

# The changing nature of the financial system: the Chilean experience<sup>1</sup>

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## Key takeaway

- In Chile, pension funds are the dominant force among non-bank financial intermediaries, managing 21% of financial assets (equivalent to approximately 72% of GDP), allocating around 50% of their assets internationally and being the main investor base in the sovereign bond market and a key source for banks' funding.
- As such, pension funds have contributed significantly to economic growth and financial stability by reducing sovereign interest rate and exchange rate volatility, providing currency hedging for the real sector, and providing a stable source of funding for banks' lending.
- However, significant shifts in pension fund allocations can create important challenges. Ongoing policy considerations and regulatory frameworks underscore the importance of sustaining the pension fund system's strength and addressing challenges for continued financial stability and growth.

## 1. Introduction

This note provides an overview of the structural evolution of the Chilean financial system from 2002 to 2022, emphasising its key components and addressing associated challenges and risks. A central focus is given to the interplay between non-bank financial intermediaries (NBFI), particularly pension funds, and their interconnectedness with the banking sector.

**The development of the financial system has been instrumental in propelling Chile's economic growth over the last three decades**, with GDP per capita soaring from approximately USD 2,500 in the early 1990s to over USD 16,000 by the end of 2022. This economic growth has been significantly supported by a well-functioning financial sector providing liquidity, managing risks, and facilitating payments.

**A robust regulatory framework, implemented post the 1982 banking crisis, has been pivotal in shaping the financial landscape.** This framework, among other things, not only ensured stability within the banking sector but also nurtured the growth of the capital market. Critical reforms in pension systems, securities market laws and corporate regulations initiated in the early 1980s have been complemented

<sup>1</sup> Note prepared to be presented at the BIS meeting of Deputy Governors on 18–19 March 2024.

by successive capital market reforms, strengthening both the banking system and the broader capital market. Furthermore, during the 2000s, Chile enhanced its economic policy framework, enabling monetary and fiscal policies to act countercyclically. This included a reinforced inflation targeting framework, increased capital account integration and a more flexible exchange rate regime, which was fully adopted in September 1999 (Berstein and Marcel (2019)).

**In particular, the introduction of the pension fund system marked a paradigm shift, positioning Chile as a global pioneer.** This departure from conventional pension systems allowed private institutions to manage individual pension accounts, introducing a novel era of individual capitalisation.

**Accordingly, pension funds emerged as a cornerstone of the financial system**, managing 21% of Chilean financial assets (approximately 72% of GDP). This figure surpasses those of other emerging market economies (EMEs) and is nearly double that of advanced economies. Notably, a substantial portion of these assets is held in the form of banks' liabilities, contributing to the resilience and expansion of the financial system, and facilitating local agents' access to long-term debt at lower rates.

**Pension funds dominate the bond market investor base**, representing a direct source of long-term financing to the non-financial private and public sectors. In particular, and unlike those in other EMEs, the Chilean sovereign bond market relies less on non-resident investors (Alfaro and Calani (2018)).

**NBFIs, encompassing pension funds (PFs), insurance companies (ICs), mutual funds (MFs) and non-bank lenders (NBLs) have become pivotal in providing financial services to households and firms.** While their credit to the non-financial sector was minimal in the mid-1980s, it surged to represent around 70% of GDP by the end of 2022.

**Institutional investors have acted as a stabilising factor in the national long-term debt market.** By adopting a long-term investment horizon characterised by a buy and hold strategy in managing their investments, especially in the fixed income market, PFs have significantly reduced the volatility of sovereign interest rates (Álvarez et al (2019)).

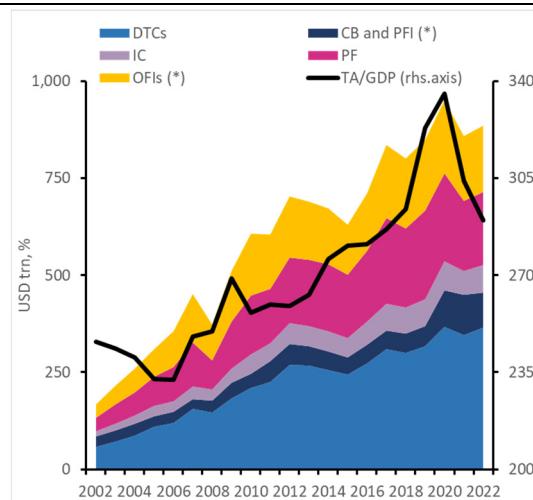
## 2. Financial assets overview

**As of the end of 2022, financial institutions in Chile held financial assets amounting to 289.9% of GDP**, marking a decline from the peak observed in 2020 (335.6%). While this places Chile's total financial assets as a percentage of GDP on par with other EMEs (348%), it is notably lower than the figures for advanced countries (768%). In terms of dollars, total financial assets reached USD 885.6 trillion by the end of 2022, reflecting a 3% increase from the previous year. This growth comes after a 10% contraction witnessed in 2021 (Figure 1). Taking a longer perspective, total financial assets as a percentage of GDP exhibit a slight increase since the early 2000s. However, this growth is relatively moderate compared to other countries, indicating a phase of consolidation following the rapid expansion experienced a decade earlier (FSB (2020)).

**By the end of 2022, private NBFIs held 48.5% of total financial assets, equating to 140.7% of GDP, and were playing a central role as the primary intermediary sector in Chile.** Deposit-taking corporations (DTCs), primarily banks, accounted for 41.3% of total financial assets, showcasing an increasing participation in recent years. The remaining share is collectively held by the central bank (CB; 9%) and public financial intermediaries (PFIs; 1.2%). When benchmarked against other countries, NBFIs' share of total financial assets in Chile (48.5%) falls between that of advanced economies (54.5%) and EMEs (27.8%). This represents a contraction from its pre-pandemic level (56.6%) and a decrease from its historical peak observed before the Great Financial Crisis (59.8%; Figure 2).

**Chile's substantial reliance on NBFIs can be primarily attributed to the pronounced presence of PFs, which exceeds the averages in both advanced and emerging market economies.** PFs account for a noteworthy 21.2% of total financial assets, with other financial intermediaries (OFIs) holding 19.4% and ICs 8%. Consequently, PFs emerge as the dominant subsector within NBFIs, holding 43.7% of NBFIs' assets, followed by ICs (16.4%) and OFIs (12.5%). In comparison to other economies, the share of total financial assets held by PFs in Chile surpasses the percentage observed in advanced economies (11.3%) and significantly exceeds that in EMEs (1.5%; Figure 3).

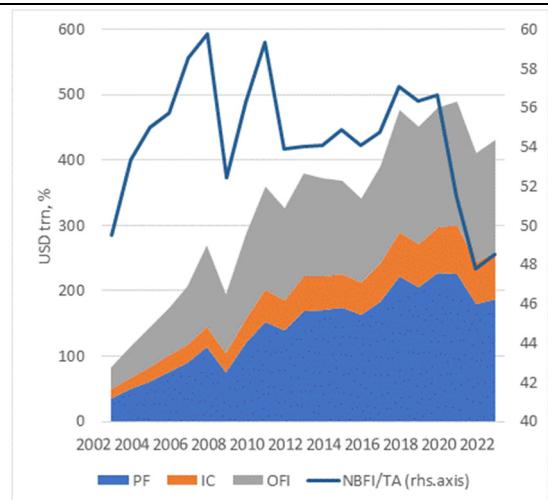
Figure 1: Chile: Total financial assets by type of intermediary



\* CB and PFI: Central bank and public financial institutions. OFIs: Other financial intermediaries include mutual funds, investment funds and other funds.

Source: Central Bank of Chile, based on FSB (2020).

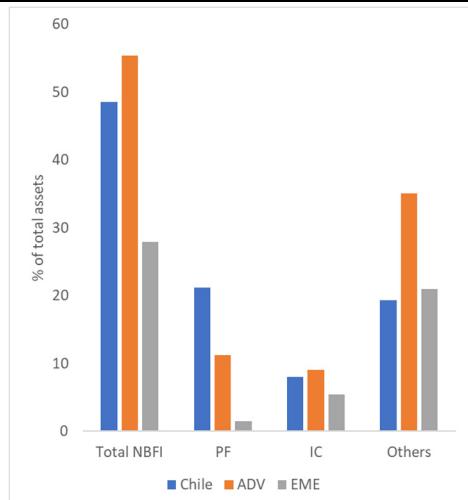
Figure 2: Chile: Non-bank financial intermediaries (NBFIs)\*



\* NBFIs include pension funds (PFs), insurance companies (ICs) and other financial intermediaries (OFIs).

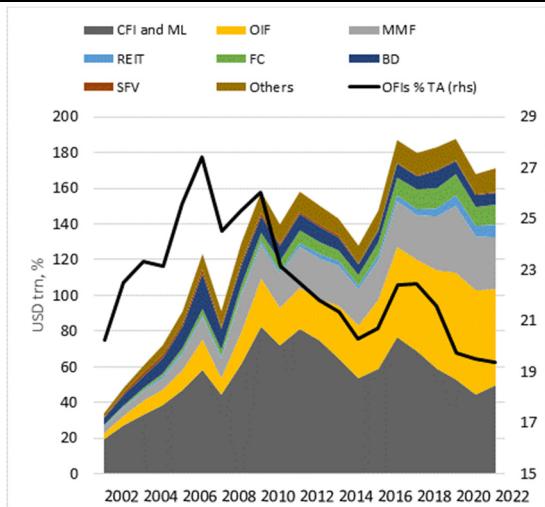
Source: Central Bank of Chile, based on FSB (2020).

Figure 3: NBFI by type



Source: Central Bank of Chile, based on FSB (2020).

Figure 4: Chile: Other financial intermediaries (OFIs)\*



(\*) OFIs includes Money market funds (MMF), other investment funds (OIF), real estate investment trusts and funds (REIT), finance companies (FC), broker dealers (BD), structured finance vehicles (SFV), captive financial institutions (CFI) and money lenders (ML), and others, including non-banks credit card issuers, credit insurance, and non-profit social security benefits administrators.

Source: Central Bank of Chile, based on FSB (2020).

**Chile's financial system exhibits a lesser dependence on OFIs.** OFIs hold 19.4% of NBFI assets, equivalent to 56.1% of GDP, a substantially smaller proportion than observed in advanced economies (34.2%) and more closely aligned with EMEs (20.9%). The current share of OFIs in total financial assets is below its historical average (22%) and the peaks observed in 2007 (27.4%) and 2010 (26%), when the value of the equity positions in investment funds substantially increased. Presently, the sectoral composition of OFIs is characterised by a notable rise in assets held by "other investment funds" (31.3%), which can be partially attributed to tax incentives established in 2012, followed by "captive financial institutions and money lenders" (CFI and ML, 29.1%) and "money market funds" (MMFs, 16.9%). Significantly, when measured relative to GDP, all these categories have experienced a decline over the last three years.

**Financial assets held by NBFI as a percentage of GDP has experienced a decline since 2019 in Chile.** The ratio of NBFI assets to GDP decreased from 182.9% in 2019 to 140.7% in 2022. This contrasts with the global trend, where NBFI assets have shown robust growth. The decline in Chilean NBFI assets can be attributed to decreases across all components of NBFI, primarily influenced by a substantial reduction in PFs' assets from 86.7% of GDP in 2019 to 61.5% in 2022. OFIs' assets declined from 69.7% to 56.1% of GDP, while ICs' assets dropped from 26.6% to 23.1% of GDP over the same period. Among OFIs' subsectors, "captive financial institutions and money lenders" experienced a decline from 22.4% to 16.3% of GDP during the 2019–22 period, and "other investment funds" also saw their assets decrease by 3.4% as a percentage of GDP in 2022 compared to 2019. However, when measured in dollar

terms, certain NBFI subsectors, notably the PF, IC, CFI and ML sectors, saw increases in 2022 compared to 2021 (Figure 4).

**The combined financial assets of the CB and PFIs amount to USD 90 trillion, constituting 10.2% of total financial assets.** Following a peak in 2021 at USD 103 trillion, the assets held by the CB and PFIs experienced a 13% decline in 2022 compared to the previous year but still remained 4% above the pre-pandemic level. In a global context, the financial assets held by the CB in Chile, equivalent to 26% of GDP at the end of 2022, are notably lower than those of advanced economies (62%) but comparable to the figure for EMEs (33%). Conversely, the assets held by PFIs in Chile are nearly negligible at 1.2% of GDP, contrasting sharply with both advanced and emerging market economies (30% and 20% of GDP, respectively).

**Although the total financial assets held by DTCs have continued to grow in dollar terms, there has been a decline in their percentage relative to GDP.** As of the close of 2022, the assets held by DTCs represented 120% of GDP, reflecting two years of decreases from the peak in 2020 (130% of GDP). Banks account for 99% of the assets held by DTCs and 85% of these assets are held in the form of loans.

**Credit assets amount to 190.9% of GDP, with most of the intermediation facilitated by DTCs.** By the close of 2022, credit assets, encompassing loans and deposits, constituted 65.9% of total financial assets. DTCs assert dominance in this domain, holding 61.7% of these assets – equivalent to 117.7% of GDP. Other key contributors include PFs (17.2%), OFIs (11.9%) and ICs (9.2%). In comparison to global counterparts, the share of DTCs in credit assets is notably lower due to the significant involvement of PFs, which hold deposits in other financial institutions equivalent to 32.9% of GDP.

**Total loan assets, amounting to 112.2% of GDP, are primarily held by DTCs (84.6%), followed by OFIs (22.7%) and ICs (4.9%).** The proportion of non-banks (ICs and OFIs) holding loan assets experienced a gradual increase in the years leading up the pandemic, reaching 27.3% of total loan assets by the end of 2020. However, post-pandemic, the share of banks in loan holdings has reasserted its prominence, reflecting strategic financial policies implemented during the Covid-19 crisis (Figure 5).

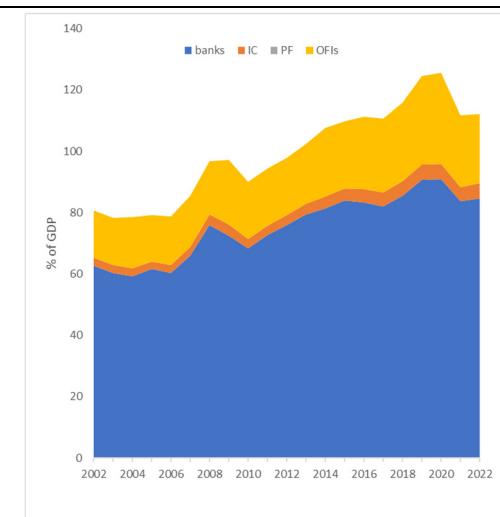
**While the NBL sector in Chile constitutes a modest 2% of total financial assets,** its role in the consumer loan segment is notably significant. Comprising savings and loans associations (S&Ls), factoring, leasing and automobile finance companies, family compensation funds (CCAFs) and non-bank credit card issuers, the NBL segment plays a pivotal role in the consumer credit landscape, commanding a 23% share. Within this segment, factoring companies have experienced robust growth in recent years, while major retail credit card issuers have shifted their credit portfolios to the banking sector through banking services support companies. Despite its smaller scale in terms of assets, the NBL sector relies on financing from banks to furnish consumer loans, introducing additional interconnection between NBLs and the commercial banking sector (Central Bank of Chile (2021)).

**PFs in Chile exhibit a distinctive trend of allocating more than half of their assets internationally, aligning with a pattern observed in other economies reliant on commodity exports.** However, Chile's PFs surpass their counterparts in both advanced economies and EMEs in terms of the extent of foreign holdings (Figure 6).

**PFs in Chile maintain approximately 50% of Chilean sovereign bonds within their portfolio.** Despite their historically dominant position, recent trends indicate an uptick in non-resident investors' participation in this market, peaking at almost 20% before the onset of the pandemic. Nevertheless, as of the close of 2022, foreign investors accounted for just 11% of local currency government debt (Figure 7). This figure falls below the average observed in EMEs and notably lags behind the corresponding percentages in advanced economies.

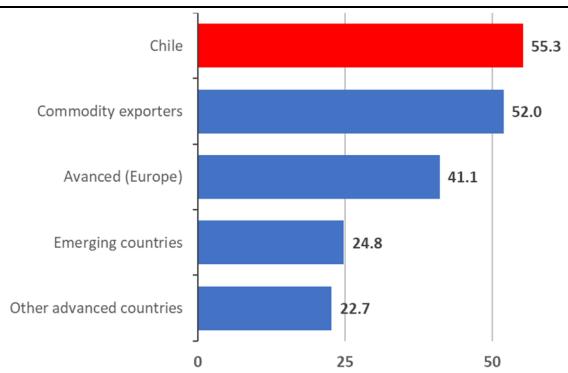
**In Chile, the narrow measure for NBFI, reflecting diverse risks contingent on their economic functions, has experienced rapid growth since the early 2000s.** As of the close of 2022, the narrow NBFI measure stood at USD 63.7 trillion, constituting 7% of total financial assets. This relatively modest representation of the narrow NBFI measure can be attributed to stringent regulatory oversight of non-bank entities. Over the long term, the narrow NBFI measure has risen from 14.7% of GDP in 2002 to over 20% of GDP in 2022.

Figure 5: Loan assets by financial intermediaries  
As a percentage of GDP



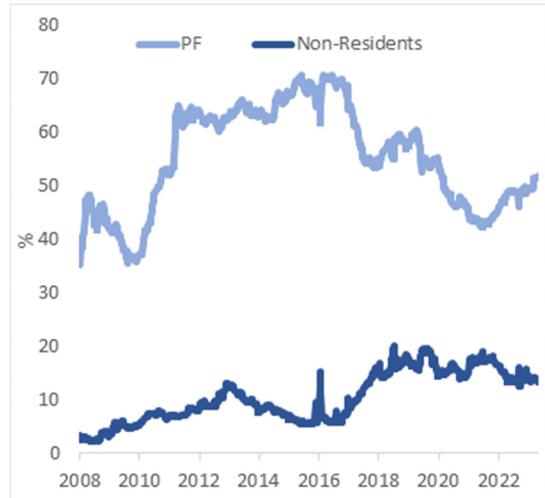
Source: Central Bank of Chile, based on FSB (2020).

Figure 6: Pension funds' investment abroad  
In per cent



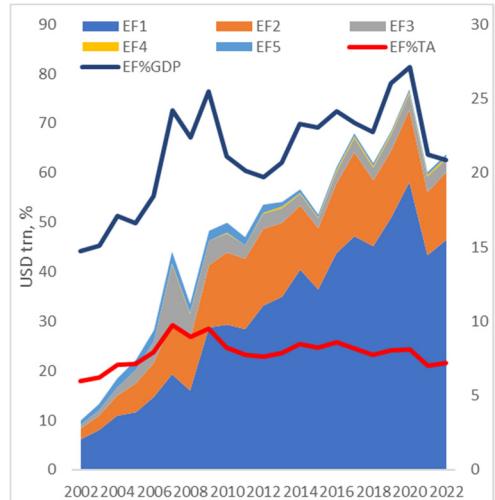
Source: OECD.

Figure 7: Sovereign bonds investor base



Source: Central Bank of Chile.

Figure 8: NBFI economic function



EF1: Management of collective investment vehicles with features that make them susceptible to runs. EF2: Loan provision that is dependent on short-term funding or on secured funding of assets. EF3: Intermediation of market activities that is dependent on short-term funding or on secured funding of client assets. EF4: Facilitation of credit creation. EF5: Securitisation-based credit intermediation and funding of financial entities.

Source: Central Bank of Chile.

**The predominant economic function within the narrow NBFI measure is the management of collective investment vehicles with features that make them susceptible to runs (EF1).** These assets encompass 73% of the total narrow NBFI measure and are primarily constituted by MMFs and fixed income open-ended funds (FIFs). By the end of 2022, around 50% of MMFs' assets consisted of time deposits in the domestic banking system, indicating a recovery from the substantial decline witnessed in 2021, attributed to policy measures enacted to mitigate pandemic-induced impact. In fact, the assets held by the CB (USD 90 trillion by 2022) emerged as the largest funding source for banks, owing to special lending facilities implemented to facilitate credit flow. The second most significant economic function within NBFI involves loan provisions reliant on short-term funding or on secured funding of assets (EF2), featuring notable contributions from finance companies (62%), a non-profit social security benefits administrator (30%) and non-bank credit card issuers (6.3%).

### 3. Challenges and risks

**As well as their level of interconnection, the high funding exposure of banks to NBFI (including PFs and MMFs) compared to the international average presents risks akin to traditional banks (Figures 9 and 10).** While current regulations mitigate risks associated with NBFI, their significant presence and interconnected nature raise concerns. Nonetheless, recent policies during the pandemic have

lessened banks' exposure to these entities, as banks have increased reliance on CB funding. Having said that, continued improvements are essential to prevent potential risks from impacting the broader financial system. The significant presence and interconnectedness of NBFIs in Chile's financial system present a vulnerability. While NBFIs contribute to stability and development, their relatively large sector in Chile raises concerns.

**The substantial reliance on institutional investors, particularly MFs and PFs, as a primary source of bank funding serves as a stabilising force during normal market conditions.** However, this symbiotic relationship reveals vulnerabilities when subjected to stress scenarios, marked by the abrupt reduction or non-renewal of institutional funding. The discernible sensitivity of MFs and PFs to market signals has impacted the funding conditions of certain banks, especially those of smaller stature. Recent episodes underscore their susceptibility to market dynamics, presenting funding challenges for banks, with a pronounced impact on smaller entities that remain considerably reliant on MF funding, albeit witnessing a recent decline. Furthermore, banks, irrespective of their size, may encounter heightened funding costs in scenarios where reputational risk or perceived vulnerability to excessive risk-taking is evident in the market. This escalation in funding costs poses a potential threat to financial stability. Nevertheless, the regulatory framework on bank liquidity management established by the CB emerges as a pivotal mitigating factor in addressing these funding risks.

Figure 9: Banks' liabilities by sector

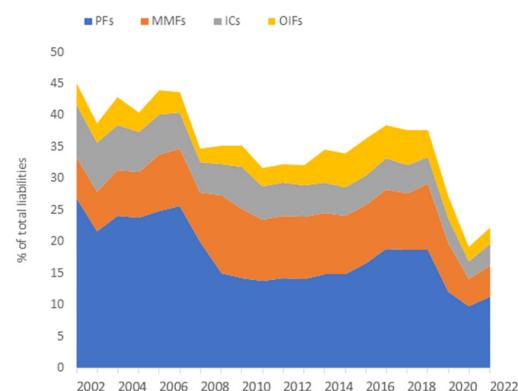
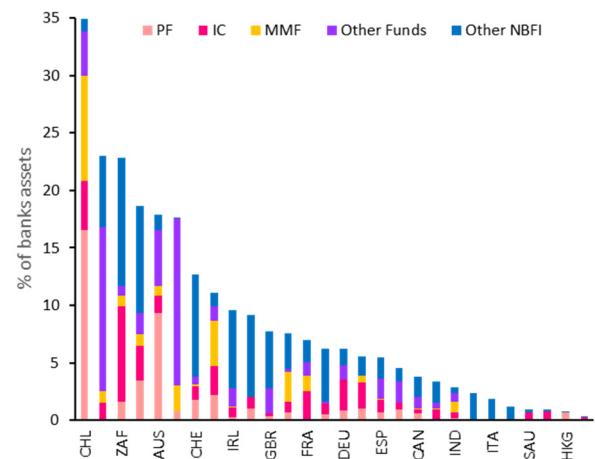


Figure 10: Total financial assets by type of NIFI



Source: Central Bank of Chile.

Source: Central Bank of Chile, based on data from FSB (2020)

**Institutional investors, typically a stabilising force, can turn into a risk factor during periods of market stress, as witnessed in advanced economies during the Great Financial Crisis (GFC).** The spectre of intensive asset liquidation, though not realised in Chile, raises concerns about potential volatility and necessitates regulatory interventions. In ordinary circumstances, institutional investors play a stabilising role by facilitating risk diversification among a diverse group of investors with varying risk appetites, acting as a buffering agent against financial shocks. However, in times of stress, the need for rapid asset liquidation due to high withdrawal levels may compel these investors to amplify market effects. The GFC showcased instances where MMFs, despite not being catalysts for the crisis, exhibited the capacity to propagate its impacts. The attractiveness of investing in MMFs lies in the stability of their amortised cost valuation. Paradoxically, this stability can induce investors to redeem their funds during stress, providing an advantage to those activating redemptions first. Although Chile has not experienced this risk, events preceding 2011 highlighted potential vulnerabilities in MMF share revaluation, prompting regulatory changes to reduce discretion and align share values more closely with market prices, thereby mitigating volatility effects.

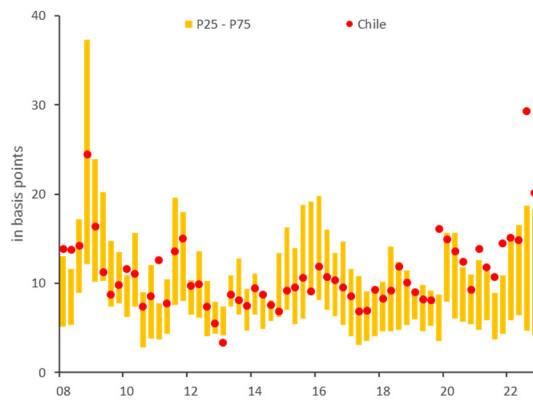
**The multi-fund system inherent in PFs, while designed to cater to diverse risk-return preferences, introduces risks stemming from sizeable shifts between funds.** These substantial movements, triggered by affiliates' choices, necessitate rapid portfolio rebalancing, resulting in distortions and adverse impacts on the local market. The vulnerability is particularly pronounced during periods of legislative changes, exemplified by the recent early withdrawal allowance for PF savings, culminating in extensive liquidation. The multi-fund system's flexibility, allowing affiliates to freely transition between fund types, poses challenges for fund managers. The need for abrupt portfolio rebalancing to align with affiliates' changing preferences amplifies the potential for market distortions and adverse effects, underscoring the importance of vigilant risk management strategies within the PF landscape.

**The growing reliance on non-resident investors within the sovereign bond market introduces potential vulnerabilities**, giving rise to risks such as heightened interest rates and increased exchange rate volatility (Figure 11). Institutional investors, notably PFs, traditionally exhibit a long-term investment horizon, and have adhered to a buy and hold strategy, especially within the fixed income market. The empirical evidence underscores that such characteristics contribute to diminishing the volatility of sovereign interest rates (Álvarez et al (2019)). In the Chilean context, the persistently low volatility of the 10-year central bank rate aligns with a substantial presence of institutional investors in the sovereign debt market. However, the buy and hold strategy's impact on liquidity in the capital market is a nuanced concern, further explored in subsequent discussions.

**The evolution of the Chilean financial system has positioned the economy to harness increased financial integration, avoiding typical vulnerabilities linked to excessive capital flow volatility.** In contrast to more advanced economies, the impact of the GFC on Chile was mitigated due to the heightened reliance on traditional NBFIs like PFs, MFs and ICs, all encompassed within the ambit of robust financial regulation and supervision. Notably, PFs and ICs exhibit a preference for local market liabilities, fostering countercyclical responses to shocks and cultivating a heightened awareness of external risks. Although PFs have diversified their

investment overseas, ICs maintain a bias towards local currency and inflation indexation. However, it is important to note that institutional investors can exhibit procyclical behaviour in the face of adverse shocks originated locally.

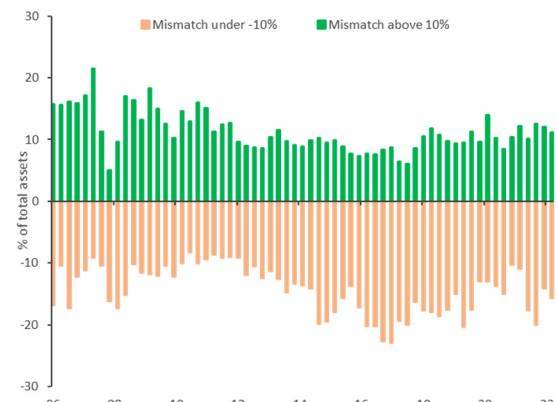
Figure 11: Sovereign rate volatility in EMEs



EMEs include Brazil, China, Colombia, Hungary, India, Indonesia, Malaysia, Mexico, Peru, Poland, Russia and Turkey. Annualised standard deviation of daily return during each quarter.

Source: Central Bank of Chile based on Bloomberg data.

Figure 12: Exchange rate mismatch



Considers sample of companies reporting their balance sheets in pesos. The mismatch measures dollar liabilities minus dollar assets, minus net position in derivatives, as a percentage of total assets. Does not consider state-owned companies or those classified in the financial services and mining sectors.

Source: Central Bank of Chile based on Financial Market Commission (FMC) data.

**PFs serve a pivotal role by assuming the counterparty position for domestic entities exposed to currency risks from foreign liabilities.** In a context of higher exchange rate volatility, the corporate sector exhibits a limited currency mismatch (Figure 12). Thus, companies with a mismatch of more than 10% accumulate 11% of total assets, while those with a mismatch of less than -10% account for 15%. Firms and financial institutions strategically leverage PFs in domestic or global markets to offload interest rate and currency risk, aligning with their strategic goals. Notably, PFs engaging in foreign investments strategically undertake the role of a counterparty for corporations grappling with currency risk associated with external debt. This risk management approach within the financial market empowers economic agents to make informed decisions on risk exposure and critical investments.

**Recent developments have introduced dynamics that challenge the traditional stabilising role of institutional investors.** Over the past decade, factors such as increased movement between PF types and successive legislative approvals enabling early PF savings withdrawal have altered the historical behaviour of pension funds. This is evident in substantial shifts between funds with different risk profiles, rising from 8.1% in 2014 to 25.6% in 2019. The Covid-19 pandemic further accelerated this trend, compelling the liquidation of over USD 36 billion in diverse financial assets within a brief period. The magnitude of these events has introduced tension into the financial system, prompting ongoing studies to unravel their deeper effects on both the capital market and the broader economy (Ceballos and Romero (2020)).

## 4. Some policy considerations

**The main NBFIs in Chile are subject to a robust regulatory and supervisory framework.** The risk of PFs is mitigated by the legal framework and the supervision of the Superintendence of Pensions. The investment made by a PF is regulated in detail, with investment caps per instrument and issuer that limit the funds' exposure to individual entities. MFs, in turn, are under the supervision of the Financial Market Commission (FMC) and subject to regulation by the Single Funds Act, which corresponds to a legal framework that has harmonised and unified the rules governing mutual and investment funds and established various safeguards on their investments. In the case of ICs, mitigators are mainly related to the solvency and risk management requirements established in the relevant statutory decree, which were recently strengthened, and supervision by the FMC.

**Furthermore, the CB's regulations on bank liquidity risk management constitute an important mitigator for funding risk.** Historically, the CB's regulations on liquidity risk have established 30- and 90-day maturity mismatch limits. In 2015, regulatory limits were established for the Liquidity Coverage Ratio (LCR), whereby a high level of liquid assets was required to adequately face stress scenarios, including the modelling of a possible sudden withdrawal of funding by institutional investors.

**Chile follows international regulatory practice to stabilise the valuation of MMFs, aimed at mitigating the risks of intensive asset liquidation.** Since 2010, the FMC regulations on the valuation of type 1 mutual funds (MF1) maintain amortised cost valuation of shares as a fundamental characteristic of MMFs and include mechanisms to reduce their deviation from market value.

**The application of a risk-based supervision (RBS) model for ICs, as well as a move towards a supervisory framework for financial conglomerates, are still pending.** Since 2012, the FMC has moved towards an RBS model for insurers, like the bases of the Basel Framework. However, this implementation would require a change in the applicable legal framework. On the other hand, the FMC is currently working on a methodology for monitoring conglomerates and on a legal proposal on consolidated supervision that grants it the necessary powers to supervise financial conglomerates effectively.

**A consolidated debt registry would facilitate the measurement of direct and indirect risks implicit in consumer portfolios and the management of credit risk in general.** In Chile, the FMC maintains a credit registry for the banking system. However, it does not include information on credit activity outside the banking system. The incorporation of retail credit cards into the bank credit registry in recent years has contributed to consolidating credit information. However, significant gaps remain with respect to the consolidation of information and the incorporation of data on credit provided by other NBLs, such as non-bank consumer loans, automobile loans, factoring and leasing, which have recorded high growth rates.

**The regulatory frameworks for NBLs remain fragmented,** which implies additional complexities in the propagation of risks to the banking industry. In particular, S&Ls have a dual supervision scheme, supervision of family compensation funds primarily aims to protect the integrity of social security benefits, while factoring

companies are not subject to different supervision schemes depending on whether they operate as bank subsidiaries or other corporate entities.

## 5. Conclusions

The structural evolution of the Chilean financial system from 2002 to 2022 reveals a robust and well-functioning landscape, with PFs emerging as a cornerstone, managing 21% of Chilean financial assets. The financial sector's instrumental role in economic growth is evident, with GDP per capita soaring from USD 2,500 in the early 1990s to over USD 16,000 by 2022. The introduction of the pension fund system marked a paradigm shift, positioning Chile as a global pioneer in individual capitalisation.

Despite challenges, including a decline in total financial assets from the peak observed in 2020, the system remains resilient. NBFIs, especially PFs, play a pivotal role in providing financial services, contributing around 70% of GDP by the end of 2022. However, challenges such as the high funding exposure of banks to NBFIs, significant shifts in pension fund allocations and potential vulnerabilities in the sovereign bond market pose risks that require ongoing vigilance.

Policy considerations include the need for continued regulatory oversight, risk management strategies and addressing gaps in credit registries. The regulatory framework has been pivotal in mitigating risks, but ongoing improvements are essential. Institutional investors, particularly PFs, are acknowledged as having a stabilising role during normal conditions but may pose risks during periods of market stress, requiring regulatory interventions.

In conclusion, the Chilean financial system's evolution positions it as a key player in economic growth and stability, with PFs playing a central role. Ongoing policy considerations and regulatory enhancements are crucial to addressing emerging challenges and ensuring the continued resilience of the financial landscape.

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