LINKED DOCUMENT B: OVERVIEW OF ASIA'S FINANCE SECTOR

A. The Aftermath of the Global Financial Crisis

1. When the Asian Development Bank (ADB) Strategy 2020 and the finance sector operations strategy that followed soon after were in force, the finance sector in Asia and the Pacific was in reasonable shape, more so than in Europe and North America.[1] The years running up to the global financial crisis had seen the finance sector in Asia develop in a different, less dramatic way.

2. The severity of the Asian financial crisis of 1997–1998 had led to a careful examination of its causes. The Asian crisis, a decade earlier than the one that had beset the global financial system in 2008, had arisen from credit (and equity market) excesses fueled by significant cross-border financial flows,[2] liquidity and currency mismatches, and weak macroeconomic policies. The reforms that followed anticipated in many ways what was to occur a decade later and offered some respite from the financial pressures: "… [D]ependence on foreign borrowing was cut back, official reserves were rebuilt, prudential supervision of the finance sector tightened, banks recapitalized, non-performing loans lowered, and corporate leverage reduced."[3]

3. The effects of the reforms meant that the position of Asian banks stood in sharp contrast to Western banks as the global financial crisis (GFC) got under way. The earlier credit excesses and currency mismatches were largely absent, exposure to banks in advanced countries had not increased, housing market exuberance was mostly avoided, and "households and corporations entered the crisis with generally stronger balance sheets" (footnote 3, p. 269). Better regulated financial systems had gone along with regional initiatives to develop debt capital markets with local currency bond issuance as an alternative source of (mainly public) funding. As then United States (US) Federal Reserve System Chair Ben Bernanke noted soon after the initial impact of the crisis: "One crucial lesson is that financial institutions must be carefully regulated, transparent, and sufficiently well capitalized and liquid to withstand large shocks. In part because of the reforms put in place after the crisis of the 1990s, along with improved macroeconomic policies, Asian banking systems were better positioned to handle the more recent turmoil."[4]

4. Asia had a further advantage that worked in its favor when it operated with a traditional banking model with an "originate to hold" approach to assets. By contrast, the US and European banks, highly dependent on wholesale finance, structured products, and an "operate to distribute" model, were dangerously exposed when the crunch came. The collapse of Lehman Brothers in September 2008 triggered a full-scale financial collapse in the international banking system, with devastating results for the model western banks had developed.

5. The sounder basis of the Asian banks afforded the region's economies some protection against the global financial meltdown. Nonetheless, Asia's trade and financial openness, its reliance on manufacturing and Western supply chains and on external finance from international financial institutions (IFIs) meant there was no escaping the economic consequences of the GFC.

6. The disappearance of trade finance and withdrawal of international banks from the region had a big impact.[5] However, the situation was prevented from worsening by the better starting point and

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[1] ADB. 2008. *Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank 2008–2020.* Manila.

[2] Mainly private sector bank and portfolio flows rather than foreign direct investment.

[3] H.S. Keat. 2009. *The Global Financial Crisis: Impact on Asia and Policy Challenges Ahead.* Federal Reserve Bank of San Francisco Conference on Asia and the Global Financial Crisis. October. pp. 269–70.

[4] Asia and the Global Financial Crisis, Federal Reserve Chairman Ben Bernanke speech at the Federal Reserve Bank of San Francisco's Conference, 2009.

[5] Bank of International Settlements (BIS).2018. *Structural Changes in Banking after the Crisis*. *CGFS Papers* 60. New York: Committee on the Global Financial System.

prompt stimulatory policy responses, which helped domestic demand compensate for the brunt of the impact from the deterioration in exports, and the economic downturn, while sharp, was short and quickly reversed.

7. From the external financing point of view, emerging Asia, which still showed strong growth potential, soon saw external flows pick up close to where they had left off before the crisis, unlike advanced economies where flows fell back significantly and failed to recover their former levels. In the midst of this, the People's Republic of China (PRC), India, and Indonesia, the largest economies in Asia but also the least open, escaped the crisis largely unscathed because of resilient domestic demand. External finance to the PRC continued to grow throughout, supporting inflows to emerging Asia, which doubled between 2000–2007 and 2009–2019 from about 0.4% of global gross domestic product (GDP) to 0.8%.[6]

8. One thing that did change on the external financing front as the post-GFC decade continued was the pattern of capital flows. A Bank of International Settlements (BIS) survey of central banks showed that the declining role of banks was the most significant structural change, while the growing influence of asset managers, investment funds, and other nonbank financial institutions was the second structural shift: "The post-GFC withdrawal of AE [advanced economies] banks from international lending has been offset by the growing importance of market-based flows, particularly for capital inflows to EMEs [emerging market economies]."[7]

9. In emerging Asia, the share of liabilities from portfolio debt increased steadily after 2008 from 25% to about 40% by 2019. Nonetheless, banks remained the dominant source of external funding, with cross-border bank loans as a share of external debt remaining steady at about 45%. Emerging Asia–based banks' investments overseas expanded slightly, with cross-border bank claims (overseas) as a share of home countries' GDP increasing from about 7% to 9% in 2008–2019.

B. A Snapshot at the Start of the Decade

10. Before considering developments over the past decade, it is worth recalling the broad position of Asia's finance sector around the time of the original ADB finance sector operations plan. An International Monetary Fund (IMF) snapshot described the position then as follows:

(i) Emerging Asia's finance sector was considerably larger than that of peers outside Asia.
(ii) Asia's finance sectors were less complex than elsewhere and relied heavily on interest income, which accounted for more than two-thirds of total income at the end of 2012.
(iii) Banks dominated the sector, accounting for 84% of total private credit in Asia at the end of 2012, with bond finance at 11%. Banks were well capitalized and reliant on deposit funding, and governments exerted significant degree of influence.
(iv) Access to finance in Asia by small and medium-sized enterprises (SMEs) lagged behind access in other regions, with fewer than 45% of SMEs having access to credit lines (and only 20% in the PRC), compared with 70% in Latin America and 60% in emerging Europe.
(v) Financial inclusion for individuals in emerging Asia lagged behind other regions, although mobile technology was rapidly changing the picture, with Asia the leader in mobile banking penetration.
(vi) Equity and bond markets remained underdeveloped and illiquid, especially corporate bond markets, because of a lack of long-term institutional investors, such as domestic pension funds and insurance companies, and low levels of public indebtedness. Some governments, such as those of the PRC and India, relied on nonmarket funding, such as loans.

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[6] BIS. 2021. Changing Patterns of Capital Flows. *CGFS Papers* 66. New York: Committee on the Global Financial System.
[7] Footnote 6, pp. 4–5.

(vii) Shadow banking through nonbank financial intermediation (NBFI) was growing cross-border interconnectedness (from a small base).[8]

11. This picture evolved over the course of the decade, especially in relation to access to finance and new forms of financial delivery, as credit and market-based finance grew and technological solutions progressed.

1. Finance and Growth

12. The availability of finance—external and internal—is an important driver of growth. The remarkable pace of output expansion in developing Asia (ADB definition) throughout the 2010s, which averaged more than 6% per annum, was supported by the rapid growth of finance. Although developing countries in Asia had diverse experiences, the pace of expansion was widespread and faster than in other developing regions. Banking systems in Asia provided ample credit overall as economic growth proceeded apace. Even as the region's GDP almost doubling in the decade to 2019, domestic credit to the private sector increased even faster. Among the top-10 recipients of ADB finance, only Pakistan saw a fall in the ratio of domestic credit to GDP in the post-GFC era (**Table 1**). In all nine other countries, the share of domestic private credit to GDP increased by more than 10 percentage points, with Viet Nam, the PRC, Thailand, Uzbekistan, and the Philippines showing the largest gains. Viet Nam, the PRC, and Thailand saw increases in excess of 50 percentage points and recorded credit ratios well in excess of 100% in 2020; such levels are, however, sometimes regarded as dangerous.[9] Nonperforming loans (NPLs) in 2020 were generally low, with countries in the vanguard of credit expansion appearing to have the lowest NPL ratios.[10]

Table 1. Domestic Credit to the Private Sector in Asia: Highest Increases (% points of GDP), 2006–2020, and Nonperforming Loans, 2020

	2006	2020	Change % points	Bank NPLs, 2020 % of loan book
Viet Nam	65	148	83	1.5
PRC	109	182	73	1.8
Thailand	106	160	54	3.2
Uzbekistan	9	36	27	2.1
Philippines	28	52	24	3.5
Sri Lanka	35	50	15	4.9
Bangladesh	31	45	14	7.7
India	44	55	11	7.9
Indonesia	28	39	11	2.8
Pakistan	27	17	-10	9.2

NPL = nonperforming loan, PRC = People's Republic of China.
Source: World Bank.

[8] H. Kang, P. Jeasakul, and C.H. Lim. 2015. A Bird's-Eye View of Finance in Asia. In C.H. Lim, R. Sahay, J. Schiff, C. Sumi, and J.P Walsh, eds. *The Future of Asian Finance.* Washington, DC: International Monetary Fund.
[9] See, for example, J.-L. Arcand, E. Berkes, and U. Panizza. 2021. Too Much Finance? *IMF Working Paper* 161. Washington, DC: IMF.
[10] This may have changed because of the coronavirus disease (COVID-19) pandemic.

2. Increasing Access to Finance

13. Along with improvements in the amount of credit, the proportion of adults (over 15 years) with access to a bank account or mobile money lender increased (**Table 2**). The increase was particularly dramatic in India, where the share rose to 80% by 2017 from 35% in 2011.[11] The PRC reached the same level by the same year. Elsewhere, the share increased by well over 10 percentage points on average among the ADB top-10 countries, with large increases in Indonesia (by 29 percentage points), Bangladesh (18), and the PRC (16).[12] Access to ATMs, another indicator often used to describe financial progress, rose during the period, especially sharply in the PRC and Indonesia, although it tailed off in these countries toward the end of the period, without reducing access, as cashless transactions accelerated.

Table 2. Asian Countries with Rapid Increases in Access to Bank Accounts, 2011–2017

	2011	2017	Change
			percentage points
India	35	80	45
Indonesia	20	49	29
Bangladesh	32	50	18
PRC	64	80	16
Uzbekistan	23	37	15
Mongolia	78	93	15

PRC = People's Republic of China.
Note: Data refers to proportion of adults (15 years plus) with a bank or mobile moneylender account.
Source: International Monetary Fund Financial Access Survey (2022).

14. More modest improvements occurred in SME lending (**Table 3**). Allowing for strong GDP growth, the increased share of GDP taken up by SME commercial bank loans translates into some large increases in lending but, as noted in the financial inclusion section, low SME bank-lending shares in several countries are suggestive of credit constraints and potential room for more finance. Considering the uneven access among types of SMEs within countries makes that even more relevant.

[11] The latest World Bank Global Findex Database (A. Demirgüç-Kunt, L. Klapper, D. Singer, and S. Ansar. 2022. *Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19*. Washington, DC: International Bank for Reconstruction and Development and The World Bank.), which extends some series to 2021, shows that this upward trend continued, although much less dramatically, as the proportion of adults with an account reached high levels.

[12] The latest World Bank Global Findex Database (footnote 11), which extends some series to 2021, shows that this upward trend continued, although much less dramatically as the proportion of adults with an account reached high levels.

Table 3. Small and Medium-Sized Enterprise Bank Loans against Gross Domestic Product for Selected Asian Countries

	SME bank loans/GDP %	
	2010	**2020**
PRC	30.5	41.6
Thailand	21.4	20.4
India	4.8	7.2
Indonesia	5.9	7.1
Bangladesh	6.8	9.0
Philippines	n/a	n/a

GDP = gross domestic product, PRC = People's Republic of China, SMEs = small and medium-sized enterprises.
Source: International Monetary Fund Financial Access Survey (2022).

3. Conclusion

15. Developing Asia's finance sector notably improved during the 2010s. However, the countries are diverse and some continued to have large needs. For example, even though bank account access improved, accounts in 2017 remained scarce in poorer countries such as Pakistan (21%), Cambodia (22%), and Lao People's Democratic Republic (Lao PDR) (29%).

C. Financial Diversification: Nonbank Financial Intermediation and Capital Markets—Trend 1

1. Nonbank Financial Intermediation

16. A strong upward trend in finance was seen throughout the world during the second decade of the millennium. There was no shortage of finance. Global financial assets almost doubled from 2008 to 2020, from some $240 trillion to $470 trillion. But the fastest rate of increase was not in banking assets but growth in assets of nonbank financial intermediaries, which grew at a compound annual growth rate of 6.8% against 3.9% for banks.[13] This shift to market-based finance took off after the GFC.

17. The severe economic downturn caused by the GFC—described at the time as the worst deterioration in output since the Great Depression of the 1930s—prompted highly supportive fiscal and monetary policies across the globe. The period of ultralow (even negative) interest rates and quantitative easing that was ushered in—which lasted for more than a decade—flooded the world with liquidity. The balance sheets of central banks increased to exceptional size, allowing the real economy to keep going but also fueling lending and asset price growth as easy money policies persisted.

18. A further consequence of the GFC, given the failures of banks and resulting financial instability, was a tightening of bank regulation, with the shift to Basel III and other requirements, and stronger supervision, complete with a catalogue of stress tests. The changes forced banks to hold more capital, abandon hitherto profitable investment banking and other noncore banking businesses and retrench back to their home markets. The changes encouraged off–balance-sheet activities.

[13] Based on figures in Financial Stability Board (FSB). 2021. *Global Monitoring Report on Non-Bank Financial Intermediation 2021*. Basel, Switzerland.

19. The squeeze on bank net interest margins that ensued, the tighter capital requirements, lackluster economic growth, and reduced ability to repackage and recycle assets and conduct peripheral business activities took their toll. Banking profitability remained low globally thereafter and price-to-book valuations became stuck well below par, with almost half of a large sample of (more than 900) banks assessed by McKinsey as trading below the equity on their books throughout the decade.[14] Banking—and bankers—were out of favor not just with the public after their excesses but also with investors.

20. The situation favored a push to non–deposit-taking financial institutions: market-based finance and shadow banking. Persistently low interest rates and lack of return on cash prompted massive inflows into investment funds by pension funds and insurance companies in search of higher yields. Money market funds, wealth management products, investment funds, structured finance vehicles, hedge funds, equity, and debt funds became increasingly important for channeling finance to those who needed it, especially companies.[15]

21. Capital markets were further boosted by growth in public debt issuance and central bank purchases of bonds, including corporate issues. Tighter regulations on banks prompted the unbundling of noncore businesses, e.g., insurance, mortgage broking, and so on, while the lighter regulatory burden outside banking attracted financial flows into areas such as leasing, factoring, and supply chain finance, and encouraged new methods of raising finance such as peer-to-peer (P2P) lending, fintech credit, crypto assets, and crowdfunding.

22. There were notable consequences. An assessment of NBFI by the Bank of England in 2021, for example, found that "… all of the net increase in United Kingdom (UK) corporate debt between the end of 2008 and the end of 2020 has come from market-based finance."[16] Many other countries saw a similar shift in corporate lending away from bank finance, with companies seeking funding through capital markets and other NBFI.

23. The new, more diversified financial landscape that developed with the help of NBFI was valuable although, from a regulatory point of view, its limited visibility and gaps in data (compared with regulated depository financial institutions) was not without risks, as the Bank of England report pointed out.[17] For example, the experience of P2P lending in the PRC led to a major clampdown toward the end of the decade.

24. Market-based finance grew fast. NBFI assets increased by $124 trillion from 2008 to 2020, to $227 trillion, almost double the $66 trillion increase seen in global banking assets. By 2020, NBFI financial assets amounted to almost half of all global financial assets, and well above the share of banks.[18] About two-thirds of the NBFI increase came from "other financial institutions" (OFIs),[19] with the rest resulting

[14] Of the sample of 905 banks, 51% showed an average return on equity from 2011 to 2020, below the cost of equity. See McKinsey & Company. Global Banking 2021.

[15] But also real estate and households.

[16] Bank of England. 2021. *Assessing the Resilience of Market-Based Finance*. London.

[17] "Market-based finance is essential to the UK real economy. UK businesses relied on the support of the sector in the global financial crisis as banks withdrew from lending and they have subsequently raised significant financing, particularly via equity and debt markets. The UK economy benefits from other services provided by the sector, including intermediating between saving and investment, insuring against and transferring risk (e.g., through derivatives markets and insurance companies), and offering payment and settlement services. The sector is therefore of importance to UK financial stability. … Authorities need to be able to effectively monitor market-based finance. This report has set out a number of the data gaps faced by domestic and global regulators, and the action that the Bank and other UK authorities have taken to remediate these. … Given the global nature of markets and the cross-border activity of many non-bank financial institutions, it is also essential that this work is taken forward internationally." Footnote 16, p. 43.

[18] The share of banks in 2020 was a little under 40%, with the remainder taken up by central banks and public finance institutions. FSB. 2021. *Global NBFI 2021*. Basel, Switzerland. p. 7.

[19] OFIs are a subset of the NBFI sector and comprise all financial institutions that are not central banks, banks, public financial institutions, insurance corporations, pension funds, or financial auxiliaries. OFIs include, for example, investment funds, captive financial institutions and moneylenders, central counterparties, broker-dealers, finance companies, trust companies, and

from the increase in assets of insurance corporations and pension funds. In compound growth terms, OFIs grew at an annual rate of 7% during this period.

2. Local Currency Finance

25. The GFC was a salutary reminder for emerging economies of the dangers of foreign currency exposure and currency mismatches on banks' balance sheets. Asia had suffered greatly from this in the past. The concern over currency mismatch—particularly in emerging Europe and some parts of Central Asia where devaluations occurred—prompted more attention from multilateral development banks (MDBs) to develop local capital markets and local currency lending. Efforts by MDBs to source local currency and extend yield curve benchmark tenors—by issuing local currency bonds in jurisdictions with more robust capital market architecture and by using hedging mechanisms such as TCX (The Currency Exchange) for some more "exotic" currencies—were redoubled. Local currency and local capital market development became a theme for some institutions such as the European Bank for Reconstruction and Development (EBRD).

3. Nonbank Financial Intermediation in Asia

26. The growth in market-based finance was not just an advanced market phenomenon. OFI (the largest NBFI segment) assets' 15% annual rate of growth in emerging markets (excluding the PRC) was more than double the global rate, while in the PRC, it had been running at about 30% a year for over a decade. By 2020, some $13.5 trillion assets of the PRC OFIs represented about one-tenth of the global OFI asset total. Fast growth was seen in Indonesia and India, although from a low base.

27. Although bank finance in the PRC (and in Indonesia and India) remained the dominant source of finance, comprising more than three-quarters of total available financing in 2008, its share declined to less than two-thirds by 2020 as market-based and other private finance accelerated to more than a quarter of the total. Equity and bond market finance's share more than doubled to 13%. In India, the share of NBFI was higher at about one-third of total financial assets, having increased significantly.[20]

4. Capital Markets

28. The trend toward NBFI was associated with the growth of capital markets. Quantitative easing in the aftermath of the GFC and further crises swelled finance sector balance sheets and fueled asset price increases across the globe. This supported growth of equity provision and, with banks facing tough regulatory requirements and more risk-averse than in the previous decade, debt capital markets took on an increasingly important role in the supply of finance. Savers, pension funds, and insurance companies sought to diversify portfolios and find new sources of income in the face of low yields—including by taking on higher risks—and their assets grew rapidly. Hedge funds and other asset management vehicles added fuel to the mix. The trend became visible in the growth of global equity and debt capital markets.

5. Equity Markets

29. During the 2010s the stock market capitalization of domestic companies in Organisation for Economic Co-operation and Development (OECD) countries relative to GDP increased by more than one-half (**Table 4**).[21] Emerging Asia overall did not change much. East Asia and the Pacific (excluding high-income countries) exhibited not only a lower level of market capitalization as a share of GDP but a flat

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structured finance vehicles. See, for example, FSB. 2021. *Global Monitoring Report on Non-Bank Financial Intermediation 2021*. Basel, Switzerland.

[20] F. Allen, X. Gu. 2020. Shadow banking in [People's Republic of] China compared to other countries. The Manchester School. London: 2021 89:407–419.

[21] An average for 2010 and 2011 is shown to smooth out volatility in the figures for Asia. Figures for 2020 are substantially higher but distorted by the effect of the COVID-19 pandemic in reducing GDP and are omitted.

path, while South Asia and Europe and Central Asia (excluding high-income countries) recorded small falls over the same period. A similar pattern was seen in stocks traded as a proportion of GDP, although the PRC and Thailand stood out with activity levels closer to those of the OECD (**Table 5**).

Table 4. Market Capitalization of Listed Domestic Companies: Emerging Asia and Organisation for Economic Co-operation and Development Countries, Share to Gross Domestic Product (%)

	Average (2010–2011)	2019
OECD Countries	80.1	121.8
East Asia and Pacific (excluding high income)	58.5	61.6
South Asia	76.1	72.7
Europe and Central Asia (excluding high income)	38.6	36.1

GDP = gross domestic product, OECD = Organisation for Economic Co-operation and Development.
Source: World Bank.

30. Actual market capitalization values and turnover in major markets of the PRC, India, and Thailand increased significantly given the rapid growth of GDP over the period. Improvements occurred in Indonesia and Viet Nam. By 2021, India's market capitalization of listed domestic companies placed it sixth in the world (with Bombay [BSE, 10th largest stock exchange] and National Stock Exchanges [NSE, 11th], while Thailand was 22nd).

Table 5. Market Capitalization and Traded Stock Values

Domestic listed companies market cap as % of GDP			**Stocks traded value as % of GDP**	
	Avg. 2010-11	**Avg. 2018–2019**		**Avg. 2018–2019**
Bangladesh	Low	Low	**PRC**	111
PRC	Medium	Medium	**Thailand**	72
India	High	High	**India**	46
Indonesia	Medium	Medium	**Viet Nam**	17
Pakistan	Low	Low	**Indonesia**	10
Philippines	Medium	Medium	**Philippines**	8
Sri Lanka	Low	Low	**Bangladesh**	5
Thailand	Medium	High		
Viet Nam	Low	Medium	**OECD**	99

Low = 40%; Medium = 40–80%; High= 80%

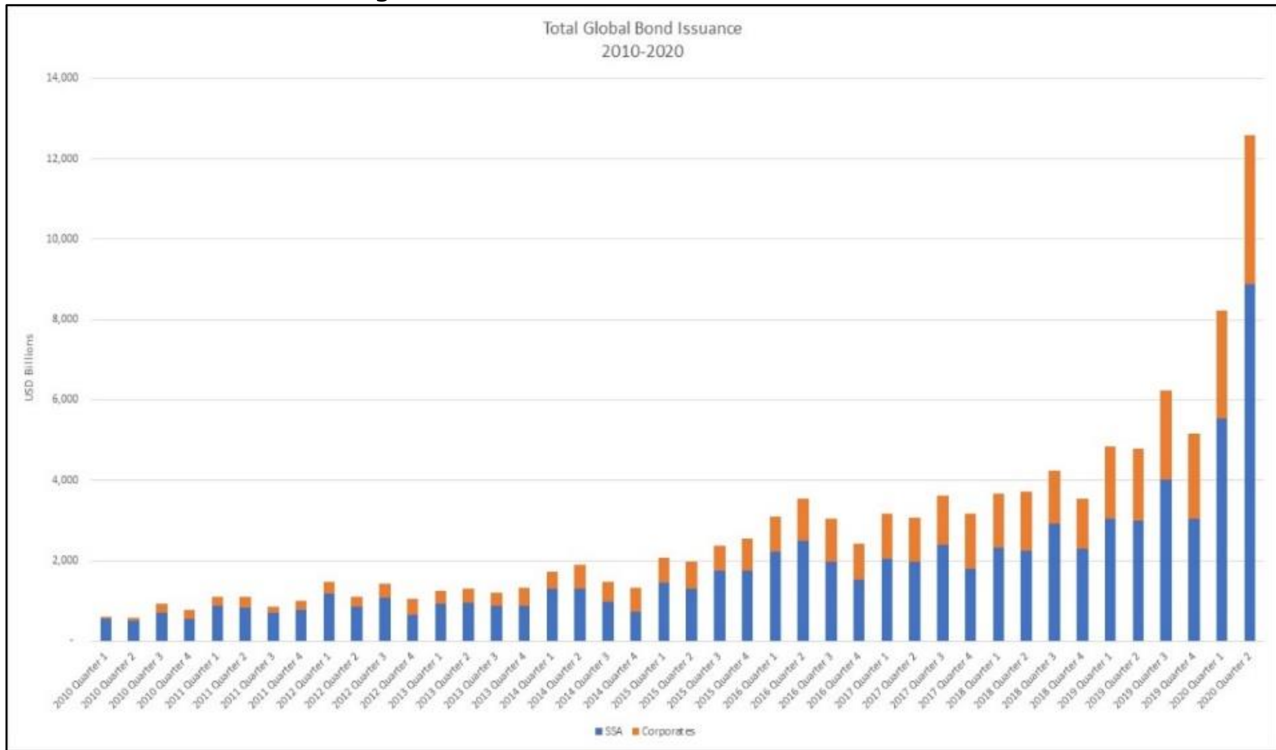
GDP = gross domestic product, PRC = People's Republic of China, OECD = Organisation for Economic Co-operation and Development.
Source: World Bank.

31. The rise of the PRC was spectacular. In 2020, it was the second-largest market by value of listed domestic companies and held the second-largest stock value trading country slot (both after the US). Debt Capital Markets

a. Global Trends

32. Global bond issuance rose substantially through the 2010s, according to International Capital Market Association (ICMA) data (**Figure 1**). This involved rapid growth in sovereign, subsovereign, and supranational issues (SSA) and corporate bonds, the latter growing the fastest. ICMA estimated cumulative nominal global bond issuance from 2010 to 2020 at some $77 trillion, with corporate bonds accounting for close to one-half of the total.

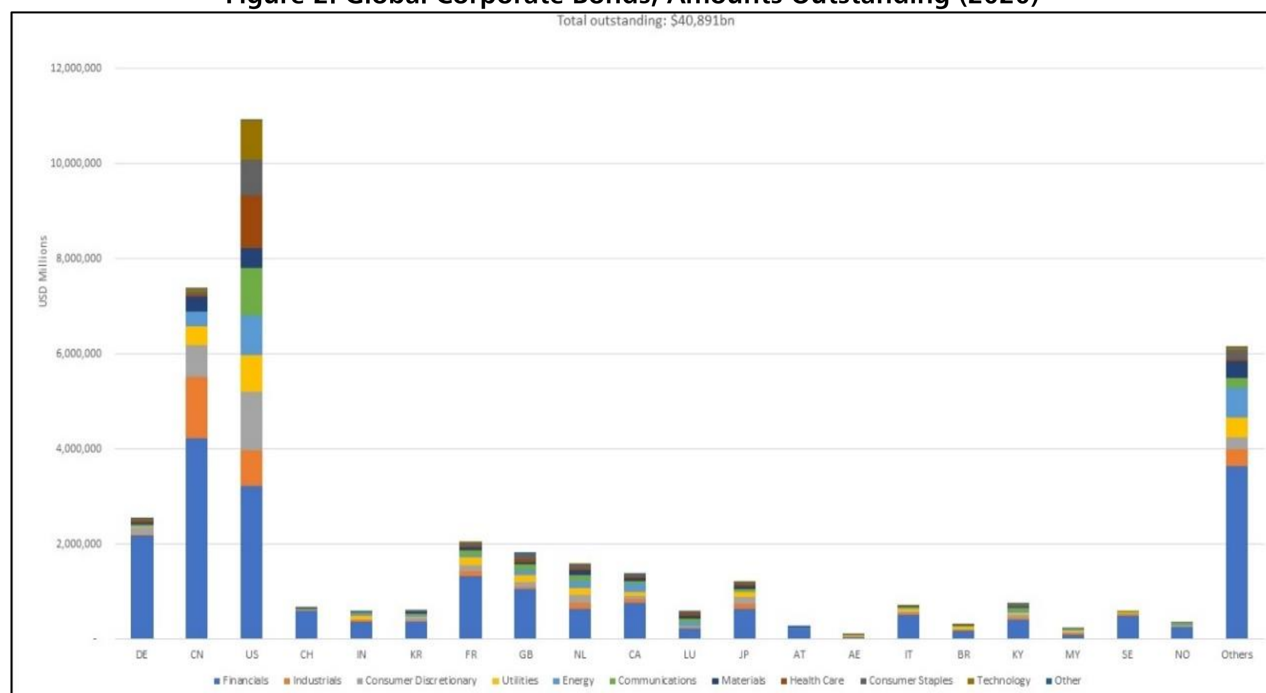
Figure 1. Global Bond Issuance, 2010–2020



Source: International Capital Market Association. (accessed 19 September 2022).

33. In 2020, some $41 trillion of global corporate bonds were outstanding, of which the US accounted for almost $11 trillion and the PRC with more than $7 trillion. Other countries had much smaller amounts (**Figure 2**). Outstanding issues by financial companies and industrials in the PRC exceed those of the US.

Figure 2. Global Corporate Bonds, Amounts Outstanding (2020)



AT = Austria, AE = United Arab Emirates, BR = Brazil, CA = Canada, CH = Switzerland, CN = People's Republic of China, DE = Denmark, FR = France, GB = United Kingdom, IN = India, IT = Italy, JP = Japan, KR = Republic of Korea, KY = Cayman Islands, LU = Luxembourg, MY = Malaysia, NL = Netherlands, NO = Norway, SE = Sweden, US = United States
Source: International Capital Market Association (accessed 19 September 2022).

b. Private Sector Issues

34. The BIS figures for global debt securities (domestic and international) issued by financial and nonfinancial corporations in 2015–2020 suggest they increased by 20% and 40% faster than the growth of OECD GDP over the same period. For the decade, outstanding international private debt securities relative to GDP grew in most major countries (e.g., US, Japan, France, Germany) and in the main developing countries in Asia. In the developing countries, growth, while fast, was from an almost nonexistent base at the start of the decade.

c. Asia

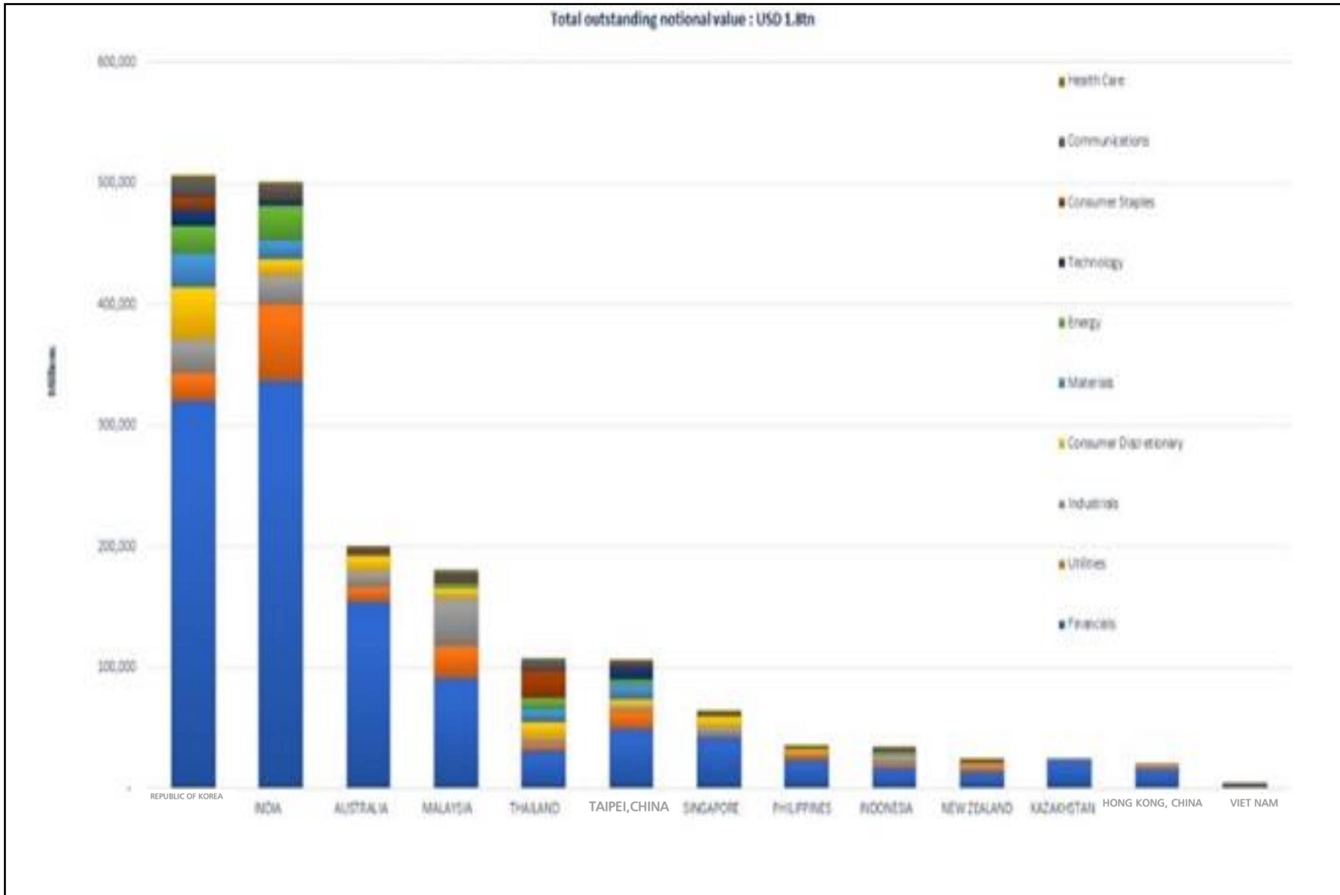
i. Sovereign, Subsovereign, and Supranational Issuance

35. Among Asia and Pacific countries (excluding the PRC and Japan), India's SSA issues outstanding in 2020 at $1.84 trillion notional value (mostly sovereign issues but also sizeable regional issuance at $500 billion) exceeded other countries' by some margin, including the Republic of Korea's. Thailand's and Indonesia's SSA outstanding bonds were large at about $300 million. However, the PRC's SSA of $19.4 trillion ($9.7 trillion, excluding government regional bonds) exceeds even India's by more than 10 times.

ii. Domestic Bonds

36. On the domestic corporate bond side (**Figure 3**), India dominates, with $500 billion outstanding in 2020, although the Republic of Korea is on par with it. The figures are dwarfed by the PRC's $7 trillion (**Figure 2**). Apart from Thailand's $110 billion nominal outstanding, other Asia and Pacific developing countries' domestic corporate bond outstanding notional values are small.

Figure 3. Asia and Pacific Domestic Corporate Bond Market (excluding Japan and the People's Republic of China), Outstanding Notional Value



APAC = Asia-Pacific, PRC = People's Republic of China.
Source: International Capital Market Association (accessed 19 September 2022).

37. Figures for Association of Southeast Asian Nations (ASEAN)+PRC (from Asiabondsonline) show how the amount of domestic bonds outstanding as a share of GDP increased in the PRC (excluding regional debt) from 44% to 100% in 2011–2020, 63% to 91% in Thailand, 33% to 50% in the Philippines, and fast but at a much lower level from 16% to 31% in Indonesia and 19% to 42% in Viet Nam. Bond issuance is dominated by public issues but domestic corporate issuance outstanding similarly increased quickly (from a low base) in the PRC (11% to 36% of GDP), Thailand (12% to 25%), and Viet Nam (3% to 18%).

iii. International Issues

38. International bond issuance (ICMA data) increased more than sixfold from 2010–2011 to 2020–2021 in the PRC and fourfold in Indonesia and doubled in India and the Philippines. Looking more closely at the path of foreign currency corporate bonds (mainly issued in US dollars) in emerging Asia over the decade, Table 6 shows this category of finance has grown faster than GDP in the PRC, Indonesia, and Thailand. In the PRC, the amount outstanding increased from a mere 1.2% of GDP in 2010 to 8.6% in 2020. However, in countries such as Viet Nam, there was virtually no issuance.

Table 6. Foreign Currency Bonds (% to GDP)

	2010	2020
PRC	1.2	8.6
Indonesia	1.9	5.7
Thailand	1.8	5.3
Philippines	4.1	4.1
Viet Nam	0.2	0.3

GDP = gross domestic product, PRC = People's Republic of China.
Source: *Asianbondsonline*.

iv. Corporate Issues as a Share of Gross Domestic Product

39. When new corporate bond issues (excluding financial and similar companies) are compared across countries, the PRC and Thailand appear to be well advanced (**Table 7**). With average annual issuance in 2010–2020 of just over 4% of GDP in the PRC and 3.5% in Thailand, they match leading corporate issuing countries such as the UK and France. The Philippines, with 1.5% of GDP, is not far behind Brazil and Mexico, while Indonesia, India, and other Asian developing countries lag notably.

Table 7. New Corporate Bond Issues (% to GDP)

New Corporate Bond Issues Average 2010-2020	* as a share of GDP (%)
United States	**4.7**
People's Republic of China	**4.2**
United Kingdom	**3.7**
Thailand	**3.5**
France	**3.5**
Germany	**2.7**
Mexico	**2.5**
Brazil	**1.9**
Philippines	**1.5**
Indonesia	**0.9**
India	**0.8**
Sri Lanka	**0.2**
Viet Nam	**0.1**
Pakistan	**0.1**

* Excluding financial, holding, and insurance companies.
GDP = gross domestic product.
Source: World Bank Global Financial Development Database, November 2021.

v. NBFI Assets and Bank Credit

40. The role of NBFI in promoting capital market finance can be seen in part through the growth of mutual fund, insurance company, and pension fund assets.[22] Table 8 shows this segment of the NBFI sector alongside commercial banks' lending to the private sector.[23] The table shows how in G7 countries mutual, insurance, and pension fund assets increased significantly faster than GDP, more than three times the GDP by 2019 in the US and UK, contrasting sharply with the path of bank credit over the decade.

41. While similar funds in Asian emerging markets have grown fast, their scale relative to GDP is significantly lower than G7 countries'. In the strongest case, Thailand, it reaches only just over half the

[22] Comparable figures are not available for investment funds.
[23] Two sets of figures for depository banks' lending to the private sector are shown for completeness: one from World Bank data, the other from BIS.

level of GDP, while in India and the PRC, it is about one-third of their GDP levels. In the Philippines and Indonesia, mutual and other fund assets were minuscule at about one-tenth of GDP in 2019.

42. Bank lending to the private sector in Asia as a share of GDP is more in line with advanced countries—with the PRC showing the highest ratio of all countries in 2019—and grew faster than GDP (other than in India). This contrasts with declines in the ratio in advanced countries and several G7 countries. There appears to be room for increases in bank lending to the private sector in Indonesia, the Philippines, and India, and a greater role for capital markets in emerging Asia as an alternative source of finance.

Table 8. Mutual Funds, Insurance, and Pension Fund Assets against Bank Credit to the Private Sector

		Mutual, Insurance and Pension Funds' Assets/GDP			Private Credit by Depository Banks/GDP			Bank Credit to Private Non-finance sector/GDP		
		%		% points	%		% points	%		% points
		2010	**2019**	Change	**2010**	**2019**	Change	**2010**	**2019**	Change
G7										
	US	259	327	68	53	52	-1	52	51	-1
	UK	213	302	89	184	131	-53	105	85	-20
	Canada	170	277	107	n/a	n/a	n/a	71	104	33
	France	164	215	51	96	105	9	92	102	10
	Japan	112	147	35	99	107	8	102	110	8
	Germany	105	142	37	89	79	-10	86	78	-8
	Italy	49	78	29	93	73	-20	91	71	-20
Asia										
	Thailand	35	59	24	91	111	20	93	114	21
	India	28	34	6	51	50	-1	56	54	-2
	PRC	19	37	18	127	165	38	127	166	39
	Philippines	10	12	2	28	48	20	n/a	n/a	n/a
	Indonesia	5	10	5	24	33	9	27	36	9
							Memo item:			
							Advanced	84	80	-4
							EMs	78	102	24

EM = emerging markets, GDP = gross domestic product, PRC = People's Republic of China, US = United States, UK = United Kingdom.
Source: World Bank and Bank for International Settlements.

vi. Continuing Dependence on Banks

43. Asia appears to source less of its bond market finance from international investors than the rest of the world. In some markets, foreign investors are restricted. A smaller proportion of overall borrowings come from the bond market compared with the US and European markets. Bank finance is still key. According to ICMA, total loan financing in the PRC accounts for about four times the amount of bond financing for nonfinancial corporates, while European corporate loans are three times the amount of corporate bonds outstanding, and in the US the ratio is almost 1:1.[24] Intermediation of (large) savings in Asia through domestic institutional investors, i.e., insurance companies, pension funds, and others, is relatively underdeveloped.

[24] ICMA. 2022. *The Asian International Bond Markets: Development and Trends*. Zurich.

6. Market Views of Capital Markets in Emerging Asia

44. A 2022 survey of participants' views on capital markets in ASEAN, the PRC, and India by the Asia Securities Industry and Financial Markets Association ranks countries' capital markets based on their regulatory, market development, and operating environment. In overall scores (10 = best, 1 = worst), Thailand ranked highest among the emerging markets covered, followed by the PRC, India, Indonesia, the Philippines, and Viet Nam (**Table 9**). Thailand scored better on its regulatory environment (ahead of Taipei,China; the PRC; and the Republic of Korea) than other Asian emerging markets. The PRC performed poorly. Elsewhere, however, the PRC, India, Indonesia, and the Philippines scored well, and the PRC especially so, on market development (matching the Republic of Korea). Among the top impediments identified in these countries, currency controls and currency convertibility were cited most frequently (notably in relation to the PRC, India), as well as physical infrastructure (India, the Philippines, Viet Nam) and market liquidity and depth (Indonesia, the Philippines, Viet Nam). Barriers to entry were cited in the PRC and fairness of law enforcement in Indonesia.

Table 9. Relative Performance of Asian Capital Markets

No.	Market	Operating Environment	Market Development	Regulatory Environment	Average score (1–10; 1 being worst and 10 being highest)
1	Singapore	7.87	7.71	7.74	7.77
2	Hong Kong, China	6.92	7.66	6.97	7.19
3	Australia	7.26	7.17	7	7.14
4	Japan	6.67	6.92	6.64	6.74
5	Thailand	6.3	6.4	6.3	6.33
6	Taipei,China	6.35	6.38	5.62	6.12
7	Republic of Korea	5.97	6.5	5.25	5.91
8	Malaysia	5.87	5.87	5.52	5.75
9	People's Republic of China	5.31	6.47	4.86	5.55
10	India	5.48	5.74	5.04	5.42
11	Indonesia	5.35	5.43	5.18	5.32
12	Philippines	5.45	5.05	5.18	5.23
13	Viet Nam	5	5	4.83	4.94

Source: Asia Securities Industry and Financial Markets Association. 2022. Asia-Pacific Capital Markets Survey.

i. Quality of Asian Capital Market Development

45. McKinsey looked at the quality of capital markets in Asia and created the Asian Capital Markets Development Index in 2017,[25] made up of three parts:

(i) Can issuers raise funding at scale through capital markets? ("Funding at scale," 50% weight)

(ii) Do capital markets provide attractive and diverse avenues to deploy short- and long-term domestic savings? ("Investment opportunities," 40% weight)

(iii) Do capital markets offer high-quality pricing information to maximize the efficiency of resource allocation? ("Pricing efficiency," 10% weight)[26]

46. Each part had subcomponents (**Table 10**) with clear and objective definitions. Scores of 1–5 were applied according to how shallow or weak the position was (1) through to very deep or excellent (5). Scores are shown in Table 10 for the key Asian emerging markets. Thailand and the PRC registered the highest scores—putting them somewhat below but within striking distance of Malaysia, Singapore, and the Republic of Korea—while capital markets in Pakistan and Viet Nam performed poorly. India, Indonesia, and the Philippines scored moderately well, and similarly overall, but with a number of weaknesses. Indonesia showed some volatility across the subcomponents, doing well on foreign investment and competitive on the cost of equity but poorly on investment opportunities and availability

[25] McKinsey & Company. 2017. *Deepening Capital Markets in Emerging Economies. Banking & Finance*. Sydney. No updates to the index appear to have been published.

[26] Footnote 25, p. 4.

of long-term debt. Overall, the analysis suggested the region in general lacked investment opportunities and financial depth. Restrictions on foreign investors inhibited the PRC's performance.

Table 10. Quality of Asian Capital Markets, McKinsey Asia Capital Markets Development Index, 2017

	Overall Score	Funding at Scale					Investment Opportunities		Pricing Efficiency
		1	2	3	4.1	4.2	5	6	7
Japan	4.00	3	5	3	5	5	5	2	5
Republic of Korea	3.45	4	5	3	3	4	3	2	5
Malaysia	3.25	3	4	3	5	3	4	2	2
Thailand	2.80	3	3	2	3	3	3	3	2
PRC	2.45	3	2	1	4	4	2	2	3
India	2.30	2	2	3	1	3	2	2	2
Philippines	2.25	2	3	3	1	3	2	4	2
Indonesia	2.20	2	1	5	4	2	1	3	3
Pakistan	1.30	1	3	1	1	1	1	2	1
Viet Nam	1.20	1	1	3	1	1	1	2	1
Asia-7 (unweighted avg.)		2.0	2.1	2.6	2.1	2.4	1.7	2.6	2.0

1 = Financial depth of primary market
2 = Availability of long-term debt
3 = Availability and stability of foreign investment
4.1 = Real cost of equity
4.2 = Real cost of debt
5 = Availability of investment opportunities across asset classes
6 = Appropriate risk-adjusted returns (7-year Sharpe ratio)
7 = Quality of pricing information

Asia-7 = PRC, India, Indonesia, Pakistan, Philippines, Thailand, Viet Nam

Scores 1-5: Very Poor to Excellent

PRC = People's Republic of China.
Source: McKinsey.

7. Conclusion

47. Growth and globalization returned after the global financial crisis of 2008–2009, albeit at a less heady pace, and savings accumulated further. With interest rates at unprecedentedly low levels, the financial environment favored risk-taking in new areas such as investment funds and other asset managers sought higher returns. Pension reforms in a number of countries encouraged individuals to gain greater control over assets and their allocation. These factors and tighter regulation on commercial banks, quantitative easing (with central banks buying bonds), and asset price growth prompted rapid expansion of capital markets in advanced economies. Their growth reflected a desire for diversification of sources of finance by companies and of portfolios by asset managers.

48. In Asia, less pressure for regulatory reform and a relatively well-capitalized banking sector (in part reflecting state ownership) allowed banks to continue to dominate as the main source of finance for corporates (and households). However, capital markets expanded in Asia, too, most spectacularly in the PRC, which by 2020 could boast the world number-two spot in stock market capitalization and global corporate bonds.

49. The implication of the shift to market-based finance and non–deposit-taking institutions was a more diversified finance sector. It now involved institutional investors via capital markets, a range of nonbank financial intermediaries, microfinance institutions, new players such as fintech and leasing and factoring companies, and new credit routes such as P2P lending. Bigger and more developed emerging Asian economies were able to follow advanced markets as their pensions and insurance sectors took on

more significant roles, wealth management products and investment funds expanded, and their capital markets advanced.

50. Several emerging Asian countries lacked the wherewithal—the financial infrastructure, marketable companies, volumes and liquidity, and technical capacity—to go much beyond developing sovereign debt issuance as a first step in developing their capital markets. Elsewhere, dealing with the risks arising from banks' efforts to create off–balance-sheet financing and the rise of additional forms of credit beyond the reach of the regulatory authorities posed new policy challenges and stretched banks' capacity to respond.

D. The Role of Tech and Digital Financial Services—Trend 2

51. A trend that supported—and accelerated—the shift to a more diversified finance sector came from the rise of technology (tech) companies and digital financial services. The backdrop was the growth of internet infrastructure and greater global connectivity. Internet penetration and mobile phone use across the world was game-changing in the 2010s, with the number of subscribers more than doubling during the decade. Today, it is estimated that there are over 5 billion unique mobile subscribers, or two-thirds of the world's population, more than 4 billion mobile internet subscribers and more than 8 billion SIM card users.[27]

52. Part of the development has been the ever-growing prominence of global tech and social media companies— "bigtech" such as Apple, Google, Amazon, Microsoft, and Facebook in the US, but also Samsung, Alibaba, and Tencent in Asia—which have come to dominate data- and internet-based (including mobile) services on which virtual commerce depends. Facebook and Google each have about 3 billion monthly active users, Tencent about 2 billion, and Alibaba 1 billion.[28] Bigtech's capacity and experience in cloud computing, customer-facing artificial intelligence, and "big data" customer analytics have featured in bigtech's role as providers of technological support to banks and other financial firms. By partnering with financial institutions, these companies have become third-party suppliers of financial services. Their ability to act as data depositories, data harvesters, and information intermediaries has helped create a new data-driven infrastructure on the back of which digital financial services and new fintech companies have expanded. Bigtech's deep knowledge of systems that underpin financial business, and bigtech's brand value as a trusted partner pose a longer-run threat to incumbents in the banking sector.

1. Digital Financial Services and Fintech: Advantages and Risks

53. Digital financial services (DFS) rely on digital technologies for their delivery and use while fintech applies computing technology to "financial innovation that could result in new [financial] business models, applications, processes or products …"[29] Both may be viewed as reducing financial frictions, arising from processing inefficiencies, incomplete markets, informational asymmetries, and so on.

54. Fintech is seen in a wide variety of financial areas: digital payments, clearing, and settlement; alternative finance; insurance; investment management; and market support, for example through data applications, distributed ledger technology, artificial intelligence, and machine learning. Fintech is supported by policy enablers such as digital identification, program applications,[30] to support open banking, data protection, and cybersecurity.[31] For people to benefit from DFS requires "a well-developed

[27] Excluding licensed mobile Internet of Things. (GSMA)
[28] Agustín Carstens, Stijn Claessens, Fernando Restoy, and Hyun Song Shin. 2021. Regulating Big Techs in Finance. *BIS Bulletin* 45. Graph 1, p.4.
[29] 'Financial Stability Implications from FinTech', p. 7, FSB, June 2017.
[30] Application Programming Interface (API) defines a set of protocols that enables the integration of application software.
[31] 'Financial Stability Implications from FinTech', pp. 8-9.

payments system, good physical infrastructure, appropriate regulations, and vigorous consumer protection safeguards."[32]

55. DFS and fintech offer many advantages. Their application can lower cost; increase speed, transparency, and security; and provide more tailored financial services to particular segments of the market. Digitalization can improve each step of a financial business, from opening an account to due diligence and authenticating transactions to automating product service processes such as assessment of creditworthiness. DFS are characterized by low marginal costs per account or transaction and enhance transparency through a data trail, which enables better credit scoring.

56. DFS are especially advantageous in overcoming long-standing constraints faced by underserved customers, which has been highly relevant to financial development in less developed regions. A comprehensive assessment of DFS by the World Bank[33] describes how digitally based financial services can do the following:

(i) Deal efficiently with customers with small and unpredictable incomes, who are mainly in informal and agricultural sectors, and supply e-money without large transactions fees or minimum balance requirements. This helps the two-thirds of adults in developing economies who cite having too little money as a barrier to account ownership and the one-quarter who say accounts are too expensive.

(ii) Overcome geographical barriers by removing the need to travel. One-fifth of adults without financial accounts cite "distance to financial institutions" as a barrier, for example, with more than 30% in Indonesia doing so.

(iii) Solve identity and documentation issues. About one-fifth of adults without financial services cite the lack of documentation as a barrier. Access to digital transaction information and alternative data sources helps overcome information asymmetries and compensates for poorer populations' inadequate credit histories and financial statements.

(iv) Build trust and skills through by strong consumer protection and literacy programs. One-fifth cite distrust as a reason to avoid financial services.

(v) Reduce high operating costs. Low-value accounts with low balances and small transactions limit traditional banks' activities, while DFS can take advantage of process efficiencies, automation, and scale economies.

(vi) Cut through legacy business models and offer flexibility and speed and tailor products more closely to the needs of underserved customers.

(vii) Raise competition and innovation. Incumbents' market power and limited appetite for innovation is pressured by new, dynamic entrants offering DFS.

(viii) Support safe, fast, and reliable remittance services.

57. From a developing markets perspective, digital financial solutions offer the highly attractive proposition of being able to leapfrog older systems where legacy issues and inertia are often an encumbrance.

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[32] Global Findex 2017, p.10, World Bank.

[33] 'Digital Financial Services', Ceyla Pazarbasioglu, Alfonso Garcia Mora, Mahesh Uttamchandani, Harish Natarajan, Erik Feyen, and Mathew Saal, World Bank Group, 2020.

58. Notwithstanding these advantages, DFS have not been without risks or the need for a careful balancing between regulation and innovation. On the operational risk side lie issues:

(i) Data governance and privacy. Collection, storage, and use of data.
(ii) Cybersecurity and operational risks, such as system failures.
(iii) Financial integrity. Quality of controls and anti-money laundering/combating the financing of terrorism (AML/CFT) processes.
(iv) Regulatory arbitrage. Use of unregulated methods, such as P2P platforms or bigtech services that lie outside financial regulations.
(v) Macro-financial concerns. The risk that incautious behavior or negligence in relation to cyber threats, for example, threatens financial stability.
(vi) Fair competition. Large DFS platforms and bigtech services may increase concentration risks in the finance sector and pose risks to competition.

59. Some risks arise from unequal access to digital infrastructure, a lack of understanding of the implications of digital access, and algorithmic biases (e.g., affecting credit scoring). Studies of fintech adoption show that higher-income groups are much more likely to adopt fintech services than those from low-income households, and men more than women do so.[34] In the PRC, among other developing nations, for example, gaps in fintech products between urban residential use (14%) and rural (2%) are common, while the poor (those below the PRC's poverty line) hold about one-third the amount of higher-income countries' holdings of fintech products.[35]

2. Regulator Interest

60. As DFS and fintech have expanded, so too has the interest of financial and other regulators. The Bali Fintech Agenda in 2018 was an effort to address fintech risks.[36] A recent paper by Augustin Carstens, BIS general manager, with others[37] raises a key regulation issue concerning fintech and bigtech and whether a more level playing field requires a shift from activity-based regulation (as applied to banks) to entity-based regulation (which would capture others). However, the biggest immediate concern, according to a survey of global financial regulators, is cybersecurity, followed by operational risks and consumer protection.[38] The Financial Stability Board (FSB) and the BIS cite cyber risk as a threat to operational and financial stability.[39]

3. Enabling conditions

61. A recent Economist Intelligence Unit (EIU) report[40] noted how digital payments are transforming the finance sector across the world, with implications for governments, to provide an enabling policy framework and public investment in digital systems, capacity provision and interoperability by payment platform and service providers, and careful regulation of new standards driven by technology.

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[34] 'Fintech in ASEAN+3 and Implications for Financial Inclusion and Financial Stability', p. 182, Peter Morgan and Bihong Huang, in 'Redefining Strategic Routes to Financial Resilience in ASEAN +3', Diwa Guinigundo, Masahiro Kawai, Cyn-Young Park, and Ramkishen S. Rajan (eds.), ADB, December 2021.
[35] Footnote 34, p. 183.
[36] See 'The Bali Fintech Agenda: A Blueprint for Successfully Harnessing Fintech's Opportunities', Press Release No. 18/388, IMF, October 2018.
[37] 'Regulating big techs in finance', BIS, 2021.
[38] World Bank and Cambridge Centre for Alternative Finance survey 2020, cited in 'Redefining Strategic Routes to Financial Resilience in ASEAN +3', ADB, p. 190 and p. 226.
[39] 'Financial Stability Implications from FinTech', FSB, 2017, p.19; 'COVID-19 and cyber risk in the financial sector', Iñaki Aldasoro, Jon Frost, Leonardo Gambacorta and David Whyte, BIS Bulletin No. 37, 2021; and 'Fintech in ASEAN+3 and Implications for Financial Inclusion and Financial Stability', p. 193.
[40] 'Going digital Payments in the post-COVID world', Economist Intelligence Unit, 2021.

62. From a policy perspective, the World Bank identifies three important conditions for the successful adoption of fintech and DFS:

(i) conducive legal and regulatory frameworks that encourage new entrants such as nonbanks; flexible approaches to regulation and innovation (e.g., "wait and see" [PRC]; "test and learn" [Kenya]; or innovation facilitators, including hubs and sandboxes [many jurisdictions]); and competition and consumer protection;

(ii) enabling financial and digital infrastructure, such as payment systems that allow interoperability; credit information sharing, e.g., secured transaction registries; and smooth-running digital connectivity with broad coverage; and

(iii) government support systems, such as data platforms (income, tax, education records, and so on); digital ID arrangements; and digitization of transfer payment systems.

4. Digital Payment Services

63. The pervasiveness and fast growth of digital technologies have changed the financial landscape in many countries and are continuing to do so as digitalization evolves. In the most advanced countries, some 80%–90% of individuals use the internet, and in Europe and North America, 85% of the population are unique mobile phone subscribers. In North America and the UK in 2017, for example, more than one-fifth of adults paid utility bills with a mobile phone, about double the number just 3 years earlier.

64. Equally remarkable is the picture in some parts of Asia. In Thailand, the PRC, and Viet Nam, 70%–80% of individuals in 2020 used the internet (more than double the proportion in 2010), with 40%–55% doing so in Indonesia, the Philippines, and India. By 2022, unique mobile phone subscriptions had reached two-thirds of Asia and the Pacific's population; the PRC's 82% was better than in many advanced countries and Indonesia's 65% was impressive.

65. The World Bank's Findex survey in 2017 showed that more than 17% of adults in the PRC and even 11% in Mongolia paid utility bills with a mobile phone. By 2021, the proportion in Mongolia had risen to 33%, while a rapid take-up of mobile payments for this purpose featured in Thailand (27%) and Kazakhstan (41%), among others. Payment of utility bills via mobile phone or the internet in countries such as Bangladesh, the Philippines, and Uzbekistan was well ahead of Japan and matched rates seen in Italy, Germany, and France.

66. Digital commerce, via online transactions and fintech such as PayPal, and mobile point-of-sale systems (ApplePay and others) have developed as modern payments systems. Digital transactions are fast replacing cash as the means of exchange everywhere but especially in Asia. This development has been dramatic in the PRC where, according to a 2019 PwC survey, 86% of consumers used mobile payments, against 34% globally.[41] In 2020, the transaction value of mobile payments in the PRC exceeded $60 trillion, more than 90% of which was conducted through Alipay and Tenpay,[42] up from close to zero 7 years earlier.[43]

67. Similar rapid change since the mid-2010s occurred in India, where digital finance was encouraged by the government and regulators to accelerate access to finance by underserved segments of the population, especially in rural communities, where the presence of physical banks (and the skills to run them) is often impractical. India's unified payments interface (UPI) helped create a digital payments system accessible by mobile phone and internet that allows financial transactions (business to business, consumer to business, and consumer to consumer) to be especially quick (and 24/7), reliable, and costless for users—a boon in a country where most financial transactions are of small value and normally incur hefty processing charges (Box 1).

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[41] PwC Global Consumer Insights Survey, 2019, based on 21,480 responses from more than 27 countries. The figures are 67% for Thailand, 61% for Viet Nam, 47% for Indonesia, and 45% for the Philippines.

[42] Tenpay includes WeChat Pay and QQ Wallet. The EIU estimates that Alipay and WeChat Pay each have about three times as many users as ApplePay and dwarf others such as Venmo and PayPal. EIU Going Digital, 2021.

[43] Carstens, Graph 1 (right hand side).

Box 1. Digital Finance Accelerator: India's Unified Payments Interface and Financial Inclusion

The introduction of a unified payments interface (UPI) in 2016 revolutionized India's payments system, offering affordable access to real-time payments to hundreds of millions of people who might otherwise have paid high fees.[a] Consumers, small businesses, and traders benefitted from being able to make instant, near-costless transactions. Its use became hugely popular, and UPI now plays a major role in India's financial system. With more than 18 billion transactions processed in 2021—at a monthly value of more than $100 billion—India's UPI is a remarkable digital finance success story.
UPI is a payments system designed by the National Payments Corporation of India, a nonprofit organization supervised by the central bank, to be secure, reliable, and interoperable among different payment companies.[b] UPI was created as digital public infrastructure with a centralized facility that does not rely on individual banks. The approach involved making UPI an open-source API[c] to provide a single interface accessible by any mobile payment application connecting banks, merchants, and consumers to ensure seamless and instant remote transactions.[d]

UPI was a realization of the Indian authorities' vision for greater financial inclusion through a digital drive toward a cashless society. Not only would it bring the vast numbers of unbanked citizens within the formal payments system but would also allow government subsidies to be allocated efficiently and without fraud. The Reserve Bank of India (RBI) set out its road map for a safe, accessible, affordable, and interoperable payments system in 2012. The RBI envisaged systems integration "through unified solution architecture," regulation focused on "innovation and competition," and emphasized the value of electronic payment products and services that "can be accessed anywhere and anytime by all at affordable prices." The RBI concluded that the road map's implementation would "reach out beyond the currently served target groups thereby facilitating greater financial inclusion."[e]

The government-backed model standardized all aspects of the system and aligned it with financial institutions, gaining their commitment, says Ankur Saxena of ACI Worldwide Payments. As a result, "it is not tied to … traditional, expensive, and relatively inflexible electronic payment infrastructure like its US and European counterparts."[f]

A key aspect of UPI is its simplicity of use. Consumers and others can transfer money to (or from) any bank account on a compliant mobile app using only the other party's UPI ID, which can be in the form of their mobile number or a QR code that can be scanned. Individuals can choose mobile app provider irrespective of the bank with which they have an account. For those without mobile phones or internet, the platform can be accessed via Aadhaar, India's biometric identity system, using a fingerprint, for example. A user need not know a payee's bank details and security is further enhanced by UPI's use of two-factor authentication. As an open platform, UPI does not confer any special power on banks or card providers but levels the playing field for transactions. It also allows nonbank financial institutions to participate. UPI's open-source protocol fosters competition and means other technologies can be added in the future, encouraging fintech start-ups and making it a larger and more useful network than its alternatives.

The negligible user cost of transactions provides a striking contrast to the oligopolistic network of credit and debit card suppliers seen in many developed countries, which charge significant transaction fees. UPI contrasts with the PRC's digital payment system, which is dominated by Alipay and WeChat Pay.[g] More than 300 banks and many payment applications and start-ups participate in UPI, including payment subsidiaries of US tech giants.
For a country like India, where small-value transactions are the norm, large transaction fees have excluded many people from the benefits of the financial system and restricted its growth potential. UPI has changed that picture. The Centre for Economic and Business Research (CEBR) reckons that the widespread adoption of real-time payments meant cost savings of $12.6 billion for Indian businesses and consumers in 2021, in turn generating $16.4 billion of economic output equivalent to 0.6% of GDP. CEBR expects net savings from UPI to rise to more than 1% of GDP by 2026.[h]

India's government commitment to financial inclusion and its vision for digital finance were instrumental in the development of UPI and the consequent improvement in financial services for millions of its citizens. Well-designed regulations, open standards, and interoperability across multiple channels ensured a coherent system in which banks could willingly participate. With more than 30 countries showing interest in adopting UPI,[i] it promises to yield wider benefits for India and the financially underserved in the rest of the world.

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[a] 'As Silicon Valley fantasizes about Web3, India leaps ahead on payments', V. Wadhwa, I. Amla, and A. Salkever, Fortune, June 30, 2022.
[b] 'Why America Urgently needs India's UPI Boost', A. Srivastava and G.S. Nair, Centre for Innovation in Public Policy, News18.com, 18 July 2022. The Box draws on other points made in this article and the one above.
[c] Application Programming Interface.
[d] Digital Financial Services, pp.21-2, World Bank Group, 2020.
[e] 'Payment Systems in India: Vision 2012-2015', p.1, Reserve Bank of India, October 2012.
[f] Cited in News18.com above.
[g] The Reserve Bank of India contains market dominance by imposing limits on market share of UPI payments.
[h] 'Prime Time for Real-Time', India, p 60, ACI Worldwide, April 2022.
[i] See News18.com above.

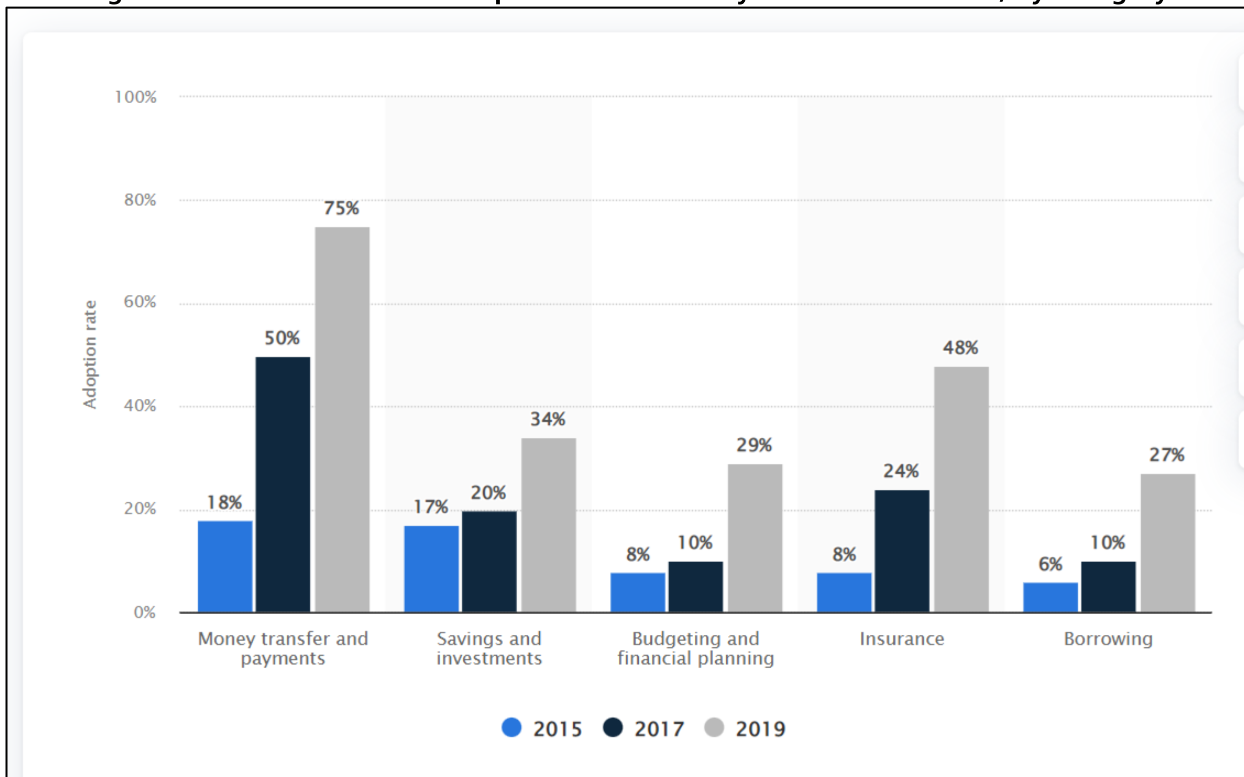
68. The impact of COVID-19 appears to have accelerated these trends. By 2021, survey respondents in Asia replying to a question on daily or weekly purchases said they bought more frequently by mobile or smartphone than in-store: in the PRC, 61% mobile vs. 50 % in-store and in Viet Nam 69% vs. 67%, in contrast with the global average response, which was 41% mobile vs. 47% in-store. The bulk of the change came from increased responses to mobile or smartphone purchases.

69. Not surprisingly, as a 2020 WEF and Statista survey showed, the PRC was one of the countries where people were most willing to pay without cash (67% of respondents), not far behind the Republic of Korea (77%) and Sweden (74%) and ahead of the US (58%) and Germany (49%). India was not far behind at 52%, although the Philippines was a laggard at 33%.[44]

5. Adoption of Fintech

70. Fintech has grown rapidly as a supplier of financial services in most countries. The FinTech Adoption Index compiled by Ernst and Young (E&Y) from a survey of more than 27,000 consumers in 27 countries (including 10 emerging markets) found that the global fintech adoption rate rose from 15% of the digitally active population in 2015 to 64% by 2019 (**Figure 4**).[45]

Figure 4. Consumer Fintech Adoption Rates Globally from 2015 to 2019, by Category



Source: Ernst and Young (2022).

71. The survey showed that the fastest area of fintech adoption was in money transfers and payments, with a 75% adoption rate by 2019, with insurance also growing rapidly to almost 50%. Borrowing via fintech had been taken up by more than one-quarter of respondents, and one-third of consumers were using fintech for savings and investments, a notable increase in just a few years and a

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[44] https://www.weforum.org/agenda/2021/01/this-chart-shows-cash-cashless-finance-payment-methods-global-preference/

[45] E&Y defines a fintech adopter as someone who has used two or more "buckets" of services to indicate a habitual change in behavior in a way that use of a single service does not. A bucket consists of a major fintech service or two or more related services, such as online stockbroking and online investment advice.

major challenge to traditional banking. Awareness of digital solutions rose. Among the most important reasons for using a fintech challenger were "more attractive rates and fees" (27% gave this as a primary reason in 2019), "easier to set up an account" (20%), and "access to different and more innovative products" (18%).

6. Micro, Small, and Medium-Sized Enterprises and Fintech

72. Fintech has brought benefits through financial and payment services to micro, small, and medium-sized enterprises (MSMEs) in market lending, supply chain finance platforms, noncash payment solutions, and data analytics. According to Oliver Wyman, a consultancy firm, SMEs highly value advice and tools such as resource planning or data management. Nonbank competitors of banks, and new digital banks, can provide such SME-specific financial services offerings. More than 90% of SME respondents to an Oliver Wyman survey in 2021 said they were comfortable with the idea of a digital-only bank, and three-quarters were open to switching banks, citing ease of access to information and quick turnaround times to queries.[46] However, there was also a lack of awareness of digital banks, with some 44% of respondents not aware of them.

73. E&Y surveyed 1,000 SMEs in 2019 for five countries (three of which were emerging markets) and found an average SME fintech adoption rate of 25%, although the range was wide, from 11% (Mexico) to 61% (PRC). The use of fintech by SMEs for banking and payments was higher at 56% (PRC 92%), with insurance the weakest category. The role of fintech in supporting financial management and financing was positive. The report indicated that "SMEs choose FinTech solutions because they provide a good range of functionality and features, have services available around the clock, and are easy to set up, configure and use."[47]

7. Tech-Driven Credit Creation

74. Some bigtech expanded beyond payments to become "super apps": all-in-one platforms that offer a range of services, including a full choice of financial products such as lending to individuals and small businesses as well as insurance and wealth management services.[48] Recent evidence suggests that they are supplanting fintech credit. Figures in Cornelli et al.[49] suggest fintech credit peaked at just over $400 billion globally in 2017 and has been surpassed by bigtech credit, reaching almost $600 billion in 2019. In part this reflects a retrenchment of fintech lending because of fraud in P2P markets and tighter regulation, particularly in the PRC. The PRC, the biggest market for both forms of credit, saw bigtech provide credit of $516 billion against fintech's $111 billion in 2019, although this is not yet the case in major fintech countries such as the US or UK.

75. Fintech and bigtech, even if growing fast, remain small lenders in total credit provision, with the highest shares seen in the PRC (2%) and Indonesia (1%). Trust in traditional financial institutions to safeguard data is considerably stronger in relation to banks than bigtech, which may limit its challenge to conventional lending. Digital financial services nonetheless have considerable potential to reach previously underserved segments of society and contribute to financial inclusion.

[46] Survey of 10,000 bank customer SMEs worldwide in 2021, 'SME Insights', Oliver Wyman.
[47] Global FinTech Adoption Index 2019, p. 23, Global FinTech Network, E&Y, 2019.
[48] Footnote 42.
[49] 'Fintech and big tech credit: a new database', Giulio Cornelli, Jon Frost, Leonardo Gambacorta, Raghavendra Rau, Robert Wardrop and Tania Ziegler, Working Paper No. 887, BIS, September 2020.

E. Financial Inclusion—Trend 3

1. The G20 Agenda

76. In the aftermath of the GFC, many policy makers were concerned about how inequality had grown despite, and perhaps because of, the period of financial expansion that preceded it. At the first global leaders' summit following the crisis, in Pittsburgh, USA in 2009, financial inclusion was made a central aim of the G20's development agenda. At the following meeting in Seoul in 2010, G20 leaders endorsed the 3-year Financial Inclusion Action Plan (FIAP) and established the Global Partnership for Financial Inclusion as a platform to help with its implementation.

77. The initial FIAP focused on enhancing dialogue, promoting a knowledge base for SME financing, and improving regulations and financial infrastructure to support the private sector, and published the G20 Principles for Innovative Financial Inclusion. The scope was expanded in 2014 to include data harmonization, financial education and consumer protection, and women's economic empowerment.

78. The focus on financial inclusion continued and deepened over the course of the decade. In 2016, the G20 agreed on the High-Level Principles for Digital Financial Inclusion (DFI) and recommendations to reduce remittance costs by promoting innovation and competition. The G20 agreed on the Action Plan on SME Financing to encourage national action on SME access to finance. The 2017 FIAP aligned its work with the 2030 Agenda for Sustainable Development and, in 2020, the 2016 Principles were supplemented by the High-Level Policy Guidelines for Digital Financial Inclusion for Youth, Women, and SMEs.

79. By 2020, after consolidation of activities, the G20 FIAP prioritized two areas—digital financial inclusion and SME finance—which included crosscutting work on the financial inclusion of underserved and vulnerable groups (and women's economic empowerment), financial literacy, and consumer protection. The outbreak of COVID-19, which particularly affected remittances, women, and MSMEs negatively, lent impetus to this work.

80. As described in the 2020 FIAP, all financial products and services delivered electronically were to be covered as part of the inclusion perspective as well as the need for data protection, privacy, cybersecurity, fraud, and AML/CFT risks. The focus of SME finance was, "Difficult-to-reach and/or underserved segments, including women entrepreneurs, youth entrepreneurs, rural entrepreneurs, forcibly displaced persons, and other vulnerable groups."[50]

2. The Value of Financial Inclusion

81. It is understandable why the world's financial leaders saw financial inclusion as a priority. Many studies pointed to positive effects from financial inclusion on economic growth and reduction of inequality and poverty.[51] Examples of studies on this subject include IMF (2015a), Park and Mercado (2016), Burgess and Pande (2015), Allen and others (2013), and Honohan (2008).[52]

82. IMF work highlighted some trends and issues on financial inclusion in Asia and the Pacific in a departmental paper published in 2018. The authors made a number of points:

(i) Empirical results point to growth benefits from financial inclusion, with the largest gains for low-income and developing countries. Simulations indicated that raising financial inclusion in low-income Asian countries to the levels in Asia's emerging market economies could significantly reduce poverty and income inequality.

(ii) Financial inclusion can enhance central banks' ability to stabilize economic activity.

[50] FIAP 2020, p.12.

[51] For example, 'Finance, Inequality, and Poverty: Cross-Country Evidence', Thorsten Beck, Asli Demirgüç-Kunt, and Ross Levine, NBER Working Paper No. w10979, National Bureau of Economic Research, Cambridge, MA, 2004.

[52] For details, see next footnote.

(iii) Fintech is playing a growing role in improving financial inclusion and should be an important component of a national financial inclusion and strategy.
(iv) Inclusive growth strategies should target vulnerable groups such as the rural population, low-income households, the elderly, women, and geographically remote communities.
(v) Asia's experience with financial inclusion highlights the benefits of a holistic approach, viz. concerted action on macroeconomic, finance sector, structural reform, and regulatory policies, and the importance of financial literacy and infrastructure policies.
(vi) Policy makers should encourage social experimentation and partnerships between the public and private sectors when pursuing financial inclusion goals. [53]

83. The last point was echoed by the World Bank: "Many … public sector interventions are more effective if the private sector is involved. For example, improvements in the credit environment, disclosure practices, and the collateral framework can be more effective with private sector buy-in and support."[54] The World Bank pointed to the important role governments can play in overseeing the information environment, for example, in reforms to financial infrastructure such as credit bureaus and collateral regimes (e.g., to allow movable assets as collateral), and in ensuring a diverse and competitive finance sector with different types of financial providers, products, and services, all of which reduce transaction costs. With the increasing use of digital financial services, the government's role was important in protecting consumers and small businesses through high standards of disclosure and transparency, efficient regulation, and oversight of biometric identification technologies and anti-fraud measures.

3. Overall Progress on Access to Finance

84. By the time Strategy 2020 and the financial sector operations plan came into effect, considerable progress in access to finance had been made. A survey of financial inclusion by the World Bank in 2014 reported that 78% of finance sector practitioners believed access to finance in their countries had improved substantially in the previous 5 years.[55]

85. From a finance sector perspective, financial inclusion's prominence increased in 2015 as a result of Sustainable Development Goal (SDG) 8: "promoting inclusive economic growth," which involved setting a target for the finance sector in "strengthening the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all." This was to be measured by the proportion of adults with formal financial accounts and access to commercial bank branches and ATMs.

86. The intensified focus on financial inclusion led to a search for better data. A basic set of financial inclusion indicators was agreed at the G20 Los Cabos, Mexico summit in 2012 and developed into a more comprehensive collection the following year. Financial inclusion measured in three dimensions—access to and usage of financial services, and the quality of financial products and services—translated into 15 G20 financial inclusion indicators, supported by information from the World Bank's Global Findex, Enterprise and Global Payments surveys, and the IMF's Financial Access Survey.

87. The surveys, and others, have enriched our understanding of progress in financial inclusion around the world. The most recent Findex figures, for 2021,[56] show that about 4.5 billion people now have access to formal financial services, or 76% of all adults and 71% in developing countries. On this measure, financial access has improved considerably and fast; more than half a billion more adults owned an account at a financial institution or through a mobile money service than 4 years earlier, and the

[53] 'Financial Inclusion in Asia-Pacific', Elena Loukoianova and Yongzheng Yang, p. v-vi, IMF Asia and Pacific Department, No. 18/17, IMF, 2018.
[54] Global Financial Development Report, 2014, p.7, World Bank.
[55] Footnote 54, p. 1
[56] The 2021 Global Findex database draws on survey data covering 125,000 people in 123 countries, while Global Findex 2017 covers 150,000 people in 144 countries.

proportion of adults with access to formal financial services was up by more than half from 51% in 2011.[57]

88. Technology has transformed access and use of accounts in many regions, especially in Sub-Saharan Africa, where 33% of adults had a mobile money account by 2021, almost three times the share of 2014 and the highest in the world. Some poorer countries in Asia have high shares of adults with a mobile money account, such as Bangladesh (29%) and Mongolia (59%). A similarly dramatic change took place in the PRC where 69% of adults (29% in developing economies as a whole) used mobile phones or the internet to pay bills in 2021, some 50% more than in 2017.

89. The number of adults who remained unbanked fell from an estimated 2.7 billion to 2.1 billion at the time of the Pittsburgh summit. Yet, 1.4 billion adults remained unbanked more than 10 years later in 2021, the vast majority of whom lived in developing countries. Women, the young and less educated, and rural and poorer households were overrepresented among the unbanked. The most common reason cited for not having an account was lack of money. About 45% of all unbanked adults were in five Asian countries: the PRC, India, Pakistan, Indonesia, and Bangladesh, with just under half of adults in Indonesia and Bangladesh and some four-fifths in Pakistan unbanked.[58]

90. There was thus potential for account ownership and credit access to increase further, for example, by targeting unbanked private sector employees, farmers, and sellers of agricultural products, particularly with the help of mobile banking and digital finance. Digitizing government payments, where about 10%–25% of unbanked adults received government handouts in cash, was another route to consider.[59] In 2017, about two-thirds of unbanked adults globally had a mobile phone and many had access to the internet in some form. In the PRC, 82% of unbanked adults owned a mobile phone and about 70% in Indonesia.[60]

91. Use of accounts matters. Inactive accounts were found to be higher than average in many South Asian economies, most notably in India (48% of accounts), Sri Lanka (about one-third), and Bangladesh (21%). Cost, cultural, or regulatory barriers may limit use despite access. India's figure may have been affected by a government scheme (Jan Dhan Yojana) to encourage account ownership. However, 66% of adults with an inactive account owned a mobile phone so the position is likely to have improved subsequently.

4. Micro, Small, and Medium-Sized Enterprises and Financial Inclusion

92. MSMEs make up the vast majority of businesses and employment in developing countries and are a critical driver of economic growth and inclusion. Many of the firms are significantly underfunded and their potential demand for finance vastly outweighs its supply.[61]

93. MSMEs face the biggest constraints in access to finance because of market imperfections, such as information asymmetries and transactions costs. Evidence suggests that small business and microfinance are insufficient to spur growth for a variety of reasons (variable growth prospects, weak management, lumpy income streams, among others) making other factors such as finance sector infrastructure, product design, and financial training and education important. Women-owned businesses and agricultural firms (affected by seasons and weather-related risks) face challenges in

[57] Global Payments Systems Survey, Word Bank Group, 2020; The Global Findex Database, World Bank Group, 2021.

[58] In 2021, 47% of adults were unbanked in Bangladesh, 48% in Indonesia, 79% in Pakistan, 22% in India, and 11% in the PRC. Global Findex Database 2021.

[59] Global Findex 2017, p. 96.

[60] Figures were 73% in Nepal, 69% in Bangladesh, 55% in Pakistan, and 51% in India in 2021. Global Findex 2017, p. 92, and Global Findex 2021.

[61] 'Is Small Beautiful? Financial Structure, Size, and Access to Finance', Thorsten Beck, Asli Demirgüç-Kunt and Dorothe Singer, pp. 19-33, World Development 52, 2013.

accessing finance, which may be tackled by new products, e.g., women in business lines of credit or crop insurance.

94. MSMEs rely heavily on trade credit, cash flows, and informal sources of finance. Because MSMEs are small and often face volatile revenue streams, they have weak financial structures and high liquidity and insolvency risks. This makes it harder for MSMEs than larger firms to borrow. Alleviation of credit constraints can help MSMEs grow,[62] which has been a motivating factor behind MDB efforts to provide them with finance, especially in poorer countries. As incomes rise, the proportion of unconstrained MSMEs also rises: an International Finance Corporation (IFC) study showed that only 19% of MSMEs were credit constrained in high-income countries against 67% in low-income countries.[63]

5. Size of the Micro, Small, and Medium-Sized Enterprise Problem

95. An IFC study estimated that in 2017, 65 million MSMEs, or 40% of the total in developing countries, were credit constrained and that the finance gap was as much as $5 trillion, equivalent to 19% of the countries' GDP. IFC estimated that potential demand from informal MSMEs represented the equivalent of a further 10% of GDP.[64]

96. Not surprisingly, given its population size, East Asia and the Pacific's MSME finance gap was almost half the total for developing countries, although only a little above average when measured against GDP. South Asia was a little below the overall average.

97. Most credit-constrained MSMEs (86%) are microenterprises since they vastly outnumber SMEs, but the figure is reversed in the finance gap, where 86% is attributable to SMEs. As a proportion of their total numbers, SMEs were slightly more credit constrained (44% vs. 40% for microenterprises) while microenterprises faced a bigger finance gap relative to potential demand (81% vs. 56% for SMEs).[65]

98. The study found that South Asian MSMEs were more credit constrained than in other regions (other than SMEs in Sub-Saharan Africa), particularly for microenterprises, more than one-third (37%) of which were "fully constrained." East Asia and Pacific showed almost as high a constraint level for microenterprises (34%) and SMEs (33%) although a few were "partially constrained."[66] The PRC, with more than half of all SMEs[67] in developing countries and almost one-third of microenterprises, is likely to have contributed greatly to this result.

6. Policy Implications

99. The IFC paper considered the implications of its findings for governments and the private sector. The paper emphasized the importance of governments ensuring financially diverse markets and effective competition. The paper did not see direct government intervention in financial markets, such as state-owned bank lending to MSMEs or interest rate caps, as generally successful. The paper noted that credit guarantees or risk-sharing arrangements did not always lead to additional lending as banks often use guarantees to lower risk on loans they would have made anyway.

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[62] 'Do Firms Want to Borrow More? Testing Credit Constraints Using a Directed Lending Program', Abhijit V. Banerjee and Esther Duflo, pp. 572-607, The Review of Economic Studies 81(2), 2013.

[63] Figures for lower-middle income countries were 48% and for upper-middle income countries 35%. 'MSME Finance Gap', IFC, 2017.

[64] Footnote 63.

[65] Author calculations based on footnote 63, pp. 23 and 28.

[66] Footnote 63, pp. 25–26. Constrained figures (i.e., fully and partially constrained) for microenterprises were 53% in South Asia, 41% in East Asia and the Pacific, and for SMEs 50% and 44%.

[67] Footnote 63, p. 21.

100. Instead, policy makers were better advised to improve the availability of credit information; introduce laws allowing moveable assets as collateral; and support credit registries, insolvency regimes, factoring and leasing, and technological solutions:

(i) The quality and reliability of financial statements by MSMEs are often low and many small business owners lack the technical knowledge to apply for loans. Support for business development services helps build capacity and many MDBs allocate resources to the task. Regulatory reforms that make it easier for informal firms to register with the authorities help, although many firms do not do so for fear of the tax authorities and associated corruption.

(ii) Credit registries or bureaus collect payment histories, e.g., from utility bills, previous repayments, among others, and create credit scores, and can act as reliable third parties that can help lenders with information needed for their loan appraisals. Evidence suggests that credit bureaus are associated with lower financing constraints and a higher share of bank financing for MSMEs.[68]

(iii) World Bank Enterprise Surveys indicate that almost 80% of loans or lines of credit require collateral. Banks are often unwilling to accept movable assets as collateral without effective secured transaction laws in place. The introduction of sound collateral laws is an important precursor to extending finance to MSMEs, helped, too, by the presence of collateral registries.

(iv) Similarly, an effective insolvency framework that protects creditor rights and orderly wind-down processes provides greater confidence in lending arrangements.

(v) The heavy dependence of MSMEs on cash flow exposes them to risks associated with delays in receivables or lumpy capital expenditure needs. The risks can be reduced through factoring backed by suitable legislation, where a third party helps smooth the inflows of cash, and via leasing, where investment costs and risks associated with new technologies can be spread through leasing payments.

(vi) Governments can support innovative initiatives by potentially temporarily waiving regulations to allow experimentation with new approaches to financial technology solutions. “Regulatory sandboxes” have been introduced in several countries.

7. Private Sector Actions

101. On the private sector side, IFC found that many financial institutions had inappropriate processes and products for meeting the needs of MSMEs and informal businesses; reliable data and collateral coverage were lacking and risks were perceived as high. IFC recommended adopting different business models, new credit assessment techniques, delivery channels, and technologies, and tailoring products and services to customer needs. DFS models were seen as valuable in advancing financial inclusion at scale via the following:

(i) Mobile money and related micro savings and credit facilities.

(ii) Platform ecosystems able to leverage large databases and economies of scale and develop products such as insurance.

(iii) Open Application Programming Interface (API) allowing different systems to integrate to exchange customer data and instructions.

(iv) For example, India’s Aadhaar biometric information system, which covers more than 1 billion people, provided the foundation for an integrated set of APIs to create India Stack, which secures customer data sharing and remote authentication for financial transactions and opening accounts.

(v) Remittance arrangements. IFC and World Bank estimated that DFS through mobile money operators could reduce cross-border remittance costs from about 7% to 3%.[69]

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[68] Footnote 63, p. 44.
[69] ‘Digital Financial Services’, p. 3, World Bank Group, 2020.

8. Women in Business Credit Lines

102. An important subset of credit-constrained MSMEs is women-owned or -led businesses. Other groups facing difficulties in accessing finance include young entrepreneurs and business owners in remoter regions.

103. Some IFIs saw value in focusing their operations on inclusion issues as part of their MSME lending programs. While various advisory programs and financial commitments to individual women-owned businesses had existed in earlier MDB programs, they had been fragmented and on a small scale. The focus on financial inclusion presented an opportunity to scale up activity using financial institutions as the intermediary vehicle to reach a wider set of women entrepreneurs and improve the gender balance in countries where it was especially difficult for women to access finance.

104. IFC launched its Banking on Women program in late 2010 to provide debt, equity, and advisory services to commercial financial institutions and expand financial services and opportunities to women customers and businesses. The aim was to leverage IFC's large pool of client financial institutions, especially those focused on SMEs in countries with a preponderance of female entrepreneurs, to increase access to finance for women entrepreneurs. Some large loans were soon made, for example, $470 million to Banco Itau (now called Itau Unibanco) in Brazil in 2013; $90 million to Cambodia; and $50 million each to the PRC, India, and Chile in 2016.

105. The initiative was followed in 2013 by the launch of a Banking on Women Bond Program, which helped attract investments into financial institutions serving women-owned businesses under Banking on Women, and in the following year a $600 million Women Entrepreneurs Opportunity Facility in partnership with Goldman Sachs was introduced to expand access to capital for women entrepreneurs. Further collaborative efforts to support women businesses continued, for example, with Overseas Private Investment Corporation, FMO (a Dutch development bank), and Swedfund. As of June 2021, IFC had committed cumulatively (including mobilized finance) more than $3 billion under Banking on Women through 165 investment and advisory projects.

106. EBRD efforts to develop a gender action plan with operational import toward the end of the 2000s led to a series of pilot projects focused on women in the Caucasus and Western Balkans. With Türkiye becoming a new country of operations, where the gender gap was large, and with a strong commitment to inclusion by EBRD's chief economist and president, increasing the opportunities for female entrepreneurs morphed into the Women in Business program. After an initial €50 million syndicated loan in 2012 to Garanti Bank in Türkiye for onlending to women-owned and -operated SMEs, similar loans to other Turkish banks followed that year and in 2013. By 2014, a full-fledged Women in Business program worth a further €300 million (EBRD finance) was in place for Turkish banks and was followed by similar programs in Egypt, the Western Balkans, Central Asia, and elsewhere. By the end of 2020, EBRD had committed more than €500 million in own finance to Women in Business.

9. Financial Inclusion Progress in Asia

107. The Asia and Pacific region is extremely diverse in size and development of its countries, making a one-size-fits-all finance sector policy inappropriate. GDP per capita ranges from the PRC at more than $10,000 in 2020 to more than 10 times less in Tajikistan ($857), while many Pacific island economies produce output of barely $1 billion compared with India's output of more than 2,500 times larger, and with the PRC's GDP of $14.7 trillion, the second largest in the world after the US.

108. An important feature of the region is the sheer size of its population—61% of the world's people live in South Asia, East Asia, and the Pacific—which, even allowing for considerable progress in reducing inequalities, leaves many households and businesses potentially without easy access to finance. Just a small share of the population without access to finance translates into hundreds of millions of people.

Financial inclusion is a continuing imperative, most obviously in highly populated countries, such as India, the PRC, and Indonesia, and those suffering from inequality, such as the Philippines, Bangladesh, and Sri Lanka. Other regions have similarly diverse experiences but perhaps not quite on the same scale.

109. MDBs and DFIs have focused heavily on investing in the finance sector to reach underserved populations and improve financial inclusion. Finance for SMEs and microfinance has been a dominant feature of the interventions, with sovereign activities to support second-tier local development banks and improvements to the financial infrastructure (via policy loans and support for legal and regulatory changes). Increasingly, however, attention has turned to helping disenfranchised groups, especially women but also youth and agri-SMEs.

110. Two aspects are especially relevant: the enabling environment for financial inclusion and progress in access to finance.

10. Enabling Environment for Financial Inclusion

111. The EIU's Global Microscope looks at a wide array of indicators on the enabling environment for financial inclusion,[70] covering 55 developing countries across the world and looking at financial inclusion from 2014. An overall score for each country is constructed from five core areas relevant to financial inclusion, each based on 10 or more indicators (**Table 11**).

Table 11. Economist Intelligence Unit Global Microscope: Enabling Environment for Financial Inclusion

Government and Policy	Stability and Integrity	Products and Outlets	Consumer Protection	Infrastructure
1. National strategies	1. Market entry requirements	1. E-money and simplified accounts	1. Financial services users	1. Payments infrastructure
2. Financial and digital literacy	2. Operational requirements	2. Credit	2. Insurance users	2. Connectivity
3. Government digitisation	3. Customer due diligence	3. Emerging services	3. Data protection	3. Digital IDs
	4. Supervisory capacity	4. Inclusive insurance		4. Credit information
	5. Cybersecurity	5. Financial outlets		

Source: Economist Intelligence Unit. 2020. *Global Microscope 2020: The Role of Financial Inclusion in the Covid-19 Response*. page 7.

112. Taking the 2019 and 2020 surveys together (to minimize distortions from the COVID-19 pandemic) the assessment shows that Asia has some of the best performers—and some of the worst—in the sample of countries (**Table 12**). India, the Philippines, and Indonesia feature in the top 10 of the 55 rankings, with the PRC in the first quartile; Cambodia and Bangladesh are near the bottom and Viet Nam performs poorly. Although comparisons over a longer period are difficult to make for a variety of reasons (changes in sub-indexes, weights, and so on), the top-three Asian countries were similarly highly ranked in 2014. The PRC has risen sharply up the rankings since that time.

[70] Economist Intelligence Unit. 2020. *Global Microscope 2020: The Role of Financial Inclusion in the Covid-19 Response*

Table 12. Asian Countries' Financial Inclusion Enabling Environment Performance, Economist Intelligence Unit Global Microscope: Average Rank, 2019 and 2020

Top Half	Rank	Bottom Half	Rank
India	5	Cambodia	48
Philippines	7	Bangladesh	44
Indonesia	9		
PRC	13	Viet Nam	43
Thailand	17	Nepal	40
Pakistan	21	Sri Lanka	37
Top 10		Bottom 10	
Top Quartile		Bottom Quartile	

Note: Sample of 55 developing countries.
Source: Economist Intelligence Unit. 2019. *Global Microscope 2019: The Enabling Environment for Financial Inclusion*.

113. The 2020 Global Microscope report compared some of the major countries against their upper- and lower-middle-income peers (low income in the case of Nepal), showing the top Asian performers to be well above their peers, and conversely for the worst performers. In general, Latin America appeared to be ahead of Asia, with more consistently high scores across the five dimensions. Asia's performance was weakest in consumer protection[71] and strongest in the products and outlets category.

11. Access to Finance

114. Three measures of financial access selected by the World Bank as important indicators of financial inclusion are the proportion of adults with an account and the gap between men and women and between richer and poorer people in each country. [72]

115. Taking the three indicators together (unweighted ranks) for 2017 shows Mongolia as the best Asian performer, with 93% of adults with an account and little difference between men and women or rich and poor, with India and Thailand not far behind. In Pakistan, however, only 21% of adults have an account and gender inequality is among the highest in the world. Gender balance is weak in Bangladesh, and the Philippines scores poorly on inequality measures. In the PRC, 80% of adults in 2017 had an account with a financial provider but scored poorly on the gap between rich and poor.

116. Some additional information on financial access that is often quoted in relation to inclusion—the number of ATMs per 100,000 adults—is in Table 13. Figures on access to bank accounts in Table 2 are relevant.

[71] Out of the 55 countries surveyed only Democratic Republic of Congo and Sierra Leone scored worse in this category.
[72] Global Findex 2017.

Table 13. Selected Financial Access Indicators in Emerging Asia, 2010 and 2020

	ATMs per 100K adults		Registered Mobile Money Accounts per 1000 adults *	
	2010	**2020**	**2010**	**2020**
PRC	25	87	..	..
Thailand	82	112	25	1058
India	7	22	4	1672
Indonesia	13	52	46	2134
Bangladesh	2	11	1	825
Philippines	15	30	127	563
PNG	5	8	..	146

* Bangladesh (2011), India (2013), Thailand (2015), Philippines (2019).
.. = no data, PNG = Papua New Guinea, PRC = People's Republic of China.
Source: International Monetary Fund Financial Access Survey (2022).

117. The ATM measure improved during the 2010s in the countries shown in Table 13, and is highest in Thailand, the PRC, and Indonesia. By contrast, the number of ATMs in PNG and Bangladesh was 10 times lower than in the best performers. Progress in these countries, however, has been made in the number of mobile money accounts, with Bangladesh coming from nowhere to show more than 800 registered accounts per 1,000 adults in 2020. Acceleration in the number of mobile money accounts has been remarkable elsewhere, too, with even highly populated countries such as India and Indonesia from a standing start recording more than one account per adult by the end of the decade. The effects of the COVID-19 pandemic are likely to have advanced this measure further.

118. The IMF summed up its view of financial access in Asia by 2018:

(i) Asia and the Pacific made significant progress in the 2010s, faster than other regions (e.g., the median growth of ATMs was fourfold in 2008–2016), but large disparities remained.

(ii) Asia and Pacific developing countries have greater access to banking accounts than their peers, although usage lags in South Asia.

(iii) Within-country disparities can be large, e.g., in some South Asian countries 30% of women vs. 45% of men have a bank account, and in Indonesia about 10% of the poorest quintile have an account vs. about 60% of the richest quintile.

(iv) Asia and Pacific enterprises do not see access to finance as much of a constraint as firms in other regions, despite higher levels of collateral needed to get a loan.

(v) Small states, and those with widely dispersed geographies, especially with small islands, face special challenges from lack of scale, vulnerabilities to natural disasters, high costs, and risk premia. Digital financial services, however, have made a difference.

(vi) The regulatory environment and government support for financial inclusion, particularly for financial and digital literacy, were seen as generally strong in Asia and the Pacific but less so for privacy, inclusive insurance, and consumer protection.

(vii) Potential benefits of public banks are overshadowed by inefficiencies and high costs of services in more risky and innovative areas.

(viii) Financial development, as measured by the credit-to-GDP ratio, is high in the PRC and Thailand, and to a lesser extent in Mongolia.

(xi) Fintech is expanding fast, with several Asia and Pacific emerging markets at the forefront of its use. The PRC is a global leader in mobile payments and accounts for more than half of fintech transactions in the region. Mobile banking is not as significant as in Sub-Saharan Africa, but mobile money accounts are advancing rapidly in poor Asian countries and among many Pacific island states (helped by fast growth in mobile phone subscriptions). [73]

12. Conclusion

119. Asia made further progress in financial inclusion in the 2010s, helped considerably, especially in the second half of the decade, by digital financial services and access to finance by previously underserved groups through mobile phone and internet access. Nonetheless, pockets of weak financial inclusion remain, especially in more remote areas, including the Pacific islands, and among women, informal and agricultural workers, and the poor.

F. Green Finance—Trend 4

120. The last decade has been marked by increasing anxiety over environmental sustainability and climate change and its consequences. With rapid economic growth has come environmental degradation and higher greenhouse gas emissions. The Asia and Pacific region is responsible for more than half of global CO_2 emissions, which has become a major issue. Many of the region's economies have experienced increasingly frequent climate-related disasters and, as these worsen, some economies even face the threat of extinction. The global call for more green finance applies to the region as much as any other.

1. Rising Interest in Green Finance

121. According to Simon Cooper, chief executive officer (CEO), Corporate, Commercial and Institutional Banking at Standard Chartered, 2 decades ago sustainability was far from the top of the agenda and featured only as a tiny part of the investment community interests, especially in Asia. Since then, awareness and attitudes toward sustainability goals have been transformed. Sustainability is now a hot topic for investors, banks, and corporates.[74]

122. Alina Florea and Nathan Morales of Bechtel, a US engineering and construction company, argue that the tipping point on sustainability came in 2015 with the launch of the SDGs, which took a more expansive and ambitious approach to development social and environmental issues, and the Paris Agreement on Climate Change that same year.[75]

123. The pattern of increasing interest is corroborated in a study of nearly 900 published research papers and similar documents on green finance. The authors found that the literature on green finance, which began in 1991, took off in 2012, picking up pace from 2015 and accelerating sharply from 2018 on.[76]

124. The role of finance in the green transition was formally recognized in article 2.1 C of the Paris Agreement, which called for "making finance flows consistent with a pathway towards low greenhouse gas emissions and climate resilient development."[77] By now, few institutions are unaware of the climate

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[73] 'The Financial Inclusion Landscape in the Asia-Pacific Region: A Dozen Key Findings', Sarwat Jahan, Jayendu De, Fazurin Jamaludin, Piyaporn Sodsriwiboon, and Cormac Sullivan, IMF Working Paper 19/79, IMF, 2019.
[74] The evolution of sustainable finance, Simon Cooper, February 2019
[75] 'Green financing: A look at the history and the options available for developers', Alina Florea and Nathan Morales, Smart City Journal, 2021.
[76] The US had the highest number of papers cited (140), followed by the PRC and UK (both about 110). Looking at core authors and institutions, i.e., those who publish more than two papers or five in the case of institutions, the PRC scholars were the most published, accounting for almost 30% of core authors.
[77] United Nations Framework Convention on Climate Change. 2015. The Paris Agreement.

challenge and that they will need to play a role in mitigating and adapting to its effects. BlackRock CEO Larry Fink made clear in a letter in 2021 to other CEOs, "There is no company whose business model won't be profoundly affected by the transition to a net zero economy."

2. Scale of Opportunity

125. To reach the 2°C or less target, the IEA puts cumulative investment in energy supply and efficiency needs at $53 trillion by 2030. Others estimate that $6.35 trillion a year will be required globally to meet Paris Agreement goals by 2030.

126. Emerging markets in Asia and elsewhere can be expected to play their part. An analysis by IFC found that there were $23 trillion of climate smart investment opportunities in emerging markets running up to 2030.[78] And in another report, IFC argued that climate-resilient infrastructure potential in South Asia was large, with Bangladesh and India, for example, having investment potential of about $2.2 trillion.[79]

127. In making progress toward these goals, IFC suggested that for the authorities to successfully implement a sustainable finance strategy, strengthening the role of the finance sector was essential. This included actions on disclosure standards, taxonomies on brown and green financial assets in bank and other portfolios, integration of sustainability risks into prudential regulation and supervisory practices, and development of local markets with respect to demand for and issuance of green financial products.

128. The financial system's primary role as an intermediary for financing economic development can contribute to the Paris Agreement through climate finance, i.e., via the provision of funds for climate change adaptation and mitigation. Green finance has a broader scope, including environmental goals and sustainable finance, which extends to environmental, social, and governance (ESG) factors and aims to mobilize financial flows toward green investments.

129. The climate-driven investment opportunity in emerging markets requires significant amounts of debt financing. Banks are essential to the scaling up of climate finance as they provide most of the formal credit in emerging economies. IFC suggested that banks will need to significantly ramp up financing of climate-related investments from an estimated 7% of their business in 2017 to 30% in 2030, or from $1.5 trillion to $13.3 trillion, including for renewables, energy efficiency, green buildings, and climate-smart transport. A large part of this growth is expected to come from the PRC.

130. Banks will need to rely on debt capital markets to help fund the necessary maturity transformation to match longer-dated assets with long-term liabilities. As well as assisting banks and capital markets with finance and advice, IFC saw a role for MDBs to help with project preparation and risk sharing to increase the bankability of projects. Problems in scaling up are a lack of bankable projects that can be labelled green and low awareness among domestic investors of opportunities for green projects. MDBs can help address this through their relationships with financial institutions.

131. IFC concluded that three elements—banks scaling their climate lending business, regulators providing consistent guidance on climate-related risks and opportunities, and debt capital markets providing the means of financing long-term climate-related debt—needed to come together for the international community to be able to leverage the private sector and mobilize finance to tackle climate change.

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[78] 'Greening Banks and Capital Markets for Growth', G20 Input Paper on Emerging Markets, Stein, P., Rooprai, G, Kludovacz, T., IFC, October 2018.

[79] 'Climate investment opportunities in emerging markets', IFC, 2016.

3. Regulator Interest

132. As the decade progressed, financial regulation authorities increasingly began to view climate and environment-related risks as material financial risks, not just reputational ones. In 2015, Mark Carney, then Bank of England governor, warned that financial stability may be undermined by increasing financial risks linked to climate change:

(i) Physical risks caused by disruptive events (hurricanes, floods) or longer-term shifts in climate patterns (higher temperatures, water scarcity), which could have financial implications through direct damage to assets and supply chains.

(ii) Transition risks that were linked to moves to a less polluting economy, which may lead to changes in the value of assets as a result of regulatory, technological, or behavioral changes. These could have financial implications for organizations through higher costs of doing business or via stranded assets.

(iii) Liability risks that might follow as a consequence of the above risks, such as claims resulting from a failure to disclose climate risks.[80]

133. Initiatives by regulators soon followed:

(i) In December 2015, the FSB established a Task Force on Climate-Related Financial Disclosures to better understand the concentration of carbon-related assets in the finance sector and the financial system's exposure to climate-related risks. Several financial institutions have subsequently followed the task force's recommendations, which are authoritative, and report financially material climate-related information.

(ii) In 2016, the G20 launched the Green Finance Study Group, which focused on greening the banking system and bond markets and institutional investments, analyzing risk, and measuring progress.

(iii) In 2017, the network of central banks and supervisors for greening the financial system was established by eight central banks and supervisors and has grown to more than 80 members, including IFI observers. The network aims to disseminate tools and methodologies to manage environmental risks in the finance sector, among other things.

(iv) The Basel Committee on Banking Supervision, the global standard setter of prudential regulation of banks, established a high-level task force on climate-related financial risks in 2020 to consider the need to incorporate climate-related financial risks into the existing bank framework and identify supervisory practices to mitigate such risks.

4. Advances in European Union Green Finance Regulation

134. The European Union (EU) has been among the most active jurisdictions on climate finance, including on regulatory requirements. The European Green Deal, approved in 2020, provided a road map to net zero carbon emissions for the EU with a "strategy for financing the transition to a sustainable economy," published in 2021, which built on the 2018 action plan on financing sustainable growth.

135. Leading up to this strategy, there had been debate on how to incentivize financial institutions to adopt more environmentally sustainable practices, including the idea of a "green-supporting" factor in prudential banking rules.[81] A high-level expert group (HLEG) looked into the issue and concluded that for the strategy to be effective, a well-identified green, and potentially brown, asset class to which differential capital requirements could be applied was needed along with evidence of significantly lower risk at the micro level. The HLEG recommended as a first step to a green-supporting factor that the commission should determine whether there is a risk differential justifying such a factor. The action plan on financing sustainable growth, based on the HLEG's report, identified three objectives:

[80] 'Breaking the Tragedy of the Horizon – climate change and financial stability', pp. 5-6, Mark Carney, Speech by the Governor of the Bank of England to Lloyd's of London, Bank of England, September 2015.
[81] Announced by the European Commission at the One Planet summit in Paris 2017.

(i) reorienting capital flows to sustainable investment,
(ii) mainstreaming sustainability into risk management, and
(iii) fostering transparency and long termism.

136. The HLEG followed up with three regulations on the following:

(i) A sustainable taxonomy, a regulation that provides a classification system to facilitate sustainable investments and avoid fragmentation over what qualifies as an environmentally sustainable activity. The regulation covers climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, and protection and restoration of biodiversity and ecosystems. Activity must contribute substantially to at least one objective and do no significant harm to any of the others.
(ii) Disclosures relating to sustainable investments and sustainability risks.
(iii) Establishing low-carbon benchmarks.

137. The action plan provided for the development of a European Green Bond standard requiring alignment with the EU taxonomy, transparency on the use of bond proceeds, and external review checks supervised by the European Securities Markets Authority. The action plan has yet to be adopted.

138. The HLEG recommended that the insurance sector incorporate climate risk more explicitly into assessments conducted by insurance companies, arguing that the business model of the insurance sector is suited to supporting sustainability.[82] In July 2021, some of the world's largest insurers and reinsurers established the net zero insurance alliance to transition their underwriting portfolios to net zero greenhouse gas emissions by 2050.

139. The HLEG held the view that pension funds' long-term liabilities made them ideal providers of sustainable finance. The HLEG believed that credit-rating agencies and sustainability-rating agencies could do more by fully integrating relevant ESG factors and, for example, considerations of stranded assets into their assessments and offer more transparency on sustainability ratings.

5. Progress on Sustainable Finance Regulation

140. The Sustainable Banking and Finance Network (SBFN),[83] a collective learning platform, was formed by financial regulators and banking associations of emerging markets with the help of IFC in 2012. The platform has since grown to include 43 countries committed to sustainable finance in line with international good practice, covering 86% of emerging markets' banking assets. The SBFN identifies three pillars of sustainable finance:

(i) ESG integration, which looks at ESG frameworks and reporting requirements;
(ii) climate risk management, a newer category relating to the assessment and integration of climate risk; and
(iii) financing of sustainability, which considers guidelines and taxonomies for green, sustainable, and social (GSS) financial instruments, such as loans and bonds.

141. The SBFN classifies member countries under three stages of performance: preparatory, implementing, and maturing. In its latest progress report (October 2021),[84] the SBFN considers the PRC and Indonesia as two of three emerging market countries having achieved the "maturing" stage, while Kazakhstan and Lao PDR were the least advanced in Asia and the Pacific. Mongolia and Viet Nam are close to the maturing stage and Bangladesh is not far behind. No country has yet reached the maturing

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[82] It is the largest institutional investor in Europe, with assets under management of about €10 trillion or about 60% of the EU's GDP.
[83] It was originally named the Sustainable Banking Network.
[84] IFC. 2021. *Accelerating Sustainable Finance Together, Global Progress Report of the Sustainable Banking and Finance Network*. Washington, DC.

stage on climate risk management, although the PRC is ahead of other emerging markets covered by the organization.[85]

142. In October 2019, the EU and seven countries launched the international platform on sustainable finance to exchange best practices in environmentally sustainable finance. The platform's members include public authorities from the PRC, India, and Indonesia, among others. The PRC and the EU collaborated on developing joint green investment standards, releasing a report in late 2021.[86]

6. Growth of Green Finance

143. Banks can support companies pursuing climate-related projects and improvements directly through their lending programs. In pursuing ways of combatting climate change, MDBs and DFIs have raised awareness of climate finance among financial institutions and offered finance and technical support for this purpose.

144. The long-term nature of investments delivering climate-related improvements make debt capital markets an important financing route for banks (and large corporates). Bonds issued by banks can be linked to green projects and green portfolios and marketed as green bonds. MDBs can support the process through purchases of bonds, help with preparation for issuance, and advise on legal and regulatory arrangements. MDBs can help develop the market for green bonds through their own debt issuance. As large supranational borrowers, they command considerable influence in the market and have been instrumental in its development.

145. Debt capital markets increasingly play a significant role in supporting banks scale up their finance for the low-carbon transition. Lenders need to access debt capital markets to raise longer-dated liabilities to match longer tenors required for climate investments, while securitizations and other true sales of green bank assets increase their capacity to originate new loans within existing capital constraints.

146. A vital role is played by investors—largely institutional ones such as pension funds and insurance companies—which seek long-term assets to match their liabilities. Green projects, such as renewables, typically require long lead times before reaching profitability but offer good and generally predictable yields, backed by contracts to sell electricity, and are attractive to the long-term investors.

147. Green financing is growing fast through a variety of instruments such as green bonds, sustainability-linked loans, and sustainability bonds. Social bonds have increased, particularly during the pandemic. There are several types of finance:

(i) Activity-based debt such as green and sustainability bonds (which include a social element) are instruments that commit the issuer to financing client projects that invest in renewable energy, energy efficiency, pollution prevention and control, biodiversity, climate change adaptation, and so on.

(ii) Behavior-based debt, e.g., sustainability-linked loans, are instruments in which the interest rate is linked to some sustainability performance indicators such as carbon emissions. In the event of reaching the sustainability targets, the borrower benefits from favorable interest rates while higher rates are due in the case of failure to meet the sustainability goals.

(iii) Other instruments include blue bonds, which are related to marine- and ocean-based projects, and social bonds and green loans, which involve periodic reporting by the borrower to the lender on the actual use of proceeds and various performance indicators.

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[85] Among the 43 countries covered, the Asia and Pacific countries were Bangladesh, Cambodia, the PRC, Fiji, Georgia, India, Indonesia, Kazakhstan, Kyrgyz Republic, Lao PDR, Maldives, Mongolia, Nepal, Pakistan, Philippines, Samoa, Sri Lanka, and Thailand.

[86] European Commission. International Platform on Sustainable Finance (Assessed 26 Sep 2022).

148. Industry initiatives, including by regulators, are helping create a common set of principles and standards for green financing. An example of new green financing involving MDBs is Amundi Emerging Planet Green One, in which IFC and EBRD partnered with a leading asset management company, Amundi, to launch in 2018 the world's largest green bond fund dedicated to climate projects in emerging markets. The up to $2 billion fund was designed to buy green bonds issued by banks active in emerging markets and to be fully invested in green projects within 7 years.

7. Green Bond Issuance

149. Figures from Bloomberg indicate that by 2019, at least $30 trillion of funds were held in sustainable or green investments—an increase of one-third from 2016, according to the Global Sustainable Investment Alliance—and they expect the figure to exceed $50 billion by 2025. Rapidly growing demand has helped create a market for green (and other sustainable) bonds and loans that barely existed a decade ago.

150. By the end of 2021, the GSS bond market as recorded by the Climate Bonds Initiative had reached $2.6 trillion.[87] In 2021 alone, $925 billion worth of GSS bonds were issued, considerably higher than the previous year's $700 billion and 2019's $358 billion. The EU (adding EU members' issues together) is the largest issuer of GSS bonds. Ten new sovereign issuers joined others in 2020, bringing the total number of sovereign GSS bond issuers to 22 countries. 2021 was a record year for green bond finance, whose net proceeds are dedicated to green assets and projects. Issuance of green bonds of more than $500 billion represented a more than 50 % increase on the previous year's figure of $298 billion, bringing the cumulative total to $1.6 trillion. It included the largest issued amount to date, a €12 billion ($14 billion) 15-year bond by the European Commission on behalf of the EU. In recent years, Indonesia has shown the potential of Islamic finance to fund sustainable development projects by issuing sovereign sukuks with green tranches totaling more than $7 billion.[88]

151. Emerging markets accounted for about one-fifth of overall green bond volume, while financial institutions issued about one-quarter of the global total, a bit more than nonfinancial corporations.[89] About two-thirds of issues had maturities of up to 10 years, and the vast majority of instruments were externally reviewed. Use of proceeds was dominated by energy projects (37%) and buildings (30%) and, to a lesser extent, transport (18%).

8. Green Bonds in Asia and the Pacific

152. In emerging markets before the pandemic (which led to an increase in sovereign and public issues), financial institutions made up from one-third to one-half of cumulative green bond issuance by volume, in contrast to about one-fifth in developed markets. In emerging Asia and the Pacific, financial institution issues contributed about half the total (and more than double that of nonfinancial corporates) until the pandemic reduced bank activity.

153. Green bond finance in Asia and the Pacific (mostly East Asia and the Pacific) has grown from virtually no issuance in 2015 to about $130 billion issued in 2021, for a cumulative $372 billion.[90] Emerging Asia accounted for close to three-quarters of the total, dominated by the PRC, which comprised more than half the Asia and Pacific total. Some way behind came India, Indonesia, the Philippines, and Thailand.[91] Other than the PRC and Thailand, where the great majority of issues were in local currency, most bonds were denominated in foreign currency (US dollars).[92]

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[87] Data here and in following paragraphs are mainly derived from the Climate Bonds Initiative database (accessed March 2022).
[88] The latest, a $3 billion issue in 2021, had a 30-year $750 million green tranche.
[89] Issuance by nonfinancial corporations is dominated by power and utility companies.
[90] Sustainability and social bonds add another $43 billion and $23 billion to the total.
[91] At $19.5 billion, $6 billion, and about $3 billion each, respectively. See 'India Sustainable Debt: State of the Market 2021', ICMA, May 2022 and 'ASEAN Sustainable Finance: State of the Market 2021', ICMA, June 2022.
[92] 'Promoting Local Currency Sustainable Finance in ASEAN+3', ADB (with ICMA), June 2022.

154. The PRC is now the world's second largest issuer country after the US and ahead of major issuers such as France and Germany.[93] In 2021, the PRC issued $68 billion of green bonds, compared with $63 billion in Germany and $36 billion in France.[94] About half of the PRC's GSS issuance has been by commercial banks. The PRC is attractive to global investors because of its large issuance and better liquidity than in other emerging market bonds. As the PRC standards harmonize with international standards, offshore investor demand is likely to grow. Ahead of the COVID-19 pandemic in 2020, financial institutions were the largest source of issuance in the PRC.

155. Global green bond pricing has outperformed the overall market for most of the period since 2017 by as much as 300 basis points. The "greenium"—a tighter spread for green over other emerging market bonds—is mostly a result of the imbalance between high investor demand and the supply of green bonds.

156. Looking ahead, green bond issuance from emerging markets is expected to remain strong as countries like India advance new renewable capacity. In the Philippines, the central bank introduced its first sustainable finance framework. Pakistan issued its first green bond in 2021.

9. The Role of International Financing Institutions

157. IFIs have provided support for green finance beyond directly supporting green projects. IFIs have done so through intermediaries such as commercial banks and private equity funds by onlending debt or providing equity capital for energy efficiency, renewables, and other green purposes. Support has been given to financial institutions to prepare portfolios and issue green bonds through structuring assistance and purchases of bonds and by developing capital markets through technical advisory and policy work on regulatory and legal aspects.

158. For example, IFC has worked with its partner financial institutions to analyze their portfolios related to climate and has provided technical expertise to develop green lending, marketing and product strategies, impact reporting, and dedicated funding strategies. Green finance has been a growing business. IFC's Reach survey in 2017 found that almost three-quarters of the banks surveyed offered climate finance in some form, mostly for renewable energy and energy efficiency, both on a fast-upward trajectory.

159. EBRD has offered financing facilities for energy efficiency and sustainable resource use to its partner financial institutions since the mid-2000s and has issued 122 green and environmentally sustainable bonds worth some €8 billion ($9 billion). The European Investment Bank issued a "climate awareness" bond in 2007 and the World Bank launched its first green bond in November 2008. The initiative helped define the criteria for projects eligible for green bond support, included a second-opinion provider, and added impact reporting as an integral part of the process. The initiative formed the basis for the green bond principles coordinated by the International Capital Markets Association. Since then, the World Bank has raised $14.4 billion through more than 160 green bonds in 22 currencies.

160. IFIs that raise funds via green bonds have helped take capital markets from a situation where investors knew and cared little about what their investments were supporting to one where purpose matters more than ever. The basic green bond premise, with its model for project selection, second-party opinion, and impact reporting, has been applied to other areas such as blue bonds. Investors' interest reflects a fundamental shift in bond market and investors' understanding of their ability to support initiatives their stakeholders care about.

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[93] Total issuance by the end of 2021 by the US was $304 billion, by the PRC $199 billion, by France $167 billion, and by Germany $157 billion. Supranational issuance was $107 billion.

[94] Figures for the US were $82 billion, with other countries such as the UK and the Netherlands well behind at $34 billion and $23 billion. Issuance by emerging markets in Latin America was tiny, e.g., Chile $4 billion, Brazil $2 billion, and Mexico $0.5 billion.

G. Regional Integration

161. Developing Asia's financial linkages have traditionally been stronger with advanced economies outside the region than among Asian economies themselves.[95] A key reason has been the number of small, segmented, and illiquid financial markets in Asia. Weak financial infrastructure links, such as payment, settlement and clearing systems, and inconsistent regulatory quality (e.g., on standards and regulations) hampered regional development, while a relatively uncomplex financial system, with a concentration on domestic banks and a premium on national sovereignty, limited the spread of interconnectedness. Another factor has been restrictions on cross-border financial transactions. However, significant foreign direct investment (FDI) from Europe and the dominant role of the US dollar in providing liquidity and security ensured strong external linkages.

162. The situation has been changing through the 2010s, which saw increasing regional integration of financial markets.[96] Table 14 shows that at the end of 2020, about one-third of developing Asia's portfolio equity and debt was held with Asia and Pacific partners and that half of Asia's FDI came from Asian investors. Indonesia stands out as the most intra-regionally focused, closely followed by the PRC. Although the US has been a significant partner for many countries, especially in Central Asia and South Asia, it barely features in Indonesia. In the PRC, equity and debt holdings with US entities accounted for about one-fifth of the total, considerably less than with the rest of Asia; US inward FDI, at 1.5% of the total, was miniscule and dwarfed by more than 80% from Asia and the Pacific.

Table 14. Cross-Border Holdings of Asian Equity and Debt, and Foreign Direct Investment Inflows, 2020, Share of Total for Region and Selected Countries (%)

	Equity	Debt	FDI
Developing Asia	31.5	33.2	51.3
Central Asia	7.5	16.0	41.3
PRC (East Asia)	60.2	30.4	82.4
South Asia	18.8	5.7	34.4
Southeast Asia	39.5	30.1	44.7
only for:			
Indonesia	98.9	68.2	89.4
Philippines	23.1	34.2	14.5
Thailand	19.1	53.6	-6.6

FDI = foreign direct investment, PRC = People's Republic of China.
Source: ADB. 2022. *Asian Economic Integration Report 2022*. Manila. Tables A5-7.

163. The Asia and Pacific region's role in Central Asia and South Asia is considerably less prominent than in other Asian subregions, suggesting that they are less well integrated into the region. The Philippines, and to a lesser extent Thailand, are better connected outside the region than with Asia and the Pacific.

[95] See for example 'A Bird's-Eye View of Finance in Asia', H. Kang, P. Jeasakul and C.H. Lim, Chapter 2, and 'The Future of Asia's Financial Sector', R. Bhattacharya, F. Han and J.P. Walsh, Chapter 6 in 'The Future of Asian Finance', R. Sahay, C.H. Lim, C. Sumi, J. P. Walsh and J. A. Schiff (eds), IMF, 2015.

[96] See for example 'ASEAN Financial Integration: Opportunities, Risks and Challenges', Aladdin D. Rillo, Policy Research Institute, MoF, Japan, Public Policy Review, Vol. 14 No. 5, September 2018.

164. Financial cooperation within Asia, which intensified after the Asian financial crisis, deepened in the 2010s. Park and Rajan (2021) point out the following:

(i) Regional liquidity support was boosted by the Chiang Mai Initiative Multilateralization.
(ii) The ASEAN+3 Macroeconomic Research Office (AMRO) supported regional economic surveillance.
(iii) Regular meetings of finance ministers and central bank governors ensured policy discussion and new initiatives, with, for example, the ASEAN Financial Integration Framework introduced in 2011 to encourage liberalization and integration initiatives and the ASEAN Banking Integration Framework set up in 2014 to facilitate a single market (equal access and treatment) in the regional banking sector.
(iv) The Asian Bond Markets Initiative helped develop local currency bond markets.

165. The authors concluded, "While room for improvement exists for coordinated financial action, progress in nurturing regional cooperation that promotes financial stability and resilience has been significant over the past two decades."[97] On improvements, they suggested, "Regional financial cooperation should focus more on a specific agenda with vision and goals to further develop regional capital markets for long-term finance, strengthen cross-border market infrastructure, improve regulatory cooperation, and tackle emerging issues such as financing climate change mitigation and the rapid rise of fintech in general and of bigtech firms in finance."[98]

[97] C. Park, R. Rajan. *Regional Financial Cooperation in ASEAN+3: Taking Stock and Moving Forward-Redefining Strategic Routes to Financial Resilience in ASEAN+3*.
[98] Footnote 97, p. 378.