Lessons from 20 years of central banking in the Americas

Alexandre Tombini, Ana Aguilar, Jon Frost, Christian Upper and Fabrizio Zampolli[1]

Abstract

Central banking in the Americas has evolved substantially in the last decades, with the adoption of inflation targeting and a sustained commitment to macroeconomic and financial stability. This evolution took place in a challenging environment, with the shocks of the Great Financial Crisis of 2008, the taper tantrum of 2013, the Covid pandemic of 2020 and a synchronised global inflationary shock in 2022. Yet central banks have risen to the challenge. Today, central banks in the Americas face new opportunities and challenges from digitalisation, with many new uncertainties. In the path ahead, as in the past two decades, the BIS Americas Office will be there to support the central banks of the region with policy dialogue and cooperative activities, cutting-edge research, a wide range of banking services and the activities of the BIS Innovation Hub.

Introduction

The past 20 years have been eventful for central banks in the Americas. While central banks have not materially changed their overarching objectives, they have substantially expanded their toolkit in response to a series of major economic and financial shocks – the Great Financial Crisis of 2008, the taper tantrum of 2013, the Covid pandemic in 2020 and, throughout this entire period, large swings in capital flows and commodity prices. Rapid advances in digital financial technologies have allowed central banks to improve payment systems and explore new ways of boosting financial inclusion. However, as central banks were meeting new challenges, old ones reappeared – in 2022, supply disruptions, the strong monetary and fiscal stimulus during Covid-19, the unexpectedly swift recovery from Covid-related shutdowns and the impact of the Russian invasion of Ukraine pushed up inflation to levels not seen in decades. While inflation peaked in the second half of that year, at the time of writing in 2023 it still remained well above target in most economies of the region.

This chapter explores these developments in more detail, complementing the country chapters that follow. It is divided into four sections. In Section 1, we begin by providing some longer-term history and context on the shifts in central banking mentioned above. Section 2 focuses on the very core of central banking – monetary policy and financial stability – and discusses the evolution of policy frameworks in the region over the past two decades. Section 3 takes a more forward-looking perspective and discusses how central banks can preserve the role of money in the future, taking into account the opportunities and challenges of financial technology (fintech) and

[1] With thanks to Cecilia Franco and Rafael Guerra for research support. The views expressed here are those of the authors and not necessarily the Bank for International Settlements (BIS).

innovations such as central bank digital currencies (CBDCs). Section 4 closes by discussing the role the Bank for International Settlements (BIS) is playing and will continue to play in helping central banks to meet the challenges of the past, present and future.

Central banking in the Americas: a long view

The history of central banking in the Americas is full of false starts and episodes of instability – but also of successes and important contributions to the public interest. Many countries of the region saw attempts to introduce a central bank or some other form of money-issuing institution in the 18th and 19th centuries, after gaining independence from European colonial powers. Some of these institutions operated for a number of years but ultimately did not succeed, often because they were not able to deliver stable money over an extended period of time.[2] The oldest of the existing central banks in the region date back to the early 20th century. Most countries had founded a national central bank by the 1930s,[3] although some came even later, such as the Central Bank of Brazil, which was founded in 1964, or the Central Bank of Uruguay (CBU), founded in 1967.

Unfortunately, the founding of modern central banks did not put an end to the monetary instability that had plagued the region for over a century. In the first years after central banks were founded in the Americas, monetary policy was constrained by the gold standard and central banks were tasked with ensuring an adequate supply of reserves – but little else. Macroeconomic stabilisation, in particular, did not feature among their tasks beyond those necessary to meet the obligations inherent in the gold standard that many countries were following. Central banks were quite independent from the government. While they generally were able to provide some financing to the government, this was within rather tight bounds (Jácome (2015) and Jácome and Pienknagura (2022)).

The Great Depression of the 1930s marked a watershed. As countries went off the gold standard, they needed to find new policy frameworks that would allow them to cope with the challenges of the time. In Latin America, central banks initially increased interest rates to stem the loss of reserves, but after leaving the gold standard, they moved to a more accommodative stance to stabilise the economy. With public revenues evaporating, central banks also became an important source of financing for the government. Many countries expanded their central bank's mandate – which had been rather narrow – to give the central bank an important role in funding the public and private sectors.

[2] In Brazil, the Banco do Brasil, founded in 1808, performed several central bank tasks prior to the foundation of the Central Bank of Brazil. In Uruguay, the state-owned Banco de la República Oriental del Uruguay played a similar role. In the United States, there was an intense debate as to whether the federal government had the right to get involved in monetary matters, and two national banks were founded and later closed. See below.

[3] The oldest current central bank – or rather, system of central banks – in the Americas is the Federal Reserve, which was set up in 1913–14 after a series of financial panics showed the need for a lender of last resort. The Bank of Canada began operations in 1935, in the aftermath of the Great Depression. In Latin America, the Reserve Bank of Peru was founded in 1922 (and in 1931 was reformed to become the Central Reserve Bank of Peru), the Central Bank of Colombia in 1923, the Central Bank of Chile and the Bank of Mexico in 1925, and the Central Bank of Argentina in 1935.

With the end of World War II came the introduction of the Bretton Woods system of fixed exchange rates.[4] This gave central banks across the region an important role in maintaining exchange rate targets and administering foreign exchange. Meanwhile, during the heyday of import substitution and active industrial policy, central banks' role in funding the public and private sectors was partly taken over by newly established specialised development banks or financing institutions. Yet pressure remained on central banks to help fund the government. The toolkit of central banks also expanded. Rather than controlling the supply of liquidity primarily or exclusively through discounting and rediscounting bills, several central banks started to trade securities, intervene in FX markets, and use reserve requirements and quantity restrictions on bank credit as policy instruments (Jácome (2015)).

Ultimately, the broad, "developmental" mandates of Latin American central banks were not successful. Central banks struggled with many – and often contradictory – objectives, such as ensuring price and exchange rate stability and providing monetary financing. This led to stop-and-go policies, which added to economic volatility and, ultimately, inflation.

Authorities responded to ever higher rates of inflation between the 1960s and the early 1990s with a sequence of stabilisation programmes. These generally relied on a fixed exchange or crawling peg as a nominal anchor, but often also contained income policies or price and wage control arrangements between the government and the private sector. While some managed to reduce inflation quite sharply in the short term, these gains were generally short-lived, and inflation soon soared to new record highs. Fiscal policy turned out to be an Achilles heel, as governments were unable to put fiscal accounts on a sustainable footing. All this eroded the confidence of society and investors in public policy.

Financial instability exacted its own toll, leaving a lasting impact. The 1980s and 1990s were especially marked by a series of disruptive balance of payments, banking and debt crises (Laeven and Valencia (2018)), which frequently followed in the wake of financial liberalisation. Central banks were not able to ensure the stability of the economy and the financial system given large external and fiscal imbalances and inadequate financial regulation and supervision, but they played a key role in managing these crises (Jácome (2015)).

The history of central bank policy in Canada and the United States shows many similarities with that in Latin America, though there are important differences. The origins of the two central banks were not that different from those of their peers in Latin America: in Canada, the Great Depression revealed the limitations of a monetary system based on note issuance by a small set of large private players, and the Bank of Canada was set up in 1935 to ensure the external and internal stability of the currency. In the United States, the foundation of the Federal Reserve System was actually the third time a national central bank had been established. The congressional mandates of earlier central banks, the First Bank of the United States (1791–1811) and the Second Bank of the United States (1816–36), had lapsed amid political opposition to a national bank. This changed after the banking panic of 1907 revealed the inadequacy of the existing framework to manage crises, resulting in wider acceptance of the need for a lender of last resort and an institution entrusted with protecting the national currency. The Federal Reserve System was founded in

[4] Countries in the Americas played an outsized role in the creation of the Bretton Woods system. At the conference in July 1944, at the Mount Washington Hotel in Bretton Woods, New Hampshire, 20 of the 44 countries represented were from North and South America or the Caribbean. This included Brazil, Canada, Chile, Colombia, Mexico, Peru and the United States.

1913 with a regional structure comprising 12 reserve banks and a Board of Governors. But it underwent substantial changes in the first decades of its existence, including the introduction of open market operations in 1922. With the ascent of the US dollar to global reserve currency in the 1930s, the Federal Reserve (Fed) became a key player in international finance, just as the United States played host to both the Bretton Woods conference and its new institutions – the International Monetary Fund (IMF) and World Bank – starting in 1944.

Canada and the United States also dealt with the problem of fiscal dominance, although with much less severity than in Latin America. For example, substantial fiscal stimulus during and after World War II, along with policies to keep interest rates low and reduce governments' financing costs and the removal of price controls, helped stoke a consumption boom that ultimately resulted in a surge in inflation in the late 1940s and early 1950s. This was then compounded by the stimulus provided by the Korean War. To bring inflation under control, institutional changes were needed. In a way, one can argue that the modern Fed was born out of a 1951 accord with the US Treasury that separated monetary policy from debt management.

Like in most of Latin America, the 1970s also marked a period of high and rising inflation in Canada and the United States, although at much lower levels. Two oil price shocks followed a long period of loose fiscal policy – and an arguably mistaken reading of the economy – to push up inflation.[5] This came at a time when central banks were searching for a new nominal anchor after the Bretton Woods system of fixed exchange rates ended in 1973. In subsequent years, both the Bank of Canada and the Federal Reserve experimented with monetary targeting in search of a nominal anchor, but this ultimately met with limited success, as monetary aggregates behaved too unpredictably to be useful in practice. In the early 1980s, both central banks were finally able to bring inflation down with huge interest rate increases. This in turn caused massive collateral damage in Latin America, including the sovereign debt crises of 1982.[6] After a long and gradual disinflation, Canada and the United States formally adopted inflation targeting in 1991 and 2012, respectively.

In Latin America, the 1990s marked a turning point in central bank history. Mindful of how the financial crises of the 1980s and early 1990s had wreaked havoc with their living standards, the public came to accept sweeping economic reforms (see eg Aguilar et al (2023)) and governments embraced economic orthodoxy as summarised by the so-called Washington Consensus. In this light, authorities enacted a series of reforms to reduce inflation and set their economies on a path towards higher and more sustainable growth. The reforms were based on four main pillars: (i) a clear central bank mandate with price stability at its heart; (ii) operational independence to execute monetary policy; and (iii) accountability (see eg Carstens and Jácome (2005)). Importantly, the new frameworks for central banks were embedded in a broader set of institutional and structural reforms that included fiscal consolidation, the opening of the economy to foreign trade and capital, and stronger prudential regulation and supervision to strengthen the banking sector. These changes created the conditions for dropping exchange rate pegs, a precondition for exchange rates playing a greater role as a shock absorber. At the same time, inflation

[5] US fiscal policy was expansive in the light of outlays for the Vietnam War and President Johnson's Great Society programmes.

[6] The debt crisis began with the default by the Mexican government in August 1982, and it would eventually involve 16 countries across Latin America. These debt crises were resolved through concerted actions by governments across the region as well as the IMF and World Bank, including the 1989 Brady Plan.

targeting replaced the exchange rate as the nominal anchor necessary to preserve price stability.

From the rich and diverse history of modern central banking in the Americas, one can draw at least five lessons.

First, central banks need mandates that put price stability at the core, along with the tools to fulfil these mandates. Imprecise mandates with multiple objectives blur responsibilities and sap credibility.

Second, unsustainable public finances undermine price stability. Fiscal imbalances were behind several bouts of inflation, the most recent and devastating of which were the hyperinflations of the late 1980s and early 1990s in several Latin American countries. Central banks took many actions to reduce inflation, but as long as the underlying problem – unsustainable fiscal positions – remained unresolved, these monetary measures had only a temporary impact on inflation.[7]

Third, central banks need to be independent to do their job. As mentioned before, central banks did try to tighten policy when faced with high inflation, but as soon as the next recession loomed, they were unable to resist calls for renewed advances to the government.

Fourth, independence must come with accountability. Central banks must explain, explain and explain to convince the public and the markets that they will do everything necessary to achieve their objectives. They must explain what they are doing and why they are doing it, and they must do so in a language that is understood by the public.

Fifth, exchange rates need to be flexible in order to serve as shock absorbers. For many decades, Latin American countries had exchange rates that were nominally fixed, only to be devalued once pressure became excessive. Betting against the currency became an almost riskless proposition – the direction of exchange rate moves was known; the only questions were the timing and size of the adjustment. Furthermore, only flexible exchange rates allow central banks to concentrate on their price stability objective. Flexible exchange rates also reduce incentives to borrow in foreign currency, thus contributing to financial resilience.

Addressing the challenges and synergies of price stability and financial stability

During most of the period covered in this volume – ie the past two decades – inflation in most of the larger economies of the Americas was low by historical standards and central banks followed some variant of inflation targeting. Output volatility was also low compared to history, not only in the United States, where observers referred to the "Great Moderation" (Stock and Watson (2002), Bernanke (2004)), but even more so in many Latin American countries. However, greater macroeconomic stability did not prevent financial instability, the 2008 Great Financial Crisis (GFC) being a case in point. In the United States and Canada, banks and financial markets saw acute stress, while large, volatile capital flows threatened both macroeconomic and financial stability in Latin America. While most central banks in the Americas maintained inflation targeting as their overarching objective, they regularly adjusted their policy

[7] See Kehoe and Nicolini (2021) and chapters therein.

frameworks to deal with the various challenges they were facing. This section provides a short overview of the main developments, complementing the country chapters that go into more detail.

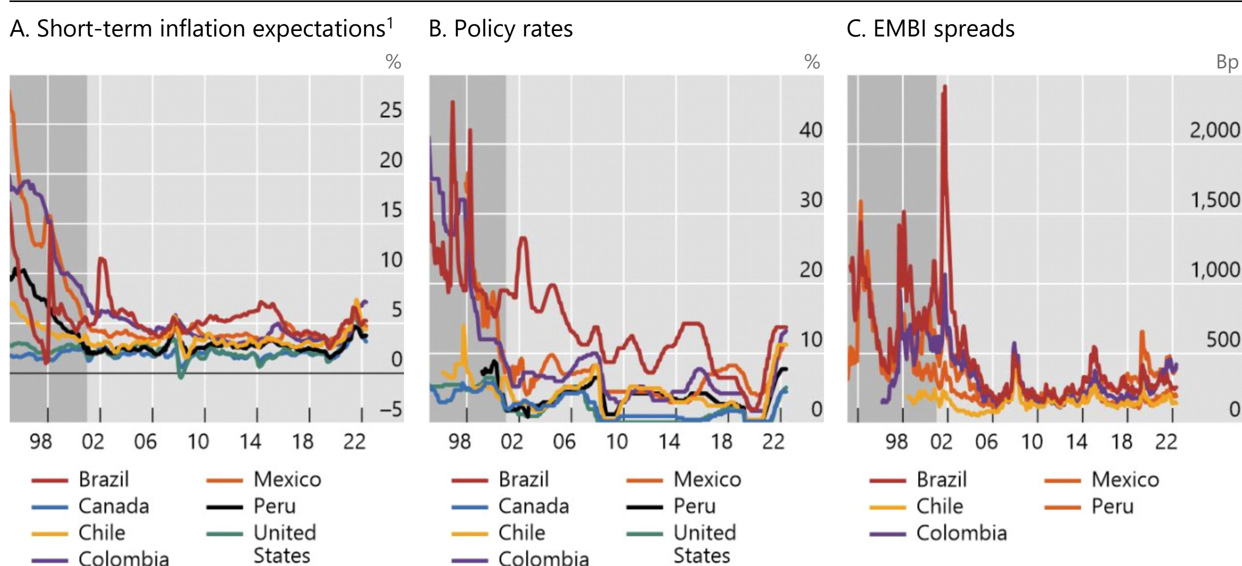
In the United States and other advanced economies (AEs), a key development was the increased sensitivity of the business cycle to financial factors. The combination of a more stable macroeconomic environment and regulatory gaps fostered greater risk-taking and easier financial conditions, leading to more prolonged business expansions and the emergence of credit and asset price booms (Borio and White (2004), BIS (2023)). Policymakers generally underestimated the risks from financial booms and increased financial complexity, and hence failed to adjust their prudential regulation and supervision. When interest rates went up in 2004–6, this exposed the weaknesses in the financial system which resulted in the GFC in 2008.

In response to the crisis, authorities tightened prudential and other regulations. In the United States, the 2010 Dodd-Frank Act required banks to hold more capital, increased oversight of derivatives trading and improved protection of consumer borrowers, among other things. At the global level, Basel III was agreed in 2013 and regulations were finalised in 2017, although long transition periods meant that they did not come fully into effect until later. Basel III required banks not only to hold higher levels of capital but also larger liquidity buffers. Tighter national and international regulations were complemented with stress tests to ensure that banks would continue to meet regulatory standards even in adverse scenarios. On the monetary front, the Federal Reserve and other AE central banks embarked on a programme of large-scale asset purchases to stimulate the economy. While these unconventional monetary policy measures contributed to the economic recovery, they also generated a search for yield and significantly increased global liquidity, posing new challenges for EMEs, including those in Latin America.

Inflation took longer to fall in Latin America than in the United States or Canada, but its decline ushered in a period of relative stability not seen in decades. Interest rates and risk premia fell as investors grew more comfortable (Graph 1). Undoubtedly, the reforms of the 1990s played an important role, but the region also benefited from the tailwinds of lower global inflation and higher commodity prices. One sign of success is that, in contrast to previous periods, Latin American countries have not experienced any major financial crises, sudden stops or dislocation in the past 20 years. This is not for a lack of shocks – unlike in the United States and Europe, the recession during the GFC was sharp but brief (except for in Mexico, whose economy is tightly linked to that of the United States). Latin American economies also proved resilient to the 2013 taper tantrum and the sharp drop in commodity prices in 2014–15.

A key to this success has been central banks' readiness to continuously adapt their policy frameworks to changing circumstances. While central banks (other than Argentina's) have remained inflation targeters, the tools and methods used have changed. The main challenge was to prevent financial vulnerabilities from building up in response to the large swings in exchange rates and capital flows during the last 20 years. The resulting macro financial stability frameworks aim to provide a nominal anchor for the economy while ensuring financial stability.

Macroeconomic stability was achieved across the Americas | Graph 1



Note: Shaded area indicates the average period before Inflation Targeting regimes were implemented in the region.

[1] One-year-ahead inflation expectations.

Sources: Consensus Economics; Goldman Sachs; national data; BIS.

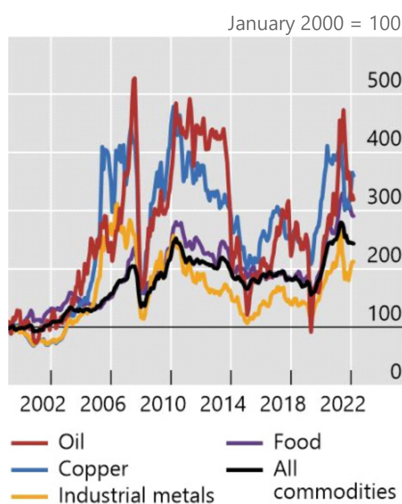
In this respect, it is worth distinguishing two periods: the first is the pre-GFC period, which saw the start of a commodity super-cycle. The second is the post-GFC period, which is marked by major monetary and fiscal stimulus in China, the deployment of unconventional monetary policy in the United States and other major economies and the end of the commodity supercycle in 2014.

The pre-GFC period saw a booming Chinese economy joining the WTO in 2001. Most countries in Latin America benefited not only from improved terms of trade and stronger commodity exports (Graph 2.A, and 2.B), but also from a substantial increase in capital inflows due to higher growth prospects. A significant share of the latter took the form of highly volatile non-resident portfolio inflows. Swings in these flows put significant pressure on exchange rates and, since exchange rate pass-through is quite high in Latin America, inflation (Graph 2.C). And since these flows were also short-term, they increased the risk of sudden reversals.

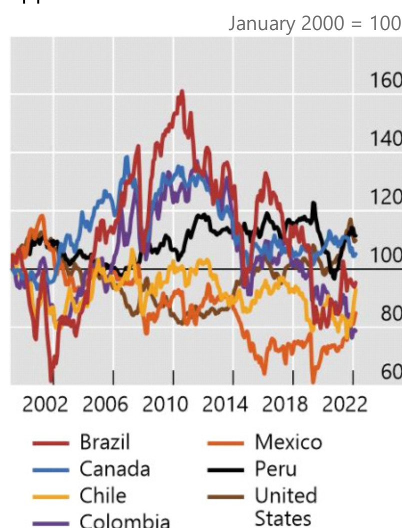
In economies experiencing large inflows, stronger growth and appreciating currencies, interest rate policy on its own was generally not sufficient to mitigate the overheating of the economy and thus inflation, let alone build the buffers needed to withstand possible capital flow reversals (BIS (2019a)). Indeed, increasing interest rates could be counterproductive, leading to even more exchange rate appreciation, drawing in more capital and further loosening financial conditions. Central banks therefore resorted to tools other than interest rates, in particular FX intervention. These were aimed primarily at building foreign exchange buffers during large inflow episodes, to mitigate market disruptions and ensure an adequate amount of liquidity in case of depreciations. Limiting exchange rate volatility also helped ensure financial stability, especially in episodes of strong appreciation and domestic credit growth. Learning from experience, central banks in the region have refrained from using FX interventions to promote competitiveness or pursue an exchange rate target.

Commodity prices changes affect exchange rates, impacting inflation | Graph 2

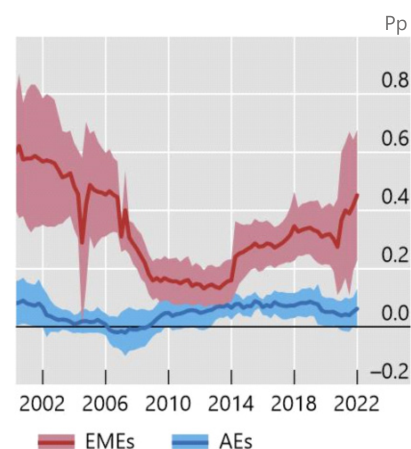
A. Commodity prices swings coincide with …



B. … real effective exchange rate appreciation



C. Exchange rate pass-through over time[1]



Note: Shaded areas represent the period after China's entrance to WTO (blue), the period after the GFC but before the Taper Tantrum (green) and the war in Ukraine (red).

[1] Coefficients are six-year rolling window long-run multipliers from the equation $Inflation_{it} = \alpha_i + \beta_t + \delta\, Inflation_{it-1} - \sum_{j=0}^{3} \gamma_j \Delta NEER_{it-j} + \phi Outputgap_{it} + \varepsilon_{it}$. Sample starts in Q1 1995. For details, see Jašová et al (2019). The ranges indicate the 90% confidence intervals. EMEs = BR, CL, CO, CZ, HU, ID, IN, KR, MX, PE, PH, PL, RU, TH, TR and ZA; AEs = AU, CA, GB, NO, NZ and SE.

Sources: DataStream; IMF; national data; BIS.

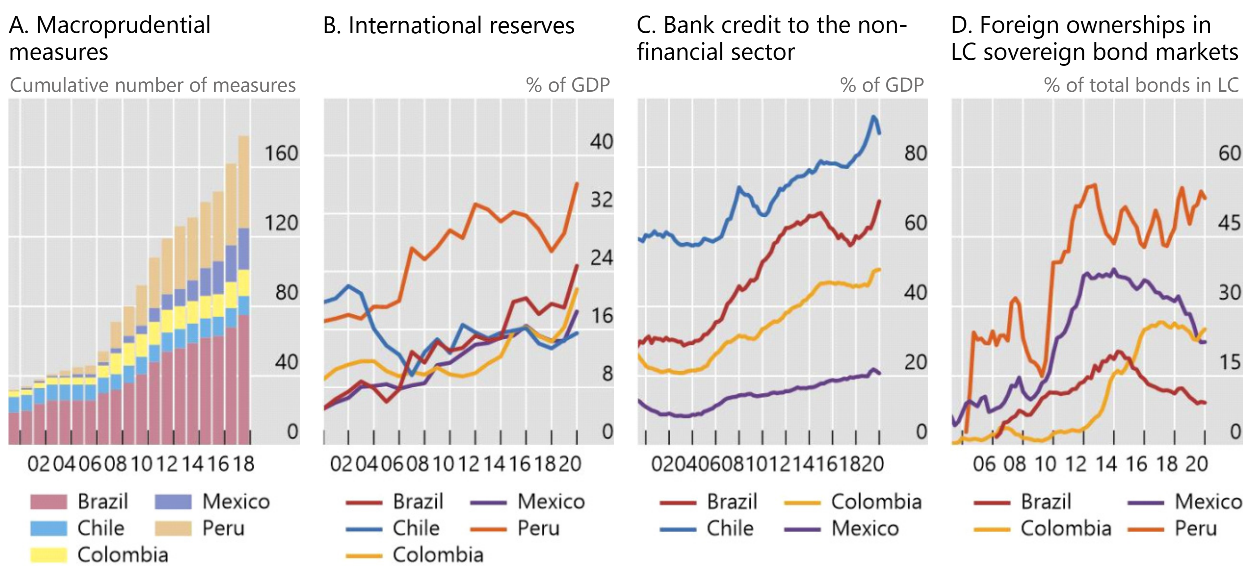
FX intervention was complemented by macroprudential measures to improve the resilience of the financial system and, in some cases, dampen financial booms. In particular, macroprudential policies generally aimed at reducing financial institutions' exposures to FX risk and fast-growing segments of the domestic credit market (Graph 3.A). The most frequently used tools were reserve requirements on deposits, often differentiated according to maturity and currency, limits to currency mismatches and loss provisioning. These tools were also convenient to central banks since most of them are not in charge of the prudential supervision.

The post-GFC period saw a new wave of capital inflows into Latin America driven by a renewed increase in commodity prices and unconventional monetary policy measures in AEs (IMF (2014)). Central banks and other authorities responded to the new challenges by acting on multiple fronts. First, the governance of central banks was adjusted to reflect their greater emphasis on monitoring and addressing financial stability risks. This involved the creation or strengthening of financial stability committees and divisions as well as the publication of more analytical financial stability reports (Aguilar, Tombini and Zampolli (2022)). Second, new prudential regulations strengthened the resilience of the financial sector, in some cases going beyond what was required by Basel III standards. For example, some countries introduced guidelines for reporting firms' derivative positions. Third, Latin American central banks continued to intervene in FX markets and made greater use of macroprudential policy. Reserve requirements remained an important tool, but the range and frequency of other tools increased compared to the pre-GFC period. Intervention in FX derivatives market also grew in importance in line with greater demand for hedges, especially by non-financial corporates.

During 2010–14, before commodity prices plummeted, and capital inflows were even larger and more diversified by type of investors and geographical origin than during the pre-GFC period. The share of banks in cross-border flows fell, while flows from asset managers, investment funds and other non-bank financial intermediaries gained relevance. Many central banks sterilised these inflows by acquiring reserves (Graph 3.B). Nevertheless, and despite active macroprudential policies, bank credit grew substantially (Graph 3.C). An increased share of foreign capital was invested in local currency markets, mostly in sovereign debt (Graph 3.D). Together with greater risk appetite by global investors, the removal of administrative barriers to foreign investment and the development of hedging markets played an important role.

The diversification of investment flows helped deepen local financial markets, especially local currency sovereign bond markets, but it also brought new risks (CGFS (2021)). Passive investment strategies and other practices could make capital more sensitive to international developments. Furthermore, while the issuance of local currency debt reduced risk by eliminating currency mismatches on side of the borrowers, it created mismatches on the balance sheet of lenders. Since the latter are often unhedged, there could be an adverse feedback loop between yields and exchange rates that exacerbates the transmission of global shocks ("original sin redux"; see BIS (2019a), Hofmann et al (2022) and Carstens and Shin (2019)).

Building buffers on the back of growing vulnerabilities Graph 3



Sources: Alam et al (2019); IIF; IMF; national data; BIS.

The Covid-19 pandemic posed yet another challenge to central banks. The lockdowns in early 2020 caused a precipitous fall in economic activity and the public began to fret about a liquidity and insolvency crisis. US bond markets froze in March 2020. The prompt injection of liquidity by the US Federal Reserve and other central banks was key to re-establishing confidence. In addition to establishing US dollar facilities for domestic and foreign counterparties, this included the renewal of US dollar swap lines with other central banks. Central banks of other AEs, including Canada, intervened with massive unconventional monetary intervention along with large fiscal packages, flooding the global economy with liquidity.

Alongside the Federal Reserve and Bank of Canada, other central banks in the region also played an important role in stabilising local market conditions. Several

aspects of their policies are noteworthy. First, most Latin American central banks managed to slash policy rates in the early stage of the crisis. This prompt response was made possible by the actions central banks took in the years before the pandemic, which helped reduce the vulnerability of their economies to currency depreciation, thus allowing exchange rates to act as shock absorbers (Aguilar and Cantú (2020)). Second, several central banks acted as "market makers of last resort" to restore market functioning, primarily in foreign exchange markets but also, in some cases, those for government and/or corporate bonds. But given their history of monetary financing and high inflation, and legal limits to this type of operations, the preferred tool of intervention for most Latin American central banks was lending operations to financial institutions in support to lending to the private sector. Finally, an innovation seen during this period was the use by several central banks of forward guidance once policy rates reached historical lows.

The economic policies implemented in response to the Covid-19 pandemic were successful in preventing widespread firm insolvencies and facilitating a rapid recovery of economic activity. However, as they emerged from the pandemic, the countries in the region, as in other parts of the world, were met with an unexpected challenge: the reappearance of high inflation. Some of the factors behind it are well known. The pandemic disrupted supply chains for manufactured goods. The lifting of the mobility restrictions then led to a sharp rebound in demand for those goods and their prices. Subsequently, Russia's invasion of Ukraine sent commodity prices soaring.

Initially, most observers believed that the increase in inflation would be transitory, receding once the supply chain disruptions would dissipate. Unfortunately, inflation turned out to be higher and more persistent than anticipated.

In addition to the unprecedented closing and reopening of economies, the lack of anticipation could reflect the long period of below-target inflation in the United States and Canada, despite very low interest rates and large-scale asset purchases. Similarly, earlier spikes in commodity prices were generally short-lived. The main worry of central banks was low inflation and inflation expectation drifting below target and their inability to use their conventional policy interest rate instrument to increase it. The Federal Reserve even changed its policy framework in August 2020 to target a 2 per cent average inflation over time rather than in a specific year. This adjustment allowed it overshoot the target moderately for some time if inflation had been below target in the previous years.

Most central banks in the Latin America increased rates in the first half of 2021, acting boldly to tame inflation. However, in doing so, they faced at least two challenges. The first concerns the interaction with the substantial fiscal stimulus in most countries (BIS (2023)), which continued to push up inflation even after central banks had started raising interest rates. In the long run, high public debt could undermine the ability of central banks to keep inflation contained. Since high public debt levels can drive up risk premia, central banks could come under pressure to keep interest rates lower so as to ease the burden on public finances and support growth (Aguilar, Cantú and Guerra (2023)). Political pressures to keep monetary policy easy may rise in the long run as many countries in the region face poor long-term growth prospects and increasing social demands. Central bank autonomy, which has been the outcome of a long and tumultuous journey, may come under threat. This is especially likely in jurisdictions where the debt-to-GDP ratio has increased considerably and thus the debt burden is large.

Another challenge for central banks is related to the financial vulnerabilities that may have accumulated during a long period of low interest rates. Today's financial

systems are very complex and fragile, as underscored again by the series of US bank failures in early 2023. The interaction between banks and non-bank financial institution has become more complex. Excess leverage and liquidity mismatches may be difficult to identify. This underlines the importance of continuously adjusting policy frameworks to ensure that financial stability issues are minimised.

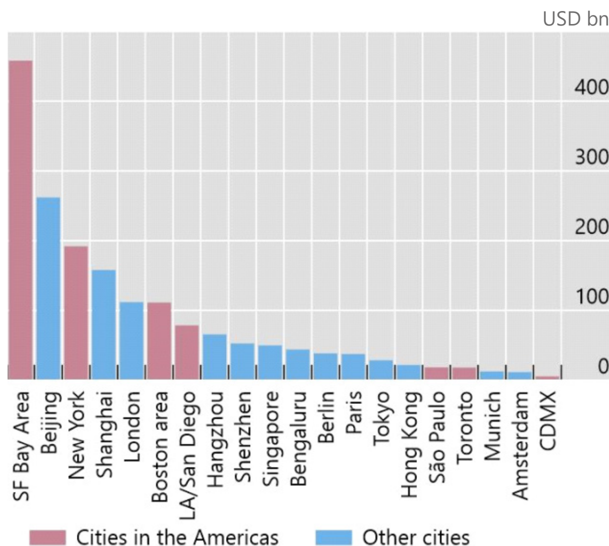
The promise and challenges of digitalisation

As countries in the Americas emerge from the major macro shocks of the past two decades and are facing renewed inflationary challenges, they now face a new set of opportunities: those related to disruptive digital innovations in finance and the real economy. These innovations hold both great promise and great challenges for their economies, financial systems and mandate to preserve the value of money in the future.

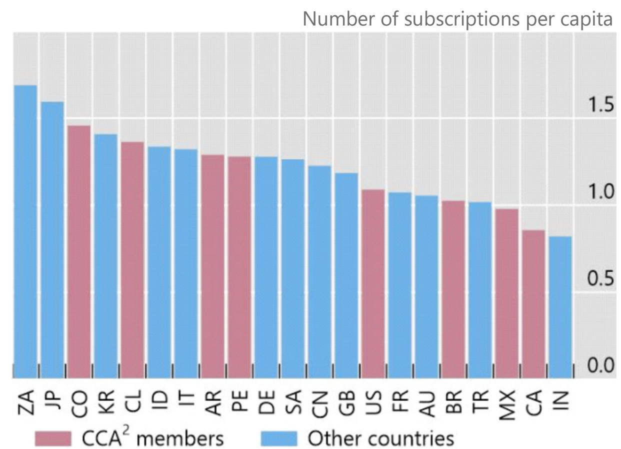
The countries of North and South America are not just passive bystanders when it comes to meeting these challenges – they are actively shaping the future of innovations whose impact reverberates around the world. In the last two decades, countries in the Americas have been active drivers of technological breakthroughs in areas like cloud computing, big data, artificial intelligence (AI) and distributed ledger technology (DLT). Indeed, Silicon Valley (and the broader San Francisco Bay Area) has been a hotbed of innovation in each of these areas and hosts the headquarters of some of the world's largest digital platform companies and cloud providers. Technology hubs in the San Francisco Bay Area, New York, Boston, Toronto, São Paulo and Mexico City have also become important locations for venture capital (VC) funding since 2002 (Graph 4.A). Meanwhile, households in the Americas have also

Countries in the Americas are major players in the global technology sector — Graph 4

A. Cities in the Americas lead the world in VC funding[1]



B. Countries in the Americas have high mobile adoption



AR = Argentina, AU = Australia, BR = Brazil, CA = Canada, CL = Chile, CN = China, CO = Colombia, DE = Germany, FR = France, GB = United Kingdom, ID = Indonesia, IN = India, IT = Italy, JP = Japan, KR = South Korea, MX = Mexico, PE = Peru, SA = Saudi Arabia. TR = Türkiye, US= United States, ZA = South Africa.

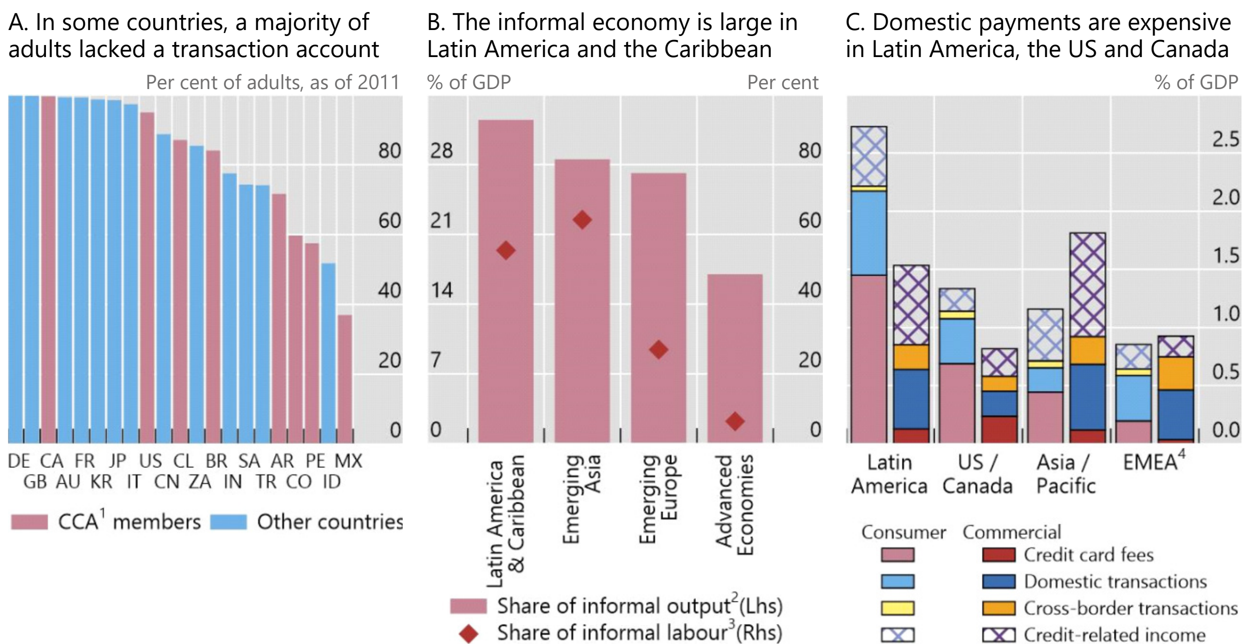
[1] Total capital invested in major tech hubs since 2002. [2] Consultative Council for the Americas.

Sources: PitchBook; World Bank.

been particularly rapid adopters of new technological applications like mobile phones (Graph 4.B).

Technology-related changes are particularly apparent in the financial system, where some of the most striking examples of digital innovation are taking place. They provide an important opportunity to meet some pre-existing challenges – such as financial inclusion, informality, efficiency, etc. Indeed, in many countries in the Americas, access to financial services has shown considerable gaps, with a majority of adults having lacked access to a transaction account in 2011 (Graph 5.A). Meanwhile, countries in Latin America and the Caribbean show much higher rates of informal activity than in other regions of the world (Graph 5.B). Finally, both Latin American countries and the US and Canada show very high costs of domestic payments (Graph 5.C) and other financial services (like credit). This relates in part to a lack of competition in the financial system.

Countries in the Americas have faced particularly pressing challenges in payments — Graph 5



AR = Argentina, AU = Australia, BR = Brazil, CA = Canada, CL = Chile, CN = China, CO = Colombia, DE = Germany, FR = France, GB = United Kingdom, ID = Indonesia, IN = India, IT = Italy, JP = Japan, KR = South Korea, MX = Mexico, PE = Peru, SA = Saudi Arabia. TR = Türkiye, US= United States, ZA = South Africa.

[1] Consultative Council for the Americas. [2] As defined by Medina and Schneider (2020). [3] As per cent of total employment. [4] Emerging Europe, Middle East and Africa.

Sources: McKinsey & Company (2021); Medina and F Schneider (2020); World Bank, *Global Findex Database*; International Labour Organization.

In what follows, we discuss five examples of digital innovations in finance that can play a role in the mandates of central banks. In some cases, they can help to address these existing policy challenges – or, in some cases, introduce new challenges.

A first example concerns digital payments. Since the introduction of M-Pesa in Kenya in 2007, countries around the world have seen rapid adoption of mobile money. The ability to transact by phone (including feature phones, not just smartphones) in remote areas has helped hundreds of millions of users – including in the Americas – to gain access to a transaction account (Frost et al (2021)). Meanwhile,

payment apps on smartphones (eg Venmo, Google Pay, Apple Pay, Mercado Pago) have become very popular and helped drive greater use of digital payments. By some measures (eg Yang et al (2023)), countries like Brazil and the United States have the highest adoption of digital payment apps in the world.

A second, and related example, concerns public payment infrastructures that support digital payments. One prominent example is retail fast payment systems, which allow users to pay across different banks – and in some cases non-bank payment service providers (PSPs) – in real time or very close to real time, often at very low cost. Such systems can be operated by the central bank or by the private sector. In the Americas, a particularly prominent example is Brazil's Pix instant payments system (Alfonso, Tombini and Zampolli (2020); Duarte et al (2022)). Since its launch in November 2020, Pix has seen rapid growth and adoption, by over 70% of the adult population. By bringing banks and non-bank PSPs into a single, interoperable system, Pix has helped to foster competition, lower costs and dramatically increase the use of digital payments. Indeed, Pix payments between individuals are free, and costs to merchants of accepting Pix payments average just 22 basis points – as compared to 1.2% for debit cards and 2.1% for credit cards in Brazil. Similar examples exist in Mexico (with CoDi/SPEI) and Costa Rica (with SINPE Movil). In the United States, the launch by the Fed of the FedNow instant payment system in July 2023 will be a further example. Similarly, the launch in Canada of the Real-Time Rail (RTR) in 2024 is expected to expand access to instant payments.

A third example of innovation is in credit markets. New online lenders have emerged around the world in the past two decades, often using non-traditional (alternative) data sources to assess credit risk and price loans. Many such lenders began in the United States. Over time, they have spread across Latin America (Cantú and Ulloa (2020)). In some cases, this too has been shown to enhance financial inclusion. For example, using data from the e-commerce platform and lender Mercado Libre in Argentina, Frost et al (2019) show that alternative data and machine learning have allowed for much more accurate assessment of the credit risk of a portfolio of small firms – 30% of which would be excluded from lending by traditional banks given their "thin file" and perceived higher risk. For the United States, Jagtiani et al (2022) show that online platforms like Funding Circle and LendingClub were more likely to lend to small businesses in areas with higher bankruptcy and unemployment rates, thus filling gaps in lending by banks.

A fourth example concerns cryptocurrencies and other applications of DLT, eg in decentralised finance (DeFi). Cryptocurrencies are a type of private sector digital asset that depends primarily on cryptography and distributed ledgers or similar technology. Since the launch of Bitcoin in 2008 and of Ether in 2015, thousands of further cryptocurrencies have been launched, and hundreds of millions of users worldwide have bought or sold them. To date, the vast majority of the use of crypto is as an investment asset, ie for speculation. Partly due to the substantial volatility in prices, cryptocurrencies and DeFi have not been widely used for payments or financial services for the real economy. Moreover, research at the BIS shows that a majority of investors globally have likely lost money on crypto investments (Auer, Cornelli and Frost (2022)). In El Salvador, where Bitcoin was declared legal tender in 2021, use is low and concentrated among young, educated urban males, and it has been declining over time (Alvarez et al (2022)). In other countries, central banks generally worry about the impact of crypto on monetary sovereignty and financial stability.

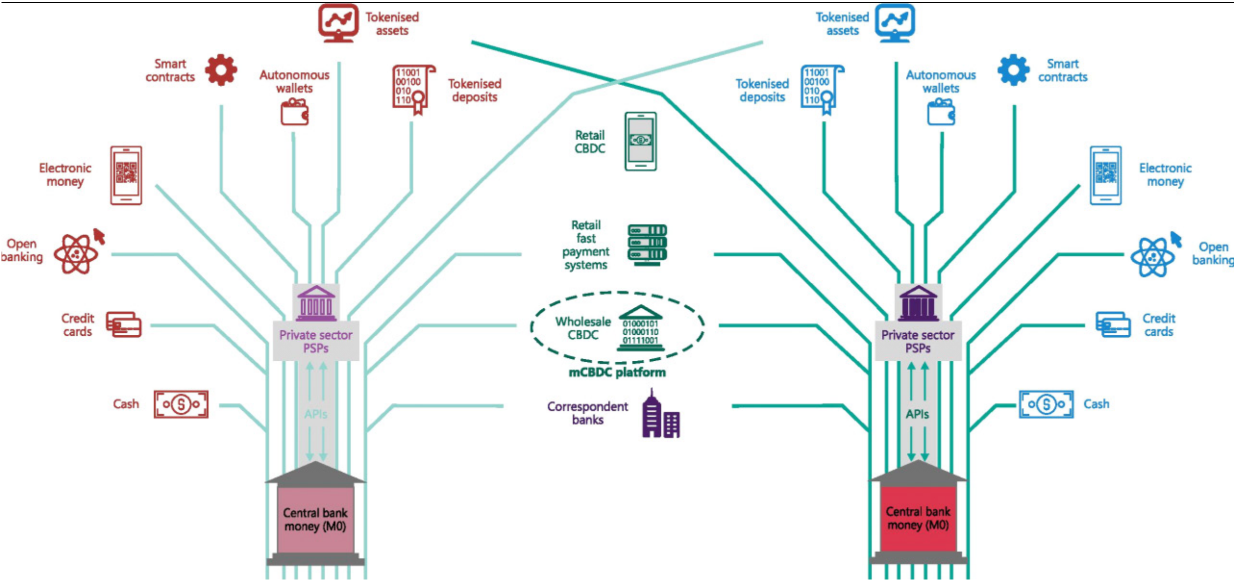
A fifth example of innovation is in central bank digital currencies (CBDCs), which many central banks are researching and developing for a range of policy reasons.

Central banks in the Americas have been particularly active in this area, with early experiments by the Bank of Canada, Central Bank of Uruguay and Central Bank of Ecuador (Alfonso, Kamin and Zampolli (2022)). Moreover, three of the four live CBDCs in the world at the time of writing are in the Caribbean – namely the Sand Dollar in the Bahamas, DCash in the Eastern Caribbean Currency Union and JAM-DEX in Jamaica. CBDCs can be intended for retail use, as in these examples, or for wholesale use by financial institutions, eg to support new programmability functions or cross-border payments.

This wide range of innovations has the potential to radically reshape the financial system. This raises the question: what should the financial system of the future look like? Given that many paths are now open, which one should central banks, with their public policy mandates, guide economies down?

BIS research has laid out one vision for the future. In this vision, the future monetary system should feature a diverse ecosystem of private sector services built on the strong foundation of central bank-issued sovereign currencies (BIS (2022)). Retail fast payment systems can support real-time, low-cost payments between users, both domestically and across borders. CBDCs, with their new functions like programmability, composability and tokenisation, can allow for a range of new financial services beyond payments, at lower cost and with less need for intermediaries. The ultimate goal is a diverse ecosystem, with a range of competing providers offering a broad array of efficient financial services for end users (Graph 6).

A strong canopy supports the global monetary (eco)system — Graph 6



API = application programming interface; CDBC = central bank digital currency; PSP = payment service provider.

Source: BIS.

This is one vision, and observers around the world continue to formulate further proposals based on the new possibilities that digital technologies have opened. How exactly the future financial system will look will depend crucially on decisions taken in the next few years. This puts a premium on international cooperation and research on these issues.

Role of the BIS's and the Americas Office

As the chapters in this volume detail, central banks in the Americas have faced – and continue to face – enormous challenges. At the time of writing, inflation in most member countries in the region is declining but still well above the respective central bank's target. Public debt levels are elevated by historical standards. Political uncertainty is high owing to trade tensions, geopolitical conflict, domestic polarisation and, in many countries, widespread discontent with the political system. Finally, the structure of the financial system is changing rapidly with the advent of new financial technologies and the arrival of new players.

Fortunately, central banks are not alone in meeting these challenges. Inflation above target or low growth in one country does not benefit other countries; if anything, it makes the lives of the others more difficult. This means that there is significant scope for cooperation. And this is where the BIS comes in. The BIS' mission is to support central banks' pursuit of monetary and financial stability through international cooperation, and to act as a bank for central banks. With the Americas Office, the BIS is physically present in the Americas region, which is a tangible marker of the BIS commitment. The Americas Office contributes to the shareholders and the broader central bank community in the region by:

- Supporting high-level policy dialogue and cooperative activities.
- Cutting-edge research and policy analysis.
- A range of high-quality banking services for central banks.
- Digital public goods for the central bank community through the BIS Innovation Hub.

The key element in all this is the Consultative Council for the Americas (CCA). The CCA was established in 2008 as an advisory committee to the BIS Board of Directors consisting of the Governors of the central banks of Argentina, Brazil, Canada, Colombia, Mexico, Peru and the United States. Over the years, the CCA has become much more than just an advisory body. A great part of the 5-6 meetings per year is devoted to the frank exchange of experiences and views among Governors, making the CCA the most important body of macroeconomic cooperation in the Americas.

Under the auspices of the CCA, there are five groups of senior central bankers from the region that meet regularly to exchange views in their areas of expertise:

- Scientific Committee: organises research conferences and networks in the area of macroeconomics and monetary policy;
- Consultative Group of Directors of Financial Stability (CGDFS): promotes collaboration on issues and research related to financial stability;
- Consultative Group of Directors of Operations (CGDO): fosters the exchange of views and analysis on financial market developments and central bank operations;
- Consultative Group on Innovation and the Digital Economy (CGIDE): promotes cooperation in developing technological solutions for improving the efficiency of payment systems and financial inclusion;
- Consultative Group on Risk Management (CGRM): promotes collaboration on central banks' risk management issues.

In addition, the Americas Office organises the *Working Party on Monetary Policy in the Americas*, which brings together the heads of the monetary policy departments of central banks in the region as well as selected peers from elsewhere to discuss current monetary policy issues.[8] Finally, it coordinates the CCA Heads of Communications Network, which brings together the heads of communications at CCA central banks for an annual dialogue.

Discussions in these groups are technical and focused. Members of these groups can also set up task forces that go into depth on specific topics of interest. Topics can be more operational, such as business continuity or the incorporation of ESG considerations into international reserve management frameworks (two recent task forces of the CGRM) or analytical, like studying the financial stability implications of cryptoassets (an ongoing task force of the CGDFS) or the implications of environmental degradation for central bank policy (a task force of the Scientific Committee). Reports on these topics are usually published and serve as references for central banks inside and outside the region.

Of course, central bank cooperation is not limited to the Americas but also takes place in other regions and at a global level. Central banks from the Americas play an active role on the global stage. The governors of the central banks of Brazil, Canada, Mexico and the United States – in the latter case represented by the Chair of the Federal Reserve Board and the President of the Federal Reserve Bank of New York – sit on the BIS's Board of Directors and many governors from the region participate in the various global meetings.

The Americas Office also plays a role at the global level. Staff from the Office regularly organise global meetings such as an annual meeting of Governors from major emerging market economies and an annual meeting of Deputy Governors from emerging market central banks, in rotation with the BIS offices in Basel and Hong Kong. They also contribute to BIS analysis and research to ensure that the experience of the Americas is adequately reflected at the global level.

International cooperation is a key role of the BIS and the Americas Office, providing banking services is another. In May of 2020 the BIS opened a new dealing room in the Americas Office. The purpose of this new banking facility was to offer central banks (members and non-members) and international organisations our full set of banking products and services during the whole trading session in the Americas. With the incorporation of this new dealing room, the BIS can now cover the three main trading regions in the world through its banking activities in Hong Kong, Basel and Mexico, becoming the only multilateral institution active trading operations in all three regions. Currently the Americas office covers 33 central banks of the region and 6 international financial institutions, in addition to trading with central banks from other regions during the Americas session.

The services provided by the BIS and the Americas Office are not restricted to shareholder central banks; many are also available to all central banks worldwide. For example, the Americas Office organises regular events that bring together shareholding and non-shareholding central banks. Working together with colleagues in Hong Kong and Basel, the trading desk in Mexico City allows the BIS to offer banking services around the clock to its central bank clients.

Through the BIS Americas Office, the BIS remains physically present in the Western Hemisphere, with a steadfast and tangible commitment to the region. With

[8] Similar working parties also exist in other regions.

its strong engagement with central banks, a strong analytical capacity and a range of banking services, the BIS Americas Office stands ready to serve central banks in the Americas to deal with whatever challenges arise on their path in the coming decades.

References

Aguilar, A and C Cantú (2020): "Monetary policy response in emerging market economies: why was it different this time?", *BIS Bulletin*, no 32.

Aguilar, A, A Tombini and F Zampolli (2022): "Monetary Policy Frameworks in Latin America: Evolution, Resilience and Future Challenges" in C Borio, E Robinson and H S Shin (eds), Macro-financial stability policy in a globalised world: lessons from international experience, proceedings from the Asian Monetary Policy Forum 2021 Special Edition and MAS-BIS Conference, Singapore: World Scientific Publishing Company.

Aguilar, A, C Cantú and R Guerra (2023): "Fiscal and monetary policy in emerging markets: what are the risks and policy trade-offs?", *BIS Bulletin*, no 71.

Alfonso, V, A Tombini and F Zampolli (2020): "Retail payments in Latin America and the Caribbean: present and future", BIS Quarterly Review, December.

Alfonso, V, S Kamin and F Zampolli (2022): "Central bank digital currencies (CBDCs) in Latin America and the Caribbean", BIS Working Papers, no 989, January.

Alvarez, F, D Argente and D Van Patten (2022): "Are Cryptocurrencies Currencies? Bitcoin as Legal Tender in El Salvador", NBER Working Paper, no 29968, April.

Auer, R, G Cornelli and J Frost (2023): "Rise of the central bank digital currencies: drivers, approaches and technologies", *International Journal of Central Banking*, forthcoming.

BIS (2019): "Monetary policy frameworks in EMEs: inflation targeting, the exchange rate and financial stability", Annual Economic Report, Ch II, June.

——— (2021): "Capital flows, exchange rates and monetary policy frameworks in Latin American and other economies", report by a group of central banks including members of the Consultative Council for the Americas (CCA) and the central banks of South Africa and Turkey.

——— (2022): "The future financial system", Annual Economic Report, Ch III, June.

——— (2023): "Monetary and fiscal policy: safeguarding stability and trust", Annual Economic Report, Ch II, June.

Cantú, C and B Ulloa (2020): "The dawn of fintech in Latin America: landscape, prospects and challenges", BIS Paper, no 112, November.

Carstens A, HS Shin (2019): "Emerging markets aren't out of the woods yet", *Foreign Affairs*

Carstens, A and L I Jácome (2005): "Latin American central bank reform: progress and challenges", *IMF Working Paper*, WP/05/114.

Cerutti, E, S Claessen and L Laeven (2017): "The Use and Effectiveness of Macroprudential Policies: New Evidence", *Journal of Financial Stability*, vol 28, pp 203–24.

Flores Zendejas, J and G Nodari (2021): "Latin American experiments in central banking at the onset of the Great Depression", Working Paper, Paul Bairoch Institute of Economic History.

Frost, J, L Gambacorta, Y Huang, HS Shin and P Zbinden (2019): "Big tech and the changing structure of financial intermediation", *Economic Policy*, vol 34, no 100, pp 761–99.

Frost, J, L Gambacorta and HS Shin (2021): "From financial innovation to inclusion", *IMF Finance & Development*, Spring.

Hofmann, B, N Patel and S Wu (2022): "Original sin redux: a model-based evaluation", *BIS Working Paper*, no 1004.

Jácome, L I (2015): "Central banking in Latin America: from the Gold Standard to the Golden Years", *IMF Working Paper*, WP/15/60.

Jácome, L I and S Pienknagura (2022): "Central bank independence and inflation in Latin America – through the lens of history", *IMF Working Paper*, WP/22/186.

Kehoe, T J and J P Nicolini, eds (2021) *A monetary and fiscal history of Latin America, 1960-2017*, University of Minnesota Press.

Laeven, L and F Valencia (2018): "Systemic banking crises revisited", *IMF Working Paper*, WP/18/206.

Pérez Caldentey, E and M Vernengo (2019): "The historical evolution of monetary policy in Latin America", in S Battilossi, Y Cassis and K Yago (eds), *Handbook of the History of Money and Currency*.

Stock, J and M Watson (2002): "Has the Business Cycle Changed and Why?", NBER Macroeconomics Annual, vol 17, pp 159–218.

Thiessen, G (2000): "Can a bank change? The evolution of monetary policy at the Bank of Canada 19): 1935-2000", Lecture at the University of Western Ontario.