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A core–periphery framework for understanding the place of Latin America in the global architecture of finance

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This paper contributes to the understanding of subordinate financialisation in emerging and developing economies by setting out a novel core–periphery framework that elucidates the place of Latin America in the global architecture of finance. This framework builds on the centre–periphery financial model of uneven regional credit and economic growth, originally proposed by Victoria Chick and Sheila Dow in 1988. In the era of deregulated financial flows and market-based credit, the core–periphery relationship has become a three-level hierarchical system, in which Latin American nations occupy a subordinate place. The key drivers of this structural shift within these nations have been the liberalisation of cross-border financial flows and investment, the deregulation of banking and the adoption of private pension systems. These drivers' adoption can be traced to both push and pull factors: specifically, recurrent financial crises requiring external intervention (especially by the International Monetary Fund (IMF)), and the possibility of engaging with the financial instruments and megabanks driving the globalisation of finance. Participating in this hierarchical system has required importing elements of the financial architecture that evolved in the 1980s in advanced economies and has also arguably deepened this region's financial dependency and vulnerability.

Key words: Latin America, Market-based credit, Core–periphery model, Financial deregulation, Banking systems
JEL classifications: E15, G10, N26

1. Introduction

What is the place of emerging capitalist economies (ECEs) in the global architecture of finance? This paper answers this question by reframing the centre–periphery

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intra-national model of Victoria Chick and Sheila Dow so as to capture the international core–periphery structure of finance in the contemporary period, focusing on a case study of Latin America.[1] While the transformation of ECEs' financial markets and structures in the past four decades has deepened their connections with global markets, it has also reinforced their subordinate place in global finance. In the era of deregulated financial flows and market-based credit, the centre–periphery model envisioned by Chick and Dow can be reconfigured as a three-level hierarchical core–periphery arrangement.

This paper contributes to the literature on the international dimension of financialisation (Bonizzi, 2013; Bortz and Kaltenbrunner, 2017), building on the suggestive analysis by Kaltenbrunner and Painceira (2018) of how market-based credit has replaced bank-based loan making as a platform for consumer credit in Brazil. Relying primarily on insights from Post-Keynesian economics and from the Latin American structuralist tradition, we make three contributions that build on this insight into the changing domestic structure of financial intermediation in ECEs.

First, we modify the financial centre–periphery framework of Chick and Dow (1988), which demonstrated how, in a hierarchically organised financial system, fluctuations in the availability of liquidity and credit over the business cycle would contribute to uneven spatial development: in boom times, credit growth would be concentrated in centre areas, leaving peripheral areas more credit-constrained; and in periods of systemic credit crunch, the latter areas would be liquidity starved. We adapt this model to the contemporary global financial system, focusing on the hierarchical structures that control global flows of money and credit. In effect, Latin America has become a subordinate component of a three-level hierarchical global system in which financial flows depend on a global financial cycle (Borio, 2012) driven as much by surges of confidence and fear among global investors as by the business cycle.

Second, we identify three key drivers of this structural shift in Latin American financial intermediation: opening markets to overseas financial flows and investment; deregulating banking; and adopting private pension systems.

Third, we show that efforts to modernise—make 'globalisation-ready'—financial markets and instruments in Latin America involve the importation into these economies of key elements of the financial architecture that has evolved in advanced economies.[2]

We proceed as follows. Section 2 summarises the Chick–Dow centre–periphery financial framework, including its extension by Dow to the ECE context, and explores its links with the emerging literature on subordinate financialisation. Sections 3–5 describe three core drivers of structural transformation in Latin American finance: the opening of domestic financial markets to international flows and investment (Section 3); banking deregulation processes in Latin America and the USA, which led to a shift

[1] The choice of Latin America is dictated by three considerations: first, it consists almost entirely of nations defined as middle-income by the World Bank, many with long histories of private-sector cross-border borrowing; second, it provided the home soil for the 'structuralist' tradition on which Chick and Dow (1988) draw; third, the Latin American debt crisis provided the leading example of a systemic cross-border financial crisis when Chick and Dow (1988) and Dow (1995) were published.

[2] This analysis of trends in Latin American finance uses a stylized portrayal that ignores key institutional differences in domestic financial structures and in their degree of opening to cross-border financial flows and investment. The justification of this approach is our focus on using Latin American experience as the basis of a core–periphery approach that may be applicable to other ECEs.

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from bank-based to market-based lending (Section 4); the shift to private pension funds, which enhanced the role of institutional investors (Section 5).[3] Section 6 suggests some modifications in the Chick–Dow centre–periphery framework that permit a better fit with the contemporary context of Latin American and global finance. Section 7 examines how the changes in Latin America's financial structures have reinforced its subordinate position in global markets and generated new sources of vulnerability and financial fragility. Section 8 briefly concludes.

2. The Chick–Dow centre–periphery framework

Working from Post-Keynesian premises, Victoria Chick and Sheila Dow wrote a series of studies between 1986 and 1990 proposing centre–periphery[4] models of financial development. Dow (1990) provides a convenient starting point. This is a study based on the Canadian experience of peripheral regions being systematically disadvantaged in financial markets. Financial expertise as well as the large banks' and non-bank financial firms' headquarters offices cluster in the centre, while smaller banks or large banks' branch offices provide financial services in peripheral areas. Banks in the centre have more immediate access to national and global money markets and provide credit to the most dynamic firms; peripheral banks face more modest credit demand and lend a portion of their reserves through the interbank market to banks in the centre. When a downturn comes and liquidity preference takes over from animal spirits, reserves and liquidity are centralised even further. Over time, the financial system contributes to a widening regional growth divide.

Chick (1986) explored how banking systems at different 'stages' of institutional development will restrict or enhance savings mobilisation, money creation and the financing of production and investment. Chick and Dow (1988) subsequently developed a more elaborate model, which envisions five stages of banking development in a centre–periphery setting. In the first two stages, investment is constrained by savings and banks' modest capacity to endogenously create credit. In the third and fourth stages, an interbank market emerges and the central bank takes on the lender-of-last-resort role; this permits inter-regional transfers of reserves and the more rapid expansion of credit, especially in the centre, since the central bank provides a backstop when liquidity preference spikes in the downturn. In the fifth stage, banks' credit creation and deposit-taking activities become independent, and credit supply is even more responsive to demand in the upturn. Banks in the periphery are themselves more able to create credit for local investment.

These authors' 1988 paper purposely describes banking relations at a general level, which can be applied to either intra-national regional differences or advanced/developing economy analysis in dependency theory. Following an extended discussion of the centre-periphery frameworks of Baran (1957) and Cardoso and Faletto (1979), Chick and Dow observe that while dependency theory has focused on trade and foreign investment, a financial framework can demonstrate how 'monetary factors

[3] Banks engage in 'market-based' lending when they back loans with borrowed funds obtained in money markets or sell loans they have made as securities that are bought in the market. This practice contrasts with traditional bank-based lending, in which banks back loans primarily with their own deposits.

[4] The term 'core-periphery' is used herein to refer to international setting, and the term 'centre-periphery' refers to the intra-national (regional) setting.

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reinforce the real process' (Chick and Dow, 1988, p. 7). Dow (1995) in turn explores how the centre–periphery financial framework can explicitly address the dependence of peripheral countries on core countries for capital and credit. She notes that since countries rely on foreign credit to increase their rate of capital formation, and are dependent on primary goods and low-level manufactured products that are sold in volatile markets, they face boom-bust cycles in which 'large inflows of… direct investment' alternate with periods of 'export shortfall and withdrawal of inward investment' leading to 'an urgent need for borrowing to finance the balance of payments deficit' (Dow, 1995, p. 5).

One aspect of dependency is that advanced economies alone possess the 'sophisticated financial system that can create credit to finance investment and provide a high return on domestic savings' (Dow, 1995, pp. 5–6). Citing Minsky (1982), she argues that because developing economies' 'banking system is at an earlier stage of evolution' (ibid., p. 6), with underdeveloped interbank markets, their banks' credit-creating activities will be inferior and more reserve-constrained. This suggests that advanced economies' banks will systematically overlend over the cycle, as predicted by Minsky's financial instability hypothesis. Her analysis neatly explains the recent Latin American debt crisis: the onset of crisis triggers liquidity preference considerations that lead advanced-economies' banks to withdraw from lending, with capital flight amplifying the initial shock.

While Dow (1995) uses Andre Gunder Frank (1978) as one of her sources, she does not take up his assertion that capitalist accumulation generates both development and underdevelopment. The Chick–Dow framework is compatible with this idea, in that the centre's concentration of credit power and then its monopolisation of liquidity during crises is integral to financial processes. But Dow does not follow Frank in describing this to an inherent aspect of capitalism.[5]

The Chick–Dow framework focuses on the role of finance in the broader economy, not taking into account the more pervasive adoption of financial motives, institutions and practices in capitalism as a whole, which is now termed 'financialization' (Sawyer, 2014). Financialisation processes are now understood to be non-linear, to take more variegated forms in ECEs than in advanced economies (Becker *et al.*, 2010; Bonizzi, 2013) and to be interlinked in these economies with structural economic subordination (Bonizzi *et al.*, 2020). The term 'subordinate financialization' has been proposed to describe the hierarchical nature of the global monetary and financial system (Bonizzi *et al.*, 2020). Latin American economies' increasing integration into global financial systems has proceeded without altering their uniformly inferior positions in the global currency hierarchy (Andrade and Prates, 2013; Kaltenbrunner, 2015).

This leads to a question parallel to that raised by Frank and other dependency theorists about capitalism: whether the subordinate position of ECEs in financialisation processes is intrinsic to the very operation of global financial processes, or instead represents a flawed implementation of financial policies. As noted, Dow (1995) does not address it. Before we propose a tentative answer, the next three sections summarise some aspects of recent institutional development in Latin American financial systems.

[5] The sole reference to 'capitalism' in this essay (Dow, 1995, p. 29) mentions Keynes' view that the stable development of monetary and financial relations is a prerequisite for capitalist growth.

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3. The liberalisation and opening of Latin American financial markets

Beginning in the 1970s, many Latin American nations adopted structural financial reforms opening their markets to foreign ownership and competition, deregulating banking and financial markets and market-determined exchange rates. These changes, together with monetarist macroeconomic approaches to economic stabilisation, align with a development strategy consistently encouraged by the International Monetary Fund (IMF) and the World Bank (Katz, 2001).

Liberalisation and market-opening policies have sometimes been freely adopted by governments in power. Authoritarian governments in Chile and Uruguay implemented these reforms in the mid-1970s (Foxley, 1983). Democratically elected governments have also implemented such policies; an example is the Macri government's removal of capital controls in Argentina in 2015 (Steinberg *et al.*, 2018). These policies have also been imposed externally as disciplinary measures, as in the reform programmes the IMF implemented in response to the 1982 Latin American debt crisis. They have also been adopted in response to external promises, as when the 'second' Washington Consensus promised that opening capital accounts would attract foreign savings and increase economic growth (Bresser-Pereira and Varela, 2004). Altogether, Mexico, Argentina, Colombia, Costa Rica and Brazil, among others, adopted such reforms in the late 1980s and early 1990s (Katz, 2001).

The aggregate effect of these reforms is much debated. There is no systematic evidence that liberalisation and market-opening policies have increased capital inflows or improved results for growth or poverty (Ferreiro *et al.*, 2008). What these policies have done is to hold the countries implementing them 'under the supervision of IFIs' (Berr and Combarnous, 2007, p. 541).

Despite its ambiguous aggregate effects, this surge toward opening and liberalisation has clearly shifted the balance between state and market. The state in economies implementing such policies is no longer a guarantor of welfare, but an enabler. Opening access to global financial markets offers new investment opportunities for resident wealth holders, while also allowing non-residents to obtain assets and offer financial services domestically (de Carvalho *et al.*, 2009). This shift toward an individualist (neoliberal) philosophy was already evident in the structural reforms implemented by Chile after 1973 (Foxley, 1983). In particular, the privatisation of pension systems, via the creation of Administradoras de Fondos de Pension, favoured individual capitalisation over intergenerational solidarity and state support in retirement provisioning (Bonizzi and Guevara, 2019). Chile's 1981 pension reforms, in turn, had a cascade effect, encouraging the adoption of individual capitalisation systems elsewhere in Latin America: Peru (1993), Argentina and Colombia (1994), Uruguay (1996), Bolivia and Mexico (1997), El Salvador (1998) and Costa Rica and Panama (2000). Multiple benefits were promised for nations adopting privately-funded systems.

The same empty promises that had been made for opening economies to foreign savings were used to justify savings accumulation for pension plans: 'private schemes would mobilise a greater amount of "funds" available to be lent out to support real investment, thus favouring economic growth' (Bonizzi and Guevara, 2019, p. 3).

Accompanying pension reforms were 1980s and 1990s deregulations of Latin American banking systems, accompanied by privatisation and mergers. This widespread remaking of banking involved 'the liberalization of interest rates, the attenuation of barriers to entry in the provision of banking services, large-scale privatization

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of state-owned banks and the facilitation of entry for foreign banks' (de Carvalho *et al.*, 2009, p. 868). But as with market-opening and pension reform, there is no clear evidence that bank deregulation has improved growth or reduced inequality.

Despite the absence of any discernible aggregate real impacts of this region-wide commitment to liberalisation and market-opening, it has profoundly altered the roles of the different component parts of Latin American financial structures, as well as changing the way these financial structures work and their external links with global finance.

4. Latin American bank deregulation and foreign-bank entry in context

Banking deregulation in the 1990s substantially intensified competitive pressures on banks in emerging economies, including 'the establishment of new institutions, privatisation of state-owned banks and a large increase in the presence of foreign banks' (Hawkins and Mihaljek, 2001, p. 3). Privatisation programmes sometimes failed. For example, Mexico's 1994 currency crisis showed that newly privatised banks could behave imprudently in the presence of ineffective regulation, leading to their takeover by foreign banks; after that crisis, 82% of banking-sector assets were in foreign hands (Haber, 2005).

And indeed, mergers and acquisitions (M&As) have played the key role in financial consolidation. Facilitated by the lifting of product and geographic restrictions (Goddard *et al.*, 2012), M&As were seen as a means of improving efficiency, as 'borders between financial products, banks and non-bank financial institutions and the geographical locations of financial institutions have started to break down' (Hawkins and Mihaljek, 2001, p. 3). A wave of financial M&As has occurred in Latin America, many across national borders and/or involving foreign banks (Peek and Rosengren, 2000; de Carvalho *et al.*, 2009; Williams, 2012; Díez *et al.*, 2017; Alarco, 2018). In Argentina (de Carvalho *et al.*, 2009) and Chile, foreign banks typically entered the market via cross-border M&A rather than starting from scratch.

How financial M&As have affected financial outcomes is disputed. Some empirical evidence suggests that more efficient institutions tend to have high market shares in more concentrated markets both in banking (Williams, 2012) and pension funds (Agostini *et al.*, 2014). Chortareas *et al.* (2011) show that bigger Latin American banks in Brazil, Argentina and Chile have indeed enjoyed higher-than-normal profits. However, de Carvalho *et al.* (2009) raise concerns that rapid increases in market concentration in the wake of the M&A wave are increasing profitability via higher interest margins—that is, monopoly pricing. For Chortareas *et al.* (2011), rising concentration raises the likelihood of financial crises. Tabak *et al.* (2013), too, point out that the emergence of systematically important banks in Latin America can decrease systemic stability, as well as adversely affecting smaller banks' performance.

Domestic banks are, in any case, contending with entry by foreign-owned banks. In general, the banks expanding into Latin American markets have been too-big-to-fail (TBTF) megabanks whose profits derive less from lending than from the fees they derive from supplying a global platform for market-based lending and risk hedging (Cerpa Vielma *et al.*, 2019). Correa *et al.* (2012) show that foreign-owned banks have spread market-based lending practices in the markets they've entered, as well as earning above-average profits. This is consistent with patterns observed globally for

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middle-income countries: dos Santos (2013) has shown that banks' activities unrelated to lending per se, 'started most clearly in the US, and spread to middle-income economies, … propelled by the competitive, market-driven actions of banks, enterprises, and households, as well as by technological and financial innovations' (dos Santos, 2013, p. 317).

This finding concurs with Bonizzi's (2013) observation that foreign banks frequently spread 'financialised' practices in these economies. So the incursion of foreign banks into Latin America, like the adoption of market-based pensions, represents another factor pushing Latin America from a bank-based to a market-based system of credit provision. The increasing prominence of market-based lending and of banks' involvement in non-banking activities is demonstrated by the evidence in Figure 1, which shows that customer-deposit-to-loan ratios have decreased in Latin America in the 2010–18 period. At the same time, Figure 2 shows how banks' share of financial assets have been decreasing in the 2002–20 period in Argentina, Brazil, Chile and Mexico, due to the higher growth in other financial institutions and pension funds and life insurance companies (RCGA, 2021).

These developments in Latin American banking must be viewed in the context of developments in the core of global finance, limited here to the United States of America (USA). The USA's leading role in global finance was achieved in several drastic steps: a broad-based multi-step deregulation of commercial banks, beginning in 1980; regulatory permission for a large-scale banking M&A wave (Dymski, 1999); large US banks replacing lost loan customers in the late 1970s by making massive loans to regions

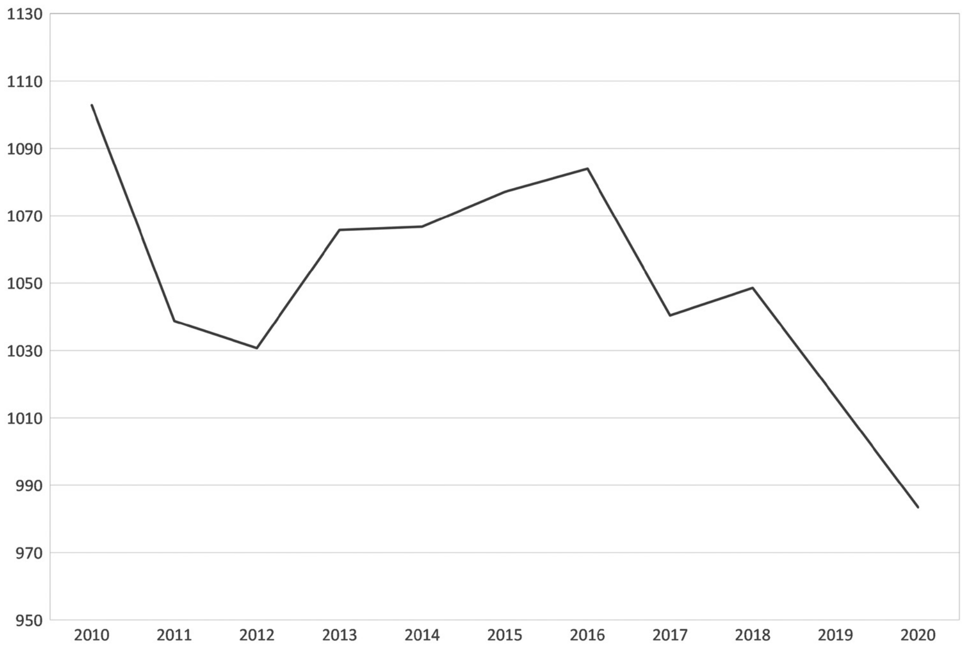

Fig. 1. *Bank customer deposits to total loan ratios, Latin America (%), 2010–18.*
Note: Includes Argentina, Bolivia, Brazil, Colombia, Ecuador, Mexico, Paraguay, Peru and Uruguay. Chile is not included.
Source: IMF's Financial Soundness Indicators.

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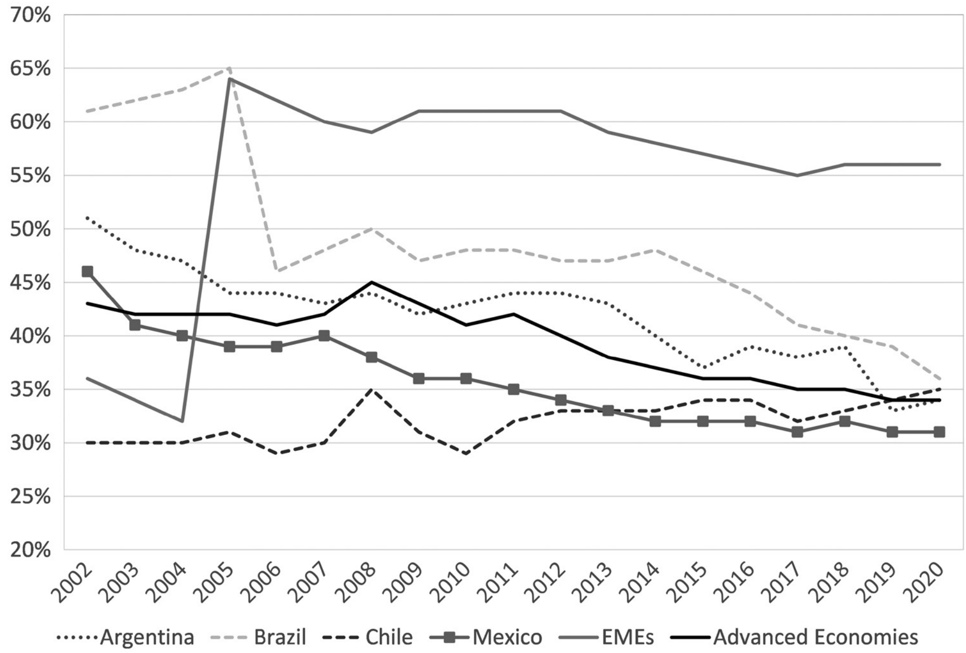

Fig. 2. *Banks' share of total financial assets (%), 2002–20.*
Source: Financial Stability Board (FSB), main monitoring aggregates of the FSB's Global Monitoring Report on Non-Bank Financial Intermediation.

benefitting from exploding commodity prices, particularly Latin America (Cerpa Vielma *et al.*, 2019); US policy-makers' rescue of those banks amidst the fallout from the Latin American debt crisis; and the policy measures that established securitisation as the new form of credit provision and shadow banks as the core suppliers of credit.

A key step was US regulators' designation of eleven US money-centre banks as 'too-big-to-fail' (TBTF) a measure dictated by the near-meltdown of US money markets two years after the 1982 Latin American debt crisis (Ioannou *et al.*, 2019). The creation of Brady bonds in 1989 simultaneously contributed to these banks' recapitalisation, by removing this bad debt from their balance sheets and creating global securities that would serve as global monitors of the 'good behaviour' of governments in default. The TBTF US banks recuperated from their Latin American losses by developing systems for bundling, selling and servicing the mortgage-backed securities market. The huge expansion of this market, necessitated by the meltdown of US savings and loan institutions, facilitated TBTF banks' shift toward fee-based income.

Market-based lending expanded further as market outlets for riskier securities emerged. Large banks built loan-origination-to-securities platforms, packaged and sold aggressive consumer loans (including subprime mortgages) and developed facilities for hedging and position-taking in risk (Dymski, 2010). The removal of all barriers between commercial banking, investment banking and insurance facilitated the global growth of financialisation: US TBTF banks and their overseas competitors grew by innovation and by expanding into new market areas (dos Santos, 2013; Cerpa Vielma *et al.*, 2019). This extreme bank competition enlarged the scale and scope of globalised financial markets, extending their reach into middle-income countries, as dos Santos (2013) notes.

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5. Market-based pensions, institutional investors and the search for yield

The widespread adoption of market-based pensions has pressured pension fund managers to obtain returns sufficient to meet their future commitments. And since bonds have persistently returned low yields in the years since market-based pension reforms were implemented, leading institutional investors have sought higher-yielding assets in diverse global corners: Asia (Lee, 2012), the European Union (Bonizzi and Churchill, 2017), housing markets (Fernandez and Aalbers, 2016) and emerging markets more generally (Bonizzi and Guevara, 2019). In Latin America, fund managers of market-based pension portfolios have been under no less pressure: the challenge of meeting their future commitments has been enhanced by the increasing number of individual savings accounts in the region. They have responded by allocating assets to capital markets. Figure 3 shows the rise in private pension assets for six countries in Latin America. These assets increased immediately after deregulations in the 1990s and 2000s, and rose very sharply after the 2008 financial crisis in Chile, Mexico, Colombia and Peru (less so in Uruguay and Bolivia).

It should be emphasised that privatised pensions represent just one of several sets of institutional investors operating in Latin America in the deregulated era: endowments, mutual funds and insurance companies and sovereign-wealth funds also have rising market shares there. This shift from bank-based savings instruments to asset management by institutional investors has an important implication: clients and not the fund managers bear gains and losses (Law and Smullen, 2008). So whereas bank

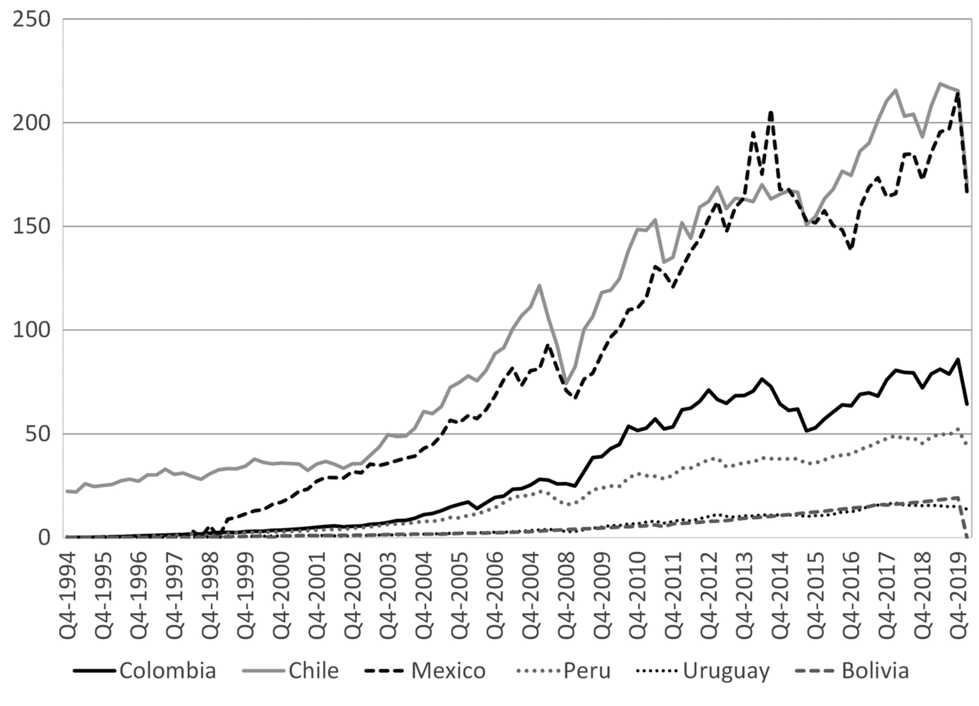

Fig. 3. *Assets under management, Latin American Pension Fund Administrators (US$B), 1994Q1-2020Q1.*
Source: Organisation for Economic Co-operation and Development (OECD) and International Federation of Pension Funds Administrators. See https://www.fiapinternacional.org/en/.

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managers previously funded much of their lending with deposits delivering relatively fixed (if stodgy) returns, they are now under pressure to deliver yield. This leads to boom-bust instability, as happened with derivatives tied to mortgages and hedge funds (Lysandrou and Nesvetailova, 2015) and more recently with the leveraged-loan market (Wigglesworth, 2019).

Financial deregulation, combined with investors' search for returns in the global 'wall of money' (Fernandez and Aalbers, 2016), has resulted in non-banks' financial assets surpassing those of banks worldwide (McKinsey, 2018). And supercharged by pension funds' shifting behaviour, several trends in Latin America—disintermediation from banks, the increased cash-flows and security-holdings of non-bank financial intermediaries and the rise of institutional investors—have converged and restricted banks' expansion of credit. Institutional investors—comprising mutual funds, insurance companies, pension funds and sovereign wealth funds—have consequently become more important than banks in the provision of credit in Latin America (ECLAC, 2019).

The decline of banks' role in credit supply has other consequences. Because many of the institutional investors (or their parent firms) with which Latin American firms have established relationships are based in advanced economies, especially North America and Europe, Latin American pension funds have been further integrated into global cash flows. And since these institutions acquire much of their funding in short-term financial markets, which are sensitive to changes in perception and to shifts in liquidity preference (ECLAC, 2019), their lending time-horizon has been shortened.

Data for the portfolio investments of six nations' pension funds, shown in Figure 4, reveals some patterns amidst these funds' search for yield. All these nations have experienced rapid growth, which has not slowed after the 2008 crisis (state investments in Colombia constitute the sole exception). Just after the 2008 crisis, pension funds in Uruguay, Argentina, Bolivia and Mexico provide a huge boost for the state sector, and Bolivian funds increased their investments in the domestic financial sector. Subsequently, however, pension funds in Peru, Colombia and Chile are diverting their portfolio decisions towards foreign financial derivatives, including private equity and fixed income investments and investing less in their local companies and in the (domestic) state. These shifts in pension funds' investments can compromise sectoral development throughout the region. Only Mexico's corporate sector has consistently received higher funding from pension funds.

6. Adapting the Chick–Dow centre–periphery framework to Latin American financial structure

A 'core-periphery' framework provides a useful vehicle for locating Latin America's financial evolution, as summarized in Sections 3–5, in the broader global context. Specifically, it can show how subordinate financialisation operates at the level of the financial structures that encompass both financial and non-financial subjects and individual markets. To adapt the Chick–Dow framework for this purpose, it will be useful to make an analytical comparison of Dow's description with institutional circumstances as they have evolved since then.

Dow's characterisation of an advanced economy/ECE core–periphery financial structure includes the following stylised facts: (i) banking systems in peripheral countries (including Latin America) are at lower levels of development and thus have

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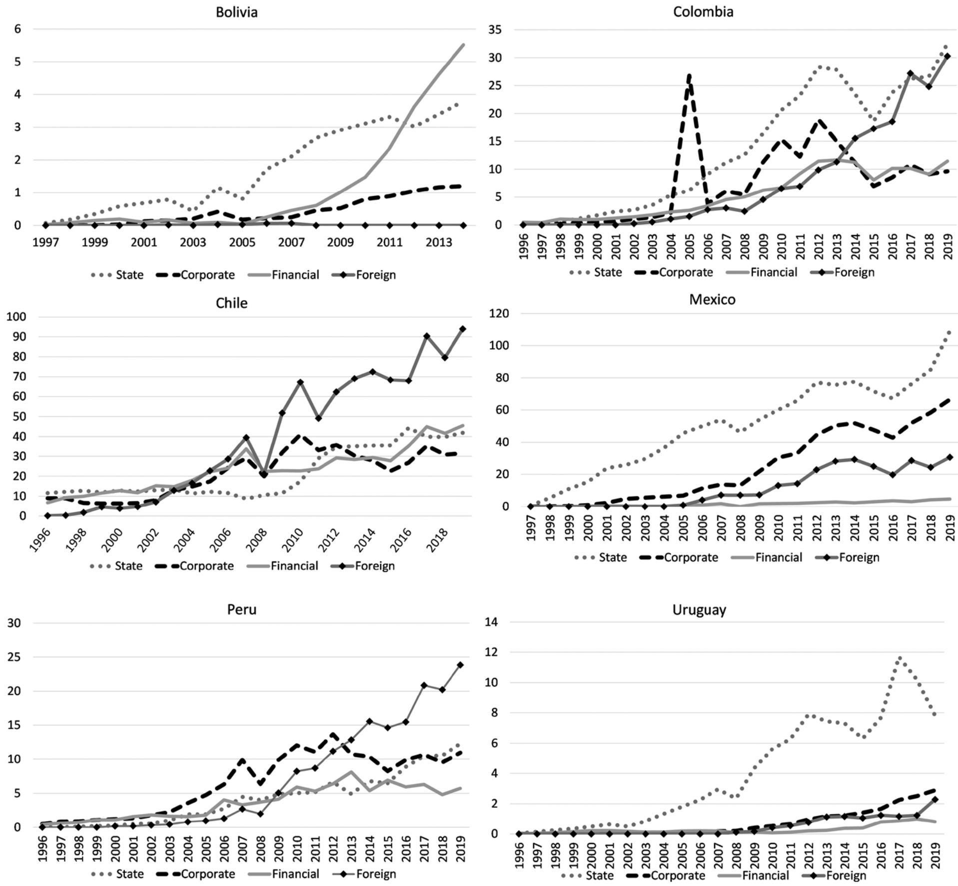

Fig. 4. *Pension funds' portfolio investments (US$B), Uruguay, Bolivia, Mexico, Chile, Peru and Colombia, 1996–2019.*

Source: Organisation for Economic Co-operation and Development (OECD) and International Federation of Pension Funds Administrators. See https://fiapinernacional.org/.

underdeveloped, reserve-constrained credit-creating capabilities; (ii) lending inside the developing country varies with its domestic business cycle; (iii) more developed national financial systems will have more autonomous credit-creation capacity, and vice versa; (iv) financial crises occur in developing economies when exports fall and external lending disappears; (v) foreign banks are not involved in domestic banking fluctuations.

We examine these premises in sequence. Regarding (i), the World Bank's Global Financial Development Database (GFDD) (Čihák *et al.*, 2012) does provide evidence that Latin American financial development lags that of advanced economies: with the exception of Chile and Brazil, both bank assets and credit provided by banks to private-sector borrowers are substantially lower as shares of GDP than in Europe. In addition, average Latin American net interest margin and bank overhead costs are higher than in Europe.

However, the remaining premises, (ii)–(v), are no longer empirically supported. Using data from the GFDD and the IMF, Figure 5 depicts the ratio of bank credit to

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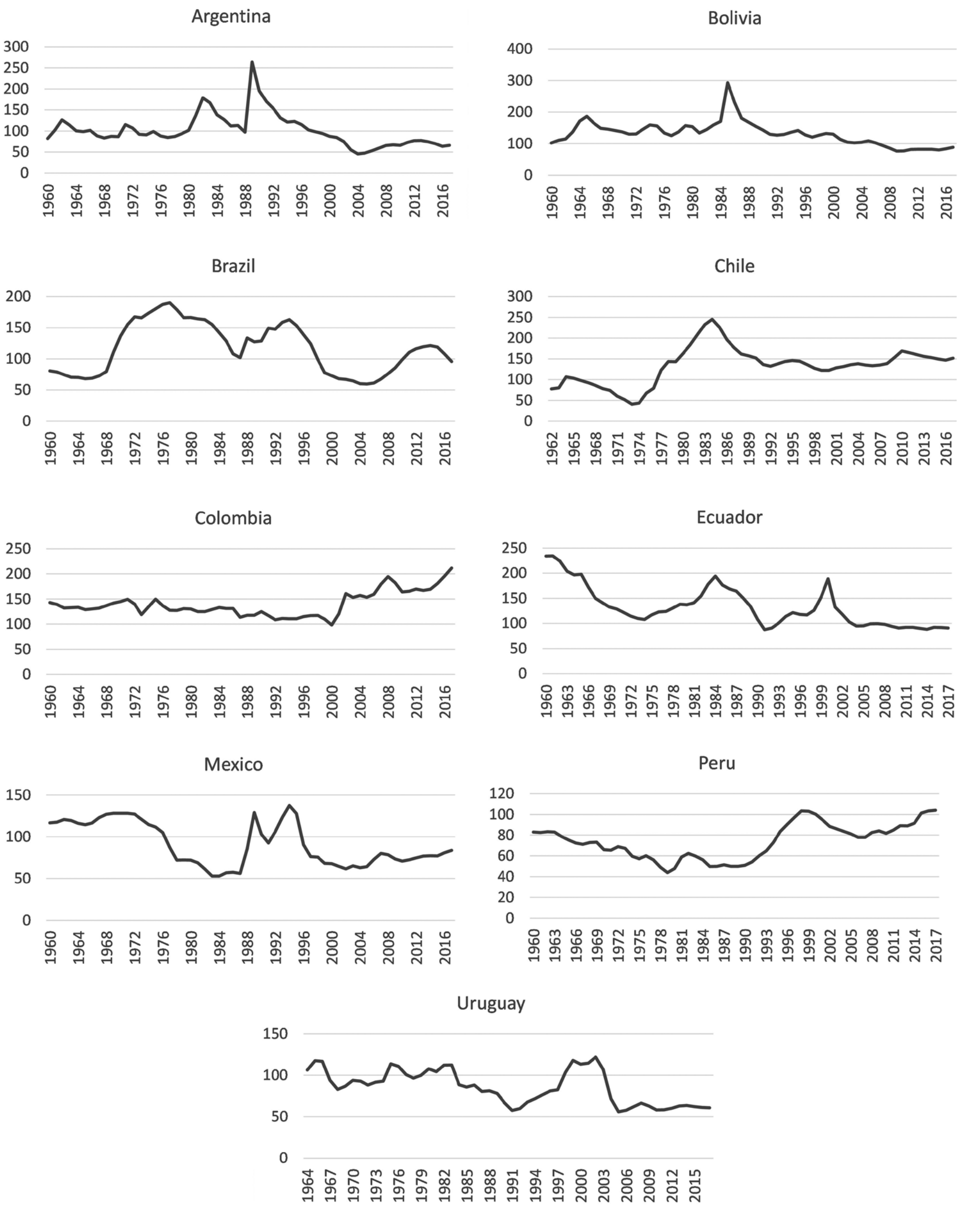

Fig. 5. *Ratio of bank credit to deposits (%), Argentina, Bolivia, Brazil, Chile, Colombia, Mexico, Peru and Uruguay, 1960–2017.*
Source: Raw data from the IMF's International Financial Statistics and Global Financial Development Database, World Bank.

deposits for nine Latin American economies from 1960 to 2017. If the intra-national core–periphery pattern proposed in the Chick–Dow framework obtains, data depicting these ratios should be smooth across time, with some cyclical fluctuations. It is immediately clear that no such pattern obtains. Instead, these data fluctuate wildly over time, and do not obey any common business-cycle pattern. Spikes occur at different

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points in different nations, evidently related to crisis episodes; there is no uniform upward or downward trend. A recent empirical study (Aiolfi *et al.*, 2011) affirms this impression; it finds that Latin American business cycle dynamics are affected by idiosyncratic local shocks, global business cycles and global crises. Figure 5 shows traces of all these factors, without any synchronisation.

Figure 6 depicts wholesale funding totals for the 50 largest Latin American banks in the 2006–19 period. Broad-based growth in these totals is evident through 2013 for all the countries' banks shown; after 2013, four of the seven countries' banks peaked and recorded flat or slightly depressed levels. These data emphasise the point that Latin American banks are not reserve-constrained; they also demonstrate these banks' autonomous credit-creation capacities are unrelated to the domestic business cycle—which, as noted, is no longer well-defined.

These data also contradict the notion that foreign banks are not involved in domestic banking fluctuations. As shown in Section 4, many foreign banks entered Latin America through M&As in the last several decades. They are not just lending to the region, but participating in the region as local financial intermediaries. In Figure 6, 71% of the wholesale funding obtained in Mexico in 2019 was secured by foreign-owned banks; in Peru and Chile, 100% and 53%, respectively. However, only 26% of wholesale funding in Colombia was obtained by foreign-owned banks, and even less—10.7% – in Brazil. These figures demonstrate both the capacity of some Latin American banks to hold their own in autonomous credit operations, but also the diversity of banking activity across the region.

Figure 7, in turn, displays BIS data depicting claims of external lenders, bank and non-bank, on Latin America and the Caribbean from 1977 to 2019. These data show a peak in all claims in 1983, another in 1998 and then a continuous climb from 2006 until reaching a plateau in 2014. Bank claims are depicted, as is the percentage of all reported claims in US dollars. The data shown make three key points pertinent to our argument: first, non-bank claims account for an increasing share of all claims, especially after the global crisis period; second, claims in US dollars have retained a relatively fixed share of this overall market; third, the post-crisis period sees a remarkable upward surge in foreign claims on Latin American/Caribbean borrowers. This last pattern is consistent with the 'spatial fix' hypothesis (Harvey, 2001) especially in light of the collapse of the market for subprime-backed securities after 2006. Figure 8 reveals, contrary to the Chick–Dow core–periphery framework, that investment (gross capital formation) as a share of GDP in Latin America declined consistently in the same post-subprime-peak years that saw a surge in the inflow of overseas credit.

Overall, these data show how both the Chick–Dow (1988) intra-national centre–periphery framework and Dow's (1995) core–periphery analysis of developing economies' cross-border financial dynamics can be made consistent with developments in the quarter-century since these papers were written. Latin American financial markets lag those in Europe along several scales, are not isolated from global markets and indeed are thoroughly penetrated by foreign banks. Credit flows from abroad and domestic institutions' lending capacity have broken free of the constraints imposed by deposit bases; but their growth has not systematically bolstered investment expenditures. Investment (Figure 8) is now subject to a range of disruptive and contradictory impulses, which can originate either from inside or outside national borders.

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Fig. 6. *Wholesale funding 50 big banks by asset size (US$B), Argentina, Brazil, Chile, Colombia, Mexico, Peru and Uruguay (US$M), 2006–19.*

Note: These data represent the volume of wholesale funding in the 2006–19 period for the 50 largest banks in Latin America by asset size, as recorded for 2019 in the Orbis Bankfocus database. We exclude figures for Bolivian, Ecuadorian, Panamanian and Guatemalan banks. Wholesale funding here includes bank deposits, other wholesale deposits, short and long-term borrowings and debt securities, and repurchase agreements, securities loaned and cash collateral.

Source: Orbis Bankfocus.

7. Latin America's global financial subordination and multi-level core–periphery relations

The results in the previous section suggest that some refinements in the Chick–Dow framework are needed in light of changes in financial institutions, practices and regulation that were already at work—but whose significance was not fully recognised—when these authors proposed their framework. In the era of deregulated financial flows and market-based credit, the core–periphery relationship featured in the Chick–Dow framework has become a three-level hierarchical system.

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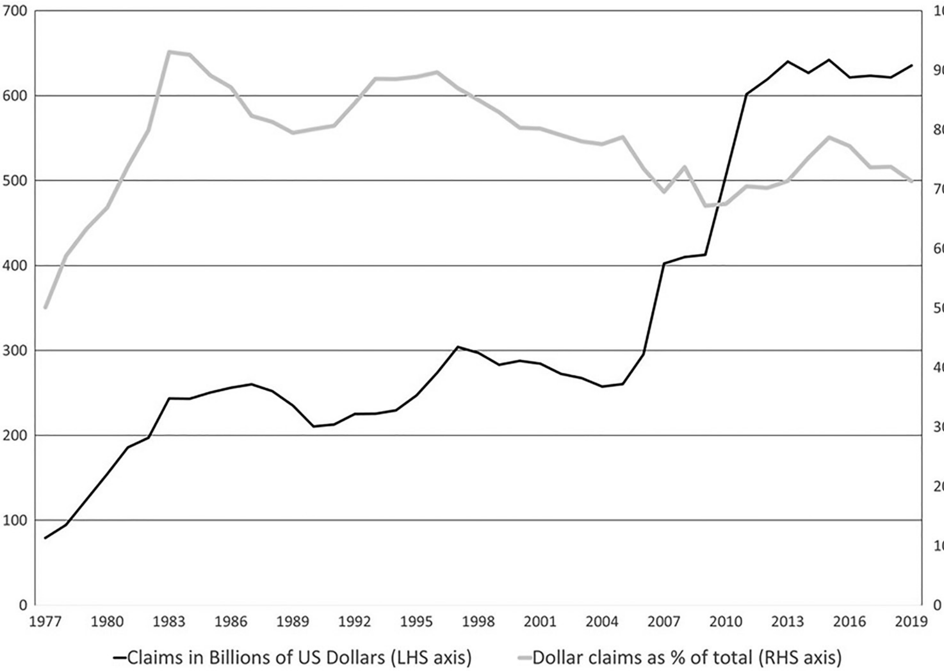

Fig. 7. *BIS-reported foreign claims on Developing Latin America and the Caribbean, 1977-2019: In billions of US$, and US$ claims as percent of all claims.*
Source: Bank for International Settlements (BIS).

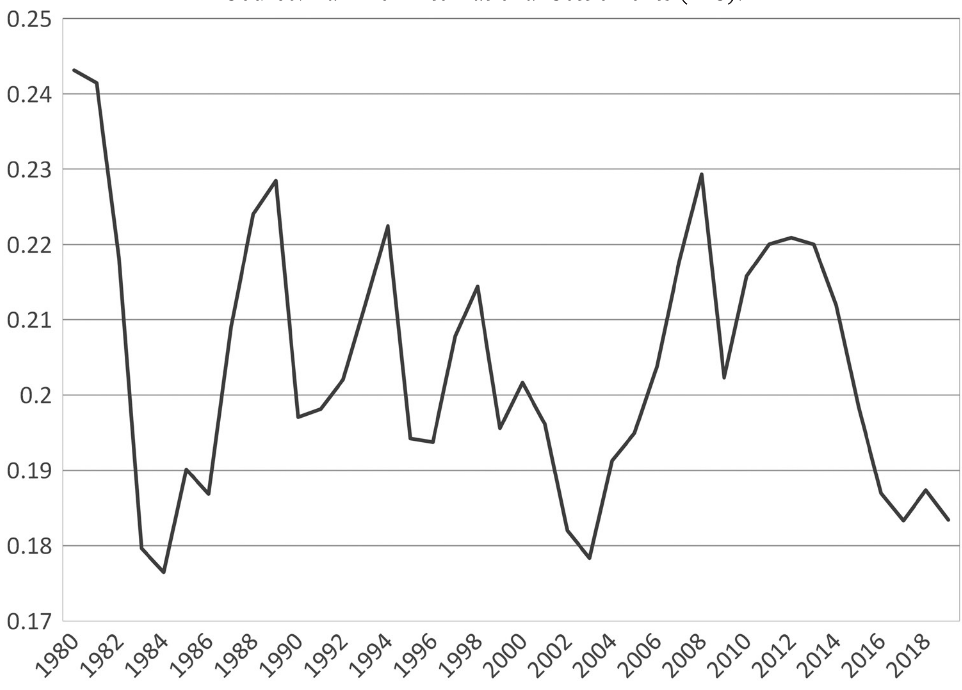

Fig. 8. *Gross Capital Formation, Latin America (% GDP), 1980-2018.*
Source: World Bank Data Catalog.

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Foreign markets and institutions have consistently played a part in ECEs, as dependency theorists have long recognised. But the degree of integration is much more intensive in the era of global finance: the flows of contingent and spot-market contracts, the streams of securitised instruments and flows of fee-based and interest earnings, as well as zero-sum gains and losses are all larger than in the past; and more individuals and institutions, non-financial as well as financial, are using these portals. The global financial cycle channels funds in and out of economies—often at lightning speed—and incorporates them into speculative position-taking whose gains are almost invariably taken by firms and brokers located in centralised (core) markets and with superior technological capacity and better access to liquidity.

Financial flows no longer vary with the domestic business cycle, but instead are at least as dependent on surges of confidence and fear among global investors. One implication of global firms and markets turning the core–periphery relationship from a two-level to a three-level one (global centre, domestic centre, domestic periphery) is that the Schumpeter/Keynes view of banking that implicitly underlies the Chick–Dow framework—the idea that banks generally promote economic development—has to be abandoned. Participants in the global markets are out for themselves and play their own game by their own insider rules (Brunnemeier and Nagel, 2004).[6]

Within the core of global finance, the dominance of the US dollar and US-centred megabanks has only been reinforced since the 1990s, even after the 2008 crisis (Ioannou *et al.*, 2019). The Federal Reserve now underwrites the wholesale money-market on which the global financial system depends. This underwriting—the need to sustain super-leveraged shadow-banking and megabank balance sheets—requires that central banks in core countries maintain very low interest rates; otherwise marking megabank and fund balance-sheets to market would reveal global insolvency. This is behind the desperate post-crisis search for yield-bearing assets by money managers (including those running Latin American pension funds). This in turn leads to wild swings in financial-market sentiment and money flows across global borders, at the heart of which is zero-sum (predatory) trading. It is not just that money-market managers, having pushed aside Schumpeterian bankers, now 'buy to sell', as Minsky would have put it; they 'buy before others buy, to sell before others sell.' This financial-investor logic feeds the global financial cycles that have, as Borio (2012) observed, obliterated the relationship between business-cycle fluctuations and financial flows.[7]

It must also be emphasised that many market-based financial markets are organised as networks, and these networks exhibit a core-hierarchy structure (Veld *et al.*, 2020): to cite three examples, the interbank (Silva *et al.*, 2016B), repo (Hüser *et al.*, 2021) and credit-default swaps (Cont and Minca, 2016) markets. These hierarchical arrangements are stable, and provide cost efficiencies for participating banks, but also encourage collective risk taking (Silva *et al.*, 2016B). This risk-taking, when it exceeds threshold limits, can damage or even destroy these network linkages, as happened in

[6] Minsky (1996) himself, having previously propounded that view (Minsky, 1986), stepped away from it, warning that the money-market capitalism then coming into being would be characterized by short-termism and speculative motives unconnected to industrial development.

[7] While the 2022 surge of price inflation in the wake of Covid-19 supply-side shocks and the war in Ukraine has forced central banks to increase rates, the threat of recession has been pushing in the opposite direction and wild asset-price gyrations have only increased.

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the European interbank market in the 2008 crisis period (Fricke and Lux, 2015); indeed, in the 2008 crisis, banking networks diffused contagion (Gallegati *et al.*, 2008).

While the 2008 crisis demonstrated to some experts that securitisation itself is inherently a source of financial contagion and excess risk-taking (Gallegati *et al.*, 2008), for global-market insiders, preserving the structure of global financial markets was worth any price, including global stagnation (Tooze, 2018). Preserving this structure meant protecting the core hubs in global liquidity, money-market and securitisation networks. The leveraged recirculation of borrowed securities—rehypothecation, especially in the repo market—is now the definition of liquidity (Gabor and Ban, 2016). This system works because the Federal Reserve, playing the role of pace-maker—guarantees that the collateral exchanged between willing counterparties will retain its value. High-quality government paper—US Treasuries—meets this test, trading in liquid markets at stable prices.

The availability of repo funding, as Kaltenbrunner and Painceira (2018) note, has facilitated the further growth of market-based credit markets in Latin America, and is in turn a key factor in these countries' build-up of international reserves. To maintain access to global liquidity—which is the only means of accessing market-based credit—Latin American central banks have had to acquire international reserves in amounts sufficient to reassure their counterparties (Borio 2012). As Caballero *et al.* (2017) have put it, they've had to make these purchases due to the global 'shortage of safe assets', as the price for maintaining access to market-based global finance.

The implication of this condition for maintaining access to global finance is the rather remarkable situation depicted in Figure 9. Latin American countries' overall net investment position is negative for three components—direct, portfolio and other investment. But reserve assets have been systematically increased throughout the 2005–19 period shown (this is the case for every country individually). These countries have essentially overborrowed not just to ward off speculation against their currencies, but to participate in the global system of finance. The presence of this collateral has also allowed cash-rich, non-bank Latin American institutions such as pension funds to participate in money markets (see Figures 3 and 4) and permitted these countries to provide a spatial fix for US banks after the subprime crisis (and their subsequent bailout).

This brings us to the relationship between financial crisis and the core–periphery structure of cross-border finance. A further lesson of the subprime crisis, historicised by Kaminsky and Vega-García (2016) is that financial crises can emanate from the global core, not from problems on the periphery. And while experiments and simulations (e.g., Silva *et al.*, 2016A; Sui *et al.*, 2020) have shown that the core–periphery interbank networks can efficiently handle such 'shocks,' this implicitly holds only within limits. Indeed, given the existence of financial-market insiders who hold both risky and riskless assets, the only way to ensure that the participants in rehypothecated repo networks will maintain 'the repledging chain of collateral' (Grilli *et al.*, 2020, p. 633) is to insure that market prices of both types of assets are maintained. This means counting on a fully-empowered lender of last resort that can maintain such asset-price stability, a lesson learned the hard way in 2008 (Tooze, 2018).

So joining the core–periphery relationship among domestic banks in any nation is another hierarchy, between that nation's leading banks (the 'top 50' Latin American banks highlighted in Figure 6) and the money markets in global core economies; and inside those money markets is a further hierarchy, maintained by the Federal Reserve

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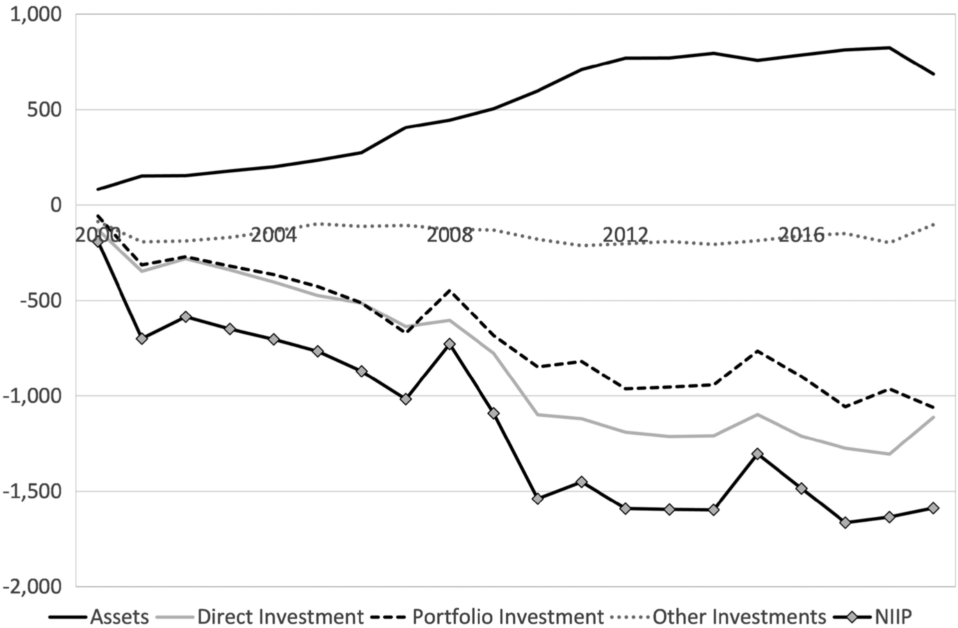

Fig. 9. *Net International Investment Position, Latin America (US$B), 2000-2019.*
Note: Venezuela is not included.
Source: International Monetary Fund.

and overseen by the Financial Stability Board. The key role of hierarchical relations in contemporary financial markets is highlighted by the small number of central banks that have swap lines with the Federal Reserve. In Latin America, only Argentina, Brazil and Mexico hold this privilege. Other hierarchical relations among Latin American central banks are then enabled. But it must be remembered that these global South linkages are far down the line in the networked global financial world, deep in the realm of 'unsafe' assets. It is important to consider, in this context, that the Brady bonds issued in the wake of the Latin American debt crisis of 1982 remained long-term obligations of the sovereign states whose firms had originally taken on those debts; and those bonds were paid off many years after the TBTF banks responsible for the original loans had been made whole by their lender-of-last-resort, dominant-currency issuing central banks.[8]

Financial crises, when they emanate from globalised financial markets, will be mediated through chains of relationships that emanate outward from this layered power hub in the global centre.[9] Borio (2012) has complained that monetary authorities have been fooled in this emergent system, into reacting to financial cycles, instead of reacting to business cycles. But one wonders whether an alternative (short of a

[8] Chiong *et al.* (2014) show that the form adopted for subprime securities, the issuance of which was controlled by some of the same institutions declared too-big-to-fail in 1984, was modelled precisely on that used for Brady bonds, with the intention of assuring that those holding debt obligations purchased as part of securitization processes would be made whole regardless of the consequences for the borrowers who were party to the original loan contracts.

[9] Tarhan (2013) makes this same point forcefully in an essay that identifies core and periphery countries on the world scale.

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complete redesign of a hyper-leveraged global financial system that has, after all, survived a dangerous crisis a decade ago) is possible for those with their hands on that system's levers.

8. Conclusion

While the systemic evolution of Latin American financial systems has worn away the foundations of the binary financial structures observed by Chick and Dow three decades ago, adapting their framework to the contemporary institutional setting permits a systemic grasp of Latin America's place in global finance that might escape notice in market-by-market analysis. Today, banks in the region are no longer reserve-constrained, but can autonomously supply credit, as long as it conforms with what cross-border investors will accept. And credit growth depends on the global financial cycle as well as the business cycle. The unstable balance between the search for yield and liquidity drives cross-border flows; and securing these flows has required host nations to sizably expand their holdings of global reserves ('safe assets'), even when their current-account balances are negative. What has emerged in the era of market-based credit is a financial architecture in which Latin American's banks and non-banks now participate in a multi-layered hierarchy, with multiple sets of core–periphery relations in numerous markets. As Gala *et al.* (2017) put it recently, 'ECLAC was right'.

What this systemic perspective reveals that operationalising globalised financial practices in nations with uniformly inferior positions in the currency hierarchy introduce new financial vulnerabilities. The adoption of the market-based credit approach, which requires access to overseas capital and currency markets, locks in the asymmetric structure of global financial power—and exposure to the possibility that the core institutions of global finance will again, as in 2008, generate a cataclysmic crisis. And that further crisis will most likely again see the core protected but those on the periphery left to their own devices, as were the 12 million US households who lost homes to foreclosure in the subprime crisis. Ironically, then, the very institutional transformations that enable Latin American participation in global markets simultaneously make them both a new venue for surplus extraction and for loss-absorption. To borrow Andre Gunder Frank's (1966) phrase, this modernisation constitutes a new chapter in the 'development of underdevelopment'.

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