 9

Goal 9 calls for building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation, which have a positive knock-on effect to many other SDGs including climate action, smart cities, water, health and education.

Infrastructure spending currently stands at $2.5 trillion to $3.5 trillion per year across both the public and private sector; this represents about half of the amount needed to meet the estimated $6 trillion of annual infrastructure demand.

The default approach for emerging and especially frontier market countries has been to source capital from other deep monetary systems, such as G10 countries, and particularly US dollars. Emerging and frontier market sovereign debt issuance has soared since the financial crisis and is at record highs. Sovereign debt levels in emerging markets have risen from a low of 34% in 2008 to 49.7% at the end of 2018, according to the Institute of International Finance.[1]

Availability of credit to emerging market governments is likely to continue rising in the near term as lenders and bondholders chase yield. However, it is questionable how long investors will remain this hungry. Moreover, while borrowing in hard currency is viable when exchange rates are constant, it can present problems during times of volatility. If the dollar's value increases, then so do debt servicing costs, which, in turn, can worsen the country's finances and lead to a deteriorating credit rating, further raising borrowing costs. Analysis shows that USD is the riskiest currency for most frontier countries to borrow in, as USD consistently strengthens during EM crises. As public debt levels across the emerging markets approach 50% of annual output for the first time, rising interest costs and frontier market currency weakness represent a significant potential threat.

Frontier Market De-risking strategies for USD or EUR Debt

In April 2019, Citi hosted the fifth in a series of roundtables that bring together the public, private and third sectors to collaborate on strategies that crowd in private capital to finance emerging and frontier market infrastructure by addressing key risks such as currency. Particular focus has been paid to the frontier markets, not only due to their most pressing need for infrastructure funding, but severe underdevelopment of the capital or derivative markets in their local currency. The most recent roundtable focused on innovative approaches to managing risk associated with USD and other reserve currencies, interest rates and commodity exposures.

During the roundtable, Citi outlined various options for debt risk management, including re-denomination of USD debt to the local frontier currency, or, absent the market to convert debt to local currency, diversifying to another hard currency, using a proxy currency, or leveraging a currency basket strategy in an effort to de-risk on a much larger scale.

The paradigm permeating the series of de-risking roundtables was de-risking by converting Development Bank loans, whereby a Development Bank loan to a frontier borrower is indexed to a local or proxy currency or commodity, leaving the Development Bank, instead of the borrower, to close the derivative. Given its superior economics and numerous conveniences for the borrower such as no ISDA or margining, this arrangement has gained notable interest in the frontier markets community.

Below we focus on two groups of strategies that have the potential to de-risk and transform frontier market debt — when hedging is unavailable in local currency — and open the way to more sustainable financing of the SDGs for frontier market countries.

De-Risking with a proxy (correlated) currency, index or a commodity

Citi has developed three potential solutions that involve converting existing or indexing new loan payment amounts to calibrated proxies. Under the Development Bank loan conversion structure, such payout linkage can then be hedged with the market by the Development Bank lender. Each of these solutions addresses a different component of a frontier currency risk (as described in continuation) and can be tailored, or even combined, to accommodate the borrower's specific circumstances.

1. De-risk the EM-wide component of frontier currency risk using an EM local currency index

One component of frontier currency risk, which is beyond the control of an individual country, often correlates with EM wide or regional asset classes. Most currencies, including illiquid ones, sell off to various degrees in line with broader, liquid local currency indices. Converting USD \loan payments to the appropriate EM liquid local currency index can therefore mitigate the volatility driven by this component.

[1] https://www.ft.com/content/7cd60938-6cd2-11e9-80c7-60ee53e6681d

2. De-risk using a correlated (local) currency.

This can be accomplished by converting USD loans to more liquid currencies that are aligned with the specific frontier market to a greater extent. For example, currencies of major trading partners may have very close, substantiated correlation with the frontier currency, e.g. Mexican Peso and Colombian Peso, Kazakh Tenge (or Belarus Ruble) and Russian ruble, or Serbian Dinar and CEE currencies such as Czech Koruna, Polish Zloty and Romanian Leu (see figures 1 and 2).

3. Look beyond currencies to current account and FX drivers such as commodities.

In some cases, a frontier currency does not correlate with the broader EM market or another liquid EM currency, such as that of a neighbor or trading partner. These countries typically have undeveloped money markets and restricted capital accounts. Examples include Ghana, Nigeria, and Ukraine. In these situations, borrowers could focus on the major drivers of country's current account, which often impact their illiquid FX markets.

For example, in Ghana there are three traded products that account for over 50% of exports – crude oil, gasoline and natural gas. If Ghana overlays a basket of its export commodities as a hedge for its USD obligations it would reduce USD/GHS risk by 70-80%.

Similarly, Nigeria could use crude oil and natural gas to achieve similar FX risk reduction (figure 4).

Ukraine could remove an estimated 70%-80% of its FX risk by linking its USD debt to contract prices for wheat or corn, which are its main exports. Over the medium term, using quarterly relative changes, Ukraine could substantially de-risk its USD borrowings.

All three components (EM macro, currencies of trading partners and commodities impacting the current account) could be combined into a bespoke basket for a country to remove large parts of the FX risk that are beyond the control of government. The government would then be left with the residual FX risk, which is driven by local idiosyncrasies, politics and banking system issues. These risks are inherently unhedgeable by any proxy and probably the risk that the host country is most equipped to run. In short, frontier governments (and Development Banks) should insure risks that are beyond their control and are insurable, and retain risks that are most relevant to, and manageable by, them.

Figure 1: Serbian Dinar (RSD) Returns in Czech Koruna (CZK), 2008 – 2019

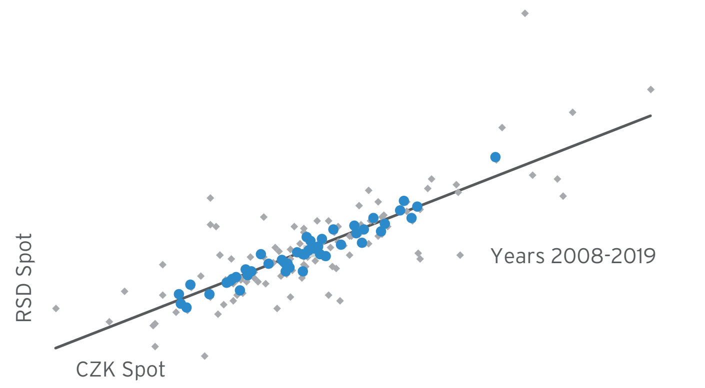


Figure 2: Kazakh Tenge (KZT) Returns in Russian Ruble (RUB) 2015 – 2019

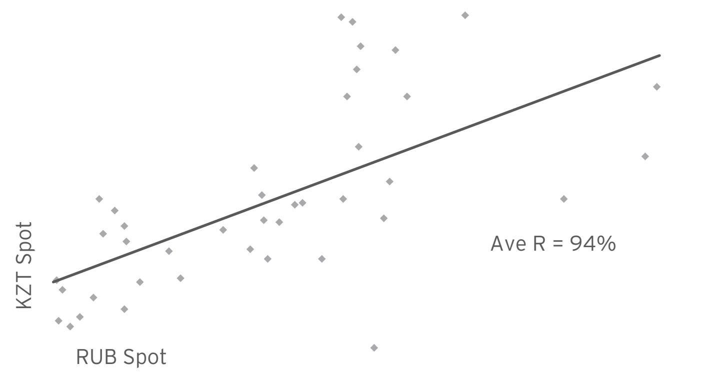


Figure 3: Ghana Cedi (GHS) vs Commodity Basket, 2010 – 2018

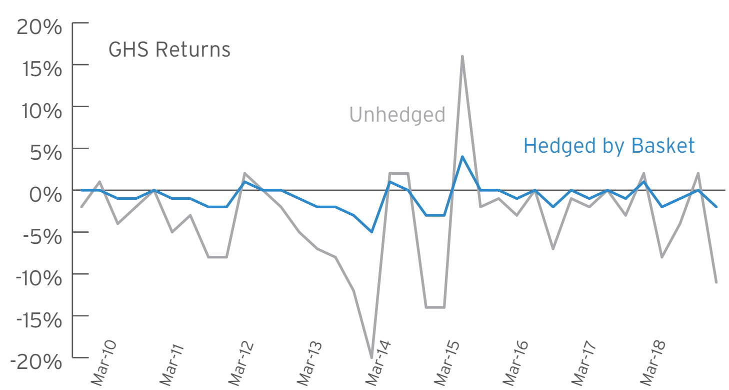
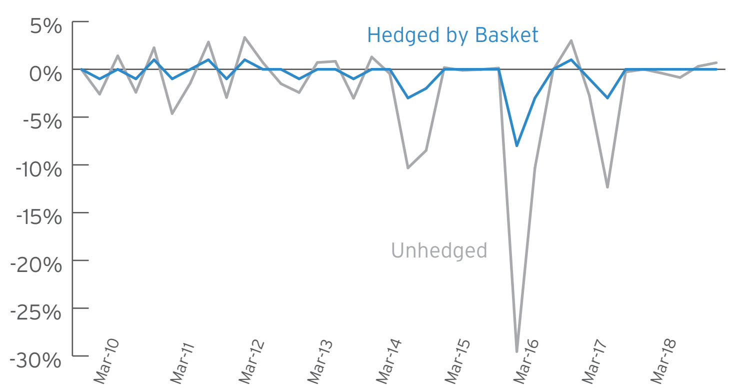


Figure 4: Nigerian Naira (NGN) vs Commodity Basket, 2010 – 2018

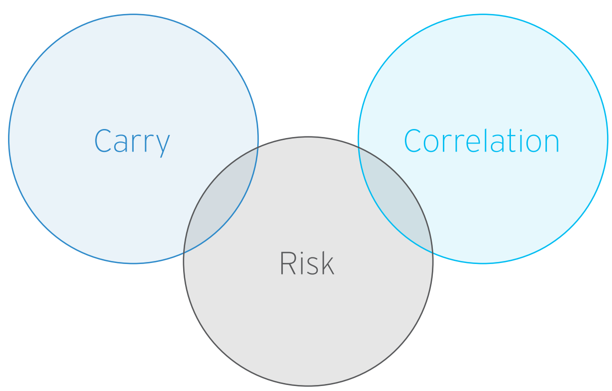


Source: Bloomberg and Citi

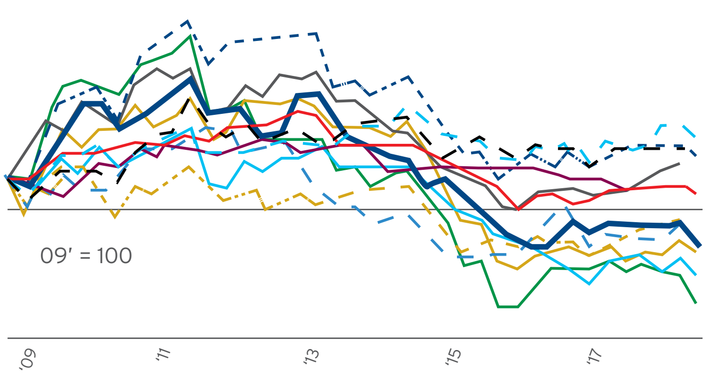
Currency basket strategy

A second innovative approach to de-risking frontier market debt is the use of a currency basket. The basket approach could limit single currency exposure by diversifying a sovereign debt portfolio away from U.S. dollar exposure and mitigating downside interest rate risk. In addition, swapping to a basket could reduce principal devaluation risk through its correlation with the local currency.

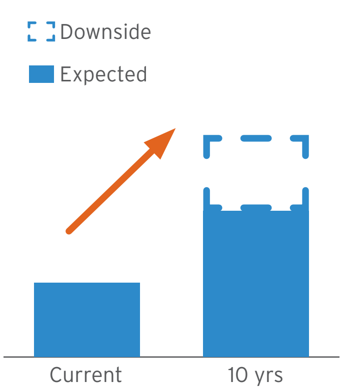
Basket



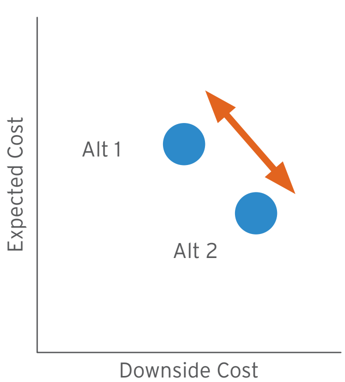
Currency Movements



Principal



Interest Cost



The currency basket is selected by optimizing a mix of currencies across global regions based on carry, risk and correlation considerations. The key objectives of basket currency selection should satisfy several risk mitigation attributes: 1) high correlation with local currency; 2) low interest rate volatility (risk) when translating to local currency; and 3) low carry. The selected currencies need to balance across these three objectives and, after combining them, could provide meaningful risk reduction and diversification to the existing debt portfolio. With respect to correlation benefits, those currencies which could sustain higher co-movements during downside or stress periods should be preferred.

After defining the objectives, Citi selects currencies across global regions (LatAm, NAM, Europe, APAC) with sufficient market capacity and the above-mentioned criteria. We apply a portfolio optimization approach to determine the optimal mix of the currency basket. The identified currency mix minimizes carry and maximizes correlation at each given level of risk. Lastly, we back test the currency basket performance over historical periods to examine its robustness throughout various market conditions, including financial crises.

The final step of the currency basket approach is to assess its risk reduction effectiveness by incorporating it into the sovereign's existing debt portfolio. We construct a Monte-Carlo simulation-based, country-specific "efficient frontier" to evaluate the risk-return tradeoff of various debt portfolio alternatives. For example, we apply this framework to a Latam government with substantial U.S. dollar debt exposure (more than 50%). We examine the risk reduction impact from swapping 20% of its U.S. dollar debt to the basket and find that the basket meaningfully reduces *both* expected and worst-case interest costs, and also significantly decreases the currency risk of principal devaluation by about 11%. While swapping U.S. dollar debt to other low-carry hard currencies (e.g. EUR or JPY) could also reduce interest cost, it tends to be less effective in managing principal devaluation risk. Our analysis indicates that the currency basket approach could be very impactful as a de-risking strategy for sovereigns with high U.S. dollar debt exposure and limited local market capacity.

Conclusion

Emerging and frontier market countries face the greatest hurdles to achieving the 2030 SDG goals, especially with regards to funding the necessary investment. The scale of the increase in finance required means that existing approaches — principally sourcing capital in USD — will put these countries at an unacceptable risk given their propensity to suffer periodic EM crises. Furthermore, it is unclear whether international investors are willing to fund EM investment on the scale required.

Local currency conversion of existing Development Bank USD loans is the first step to consider in de-risking frontier markets balance sheets, alongside the focus on denominating any new debt in local currency. In the case of frontier markets, given their swap market illiquidity and lack of investors, this may not be possible. Nevertheless, there are solutions involving proxy indices, currencies, commodities or customized baskets that could notably reduce the risk of local currency devaluation.

Some may argue that a typical frontier government lacks the sophistication to run "proxy" or "basis" risk between its local currency movements and currencies of its trading partners. But frontier governments currently run a much larger "basis" risk between local currency and the USD market. This risk requires much greater sophistication to manage than risks related to similar economies and directly relevant current account drivers. In short, any reduction of local currency/USD risk by shifting it "closer to home" is the right direction to travel.

Amongst the highlighted solutions, we believe that the currency basket approach harbors the biggest benefits, addressing the liquidity issue and enabling larger size transactions, while avoiding exposure to vagaries of a single currency or commodity.

Finally it is worth noting that frontier markets have a genuine need for a systemic, scalable solution that can ramp up development financing. Development Finance Institutions can play a critical role as an intermediary, using their influence on policy, technical expertise and innovations in development finance to unlock capital at scale and make the SDGs a reality.

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In our experience, some aspects of ratings might not be intuitive to either issuers or investors.

Structural Penalties in Sovereign Credit Ratings

Paull Randt **Anna Corcuera**

Credit ratings from at least two of the three dominant rating agencies — Fitch, Moody's and S&P — are a prerequisite for countries raising funds in international debt capital markets, which in turn give sovereign issuers access to a broader set of investors, improved global recognition and lower cost financing.[1] All else being equal, a better rating enhances all of these benefits, and Citi's Sovereign Advisory team helps our sovereign clients understand, obtain and maintain appropriate credit ratings. In our experience, some aspects of ratings might not be intuitive to either issuers or investors.

For the most part, sovereign credit ratings reflect political, economic and financial conditions within the control of government officials, such as foreign exchange reserves, debt stocks and fiscal balances. However, some ratings inputs are outside the command of normal policymaking, including certain long-term historical variables such as the international status of the issuer's currency and the size of the issuer's economy relative to world GDP. To some sovereigns, being rewarded or penalized for such "hard-to-change" structural factors might seem unfair, and this article aims to explain the impact of such variables in the agencies' methodologies and to introduce ways that governments might compensate for ratings handicaps.[2]

This article is a brief investigation of three hard-to-change variables in the rating methodologies that might result in ratings penalties to sovereigns: (A) a past episode of debt restructuring, (B) possessing a non-reserve currency and (C) being a small economy.

Although highlighting these variables, we do not intend to criticize any of Fitch's, Moody's or S&P's sovereign rating methodology, nor is this article a comprehensive review of the rating models and component factors. Still less do we purport to reveal how sovereign issuers can improve their ratings overnight. Firstly, the models are not mechanical calculations, and the agencies retain considerable discretion in rating assignments. More generally, upgrades require sustained commitment to responsible, transparent public financial management rather than quick fixes. The Citi Sovereign Advisory team welcomes opportunities to support governments develop and execute such plans.

We consider each of the past default, currency status and size variables to be hard for sovereign debt management offices to influence for different reasons. The first, like other rating factors, reflects past events and possibly the decisions of previous governments. Yet the adverse impacts can linger in a credit rating

[1] Khorana, A., C. Hulac, et al. (2018) "Unlocking the Door to Debt Capital: A Guide to Inaugural Credit Ratings," Citi Financial Strategy and Solutions Group, 4-8.

[2] "Rating" or "ratings" in this article refers to the Fitch Foreign Currency Issuer Default Rating (FC IDR); the Moody's Government Bond Rating (foreign currency); and the S&P Global Issuer Credit Rating (ICR), Foreign Currency and Long Term. Each is described in, respectively, Fitch's "Sovereign Rating Criteria, Master Criteria" (May 2019), Moody's "Rating Methodology: Sovereign Bond Ratings" (November 2018), and S&P's "Criteria: Sovereign Rating Methodology" (December 2017) and "Guidance: Sovereign Rating Methodology" (January 2019), with reference also to Fitch's "Cross-Sector Criteria Report: Country Ceilings Criteria" (July 2019) and Moody's "Request for Comment: Proposed Update: Sovereign Bond Ratings" (June 2019).

for many years thereafter. The second and third are examples of variables that only very ambitious governments might be able to meaningfully influence within the normal life of a political administration. While Citi recognizes that none of the ratings factors are easy to improve, the three variables discussed in this article are selected for their particular unresponsiveness to ordinary political, economic and financial policy.

The size penalty is particularly interesting, because relative economic — and geographic — size are broadly stable characteristics of a country except in the most extraordinary circumstances, and the ways in which size impacts credit ratings might not be obvious.

Hard-to-Change Ratings Factors

To assign sovereign credit ratings, each of the agencies employs a proprietary rating model comprised of quantitative and qualitative components. In all three of the Fitch, Moody's and S&P models, the quantitative component produces an indicative rating or rating range based upon a set of individually-weighted numeric factors. The factor weights in the models are set by complex, multivariate regressions of the factors against historical observations of sovereign willingness and ability to meet debt obligations. Each agency's model uses a unique but similar set of factors, the relative weights of which are recalibrated at least annually.

The calculation-based indicative score is then subject to qualitative adjustments, in which agency analysts can shift the rating to better reflect non-numeric context, information and judgments.[3] Because of the qualitative component in each agency methodology, the quantitative factors are not determinative, limiting both an issuer's ability to "game" the process for improved ratings and Citi's ability to predict exact results.

Nevertheless, the quantitative models are a robust guide to likely rating outcomes and reflect the relative importance the agencies place upon different sovereign characteristics. It is therefore notable that all three methodologies include a measure of prior issuer defaults over a long historical horizon, potentially allowing the mistakes of past governments to constrain the rating. In Fitch's 18-factor model, "Years since default or restructuring event" carries an overall weight of 6.6% in the quantitative model. It is measured from 1980 such that an event in 1979 or earlier returns a zero, while an event in 2019 returns a negative one and would result in a roughly 2.6-notch downgrade — a BBB to BB+, all else being equal.[4] Moody's current methodology considers "Track record of default" over a 20-year period and assigns a score of zero to negative three, "serial defaulters" being assigned the lowest score. Again holding all else equal, applying a score of zero to one specific Baa3-rated CEEMEA issuer would likely result in the loss of its investment grade rating in the quantitative model.[5]

S&P treats prior defaults differently, treating the variable as binary and a binding constraint on the final rating. For sovereigns with any of "significant and sustained arrears on bilateral debt," "a public discourse that questions the legitimacy of debt contracted by a previous administration," or "no material policy change since the last default," S&P places a rating ceiling of BB+. For S&P, past instances of debt restructuring or defaults reflect a poor "debt repayment culture." Indicators of such a culture correlate with a greater likelihood of re-default in future and, as S&P observes, "history demonstrates that countries can graduate from being serial defaulters, although the path to doing so may be long."[6] Fitch and Moody's discuss their treatments of prior restructurings in similar terms, thereby explaining the long look-back period for this factor and emphasizing for sovereigns the importance of avoiding debt restructurings and defaults whenever possible.

[3] In fact, qualitative judgements are found throughout the quantitative components in each agency's model as well. For example, we can consider S&P's assessment of sovereign "Fiscal Performance and Flexibility." The scores requires calculation of the average change in net general government debt as a percent of GDP including the current-year estimate and S&P's two- or three-year forecast estimates. This average figure is then transposed into a score of 1 to 6, such that an average of between <0% and 1% becomes a "1," an average between 0% and 3% is a "2," and so on until an average <6% is a "6." Note, however, that an average of 1.9% could be either a "1" or a "2," in which case the "assessment is decided based on the trend of the government's fiscal performance." The space for interpretation is evident — but that is not to say it is problematic. S&P (2017), "Criteria: Sovereign Rating Methodology," 19.

[4] Fitch (2019), "Sovereign Rating Criteria, Master Criteria," 12. The average factor weight in the model is 5.56%, and the highest-weighted factor is "Governance indicators" at 19.8%. This is calculated as the average of the country's most recent World Bank Worldwide Governance Indicators scores.

[5] Moody's (2018), "Rating Methodology: Sovereign Bond Ratings," 16.

[6] S&P (2017) "Criteria: Sovereign Rating Methodology," 9, 16.

Another hard-to-change rating factor is a country's currency status in world markets, a variable that falls along a spectrum between reserve currency and, in "dollarized" economies, having been replaced by external cash. Where a country's currency falls along this spectrum has a profound impact on rating outcomes in all three methodologies, but each treats this factor quite differently. Only Fitch includes direct quantification. With reference to the IMF Currency Composition of Official Foreign Exchange Reserves (COFER) database, the Fitch model calculates the share of global reserves held in each of eight currencies, a figure that is given a weight of 7.9% in the "home country's" rating model.[7] The U.S. Dollar's 61.7% share of allocated global reserves adds 4.2 points to the USA's quantitative score; in the model, *total* scores above 15.5 suggests an AAA outcome, and so the exorbitant privilege of minting the U.S. Dollar is reflected also in the country's credit rating.[8] In contrast, countries without a reserve currency have a score of zero for this variable.

Fitch's rationale for the high weight given to the currency status variable — the fourth highest of 18 — is that the global demand for reserve currencies insulates home countries from normal external funding pressures. Such insulation of course also impacts other parts of a sovereign credit profile. As Fitch writes, "[Reserve currency status] benefits fiscal as well as external financing flexibility as the majority of reserve assets are government bonds."[9] It follows that both direct and indirect reference to reserve currency status appear throughout each of the agency methodologies. Moreover, the models are sufficiently nuanced to capture the benefits of external currency demand even when that currency does not appear in COFER. For Fitch, one example is a measure of foreign exchange and gold reserves that is applied only to non-COFER countries.

Currency status is an input into two key parts of the S&P model: the Monetary and the External Assessments. In the former, a score between one and six is matched to the currency regime. A lower score is preferable, and reserve currencies are given a one; free-floating currencies two; managed floats three; conventional pegs or regimes with heavy intervention four; hard pegs five; and "dollarized" systems six. This score is 40% of the Monetary Assessment, which is one of the five components that combine to produce the indicative rating. In parallel, the External Assessment computation divides countries into different currency status groups and treats each distinctly. Prior to qualitative adjustments, reserve currency sovereigns cannot score worse than three of six regardless of their levels of external debt, and sovereigns with "actively traded currencies" (those accounting for more than one percent of global annual foreign exchange turnover) cannot score worse than four.[10] Other sovereigns do not have a floor on their external financing vulnerability assessment.[11]

Currency status is an input into two key parts of the S&P model: the Monetary and the External Assessments.

The Moody's treatment of currency follows a similar logic, reflecting that currency regimes and external currency demand are simultaneously signals of institutional strength, monetary policy credibility and capital markets health as well as being drivers of other credit-positive sovereign attributes, such as having strong access to financing. Therefore, an in-demand, free-floating currency is a clearly valuable asset to sovereigns from a credit rating perspective, but it is no mean feat for a government to upgrade its currency status. Between 2001 and 2016, China's RMB was the only currency to *become* a new reserve currency, and only six currencies climbed above the 1% "actively traded" threshold.[12] While countries with dollarized and hard-peg currency regimes will be rewarded for steps towards liberalization, it is less obvious what policymakers in countries with floating, small-circulation currencies might do to improve their performance on currency status metrics.

[7] The AUD, CAD, CHF, EUR, GBP, RMB, USD and JPY. All Eurozone countries are given the benefit of the Euro's c. 21% share of global reserves, but "makes adjustments in the Qualitative Overlay (Fitch's qualitative component) to recognize that not all countries in the Eurozone have the same degree of Reserve Currency Flexibility." Fitch (2019), "Sovereign Rating Criteria, Master Criteria," 24.

[8] As of 4Q18. IMF Currency Composition of Official Foreign Exchange Reserves, data.imf.org.

[9] Fitch (2019), "Sovereign Rating Criteria, Master Criteria," 24.

[10] As measured in the Bank of International Settlement's (BIS) Triennial Survey of foreign exchange and OTC derivatives trading, www.bis.org/statistics. As of the most recent survey (2016), 15 currencies meet this threshold and are not COFER reserve currencies.

[11] S&P (2017) "Criteria: Sovereign Rating Methodology," 12-15, 27.

[12] The Brazilian Real, Indian Rupee, Polish Złoty, Russian Ruble, Taiwanese New Dollar, and Turkish Lira. BIS, Triennial Survey.

Size Penalty

The options are even narrower for leaders in small countries with small economies. Geographic and relative GDP size are factors in all three agency methodologies, with bigger being better in regards to quantitative rating outcomes. This methodological design is based in macroeconomic theory and observation but reflects highly immutable country characteristics. Although all national economies are growing and shrinking each year, relative positions are broadly stable. For the years 2015-2017, the average growth rate for all countries in Moody's universe of 138 rated sovereigns was 2.9%, and only nine economies during that period grew consistently at a rate more than one standard deviation faster or slower.[13] Meanwhile, a significant expansion or diminution of a country's geographic area is an unwelcome sign. The international community will often withhold recognition of the change, and in instances resulting in new states, ratings are rarely a near-term concern.[14] Therefore, we see that the rating agencies impose a "size penalty" on smaller sovereigns.

Per the methodologies, the agencies are interested in the size of the sovereign's economy as a proxy for economic concentration. Fitch measures the share of an economy as a percent of world GDP, and Moody's divides countries into 15 size categories based on nominal GDPs (20 in the proposed new model). "Scale is an important driver of creditworthiness," asserts Moody's, "A larger, more diversified economy has a higher capacity to generate sufficient and stable revenues for a sovereign to services outstanding debt."[15] The S&P methodology agrees that "economic concentration and volatility are important because a narrowly based economy tends to correlate with greater variation in growth," but it does not attempt to measure size directly. Rather, it instructs analysts to negatively adjust its Economic Assessment score for countries with "significant exposure to a single cyclical industry (typically accounting for more than 20% of GDP)."[16]

This perspective on GDP size and composition finds support in macro- and development economics literature. Larger economies will more likely have a greater variety of economic activity than small ones, and there is substantial evidence that diversification is linked to the resilience of growth, productivity and competitiveness through business cycles — which are all credit-positive attributes.[17] In contrast, concentrated economies are more exposed to changes in industries and supply chains, whether of price, technology, customer preference, operations or other variables. A serious, unanticipated shock to an undiversified economy could have knock-on effects to government accounts through tax receipts, employment and other channels.

Chart 1 illustrates the size-rating relationship for the 117 rated sovereigns in the Fitch universe.[18] Although there are highly-rated economies smaller than 1% of world GDP, the numeric bulk of this set is clustered in the BBB- to B- range; in contrast, there is only one economy greater than 1.0% of world GDP with a high yield (below BBB-) rating. Of course, one would expect to see some positive correlation in this data, because as a model input, GDP size is endogenous to the Fitch outcome. One would also expect the correlation to be weak (r = 0.28), given that this is only one of 18 variables.

[13] These are Bangladesh, Cambodia, China, Cote d'Ivoire, Ethiopia, India, Macao (rated separately from China), Tanzania and Venezuela. This does not suggest that ordinal ranks do not change — Romania and Mauritius, which have very similar-sized economies, regularly traded ranks between 2012 and 2017 — but that with rare exceptions countries do not surge up (or down) the ranks.

[14] Serbia is an interesting exception, given that it is both a rated sovereign and lost 12% of its territory when Kosovo declared independence in 2008. As will be explained, the impact of this change on Serbia's rating cannot be estimated.

[15] Moody's (2018), "Rating Methodology: Sovereign Bond Ratings," 10.

[16] S&P (2017) "Criteria: Sovereign Rating Methodology," 12.

[17] Fruman, C. (2017), "Economic diversification: A priority for action, now more than ever," World Bank Blogs, blogs.worldbank.org; McIntyre, A. et al (2018), "Economic Benefits of Export Diversification in Small States," IMF Working Paper; Papageorgiou, C. and N. Spatafora (2012), "Economic Diversification in LICs: Stylized Facts and Macroeconomic Implications," IMF Staff Discussion Note.

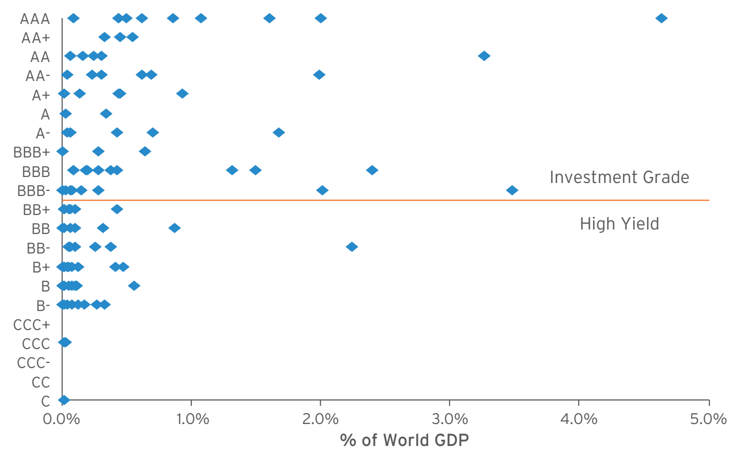
[18] For legibility, this chart terminates the x-axis at 5.0% of world GDP. Only three countries — the USA (25.2%), China (16.4%), and Japan (5.9%) have economies above this threshold.

What might be surprising to sovereigns is the weight given to the economic size variable in the methodologies. In the Fitch model, "Share in world GDP" has a 12.8% weight; Moody's nominal GDP metric is 25% of the Economic Strength component, which is itself one of four components (that do not aggregate arithmetically); and S&P, as described above, allows a significant downward adjustment for small economies.

Also surprising is that geographic size, although not directly measured by the models, compounds economic diversification considerations – especially if the small land area exposes the sovereign to natural catastrophe risks. Chart 2 shows that there is no correlation between rating and area alone, but as Fitch remarks, "The smaller a country, the higher the potential impact of an idiosyncratic natural disaster or severe exogenous shock."[19] Numerous studies have found a physically concentrated economy is more vulnerable to localized catastrophes, such as earthquakes or storms, and the other models similarly link size, diversification and credit risk; as Moody's notes, "A very small, but very rich country can be subject to an abrupt change of economic fortune."[20]

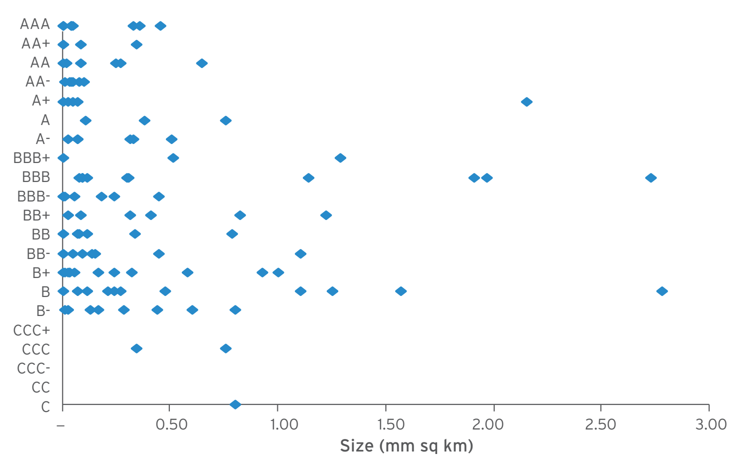
While we do not wish to suggest that geography is destiny, economic size and location are significant factors in a rating score. When comparing any relatively smaller economy prone to storms or earthquakes, such as the Dominican Republic (BB-/Ba3/BB-), to larger countries with the same rating (e.g. Russia), the smaller country is compensating for size and location structural penalties by outperforming in other areas. Identifying and publicizing the areas in which a relatively smaller sovereign can outperform larger peers is a key debt management and investor relations responsibility.

Chart 1: Percent of world GDP against Fitch ratings



Source: Fitch Sovereign Data Comparator (2019)

Chart 2: Sovereign land area against Fitch ratings



Sources: Fitch Sovereign Data Comparator (2019) and the CIA World Factbook (2019)

Partnering with Citi to Address Vulnerabilities

Unfortunately, Citi cannot erase past defaults, create a new reserve currency nor enlarge your country, but our expert advice and services address the concerns underlying the hard-to-change variables. For example, regular liability management and debt smoothing reduce the risk of spikes in debt service costs and acute liquidity shortfalls. Liability management exercises are also an opportunity for sovereign issuers to meet with global investors and demonstrate a commitment to transparency and communication of sound policies. Fortunately, the agencies have discretion over final ratings and might treat a strong liability management program as compensation for past defaults. Moody's explains this flexibility in its proposed new methodology, "The magnitude of the negative adjustment [for historical restructuring] typically depends on our expectations for the risk of re-default.... We may reduce the negative adjustment if it is clear that the underlying economic, financial or political problems... have been resolved in a sustainable way."[21]

[19] Fitch (2019), "Sovereign Rating Criteria, Master Criteria," 12. The linear regression of size against Fitch rating as a small correlation coefficient (r = 0.12) and it is not statistically significant (p = 0.27).

[20] Alano, E. and Lee, M. (2016), "Natural Disaster Shocks and Macroeconomic Growth in Asia: Evidence for Typhoons and Droughts," ADB Economics Working Paper Series, 503; IMF (2013), "Macroeconomic Issues in Small States and Implications for Fund Engagement," IMF Policy Paper; Lee, D. et al (2018) "The Economic Impact of Natural Disasters in Pacific Island Countries: Adaptation and Preparedness," IMF Working Paper, 18/108; Moody's (2018), "Rating Methodology: Sovereign Bond Ratings," 10.

[21] Moody's (2019), "Request for Comment: Proposed Update: Sovereign Bond Ratings," 24.

Citi is exceptional among banks in the extent of our geographic footprint and product offering. We offer to governments globally a wide range of solutions to address and sustainably resolve public finance challenges. Virtual accounts and procurement cards enhance budgetary control and transparency in government departments; our top-ranked debt capital markets and worldwide syndicate teams compress bond spreads to limit interest burdens; and our investment banking platform leads public sector clients through the process of monetizing state assets for greater fiscal resources, to name just a select few of Citi's capabilities relating to common rating agency concerns. From the ratings agency perspective, individual transactions and targeted programs over time aggregate into a strong track record to support a sovereign ratings upgrade.

Returning again to the size penalty, the specific concern about economically and geographically small sovereigns arises in part from the concentration of assets either in industry supply chains or in the path of natural disasters. Over the long term, the best solution is to grow, diversify and strengthen the economy, for which Citi is a committed partner; in the short and medium terms, Citi offers solutions to mitigate the fiscal risks of a downside shock. Where the economic concentration is in commodities, a well-designed hedging program can efficiently lock in prices and provide budgetary predictability. In Mexico — a large country and economy — Citi partners with the central government to insulate the budget from temporary falls in oil-linked revenues. In basic terms, the hedge (a rolling put option) places a floor under Mexico's oil price sales, acting as a form of insurance. Thus in the event of a downside shock, the government's fiscal resources are better protected and more available to deploy against other challenges.

Catastrophe bonds are another form of insurance and are of particular value for countries exposed to storm and earthquake risk — and the range of covered disaster risks is always expanding. In a "cat bond" structure, a sovereign pays a premium to international investors to make liquidity rapidly available in the event of a natural disaster event exceeding agreed parameters. For example, in May 2019, an 8.0Mw earthquake in Peru triggered a $60mm payout of Peru's outstanding cat bond, making these funds available more quickly than traditional insurance or donor assistance would do and allowing Peru to begin recovery. This instrument is part of the Pacific Alliance $1.36bn program, the largest-ever sovereign cat bond, for which Citi collaborated closely with the World Bank's IBRD and insurance industry partners.

Although a cat bond program alone is unlikely to result in a ratings upgrade, it can be an important part of a responsible fiscal and debt management — with rating benefits. Jamaica has historically suffered from fiscal deficits and high debt, both of which can be exacerbated by disaster-related expenditures. To address this risk and as part of its current IMF program, the country has developed a natural disaster resilience framework including cat bonds.[22] As the framework demonstrates over time its ability to shield Jamaica's fiscal resources as well as the country's improved governance, it should reinforce the evolving views of Jamaica that led Fitch to upgrade the country one notch in January 2019 and S&P to upgrade its outlook in September 2018.[23] Citi is in conversations with countries across the ratings spectrum — Aaa to B3 — about using cat bonds to insure against negative surprises. Where relevant, we are also discussing them as one part of a larger program to compensate for the structural, hard-to-change rating variables that might hold back a sovereign rating.

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[22] Patterson, C. (2019), "Gov't Building Financial Resilience Against Disasters," Jamaica Information Service, https://jis.gov.jm.

[23] Fitch (2019), "Fitch Upgrades Jamaica to 'B+'; Outlook Stable"; S&P (2018), "Research Update: Jamaica 'B/B' Rating Affirmed; Outlook Revised To Positive From Stable On Improved External Position."

Sustainable Sovereign Financing: Optimizing Resource and Risk Allocation

Peter Sullivan Anh Khuat

Over the past two decades Africa has enjoyed almost uninterrupted growth; a quarter of its countries achieved a real compound annual growth rate above 5.5% per year.[1] Part of this growth has been attributed to debt-financed infrastructure investment as African governments have sought to close its infrastructure gap and drive economic opportunities in the region. However, Africa governments continue to face increasing challenges in addressing its development gaps of $1.3 trillion per year.[2] The challenges are compounded by diminishing debt capacity and constraints to generate more internal resources due to low savings rates, sizable informal sectors and weak institutional capacity. As demand for development funding grows and supply of domestic resources remain static or declining, how will governments fulfill its pledges to achieve the ambitious "Sustainable Development Goals" ("SDGs" [3])?

Part of the solution is reflected in the seismic shift in investors' attitudes and demand for investments in emerging markets that deliver both economic returns and social impacts. The market trends of "Impact investing", "ESG[4]-focused funds", and "Green Finance" are creating more accessible and flexible sources of liquidity for governments to tap into to finance the needs of SDGs. But how should governments approach these pools of money? Should private capital flows be left to traditional channels in support of commercially-orientated SDGs (e.g., SDG 9 — *Industry, Innovation & Infrastructure*) while governments focus on directing their limited financial resources on socially-minded SDGs and developing policies and enabling environments that maximize the synergies from private sector interventions? Or should governments seek to divert more public resources to attracting private capital flows in support of the broadest possible range of SDGs while implementing the necessary policy and institutional frameworks to realize and maximize the intended social outcomes and benefits?

In this article we will explore how governments can best allocate its finite resources to not only mobilize and direct significant quantum of private sector capital but achieve the maximum economic and social impact for their citizens. We will also identify the key building blocks governments need to adopt to scale and deliver the necessary financing to achieve the SDGs as well as achieving an effective and efficient allocation of risk.

[1] On a compounded annual basis. Source: calculated from IMF data

[2] UNEP Finance Initiative: Rethinking Impact to Finance the SDGs https://www.unepfi.org/wordpress/wp-content/uploads/2018/11/Rethinking-Impact-to-Finance-the-SDGs.pdf

[3] UN Sustainable Development Goals https://sustainabledevelopment.un.org/?menu=1300

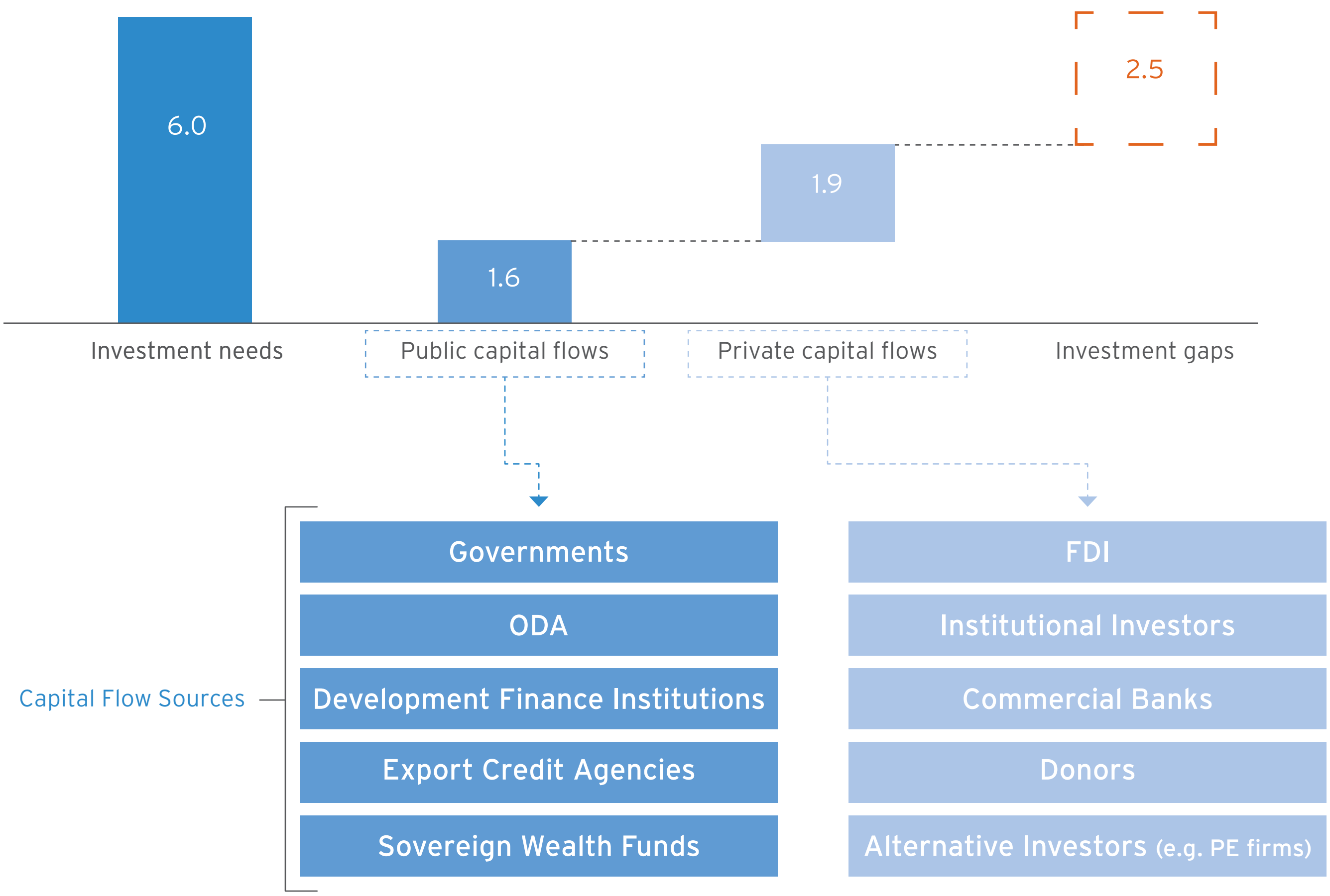
[4] Environment, Social & Governance

The Current State of Play

Africa's SDG funding needs is estimated to be $1.5 trillion per year, much of it in infrastructure, against modest public and private capital flows of approximately $0.2 trillion. This leaves a substantial annual financing gap of $1.3 trillion, more than 50% of the global gap[2]. Mounting environmental, social and economic pressures will further compound the effect, pushing up the already significant opportunity costs in delaying investments into the SDGs.

Annual financing of $2.5 trillion required to bridge SDG funding gaps

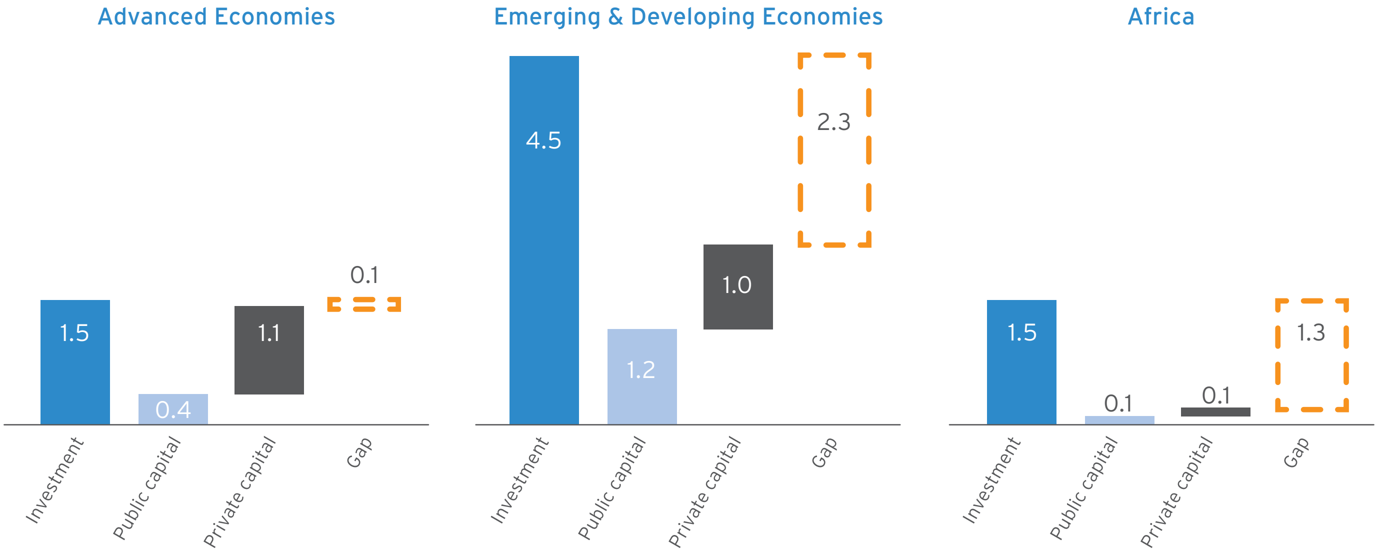
(SDG investment needs and SDG investment flows p.a, $ trln)



Source: UNEP Finance Initiative: Rethinking Impact to Finance the SDGs

Funding gap is particularly large in Africa

(SDG investment needs and SDG investment flows p.a, $ trln)



Source: UNEP Finance Initiative: Rethinking Impact to Finance the SDGs

Public capital flows towards SDG investment in Africa remain limited given the constraints in domestic revenue mobilization. Based on the OECD's assessment of 21 major economies in Africa, the average tax to GDP ratio in 2016 is 18.2%, far below the OECD average of 34.4%[5]. Africa's average tax capacity is estimated at 20% of GDP, the lowest in the world, and almost 10 percentage points below that of OECD countries[6]. This is driven by the developing nature of African economies, the dominance of agriculture in economic activities and a large informal sector. In addition, Africa has the second longest average time to comply with tax payments globally, just after South America[7]. A low tax capacity and inefficiency in tax collection have resulted in perennially low tax revenues in the region, leaving governments insufficient internal resources to finance growth and development.

With limited internal resources, many governments have sought borrowing to bridge the financing gap. Developmental spending has been a major driver of increasing debt levels in Africa over the past decade. However these levels still remain moderate compared to HIPC era in the mid-90's. While we don't think a debt crisis is imminent, the headroom is narrowing for governments to continue relying on borrowing to finance growth and development. In addition, rising public debt has increased the debt servicing burden, which in turns consumes a growing share of tax revenues. Governments will need to strike a balance between meeting development needs and maintaining debt sustainability.

Private capital flows for investments in Africa has historically been constrained by the risk and return requirement. Investors focus on the "headlines" risks that are most associated with the African region, including political instability, corruption, weak institutional capacity, liquidity risk, currency risk and commodity risk, etc. Returns on commercial projects often do not stack up to these "perceived" risks.

Meanwhile, there has been a major strategic shift in institutional investors' attitudes towards ESG investment in recent years. ESG is no longer a peripheral matter, but a fundamental financial and strategic driver of firms' performance. As such, ESG has become a growing mainstream asset class for investors who want to both "do well and do good", and a global opportunity for issuers looking to diversify investor base and tap into an abundant supply of capital. To put this into context, almost 2300 institutional investors with over $80 trillion of assets under management globally have already signed up to the UN-backed Principles for Responsible Investment[8], demonstrating their commitment to invest in ESG, report these investments, and to be active owners by incorporating ESG in their portfolio management practice. In addition, the Green, Social and Sustainability bond market has already reached $498bn of outstandings, with year-to-date issuance of $159bnm, implying a 60% increase versus the

[5] http://www.oecd.org/tax/tax-policy/brochure-revenue-statistics-africa.pdf
[6] OECD estimates, https://www.brookings.edu/wp-content/uploads/2018/10/Mobilization-of-tax-revenues_20181017.pdf
[7] PwC: Paying Taxes 2018 report https://www.pwc.com/gx/en/paying-taxes/pdf/pwc_paying_taxes_2018_full_report.pdf
[8] https://www.unpri.org/pri/about-the-pri

same period last year[9]. Governments should leverage this trend and work with both public and private sector partners to create bankable blended finance structures that fit within the mandates, constraints and risk-adjusted return requirements of institutional investors. With the right structures and incentives in place, significant private capital flows can be deployed to meet the investment needs in Africa.

Government Framework — SDG Financing

In 2018, Citi Research published a Global Perspectives & Solutions Report titled "*UN Sustainable Development Goals: Pathways to success — a systematic framework for aligning investment*" that offered investors a structure on how to allocate capital across the SDGs. While the report was directed at private sector investors, it does provide some key insights to governments on how to best mobilize private sector capital and to allocate their own resources for accelerating progress against development goals.

Policy Imperatives/Enabling Environments

The assessment of investment opportunities takes into consideration a number of factors and variables that will influence the targeted outcomes of a project. One of the principle considerations is the operating environment where the asset is domiciled and how public policy shapes the expected behavior of the key stakeholders including users, owners, regulators, financiers and service providers. Clear and consistent policy setting and implementation by the host government enhances the "predictability" of outcomes and reduces the risks associated with an investment.

Governments must have a clear understanding on how investors view the legal, regulatory, financial and environmental landscapes in the markets where they operate. There are a number of public benchmarks, such as the World Bank's Ease of Doing Business rankings, the Worldwide Governance Indicators and the World Justice Project's Rule of Law Index, that provide comparative insights to the attractiveness of particular markets for investment. Competition for private sector capital is intense and sovereigns must strive to create and maintain the proper enabling environments through accommodative policies that support the targeted outcomes of the SDGs. For instance, developing a robust and reliable regulatory regime for power and providing appropriate tax incentives for financing renewables sources of energy can greatly assist in mobilizing capital for *SDG 7 — Affordable and Clean Energy.*

[9] Dealogic August 2019

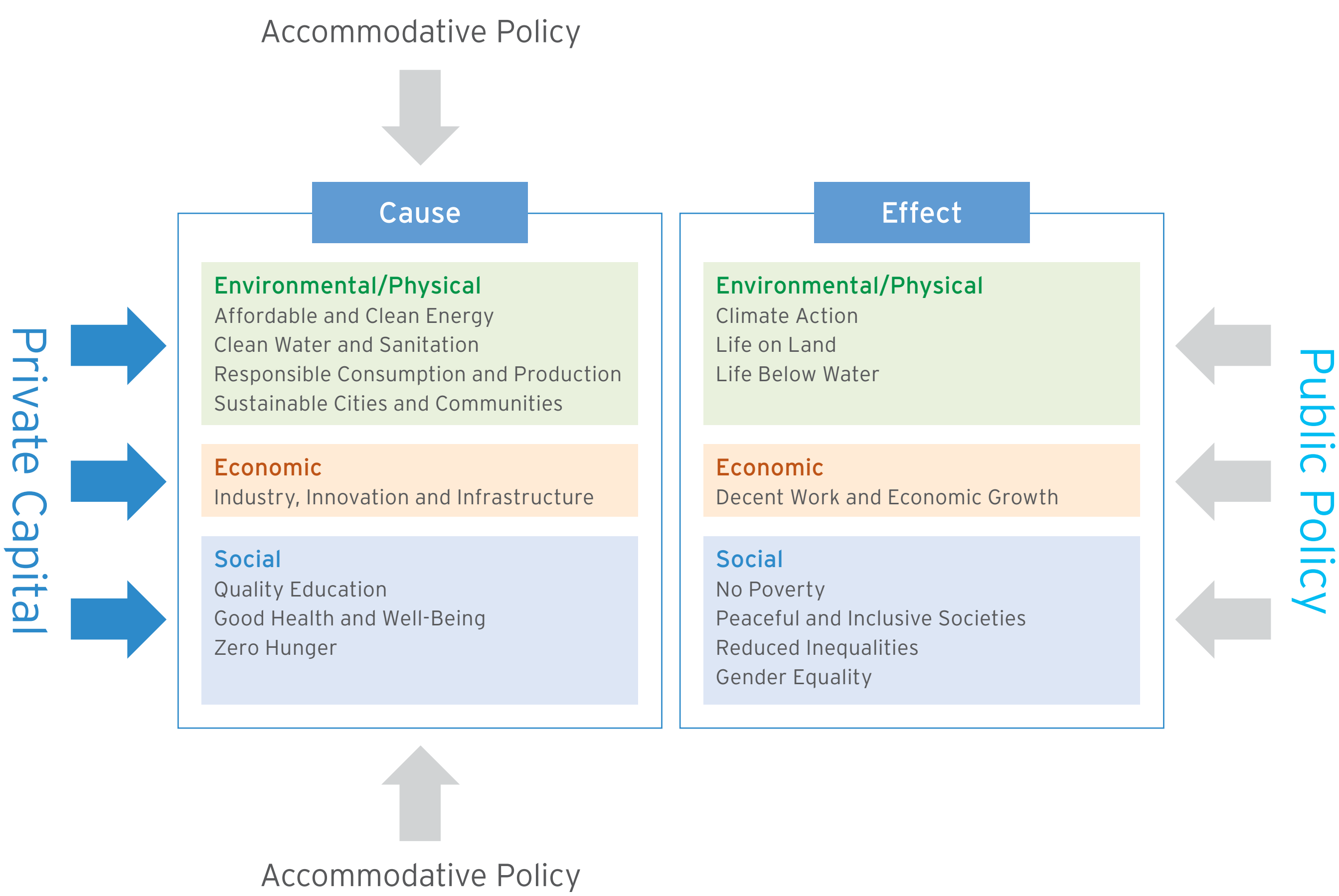
Resources allocation for SDG

Historically, governments have directed their internal resources to more social-oriented sectors where direct financial returns are low and the time horizon for realizing social returns are long. These "social infrastructure" segments, such as education and health, were not sufficiently commercial to draw in private sector capital and, given the importance to the fundamental well-being of the country, dictated that the government provides the necessary funding for these segments. Conversely, private capital was allocated towards more commercially-viable projects with faster realization and higher absolute quantum of profits, e.g., the mobile telephony build-out in Africa.

However given the major strategic shift in institutional investors' attitudes towards ESG investment in recent years as highlighted previously, social impact is gaining greater currency with investors and influencing investment decisions. This shift should result in greater levels of capital being deployed by private sector investors into non-traditional sectors such as water and sanitation and health.

If we take a deeper dive into specific SDGs and split the goals by focus and by cause/effect, it starts to become clearer which sectors of society are best placed to advance each of the goals. As per the diagram below, private capital appears better placed to invest in the causes, with the right accommodative policies, while public policy can have more impact on the 'effects'.

This framework then suggests a more efficient allocation of private sector capital and public sector resources in support of the specific SDGs. However beyond *suggestion*, there is a still a yawning gap in funding requirements and accommodative policies alone will not attract the capital needed. Governments must transform and harness their financial resources to incentivize and mobilize greater scale of private capital.



Source: Citi's GPS report – *"UN Sustainable Development Goals: Pathways to success – a systematic framework for aligning investment"*

Transition from "Debt" to "Equity"

Traditionally, governments have sought to finance infrastructure and associated projects through monetizing future cash flows or, in other words, borrowing today and paying back tomorrow from either direct or indirect revenues generated by the project. Sovereigns cannot afford to continue to finance its investments in the country through debt given the size of funding required and the government's relative debt capacity and sustainability. Governments need to transition from providers of debt to suppliers of equity.

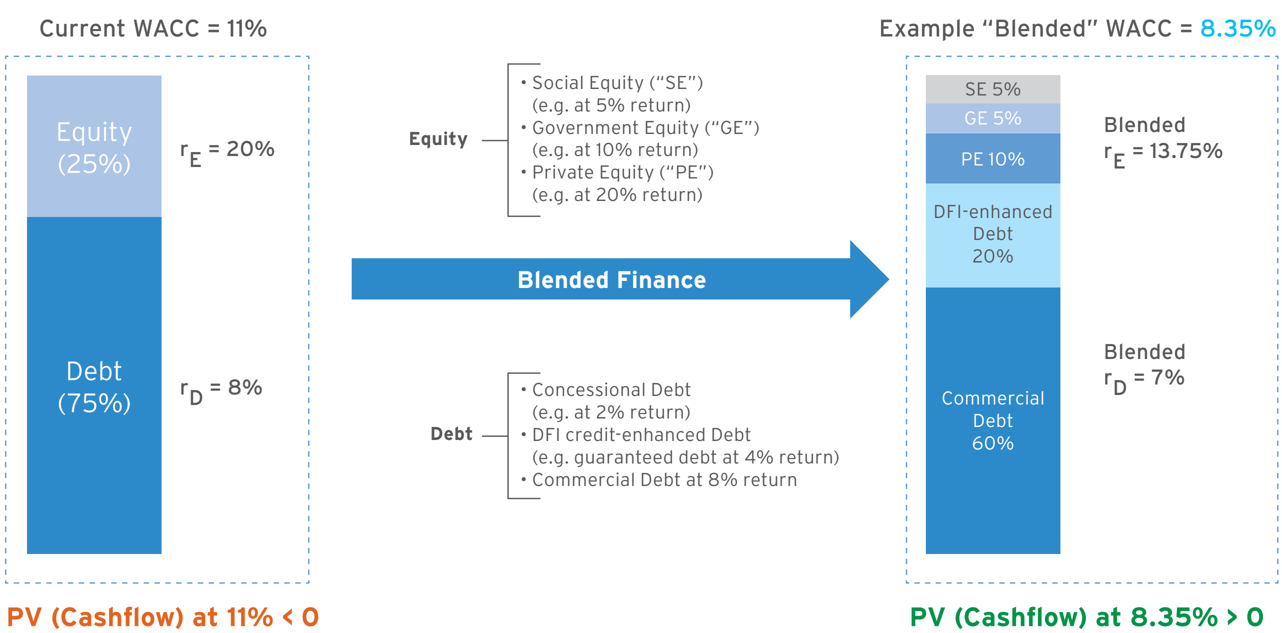
As an equity provider, governments will continue to have a degree of ownership and control in projects and be guided by the societal impact of such projects. They may need to forego a degree of financial returns in order to leverage the necessary capital to fully fund the asset. Lastly, government must be willing to absorb the first loss attributed to the project and work with its developmental partners, including official donors and multilateral development financial institutions, to share in the equity risk of the project. The transition does require certain trade-offs but it also represents the potential to achieve leverage in the range of 1 to 8 as demonstrated by recent blended finance structures.

Blended Finance Structure

High potential opportunities for Blended Finance exist where the composition of the structuring components make economic sense but certain investment barriers prevent investors from achieving necessary commercial returns. By introducing new components or enhancing existing ones, a bankable deal can be created by reconfiguring the risk-adjusted returns at each tranche of the capital structure.

Blended Finance can take many forms where public and private sector capital are co-invested in a structure with differentiated risk absorption and return dynamics. The most basic form and the best illustration of a Blended Finance solution is to reflect the risk absorption and return tranches within the capital structure of an asset (*see diagram below*). Within the capital structure, the equity providers absorb the first losses of the asset up to their respective level of capital contribution. Once the equity capital is depleted in terms of loss absorption, the debt providers begin to incur losses subject to their seniority within the capital structure. The returns dynamic is reverse whereby the most senior debt providers are paid out first with the most junior equity contributors receiving the remainder of the free cash flow waterfall. Debt providers will be repaid from the revenues generated by the asset in the medium to long-term and relinquish any further claims on the revenue generated by the asset once the debt has been repaid. Subsequently, the equity holders will then realize the long term returns (if not having already received dividends following the debt pay-outs).

Illustration of Blended Finance Application



Key Building Blocks for Blended Finance

Alignment of mandates

In order to effectively bring stakeholders of blended finance together, it is important to understand each party's mandate and obligation, and respect these mandates. Donor governments, recipient governments and development finance institutions (DFIs) are guided by developmental mandate but the prior ones seek concessional returns while DFIs also aims for financial sustainability — i.e. commercial returns, especially in their private sector operations. Non-governmental-organizations (NGOs) and other philanthropic donors are development-oriented and can be flexible in providing capital at concessional terms or as grants to meet their objectives. Public investment funds, including pension funds and sovereign wealth funds, prioritize preserving and enhancing the value of public funds but sometimes with an additional development mandate. Other institutional investors are driven by commercial and fiduciary mandates of ensuring certain commercial returns thresholds. Public investment funds and other institutional investors tend to have long-term investment horizon and therefore seek to invest in assets of the same nature. This is different from commercial banks who are also driven by commercial motives but only able to participate in short to medium term investments given their regulatory and capital constraints. Successful blended finance structures do not change the motivation of these development or commercial actors but seek to align them by creating investment opportunities that yield both development and commercial returns.

Risk Allocation

The key to this alignment of interests is the allocation of risks and returns between financing parties, i.e. leveraging concessional finance to mitigate risks (e.g. guarantees or first loss absorption) and match the adjusted risk with the given returns requirement of commercial finance.

Risk allocation is about deconstructing an asset or project's risks into various categories, and determining which actors can most efficiently manage each category. A project or asset's risks can be broadly disaggregated into the following categories: political & regulatory risks, operational & commercial risks, credit risks, market risks, and impact & development risks. Operational & commercial risks are best managed by private sector while political & regulatory risks or impact & development risks are best managed by the public sector. Credit risks and market risks could be shared among public and private stakeholders. Who manages which type of risks is driven by the expertise of each stakeholder and the available tools they have at hand to mitigate these risks. For example, political & regulatory risks could be managed by DFIs who could offer political risk insurance or partial risk guarantee. Or impact & development risks could be managed by NGOs who have the expertise and could offer technical assistance or capacity building to ensure any positive environmental, social or governance impact is maximized.

Risk absorption – "Equity" vs "Debt"

Driven by different mandates and objective, and therefore different risk appetite and returns target, each financing actor in a blended finance structure would possess a different risk absorption capacity. Such risk absorption capacity, in turns, determines how each actor should participate in a blended finance structure, i.e. via which financial instrument. Governments have historically played an instrumental role both as debt and equity provider for the financing of SDG related projects and assets. However given their developmental priorities, governments are often willing to stand last in the capital structure waterfall, taking higher risk at low concessional returns. As such, a shift towards more equity-like participation by governments, for example in the form of first loss capital, will be most effective in catalyzing private sector capital. In particular for projects or assets that are commercially viable when given the right capital structure, equity-like contribution will also help alleviate the large financing burden on governments. This, in turns, eases the pressure on government's debt sustainability.

Impact assessment & disclosure

For blended finance to be scalable in order to bridge the significant SDG financing gap, information transparency and efficiency are the key prerequisites. Every investment decision made is influenced by investors' assessment of an asset or project's past performance, precedents of similar investments, and expected returns from the asset or project. It is therefore critical to define, monitor, assess and disclose data and information on the commercial and social returns of SDG projects. At the preparation stage, stakeholders should agree on performance and result metrics and adopt a common monitoring and evaluation framework. During execution, financial flows, commercial performance and development results should be tracked to assess the effectiveness and efficiency of blended finance operations. There should be dedicated resources for monitoring and evaluation; and information should be made publicly available and easily accessible to allow for transparency and accountability.

OECD Blended Finance Principles

The above building blocks are aligned with a number of blended finance principles put forward by the OECD's Development Assistance Committee (DAC)[10], namely "Focus on effective partnering for blended finance" and "Monitor blended finance for transparency and results". The principles also point to the importance of anchoring blended finance use to a development rationale, designing blended finance to increase the mobilization of commercial finance and tailoring blended finance to local context. In particular, the DAC emphasizes that blended finance should be deployed to address market failures; overcoming barriers to market formation but subsequently should be withdrawn once functioning markets have been established. This implies that blended finance should not become a static or permanent approach and there is a need for commercial sustainability in the structure to allow for a clear exit strategy of concessional finance. This means local context should also be embedded in the financing framework and that blended finance should be complemented by governments' reform efforts to promote an enabling environment and deepening of the local financial market.

[10] https://www.oecd.org/dac/financing-sustainable-development/development-finance-topics/OECD-Blended-Finance-Principles.pdf

Conclusion

The investment requirements to fulfill Sustainable Development Goals remain substantial (estimated at $6 trillion[2] globally.), against a modest pool of available public sector capital (estimated at $1.6 trillion[2] globally). The below chart extracted from the Citi's GPS report – "UN Sustainable Development Goals: Pathways to success – a systematic framework for aligning investment" provide a sense of the relative scale of investment needed across all SDGs. It has become clear that private sector investment is critical in bridging this gap and scarce public sector resources should be optimized to enable such private capital mobilization.

However for countries in Africa, where the shortage of SDG finance is most acute – driven by governments' internal resources constraints, the risks – whether real or perceived, are unfortunately most elevated. Blended Finance could play an instrumental role in addressing this with the reallocation of risk and blending of return. Governments must be prepared to contribute the first loss absorbing tranche of the capital (i.e., equity) to induce both public and private capital contributions in Blended Finance structures. Addressing the challenge of closing the funding gap for the SDGs requires adopting multi-tranche capital structures that efficiently and effectively allocates the appropriate levels of risks and returns to the various capital providers. Blended Finance structures allows continued control and ownership of projects by the public sector but bring these projects to financial close and increase the efficiency, effectiveness and volume of the limited public resources at hand.

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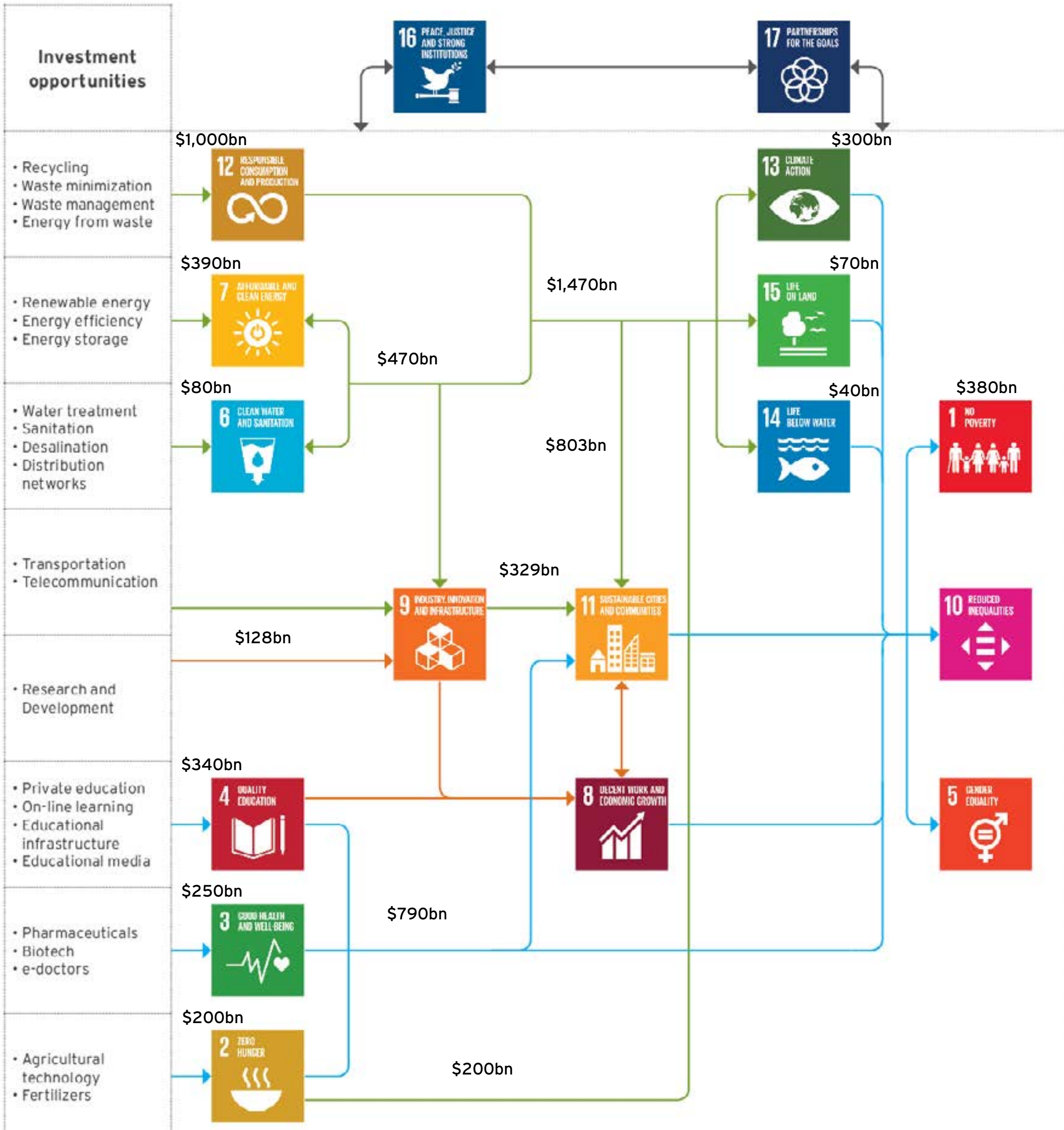
It has become clear that private sector investment is critical in bridging this gap and scarce public sector resources should be optimized to enable such private capital mobilization.

Pathway to Success: SDGs Investment Requirements



Source: Citi's GPS report – *"UN Sustainable Development Goals: Pathways to success – a systematic framework for aligning investment"*

Improving Public Sector Collections

Gary Schneider **Kunal Bist**

New domestic and international receivables tools will improve the experience of governments and public authorities collecting funds globally. Integrated and automated presentment, payment and reconciliation simplifies the end-to-end receivables journey while also reducing complexities for citizens and companies initiating and executing transactions.

Governments around the world receive millions of transactions every day to maintain their country's fiscal balance. Incoming payments — known as receivables — come from businesses and citizens paying their taxes, workers contributing to pension or social security plans, and, in many countries, students needing to repay student loans to public authorities. While most of these payments are initiated in the country where the government is based, increasing international migration means a growing portion now comes from overseas.

For payers, sending money to the government has often been cumbersome and, in some instances, expensive. When making domestic payments, individuals may be restricted to using dominant local payment methods, including domestic ACH and direct debit. Yet international payments are even more challenging and costly. Often payers must send funds via expensive wire transfers or through money transfer services and incur further costs when converting payments to the local currency required by the government.

This inconvenience is more apparent today due to the introduction and rapid growth of new payment methods. Many of us no longer pay using cash or checks and instead rely on cards or alternative payment methods such as mobile wallets. Against this backdrop, the processes and instruments required to make payments to government entities are seen as overly complicated and in need of modernization.

Governments are motivated to make it as easy as possible for citizens and corporates to make payments to them, improving the citizen experience. Likewise, it is in the interest of citizens to repay their student loans and for workers to make contributions to their social security plan. Moreover, many governments want to eliminate the expensive and time-consuming manual, paper-based processes that are often associated with existing payment methods.

However, tackling challenges associated with domestic and international payment has been difficult. Historically, there has been no solution in which multiple components could be managed via a single platform, including multiple, flexible payment methods, domestic accounts in other jurisdictions, foreign exchange, and the provision of digital information to facilitate straight-through-processing and automatic reconciliation. As a steward of taxpayers' money, governments cannot absorb the costs often associated with an offering that gives greater flexibility to remitters.

Leveraging bank capabilities

Financial institutions with global footprints often have strong local currency account services and industry-leading FX and transaction capabilities. Some also have a proven track record of partnering with best-in-class fintechs to deliver innovative solutions such as electronic invoice presentment and payment platforms, artificial intelligence (AI) and machine learning (ML)-driven reconciliation tools, and gateways offering alternative payment methods.

Such banks are therefore well placed to create a solution that fulfills the needs of government and public authorities worldwide when they collect from domestic and international payers. However, until recently, no bank has been able to bring together the disparate range of products required to create such a solution.

The goal in developing solutions for domestic and international payments is straightforward: to improve every element of the payment lifecycle by digitizing it from end-to-end and integrating every component — from invoice presentment, to payment, to reconciliation, including the high friction FX component.

In practical terms, such a receivables solution would replace a paper-based invoicing process with a digital invoice, issued using electronic invoice presentment. The payer interacts with a custom-built payment gateway to view the invoice in either local currency or the currency in which it was issued. They are then offered a wide variety of payment options, affording them the ability to pay using familiar instruments in the country where they are a resident or where the government is based, in addition to direct debits, debit or credit cards and alternative payments, such as mobile wallets. Again, the citizen or company can pay the amount due either in local currency or the currency in which the invoice was issued, as FX is fully embedded into the solution.

Costs associated with the payment, including FX, are borne by the payer. However, these are completely transparent; they have the choice regarding which payment method to use and therefore how much they want to pay. An instant FX conversion capability is embedded in the solution to give the remitter the choice of currency to pay in, using market rates with a spread pre-agreed with the government or public authority receiving the payment. At the same time, the flexibility for the payer is achieved without increasing costs or risks for the entity making the collections, receiving exactly the amount they expect, at the time they expect.

Crucially, the payment is automatically associated with the paying individual or company, making reconciliation more straightforward. The solution deploys technology developed with a cloud-based software company that leverages AI and ML technology and the bank's assets. It increases the efficiency and automation of the cash application process of matching open invoices to payments received.

Financial institutions with global footprints often have strong local currency account services and industry-leading FX and transaction capabilities.

A wide range of applications

The solution described above is not fanciful. It has already been implemented for both domestic and international receivables solutions for a number of clients. One Asia Pacific-based government department needed to collect student loan repayments from people who had since emigrated overseas. Another government authority is working on making it easier for its expatriate community to easily make contributions to their pension plan, even if they are living and working in a different country and currency.

The cross-border collection solution has facilitated both objectives, allowing residents of other countries to pay in their preferred currency while ensuring government agencies receive exactly the amount invoiced or requested in their functional currency — all through one, central platform. Furthermore, by digitizing payments, the authorities no longer face the challenge of reconciling checks and the number of forgotten payments is sharply reduced.

Another solution currently being developed enables a government department to issue visas to people in dozens of countries worldwide, for travel to its country. Currently, applicants must fill in a form online and then pay local currency in cash at a bank branch before scheduling an appointment. These funds are deposited in the Embassy's account and used for local expenses. However, there is a significant volume of paperwork involved and it is inconvenient for applicants to go to a bank to initiate the payment in foreign currency. Using this payment solution (available in dozens of countries), applicants can simply go online to the embassy website, choose how they want to pay and in what currency, and schedule an appointment immediately.

The solution is also being deployed for a tax collection authority to enable it to broaden the range of payment options it offers beyond credit and debit cards to include popular alternative payment methods. This solution encompasses both cross-border and domestic collections. Other potential applications for the solution include foreign students paying for higher education, local licensing and permitting, and potentially the payment of fines.

Lower costs and greater flexibility

By bringing together multiple capabilities and solutions, it is possible to overcome many of the challenges faced by governments and transform receivables management.

The payers' user experience is significantly improved, as they now have flexibility in the currency they can pay in and how they make payments, using a wide range of options including alternative payment methods such as faster or instant payments. By doing so, the payment experience becomes more seamless while also reducing the frictions traditionally inherent in cross-border payments.

> Today, many businesses, governments and other entities struggle with the difficulties associated with domestic and cross-border receivables.

From the perspective of the government or public entity requesting a payment, the solution offers multiple benefits. They can easily schedule a payment request at a specific time and ensure that they receive the appropriate amount. Overall costs are lower as a result of reduced bank fees and the elimination of costs associated with handling cash and checks. Creating a domestic look and feel for international citizens and companies also increases the likelihood of timely payments.

Perhaps most importantly, administrative work associated with invoicing and reconciling payments is significantly reduced. The government entity simply specifies the amount they want to collect, at what time, and sends it to the recipient of the invoice via the solution. The bank manages the rest of the procedure including reconciliation using AI and ML, making the domestic and global collection tools effectively a turnkey solution.

Today, many businesses, governments and other entities struggle with the difficulties associated with domestic and cross-border receivables. Making payments as seamless as possible — for both the payer and receiver — must be a priority for banks, as this friction point will only increase as globalization accelerates. In line with Citi's aim to be the digital bank of choice for clients, the bank is committed to fulfilling clients' receivables needs and eliminating complexities wherever possible by leveraging industry-leading FX and payments capabilities as well as fintech partnerships.

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The ecosystem evolution has seen pockets of excellence rather than a consistent exponential growth in the region.

Mobile Money Momentum: The Race Towards Interoperability, Interconnectivity and Inclusivity Across Sub Saharan Africa

Dustin Ling **Esther Chibesa**

For the past ten years, Kenya has led the way as the preeminent mobile money success story. The spread of mobile money lifted one million people out of extreme poverty from 2008 to 2014 — nearly 2% of the population[1]. Mobile money has proven it can serve as a powerful tool to help tackle SDG 1 and many others given the interconnected nature of the global goals and the crosscutting benefits of digital financial inclusion. In 2017, over 70% of adults in Kenya had used mobile money, a figure larger than those who hold bank accounts, only about 55% of adults[2].

At the same time, mobile money solutions and the ecosystem for it has not taken shape quickly enough across east, west and central Africa, a region in critical need of poverty reduction given the poorest and most vulnerable communities in the world live south of the Sahara Desert. The ecosystem evolution has seen pockets of excellence rather than a consistent exponential growth in the region.

In the last year we have seen ecosystems players — both public and private — drive the acceleration of modernizing and maturing the mobile money model at a faster pace and beyond Kenya. We will focus on key mobile money developments and pin point opportunities and challenges across Sub Sahara Africa, while outlining what stakeholders/treasurers of multinational organizations need to consider from an interoperability and connectivity perspective.

[1] Suri & Jack 2016)

[2] UNSGSA

Expansion of mobile subscriptions and mobile money ecosystem

In 2018, there were 456 million unique mobile subscribers in Sub-Saharan Africa of the one billion plus population — representing a subscriber penetration rate of 44%. Sub-Saharan Africa is the fastest growing region, with a CAGR of 4.6% and an incremental 167 million subscribers over the period to 2025 (Source: GSMA). Half of the additional subscribers will come from five markets; Nigeria, Ethiopia, Democratic Republic of Congo (DRC), Tanzania and Kenya. In particular, Ethiopia's new government has signaled the easing and opening up of foreign participation in its 80 million strong economy, which will attract investors in the mobile money and fintech communities. The total regional subscriber base will exceed just over 600 million by 2025, representing around half the population with West African States continuing to lead. Across the wider region, mobile data usage will grow four-fold by 2024.

Figure A. GSMA Mobile Economy Statistics (Source: GSMA Mobile Economy Sub-Saharan Africa 2019)

	2018	2025
Unique mobile money subscribers	456 million	623 million
Mobile subscription penetration Rate	44%	50%
Mobile internet users	239 million	483 million
Mobile internet penetration rate	23%	39%
Smartphones % of total connections	39%	66%

Mobile Money Matures from Kenyan beginnings to Regional African ambitions

Mobile money is the technology that allows people to receive, store, and spend money using a mobile phone device. Based on a combination of simplicity, convenience, and safety, mobile money has risen worldwide and become a real alternative to bank accounts and payment services in several emerging and frontier markets (Source: Citi GPS Report).

Sub-Saharan Africa remains the nexus for mobile financial services and given the urgent need to innovate for progress. In 2018, there were 395 million registered mobile money accounts in the region, representing nearly half of total global mobile money accounts. The region is now served by more than 130 live mobile money services, many of them led by mobile operators, and a network of more than 1.4 million active agents. Today, more than 60% of the adult population has a mobile money account. Nearly 9 in 10 registered mobile money accounts are in East and West Africa. (Source: GSMA The Mobile Economy Sub-Saharan Africa 2019).

Citi's Mobile Money Model attempts to forecast future mobile money growth in the emerging markets based on key variables that will determine the speed of adoption. Markets with substantial upside for mobile money growth represent areas where these mobile money applications challenge the status quo. We look at factors such as cash usage, alternative payment methods, banking penetration, demographic change, and the regulatory and institutional environment. These are the inputs we used:

- Mobile money success drivers
- Cash dependency
- Alternative payment options e.g. credit cards
- Unbanked population: Percentage of people with bank accounts;
- Demographics: change in urban population mix
- Regulatory and institutional support for mobile money adoption

Figure B. Mobile Money Model (Source: Citi GPS Report 2019 Bank X — The New New Banks)

Country	Cash Dependency	Absence of Alternative Payment Options	Unbanked Population	Demographics (Internal Migration, Youth Population)	Regulatory & Institutional Support	Mobile Money Future Potential
Ghana	High	High	High	High	High	High
Kenya	Medium	High	Medium	High	High	Medium
Nigeria	High	High	High	High	Low	Medium/High
South Africa	Medium	High	Medium	High	Medium	Medium
Tanzania	High	High	High	High	Medium	High
Uganda	High	High	High	High	Medium	High

Multilayered Interoperability: Regulatory Reforms & Institutional Partnerships

Over the past year, several countries have taken steps to accelerate mobile money adoption and, by extension, financial inclusion. These include regulatory reforms and infrastructure partnerships initiated by the private sector. As markets develop and mobile financial services deepen and mature, development organizations, industry bodies, regulators or industry actors themselves may embark on similar interoperability initiatives. (Source: IFC)

A. **Interoperability between mobile money providers for wallet-to-wallet (P2P) transactions:** This gives users the ability to transfer between mobile money accounts held with different mobile money providers (MNOs) and other financial system players. Tanzania led the way in 2014, but several countries across the region, including Kenya, Rwanda, Nigeria and Ghana, have now launched interoperability projects and use cases.

B. **Interoperability between mobile money providers and banks (facilitating B2C and C2B):** This is a use case that will significantly increase volumes moving between mobile money and banking systems. A key next step in this journey will be the implementation of innovative solutions to integrate mobile money platforms with the wider financial ecosystem, including sub regional context with common currencies, such as ECOWAS. This has and will ultimately solve for the ability to facilitate institutional payments to mobile wallets and vice versa across the region, may it be a business, government or development organization.

Various approaches exist around central switching infrastructure for the industry to enable nascent use cases to scale, including merchant payments and efficient connections to domestic and international financial system players. This is already happening at sub-regional and country levels across multiple layers and combination of ecosystem players.

Mobile Momentum across the Sub Saharan Africa Ecosystem

- **West Africa:** For example, the eight countries of the West African Economic Monetary Union (WAEMU) are building an interoperable payment system that will connect 110 million people to more than 125 banks, dozens of e-money issuers, and more than 600 microfinance institutions. This initiative is led by the Central Bank of West African States (BCEAO), which is the central bank regulator for the common monetary zone, and part funded by the Bill & Melinda Gates Foundation.
- **Tanzania:** In 2014, Tanzania became the first country in Africa to introduce multilateral interoperability including between mobile money services, making Tanzania one of the first countries in the world with an industry-agreed interoperable market for mobile financial services. The policy allows instant transfers between customers of different providers — a move said to widen access and increase competition. Regulations state operators must connect services to the National Switch — the platform already used by other finance providers to ease fund transfer and expand customer access to banking infrastructure such as ATMs. In 2020, the Bank of Tanzania plans to go live with an interoperable, instant payment switch that will include the MNO and fintech community and their digital wallets, another initiative that is supported by the Gates Foundation.

- **Kenya:** While M-Pesa continued to mature its model in Kenya with interoperability with banks, in 2017 we also saw the launch of the real-time money transfer service called PesaLink. The interbank money transfer platform transacted Sh81 billion in its first 17 months. The platform is offered by Integrated Payment Services Ltd (IPSL), a subsidiary of the Kenya Bankers Association (KBA), and can handle person-to-person transfers. PesaLink was set up to rival telcos' mobile money service currently dominated by Safaricom's M-Pesa. KBA manages the switch and facilitates direct transfers without going through intermediaries such as M-Pesa, Airtel Money and Orange Money. While it is still scaling, it provides a credible integration for any local or crossborder player that would like to pay into digital wallets that are active on the switch. (Source: Business Daily — Kenya)
- **Uganda:** Mobile network operators (MNOs) in Uganda also launched a scheme in their own market when in 2017, the Central Bank of Uganda directed telecoms to implement mobile money interoperability, which would enable cross-network and cross-border mobile money transactions. MTN and Airtel hold a combined 90 percent market share of mobile subscribers in Uganda. Unfortunately, however, this service (cross network money transfers) has since June 2019 been unavailable, with some of the key MNOs having technical failures.
- **Zambia:** In June 2019, the Bank of Zambia also confirmed it is working on a project to link up all mobile money service providers in the country. The project is being undertaken in collaboration with the Zambia Electronic Clearing House Limited (ZECHL) and implemented under the National Financial Switch (NFS), an electronic platform (system) which will link all mobile money operators in a bid to increase financial inclusion among the over 60% unbanked Zambians. The NFS is being established under the National Payment System with the aim of linking with other payment systems without undue restrictions. (Source: Zambia Reports June 2019)
- **Democratic Republic of Congo:** The Banque Central du Congo (BCC) will be launching in 2020 an instant payment switch, interoperable in nature, and will require the participation of mobile wallet providers mandatorily. This is critical given the complexities of operating in Congo, which is largely unbanked, and has minimal telecommunications and infrastructure for its widely dispersed population.

Emerging Risks to the Mobile Momentum and the Ecosystem

While we see great momentum in interoperability across Sub Saharan Africa, we also see some potential risks to the ecosystem.

- **Cote D'Ivoire:** One example, is in Côte d'Ivoire, where the introduction of a tax on mobile money transactions threatens to reverse some key gains and may limit the impact of mobile money on the country's 2040 vision and delivering on the SDGs. Electronic money issuers wholly owned by mobile operators and licensed by the Central Bank of West African States (BCEAO) face a 7.2% tax on turnover introduced in January 2019, an action which could slow down the effort to develop B2C and C2B use cases and to achieve ubiquity amongst users This is a tax specifically levied on the mobile sector as other e-money issuers and mobile money providers that are not promoted by a mobile operator are not subject to the tax. This renders mobile money transactions disproportionally higher in cost than similar transactions processed by banks and other financial institutions. (Source: GSMA West Africa 2018 Mobile Economy)

There is also a general recognition that much of the existing bank-focused infrastructure is not optimal for mobile money and is not fit for purpose in the new mobile money world. So we have seen key ecosystem players take the lead in launching a cross continental payments infrastructure.

The Launch of Mobile Wallet Interoperability (MOWALI)

In an effort to solve interoperability across the region, MTN and Orange, two of Africa's largest mobile operators and mobile money providers, launched a joint venture to enable interoperable payments across the African continent. This service was launched in conjunction with the GSMA, which will support its development. Known as Mowali ('mobile wallet interoperability'), this service is open to any mobile money provider in Africa, as well as banks, money transfer operators and other financial services providers, who are encouraged to join the Mowali ecosystem to promote digitization of payments across the financial sector.

Mowali has the potential to drive down the price of services offered to lower-income customers with its pan African footprint allowing for economies of scale and a cost-recovery commercial model. It could shape the future of the mobile money ecosystem in the region by creating a common mobile money acceptance brand with the potential to connect fintechs, banks, merchants and other ecosystem players to nearly 400 million mobile money accounts across Africa. The ambition of Mowali is to build on this success, helping Africans to gain access to best-in-class digital financial services through the convenience of their phone (Source: GSMA — Mowali)

Each of these models is different in terms of the paths followed, the rules agreed, the business models chosen and the technologies that connect participants. The one thing they all have in common is that they represent a multi layered approach to interoperability. Rather than a third-party aggregator facilitating transactions or an uncoordinated array of bilateral contracts setting terms between pairs of providers, providers chose to balance competition and collaboration to make digital payments more widely accepted, convenient and useful for customers. (Source: CGAP)

These developments put the ecosystem firmly in the scaling phase — with plenty of room to grow and develop further use cases to service different markets as needed. The use cases range from facilitating the disbursement of loans to agriculture and commodity based industries, to micro-insurance, to micro lending.

Access to consumer and small business credit has been a problem that traditional banks have been unable to so efficiently and effectively solve. A remarkable example of how digital finance solves this problem, is Safaricom's Fuliza product in a mature market like Kenya. The proposition has evolved away from purely sending money, to creating stickiness by providing additive value. In early 2019, Safaricom launched the "Fuliza" product — a Big Data and AI-driven proposition that essentially calibrates a credit score and potential loan limit for willing borrowers. In its first six months of operation, this platform lent out Shs81billion (approximately USD785 million) to 10.2 million customers (roughly half of the MPESA subscriber base). Safaricom's Fuliza disburses about 12 overdrafts per second. This example shows how maturing propositions will evolve into full scale digital banks, whether or not they are recognized or licensed as such. In that sense, while the rest of Africa is scaling the payments proposition away from cash, it is clear that the future is wide open to a properly recognized digital bank. In a market where the regulatory regime has the provision of capital, the ownership of the client relationship (the digital wallet) and the ownership of various risks clearly stacked towards the issuer of the instrument, it is only a matter of time before these entities simply own the tacitly unspoken path towards being truly digital banks.

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Sources and References:

Source 1: The long-run poverty and gender impacts of mobile money 2016. Tavneet Suri and William Jack 2016

Source 2: UNSGSA Igniting SDG Progress Through Digital Financial Inclusion, UNSGSA, Better Than Cash Alliance, UNCDF, and the World Bank 2018

Source 3: Citi GPS Report — Bank X — the New New Banks 2019

Source 4: IFC Partnership for Financial Inclusion: Interoperability Rules 2014

Source 5: CGAP East African Interoperability: Dispatches from the Home of M-Pesa

Source 6: Business Daily: Pesa Link moves Sh81 billion in first 17 months 2018

Source 7: GSMA: Unlocking mobile money interoperability and merchant payments across Africa through Mowali

Source 8: GSMA Mobile Economy Reports — Sub saharan Africa and West Africa 2018

Proper use of public commercial assets has been a core component of Singapore's strategy to move the economy from developing to developed status in a single generation.

Putting Public Assets to Work

Dag Detter David Walker Laura Gibson Hanan Amin-Salem

Governments around the world face pressure on their finances as well as a need to diversify their economies. By reassessing the potential of the commercial assets on their balance sheet, most notably real estate, they have the opportunity to bring about transformative change.

When Singapore and Jamaica achieved independence in the early 1960s, both island nations had roughly the same population, life expectancy, and GDP per capita.

Today they are poles apart. Not only has Singapore's population grown three times faster than Jamaica's, its per capita GDP is 10 times bigger, and its average life expectancy is 9 years longer. Against all odds, the tiny Asian nation with no significant resources, not even basic utilities such as water or the capacity to generate electricity, has thrived thanks to innovative and bold thinking.

There are many reasons to explain why Singapore performed so much better than its peers over the succeeding half century, including the development of human capital and a strong rule of law, but a major source of Singapore's economic attainment was the creation of robust economic institutions and the effective use of public assets.

Proper use of public commercial assets has been a core component of Singapore's strategy to move the economy from developing to developed status in a single generation. Singapore's founders introduced an innovative and unorthodox separation of economic policy from the management of public assets. At a time when free market capitalism was seen as essential to rebuilding the post-World War II global economy and creating full employment in many countries, Singapore opted to go the other way and recognized that a government, just like a corporation, has a balance sheet with both assets and liabilities that need active management. Most other governments around the world, many endowed with plentiful natural resources, kept managing their economies as if they only consisted of a current cash budget and a stock of public debt. The founding fathers of Singapore incorporated portfolios of assets inside public wealth funds; they delegated to professionals the responsibility for managing public commercial assets in holding companies that introduced private sector discipline and used governance tools borrowed from the private sector.

Professionalizing public financial management

Today, most governments around the world have delegated public management of several core financial operations to separate professional institutions, including government debt to the debt management office and interest rates to the central bank.

Similarly, some governments have delegated the management of surplus revenue from exports to sovereign wealth funds (SWFs). These SWFs — often in resource rich countries — have succeeded in generating wealth for society and future generations, by investing surplus revenue in well-developed international stock markets or in real estate in stable developed markets.

In many instances, high commodity prices — most especially of hydrocarbons — have benefited commodity exporters over the past decade both directly, by supplementing tax revenues with income from exports, and indirectly, through the dividends from the SWFs. In addition, public sector balance sheets have been bolstered by the continuous growth in the value of the SWFs. The proceeds have been used to modernize infrastructure and create employment.[1]

[1] Fasano-Filo and Iqbal, 2003

However, not all commodity exporting countries have been sufficiently far-sighted to create SWFs; and some SWFs have fallen victim to political interference or mis-guided investments. Moreover, many developing countries have not had the benefit of commodity riches to underpin their development via SWFs.

Both these countries, and commodity exporting countries in the wake of commodity price declines, are recognizing the need to diversify their economies, create additional government revenue and strengthen government balance sheets. The best response would be to take a leaf out of Singapore's book and reassess the potential of the other commercial assets on the government balance sheet.

Public commercial assets

Apart from natural resources, the public sectors of many countries around the world own a huge variety of assets, including airports, ports, utilities, banks, and listed corporations. In most instances, by far the biggest asset is a large portfolio of real estate, the value of which is several times that of all other assets. Excluding public parks and historical heritage sites, these government-owned commercial real estate assets account for a significant portion of each country's land. But governments often know about only a fraction of these properties, most of which are not visible on government accounts.

Operational assets owned at the national level are sometimes called state-owned enterprises (SOEs). Non-commodity SOEs, although less valuable than the real estate segment, play a fundamental role in many economies because they often operate in important sectors on which the broader economy depends – such as electricity, water, transportation, and telecommunication. For these reasons and others, the importance of well-governed SOEs cannot be overstated.

The size of the prize

The value of public assets is twice that of global stock markets – and twice global GDP, according to estimates from the IMF. But unlike listed equity assets, public wealth is unaudited, unsupervised, and often unregulated. Even worse, it is almost entirely unaccounted for. When developing their budgets, most governments largely ignore the assets they own and the value those assets could generate.

Since modern accounting was invented about 700 years ago, private sector corporates have had to develop high-quality information for decision-making and for stakeholders to be able to hold them accountable.

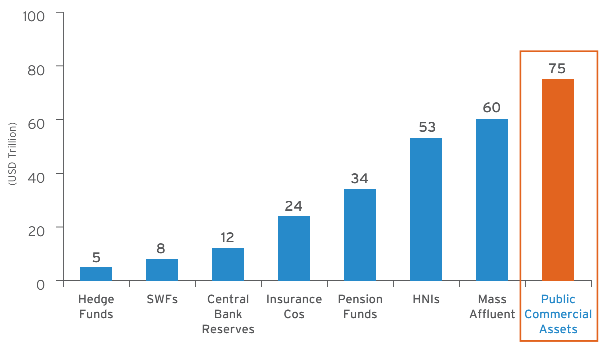
Listed stocks are constantly scrutinized by armies of analysts, brokers, investors, regulators, tax authorities, and media. The development of corporate governance systems and accounting standards has not only enabled capital market development but contributed mightily to the creation of the wealth we all enjoy today (see Box 1). But the same progress has not been made by governments.

Two asset types

Operational	
Transport	• Roads (toll-roads) • Rail/Subway • Airports
Utilities	• Energy • Water
Financial Services	• Banks • Insurance companies • Mortgage providers

Real	
Buildings	• Used (by public entity, or third party) • Unused
Land	• Developed land • Undeveloped land

Value per asset segment



Creating fiscal space and strengthening the public sector balance sheet using public wealth could be a critical tool in strengthening public finances and generating growth. Professional management of public assets could annually generate extra revenue equivalent to 3% of GDP each year, according to the IMF.

Box 1: Benefits of modern accounting and public financial management

Adopting accounting standards similar to those used by private companies and based on accrual accounting — which records income and expense when incurred rather than when cash changes hands — would be an important first step toward implementing a modern financial — management system. The International Public Sector Accounting Standards Board recommends accrual accounting.

Most OECD countries now report on an accrual basis and show a balance sheet — which reports the value of assets and liabilities at a point in time that yields important information about financial health. But the majority still budget and appropriate on a cash basis, which means the balance sheet sits outside the budget process and for that reason is largely ignored.

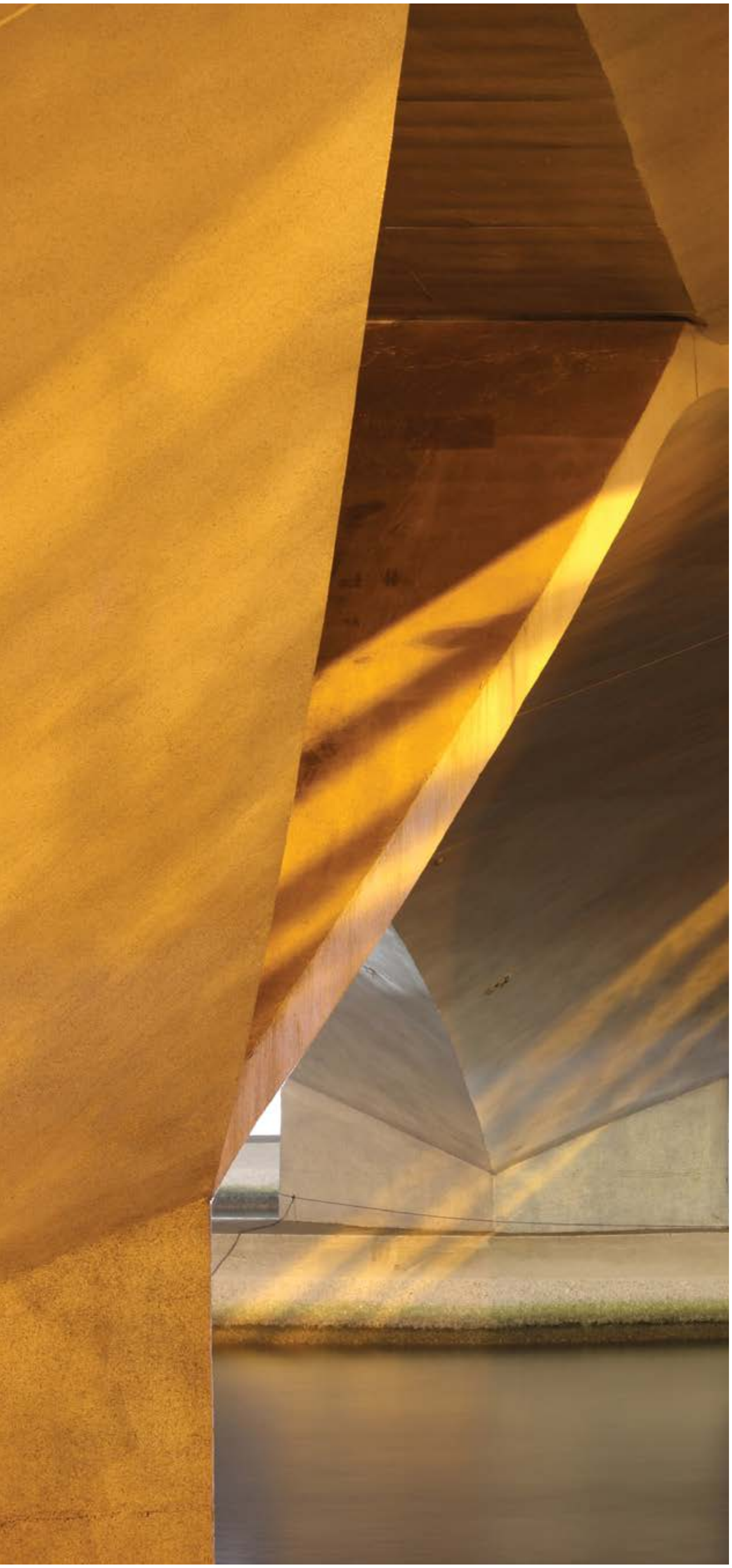
The absence of a proper balance sheet, fully integrated into the budget, distorts understanding of financial status because governments focus mainly on debt, without recognizing the value of the physical assets, using measures such as "net debt" or "debt/GDP" as key targets. That can lead to bad decisions — such as privatizing a water system to generate funds to finance an infrastructure investment rather than borrowing.

With proper accounting, governments would focus on net worth — the value of assets less liabilities, the measure used in the private sector, instead of on debt alone. With net worth as the official key target, an increase in debt to finance an investment is matched with an increase in assets. This would then create incentives to invest in government-owned assets rather than encouraging wholesale privatization — which may be for the wrong reasons and at the wrong price.

A focus on debt alone has also led to governments embracing much-criticized financial techniques such as public private partnerships (PPP), where the main advantage is keeping debt off the government's balance sheet but often at the cost of an undue transfer of public wealth to the private sector partners.

Poor or risky accounting practices can shake, and ultimately reduce the confidence and trust felt by society. Accounting affects us all, as becomes apparent whenever there is a financial crisis, be it for banks, corporates or governments.

So far, only New Zealand has introduced modern accounting and integrated its balance sheet with the budget, using it as a tool for its budgeting, appropriations, and financial reporting. Since the public sector reforms in the mid-1980s, New Zealand has achieved and maintained significantly positive net worth, where most comparable governments, such as Australia and Canada, or larger countries such as the United Kingdom and the United States currently report a negative net worth.



Institutionalizing the management of public commercial assets

Increasing reliance on debt to finance public expenditures has led governments to professionalize public debt management in a drive to minimize the costs of central government financial management without incurring excessive risk. Similarly, independent central banks were created to oversee interest rates with the aim of keeping prices steady while politicians set broad economic policy goals.

In 1971, the newly independent state of Singapore created the Monetary Authority and delegated management of the asset side of its public sector balance sheet. Its commercial assets therefore became the management responsibility of professionals inside independent public wealth funds (see Box 2).

Goh Keng Swee, the deputy prime minister of Singapore at the time, explained why Singapore chose private sector discipline and governance tools borrowed from the private sector to manage commercial assets: "One of the tragic illusions that many countries entertain is the notion that politicians and civil servants can successfully perform entrepreneurial functions. It is curious that, in the face of overwhelming evidence to the contrary, the belief persists."

Since then Singapore's wealth management funds — Temasek and the Singapore Government Investment Corp (GIC) — have helped fund the economic development of the city-state, while the Housing Development Board (HDB) has provided almost 80% of its citizens with affordable and well-maintained public housing.

GIC is the sovereign wealth fund, the vehicle that helped professionalize management of the foreign reserves of the government, which is invested in financial assets outside of Singapore. But the public sector also needed a vehicle to manage its portfolio of domestic operational assets in a way that is recognized as the accepted international standard of asset management. In the private sector that vehicle is a corporate holding company with internationally accepted corporate governance and accounting standards. In the public sector the professional management vehicle for commercial assets is called a national wealth fund (NWF). There can be no professional management without such a vehicle. In Singapore the NWF is Temasek.

The joint market value of GIC and Temasek significantly exceeds Singapore's public liabilities and is more than 1.7 times the annual GDP of the city state. As a result of this strong balance sheet, Singapore has consistently received the top credit rating — AAA — from the three main credit-rating agencies. Both funds deliver a significant surplus to the government.

Box 2: Sovereign vs national wealth funds

A **Sovereign** Wealth Fund (SWF) is primarily concerned with managing reserve liquidity, typically investing in securities traded on major mature markets.

SWFs are designed to optimize a portfolio by trading securities to achieve balance between risk and returns.

An example is GIC of Singapore.

A **National** Wealth Fund (NWF) is an asset manager, concerned with active management of a portfolio of operational assets.

NWFs seek to maximize the portfolio value through active management including the development, restructuring, and monetization of the individual assets.

An example is Temasek of Singapore.

While policymakers in many countries have focused on managing debt for decades, they have largely ignored the question of public wealth. In most countries public wealth exceeds public debt: managing that wealth better could help to reduce excess indebtedness while providing the basis for future economic growth.

The longstanding debate between those who argue for privatized economies and those who champion nationalization misses the point: what matters is the quality of asset management. When it comes to public wealth the focus should be on yield rather than ownership. Improvements in public wealth management could generate returns greater than the world's current combined investment in infrastructure. Improvements in the transparency of public wealth management could also help fight corruption.

Professionalizing the management of public commercial assets

Government ownership has historically given rise to complex governance and regulatory risks that often prevented SOEs from creating optimal value for the economy. Inefficient SOEs and other public assets, such as real estate that remains underdeveloped or mismanaged, create a drag on the economy and crowd out private sector initiatives and foreign direct investment.

In the worst case, SOEs are used for political patronage or self-enrichment, which erodes the trust of citizens, international investors, and potential partners. Moreover, government ownership is often decentralized along line ministries with an inherent conflict of interest between the ministry's ownership and its regulatory responsibility,[2] which can add to the suboptimal use of public resources. Governance of public commercial assets is further constrained by a lack of transparency and adherence to international accounting standards.

[2] OECD, Corporate Governance in MENA, 2019

While most developed economies have moved to a centralized management of assets, the best results have been achieved when assets have been consolidated inside an independent holding company, at arms-length from short-term political influence — as occurred with Temasek in Singapore (see Box 3) or Solidium in Finland.

Box 3: Temasek: The iconic state holding company

Temasek was established in 1974 as a separate holding company that was an active investor and shareholder in commercial enterprises and real estate to enable the government to maximize long-term shareholder value. Temasek consolidated all of the commercial assets owned by the government: existing holding companies and state-owned enterprises; previously existing monopolies and utilities that had recently incorporated and still resided within the respective ministries; and some real estate.

Temasek was used to separate the regulatory and policymaking functions of government from its role as a shareholder of commercial entities.

Since its inception, total shareholder return, measured in Singapore dollars, has averaged 15% per year.

Many of Temasek's holdings are now world-leading companies within their sector such as the telecom operator Singtel, the largest company by market capitalization on the Singapore stock exchange; DBS Bank, the largest in Southeast Asia; and PSA International, one of the largest port operators in the world.

Other well-known brands within Temasek include Singapore Airlines and ST Engineering, one of Asia's largest defense and engineering groups, as well as CapitaLand, one of Asia's largest real estate companies.

Temasek's political insulation is reinforced by professional boards and a risk management system that puts responsibility and accountability solidly with the board of each holding. The board of Temasek, as well as those of its holdings, consists of independent non-executive directors recruited on merit. Almost half of both management and staff are non-Singaporeans. Transparency and clear objectives are also strengthened by Temasek having a credit rating.

Once an asset is inside a holding company and subject to proper accounting standards, a comprehensive business plan will help put it to its most productive use and make clear the opportunity cost of using the asset in a sub-optimal way.

Implementing hands-on active asset management will allow an economy to commercialize, optimize, and rationalize its commercial portfolio to the benefit of society. Commercialization of public assets requires that a comprehensive business plan reviews all assets, including real estate, that are unused, used by third parties, or directly used in the provision of public services, but that can either be reallocated or used to generate ancillary income.

Optimization requires economies of scale be achieved across the entire portfolio, which includes rationalization — or sales of mature assets to generate funds to reinvest in higher-yielding assets.

Monies generated from rationalization activities should be first made available as a source of funding for the achievement of the business plan and then other investments such as infrastructure and housing. Alternatively, the yield could be used for economic development in other areas of benefit to society, such as schools or hospitals.

National wealth funds enable a shift in state assets toward infrastructure

A NWF acting as a holding company for public commercial assets offers a politically palatable way to shift state assets towards infrastructure in a way that could achieve three goals: increasing funding of infrastructure, putting infrastructure decisions on a sounder economic footing, and reducing government's direct and politically-motivated access to those assets.

NWFs can help governments manage projects and encourage FDI by providing a window to international best practices and hands-on experience and management. With the same capacity to manage commercial risk as any private sector partner, any PPP would be on equal terms with any private sector partner thereby significantly reducing, or even eliminating, the risk of an undue transfer of value to the private sector, one of the common criticisms against PPPs.

SWFs are in a financial position to invest in large infrastructure projects, but their expertise is financial rather than structural and operational and an important question is whether they have the competence that successful infrastructure investments require. National infrastructure investment can be boosted and managed better by letting an NWF shift or sell state assets in other commercial holdings and invest in infrastructure consortia in their own country. In doing so, three measures that reinforce each other are important.

First, ***an NWF that invests in infrastructure should solely focus on profitability***. Its job is to manage the value of operational assets, ensure economic soundness, and try to find structural deals that increase profitability. For example, many roads and railroad investments can become profitable if the increase in land value around these investments is internalized. An NWF is in a position to buy land surrounding an investment, making it profitable, or the NWF may already own the land through another of its holdings.

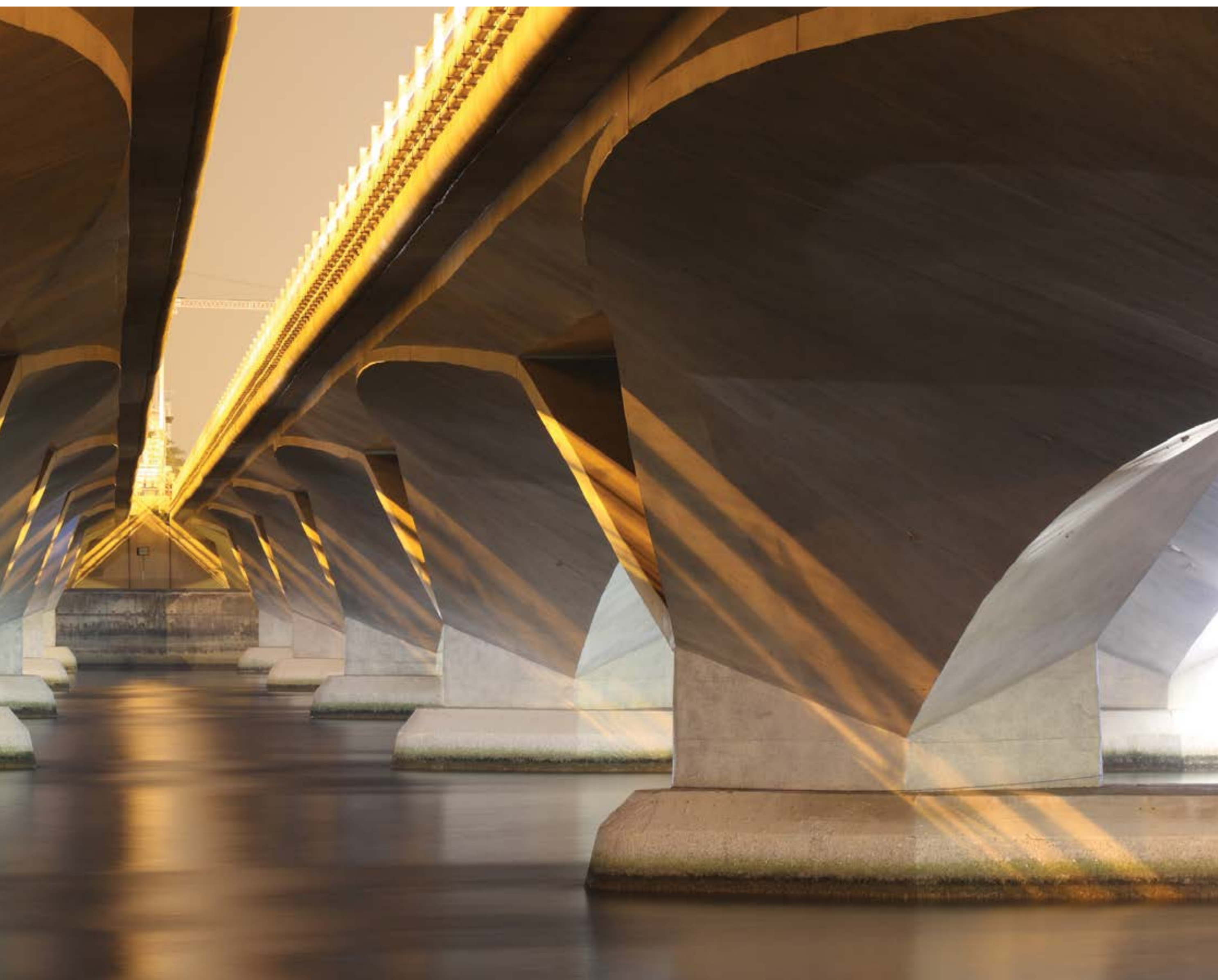
Using an NWF to shift public assets toward infrastructure also helps politically. Governments often keep state enterprises merely because there is no strong political belief in privatization. But a somewhat independent NWF that can sell excess real estate or non-essential SOEs and reinvest the proceeds in profitable infrastructure would not be seen as relinquishing net wealth to the private sector, but merely shifting wealth within its portfolio.

Second, ***infrastructure projects that are not commercially profitable, but have a positive net social value, should be paid for by state or local governments in the form of "payments for use."*** For example, a consortium owned by the NWF alone or together with private owners may make a contract with the state or a local government in which the consortium builds a road and the state commits to pay an annual usage fee that can vary depending on road accessibility and other quality parameters. This is already a common model in many PPP projects. For example, governments pay a PPP consortium annually for provision of a road or railroad often in relation to the quality the PPP achieves. That focuses governments on the value of a service to the consumer, rather than entangling them in difficult investment decisions that also offer temptations for corruption.

Third, ***an independent institute should continually evaluate the social profitability of infrastructure services that governments purchase***. The evaluation should use internationally accepted tools to determine how to factor in environmental and social values. While the recommendations of such an independent institute probably would not be binding, they would make the economic rationale for various projects more transparent and impose a political cost on governments that invest in bridges to nowhere.

There are a number of examples of governments using consolidated public commercial real estate assets inside a holding company to properly develop portfolios — both by segment and by location. Geographically it is most common at the local government level — as when the City of Hamburg (Germany) expanded by developing its derelict urban harbor area into one of the most attractive residential and commercial areas of the city — complete with kindergartens, primary and secondary schools, universities, and a world-class concert hall. Also, in the 1990s, economic malaise and high unemployment impelled Copenhagen's leaders to get creative. A professionally managed public wealth fund consolidated the city's old harbor area and a former military garrison on the city's outskirts. Beyond transforming Copenhagen's harbor district into a highly desirable area, income from the fund enabled the government to build a transit system without dipping into tax revenues.

Segmental holding companies have such operating assets as airports, postal systems, highways, ports, and railways. They all have real estate assets that could generate substantial value if managed professionally in independent holding companies. For example, Hong Kong, aware of its fiscal limitations, set up MTR, which found a way to build a subway and railway system the size of New York City's without using a single tax dollar. To do so MTR developed the real estate adjacent to its stations. London Continental Railways in the United Kingdom led the remarkable transformation of the abandoned area around King's Cross Station into a hub for both tech start-ups and tech giants, such as Facebook and Google. The site also attracted notable academic and cultural institutions and has hotels, residential, and recreational areas.



Impact on the sovereign rating

Lastly, improved management of government assets may also have a positive impact on a country's sovereign credit rating, which affects its cost of borrowing. Clearly, the monetization of public assets generates receipts that can be used to pay down existing debt, to reduce the need for new borrowing or to build the government's financial buffers. A reduction in a government's debt load, or slowdown in its pace of accumulation, and an increase in government financial assets directly improve key metrics the three global rating agencies use in their sovereign rating models.

In addition to assisting sovereign credit ratings, more efficiently managed assets would contribute to a higher rate of real GDP growth, generate dividends or other cash flows for the government budget, and lower operating costs, all a major benefit to society.

To many developing countries around the world, the stability and wealth of Singapore might appear unachievable. But simply by looking at public commercial assets in a fresh way and putting in place the structures for professional, independent management, all countries have the potential to optimize the value of these assets to the benefit of the economy and all citizens. It is almost 60 years since Singapore and Jamaica gained independence and set off on starkly different development tracks; there is no reason why Jamaica cannot pull level with Singapore in the decades to come.

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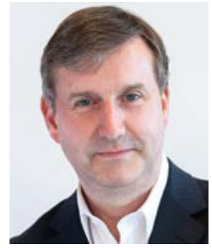
Principal, Detter & Co



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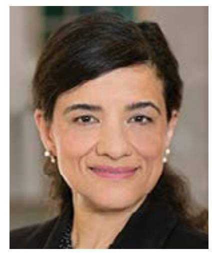


Hanan Amin-Salem
Global Public Sector, Citi

A reduction in a government's debt load, or slowdown in its pace of accumulation, and an increase in government financial assets directly improve key metrics the three global rating agencies use in their sovereign rating models.

Berne Union statistics show that since 2014 approximately 20-30% of annual export credit insurance business have consistently been allocated to public sector projects.

New Trends in Official Agency-Backed Financings for Public Sector Borrowers

Georgi Yordanov

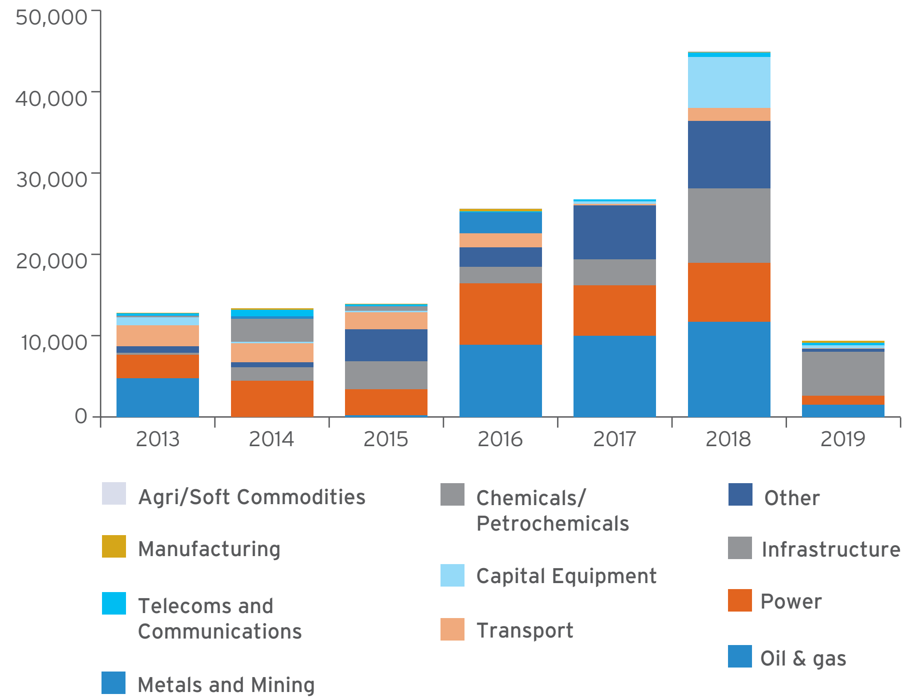
Nazli Edgu

The last decade has seen a significant shift in infrastructure spending by the public sector in emerging and developed markets alike, while sustainable lending has become the key driver for multilateral organizations, developmental financial institutions (DFIs) and export credit agencies (ECAs) globally. Public sector borrowers continue to use official agency-supported financing as a major source of funding for projects in infrastructure, energy and other key strategic sectors; but the overall focus of official agencies is gradually moving to sustainable development while supporting global trade flows.

Official agency support can come in many forms for sovereign borrowers. While some multilateral organizations like the World Bank provide general budget financing support, most DFIs tend to focus on financing specific infrastructure projects, either by direct lending to public sector borrowers or through guarantee or credit insurance programs to mobilize commercial bank market funds for long-term financing of projects. There are also ECAs that promote their respective countries' exporters or contractors through guarantee programs they provide on a long-term basis. In addition, there are an increasing number of blended finance packages offered by various governments for developing countries, where export credit is combined with tied aid or concessional offerings.

Berne Union statistics show that since 2014 approximately 20-30% of annual export credit insurance business has consistently been allocated to public sector projects. As of the end of 2018, sovereign export credit volumes reached $45 billion, with a significant portion financing power and infrastructure projects.

Industry Breakdown — Export Finance for Public Sector Borrowers ($ millions)



Source: TXF

ECA-backed export credit has been an established source of financing for public sector borrowers since the late 1970s but the demands of the market have evolved over time. There is now a much larger variety of support programs from ECAs, ranging from untied loans to support for non-recourse project finance structures. A multitude of financial institutions provide funding on the back of official agency support. Recently, institutional investors have shown increasing interest in the asset class, enabling public sector borrowers to achieve attractive terms and abundant liquidity to finance their projects.

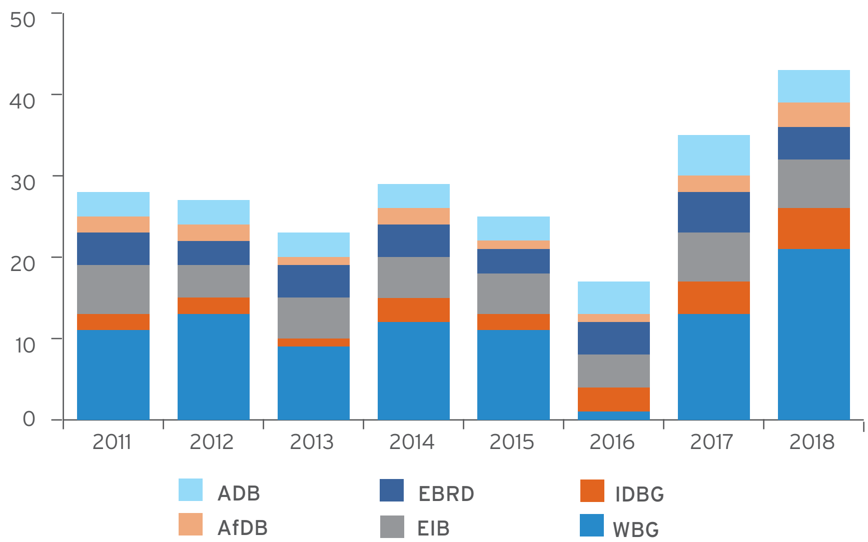
Over the past decade, certain ECAs have differentiated themselves with more flexible content rules based on national interest rather than origin and sourcing of equipment; some ECAs have lowered the content thresholds for a project to be eligible for their guarantees. Trends in ECA finance continue to evolve as global trade flows change in direction. Compelling governments to design new export finance products and enhance existing ones to support their exporters facing challenges in various markets.

Sustainable Lending

Climate change and social developmental goals have gained significant emphasis in multilateral agencies' lending and guarantee programs. Recently the world's six largest DFIs released their Joint 2018 Report on Climate Finance. These DFIs climate financing commitments grew to an all-time high of $43 billion in 2018, a 60% increase since the adoption of the 2015 Paris Climate Accords. The World Bank Group (WBG) drove most of the climate finance growth in 2018, increasing its climate finance commitments to $21 billion, up 60% from 2017. Other multilaterals such as Asian Infrastructure Investment Bank, Asian Development Bank or African Development Bank have aligned their strategies with the United Nations 2030 Agenda for Sustainable Development to focus on renewable energy projects or supporting sustainable cities, among others.

The World Bank is driving the increase in climate finance almost single-handedly

(Total MDB climate finance commitment. USD billions, 2018)



Sources: 2018 Joint Report on MDB Climate Finance and Moody's Investors Service

The green, social and sustainability bond market continues to grow in size ($465 billion as of end-2018) and investor interest in green bonds is strong. A significant portion of official agencies (supranationals and ECAs) regularly issue green bonds and this asset class has now become mainstream, with AUM in ESG funds rising 60% from $665 billion in 2012 to $1.05 trillion in 2018. This alone explains the tremendous resource behind sustainable lending and how public sector institutions can raise funds for various climate change and social impact-focused projects.

Citi is fully committed to environmental finance and supports the official agency community and public sector borrowers in their efforts to reach their sustainable development goals. We are one of the top underwriters of green bonds, supporting multilaterals and export credit agencies with their issuances, as well as sovereign issuer clients. Citi actively supported the Paris Agreement and is one of the 16 leading global and regional financial institutions which participated in the UN Environment Finance Initiative pilot project to implement the Task Force on Climate-related Financial Disclosures appointed by G20's Financial Stability Board. Citi continuously works towards its environmental financing target of $100 billion, and had achieved $95.3 billion of this by the end of 2018.

Broadening Supply Chains: EPC+ F model

One important trend in infrastructure projects is Engineering, Procurement and Construction + Finance (EPC+ F), where public sector tenders are awarded on the basis of EPC contractors bringing financing alongside their technical offering. There are increasing ties between EPC contractors, their sub-contractors, ECAs and financial institutions to bring together the optimal financial structure for public sector buyers. The EPC+ F model is becoming standard for infrastructure, healthcare, transportation and power projects.

At the heart of the EPC+ F model lies the growing internationalization of supply chains, especially for large-scale infrastructure projects. For example, a railway project in Africa could attract EPC contractors from Europe, the Middle East or China. While their supply chain could potentially include dozens of different companies providing engineering services or equipment from various geographies as well as another dozen suppliers of rolling stock from around the world.

Export credit agencies are increasingly aware of this trend and would like to support their SME exporters in particular, which have relatively limited access to international markets, by linking them with EPC contractors and relaxing their content definitions to provide financing support. We have recently seen UK Export Finance successfully organize supplier fairs that invite British manufacturers from a specific sector to increase UK export content in the supply chain of a specific project. These kinds of efforts directly connect exporters to EPC contractors or project sponsors, augmenting the supply chain offering from a single country in a specific project, and allowing that country's ECA to offer their guarantee for the financing of a larger portion of the project cost. Export Development Canada and Italy's SACE have also embraced this trend with their "pull" and "push" strategies, offering financing incentives to international companies to increase trade with their exporters and broaden their supply chain to include Canadian/Italian products. Similarly, Danish ECA EKF has introduced "shopping line" credit for strategic buyers to finance purchases from Danish companies, while Swedish export credit agencies EKN and SEK have joined forces with the Swedish aid agency Swedfund to help Swedish exporters connect with EPC contractors to increase Swedish sourcing in large infrastructure projects globally. Export-Import Bank of Korea has followed suit with its recent announcement that it is devising a similar financing product to EDC's and SACE's pull/push program financings, which are not usually tied to a single contract financing.

Citi has excellent links to ECAs and EPC contractors alike and supports efforts to help public sector borrowers maximize their access to ECA-backed financing to achieve optimal terms for the financing of landmark sovereign development projects across the world.

Framework Borrowing Solutions

Various governments' debt management offices face the challenge of ensuring attractive financing terms for a multitude of projects undertaken simultaneously. This results in multiple work streams for public institutions to tender, execute and monitor a series of financings for projects in sectors ranging from transport to healthcare, infrastructure to power.

A good solution for debt management offices or ministries of finance could be to streamline these financings using framework debt structures. These structures can be in the form of a common terms agreement for greater efficiency in loan documentation negotiations or a series of loan agreements, replicable in structure, to finance projects sourced from different countries, each benefiting from a different ECA's support. Another new trend is for sovereign borrowers to use the services of advisor financial institutions or third-party procurement consultants to analyze the content and sourcing of large-scale projects to help governments identify financing options that could be relevant and choose the most efficient solution.

Any public sector entity with a large pipeline of projects or that regularly taps the ECA financing market would be a good candidate to consider framework financing solutions. It is now common for Middle Eastern public institutions to use this method to tap support of multiple ECAs simultaneously. A number of African governments have also established framework facilities or credit lines to efficiently borrow from financial institutions with official agency support.

Citi is a market leader in establishing framework financing solutions for public sector clients and has implemented them for a number of public sector borrowers, especially for projects in oil and gas or infrastructure sectors.

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Conducting Sovereign Liability Management: An Indispensable Step to Building Up Economic Strength

Anna Corcuera **Joyce Lam**

In recent years we have seen a number of new sovereigns join seasoned players in raising funds on the international capital markets, where they have taken advantage of low cost of funds to invest in their growing economies. As a result, foreign currency debt in emerging and frontier markets has risen to new levels. Mature economies can provide valuable best practices to newcomers with a hands-on approach to optimize sovereign liabilities. This guidance can help new issuing sovereigns manage debt repayments across economic cycles and reduce risks related to changing economic climate, natural disasters or financial market risks.

We observe that many Liability Management (LM) exercises tackle a small portion of a country's outstanding debt, and over the long term may contribute to a positive impact on sovereign ratings. Therefore, LM exercises are important and should be part of all sovereigns' debt management best practices as they provide significant risk reduction to emerging market countries with increased exposure to domestic and international markets. Citi is a market leader in Sovereign LM, a product offering Citi often incorporates as a parallel solution when assisting sovereigns raise new funds in the international capital markets. Increasingly popular LM Strategies include proactively extending the average life of the debt profile and opportunistically addressing upcoming short term maturities before unexpected market dislocations occur. The application of regular LM exercises has created a track record of enhanced debt management practice in-country, and a sovereign's improved perceptions with international bond holders.

1. Sovereign LM exercise: a risk management tool to strengthen macroeconomic policies

Growing emerging economies have so far been able to access local and international markets more frequently to complete their funding needs. This has raised their levels of government debt relative to GDP and relative to their exports receipts. The ability to service the related cost of debt effectively becomes increasingly important to maintain macroeconomic stability.

Any government is exposed to several risks that may have direct influence on the cost of their debt service. On a global scale, shifts in international markets can cause increased volatility in the exchange rate, drive terms of trade shocks, or significantly move commodity prices, all of which is outside the influence of an individual government. At a domestic level, countries can be affected by changing interest rates, inflation rates, or be exposed to more systemic shocks driven by a specific industry, such as the banking sector. Any of these risks can expose the vulnerabilities a sovereign faces and translate into stress when it comes to debt repayment. The perception of stress by external market participants can in turn lead to restricted funding access for a government, which in worst cases, may end up using its international reserves to service debt repayments, further weakening its macro stability.

However, these risks can be preemptively addressed through the adoption of regular liability management transactions that can easily be executed opportunistically on smaller outstanding debt portions in a country's government debt portfolio. These operations can in turn have positive effects on the fiscal profile, help fortify the domestic financial system, and create a positive reinforcement that supports the macroeconomic fundamentals of any emerging market economy. These types of operations also ensure the sustainability of servicing debt and appropriately manage its related risk.

It is worthwhile to note that regular LM transactions alleviate the need to do so under stress situations. Waiting to execute an LM operation until it is absolutely necessary, rather than taking an opportunistic view, defeats the positive effect of regular executed LM operations. Executing an LM under stress may lead to elevated refinancing costs, as investors will understand that the government, at that point, may not have any alternative funding options.

2. Identifying risks covered by regular LM operations

The risks sovereign debt management offices need to take into account relate to the total stock of debt, its maturity and currency composition, as well as its interest rate composition. External and domestic shocks can exacerbate these risks associated with a government's debt portfolio.

Below is a list of the most common challenges sovereign debt management may seek to address with an LM operation[1]:

Risk	Description
Interest Rate Risk	Higher interest rates increase the cost of debt. Increases in interest rates occur when fixed rate debt is refinanced, or when interest rate changes occur on floating rate debt. Short term and floating rate debt is traditionally considered riskier than long term, fixed rate debt.
Exchange Rate Risk	Changes in exchange rates may increase the servicing cost of foreign denominated debt. Measures of exchange rate risk include the share of domestic currency debt as percentage of a government's total debt, and the ratio of short term external debt to international reserves.
Refinancing Risk	This measures the ability to refinance maturing debt under current market conditions and takes into account investor appetite for a country's government bonds. Refinancing risk is typically a major concern for countries with volatile and/or rapidly deteriorating economic indicators, lower credit rating, perceived poor governance, and high political risk, as well as for highly indebted countries and countries under financial distress.
Liquidity Risk	Refers to a situation where the volume of liquid assets diminishes quickly as a result of unanticipated cash flow obligations and/or a possible difficulty in raising cash through borrowing in a short period of time.
Credit Risk	Traditionally reflected in a country's sovereign credit rating and the sovereign credit default swap (CDS) spreads that reflect market concerns. These indicators are difficult for debt managers to control; however, they determine respective bond yields and borrowing costs.

[1] Extracts from the IMF Policy Paper, *A Primer on Managing Sovereign Debt Portfolio Risks*, April 2018

Tailored LM operations can address the above mentioned risks. Below is a selection of the most common operations:

Debt Exchange Offers are used to either extend the debt maturity profile of a government, or to consolidate a smaller series of outstanding bonds into a larger benchmark series.

Refinancing is applied, as an example, to high-coupon legacy 30-year government bond issuances, which can be refinanced with lower-coupon 30-year, or long dated funding, current market conditions permitting.

De-dollarization strategy is applied to reduce foreign exchange risk: it consists in repurchasing US Dollar (US$) denominated notes funded with proceeds from domestic debt issuances. This strategy has become increasingly common for investment grade sovereigns with a developed US$ and local funding curve, such as Peru or Uruguay. As domestic funding markets have become more robust in size and product mix, the de-dollarization strategy has grown largely due to innovative local capital markets products (such as Citi's GDN program) created to allow for international investors' ability to hold domestic securities through international clearing systems, such as Euroclear or the Depository Trust Company (DTC).

3. LM operations add institutional strength to the debt management framework

Regular LM operations contribute to a solid debt management framework. It builds upon the institutional strength of the sovereign debt management office, improving its credibility to apply sound policies that foster debt sustainability and fortify the public debt profile of a country.

Institutional strength in debt management operations signals to local and international market players the effective application of a strong rule of law, as well as a political willingness to ensure prudent policies are applied over the length of the economic cycle. Both require increased transparency and communication with market players, which in turn generates a higher degree of confidence towards the sovereign.

Sovereigns that employ active liability management practices often benefit from increased trading liquidity, as market investors position themselves in anticipation for the next LM transaction. In the medium term, these operations also improve market players' perception of the government, leading to an improved sovereign credit rating which decreases the cost of its future funding operations.

4. Case study: Ecuador's first liability management exercise

In the first half of 2019, Citi accompanied the Republic of Ecuador on its first sovereign liability management operation.

Since the election of the Moreno Government in 2017, the Republic of Ecuador has undertaken steps to strengthen its economy and ensure inclusive growth. Next to social and fiscal reforms, the Ministry of Finance is working on solutions to reduce fiscal pressures stemming from the increased cost of servicing its government debt. The debt management office was also keen to tackle potential refinancing risk stemming from upcoming external government debt maturities due in 2020.

The Government of Ecuador undertook its first ever LM addressing both of these issues. The aim of the exercise was to extend the maturity profile of the existing government debt portfolio while taking advantage of the current market rally. The opportunistic timing of the operation presented it as a well-thought strategic exercise to Ecuador's bondholders and an integral part of Ecuador's debt management framework.

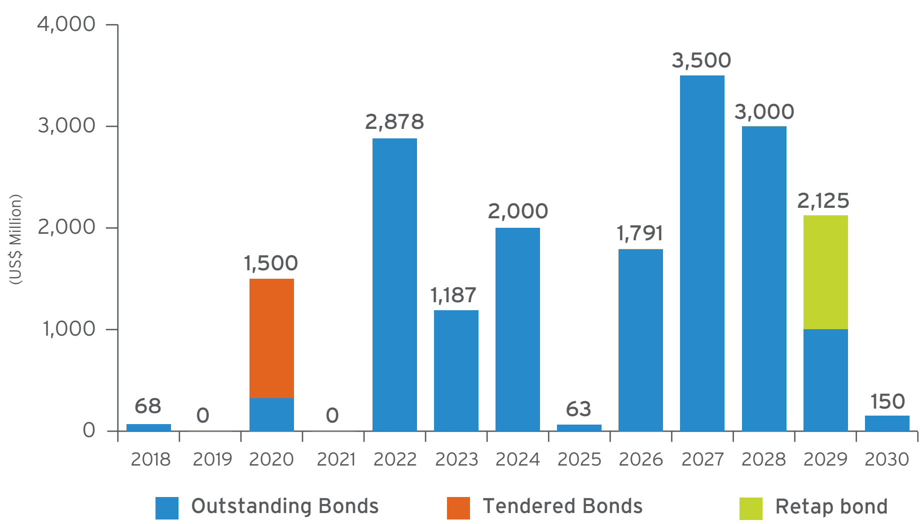
The LM exercise started as a tender offer composed of a two-step approach. In the first step, the government of Ecuador priced $1,125 million in the international markets with the re-opening of its bond maturing in 2029. The second step opened up a six day tender offer period, where the newly re-opened bond was offered as a liquid benchmark for bondholders of Ecuador's sovereign bonds to tender the notes maturing in 2020.

After the tender offer period ended, 90% of the 2020 Bond holders expressed interest in participating in the tender offer. This gave Ecuador the opportunity to use favorable market conditions and roll an important part of its Government securities maturing in 2020 for debt maturing in 2029. Overall, Ecuador was able to repurchase $1,175 million of their overall government debt maturing in 2020, which represents 78.4% of its bonds maturing in 2020.

The tender offer operation provided an important reduction to Ecuador's funding figures for its 2020 maturities; these were reduced to a manageable $325 million. This comes at a time when the Government of Ecuador's priority is to minimize increases of its outstanding debt, and take steps towards achieving fiscal sustainability targets as outlined in its economic strategy.

As a result, the LM operation significantly mitigated refinancing risk for 2020, extended the average life of Ecuador's government debt portfolio, and allowed an overall debt stock reduction.

Liability Management provides a meaningful debt maturity extension to Ecuador



An LM operation with a positive impact in Ecuador's transformation process

The LM operation has allowed the government to free up additional resources to pursue Ecuador's structural reform agenda instead of earmarking them for debt servicing purposes. These funds have been redirected to strengthen the social safety net for Ecuador's vulnerable population, prone to being most at disadvantage during the current period of economic adjustment.

Ecuador's first LM operation also sent a positive signal to international market participants: Ecuador is now pro-actively managing its short-term liabilities and can opportunistically launch transactions when the primary markets are strong. These factors contribute significantly in sustaining fiscal policies in the medium term that help optimize and predict government finances and ultimately support Ecuador's economic stability in the long run.

The incorporation of LM as part of a proactive debt management framework is in line with best practices of the market. The Government of Ecuador has now joined a group of countries in the region, such as Chile, Uruguay, Mexico and Colombia that have proactively managed their debt profile through capital market LM exercises. All of these countries have also experienced improved fundamentals and consistent upgrades in their sovereign rating over time that have in turn helped them access funding at a lower cost, reflecting a track record of improved debt management practice.

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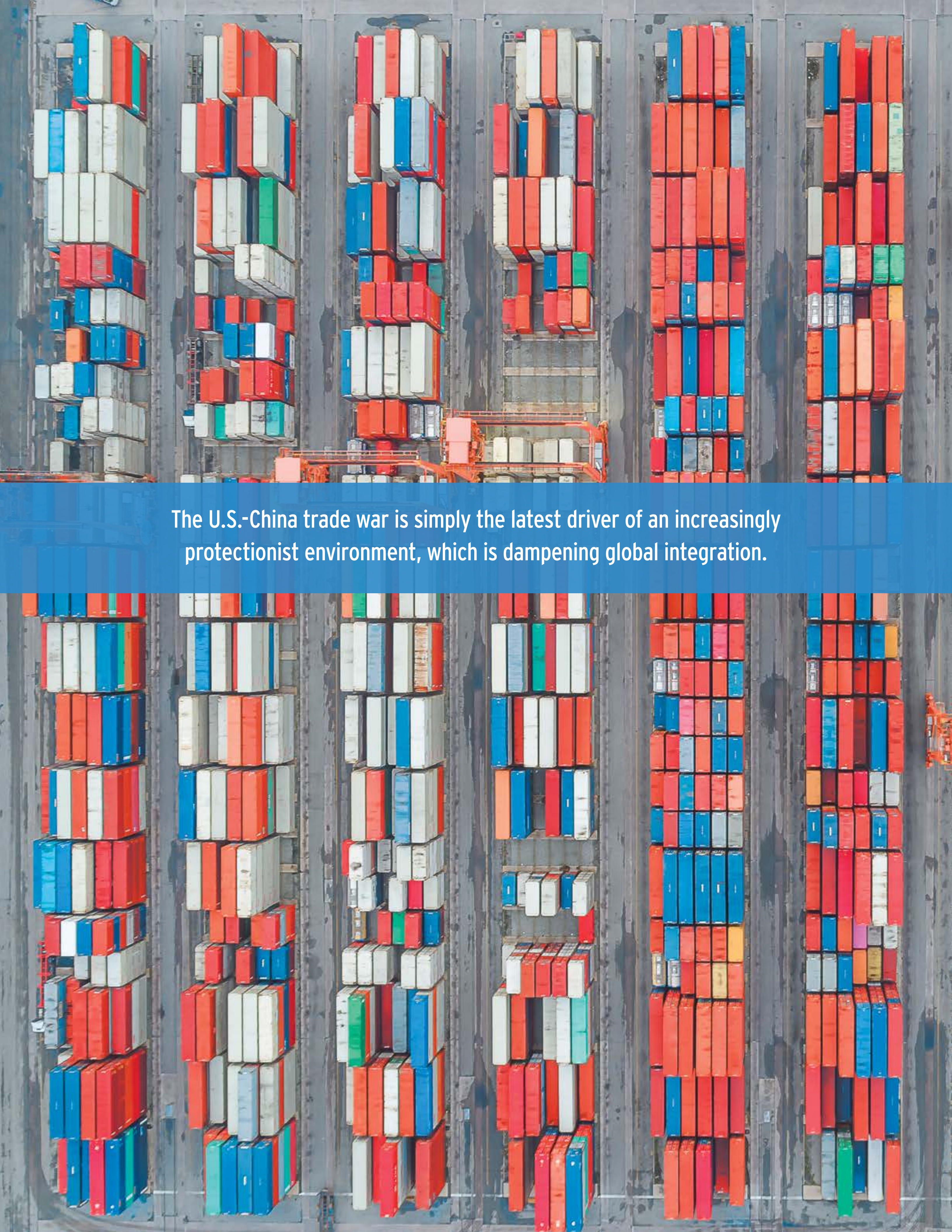
The incorporation of LM as part of a proactive debt management framework is in line with best practices of the market.



The U.S.-China trade war is simply the latest driver of an increasingly protectionist environment, which is dampening global integration.

New Perspectives on Trade Finance

Akeel Akhtar Georgi Yordanov Mehwish Jangda Natasha Condon

Globalization is evolving as a result of changes in the economic, geopolitical and technological environment. Multinational corporations, supranationals and governments must transform how they manage their trade flows in response.

The global economy has faced multiple headwinds in 2019. The U.S. government shutdown at the beginning of the year was followed by mounting concerns around the U.S.-China trade war, declining Asian trade flows, idiosyncratic shocks in the euro area and ongoing uncertainty around Brexit. These have caused anxiety about the outlook for global growth, as indicated by Citi's Global Growth Trackers, which are flat. The loosening of financial conditions has essentially offset deteriorating sentiment this year; activity has consequently remained stable. However, if the political and trade relationship between the U.S. and China continues to deteriorate, it will weigh heavily on global growth prospects.

The U.S.-China trade war is simply the latest driver of an increasingly protectionist environment, which is dampening global integration. According to Citi GPS, the U.S. accounts for 17% of the protective measures for iron and steel, Russia and India have the greatest barriers for motor vehicles, India and Brazil have the most extensive protective measures for basic chemicals while Russia, India and Brazil are most protectionist when it comes to metals and mining. World trade intensity has stalled since the financial crisis due to countries' reduced commitment to trade liberalization, the unravelling of global value chains (which is affecting productivity), and countries' convergence to higher living standards.

Realignment of trade flows

The forces described above are already having an impact on corporate behavior and trade flows. When investing significant capital in launching new solutions and services, organizations need predictability to make confident business decisions. Trade discord has undermined business confidence: the process of evaluating and integrating new trade routes, suppliers and production locations is inhibiting overall decision making.

U.K. warehouses are "full", raising doubts about the ability of UK firms to stockpile goods ahead of a potential no-deal Brexit on 31 October. "There is no available space," Peter Ward of the United Kingdom Warehousing Association told BBC Newsnight. The estimated vacancy rate for warehouses of over 100,000 square feet nationwide for the second quarter is 6.8%.

Nevertheless, at a macro level, globalization is evolving to accommodate the new environment. There is evidence of trade substitution taking place; U.S. imports from China are falling while imports from the euro area, the rest of Asia, and Latin America are growing. The rapid realignment of supply chains and trade flows is a reminder that globalization, although under threat, is more powerful than contemporary political developments. While politicians may choose to put up barriers, the world around them is reacting creatively. Indeed, trade route disruption has, in some cases, increased trade flows.

"Because of Citi's global footprint, we are financing both the export of soybeans from Brazil and Argentina to the Chinese, and also financing the exports of soybeans from the U.S. to Argentina and Brazil," Ahearn told Business Insider in an interview. "As our clients adapt and need financing through these new routes, we get to finance the same transaction throughout the entire lifecycle, which has helped our profitability."

Soybeans are a high-profile example of this trend. China is the world's top soybean consumer and for many years has relied on U.S. farmers to meet demand. In 2015 and 2016, it imported more than $14 billion worth of U.S. soybeans, according to U.S. Census estimates.

The escalating trade dispute with the U.S. has seen the collapse of Chinese imports of U.S. soybeans to just $2 billion in 2018. Instead, China is buying from South American countries such as Argentina and Brazil, according to John Ahearn, Global Head of Trade at Citi. Argentina and Brazil are in turn buying soybeans from the U.S. to meet their domestic needs.

Overall, supply and demand are largely unchanged, but geopolitical events have created new trade routes that require financing services. Citi's presence in these countries — and nearly 100 others — enables the bank's trade finance business to take advantage of these new opportunities, in some cases financing the same trade flows twice.

The evolution of trade finance

Trade finance, traditionally a simple means of protecting a seller from the payment risk of an unknown buyer — has innovated in response to changing trade and business dynamics. An exporter in the UK might once have requested a letter of credit from a new customer in South Africa, or sought a financier to discount its receivables from that customer to mitigate the buyer's credit risk and improve liquidity. More recently, the primary drivers of trade finance have mainly been improvement of working capital (this was especially important during the last economic downturn). Now exporters are seeking balance sheet efficiency from non-recourse trade finance solutions that reduce days sales outstanding and improve free cash flow.

Globalization has led to an increasingly competitive landscape. The 21st century treasurer now looks at trade finance solutions as a means of managing FX volatility, customs disruption risk, and driving sales growth. An exporter can offer extended payment terms to an importer in order to make its sale offering more compelling; it can then discount the extended term receivables, facilitating an improvement in sales without negatively impacting working capital. Importers find this proposition attractive, especially when there are expectations of increased trade tariffs or FX volatility. Such trade finance solutions are also generally favorable for export economies as they drive increased exports.

Digitization and leveraging data

Technological advancement, disruptive innovations and improvements in logistics management are impacting the pace and makeup of trade flows. They are making global flows of physical goods increasingly agile and responsive to change. The world's trade hubs must compete to remain relevant or risk having business re-routed elsewhere. In the future, customs authorities will have to oversee drones and driverless trucks crossing their land borders, while their seaports will receive tankers containing hundreds of thousands of individual items tracked from raw materials to finished goods via electronic tagging.

More than 60% of Switzerland's foreign trade in goods is within the EU, despite Switzerland being one of the last countries in Central and Western Europe to have a customs border. Consequently, efficient customs processes, which allow for swift and easy border crossing, are extremely important for companies involved in Swiss international trade.

At the same time, international trade remains in many cases a laborious, paper-based process. Heightened regulation as well as changes in global sanctions policies have increased the compliance burden on trade banks significantly. Citi processes 9 million trade transactions annually and has implemented optical character recognition to digitize 25 million trade-related pages of data, which traditionally have been manually inputted. While this may represent a small incremental speed increase for any single transaction, over the whole trade portfolio it represents a massive reduction in time, effort and manual processing errors.

In the medium term, the largest trade banks are exploring options to remove paper entirely and create digital equivalents, which will solve the underlying problem. Disruptors such as komgo, Voltron, Marco Polo and we.trade have developed blockchain-based solutions, which harness the transparency and real-time transactional capability of distributed ledger technology to digitize trade flows. However, each of them suffers to a greater or lesser extent from the consensus problem. To truly digitize a trade flow, every party — buyers, sellers, banks, logistics partners, insurers, customs authorities and others — must also be digitized. It therefore seems likely that no single solution will become the new global trade infrastructure alone; instead, many different systems will interoperate with each other to create a new global trade ecosystem.

Increasing digitization begs a further question; how to manage the data that results. Shifting immeasurable amounts of information from paper to digital will generate new possibilities for leveraging data to predict macro trends, identify new business opportunities, and drive additional efficiencies. Citi is already taking advantage of these opportunities. The bank's Nextgen project in partnership with EY and SAS leverages artificial intelligence to develop an advanced risk analytics scoring engine to review large volumes of trade transactions for regulatory compliance while minimizing friction and delays.

Sustainability and ESG in trade finance

Sustainability and environmental, social and governance (ESG) concerns have reached a tipping point in recent years as the green bond and green loan markets have multiplied in size. Investors are increasingly demanding progress on ESG topics while consumer pressure is growing on B2C companies to engage in sustainable business practices. For now, investment decisions are largely being made on a 'blacklist' basis, i.e. avoiding certain sectors or companies. However, it is easy to imagine a future where a 'whitelist' of companies which meet certain ESG criteria are prioritized by funders, creating a subset of companies that will struggle for investment and funding.

One of the major challenges relating to sustainability is the imprecision of 'ESG' and 'green' terminology. There are many governmental bodies and non-governmental organizations working to improve definitions relating to green financing. However, so far, these have been primarily applied to equities and the traditional bond and loan markets. Trade finance has yet to define its own green guidelines. While it seems likely that they will resemble the green loan guidelines published by the Loan Market Association there are complexities. A basic tenet of green lending is that funds should be used for green purposes. But how can this be applied to a guarantee facility, where the purpose of the instrument is that no funds should be paid out unless something has gone wrong? In addition, if a buyer has committed to purchasing only environmentally-friendly raw materials, can its supply chain finance program be designed to incentivize suppliers to comply? Will this financing be considered sustainable?

Citi provided financing via pre-funded letters of credits to implement the purchase and installation of digital learning devices in Kenya's public primary schools to support the Kenya Government's flagship DigiSchool project.

Citi provided £800 million in financing for Hornsea 1, guaranteed by Denmark's EKF, in the largest wind financing by a public export credit agency. Wind turbines do not release emissions that can pollute the air or water, and they do not require water for cooling. Wind turbines may also reduce the amount of electricity generation from fossil fuels, which results in lower total air pollution and carbon dioxide emissions.

Once the definitions of ESG and green trade lending are clarified, corporates and banks will then need to demonstrate that they are monitoring compliance and reporting transparently, or else run the risk of accusations of 'greenwashing' and the associated reputational damage. How this will happen, and how the data will be collected and transmitted, is far from being standardized. However, given growing demand, we expect to see increasing innovation from banks on ESG issues and clarity on sustainable trade finance lending.

Of course, sustainability not only relates to environmental issues. Citi has collaborated with development institutions to help stimulate the growth of trade in emerging markets and to support economic development. Citi's Export Agency Financing business works in partnership with development banks and export credit agencies around the world to finance a variety of sustainable projects, including renewable energy, energy efficiency, public mass transit and water conservation.

In response to corporates' increasing focus on improving the sustainability of their supply chain, Citi is working on innovative supply chain financing solutions that would incentivize suppliers to adopt a more sustainable business model and operations.

Since the IFC's Global Trade Liquidity Program was launched by IFC and Citi in 2009 it has financed a total trade volume of $29 billion, with around $4.5 billion in International Development Association countries (the World Bank Group fund for the world's poorest countries), and $11.1billion in low income and lower middle-income countries. Most recently, the IFC and Citibank created a $1.2 billion risk-sharing facility to help stimulate the growth of trade in emerging markets and to support economic development.

Conclusion

Major shifts in geopolitical relations, evolving globalization, disruptive technology, and the growing importance of sustainability, are spurring significant change in the trade finance industry. Parties that are proactive in evaluating these changes and adapting their business processes accordingly will be best positioned to compete in the new environment. As an industry leader in trade finance, Citi is well placed to support its clients as we enter a new era of trade finance.

World's Best Bank for Transaction Services

- Africa's Best Bank for Transaction Services
- Asia's Best Bank for Transaction Services

Global Trade Review (GTR) Awards

Deals of the Year:

- Hornsea Project One
- Banco Sudameris
- Best Trade Finance Bank – North America

Trade Finance Global – Best Finance Providers by Geography

- Best Business Finance Provider in Europe

Global Trade Review Leaders in Trade Award 2018

- Best Trade Finance Bank in North America

Global Finance Best Trade Finance Provider 2018

- Best Trade Finance Bank
- Global Best Bank for Export Finance

Regional/Country Wins:

- LatAm
- Mexico (Citibanamex)

As ESG gathers momentum, Citi continues to contribute towards the United Nations Sustainable Development Goals.

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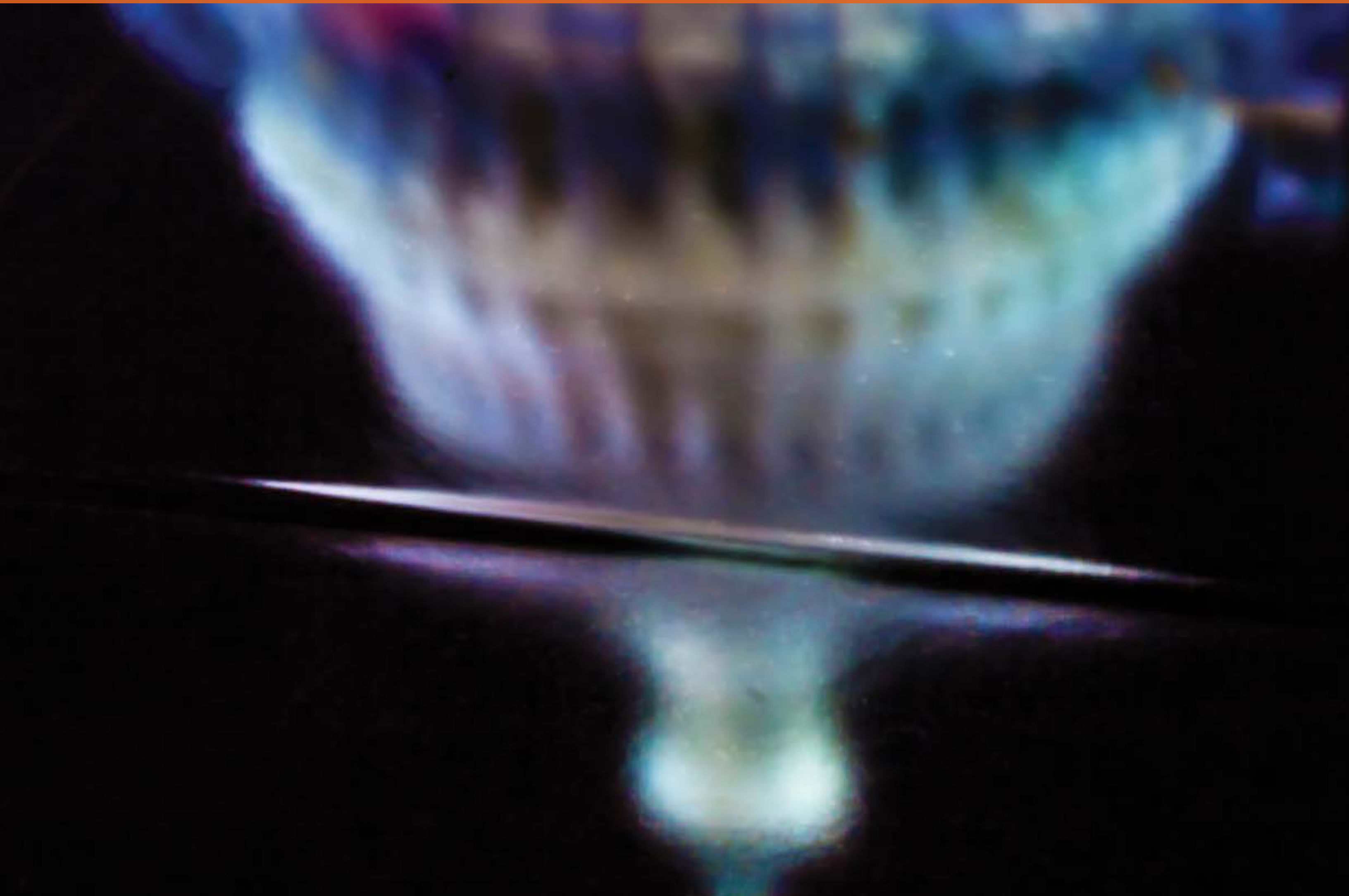
EMEA Public Sector, Citi

Georgi Yordanov
Head of Public Sector CEE, Turkey & Israel, Citi

Mehwish Jangda
EMEA Trade Sales, Citi

Natasha Condon
Global Head of Trade Sales, Citi

The digital revolution across the public sector is catalyzing more rapid innovation in the provision of public services to meet ever-evolving citizen expectations in terms of ease of use, speed and efficiency.



Digital Government: Key Steps to Automating Transactional Activity

Dimitrios Raptis
Laura Gibson

Digital disruption, often described as the fourth industrial revolution, and defined by Artificial Intelligence, big data, robotics and other emerging technologies, is transforming businesses and economies around the globe. Over the past decade corporates and multinationals have embraced this wave of digital revolution, driven either by the desire to innovate and transform their business models or by the competitive pressure of new, start-up digital disruptor firms entering the markets in which they operate and promoting the need to adapt and evolve at speed to retain market share.

Governments and other public sector entities have not been compelled to take action in the same way, given that they don't face similar competitive threats, however, more recently the evolving expectations of the citizens and businesses which they serve and a more global playing field, in terms of attracting large capital and talent flows, have encouraged governments to fundamentally question how they operate and whether they can enhance existing processes and intragovernmental structures to exploit the benefits and cost savings that digitization can promote.

Central government departments control numerous processes that could be streamlined and improved through automation, including those in Finance, Treasury and Procurement. Automation promises to deliver higher levels of efficiency and productivity, reduced operating costs, fewer human errors and a safer operating environment, with less room for fraudulent activity. Many areas of Finance and Treasury, in particular, can be streamlined, including: cash payments and collections, particularly across borders, budgeting, financial planning and risk management, for example, through foreign exchange hedging based on net positions across governmental departments. Automation can help through the integration of diverse processes and information, as well as through the centralization of data collected. This allows for faster replication and interpretation of that data, presenting the ability to highlight any potentially fraudulent transactions and also where additional changes might be implemented to further enhance efficiency gains and cost savings.

1. Harnessing Enhanced Economic Efficiency, Transparency & Control

In an era of tightening budgets, government spending is under increased scrutiny at both ends of the cash flow spectrum, with tax payers and Central Treasury teams demanding increased transparency & accountability across all departments. Public sector entities need to be able to provide a strong audit trail on their spending, increase visibility on government accounts and have greater control over their cash positions. Our engagement with Ministries of Foreign Affairs (MOFAs) globally has revealed the significant potential for efficiency gains through more effective cost management and transparency as they manage a wide array of payments to, and collections from, their diversely located Embassy offices. These transactions are often multilayer, involving several Financial Institutions, including occasionally Central Banks, as funds are moved across borders and finally converted into either more easily tradeable currencies or, at the other end of the scale, more exotic, illiquid currencies.

> Government departments conduct many processes that could be improved through automation.

In the current environment, the majority of MOFAs still process, monitor and reconcile these flows in a very manual way, incurring substantial direct and indirect costs that can exceed 5% of the annual budget. These fees are not always immediately visible and are often passed through various financial bodies and countries. Obtaining a holistic, high level view of flows and cash positions is also a huge challenge, as MOFAs often struggle to gain a global view of their financial operations, with delayed reports exposing the entities to increased country and counterparty risks and generating significant economic inefficiencies. The adoption of digital tools, however, can immediately reduce or eliminate these fees, enhance visibility with close-to real time reporting and improve the control over budget management.

Through our work with MOFAs we have recently witnessed cases in both developed and developing markets where cost savings of over $30mm over a period of four years was gained through the adoption of such tools. One of our clients has also realized savings of c.4% of their annual budget by simply centralizing their FX conversions at source and leveraging low value channels to move the funds. The adoption of these intuitive and easy to implement solutions has also permitted an immediate boost to visibility and acceleration of account delivery times from several days or weeks to a maximum of two days, without the need to migrate existing Bank accounts.

2. Promoting Increased Operational Efficiency & Accurate Reconciliation

While cost is a key driver of automation in the public sector, increased operational efficiency is also important, including more accurate and reliable account reconciliation. Public sector entities are looking for Receivables Solutions which streamline, integrate and lower the cost of payment collections, and permit clear and accurate details on where collections are originating from.

Tax Authorities collect domestic taxes, including income tax, Pay As You Earn (payroll), excise duty, value added Tax, withholding tax, customs taxes and road transport taxes. These authorities often have a high level of manual processing which leads to delays in updating taxpayers' records and slow service provision, delayed and inefficient reconciliation processes and slow refund processes when overpayment occurs. There is a need to automate tax registration and validation on a real-time basis to resolve these issues.

Authorities can create an online portal through which financial services firms can support post-validation of the taxpayer and their payment details for automated reconciliation. This system also permits pre-validation services to eliminate payment reversals due to incorrect information supplied by the taxpayer. The tax administration of tomorrow will be radically different from that of today; data will be used in a highly relevant manner, allowing systematic filing and payment in a risk- and error-free environment, and back-end operations will be so smooth that taxpayers may not even need to be in contact with tax administrations anymore. To get there, tax authorities must go beyond incremental changes using existing tools and begin revising their approach to a whole host of operational tasks.

We have seen clients reduce required reconciliation of receivable transactions by over 50% through the adoption of Virtual Accounts or Artificial Intelligence tools that streamline the process and enable immediate utilization of the collected funds.

3. Embracing Improved Cost Effectiveness & Yield Maximization

In addition to the focus on reducing costs, public sector spending decisions based on increasingly stretched resources have placed the need on public sector entities to optimize the funds available to them, through minimizing idle account balances and maximizing the yield on those balances waiting to be deployed. This has encouraged entities to further rationalize their bank accounts and streamline liquidity management to reduce working capital costs.

Digital liquidity management systems, including advanced and interconnected technology platforms, ease account, transaction and information management and streamline, integrate and lower the cost of payments and collections. Public sector clients can get a reliable and consolidated picture of the cash they have on hand, integrate accounts and systems to concentrate and mobilize funds more effectively.

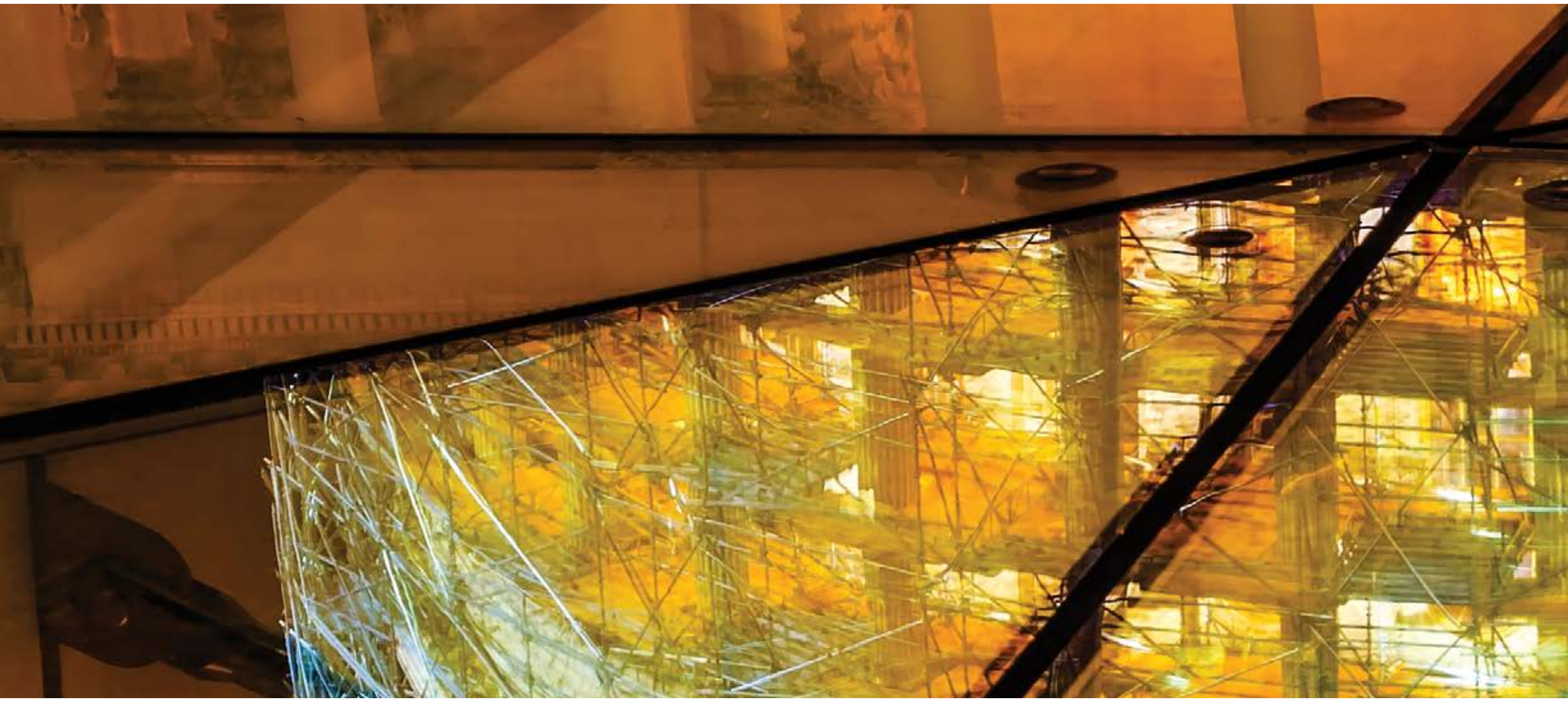
Adopting a liquidity structure to offset debit and credit balances domestically, regionally and globally, reduces borrowing and permits streamlined liquidity structures, real-time visibility of compartmentalized balances and optimal yields on balances.

Liquidity Solutions are widely utilized across all sectors and very frequently clients have significantly reduced or even eliminated the idle balances they had maintained in different account or countries. As a result, the net return of their assets increased as scattered pockets of liquidity were consolidated and invested on a same day basis.

4. Ensuring Secure, Consistent Risk Management & Anti-Corruption Measures

Sound management of risk is essential as public sector entities digitize and strive to make lasting positive improvements in governance. It enables the use of resources more effectively and enhances strategic planning, as well as contingency planning. The trend is to focus on business sustainability, strong cyber security and to automate reconciliation to eliminate manual intervention.

Digital platforms include sophisticated risk detection tools to identify outlier transactions that do not conform to routine behaviors and patterns of transactions within public sector entities. A unique profile is generated for each account which increases the detection accuracy and decreases the false positive rates. The system uses key fields in a payment transactions for training itself and tuning the underlying algorithms and finally it operates with real-time escalations, the system adjusts to each department's workflow with the ability to stop a process from being executed. These kinds of technologies can be used to reduce these monetary losses arising from fraud, error and abuse.



Digital platforms also enable entitlements like aid, welfare, remittances, donations, and healthcare to be digitized and delivered through blockchain technology. Digital payments leverage blockchain to create digital solutions for governmental flows towards a new digital asset economy. All transactions made through this kind of solution are instantly verifiable. The solution is secure, every transaction is secured using a distributed ledger, and transparent, every transaction is permanently recorded and can be traced from start to finish. This also supports anti-corruption as records cannot be manipulated on the distributed ledger.

5. Delivering an Enhanced Experience for Citizens, Businesses & Civil Service Staff

In an era of open borders and migration waves, central governments are frequently required to deliver social security payments, such as pensions and other benefits, to citizens living abroad. While these transactions are critically important it is not uncommon for payment to take days, weeks or even months to be delivered. The lengthy cycle amplifies the engagement of various resources in unproductive tasks, increases the cost of the transaction exponentially and that is often passed to the beneficiaries and eventually inflates the dissatisfaction of the citizens who collect their funds with unreasonable delays and costs.

A few governments and agencies managing Social Security flows have moved ahead of the curve and deployed digital solutions that have enabled them to shorten the delivery cycle from several days or weeks down to days or even hours. Through these tools they can also access the local value clearing systems, substantially reducing collection costs for their citizens.

With a clear, centralized view of real-time cash positions, government departments can optimize liquidity management and therefore, make more informed funding decisions. The flexibility offered in this solution allows clients to individually view transaction activity, manage online banking entitlements and generate virtual account statements.

In a recent case, a Middle Eastern government managed to cut down the cross border pension payments delivery time to citizens living abroad, from over six weeks to two days. Most importantly, the implementation cycle was less than 10 weeks, the government entity did not open additional accounts and there were no incremental costs.

Conclusion

The digital revolution across governments and other public sector entities is just beginning. It is catalyzing more rapid innovation in the provision of public services to meet ever-evolving citizen expectations in terms of ease of use, speed and efficiency. It can also further engage our civil service employees and promote essential operational efficiencies and cost saving gains. Many governments have already embraced creating centralized online platforms for citizens to complete online applications for services such as visas, passports and tax returns and the next phase will be to place further focus on the automation of internal processes, assisting governments to fully embrace the benefits that digitization has to offer. Adopting a willingness to embrace the changes necessary to provide optimal public services and support economic growth will be crucial for public sector entities as they navigate the digital revolution as it unfolds.

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Asset owners are increasingly taking control of their investments by managing them in-house.

Asset Owners' Appetite to Insource

The drivers and considerations to bring investment management in-house

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Asset owners are increasingly taking control of their investments by managing them in-house. While portfolio management is a front-office role, asset owners should implement the supporting infrastructure and capabilities, as insourcing has implications that stretch to the middle and back-office layers and beyond.

The Asset Owner's dilemma

The asset owners' business model is more complex than ever before. In today's continuing low returns macro environment, public sector asset owners – pension and sovereign wealth funds, central banks and insurance funds – can no longer afford to leave money on the table. In the search for yield, asset owners are diversifying their portfolios: it is no longer profitable for asset owners to hold traditional and passive investments managed by external managers and simply benchmark performance against market beta. Now asset owners seek a mix of public and private assets across different strategies and geographies, with management split between in-house and external portfolio managers. As the business model becomes more multi-faceted, asset owners are increasingly taking control of their investments.

In a global survey of 485 investors that held a combined $8 trillion of assets, almost 20% had increased the proportion of assets managed internally in the last three years and another 10% plan to in the following year. This insourcing trend is even more apparent among larger firms – 45% of firms, with assets above $25 billion, manage a higher proportion of their assets in-house compared to three years ago.[1] Furthermore, a deep dive of the world's five largest sovereign wealth funds reveals that they collectively manage half of their assets internally, almost $2 trillion.[2]

Largest five global sovereign wealth funds: Proportion of portfolio internally managed

Rank	Fund	Country	Fund Value (USD)	Proportion of portfolio internally managed
1	Government Pension Fund Global	Norway	$1,073 billion	96%
3	China Investment Corporation	China	$941 billion	37%
2	Abu Dhabi Investment Authority	United Arab Emirates	$697 billion	45%
4	Kuwait Investment Authority	Kuwait	$592 billion	5%
5	Hong Kong Monetary Authority Investment Portfolio	Hong Kong	$509 billion	66%

[1] bfinance – Asset Owner Survey: Innovations in Implementations, September 2018

[2] Official annuals reports for respective sovereign wealth funds, as at 2018 fiscal year-end

Five forces driving Public Sector Asset Owners to manage investments internally

The insourcing trend is likely to continue as asset owners navigate a web of complex drivers shifting their business models. Firms are internalizing investment management to get closer to their investments, enhance oversight and risk management, and develop internal expertise, while combating rising costs and building scale.

1) The need to contain costs

Fees paid to external managers are under scrutiny as it can be higher than comparable internal costs, and when these managers fail to outperform consistently, asset owners are likely to question their value-add. In the previously cited survey of 485 global investors, external manager fees were a key source of cost savings opportunity for over half the respondents.[3]

2) The need to align with investment horizon and purpose

Demographics are evolving with time, resulting in new expectations from asset owners' underlying participants (e.g. citizens, including pensioners, savers and students). Asset owners take a long-term view for their investment targets to benefit these participants; whereas, asset managers have short-term performance targets, potentially creating an inconsistency between an asset owner and external manager's investment horizon. Asset owners also seek to align their investments not only with their funds' philosophies, but also with their beneficiaries' beliefs. This is especially relevant to investors who prioritize environmental, social, and governance-based (ESG) investing principles and actively engage with portfolio companies by proxy voting, shareholder filings and on-site due diligence.

3) The need for oversight, risk management and transparency

Trustees and regulators, as well as beneficiaries, demand that asset owners take steps to strengthen their fiduciary duties. Firms want to ensure they have oversight of their trades and associated costs in the value chain, with robust risk management. They seek a holistic view of their investments which are spread across managers, asset classes, strategies and geographies. By internally managing their assets, firms can minimize agency risk – this includes direct market access, less latency to respond to market movements, reduced information asymmetry, quick turnaround time and decreased time lag to resolve operational issues. Moreover, with fewer external managers, asset owners can monitor them with more diligence.

Canada's 10 largest public pension funds' expenses are roughly 0.3% of their total assets. Much of this low cost base can be attributed to internal asset management – the top 10 manage 80% of their investments in-house, while other pension funds manage roughly 20% of their investments in-house with a 1.0% expense-to-asset ratio.[4]

4) The need to build scale

As the fund grows or diversifies assets and strategies, the existing external managers may not have the capacity or expertise to support the new investments. High-performing managers are especially prone to this as they reach caps for new money. Furthermore, if one asset owner represents a large proportion of an investment manager's business, it can pose high business risk for the manager and investor.

5) The need to develop expertise

As the investment strategies become more complex, firms are keen to build expertise for a self-sufficient business that reduces dependency on third parties. Firms are increasingly diversifying their investments in search for returns – in the survey of 485 investors, two-thirds of investors entered a new asset class or strategy in the last three years, and this trend is likely to continue as almost another 10% plan to in the following year. The most popular additions are private debt, infrastructure, real estate, emerging market equity and alternative risk premia.

[3] bfinance – Asset Owner Survey: Innovations in Implementations, September 2018

[4] Healthcare of Ontario Pension Plan – Canada's Top Ten Pension Funds, Helping Drive National Prosperity

Five considerations for Public Sector Asset Owners looking to insource

To ensure they realize the full benefits of controlling the investment process, asset owners should consider the supporting organizational, operational and governance requirements for their business model.

1) Invest in talent

One of the most critical considerations will be appointing front-office portfolio managers and research analysts with the appropriate expertise to manage investments per the asset owner's strategy. Typically, firms start by insourcing more traditional assets, such as cash and treasury bonds, and passive strategies, which are cheaper to manage and do not require specialist knowledge. Firms can also start managing domestic assets in-house if they have the existing talent. More recently, asset owners are managing complex, illiquid assets, such as infrastructure and private equity.

Global firms may face recruitment and retention challenges, especially in emerging countries and popular offshore domiciles, such as Luxembourg and Ireland. Compensation will be a key consideration for recruitment — asset owners in the public sector, have limited budgets, which can affect the remuneration of investment professionals. They are competing against the private sector buy-side firms that have more flexibility and can offer higher compensation for high-quality talent. Public sector firms can attract talent by highlighting non-financial benefits, such as the fund's vision and purpose, initiatives for community-building, work-life balance and opportunities for professional development and job security.

2) Establish governance frameworks

The firm's board and investment committee will help define the goals of internal and external investment teams. While it's common to set up independent sub-committees to oversee day-to-day execution when appointing external managers, firms can benefit from doing the same for internal investment teams. These committees should have sufficient investment and risk knowledge to monitor the fund by setting up frameworks for performance measurement, auditing processes and authorizing investment decisions in an efficient manner.

Over time, as internal teams advance, firms can rationalize third-party managers, renegotiate fees and select fewer managers for asset classes, strategies, or geographies where the firm does not have the specialist knowledge or supporting operational capabilities. For a holistic investment management strategy, firms can use internal expertise to compare external managers. As opposed to comparing external managers to their past performance, managing and overseeing internal investments teams can provide a better understanding of external managers to assess their value-add.

3) Define the target operating model

Managing assets internally will necessitate a fundamental review of the firm's supporting operating model, including the technology, infrastructure, operational processes, and partners and service providers. These areas must be considered at the outset, as without a compatible set up, internalizing investment management may not achieve its objectives.

In 2019, Abu Dhabi Investment Authority announced plans to increase investment and research-focused roles in the fixed income and treasury departments as they begin scaling up active investing strategies.[5]

[5] Financial Times — Abu Dhabi Investment Authority in hiring push as it plans to 'scale up' active investing

Firms can use this opportunity to start with a clean canvas and develop a blueprint of their current and future operational model. Technology's evolution over time has created modular and interoperable systems. Firms that insource investment management can benefit by outsourcing non-core middle and back-office functions, such as safekeeping, fund accounting and administration of their assets. This can result in cost savings, while leveraging the expertise of their service providers. Other revenue-generating opportunities that asset owners can outsource in a low-returns macro environment include securities lending and collateral management.

4) Set a holistic data strategy

An orchestrated firm-wide effort around data governance and management will help firms internally manage their assets effectively. As they invest in more complex strategies, firms require a sophisticated data strategy that empowers them to make the most of their investments. Firms are also becoming more flexible with their investment timelines in search of yield by frequently rebalancing their portfolio. Internal investment teams can use normalized, aggregated and real-time data to derive insights to inform allocations. Firms can begin by harmonizing data sources and consolidating them into a centralized repository, ensuring that teams use the same reporting method and data source. They should ensure that data systems are built with capabilities to feed in all trading positions and related internal and external data sets with a user-friendly interface that quickly provides insights. Asset owners can alleviate the burden of building their data solutions from scratch by partnering with service providers and vendors that offer data systems, expertise and capabilities suited to their needs.

5) Monitor and manage operational risks

When an asset owner starts managing investments in-house, the operational risk transfers from external parties to itself as oversight of the end-to-end investment process is required. Due to constraints on capacity, smaller firms tend to rely on investment advisors and external managers for oversight. As firms scale up, they develop expertise and are able to take more oversight control, reducing third-party dependency.

Firms should ensure that they have the adequate capabilities in place: these include establishing internal guidelines for investments and related processes, monitoring adherence to these policies, maintaining data security, and reporting effectively. This will require analytics tools and collaboration between internal teams — across trading, operations and technology, risk and compliance, product management, and cybersecurity — and with service providers. Many service providers now offer compartmentalized oversight and risk management solutions for that are relatively straightforward to plug into the firm's infrastructure.

Internalizing investment management requires asset owners to establish the supporting operational processes, data strategy, talent and governance models. As their oversight responsibility increases, partnerships with service providers and vendors can help asset owners optimize their business models to realize the full benefits of insourcing.

Asset owners need a partner that can support their firm of today, whilst providing strategic guidance for the future. At Citi, we have put asset owners at the center of our Markets and Securities Services business, providing the support and partnership that public sector asset owners need as they internalize investment management and adapt their business models for the future.

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The Declaration seeks to address one of the most pressing global issues of our time: Empower digitization, e-commerce, and innovation, while ensuring a free, open, and safe Internet.

From Security to Resilience: Taking Cyber from the Realm of the IT Experts Into the World of Holistic Risk Management and Making It a Global Public Good

Peter Sullivan **Charlotte Branfield**

Earlier this year, Benoît Cœuré, Chair of the Committee on Payments and Market Infrastructures (CPMI) and Member of the Executive Board of the European Central Bank (ECB), spoke of "cyber resilience as a global public good." His statement is a timely call to action, and helps elevate cyber from the world of IT experts to the wider context of economic, market, and enterprise risk management.

Cyber resilience enables us to foster financial inclusion and innovation while protecting consumers and their data. It is a critical part of the private and public sectors' shared responsibility in ensuring the financial sector's safety and soundness — a prerequisite for sustainable economic growth and social development.

This motivated Citi to become an Official Partner of Commonwealth Cyber Declaration — the world's largest intergovernmental agreement on promoting cyber resilience, across all sectors and members of the Commonwealth. The Declaration seeks to address one of the most pressing global issues of our time: Empower digitization, e-commerce, and innovation, while ensuring a free, open, and safe Internet.

On 2 July 2019, in support of the Commonwealth Cyber Declaration, Citi ran simultaneously, a multi-country, strategic-level pilot exercise lasting four hours across six African countries, in partnership with Immersive Labs, the IMF, World Bank. Participants included central banks, domestic information sharing organizations, the critical local banks, mobile money service providers, stock exchanges, clearing houses, and telecommunication firms.

The strategic nature of the exercise, focusing on fictitious global and local banks impacted by malware, explored the decisions leaders would need to consider, including market dependencies, connections, communication and escalation protocol, as well as the impact to the international and domestic payment flows.

The mix of public sector and C-suite (CEO, CFO, CRO, CIO) along with banking and public affairs heads enabled strategic conversations with wider perspectives, whilst remaining anchored in reality. These diverse views took cyber out of the domain of information security and made it a business, financial sector and real economy issue. By making it more relevant and meaningful, these types of exercises help evidence why C-Suite should care and not just delegate to the tech teams.

Cyber is a Business, not Tech, Issue

The Internet and access to data allow small- and medium-sized companies to scale globally from day one. According to Forrester,[1] global cross-border B2C e-commerce will reach US$ 627 billion by 2022, having more than doubled over just five years. This highlights how the digital economy is a key driver of growth and development across the world — with Huawei and Oxford Economics estimating that the digital economy will account for 24.3% of global GDP by 2020, growing at 2.5 times the pace of the overall global economic growth.

Cyber and the new concept of Operational Resilience are fundamental to enabling business in today's interconnected, dynamic, and technology-based market. Rapidly increasing digitization is creating new risks and amplifying existing risks. It increases technological interdependences, configuring new tech to decommissioning legacy tech, and factoring in new risks into traditional activities, such as mergers and acquisitions.

Historically, securing the payment channels has been the regulators' and industry's focus. However, focusing on payment to the right beneficiary on a timely basis is equally as important. Security of payment channels requires the same attention as does the need to develop competitive and effective platforms. Without the "pipes" of the financial system being resilient, the capital flows fueling economic development could be impaired.

Further, countries and firms perceived to have weak cyber resilience may see a decrease in foreign direct investment or access to capital, with low cyber scores in future credit ratings[2] negatively impacting access to finance. On top of this, a firm with weak cyber security can have knock-on effects on its whole sector, creating negative impacts on the wider industry or economy's performance and stability.

This directly affects other areas — poor cyber resilience impacts the available investment, resource, and deployment capabilities to deliver on the UN Sustainable Development Goals and other critical public sector initiatives.

However, the "cyber" problem is only forecasted to get worse. The Accenture & Ponemon's 2019 Cost of Cybercrime Study highlights that the over the last five years the average cost of cybercrime for an organization increased 72% to US$13.0 million. Another Accenture report[3] estimates that in the private sector, over the next five years, firms risk losing an estimated US$5.2 trillion in value creation opportunities from the digital economy to cyber security attacks.

If cyber resilience awareness, culture, and collaboration are rapidly improved over the coming years, the cost of controls and value at risk would decrease. By better understanding areas or weakness, there could be more efficient deployment of resources across both public and private sectors.

Public-Private Partnership

To be effective, the cyber public-private partnership "collective defense" model will require deeper cross-sector partnerships in a coordinated manner to reduce risk.

Whilst great progress has been made over the years coordinating information sharing, there is an urgent need to evolve the model, so that it goes beyond "sharing" to "coordinating" risk management actions based on the shared information. To improve cyber resilience, central banks and other public sector bodies need to come together to drive this collaborative risk management strategy development.

[1] https://go.forrester.com/press-newsroom/cross-border-ecommerce-will-reach-627-billion-by-2022/

[2] For example, the partnership between S&P Global Ratings and Guidewire Cyence Risk Analytics announced in 2018, following a warning in 2015 from S&P that it would downgrade credit ratings for banks with weak cyber security, even if they hadn't been breached. Moody's emphasized the threat of cyber risk in 2015 , and, similar to S&P, also announced in 2018 that it would evaluate organizations on their risk of a major impact from a cyber-attack. https://www.businesswire.com/news/home/20180216005674/en/SP-Global-Ratings360%E2%84%A2-Include-Cyber-Risk-Insights; https://www.insurancejournal.com/news/international/2015/06/10/371100.htm; http://www.maalot.co.il/publications/OAC20150708094842.pdf; https://www.moodys.com/research/Moodys-Threat-of-cyber-risk-is-of-growing-importance-to--PR_339656; https://www.cnbc.com/2018/11/12/moodys-to-build-business-hacking-risk-into-credit-ratings.html.

[3] Securing the digital economy, Accenture. https://www.accenture.com/us-en/insights/cybersecurity/reinventing-the-internet-digital-economy

To achieve this, today's public-private partnerships need to evolve from being seen as traditional IT tactical and operational information sharing or business continuity "circles of trust" to true risk management groups focused on underlying services and functions. Evolving cyber resilience in this way would not only make it more inclusive and better connected with the real economy, but also support cyber capacity building and collective strength of the financial ecosystem.

Going further, tying cyber risks to business impacts would help embed resilience in product development and daily operations (e.g., a better Secure Development Lifecycle approach that would significantly improve organizations' abilities to innovate faster while operating with lower overhead costs and fewer errors). This is increasingly important for the financial sector participants, as organizations move to the Cloud, and into a world of real time payments, real time liquidity and global concentration "engines."

In essence, the cyber collective defense model needs to evolve into an effective enterprise-wide risk-management approach where government, central banks, and industry work side by side to address and reduce risk.

This not only reduces risk; it decreases the likelihood of inefficient investment in resilience . From a development perspective, this collaborative risk management at country and sector levels would create stronger links between cyber resilience, capacity building and concessional and philanthropic funding.

It will require hard work and creativity; professionals from across firms' revenue and non-revenue generating teams will need to proactively share expertise to make cyber relatable and understood in the context of their firm's business growth and risk appetites. And we need to do this across sectors too, with the public sector.

Strategic exercises at the level of Central Bank Governor and Deputy Governor, Minister, and C-Suite would be a first step in providing a true holistic understanding of cyber risk and current state of resilience. Gamified, online interactive tools, could be leveraged in these events to anonymously gather data on decision making, and speed and certainty of response, enabling practical capacity building with credible thematic and repeatable benchmarks. These could in turn, be integrated into rankings such as the Worldwide Governance Indicators (WGI).

Strategic Cyber Exercising

For many years, firms have been encouraged to conduct internal exercises (or tabletops, war-games, simulations). Strategic industry-wide cyber crisis management exercises are crucial to achieving the strategic collective risk management model of public-private partnerships.

The critical point here is that any strategic-level public-private exercises must be kept small to enable the institutions to debate and discuss the actions they would take and why. Whilst large sector exercises, such as those run by FS-ISAC and FSARC, are important to strengthening security, they include such a large range of people and different organizations that discussion is not possible. They also rely on participants playing "using" their firms' capabilities — this also precludes group discussion as few firms today are willing to openly share what capabilities they do or don't have.

Small, strategic level exercises that enable scenario analysis and discussion can help institutions understand potential risks, how these may transmit, where investments need to be made, and how best to respond when systems are breached.

On 2 July 2019, in support of the Commonwealth Cyber Declaration, Citi ran simultaneously a multi-country, strategic-level pilot exercise lasting four hours across six African countries. Citi conducted this in partnership with Immersive Labs, the IMF, World Bank. The exercise included SWIFT, domestic information sharing organizations, such as SABRIC, and banking associations, as well as Deputy Central Bank Governors and ICT regulators per country. Firms critical to each country's respective financial sector from the top five local banks to mobile money service providers, stock exchanges, clearing houses, RTGS platforms, and telecommunication companies were included.

The scenario involved fictitious global and local banks impacted by a malware which paralyzed their operations. As the scenario unfolded, it became evident that the driver behind the coordinated cyber-attack was payment manipulation.

Each country's participants came together in a single location, and for the first half of the exercise, they took part in the scenario within the country, before joining together on a regional video call to discuss the cross-border elements. Responses to the scenario were multiple-choice: each participant could select an answer directly in the online platform, with each country's participants required to come to agreement on a single group "country" answer — and each option was designed to impact to Funding & Liquidity, Share Price, Market Confidence and Reputation, illustrating the balancing of risks and impacts in crisis scenarios.

The pilot exercise also highlighted the power of creating a safe, learning environment. By leveraging Immersive Lab's interactive online (web-based) platform at the event, the participants could directly and anonymously engage with the scenario whilst also benefiting from a structured discussion, with the multiple-choice providing optionality, driving debate within the country locations. By doing this, and using fictitious banks, participants were better enabled to engage in discussion, with no barriers to engagement, nor need to share details of their own cyber security programs and subsequent risk of inference that others were worse/better than the rest.

Key themes from Citi's Africa Exercise

- **Preparation is Key:**
  - There is a need for a proper recovery strategy framework with playbooks for each sector and at a country-level. These playbooks should include escalation procedures, external communication and information sharing arrangements, roles and responsibilities, and clearly defined roles for the Bankers' Association, Communications Regulator, and Central Bank. This information should be captured as appropriate within the national/financial crisis management frameworks.
  - In addition to a sector playbook, both the private and public sector require their own broad institution-specific playbooks to help guide response practices with pre-defined trigger thresholds for deployment of containment procedures and escalation protocols.
  - Banks whose revenue-generating teams signed-off/sponsored their playbooks, instead of delegating to their information security or business continuity teams, appeared to have a much better understanding of the trade-offs when making decisions.
  - Central banks had a vital role to play in connecting the banking and payments associations, as well as developing a proactive mechanism to convene industry in the event of an incident.
  - In particular, clarity was called for over who should handle media statement(s): individual banks (to manage their stakeholders and confirm they are not affected, which may see over 20 statements shared with the public, for example) or a single response from the central bank (to ensure market stability and reassure confidence in the market)?
- **Deeper Trust to Enable Information and Risk Sharing is Needed**
  - Value of information sharing was recognized; and more trust in the market is needed to progress this, which can be developed through collective exercising.
  - Need to have a mechanism to share and review emerging risks, and to perform annual risk assessments with outputs shared and included in playbooks (with exercises then validating these).
  - Many noted that it was important to keep a clear distinction between threat intelligence/information sharing for early warning purposes vs. for regulatory notifications/reporting requirements.

Key themes from Citi's Africa Exercise *(continued)*

- **Decision-Making for All Needs Work**
  - Responses were sometimes slow and uncertain. Confidence and decision-making ability started to really break down as the event became cross-border and cross-sectoral.
  - At a domestic level, participants recognized much value in identifying a single umbrella organization to help coordinate responses by sharing threat intelligence, responses, and changes in the market and risk to the market.
  - More discussions were called for regarding what triggers should exist regarding central bank intervention in a cyber event.
  - There was a recognized need for a "rapid-response unit" at strategic CEO and CRO levels (i.e., how do they all get on a call and ensure proper understanding of business impacts?).

- **Systemic risk**
  - The participants were in agreement that cyber related risks/events could easily escalate into a full/system wide crisis if not well managed by all the relevant stakeholders in a quick and timely manner (as a result of panic, reputation damage, or loss of confidence in the financial system).
  - Tension/fine balance between taking action to save your firm (but risk market stability) vs. taking action to protect market stability (risking individual stability); need more discussion on individual vs collective market actions in a cyber event — and there is a need for clear regulatory guidance on this and their expectations (at a multi-country level).
  - Scope of impact could extend to the capital market and impact settlement done via the financial market. Given a cyber event is likely a multiple day event, public and private sectors need to consider the T+2 impacts.
  - Views that existing liquidity back-stop arrangement and similar initiatives on reaching out to a pre-agreed partner bank in case of a need for liquidity or injection of funds will not work in a cyber event, as they were not designed with a cyber-attack in mind.
  - The longer term trade-offs require further discussion and exploration from a systemic perspective and if short-term containment had been prioritized (possibly appropriately).
  - Clarity is required on who provides assurance to the market that the systems of the impacted bank(s) are operational with integrity — how do you know you have recovered from a cyber-event? Who provides the attestation? What do you trust/take comfort from? Timeframe for this can be months.

Citi's pilot exercise showed the continued need for financial sectors and countries to come together, find a common ground, and build cyber resilience. Through improving interconnectivity among industry players and public sector, exercises are a practical way to highlight the need for a proper recovery strategy framework and playbooks for each sector and at a country- and multi-country levels.

As the global architecture of cyber resilience (and Operational Resilience) regulation evolves over the next two to five years, cross-border collaboration and public-private sector partnerships will be needed more than ever to establishing robust multilateral cooperation, common cyber response and recovery frameworks, and developing scalable, outcomes-based risk-management techniques.

The role of business is fundamental, both to transition away from practices that undermine the attainment of cyber security and to proactively create solutions that solve existing cyber challenges.

No firm can gain advantage in this space; with our interconnected financial ecosystem and shared technological dependencies, we all rely on a common credibility and confidence structure. A cyber incident at one institution could have a significant impact on others. Partnerships between financial institutions and the public sector, including Central Banks, Development Banks, Ministries of Finance and Ministries of Foreign Affairs is vital.

Over the past year, there has been increased momentum and energy galvanizing the private sector to consider the role it plays in advancing cyber resilience through cyber capacity building.

More is needed.

This is well-aligned with Citi's mission and vision. Citi, as the world's global bank, has a vital role to play, including deploying services and products to address the challenges of resilience in an intentional way and supporting others to do the same. Private-sector support of the public sector, and continued public sector leadership are essential. The risk of not acting is a costly proposition with potentially detrimental consequences for the public sector sustainable development, financial inclusion and innovation agendas, and a suboptimal and diffused deployment of public sector's resources.

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How Not-For-Profit Healthcare Organizations Can Optimize Cash in the Age of Industry Disruption

Thad Garrison

Not-for-profit healthcare organizations face declining profitability and increasing expenses. But by leveraging tools used by healthcare disruptors, treasurers can improve profitability and efficiency by effectively managing liquidity and optimizing working capital.

The past three years have seen the not-for-profit (NFP) healthcare sector face compressed revenues and ever-increasing expenses. This weakness has prompted increased M&A activity; the entrance of corporate industry disruptors; and a market shift to value-based care. These three trends have put increasing pressure on NFP treasurers to optimize cash for a variety of scenarios.

Increasingly, cash is needed to maintain a war chest for acquisitions and act as a credit enhancement tool for debt financing.[1] While working capital cash remains essential to support daily operational expenses and provide reserves for liabilities and unexpected events, NFP healthcare treasurers must leave no stone unturned in the search for cash trapped in legacy treasury operations that can also be used to support financing.

As healthcare disruptors like Wal-Mart, Berkshire Hathaway, Apple and Google recognize, taking a diagnostic approach to cash management requires more than simply understanding a healthcare organization's days cash on-hand; the traditional NFP healthcare sector measurement for liquidity.

This metric, while useful, is static.[2] Taking a fresh look at cash held in bank accounts across the entire organization, centralizing the investment of strategic cash, and unlocking cash in supply chains, can result in significant increases in cash. In addition, extending days payable outstanding (DPO) can measurably improve an organization's cash conversion cycle (CCC), a metric used by corporates to evaluate treasury efficiency. Using both traditional liquidity measures as well as the CCC is important to comprehensively analyze liquidity.[3]

[1] H. Rivenson, J. Wheeler, D. Smith, and K. Reiter, "Cash Management in Healthcare Systems" Journal of Healthcare Finance, (2000): 59-99. https://www.researchgate.net/publication/12473761_Cash_ management_in_health_care_systems

[2] Ibid

[3] S. Upadhyay, Dean Smith, "Hospital Liquidity and Cash Conversion Cycle: A Study of Washington Hospitals," Journal of Healthcare Finance, 2016: 148-157. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.924.9103&rep=rep1&type=pdf

Bank account rationalization

As M&A activity and industry consolidation have accelerated, it is important to not only understand the sources of consumer-to-business (C2B) revenue account flows, but also rationalize business-to-business (B2B) bank accounts across the organization.

Healthcare organization expansion often leads to numerous legacy banking relationships with regional and national banks performing similar banking tasks. There may also be multiple accounts with idle cash balances as a result of completed expansion projects, old contingency reserve accounts, and dormant treasury bank accounts.

Conducting a due diligence review every 3-5 years of all collection, disbursement, and trust accounts can improve operational efficiency, lower banking fees, and improve cash transparency, facilitating more effective investment of strategic, reserve, and working capital cash.

Rationalizing bank accounts also gives healthcare providers the opportunity to determine which banking platforms offer the most useful tools for real-time cash management, account aggregation, and liquidity management reporting. This enables investment decisions to be made with a holistic view based on interest rate trends, investment portfolio returns, and operational business needs for liquidity. Segmenting cash into working capital and reserve or non-strategic cash enables NFP healthcare organizations to maximize yield, while ensuring ample liquidity and safety of principal.

New banking tools to address today's revenue cycle challenges

As healthcare organizations merge and restructure, there is a shift underway from fee-for-service payment models to value-based care (VBC) reimbursement models. This is meant to address historical inefficiencies driven by volume vs. value. Value-based reimbursement models are structured to reward cost effective care and quality outcomes rather than fee/volume driven performance.

Healthcare finance and treasury teams tasked with transitioning their organizations to VBC models need to fully review accounts receivable billing structures and their associated bank account structures. Banks and third-party vendors can assist with new tools that leverage machine learning (ML) and artificial intelligence (AI). These tools will enable healthcare organizations to reconcile collections faster by bringing together disparate pieces of payment data and applying AI and ML to efficiently match payments received with medical invoices.

In many instances, healthcare M&A activity and value-based care restructuring results in an expansion in banking relationships. Virtual accounts can help to rationalize the number of accounts held by a healthcare provider. A healthcare provider may operate across multiple states, including dozens of acute care hospitals, long-term care facilities, and clinics. Under a traditional account structure, a treasurer may need to establish well over 100 bank accounts. Virtual Accounts use a single physical bank but segregate cash flows to a number of virtual accounts, providing a means of tagging transactional activity and enabling more granular levels of transaction reporting.

Virtual accounts can vastly reduce time spent opening and closing physical accounts. As the healthcare entity centralizes cash, liquidity otherwise trapped in redundant bank account structures can be pooled for investment and working capital. Implementation of virtual accounts can take place in concurrence with organizational shifts to value-based card models, or as part of periodic account rationalization efforts.

Optimizing cash and investment portfolio returns; custody and securities lending

As noted by Fitch Ratings, a hospital's cash and investment portfolio and investment policy can have a significant bearing on creditworthiness.[4] In addition to bank accounts, investment portfolios also maintain cash balances that should be considered as part of any account rationalization for optimal returns. Surprisingly, uninvested cash held at custody banks has not been considered a key area of performance returns across investment portfolios in the past.

After nearly a decade of near-zero interest rate returns, uninvested cash was considered statistically insignificant when evaluating overall portfolio performance. Corporate treasurers have increasingly revisited investment policies and now utilize competitive interest-bearing bank accounts and money market funds to boost cash returns while maintaining required liquidity.

[4] Fitch Ratings, "U.S. Not-For-Profit Hospitals and Health Systems Rating Criteria" February 4, 2019:1-30. https://www.fitchratings.com/site/pr/10061558

Larger investment portfolios of NFP healthcare organizations have found that custody and non-custody securities lending arrangements can generate significant cash revenue, help reduce investment management operational expenses, and provide incremental portfolio returns. In simple terms, securities lending is a collateralized loan of securities. Lending agents facilitate loans between borrowers (typically brokerage firms) and lenders (large institutional investors). Lenders earn incremental income based on the demand for the security and the reinvestment of cash collateral. Returns are based on a negotiated percentage split of the revenue earned from these transactions.

Lending arrangements are defined by a contractual agreement and can be customized based on specific lending parameters. For example, a typical multi-asset investment portfolio with $5 billion in marketable securities to lend could generate nearly $1 million in annualized securities lending revenue. Securities lending, as with all investment strategies, requires prudent risk management and active oversight by investment officers.

Adopting corporate treasury best practices

As hospitals and healthcare profitability continues to decline, treasurers, CFOs, and procurement officers need to focus on supply chain efficiency and supplies expense management to maximize profitability.

Many NFP healthcare organizations have begun to consider tools traditionally used by corporates (including healthcare disruptors) to manage accounts payable (e.g., ACH, virtual cards, and supply chain finance) as a way to manage supplies expense. McKinsey estimates that if the NFP healthcare sector adopted best practices from other industries, supply chain and costs such as patient care could fall by $130 billion.[5]

[5] Thomas Ebel, Erik Larsen, and Ketan Shah — McKinsey & Company, "Strengthening health care's supply chain: A five step plan" 2013: 1-7. https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/strengthening-health-cares-supply-chain-a-five-step-plan

Although many hospitals and healthcare organizations have moved away from paper-based payments in recent years as part of broader efforts to digitize healthcare delivery, high volumes of checks continue to be used compared with other sectors. In 2018, healthcare organizations could have saved $12 billion annually by moving from manual to electronic transactions, according to CACQ, a non-profit healthcare alliance.[6]

As well as focusing on B2C payment flows, treasurers, CFOs, and procurement officers should scrutinize B2B accounts payable relating to administrative and supplies costs, which are a significant element of overall cost. Citi estimates supply expenses represent roughly 15% of total hospital expenses while industry research indicates that expenses can be as high as 40% in hospitals with a high case-mix index, such as surgery-intensive hospitals.[7]

According to the Department of Health and Human Services, nearly a third of every dollar spent on healthcare in the United States is consumed by administrative/back-office expenses. Organizations that manage these costs will realize healthier profit margins, increased days cash on-hand and improved working capital metrics. Ratings agencies will view such developments favorably given the current challenging revenue environment.

Strategies to lower costs and extend DPO

With NFP healthcare expenses expected to continue to outpace revenues for the foreseeable future, organizations need to consider treasury tools that reduce costs and extend DPO. Reducing paper checks has been at the forefront of corporate treasury priorities for over a decade and NFP healthcare treasurers are following suit.

Check volume can be reduced by using purchase and virtual cards, ACH, or supplier finance payments. A first step in evaluating accounts payable expense is to conduct a working capital analysis of accounts payable. A file of annual payments can be reviewed by relationship banks or via an RFP to identify the 15%-35% of suppliers that can accept credit cards. Given that the average company makes an estimated 41% of its payments to major suppliers via check (according the 2016 AFP Electronic Payments Survey)[8] there is a significant opportunity when moving to electronic payments.

Virtual cards have become increasingly popular in healthcare in recent years and are now used for a wide variety of expense items including medical devices and supplies, telecom equipment, and even items typically purchased via group purchasing organizations. As the name suggests, virtual cards generate a unique "virtual" credit card number for each payment and enable spending and reconciliation controls to be set for each transaction. Payments can be made individually or via a batch file. A major benefit of card-based payments is the opportunity to earn cash rebates equivalent to between 0.50% and 2% — delivering up to $4 million in rebates for a $200 million spend — depending on an organization's accounts payable vendor data.

Supply chain finance: benefits for buyers and suppliers

Supply chain finance (SCF) is an alternative to card-based payments that enable businesses to lengthen their payment terms to their suppliers while allowing suppliers to elect to be paid early. Banks or third-party vendors provide web-based SCF platforms to facilitate these payments. SCF (also known as reverse factoring) is an extension of the buyer's accounts payable and not typically considered financial debt. For a SCF program to be successful, treasury, finance, procurement and accounts payable teams must work collaboratively.

For the supplier, SCF represents a true sale of receivables. It provides value for firms of all sizes and credit ratings, including SME suppliers (which maintain the flexibility to request discounting at any time during the life of the transaction). Suppliers have the chance to get paid early, with faster, simpler access to cash at beneficial rates, strengthening the healthcare supply chain. SCF can benefit service-oriented healthcare businesses — such as medical transcription services, medical supply companies, medical staffing agencies, temporary nurse registries, outsourced medical coding companies and medical billing services — as they do not bill third-party payers. Instead, they bill the hospitals or healthcare facilities directly.

[6] CAQH, "2018 CAQH Index — A Report of Healthcare Industry Adoption of Electronic Business Transactions and Cost Savings" 2018:1-37. https://www.caqh.org/sites/default/files/explorations/index/report/2018-index-report.pdf

[7] Y. Abdulsalam and E. Schneller, "Hospital Supply Expenses: An Important Ingredient in Health Services Research" Medical Care and Research Review, (2017): 1-13. https://www.ncbi.nlm.nih.gov/pubmed/29148349

[8] Association for Financial Professionals, "2016 AFP Electronic Payments Survey" 2016: 1-43. http://www.socalafp.org/documents/news/2016EPaymentsReportFinal.pdf

SCF has traditionally been underutilized in healthcare. However, with traditional debt forms of financing becoming more expensive and less accessible, SCF provides significant opportunities for both buyers and suppliers. Technology will play an increasingly important role in the delivery of effective SCF solutions, both to automate the exchange of information among buyers, sellers and financial institutions, and also to integrate the financial and physical supply chains.

A final supply chain optimization step is to revisit the use of ACH payments to suppliers unable to accept card-based payments, or unsuitable for supplier financing. Studies have shown savings of over $3 per item by moving from check to ACH:[9] A shift to ACH for a healthcare company making 10,000 check payments can save over $350,000 in annual banking expenses. In addition, ACH vastly reduces fraud, as banks can track ACH items when they are deposited in bank accounts. Finally, payers can extend payment terms on ACH items thereby increasing days cash on-hand.

Conclusion

Next generation payment tools offered by banks provide access to multiple payment methods, (such as Cards, ACH, and checks) offering the flexibility to select the mix of payment methods that best balance payables costs with beneficial supplier terms for added efficiency and cash optimization. These tools also address administrative challenges such as payee enrollment and data maintenance by taking a scientific and systematic approach to payee segmentation, targeting and subsequent enrollment.

As a result of these continuous improvements, healthcare supply chain organizations can significantly improve working capital, shorten cash conversion cycles, and ultimately improve long-term organizational efficiency.

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Healthcare treasury organizations can manage both industry disruption and consolidation by leveraging next generation banking tools that optimize days cash on-hand, improve working capital efficiency, and reduce supply chain operating costs.

[9] Association for Financial Professionals, "2015 AFP Cost Benchmarking Survey" 2015: 1-30. https://www.bottomline.com/application/files/faster-cost-effective-afp-payments-cost-benchmark-survey-gen-us-srr-1510.pdf

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