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The Journal attempts to link conceptualists and practitioners in banking and finance and related aspects of the industry. It is aimed at providing articles that may serve as guidelines in banking and finance operations. The ABA Secretariat welcomes article submissions that align with the goals and objectives of the Asian Bankers Association (ABA).

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This issue features articles that are published in IMF Blog, ESCAP, OMFIF, UNDP, IMF, WEF, ADB, McKinsey, FitchRatings, CNBC and Fintech Magazine, a research institute dedicated to analyzing increasingly complex risks that are reshaping industries, governments, and societies. The editors and staff of the ABA Journal of Banking and Finance would like to take this opportunity to thank the authors for sharing their materials with the ABA and its members.

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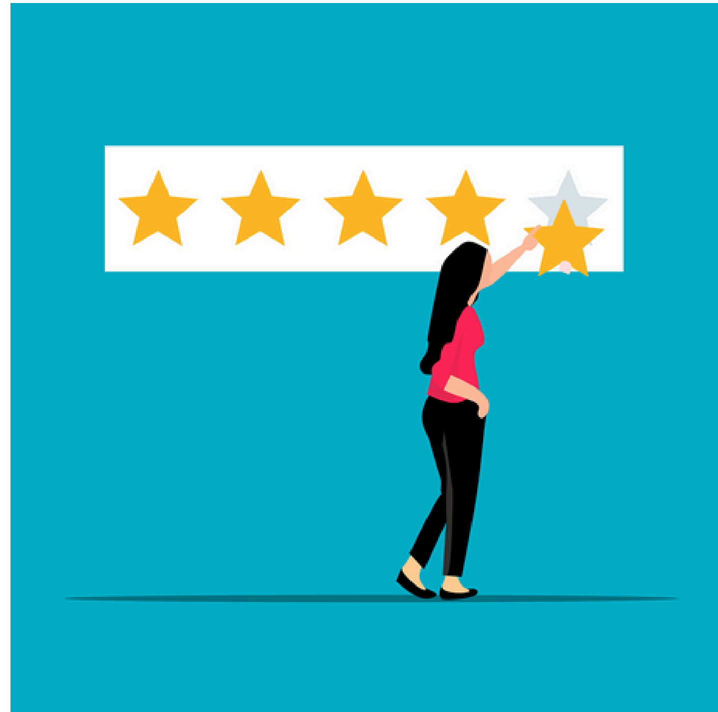
Should there be a dedicated credit rating agency for Asia and the Pacific?

United Nations Economic and Social Commission for Asia and the Pacific
Lin Zhuo | Economic Affairs Officer, Macroeconomic Policy and Financing for Development Division

July, 2024

Following persistent and determined efforts, Africa has achieved a breakthrough in advancing the establishment of an African credit rating agency (ACRA), with the proposed launch scheduled for December 2024. More recently, the African Peer Review Mechanism (APRM) and the United Nations Economic Commission for Africa (ECA) gathered together for a two-day retreat in Lusaka, Zambia, to discuss details of getting ACRA up and running.



What makes it such a significant development? How much sway credit rating agencies have in the big picture of global finance? A new analysis by ESCAP reveals that even a minor upgrade of one notch in a country's credit rating can lead to a significant reduction in government's borrowing costs. We are talking about a 0.42 per cent drop in government bond yields!

However, the global credit rating market is dominated by the Big Three agencies (Moody's, S&P and Fitch Ratings). Together, these three United States-based firms hold a market share of around 95 per cent. The Big Three frequently face criticism for their perceived bias toward developing countries while assigning credit ratings to their sovereign debt obligations. These include heavier reliance on judgment, particularly considering political risks and a country's "willingness to pay." Several factors contribute to this perceived bias, including limited local expertise, shorter track records in emerging markets, less robust reporting standards and data infrastructure, and cultural and linguistic differences.

The APRM has been tasked to conduct a feasibility study and support the establishment of the ACRA. Despite acknowledging various challenges highlighted in the feasibility study, such as concerns about credibility, investor perceptions of ACRA's independence, market confidence, and potential financial risks to shareholders, the study expresses confidence in ACRA's potential for success given the huge appetite for an alternative credit rating agency in Africa.

This new pan-African CRA aims to provide more accurate assessments of African countries by considering regional dynamics and geopolitical factors. It is expected to contribute to make borrowing cheaper for African governments and it is set to be a part of a broader strategy to improve access to capital and integrate the continent with global financial markets. A United Nations Development Programme study suggests that fairer ratings could save African countries up to $74.5 billion, aiding in managing debt and allocating resources for development.

In Asia and the Pacific, during the 15th meeting of the Finance Ministers and Central Bank Governors of ASEAN, China, Japan, and Korea (ASEAN+3) in 2012, the ASEAN+3 Research Group was tasked with studying the establishment of a new regional credit rating agency in the ASEAN+3 Region. Their report was presented at the subsequent 16th meeting, highlighting benefits and challenges similar to what were outlined in the above-mentioned APRM feasibility study. While the findings were acknowledged by the Finance Ministers and Central Bank Governors of ASEAN+3, no further action has been taken thereafter.

Indeed, deciding on the establishment of a regional credit rating agency for Asia and the Pacific is not a simple matter and it requires strong political backing. ESCAP's Economic and Social Survey of Asia and the Pacific 2024 highlights several factors that need to be examined thoroughly. First, a detailed business and financial model, including projected cash flows, need to be explored to ensure both financial sustainability and independence of this new credit rating agency, be it a stand-alone entity owned by a regional intergovernmental body, a joint venture with an established rating agency or outsourcing the credit rating function to other rating agencies. Second, an appropriate legal framework needs to be established. In the case of the proposed African credit rating agency, its legal framework is one critical precondition to ensure that it becomes an autonomous, self-funded, financially independent and globally credible agency. Third, a shareholder and management structure with a clear description of the roles of all potential stakeholders to ensure independence and credibility.

Amidst rising government borrowing costs and escalating public debt distress, globally and in Asia and the Pacific, there is a need for a renewed momentum for creating a regional credit rating agency attuned to the distinctive dynamics of Asia-Pacific economies. Ahead of the Fourth International Conference on Financing for Development (FfD4) to be held in Spain in 2025, a milestone to address financing challenges to accelerate the implementation of the 2030 Agenda for Sustainable Development and to reform the international financial architecture, it is perhaps time for countries in the region to discuss this issue. ESCAP, in collaboration with ECA, can facilitate experience-sharing among member countries of the African Union and Asia-Pacific countries, including by co-organizing side events during major events and intergovernmental platforms, such as the forthcoming sessions of the Preparatory Committee for the FfD4 and annual Commission session of the ESCAP. If the initiative triggers interest from the countries, ESCAP can work closely with its member and associate member States to advance the exploration of the idea of establishing a dedicated Asia-Pacific rating agency.

Re-emerging markets: investors will be back

Official Monetary and Financial Institutions Forum
- Kaan Nazli | Senior Economist & Portfolio Manager for Emerging Markets Debt
- Jahangir Aka | Head of Official Institutions & Managing Director, Neuberger Berman

July, 2024

Strong fundamentals and macro tailwinds could bring emerging markets back into favour

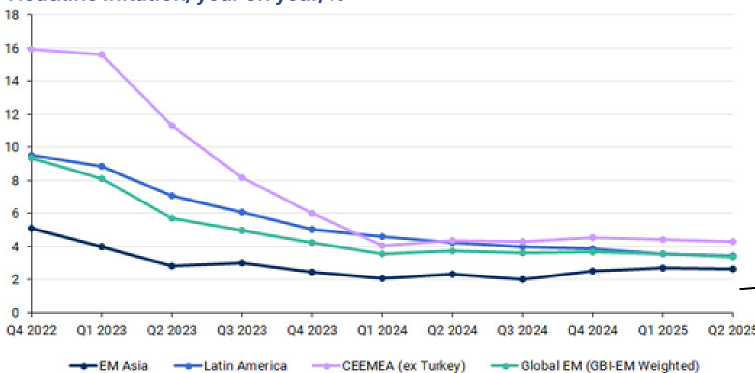
There were record-breaking investor outflows from emerging markets debt in 2022 and 2023. So far, 2024 hasn't seen much of that capital rushing back.

A peak and decline in US interest rates has typically been a favourable backdrop for the asset class, however, and it is only a matter of time before investors turn their spotlight back onto its attractive inflation and growth dynamics, strong corporate fundamentals and notable turnaround stories.

Inflation and growth

Inflation has declined substantially across all regions and now sits broadly within local central banks' comfort zones (Figure 1). We expect further disinflation from here to be more modest, with some lingering risk in oil prices and shipping costs. Overall, however, attractive real yields – especially in Latin America, where we saw some of the world's most aggressive hiking cycles – and a bias towards policy easing, are likely to support local-currency bond performance.

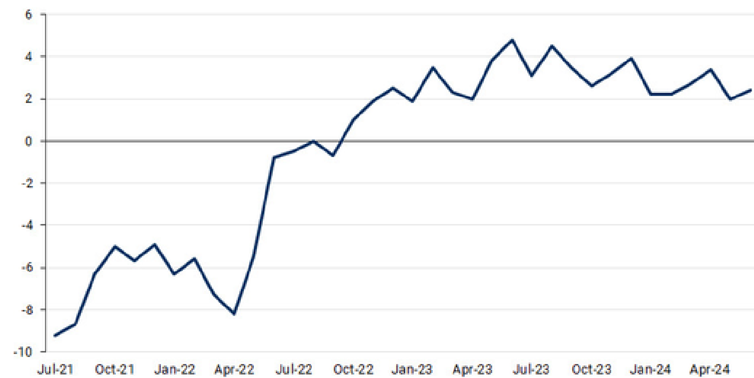
Figure 1. Strong inflation and growth fundamentals in emerging markets
Headline inflation, year on year, %



Following a dip in 2021 and 2022, we have also seen emerging economies' growth differential over developed economies rebound to its longer-term average of around two percentage points (Figure 2). As China has struggled to regain traction, India has emerged as a key growth engine and looks likely to record four consecutive years of expansion in excess of 7%. This is driven by strong public capital expenditure, measures to boost local manufacturing and a boom in service sector exports.

We believe the emerging markets growth advantage can persist if the soft-landing scenario continues to play out in the US. Combined with the high carry resulting from those aggressive emerging markets rate hikes, this fundamental strength should support local currencies.

Figure 2. Emerging markets' growth differential has rebounded



Source: Neuberger Berman, Markit. PMI data as of 30 June 2024. For illustrative and discussion purposes only.

→ Source: Bloomberg, EMD team forecasts from 4Q23, as of 3 April 2024. EM aggregate includes China, India, South Korea, Taiwan, Singapore, Indonesia, Malaysia, Philippines, Thailand, Czech Republic, Hungary, Poland, Romania, South Africa, Turkey, Brazil, Mexico, Colombia, Chile and Peru. Regional aggregates are equally weighted averages of corresponding countries. For illustrative and discussion purposes only.

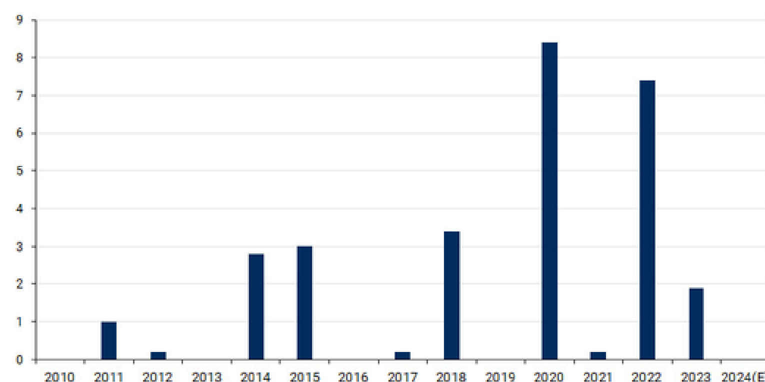
Default risk receding

This outlook also bodes well for defaults, in our view. We see limited risk of sovereign defaults this year, as the more vulnerable countries have managed to secure new funding (Figure 3). More concerted engagement with the International Monetary Fund should result in support for funding needs and reform agendas.

Argentina is pursuing ambitious fiscal reforms and just recorded its first budget surplus since 2012. Egypt has secured valuable capital inflows from Gulf countries, the European Union and the World Bank, while extending its IMF reform programme. Nigeria has undergone a currency devaluation and a hiking cycle, and is pursuing tax and subsidy reforms that should improve its budget position. Sri Lanka continues a steady recovery from its multi-year economic crisis, with a debt restructuring due to be finalised this year, an IMF programme and a rebound in income from tourism and remittances. Zambia has just exited from default status after three and a half years and Ghana has obtained its bondholders' preliminary approval for a restructuring.

We believe default risk is receding for high-yield corporate issuers, too: our forecast is for the rate to fall to 4.8% this year, down from 7.8% in 2023 (Figure 4). Excluding the China property sector, which is likely to remain the main source of corporate defaults this year, our expected default rate drops to 3.3%, which is lower than the historical average. Risks from a slowdown in earnings are mitigated by strong corporate balance sheets on average, with liquidity buffers near decade highs and debt ratios lower, on average, than those of US companies, following years of deleveraging.

Figure 3. Emerging market default risk is receding
Emerging markets sovereign default rate, % of notional



Source: Neuberger Berman estimates as of 31 March 2024. For illustrative and discussion purposes only.

Figure 4. Default risk also receding for high-yield corporate issuers
Emerging markets high yield corporate default rate, % of notional

	2022	2023	2024 (estimate)	2011-20 average
Asia	16.5	8.0	5.6	4.3
Central and eastern Europe, the Middle East and Africa	16.1	10.0	3.4	2.2
Latin America	3.7	5.3	1.7	4.3
Total EM	**14.0**	**7.8**	**4.8**	**4.6**
Total EM, excluding China real estate	8.3	5.0	3.3	

Source: Neuberger Berman estimates as of 31 March 2024. For illustrative and discussion purposes only.

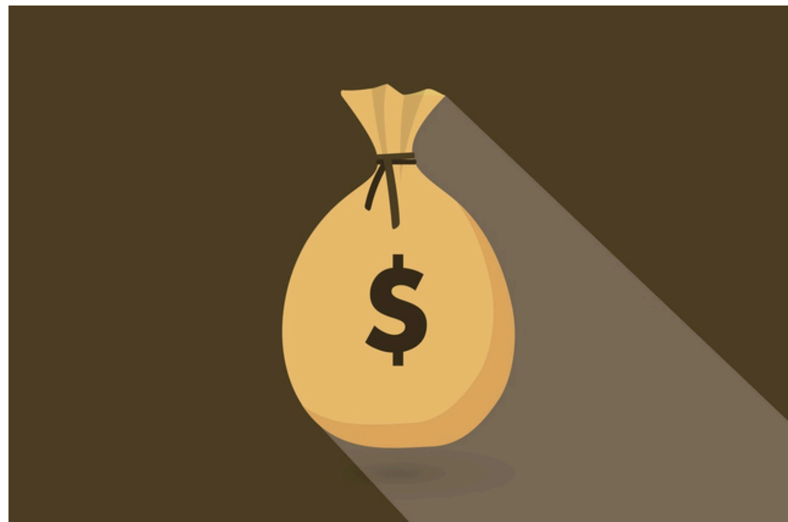
Value still available

Is this benign outlook for the asset class already in the price? We do not believe so. While valuations have become relatively expensive in parts of the investment-grade hard-currency market, we continue to see opportunities for spread compression across numerous higher-yielding names and, outside of Asia, attractive carry in local-currency bonds and foreign exchange. A reversal of the past two years' outflows could be the catalyst for that spread compression.
The key risks, in our view, are the potential for a re-acceleration of global inflation and a consequent hawkish turn by central banks, and a return to a more aggressive protectionism in the US following the election in November.

2024 Revised Basel Core Principles for Effective Banking Supervision

International Monetary Fund
- Fabiana Melo | Deputy Division Chief, Financial Regulation and Supervision, IMF
- Katharine Seal | Senior Financial Sector Expert, IMF
- Valeria Salomao | Senior Financial Sector Specialist, World Bank

July, 2024



In a significant step toward enhancing global banking supervision, the Basel Committee on Banking Supervision (BCBS) recently revised the Basel Core Principles for Effective Banking Supervision (BCP). The BCP are the de facto minimum standards for the sound prudential regulation and supervision of banks and banking systems and are universally applicable. This comprehensive update, the first since 2012, reflects the evolving financial landscape and incorporates feedback from a wide range of stakeholders including BCBS members, nonmember countries, the International Monetary Fund (IMF), and the World Bank (WB). After extensive consultation, the revised BCP were approved by the BCBS in February 2024, endorsed by the International Conference of Banking Supervisors in April 2024, and published thereafter —marking a pivotal moment in the global effort to strengthen financial oversight.

The revised BCP document is a response to regulatory developments and structural changes within the banking industry over the last decade. It addresses the lessons learned over the last 10 years, including from the pandemic and the March 2023 banking turmoil; key findings from assessments under the Financial Sector Assessment Program (FSAP); and new challenges posed by ongoing structural transformations, notably digitalization and climate change. The revisions emphasize the importance of operational resilience, systemic risk management, and the adoption of a proportional approach to supervision, catering to the global diversity of banks and banking systems.

The revised Core Principles and accompanying methodology are set for immediate adoption, with no transitional period. This approach signals a commitment to rapidly elevate supervisory standards worldwide, although it is recognized that achieving full compliance may take time for many jurisdictions. The aim is to foster a global banking environment that is robust and adaptable to future challenges. In anticipation of these standards and their broader implications, the IMF and WB have proactively engaged with member countries to facilitate their understanding and implementation.

This is the executive summary of IMF's report, titled "2024 Revised Basel Core Principles for Effective Banking Supervision."

Asia-Pacific Banks Not Feeling the Heat from Final Basel Rules

FitchRatings

March, 2024

The majority of APAC banking jurisdictions are set to take the latest global iteration of Basel capital standards in their stride, says Fitch Ratings.

Banking groups in most APAC markets have been able to absorb the moderate increases in capital requirements required under the final Basel III standards, due to prevailing conservative regulatory approaches and less extensive use of internal models within the region. Few have implemented the rules in full so far, but we expect the transition will not have a substantial impact on capital requirements over the next two years - by which time adoption should be complete in most major APAC jurisdictions. This contrasts with US bank regulators' estimate that adoption would cause a 16% increase in common equity requirements for large US banks - although the actual impact is likely to be lower if US authorities adopt less onerous rules - as suggested by the Federal Reserve Chair earlier in March 2024.

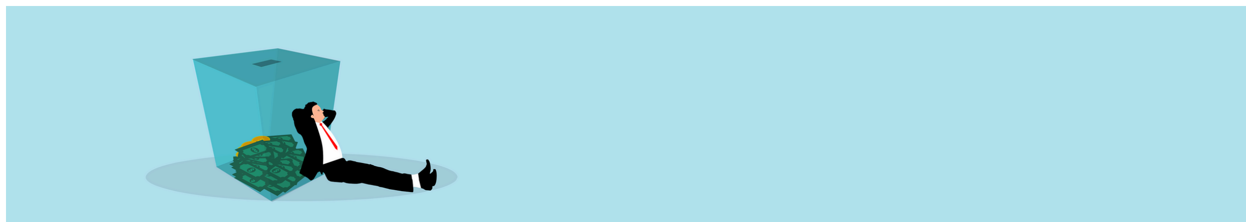
Australia adopted the final Basel III package from 1 January 2023, which resulted in reported domestic bank common equity Tier 1 ratios improving by up to 100bp for the major banks, due to an easing in some of the conservative risk-weighted asset (RWA) calculations in place prior to the switch. Similarly, Indonesia's pilot application of revised standardised approaches from January 2023 improved Tier 1 capital ratios initially by up to 300bp.

These observations align with the Basel Committee on Banking Supervision's (Basel Committee) March 2024 monitoring report. This estimates, using end-June 2023 balance sheets, that a fully phased-in implementation of the final Basel III framework could lower tier-1 minimum required capital for internationally active large APAC banks (disclosed in the publication as the 'Rest of the world' category, but predominantly APAC) by an average of 0.8%. This compares with its estimated tier-1 requirements being 18.3% and 1.3% higher for the large European and Americas banks, respectively, albeit based on a full transposition of Basel rules, which sometimes differ significantly from actual legislative proposals.

China launched its domestic implementation of final Basel III at the start of 2024, and will be followed by Japanese internationally active banks from end-March. Fitch does not expect the Japanese megabanks will report a significant impact in the first year of implementation, with the exception of Mitsubishi UFJ Financial Group, Inc. (A-/Stable/a-) where removal of capital floor-related buffers will reduce its overall RWAs. Singaporean banks will go live under the new regime from July, and then Hong Kong and Malaysian banks from January 2025. We believe they will do so largely faithfully, since authorities in these major systems are Basel Committee members, and so committed to applying the final Basel III framework.

South Korea, another Basel Committee member, has already implemented the revised credit risk, market risk, and credit-valuation adjustment measurements required under the final Basel standards in 2023, along with preferential risk-weightings to corporates and SMEs, as part of their pandemic era relief package. India has yet to publicly disclose its implementation timescales, although as a Basel member jurisdiction it will be under moral suasion for a timely and full implementation.

Authorities in other APAC systems, but particularly within emerging markets, have generally taken a more conservative prudential approach, and do not permit using internal models (with a few exceptions). As such, these jurisdictions face less impetus to implement the final Basel III framework - including the output floor that ties modelled estimates to a fixed proportion of standardised supervisory risk-weightings. Vietnam, for example, only transitioned fully to the Basel II framework in 2023, and we do not expect a transition to Basel III rules in the next two years.



Modernizing Financial Markets with Wholesale Central Bank Digital Currency

April, 2024

World Economic Forum

Preface

The financial sector is on the precipice of the next phase of wholesale central bank digital currency (wCBDC). In late 2023, Switzerland saw the first-ever live wCBDC issued to settle a digital bond transaction as part of a limitedphase pilot. In Asia and the Middle East, Project mBridge is redefining cross-border payments using wCBDC by expanding its observing members to 25 central banks and institutions ahead of its minimum viable product launch this year. The European Central Bank (ECB) has also begun testing wCBDC on distributed ledger technology for securities and foreign exchange transactions. The Bank for International Settlements (BIS) general manager, Agustín Carstens, stated that wCBDC should be "taken for granted", noting its expected broad adoption. 3 With more than 200 central banks, over 130 regulated financial market infrastructures (FMIs) and a large proportion of economic activity that relies on wholesale financial markets, the question of wCBDC's value proposition comes to the forefront.

While wCBDCs are already being used in limited cases, wCBDC systems are still a new concept. The broad availability of wCBDC systems will depend on policy choices focused on financial stability and safe and sound market practices. The legal and regulatory elements that will govern the possibility of widespread use of wCBDC have an unknown timeframe. Thus, private-sector solutions may grow alongside wCBDC development, and the outcome of regulations will influence the future mix of payment instruments.

Executive summary

Central bank money (CeBM) is crucial for interbank payments and securities transactions because it is virtually free of credit and liquidity risk, enables institutions to reach settlement finality and promotes financial stability. CeBM is ideal for systemically important transactions despite the emergence of alternative payment instruments. Wholesale central bank digital currency (wCBDC) is a form of CeBM that could unlock new economic models and integration points that are not possible today. wCBDCs promise to preserve the role of CeBM as a credit risk-free payment instrument by providing a foundational layer for digital payments in the next generation of financial markets.

These findings suggest wCBDC systems are well-positioned to modernize cross-border transactions, especially those involving multiple parties and assets like FX or securities.

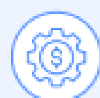
There is a set of persistent industry challenges that require modernization beyond introducing a new payment innovation. Further evidence is needed to conclude whether wCBDC can effectively address: liquidity management optimization, CeBM accessibility, compliance by design and new and existing system interoperability. This report offers a set of calls to action for the industry to consider and continue advancing the global dialogue in these areas.

Real-time gross settlement (RTGS) systems and legacy infrastructure are being modernized to meet evolving demands, and these systems will exist in parallel with wCBDC. Likewise, privately issued reserves-backed digital currencies (RBDCs), deposit tokens (DTs) and fiat-backed stablecoins (FBSs) are examined to distinguish their potential role with wCBDCs and envision a digital payments ecosystem where a diverse set of payment options coexist.

Policy-makers, financial market infrastructures and private sector leaders should apply these insights to their respective jurisdictions to ensure a more efficient, responsible and secure financial future

Four areas of differentiated value for wCBDCs are highlighted:

Realizing a global settlement window by harmonizing foreign exchange (FX) and securities markets settlement times to overcome operational hour disparities among key trading corridors.



Expanding payment-versus-payment arrangements through cost-effective solutions that can support a diversity of currencies to enhance currency liquidity.

Mutualizing data across parties by securely transmitting settlement data across parties and jurisdictions to support automation, reduce settlement risk, and enhance trade and post-trade activities.

Tokenizing credit risk-free settlement media for settling tokenized securities and supporting emerging tokenized payment instruments.

This is the executive summary of WEF's report, titled "Modernizing Financial Markets with Wholesale Central Bank Digital Currency."

6 trends shaping financial advice in the fintech era

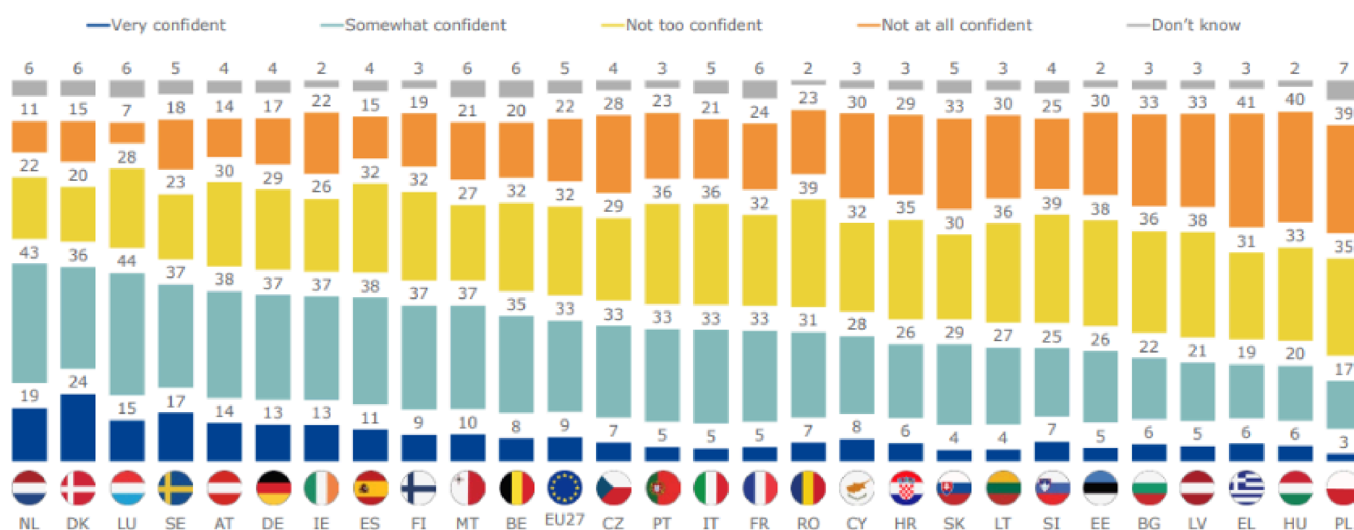
World Economic Forum
Andrea Willige | Senior Writer, Forum Agenda

August, 2024

The financial advice industry was considered conservative, dominated by large, established organizations mainly focused on the wealthier end of the financial clientele.

Today, the landscape couldn't look more different. Rapid technological progress, demographic shifts and changing consumer expectations have profoundly transformed the sector. A new report from the World Economic Forum and Accenture, The Future of Financial Advice, explores how the face of financial advice is changing in a much more fragmented and complex marketplace.

It highlights six trends characterizing the financial advice marketplace and how policymakers and regulators can guarantee access to sound and trustworthy financial advice – at a time when financial literacy is more important than ever.



1. Changing demographics drive a need for innovation
Financial advice typically follows a person throughout their life, ranging from investing into the future through managing debt to planning for retirement and inheritance.

With demographics shifting as life expectancy increases, financial advice must adapt and enable people to build life-long financial resilience.

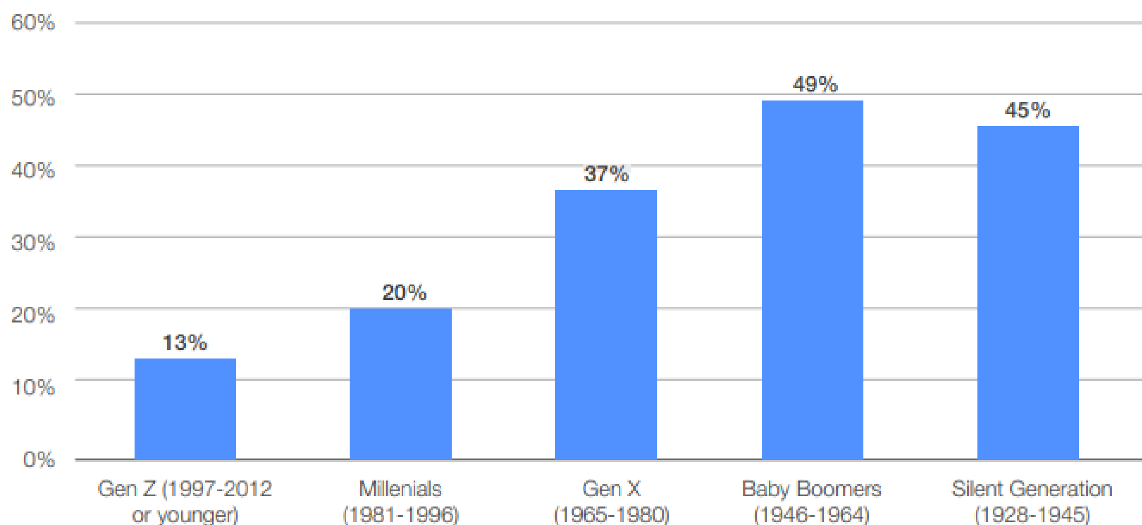
Longer lives, changing economic conditions, and changes to state pension schemes could leave older people with insufficient retirement funds. Recent research shows that only around half of US Americans and EU citizens feel confident they have saved enough to live comfortably in retirement.

Younger people enter the financial services market earlier than previous generations, not least due to student loans, the report finds.

The makeup of investors is also changing, especially in the US, where women and people of colour are getting more involved than in previous generations.

At the same time, trust in financial services has been in decline, and as the Forum finds, financial literacy is low, especially among the youngest generations (Gen Z, Millennials and Gen X).

To claw back trust, financial institutions need to accommodate a more diverse marketplace. This means recruiting more diverse teams that can relate to these new audiences and develop better approaches to reaching and educating them.



2. Holistic financial well-being comes to the fore

What's needed is more than just point solutions – a car insurance policy, a pension plan – but advice and education to achieve what the report terms "holistic financial well-being". This is when a person feels secure in meeting current and future financial obligations.

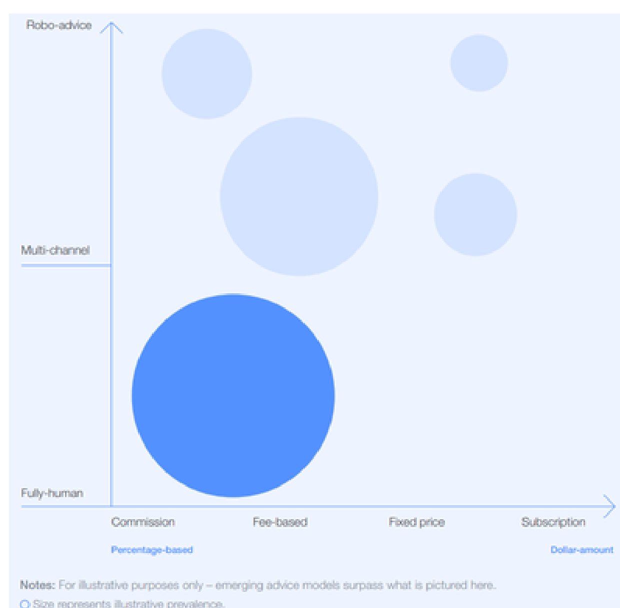
The Forum finds that people seek out one-stop shops that can provide comprehensive, unbiased advice on all their financial needs, supported by long-term plans around major life events.

This holistic approach will not only contribute to building up more savings and investments, but it also has psychological value. The report points to research in the US showing that it can make people feel less vulnerable and worried about their personal finances, with a significant impact on overall well-being and productivity at work.

Banks must capitalize on this opportunity by implementing technology such as mobile apps and websites to offer more tailored advice and education.

3. People expect hyper-personalized services and round-the-clock digital access
This personalized approach is increasingly becoming the default expectation. More than three-quarters of Americans now see personalized interactions as the standard, the Forum reports. Along with personalized advice, they also want instant access to their accounts and financial products.

Technologies like "robo-advice" – a digital platform providing automated, algorithm-driven financial planning and investment services – could bridge that gap. And help with day-to-day financial management while referring bigger life decisions to a human expert.



Access

There is an evolution in how financial advice is being accessed and delivered, potentially expanding affordability and access points for individuals.

The increasing availability of information sources, including social media platforms, is prompting individuals to seek knowledge and ask questions about financial matters.

Education

Financial literacy is critical to the effective use of financial advice and to empower financial well-being, and financial advice is a complement (rather than a substitute) for this.

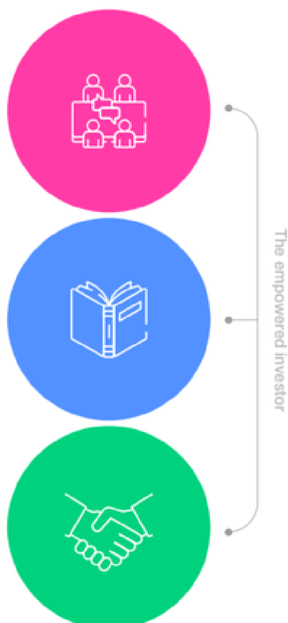
Trust

Trust between the adviser/provider and the individual remains paramount.

Evolving models within the financial advice landscape are shifting how trust is earned and kept.

The training and credentials of advisers are crucial gatekeepers.

With technology comes a risk of misuse and exacerbating existing biases if not deployed responsibly.



4. Transparent and fair pricing lowers barriers
Changing consumer preferences and policymakers' efforts for more flexible, transparent and fair pricing structures have already spurred innovation in financial institutions' business models.

In the US, close to 9 in 10 households prefer fee-based advice, shunning commission-driven financial consulting. Financial advisers' share of fee-based income has grown from just over half to 75% in the last eight years. In Europe, there is a higher share of commission-based selling. The Forum points to research that more than two-thirds of European adults don't trust the financial advice they receive.

Beneath those top-line numbers, transparency is particularly favoured by the two youngest generations, Gen Z and Millennials, who are more inclined to switch advisors to reduce fees.

Banks must, therefore, prioritize delivering financial advice and education not only more independently but also more cost-effectively. The financial sector has an opportunity to integrate human, multichannel, and automated advice into its business models, along with differentiated pricing for the different strands.

5. Technology innovation and AI
As customers' expectations rise and new markets emerge, deploying technology will be vital to increasing productivity, lowering costs, and enabling greater access to markets.

The interactive nature of digital and mobile platforms also enables greater personalization and can help demystify financial planning.

Generative artificial intelligence (AI) will play a key role, helping automate many routine processes and enabling advisors to dedicate more time to personalized consulting. At the same time, AI can simplify the advisor's work by providing valuable insights in real-time and automatically generating tailored advice.

Greater levels of digitalization and automation would also lower costs and barriers for young people or low-income households to access financial advice.

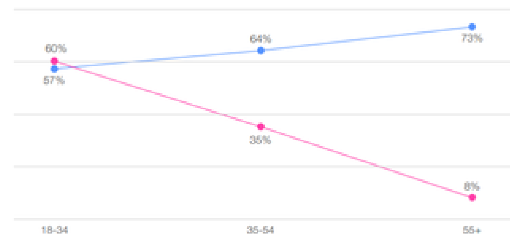
However, it can only live up to these expectations if financial services firms commit to modernizing their technology stack.

6. The birth of the 'finfluencer economy'
Hardly any industry sector has escaped the impact of social media, and financial services is no exception.

The influencer economy is now a $24 billion industry. And while the world's top 10 financial institutions have amassed 10 million followers between them, the top 10 'finfluencers' have 64 million followers, the Forum reports.

Finfluencers are driving individuals to start investing...

Main source of investment information (US) December 2022[81]



50%

of Gen Z investors in China cite social media influencers as a major factor in their decision to start investing, compared to 37% in the US and 38% in the UK.[82]

Financial professionals

Social media

Note: Due to limited availability of data, the global statistics span the following countries unless otherwise noted: US, UK, France, Germany, the Netherlands, Japan, United Arab Emirates, China, Brazil and South Africa.

Source: Financial Industry Regulatory Authority (FINRA). (2022). *Financial Capability in the United States: Highlights From the FINRA Foundation National Financial Capability Study.*

Influencers are now playing an essential role in financial education and advice, filling gaps that the established financial industry has not been able to fill, especially among Gen Z and Millennials. Compared to banks, influencers are perceived as more relatable and inclusive and not 'salesy'.

That said, they are not always qualified financial advisors. Their advice can therefore lack risk management considerations, and they may need to be more open about their affiliations and how they monetize their activities.

Nonetheless, finfluencers are stealing the march on traditional financial services providers by providing financial education and improving access to traditionally underserved communities. The financial advice industry must continue updating its business models to close this gap and regain trust by making its services available to a much broader community of investors.

NVIDIA: The Hurdles FIs Must Overcome for AI Implementation

FinTech
Louis Thompsett | Editor of InsurTech Digital & FinTech Magazine

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FinTech speaks to Malcolm deMayo, VP of Global Financial Services at NVIDIA, about the significant hurdles banks must overcome to successfully, effectively and safely implement AI.

The key challenges to AI adoption for banks
The challenges to AI adoption at financial institutions are wide-ranging, they cause friction and slow financial firms down.

For Malcolm, it's important to first take a step back. After all, AI has been baked into financial services operations for some time – predictive AI and machine learning in the form of early neural nets, like recurrent neural nets (RNNs), have been embedded by early AI adopters.

Unified data sets
When it comes to the latest AI innovations, the first question banks should ask themselves is how good their data is.

"Financial institutions are organised around products, which has led to the creation of data silos," Malcolm says.

Now, it's about getting that data into a unified set – a curated dataset that can be accessed and analysed to drive actionable insights.

"Getting data into a place where you can make a high-quality data set is important for model accuracy, and it is an effort that financial firms are very focused on. They know this challenge and have been working on it for years, but it's one of the challenges slowing them down," Malcolm adds.

Is your dataset AI-ready?
It's all well and good working toward creating a unified data source, but is it AI-ready? For Malcolm, creating a data pipeline consisting of tabular and unstructured data from internal and external sources and then curating the data—deduping, compressing white space, extracting noise, scanning for toxicity, and handling data gaps—are key steps in creating an AI-ready dataset.

"There are a few fundamental ways to improve model accuracy, and the first is to have a high-quality data set," says Malcolm. It is in this way a unified data set feeds into the delivery of curated data.

"Model accuracy is influenced by the size of the model," he continues. "The larger the model in parameters, the better its reasoning skills, and the better its thought, the more accurate it is. The more data it's trained on, the better it is at understanding the world which is described in words.

"When you have this, you have a large language model, ie, transformers or generative AI."

Leveraging open-source, improving efficiency

The advent of open-source models has significantly helped financial institutions in this regard. “These open source models allow firms to not have to go out and build their own foundational model,” adds Malcolm, cutting down on technology investment, time and manpower costs.

“Jensen Huang describes an open-source model as a University graduate who knows a lot about the world but nothing about your organisation. So banks must train that model on their business data,” Malcolm explains.

“Customising open-source models to your organisation’s needs is achieved using various techniques, such as supervised fine-tuning and Retrieval Augmented Generation (RAG). This really helps improve model accuracy.

“The leading firms are working hard at data quality and experimenting with fine-tuning techniques, or partial fine-tuning techniques in combination with RAG to improve model accuracy.

“Once you’ve fine-tuned and validated your model, you can deploy it using RAG. Combining high-quality data, supervised fine-tuning, and RAG enables your model to perform better. This means the model will provide the sought-after answer to prompts (a question by another name) on the first go more often instead of having to iterate your prompt several times before the model figures out what you are after. It starts to become expensive.

“And so for those firms, as they start experimenting, they realise that model accuracy leads to more efficiency and a better experience.”

This is the next consideration for banks – efficiency, both in terms of time and costs.

It’s clear that data quality, model accuracy, and model size are all interrelated when it comes to efficiency and cost savings.

Building an AI Factory that supports multi and hybrid cloud

The next challenge for banks is to leverage an AI Factory that enables them to develop and deploy models anywhere. If they have sensitive data, need to prove their workload is resilient, would like to meet customers across clouds, or are concerned about accuracy, cost, or latency – if any of these are true, banks will want to leverage an AI Factory that can live anywhere. “It really requires a firm to have a platform to build models and inference models that's available anywhere in any cloud, on-premise or in colocation (colo),” says Malcolm.

The regulatory angle

The final challenge for banks is arguably the most challenging – it’s the one area they have the least control over – regulations.

Of course, financial firms have been integrating new technologies for years and have developed robust lines of defence to ensure any new implementation is fully compliant.

They have four lines of defence already in place for new technology, especially for predictive AI or machine learning.

“The first line of defence is to ask: Just because we can do it, should we? Every employee in every financial firm is tasked with answering that question and understanding that they must be responsible if they decide to implement any new tech,” continues Malcolm.

With the fiduciary responsibility put on financial firms, this has, in essence, created a ‘table stacks’ process they must all go through.

The next layer of defence is model validation. Proving that the model will do no harm and will generate accurate, fair, and responsible insights and predictions.

Malcolm says: “Last year was the year of experimentation from leading firms, and they looked at recalibrating their control framework for generative AI, having conversations with regulators around how it works, how varying inputs impact the outputs, and how to explain how a model operates responsibly.”

The third layer of defence is governance, and the fourth is risk management. Banks must ensure they focus on their exposures based on everything happening in the world.

“That requires understanding beyond just tabular data,” Malcolm notes. “It requires looking at unstructured data, looking at breaking news, looking at fundamental data, looking at social sub-forms and paying attention to satellite images, which is quite a bit of work and requires a lot of experimentation.”

AI is here to stay

So, while there has been a lot of hype around the adoption of Gen AI at banks, Malcolm is definitive: “It’s here and it’s here to stay.”

He concludes: “This is for real. In 2024, we're starting to see production-based large language models pop up, and you're probably going to start seeing more as the year progresses. This will be the year when we start to see models get into production, as AI assistance, computer code generators, process automators, and co-pilots, all requiring a human in the loop to make final decisions, but it will keep growing as we head into 2025.”

One year in: Lessons learned in scaling up generative AI for financial services

McKinsey & COmpany
– Carlo Giovine | Partner, in McKinsey's London office
– Larry Lerner | Partner; McK, Washington, DC, office

May, 2024

In the year or so since generative AI burst on the scene, it has galvanized the financial services sector and pushed it into action in profound ways. The conversations we have been having with banking clients about gen AI have shifted from early exploration of use cases and experimentation to a focus on scaling up usage. The technology is now widely viewed as a game-changer and adoption is a given; what remains challenging is getting adoption right. So far, nobody in the sector has a long-enough track record of scaling with reliable-enough indicators about impact. Indeed, some financial institutions have gotten off to false starts. Yet that is not holding anyone back—quite the contrary, it's now open season for gen AI implementation and the learnings that go with it.

Much has been written (including by us) about gen AI in financial services and other sectors, so it is useful to step back for a moment to identify six main takeaways from a hectic year. With gen AI shifting so fast from novelty to mainstream preoccupation, it's critical to avoid the missteps that can slow you down or potentially derail your efforts altogether.

1. Make AI a strategy centerpiece
Gen AI amounts to a big bet, and as such, implementation and scaling need to be front and center. This is a core strategy topic and needs to be addressed at the CEO level. Financial institutions that have made the most headway have driven their efforts from the top. Treating AI strategy as a CEO-level topic both energizes the organization and eliminates potential bottlenecks. Moreover, the top-down prioritization that flows from elevating AI to top-level strategy means that efforts are sponsored and funded in ways that help gain momentum. We are already seeing a big change in thinking along these lines: at a recent roundtable with 26 data-and-analytics banking executives, some 60 percent said gen AI is now a top-of-the-house strategic priority that is spurring more widespread adoption of the technology.

2. A centrally led organization is the key to scaling
Financial institutions using a centrally led gen AI organization are reaping the biggest rewards. A review we conducted of gen AI use by 16 of the largest financial institutions in Europe and the United States showed that more than 50 percent of the businesses studied have adopted a more centrally led organization for gen AI, even when their usual setup for data and analytics is relatively decentralized. Conversely, efforts have sometimes stalled, including at some leading banks, when organizations have launched more peripheral experiments that failed to gain traction. No single business unit has the scale needed to build the AI "scaffolding" for the whole organization, and thus harness the full power of gen AI. The case for centralization is strong when important decisions need to be taken on matters such as funding, tech architecture, cloud providers, large language model providers, and partnerships. Risk management and keeping up with regulatory developments is also easier with a centrally led approach. Centralization also allows a company to allocate talent in a way that is more likely to benefit the entire organization. For all the advantages that central leadership brings, there is also a risk of straying too far from core business. Striking the right balance is essential, and may involve centralizing only for a limited time.

3. Sequence the gen AI roll-out across domains
To date, very few institutions have seen material benefits from Gen AI at scale. While we suspect that this will change over the next 3-6 months, the approach that some have taken to launch dozens of pilots at once is not leading to sustained impact. Instead, those institutions that are narrowing their scope and focusing on scaling 1-2 lighthouse domains appear to be getting more impact momentum.

To realize gen AI impact, financial services institutions will need to continue to reimagine the domains of application and deliver against the full range of opportunities within each domain—both simple and complex ones. Gen AI is a lever, not a silver bullet, and we can already see some sequencing at work. Early momentum has largely focused on customer servicing—mostly agent co-pilots with some banks offering a chatbot or thinking about it, alongside software development, mostly in the form of coding assistance tools for new code development, documentation, and testing. We've also seen some front-line support for wealth and commercial banking. More recently, there has been movement to domains that are in the thick of operations and highly regulated, including back office, credit risk, and know-your-customer. There are some moves to more complex, end-to-end automation for customer servicing, for example linking multiple agent co-pilot use cases including call summarization, knowledge access, post-call fulfilment, and seamless experience, as well as more complex coding transformations, such as legacy code base migration. Next up will be bringing together multiple domains seamlessly, including front and back office, outbound communications, and inbound chatbots. All of these applications will need to be integrated with complementary advanced analytics capabilities; hyper-personalization is one example of where traditional recommendation engines work hand in hand with gen AI.

4. Robust (and reusable) scaffolding is crucial
Building (and trying to scale) pilots without a robust enterprise AI infrastructure can result in increased risks and Model Risk bottlenecks. The "knowledge scaffolding" that a financial institution builds for gen AI needs to be extensible and reusable. There is both a "what" and a "how" element here: the "what" is the product innovation you provide customers, the productivity gains you can extract, and the competitive shifts in market dynamics that need to be considered; the "how" is the operating model, the prioritization of use cases, the data, tech, and tooling aspects including data architecture and governance, and the risk and regulatory frameworks that are essential components. Scaling gen AI requires a multi-layered tech stack comprising applications that allow for end-user workflow integration, machine-learning operations that can tailor, deploy, and maintain models; access to different large language models, and reconfigured infrastructure that can support gen AI. Once the scaffolding is built, you can hang use cases from it that span from the back office all the way to the front lines, as well as legal and compliance. In other words, the same infrastructure is used to analyze different types of documents. The question here for financial services firms is whether they are building locally optimized scaffolding where it is needed that can also be used horizontally across the organization where it makes sense. Getting value to the customer does not always require the latest state-of-the-art model. What's important is staying up to date on the developments in the field to keep selecting the most appropriate tech solutions.

5. Treat data as a corporate asset

Data is the new gold dust and needs to be elevated as a corporate asset and governed in ways that extract maximum value. This is not specific to gen AI but is relevant to any digital transformation. It may sound obvious, but we continue to find institutions that have not yet done this and are thus struggling to gain momentum. Data is either a great enabler or a great blocker, and those that have elevated it to a corporate-level asset tend to do better. Yet the hurdles to doing so remain considerable: in our recent roundtable with data-and-analytics banking executives, one in four said that the quality of unstructured data was one of their biggest data-related challenges to scaling gen AI, followed by security classification of new data sources, and data permissioning.

6.AI is a people play

A key differentiator that separates the institutions that are doing best with gen AI and the rest is how well they address end-user adoption and change management. Indeed, it's no exaggeration to say that gen AI is not just a tech play but a people play. Firms need to ask themselves if they are spending enough resources to drive adoption, including through robust change management, reskilling, and measuring impact. The issue cuts to the core of cultural changes that most banks are grappling with. If you are a 30-year relationship-manager veteran, you have long been heralded as a rainmaker; now, along comes gen AI which aims to make you more effective. Not surprisingly, the pushback against adoption is real. A survey we conducted suggests that fewer than one-third of organizations use AI in more than one function, a share largely unchanged since 2021. The risk here is that companies will fall into "pilot purgatory" and capture only a fraction of the technology's true value. The same rigor is needed in change management as it is in implementation.

These are certainly exciting times, and we have been impressed by the rapid embrace of gen AI by some of the biggest players. AI capabilities continue to evolve at lightning speed: latest developments include agent-based workflows that automate more complex processes, including, for example, writing credit risk memos. Assumptions made today on use cases thus may not hold true tomorrow. Ultimately, time is the best test of any technology adoption and, one year in, there is still a lot about gen AI and its current usage that we have yet to discover, let alone imagine future uses. What's important is to keep the momentum going, to broaden the use cases, and above all to see the technology for what it is: a tool of incredible power, but one that needs to be managed with care.

Explainer: How Asia Can Unlock $800 Billion of Climate Financing

International Monetary Fund
– Ilya Garger | International Consultant, UNDP
– Sean Less | Business and human Rights Specialists, UNDP

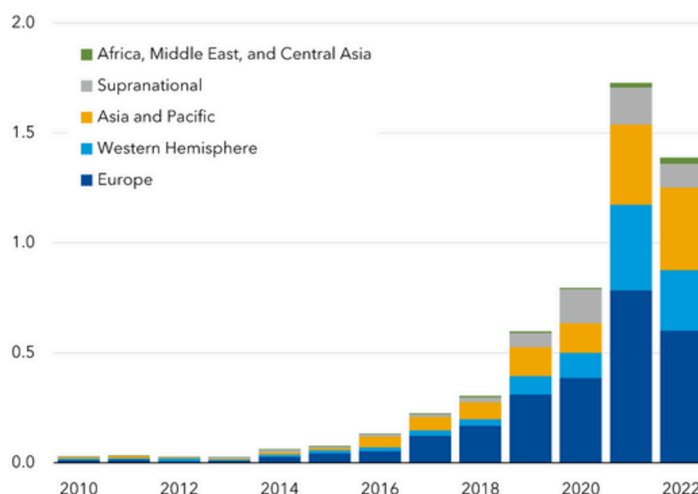
January, 2024

Countries in the Asia-Pacific region face a shortfall of at least $800 billion in climate financing. With public finances depleted by the pandemic, policymakers must unlock the vast potential of private capital to join the fight more effectively against global warming.

Doing so will demand a coordinated and multi-faceted approach by actors on all sides, from governments and central banks to financial supervisors and multilateral institutions. Important strategies include phasing out fossil-fuel subsidies, which have reached a record $1.3 trillion. It will also be key to expand carbon pricing, bridge critical data gaps, and promote innovative financing along with public-private partnerships.

Here's an explainer based on our latest research, which draws on recent chapters of the Global Financial Stability Report on scaling up climate finance and other IMF studies on climate issues:

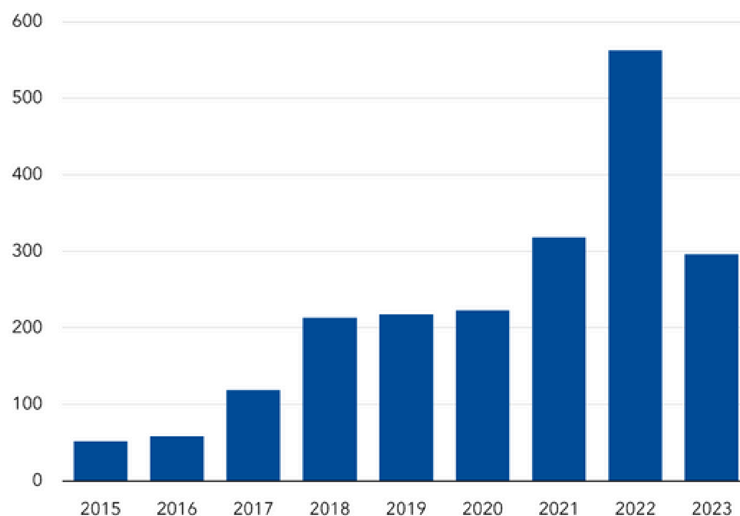
- Why is climate finance urgent? Progress is too slow. Global temperatures are set to surpass the critical 1.5 degrees Celsius threshold above pre-industrial levels. Efforts to halve 2019 levels of greenhouse gas emissions by 2030 fall alarmingly short, targeting only an 11 percent reduction. Without stronger action, our warming planet imperils homes, health, and food security. Mobilizing more climate finance is vital not only for mitigating emissions but to build adaptive capacity through investments in climate resilient infrastructure. This is especially important for Asia, which is home to several of the largest emitters and a region acutely vulnerable to climate change due to high population density and geography.
- What makes Asia's role pivotal? The region's transition to greater sustainability has global implications. Asia contributed about two-thirds of global growth last year, and will again in 2024, but its heavy reliance on burning coal for energy means that it contributes more than half of harmful global greenhouse gas emissions. Asia's economies recognize how climate hazards directly impact lives and livelihoods, and have made deeper commitments, as their revised Nationally Determined Contributions under the 2015 Paris Agreement show. Asia can aid the climate fight by demonstrating how to balance economic growth and environmental sustainability.



- How significant is the funding gap? Asia's emerging market and developing economies need investment of at least $1.1 trillion annually to meet mitigation and adaptation needs. But they're only getting $333 billion, mostly from sustainable debt instruments like green bonds, and public sources contribute more than half. Such a shortfall leaves these economies with a funding gap of at least $815 billion. China leads in attracting climate finance, making major strides in renewable energy adoption, and its collaborations with the EU have yielded crucial frameworks for sustainable finance, such as the Common Ground Taxonomy and stricter China Green Bond Principles.

- What are the biggest challenges? Pacific island countries and other small economies often have trouble accessing international capital markets or obtaining financing via global climate funds. In particular, they find it hard to meet stringent accreditation requirements of global climate funds as their capacity is already stretched thin and public investment management is challenging. For larger countries, green bonds may be as costly as conventional securities because investors appear to be less trusting of green characteristics in Asia's sustainable debt instruments. These issues underscore the broader challenges for the region's funding aspirations.

- What do countries say? A survey of 19 countries in Asia revealed important gaps in data, disclosures, and taxonomies, and that these are exacerbated by inconsistent national climate policies that can promote fossil fuel subsidies. These deficiencies undermine investor confidence in forward-looking targets and transition. Greenwashing also is a risk, respondents say, because it can call into question the legitimacy of environmental claims made by bond issuers. In addition, increasing geoeconomic fragmentation, including friend-shoring and fraying global supply chains, could threaten cooperative and collective action to contain climate change.



Action to unlock much more climate finance requires coordination among agencies overseeing climate initiatives, plus collaboration between local and global entities:

- How can Asia's governments help? One way will be to comprehensively enhance the framework on data, taxonomies, and disclosures. They should phase out fossil fuel subsidies and expand carbon pricing, which would generate revenue for sustainable public investment. This would help boost investment in green technology, jobs, and growth, while supporting vulnerable households. Measures that strengthen macroeconomic and public investment management will help reduce risk premiums and funding costs, drive economic growth, and attract private capital.

- Where do central banks and financial supervisors fit in? They should promote global standards for transparent and consistent disclosures, while strengthening climate risk analyses and incorporating climate-related financial risks into prudential frameworks to enhance financial stability. Lastly, collaborating with multilateral standard setters to develop internal capacity is crucial for improving the clarity and reliability of ESG score ratings, fostering greater trust and understanding in these evaluations.

- What is the IMF's role?The Fund is working with member countries to better detail climate-related economic risks and policies in surveillance and lending activities. The IMF also is strengthening data and statistics, including through capacity building and peer learning, to develop common standards for measuring and analyzing climate risk. Finally, our Resilience and Sustainability Trust can help vulnerable low- and middle-income countries catalyze financing from other sources by restoring sound macroeconomic management and building the institutional capacity of the public sector. Other multilateral organizations can provide more grant financing and concessional lending, and risk-mitigating mechanisms can help expand their lending capacity. Cooperation among multilateral institutions is essential to align efforts and resources to achieve a balanced allocation between mitigation and adaptation lending.

Sustainable Bond Market Posts Strong Growth in ASEAN+3 Economies

Asian Development Bank

March, 2024

The sustainable bond market of member economies of the Association of Southeast Asian Nations (ASEAN), the People's Republic of China (PRC), Japan, and the Republic of Korea expanded 29.3% last year, outpacing the 21% growth of the global and euro-area sustainable bond markets, according to a new report by the Asian Development Bank (ADB).

Outstanding sustainable bonds in these economies, known collectively as ASEAN+3, reached $798.7 billion by the end of 2023 and accounted for around 20% of global sustainable bonds, according to the latest edition of Asia Bond Monitor, released today.

The global and euro-area sustainable bond markets reached $4.0 trillion and $1.5 trillion, respectively, by the end of 2023. Sustainable bonds are bond instruments that are used to finance projects and programs with environmental and social benefits.

"ASEAN sustainable bond issuance made up a higher share of local currency financing and long-term financing in 2023, driven by public sector participation," said ADB Chief Economist Albert Park. "The public sector's participation not only adds to the supply of sustainable bonds, but also serves as a model case for the private sector and helps set a long-term pricing benchmark for these bonds in domestic markets."

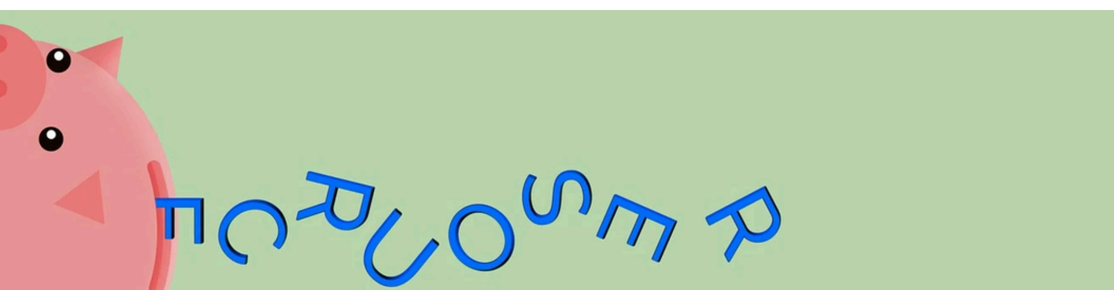
ASEAN markets recorded $19.1 billion of sustainable bond issuance last year, accounting for 7.9% of aggregated issuance in ASEAN+3 sustainable bond markets. This compares with ASEAN's 2.5% share of ASEAN+3's general bond issuance.

ASEAN recorded a higher share of local currency financing and long-term financing in sustainable bond issuance, with 80.6% of sustainable bond issuance denominated in local currency and a size-weighted average tenor of 14.7 years. This outperformed the corresponding numbers of 74.3% and 6.2 years in ASEAN+3, and compares with 88.9% and 8.8 years in the euro area.

Financial conditions in emerging East Asia improved marginally between 1 December and 29 February, as the United States (US) Federal Reserve was expected to ease its monetary stance, while inflation continued to moderate and most economies posted sound economic growth in the region. Equity markets gained in 6 of 9 regional economies, and a total of $17.4 billion in net foreign equity inflows was recorded. Emerging East Asia includes the member economies of ASEAN; the PRC; Hong Kong, China; and the Republic of Korea.

Emerging East Asia’s local currency bond market grew 2.5% in the final quarter of last year to $25.2 trillion. Overall bond issuance contracted 4.8% from the previous quarter, as most governments had fulfilled their funding requirements in prior quarters, while the PRC led a contraction in corporate borrowing amid a weak economic outlook.

The latest issue of Asia Bond Monitor features the first bond market summary for the Lao People’s Democratic Republic. It also presents the results of the AsianBondsOnline 2023 Bond Market Liquidity Survey. The survey notes improved liquidity conditions last year, narrowed bid–ask spreads, and an increase in transaction sizes in both government and corporate bonds.
ADB is committed to achieving a prosperous, inclusive, resilient, and sustainable Asia and the Pacific, while sustaining its efforts to eradicate extreme poverty. Established in 1966, it is owned by 68 members—49 from the region.



Achieving Financial Inclusion Through Digital Currencies

UN Development Programme
Heng Wang | Professor, Singapore Management University

May, 2024

CBDCs are digital versions of countries' official currencies issued by the central bank or the like. They could be the digital representation of physical cash. To date, over 110 central banks around the world are engaged in some form of CBDC-related work, and the Eastern Caribbean Central Bank, and the central banks in the Bahamas, Jamaica and Nigeria have already issued CBDCs.

With more and more governments exploring the potential of CBDCs, there is a greater need to engage with various aspects of this emerging topic, including design, especially given its potential to foster financial inclusion. UNDP has a long history of promoting technological and digital financial innovations that help advance financial inclusion and the SDGs more broadly. For example, its teams have worked with various countries on digital finance and infrastructure innovations enabling underserved business segments, such as MSMEs, to access more sophisticated financial services or on enabling micro-savers to become micro-investors in green infrastructure projects, or on harnessing the developments in Distributed Ledger Technologies to advance innovative financial instruments for private capital mobilization for nature. Given UNDP's expertise and leadership in this space, UNDP's involvement in this discussion will help better support member states as they navigate this changing landscape.

Achieving financial inclusion through digital currencies

Individuals and small firms are facing challenges related to financial inclusion, including limited access to and high costs of banking services, lack of financial literacy, and informal financial practices, among other issues. Despite the progress made to address financial exclusion, these challenges persist: 18% of people around the world still lack a bank account. A significant share of micro, small and medium-sized enterprises – many of which are led by women – are unable to access funding or financing. And amid this backdrop, the annual SDG financing gap – the funding required to achieve the Sustainable Development Goals by 2030, has now increased to a yearly shortfall of US$4 trillion.

The digital divide is further exacerbating these challenges – for example, 2.6 billion people, or around one-third of the world's population, still lack internet access. But this is not just about access. The 'usage gap', the population living within the footprint of mobile internet coverage but not using this potentially game-changing connectivity, is now eight times larger than the total number of those without coverage. Limited digital skills, unaffordable data and devices, concerns of safety and security, and a lack of relevant content and services hinder people from participating in our increasingly digital societies and economies. Financial inclusion is a complex and multifaceted issue – can CBDC's contribute to addressing some of these challenges?

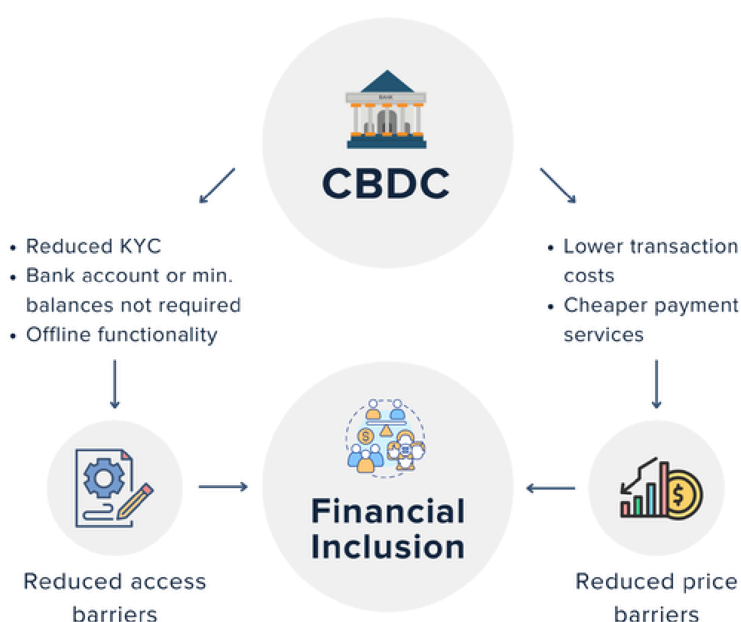
What are central bank digital currencies?

Unlike e-money, stablecoins, or private digital assets like Bitcoin, central bank digital currencies (CBDCs) are digital forms of national currencies ("fiat currencies") issued by central banks. CBDCs can serve as a novel form of central bank money and function as new financial infrastructure.

A CBDC can take two forms, retail CBDC (designed for broad public use in retail transactions) and wholesale CBDC (tailored for financial institutions and wholesale markets to facilitate large-value interbank transactions and settlements). In particular, retail CBDCs are used by the public and businesses for transactions and storing value. The potential use cases for CBDCs are diverse, including salary payments, taxation, and e-commerce. CBDCs can also utilize the technology of "smart contracts", which are automatable and enforceable agreements. Smart contracts hold promise in fulfilling a wide range of functions, such as delivering public services to remote (underserved) areas and managing prepaid fund.

In terms of CBDC current development, 93% of 86 central banks surveyed around the world by the Bank for International Settlements (BIS) are engaged in some form of CBDC-related work, including the central banks of Sweden, China, and Euro area. Within the 30 respondents of the recent International Monetary Fund (IMF) survey on Sub-Saharan Africa, 23 stated that their central bank either has begun or plans to start research, experiments, or development related to CBDCs. The Bahamas, Eastern Caribbean, Jamaica, and Nigeria Central Banks have already issued retail CBDCs, but are currently facing challenges such as adoption rates. For example, the SandDollar, the Bahamas' CBDC, represents a small fraction of the currency in circulation, with the number of registered wallets equivalent to approximately 25% of the population.

Various countries are actively exploring the potential use of CBDCs, particularly retail CBDCs, to improve financial inclusion. CBDCs, if properly designed and managed, may have the potential to enhance financial inclusion by addressing access and price barriers. In terms of improving access to financial services, CBDCs can be designed to reduce identity management requirements (particularly Know Your Customer [KYC]) in low-risk contexts. This could allow the use of digital currencies without the need for bank accounts or minimum balances and offer offline functionality to mitigate the impact of physical remoteness. In addition, by lowering transaction costs for financial services and providing cheaper payment services, CBDCs have the potential to address price impediments and make financial services more affordable for underserved populations.



Potential for development

The understanding of the costs, benefits, and practicality of CBDCs helps countries to affect and prepare for the changing financial landscape. This understanding informs their decisions in developing infrastructure, improving efficiency (e.g., facilitating faster cashless payments), and meeting other user needs (e.g., reducing transactions costs, and providing digital financial services to vulnerable populations).

However, this potential comes with a caveat. While CBDCs hold promise for enhancing financial inclusion, they are still in the early stages of development and are not a panacea for financial inclusion. Other barriers to financial inclusion must not be overlooked (such as financial and digital literacy gaps). CBDCs also bring new risks and challenges. These include cybersecurity threats, identity theft, privacy concerns, cost recovery, carbon emission of infrastructure like data centres, and e-waste. Taking smart contracts as an example, it is crucial to address issues such as privacy concerns and potential technical glitches. Moreover, technical challenges (such as the risk of devices being tampered with during offline payments) shall be carefully addressed.

The complexity of these challenges underscores the need for a conceptual framework for exploring the nexus between CBDCs and financial inclusion, as well as forums where countries can share experiences and lessons learned and learn from each other. In the following sections we have examined a conceptual framework through three main questions (and such framework will be investigated in more depth in our next blogs). The framework places users, including individuals and merchants, at the core of CBDCs, while acknowledging the crucial roles of other actors, including CBDC issuers and industry participants.

Do users understand CBDCs?

Users of retail CBDCs, businesses and individuals, shall have access to not only the infrastructure but also the necessary knowledge about CBDCs. For example, the public should understand how to open a CBDC wallet and use a CBDC without a bank account. Accessing the knowledge and infrastructure necessary for CBDCs can vary based on factors such as offline or online functionality, access to data, and, of course, mobile phone ownership.

Do users know how to use CBDCs?

Key issues regarding CBDCs include convenience (e.g., seamless conversion between CBDCs and cash), and the technological preparedness of users (e.g., possessing cell phones). Further questions arise, such as what happens to a user's CBDC if a user's device is lost? Can CBDCs maintain privacy for small and low-risk transactions? Can CBDCs easily operate offline even during disasters? The CBDC access by feature phones and other hardware (such as cards) helps to promote the adoption of CBDC. This will require maintaining sufficient coverage and capacity of digital infrastructure (including POS and last-mile connectivity) over time.

Do users want to use CBDCs?

Individuals and businesses will weigh factors such as privacy protection, costs, reliability (e.g., user support, dispute resolution), accessibility, and security when considering retail CBDCs. Users often compare CBDCs with traditional methods like cash and credit cards, highlighting challenges such as CBDC dispute resolution mechanisms currently falling short of those in global card payment systems. Essentially, building trust in CBDCs and the issuing central bank is pivotal. Trust is influenced by transparency, resilience (both digital and operational), legitimacy, and security of CBDCs, all of which significantly affect adoption rates.

As we wrap up this first chapter on what CBDCs are and why they are relevant in the financial inclusion discourse, we look ahead to the next chapter of this blog series, exploring the intentional design of CBDCs for financial inclusion. Achieving the latter hinges on secure and resilient technology, accessible infrastructure (including digital identification), and effective governance. It also demands adequate financial and institutional resources to address challenges and sustainably deploy CBDCs, if implemented.