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Central Banking in Latin America

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Abstract

Since the 1990s, Latin America's central banks were strengthened by independence laws, adoption of new policy regimes and higher requirements of transparency and accountability. Exchange rate and monetary policy regimes were strengthened subsequently; many central banks adopted floating exchange rates and inflation targeting. Most Latin American countries have attained low inflation since 2000. The region weathered well the consequences of the Global Financial Crisis due to healthy banks and appropriate central bank policy actions in response to the crisis. Since then, governments and central banks are adopting gradually the micro- and macroprudential standards that are consistent with Basel III. However, central banks in LA still face major policy challenges to strengthen further their countries' macro-financial stability and resilience to large foreign shocks.

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Introduction

Since the 1990s, deep reforms of central bank laws in Latin America (LA) granted central banks legal and operational independence, put an end to fiscal dominance, provided clear mandates and raised central bank standards of accountability and transparency. Exchange rate (ER) and monetary policy regimes were strengthened subsequently: ER systems transited from intermediate regimes towards either pegs or floats, and monetary regimes shifted towards inflation targeting (IT). Supported by fiscal adjustment and legal independence, the stronger monetary, ER and financial policy framework led most countries to attain low inflation since 2000. In contrast to previous financial crises, LA's reformed central banks and healthy financial systems weathered well the consequences of the Global Financial Crisis (GFC), an outcome which was in part due to strong conventional and nonconventional policy actions by central banks. Since then, governments and central banks are adopting gradually the micro- and macroprudential standards of commercial bank regulation and supervision, consistent with Basel III. However, central banks in LA

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Central Banking in Latin America, Table 1 New central bank laws and their key features in selected Latin American countries

Country	Date of new laws	Credit to government		Accountability	Primary mandates		
		Banned or restricted	Weak limitations	Formal report to congress	Price stability	Economic development	Financial system stability
Argentina	1992, 2002		✓	✓	✓	✓	✓
Bolivia	1995		✓		✓		✓
Chile	1989	✓		✓	✓		✓
Colombia	1992	✓		✓	✓		
Costa Rica	1995	✓			✓		✓
Dominican Republic	2002	✓			✓		
Guatemala	2001	✓		✓	✓		
Honduras	1996, 2004	✓			✓		✓
Mexico	1993	✓		✓	✓		✓
Nicaragua	1992, 1999	✓			✓		✓
Paraguay	1995	✓		✓	✓	✓	✓
Peru	1993	✓		✓	✓		✓
Uruguay	1995	✓			✓		
Venezuela	1992, 1999, 2002	✓			✓	✓	

Note: Ecuador and El Salvador had new central bank laws in the early 1990s but subsequently modified them as both countries adopted the US dollar as their currency, relinquishing exchange rate and monetary policies. Hence both countries are excluded from this and the next table

Sources: Central bank websites, Schmidt-Hebbel (2011), and Carrière-Swallow et al. (2016)

still face major policy challenges to strengthen further their countries' macro-financial stability and resilience to large foreign shocks.

Central Bank Reforms and Policy Regimes

For many decades LA's central banks were subordinated to governments and lacked clear policy objectives, which led to money-financed government deficits, endemic high inflation and hyperinflation episodes and recurring banking and balance-of-payments crises. This dismal record of macroeconomic and financial instability led to deep reforms of central bank laws in most countries in the region, which were adopted between 1989 and 2004 (Table 1). The new legislation granted central banks legal and operational independence to avoid inflationary bias, put an end to fiscal dominance by imposing restrictions on central bank financing of governments, provided clear mandates to central banks and raised their standards of accountability and transparency.[1]

An aggregate measure of central bank independence doubled on average after bank reforms (Table 2). In most countries, central bank board members are proposed by the President and voted by Congress for long tenures. Credit to the

[1]The major exception is Brazil, where legislation of central bank independence has been submitted to Congress but has not been approved to date; however, the Central Bank of Brazil enjoys a significant degree of operational independence. At the other extreme are Argentina and Venezuela, which granted legal independence to their central banks in the 1990s, but subsequent governments did not respect these laws, as discussed below.

Central Banking in Latin America, Table 2 Central bank reforms, legal independence and transparency in selected Latin American countries, 1988–2015

Country	Reform year[a]	Independence index[b]			Transparency index[c]	
		1 year before reform	1 year after reform	2012	1998	2015
Argentina	1992	0.37	0.83	0.76	3	3
Bolivia	1995	0.37	0.79	0.79	–	–
Brazil	n.a.	n.a.	n.a.	0.17	2.5	8.5
Chile	1989	0.49	0.73	0.73	6	11
Colombia	1992	0.21	0.73	0.73	2.5	7.5
Costa Rica	1995	0.48	0.73	0.73	–	–
Dominican Republic	2002	0.44	0.60	0.60	–	–
Guatemala	2002	0.52	0.68	0.68	1.5	4
Honduras	1996	0.38	0.69	0.69	–	–
Mexico	1993	0.33	0.67	0.68	4.5	6.5
Nicaragua	1992	0.38	0.65	0.68	–	–
Paraguay	1995	0.45	0.62	0.62	–	–
Peru	1993	0.44	0.81	0.81	5.5	9
Uruguay	1995	0.14	0.70	0.56	5	2[d]
Venezuela	1992	0.45	0.64	0.60	1	4[d]

[a]Central bank websites
[b]The legal independence index, based on Garriga 2016, ranges between 0 and 1, with higher values indicating stronger central bank independence
[c]The index of central bank transparency, based on Dincer and Eichengreen 2014, ranges between 0 and 15, with higher values indicating higher central bank transparency
[d]The values are for 2010

government is banned or restricted in most reformed central banks, curtailing monetization of government deficits.

With new independence came stronger legal requirements of accountability and transparency. Central banks were made accountable to Congress and the general public (Carstens and Jácome 2005; Carrière-Swallow et al. 2016). Most LA central banks release regular inflation reports that are presented at parliamentary hearings, publish a calendar of policy meetings and publish press releases and minutes of their monetary policy meetings and decisions. A large body of central bank data, surveys, research, models and forecasts are made public, almost in real time, by most central banks. An aggregate measure of central bank transparency reflects roughly a doubling of transparency of LA's central banks between 1998 and 2015.

To guide policy, the new laws provide banks with clear mandates. All reformed central banks have price stability as their first or primary or only mandate. Many banks have also financial stability as their second mandate – in several cases, this mandate was added after the GFC. A few banks have an additional mandate: economic development, broadly interpreted as employment or output stability.

Exchange Rate and Monetary Policy Regimes

Latin America and the Caribbean (LAC) exemplify the two-corner hypothesis in ER regimes. While intermediate systems with limited ER flexibility – ranging from stabilized arrangements to crawling pegs and other managed ER arrangements – were the regimes of choice in the 1980s and 1990s, only 11 of 33 LAC countries have intermediate ER arrangements in place as of 2018 (Table 3). Thirteen smaller countries have adopted the US dollar or have in place a currency board or a conventional fixed peg with the US dollar. At the other extreme, LAC's nine larger economies have a floating ER regime in place –

Central Banking in Latin America, Table 3 Exchange rate and monetary regimes in Latin America and the Caribbean, 2018

	Monetary policy regime (monetary anchors)			
Exchange rate regime	Exchange rate	Monetary aggregate	Inflation targeting	Other
No separate legal tender	Ecuador			
	El Salvador			
	Panama			
Currency board	Antigua and Barbuda			
	Dominica			
	Grenada			
	St. Kitts and Nevis			
	St. Lucia			
	St. Vincent and the Grenadines			
Conventional peg	Aruba			
	Barbados			
	Belize			
	The Bahamas			
Stabilized arrangements	Guyana	Bolivia	Guatemala	
	Trinidad and Tobago	Suriname		
Crawling Peg	Honduras			
	Nicaragua			
Crawl-like arrangement			Dom. Republic	Haiti
Crawling band				
Other managed arrangements				Venezuela
Floating (managed floating with no predetermined path for exchange rate)		Argentina	Brazil	
			Colombia	
			Costa Rica	
			Jamaica	
			Paraguay	
			Peru	
			Uruguay	
Free floating			Chile	
			Mexico	

Source: International Monetary Fund (2019a)

most of them a managed float with frequent ER interventions. Only Chile and Mexico have independently floating exchange rates.

Hence "fear to floating" (Calvo and Reinhart 2002) is still dominant in the region. In the absence of deep and healthy domestic financial markets, well-anchored inflation expectations and strong macroeconomic and macroprudential policies, ER interventions could represent a second-best policy to counteract market and policy failures that justify interventions. However, the possible benefits of frequent ER interventions should be balanced against their costs that come from limited ER flexibility, lack of a key shock absorber and limited monetary independence.

Foreign exchange (FX) interventions by LA central banks are of two types. Opaque interventions with little ex ante and ex post communication about intervention objectives, instruments, amounts and periods are prevalent in many

countries. An exception is Chile, where interventions are very exceptional (4 episodes in 20 years) and are pre-announced by the central bank, which communicates the period and amount of its interventions.

Empirical research on FX interventions by central banks shows some evidence on the transitory and/or impact effects of interventions on the ER. For a sample of nine LA countries during 2004–2010, Adler and Tovar (2014) report that an FX sale by the average LA central bank, equivalent to 0.1% of GDP, slows the rate of domestic currency appreciation by 0.3%.

Albagli et al. (2019) report evidence on the benefits of Chile's free float: the role of the ER as shock absorber, lowering output and domestic asset-price volatility; the reduction of FX risk exposure; the strengthening of monetary policy independence; and the decline in ER depreciation-to-inflation pass through.

The choice of ER regime determines to a large extent the selection of a monetary regime. 17 LAC countries with inflexible or intermediate ER regimes have chosen the US dollar as their currency of reference, either adopting the dollar as their currency or pegging their currency to the dollar. Two central banks with managed ER arrangements have no explicit monetary regime in place. The remaining choices of monetary regimes are targeting a monetary aggregate (3 countries) or targeting inflation (11 countries).

IT is the regime of choice in LA's larger and/or more stable economies. Several LA central banks adopted IT early on, at a time when they did not satisfy the conditions of a full-fledged IT framework. For example, Chile and Colombia adopted a system of partial IT in the 1990s, where inflation targets coexisted initially with ER anchors. Many LA central banks started IT by pre-committing to annual targets on a declining schedule towards stationary target levels. During this phase of "converging targets", central banks used IT as an instrument to anchor inflation expectations to forward-looking target levels, bringing inflation gradually down. At low single-digit levels of inflation, central banks adopted stationary target levels and floating exchange rates, achieving high levels of monetary independence.

IT central banks have invested heavily in developing their monetary regime, moving gradually from partial to full-fledged IT. This involved modernizing monetary policy operations, improving analytical and forecasting capabilities, revamping policy decision procedures and raising transparency and accountability of policy decisions (Batini and Laxton 2007). Monetary policy under IT is aimed at attaining a point inflation target within a symmetric target range, over a typical medium-term policy horizon of 2 years. The policy instrument is the monetary policy rate, which is closely matched by overnight interbank rates, supported by open-market operations. Today the region's 11 IT central banks are at the best practice frontier of the world's 41 countries that have in place a flexible IT framework (IMF 2019a).

Macroeconomic Stabilization

Supported by fiscal adjustment and legal independence, most central banks in LA strengthened their monetary, ER and financial policy framework since the 1990s.

The region's conquest of inflation is reflected in convergence to low single-digit inflation rates in most economies during the 2000s. While many LA countries suffered from high and hyperinflation until the 1990s, the region's average annual inflation fell to 5–6% since 2000, similar to other emerging economies (Table 4).

Inflation in the region's current 11 IT countries is even lower, at an average 4.4% in 2010–2019. In the latter countries, annual absolute inflation deviations from target levels exhibit a downward trend since the start of IT, except for the 2008–2009 largely imported inflation-deflation episode. This trend decline in inflation deviations reflects the growing success of IT central banks in controlling inflation volatility.

The literature on IT worldwide shows that IT countries experienced larger reductions in inflation levels (Lin and Ye 2009; Yamada 2013), larger reductions in GDP volatility (Abo-Zaid and Tuzemen 2012; Hartmann and Roestel 2013) and less intense response of domestic

Central Banking in Latin America, Table 4 The great moderation in the world and in Latin America and the Caribbean. Average annual inflation rates in major regions, 1980–2019 (%)

	1980–1989	1990–1999	2000–2009	2010–2019
World	15.8	20.2	4.2	3.6
Advanced economies	6.5	2.9	2.0	1.5
Emerging market and developing economies	36.6	55.2	6.9	5.2
Latin American and Caribbean countries[a]	131.9	150.4	6.2	5.3

Source: International Monetary Fund (2019b)
[a]The country sample of Latin American and Caribbean countries excludes Argentina and Venezuela

macro-financial variables to global liquidity shocks compared to non-IT countries (Choi et al. 2017). There is also evidence on that emerging and developing IT countries experienced larger reductions in inflation levels and volatility (Mishkin and Schmidt-Hebbel 2007; Abo-Zaid and Tuzemen 2012) than non-IT emerging and developing countries. Inflation stabilization reflects to a large extent the public's anchoring of inflation expectations (measured by market and survey data), over the relevant policy horizon, to inflation targets (Cecchetti and Hakkio 2010).

Focusing on three LA IT countries (Brazil, Chile and Mexico), Schmidt-Hebbel and Werner (2002) find that IT has brought lower inflation levels and costs, compared to non-IT countries. They also show that IT has strengthened credibility, reflected by more stable inflation expectations, weaker effects of shocks on inflation and lower inflation forecast errors. Broto (2011) finds that five LA IT countries (Brazil, Chile, Colombia, Mexico and Peru) perform better on inflation levels and volatility compared to three non-IT countries (Argentina, Ecuador and Uruguay). The results are not as conclusive for Brazil.

Argentina and Venezuela are the region's two exceptions regarding central bank behaviour and macroeconomic performance during the last two decades. In both countries, unsustainable government deficits are financed by money-issuing central banks, which are legally independent but de facto dominated by governments. As a result, both countries suffer recurring episodes of fiscal, banking, currency and inflation crises throughout 1998–2019. Argentina exhibits recurring recessions and inflation bouts, exemplified by a 48% inflation forecasted for 2019. Venezuela holds the world record in macroeconomic mismanagement, reflected in a cumulative GDP loss of 65% between 2014 and 2019 and a hyperinflation forecasted at 10,000,000% for 2019 (IMF 2019b).

Financial Stability and the Response to the Global Financial Crisis

The 1982–1985 Latin American currency, banking and debt crisis burdened the region's central banks and governments with new, urgent tasks. They ranged from commercial bank intervention and recapitalization to negotiating official assistance and debt scheduling and to conduct policy in deep recessions. Subsequently countries reformed thoroughly their commercial bank regulation and supervision, adopting strong banking laws that limit risk-taking, strengthened commercial bank supervision by central banks or government agencies and lifted restrictions on foreign investment and capital inflows.[2]

Financial intermediation and financial system depth grew gradually but steadily since the late

[2]Full financial integration may raise domestic vulnerability to large swings in capital flows, impairing macroeconomic and financial stability in the absence of well-regulated, sound domestic financial markets and effective countercyclical policies. Therefore, controls on capital inflows are sometimes adopted and justified as a second-best policy choice when first-best solutions are not available, and when the stabilizing effects of capital controls are perceived to outweigh the costs derived from the financial distortions they imply. However, a significant literature on effectiveness and costs of capital controls imposed in the 1990s by emerging economies is largely inconclusive (e.g. Ostry et al. 2010). Yet most LA countries have shed capital controls.

1980s, while banking system health improved. Yet some individual countries experienced idiosyncratic financial crises, including Mexico in 1994 and Argentina in 2001–2002; however, little contagion effects from these crises were felt in other LA countries.

Two systemic crises hit the region harder: the 1997–1998 Asian/Russian crisis and the 2008–2009 GFC. In 1997, most central banks had in place inflexible ER regimes, and none had adopted full-fledged IT yet. Reserves were relatively low and policy credibility was weak. This led most central banks to adopt pro-cyclical (i.e. contractionary) monetary policies in 1998, while governments had little room to put in place expansionary fiscal policies. As a result, most countries suffered significant recessions. Yet banking systems in most LA countries withstood well the downturn.

After this experience, central banks in LA accelerated their transition to more flexible ER regimes and full-fledged IT, built up foreign reserves, and, coherent with their mandates to strengthen financial stability, started adoption of macroprudential policy measures (Akinci and Olmstead-Rumsey 2018). Most LA central banks (and governments) aimed at full international financial integration by ditching controls on capital outflows and inflows, which had been in place for decades before the 2000s. Some governments adopted fiscal rules and fiscal institutions, which made them save part of their revenue windfall obtained during the 2004–2014 commodity-price super cycle. However, several other governments spent and overspent their resource windfall – foremost Argentina and Venezuela.

LA's new policy framework was put to severe testing by the GFC, which hit the region much more strongly than the Asian/Russian crisis. LA's terms of trade, trade volumes and access to foreign financing shrank sharply during 2008–2009, at a magnitude that was unprecedented since the Great Recession. Yet this severe international shock – for the region possibly one order of magnitude worse than the Asian/Russian crisis one decade before – found LA much better prepared. Many governments and central banks adopted expansionary policies that in part counteracted the consequences of very adverse external conditions.

After monetary policy rates had been raised to very high levels in 2008, in response to the inflationary effects of very high world energy and food prices in 2008, LA's central banks lowered their rates to record loss in the first months of 2009, in response to the GFC and its depressive effects on domestic output and inflation. No central bank reduced its policy rate to zero, which is consistent with the fact that complementary nonconventional policies by central banks were much less extensive than those pursued in many industrial countries. There was less need for massive use of nonconventional policies by central banks in LA than in advanced countries, as LA's local financial markets did not dry up, and financial institutions fell not in distress.

However, foreign credit lines to domestic banks and nonfinancial institutions in LA were curtailed, reflecting a "sudden stop" in foreign capital inflows, due to a world flight to quality and the financial distress suffered by foreign creditors. Depending on the country and its ER regime, central banks used a combination of ER depreciation and FX provision to cushion domestic markets from the FX-liquidity crash (Table 5). Among the FX operations carried out by many central banks between September 2008 and mid-2009 were standard FX interventions and nonconventional FX-related operations, including currency swaps, foreign exchange swap auctions, direct foreign exchange spot purchases and foreign currency term liquidity provisions. In addition, some countries agreed foreign exchange swap with foreign central banks (Brazil, Mexico) and signed up for an IMF Contingent Credit Line and/or an IMF Special Drawing Right facility (Colombia, Mexico).

In addition, LA's central banks used a range of nonconventional monetary policies aimed at providing liquidity and reducing risk premiums, complementing the interest-rate cuts in supporting credit provision by commercial banks. They adopted the following measures: reduction of bank reserve requirements, credit line expansion, purchase of treasury bonds, purchase of central

Central Banking in Latin America, Table 5 Nonconventional policy actions by selected Latin American central banks during the global financial crisis, 2008–2009

Nonconventional policy actions	Brazil	Chile	Colombia	Mexico	Peru
A. Foreign exchange related					
Currency swaps	✓	✓		✓	✓
Foreign exchange swaps	✓				
B. Monetary policy related					
Reduction of bank reserve requirements	✓	✓	✓	✓	✓
Forward guidance	✓	✓	✓	✓	✓
Credit line expansion	✓		✓		
Purchase of treasury bonds	✓	✓	✓	✓	✓
Purchase of central bank liabilities	✓	✓	✓	✓	✓
Term liquidity facility		✓			
Repo swaps	✓	✓	✓	✓	✓

Source: Based on Calani et al. (2011) and Schmidt-Hebbel (2011)

bank liabilities, term liquidity facility, repo swaps and forward guidance.

The region at large suffered only a mild, short recession, in contrast to the severe, year-long Great Recession that afflicted most advanced countries. Also in contrast to LA's previous systemic crises – and to advanced economies in 2008–2009 – no banking, currency or debt crises were observed in LA countries during the GFC. Commercial banks resisted well the GFC, as a result of high regulatory risk-weighted capital to asset ratios in 2008 (at roughly twice the ratios observed in advanced countries), strong supervision, limited risk-taking and no exposure to toxic US assets and derivatives.

Evidence suggests that the nonconventional measures were successful in reducing domestic interest rates, flattening yield curves, reducing risk premiums in domestic asset markets, lowering bank lending-deposit rate spreads and providing liquidity (Calani et al. 2011). One may conclude tentatively that LA's nonconventional central bank policies were complementary to the interest-rate cuts in supporting credit provision by commercial banks and hence in dampening the impact of the global crisis on domestic aggregate demand and output. Empirical evidence shows that the central banks' new policy framework and response during the GFC dampened significantly the amplitude of the recession (Corbo and Schmidt-Hebbel 2011).

Macroprudential Policies and Basel III

The GFC unveiled profound financial market failures and regulatory/supervisory policy failures that were at the source of the crisis. They included inappropriate incentives for first block includes bank and risk managers; flaws in techniques used to measure, price and manage risks; corporate governance weaknesses; and regulatory and oversight deficiencies (Ferreira et al. 2019). Recognition of these major failures spurred an unprecedented review of international prudential standards for financial markets, including both microprudential reforms and the development of a macroprudential policy framework aimed at containing systemic risks.[3] Central banks play a key role in assessing, recommending and implementing the large body of the new national legislation and regulation that result from national implementation of Basel III. The major regulatory reforms are categorized into four building blocks: (i) building resilient financial institutions, (ii) ending too-big-too-fail, (iii) making derivative markets safer and (iv) transforming shadow banking into resilient market-based finance. The first

[3]The new international standards, termed Basel III standards, comprise the Basel core principles and the large body of regulatory and supervisory standards issued since 2010 by the Basel Committee on Banking Supervision and the Financial Stability Board of the Bank of International Settlements.

block includes new bank capital and liquidity requirements.

LA had already implemented some macroprudential instruments (like other regions had done) before the GFC. After the crisis, LA started implementing the new macroprudential policy framework reflected in Basel III, but at a slower pace than the advanced economies. While several LA countries have already in place new banking legislation, others are still lagging behind. Depending on each country's legal environment, LA's central banks play either a key or a complementary role in promoting and adopting the new policy framework.[4]

Taking stock of key capital-based instruments in the six largest LA economies as of 2019, progress has been made in adopting higher capital requirements, counter-cyclical capital requirements, limits on leverage, limits on dividend distribution, dynamic provisioning and other capital-based tools (Table 6). However, extraordinary capital requirements on systemically important financial institutions have not been adopted yet. There is more progress regarding liquidity-based instruments, with adoption of counter-cyclical reserve requirements, liquidity ratios, limits on loan-to-value and debt-service-to-income ratios, limits on credit growth, limits on exchange rate risk and limits on derivatives.

While implementation of macroprudential policies in LA is only recent and hence the time span of available data is limited, some empirical evidence on their effectiveness is available. Macroprudential policies in LA have been effective in stabilizing credit cycles, and they have a greater effect on credit growth when reinforced by the use of monetary policy (Gambacorta and Murcia 2019). This complementarity of monetary and macroprudential policies is reassuring for the overall stabilization goal of central banks, reflected in their mandates to attain both price and financial stability.

[4]In some countries (including Argentina, Brazil, Paraguay and Uruguay), prudential policy functions are conducted by central banks; in other countries (e.g. Chile, Colombia, Mexico and Peru), it is carried out by a separate government agency.

Challenges Faced by Central Banks in LA

A sustainable fiscal policy and absence of fiscal dominance are the key conditions for effective central bank policymaking. Most LA countries satisfy this condition today. However, there are several countries in the region where fiscal sustainability has not been achieved yet and a few others where subservient central banks finance government deficits by printing money. For the latter countries, the foremost task is undertaking a structural fiscal reform and cutting the umbilical cord between central banks and governments. For the majority of LA countries, where fiscal solvency is ensured and central banks have been reformed, six major challenges are faced by central banks today and in the near future.

Strengthening Central Bank Independence, Transparency and Accountability

Several central banks face the key political challenge of attaining legal and/or de facto independence – foremost in three large LA countries: Brazil, Argentina and Venezuela. Most LA central banks still face important transparency and communication challenges. Only one LA central bank publishes forecasts and fan charts of their own monetary policy rates, while several IT central banks in other regions do. Very few LA central banks publish backcasts and forecasts of key unobservable variables, including potential output, the natural unemployment rate, the neutral rate of interest and the equilibrium exchange rate. At least all IT central banks should publish all the latter variables, which would imply a major improvement in transparency and communication of monetary policy decisions (Schmidt-Hebbel and Walsh 2009). Finally, while central banks have made improvements in procedural transparency, they should commit to publish timely and full transcripts or minutes of their monetary policy meetings.

Strengthening ER Regimes

The 13 central banks with intermediate ER regimes should evaluate the benefits of moving to the corners of either fixed or floating regimes. The seven central banks with managed floats

Central Banking in Latin America, Table 6 Macroprudential policies in selected Latin American countries, as of 2019

Pillars	Specific instruments	Argentina	Brazil	Chile	Colombia	Mexico	Peru
Capital-based instruments	Higher capital requirements	✓	✓	✓	✓	✓	✓
	Counter-cyclical capital requirements			✓			
	Limits on leverage			✓			
	Dynamic provisioning			✓	✓	✓	✓
	Limits on dividend distribution	✓			✓		
	Other capital-based tools	✓	✓	✓	✓	✓	✓
Liquidity-based instruments	Counter-cyclical reserve requirements	✓	✓	✓	✓		✓
	Liquidity ratios	✓	✓	✓	✓	✓	✓
	Limits on loan-to-value and debt-service-to-income ratios	✓	✓	✓	✓		✓
	Limits on credit growth			✓	✓		
	Limits on exchange rate risk	✓	✓	✓	✓	✓	✓
	Limits on derivatives	✓	✓	✓	✓	✓	✓

Notes: Argentina, Brazil, Colombia, Mexico and Peru, measures implemented between 2000 and 2019. Chile, measures implemented before 2019 and others to be implemented after the Banking Law enacted in 2019
Sources: Gambacorta and Murcia (2019) and Akinci and Olmstead-Rumsey (2018)

should evaluate the benefits of adopting a free float, with exceptional interventions. The latter regime shift would strengthen monetary independence, improve the role of the ER as a shock absorber, and reduce FX risk-taking in financial markets. For the central banks that have adopted free floats, they should consider adopting and making transparent an explicit policy framework for their exceptional interventions, as in Chile and New Zealand.

Adopting/Strengthening IT

The first challenge is for LA central banks without IT to evaluate if they satisfy a minimum set of conditions for successful IT adoption and, if not, to put it in place. The second challenge is for prospective IT adopters and for those IT central banks that are on a convergence path to stationary targets: they ought to demonstrate through policy actions that attaining inflation close to target levels is their dominant policy objective. A final challenge for ITers on a convergence path to low inflation is to avoid accommodation of positive inflation shocks by raising inflation target levels (Schmidt-Hebbel and Carrasco 2016; Carrasco 2018).

A radical challenge comes from the proposal to replace IT by price level targeting (PLT). Svensson (1999) shows that PLT's main theoretical advantage over IT is that the expectation that the prices will return to their target trend influences current inflation when price setting is forward-looking. This benefit may be strong when the ZLB holds, and the economy is in a deflationary liquidity trap.[5] However, no country has made the shift from IT to PLT yet.

Dealing Better with Foreign Shocks

LA is a very open region and therefore highly sensitive to foreign financial and real shocks. Sudden stops in capital inflows, major swings in commodity prices and terms of trade and global crises and recessions hit LA countries. Cross-country research shows that sensitivity to shocks is exacerbated in LA by weaker institutions, less domestic financial development and lower

[5]Deflation bygones under IT are not bygones under PLT, requiring future inflation that is on average higher than the inflation target level (or the price level target trend). As this is anticipated by forward-looking agents, the likelihood of getting into a deflationary situation is lower under PLT, and when it materializes, the likelihood of getting out more quickly is larger under PLT.

financial integration than in industrial countries (Corbo and Schmidt-Hebbel 2011). The policy implication of the latter for LA is to strengthen policy institutions (including central banks), avoiding pro-cyclicality and promoting counter-cyclicality of the macro-financial policy framework – fiscal, monetary and macro-prudential policies – to offset more effectively the destabilizing effects of external shocks.

Macroprudential Policy

LA countries have taken a gradual, cautious approach in adopting macroprudential policies. The first challenge is effective and systematic identification, analysis, measuring and monitoring of systemic risks – a task which is fully consistent with central banks' financial stability mandate. Second, countries ought to raise macroprudential policy standards to the levels consistent with banking regulation and supervision under Basel III. Finally, many LA countries have yet to establish financial stability committees as part of their macroprudential policy framework. However, specific features and sequencing of implementation of Basle III will depend on country size and structural features (Ferreira et al. 2019). Central banks will play a key role in addressing these challenges.

The End of Paper Money and Digital Transformation

Digital transformation affects all human activity, including financial markets and central banks. One dimension is the substitution of electronic transactions for money, gradually reducing the demand for currency money towards zero. The gradual end of paper (and coin) money, forecasted for the next two decades, is a challenge to central banks, not the least for those in LA countries where inflation is not yet at low stationary levels, and therefore the inflation tax is not yet negligible.

However, the challenges to central banks that stem from full digitalization of financial transactions, services and instruments replacing conventional commercial banks go far beyond the end of paper money. They stem from the difficulties of identifying, preventing and addressing the new systemic risks to the infrastructure and functioning of the financial system. The latter risks are compounded by the explosive growth of cybersecurity attacks on financial transactions, assets and institutions. Central banks worldwide and in LA face huge challenges, in real time and round the clock, to ensure the development and security of their countries' financial systems, in close coordination with governments and the private sector, both domestically and abroad.

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