Latin American Journal of Central Banking xxx (xxxx) xxx

Contents lists available at ScienceDirect

Latin American Journal of Central Banking

journal homepage: www.elsevier.com/locate/latcb

# The finances of Chilean households during the pandemic: an assessment from the 2021 Household Financial Survey

Enzo Cerletti [a,*], Magdalena Cortina [b], Alejandra Inzunza [a,c], Felipe Martínez [a], Patricio Toro [a]

[a] Central Bank of Chile, Santiago, Chile
[b] Texas A&M University, Department of Economics, College Station, TX, USA
[c] Bocconi University, Department of Finance, Milano, Italy

ARTICLE INFO

*JEL:*
D12
JEL E21
JEL G51

*Keywords:*
Household finance
Pandemic
Consumption
Stimulus
Pension fund withdrawals

ABSTRACT

The policies adopted in Chile to mitigate the impact of the Covid-19 pandemic stand out for their magnitude: they implied an increase in the liquidity of the household sector of 29 % of the 2019 GDP in an interval of 18 months. We use the 2021 Chilean Household Financial Survey to assess the impact of the pandemic and the massive liquidity shock generated by the policy response on financial decisions and the financial situation of Chilean households. We find that households used the additional liquidity to recover their consumption levels, reduce debt, and accumulate liquid assets. Once the support measures were phased out, households retained buffers, allowing them to maintain a high level of expenditure despite unfavorable macroeconomic changes. Finally, we document that the ultimate effect of the implemented policies was a deterioration in households' financial conditions, particularly for those with lower incomes.

## 1. Introduction

The Covid-19 pandemic represented a simultaneous shock in consumption and employment for many households around the world. As in many other jurisdictions, the Chilean authorities tried to mitigate the impact of these shocks through direct transfers and employment protection policies. However, the case of Chile stands out due to the magnitude of the funds made available to households. The combination of direct government transfers and early pension fund withdrawals amounted to a liquidity shock to household of 29 % of the 2019 GDP in an interval of 18 months. Thus, the Chilean case provides a unique opportunity to understand the financial reaction of households to a massive liquidity shock.

Central Bank of Chile. We thank the comments and suggestions of Rosario Celedón and Rodrigo Alfaro. The views expressed are those of the authors and do not necessarily represent the views of the Central Bank of Chile or its board members. This study was developed within the scope of the research agenda conducted by the Central Bank of Chile (CBC) in economic and financial affairs of its competence. The CBC has access to anonymized information from various public and private entities, by virtue of collaboration agreements signed with these institutions. To secure the privacy of workers and firms, the CBC mandates that the development, extraction and publication of the results should not allow the identification, directly or indirectly, of natural or legal persons. Officials of the Central Bank of Chile processed the disaggregated data. All the analysis was implemented by the authors and did not involve nor compromise the Pension Supervisor.

* Corresponding author.
*E-mail addresses:* ecerletti@bcentral.cl (E. Cerletti), mcortinat@tamu.edu (M. Cortina), ainzunza@bcentral.cl (A. Inzunza), fmartinez@bcentral.cl (F. Martínez), ptoro@bcentral.cl (P. Toro).

https://doi.org/10.1016/j.latcb.2025.100175
Received 8 October 2024; Received in revised form 17 March 2025; Accepted 16 April 2025

In this document, we analyze the impact of the pandemic and the measures aimed at supporting households on their financial decisions and situation. We focus on microlevel changes in the composition of assets, indebtedness, and financial ratios to assess their financial fragility during the pandemic and its links with macro-outcomes in the aftermath. To do this, we use the Household Financial Survey (*Encuesta Financiera de* Hogares, EFH) of the Central Bank of Chile. Its latest wave, corresponding to 2021, provides rich information on the financial situation during this period.[1] We complement this information with administrative records from different sources and data from the National Accounts.

The ability of households to cope with negative income shocks depends largely on the he structure of their financial balance sheet (Du Caju, 2013; Sierminska and Medgyesi, 2013; Slacalek et al., 2020). Household financial surveys remain the most important source for studying household balance sheets and explore their heterogeneity. These surveys collect detailed information about the assets and debts of households. Unlike administrative records, surveys provide an extensive socioeconomic characterization of households, in addition to information regarding financial decisions and perceptions. Therefore, we start with a brief characterization of the balance sheet of Chilean households before the pandemic using the EFH.

Before the wake of the pandemic, shorter-term debt classes, such as credit cards and credit lines, and to a lesser extent, installment loans, had a more significant weight for lower-income quintiles. Hence, these households were more exposed to refinancing risks due to a sudden increase in interest rates, which would increase their financial burden. On the other hand, mortgage debt constitutes 80 % of total debt for higher-income households, mortgage debt constituted 80 % of their total debt. Therefore, these households were more vulnerable to declines in house prices or rental rates (see Córdova and Toledo, 2023, for a comparison of stressed scenarios across the income distribution).

The pandemic, and the measures adopted to contain it, materialized the first of these negative scenarios. Unemployment increased and labor income decreased, disproportionately affecting lower-income households, as documented in Barrero et al. (2020). The policy response in Chile relied mainly in direct transfers and authorizing an exceptional partial liquidation of pension funds. Households received 9.8 % of the 2019 GDP through the various transfers under the Emergency Family Income program. In addition, Chilean households were able to access a portion of their mandatory pension funds, equivalent to 19.1 % of the 2019 GDP. Thus, between June 2020 and December 2021, households received liquid funds amounting to 28.9 % of the pre-pandemic GDP.

The EFH and National Accounts data suggest that Chilean households used the additional liquidity to recover their pre-pandemic consumption levels and reduce non-mortgage debt. The reduction was more pronounced for more expensive debts, such as revolving credit from non-bank institutions. On the asset side, households accumulated liquid assets, resulting in a shift toward a more liquid portfolio across the income distribution. This behavior is consistent with the accumulation of precautionary savings in response to the higher level of uncertainty. These results point to households making rational financial decisions during the pandemic. Due to lower consumer debt levels and a higher share of liquid assets, households were more financially resilient towards the last quarter of 2021. Debt-to-income ratios and leverage decreased for many households, and default rates on consumption loans hit a historical minimum (cfr. Central Bank of Chile, 2023).

However, due to macroeconomic imbalances aggravated by the same liquidity shock, the improved financial resilience was only transitory. A higher inflation rate, fueled by higher consumption levels sustained by liquid funds, and the surge of financial costs, rapidly eroded the liquid assets and increased the financial burden of short-term debt. Households in the lowest income quintiles were affected the most by these imbalances. Their indebtedness and arrears and have gradually returned to pre-pandemic levels after the extraordinary provision of liquidity ceased.

Furthermore, the pension withdrawals allowed during the pandemic had significant costs. In addition to the immediate fiscal cost of direct transfers, the early liquidation of a sizable share of households' pension funds will reduce future expected pensions. Moreover, a higher fraction of households is likely to rely on non-contributory pension benefits than before the pandemic, creating an additional fiscal burden in the future.

We believe the Chilean experience during the pandemic to have broader, valuable lessons in two ways. First, the massive provision of liquidity to households created a unique opportunity to reshape their balance sheets. Households reoptimized their short-term portfolios, reducing expensive consumer debt and accumulating liquid buffers, at the expense of long-term saving. This insight into household financial decision-making is informative about the preferences and main financial constraints faced by households ibn Latin America. Second, the Chilean pension fund withdrawals are, to the best of our knowledge, the largest experiment on early liquidation of mandatory retirement accounts. However, during the pandemic, other countries with defined-contribution pension systems, such as Peru and Australia, adopted similar policies, spurring a debate on their applicability to other contexts. The Chilean experience contributes several insights into the costs and benefits of such policies, and their impact on household balance sheets.

## 2. The portfolio of Chilean households before the pandemic

Our analysis relies heavily on the Chilean Household Financial Survey (*Encuesta Financiera de Hogares*, EFH). The EFH is conducted by the Central Bank of Chile since 2007, with an intended interval of three years between waves. In 2020, the collection of the EFH was delayed by one year due to the lockdowns adopted to contain the COVID-19 pandemic. Therefore, at the time of writing this article, there are five waves available, corresponding to 2007, 2011, 2014, 2017 and 2021. It is designed as a two-period rotating panel, with roughly half the sample being refreshed every wave. The target sample size is 4500 observations, with minor variations between

[1] All waves of the EFH are publicly available at https://www.bcentral.cl/web/banco-central/areas/encuestas-economicas/encuesta-financiera-de-hogares. The next wave is scheduled for release by the end of 2025.

waves. The sampling design is stratified based on home values, oversampling the top 20 % of the distribution. The resulting sample is representative of the urban population across Chile.

The questionnaire design of the EFH is similar to other household financial surveys, such as the Survey of Consumer Finances (SCF) in the US, the *Encuesta Financiera de las Familias* (EFF) in Spain, and the Household Financial and Consumption Survey (HFCS) in Europe. It contains detailed information on household characteristics (such as its composition and the age, education and employment status of its members), assets (including houses, vehicles and financial assets) and liabilities (including bank, non-bank and informal credit). It also features questions regarding their perceived financial burden and credit access.

The EFH allows us to study the extent of heterogeneity among households and, consequently, their different ability to cope with adverse shocks. We analyze the portfolio structure across quintiles of the total household income distribution before the pandemic.[2] We focus on the last pre-pandemic wave, in 2017, uncovering several stylized facts.[3]

First, the portfolio structure of Chilean households was similar to that of other economies with similar income levels. However, some differences are worth noting.[4] In particular, Chilean households had a high prevalence of non-mortgage debt, comparable only to that in the United States and Mexico. In turn, the financial burden was high relative to the level of debt (Figs. B1 and B2 of the Appendix). This can be explained by the higher interest rates associated with short-term debt.

Second, the structure of the balance sheet was heterogeneous across income quintiles (Figs. 1 and 2), leading to important differences in the financial resilience of households to economic shocks. Lower-income households had relatively fewer financial assets as a proportion of total assets (2 %) compared to households in the fifth quintile (10 %). However, both groups had similar levels of short-term debt (2 % and 3 % of total assets, respectively). In fact, while the debt-over-asset ratio was lower for poorer households, the difference with respect to households in the fifth quintile was almost completely explained by access to mortgage debt (2 % and 14 %, respectively). In turn, this means that short-term debt accounted for a larger share of total debt for low income households.

The heterogeneity in debt structures implied an heterogeneous exposure to different financial risks across income quintiles. In fact, as reflected in the Financial Stability Report of December 2019, there were two groups of households with some degree of vulnerability to specific shocks. First, a group of low-income households carried a high financial burden as a proportion of their income (Fig. 3), leading to increased credit risk in the event of severe deterioration in the labor market. Second, a subset of medium and high-income households had invested in real estate through the intensive use of mortgage debt, exposing them to the risk of a decline in real rental prices or an increase in the vacancy rate (Central Bank of Chile, 2019).

## 3. The pandemic shock and the policy response

The Covid-19 pandemic was an unprecedented shock to the global economy.[5] The health response to the pandemic restricted economic activity, especially in sectors that require in-person interactions. In Chile, these measures led to a reduction of 14.8 % in the GDP and 22.9 % in household consumption in the second quarter of 2020 (Figs. 4 and 5). This contraction in GDP was accompanied by an increase in the unemployment rate, which reached 13.1 % in the same period, the highest rate in the last decades in Chile (see Fig. 6).

The pandemic, as a global phenomenon, had some common characteristics across countries, including Chile. As an economic shock, it had two components. First, it was a very specific consumption shock, and second, it was a conventional employment shock for workers in contact-intensive sectors.

The consumption component of the shock stemmed from fear of contagion and mobility restrictions, which reduced spending in sectors where in-person interaction is inevitable (Chetty et al., 2022). Fig. 5 shows the evolution of various aggregates for the Chilean household sector during the pandemic. Consumption fell during the first two quarters of 2020, with a particularly significant decline in the second quarter.

The contraction of activity in contact-intensive sectors decreased the number of workers in those sectors, turning the pandemic into an employment shock. The shock propagated to workers in other sectors of the economy through general equilibrium effects. Fig. 6 shows the increase in the unemployment rate in Chile, from 8.2 % in March 2020 to a peak of 13.1 % in July of the same year, coinciding with the introduction of the 'Step-by-Step' plan (*Plan Paso a Paso*) for the gradual reopening of the economy. This employment shock disproportionately affected lower-income households (cfr. Barrero et al., 2020; Crossley et al., 2021).

Governments took several measures to mitigate the impact on employment and household income. The initial policy response to the pandemic was based on a common view of the shock as a transitory disruption in economic activity. From this perspective, the priority was to prevent inefficient job destruction and preserve the productive structure until the relaxation of the lockdown measures, progress in vaccination campaigns, and a reduction in the saturation of healthcare services could be achieved (IMF, 2021; FSB, 2022). Consequently, along with other measures to support businesses and increase credit supply, the authorities took actions to protect employment. Direct transfers were used as a complementary approach to reach self-employed or informal workers, with variations in the relative importance of each type of measure across countries. (FSB, 2020; IMF, 2021; Atuesta and Van Hemelryck, 2022).

When comparing the policies implemented in different countries, Chile stands out for the magnitude of the transfers provided to

[2] These quintiles are defined based on the disposable income of families in each wave of the EFH.

[3] As shown in the section A of the Appendix, changes in the balance sheet of Chilean households are gradual in time, specially before the pandemic. Thus, the EFH 2017 provides a good approximation of the financial situation of families just before the pandemic.

[4] For more details about the international comparison see Appendix B.

[5] For a description of the initial impact of the shock in Chile see García (2021).

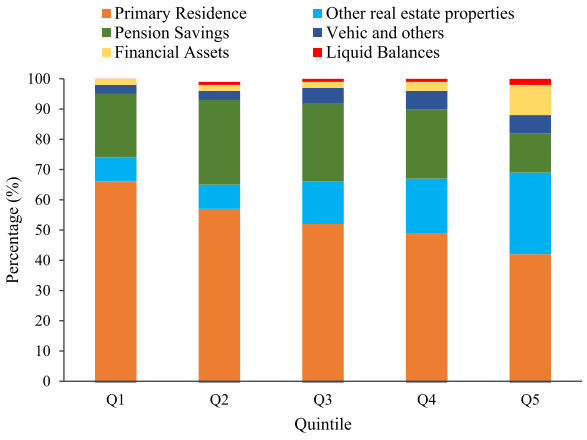


**Fig. 1.** Composition of assets by income quintile
Note: Quintiles according to EFH household income.
Source: Central Bank of Chile based on information from EFH 2017.

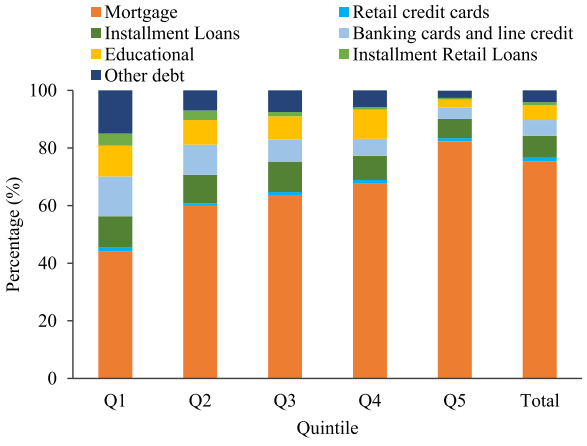


**Fig. 2.** Composition of liabilities by income quintile
Note: Quintiles according to EFH household income.
Source: Central Bank of Chile based on information from EFH 2017.

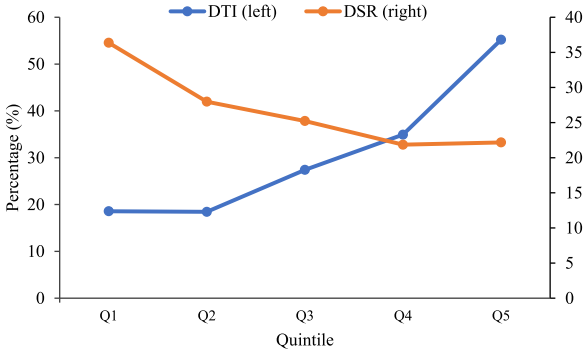


**Fig. 3.** Debt ratios by income quintile (medians)
Note: Quintiles according to EFH household income. DSR: The debt service-to-income ratio corresponds to the percentage of monthly income that a household allocates to meet its financial obligations. DTI: the debt-to-income ratio, corresponds to the fraction of the annual income required to fully settle household debts.
Source: Central Bank of Chile based on information from EFH 2017.

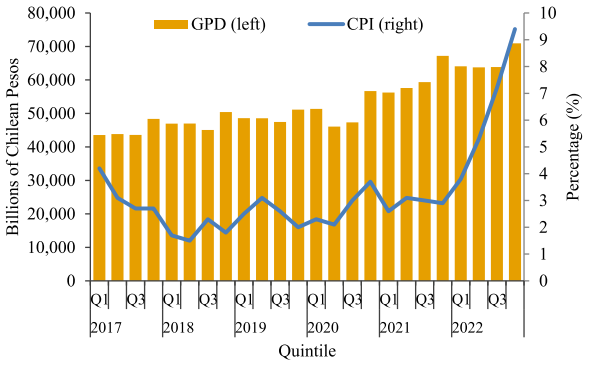


**Fig. 4.** Evolution of GDP and inflation
Note: GDP is expressed in thousands of millions of Chilean pesos at December 2021. CPI represents Chilean inflation and is measured in percentage.
Source: Central Bank of Chile, based on National Accounts and the National Institute of Statistics (INE).

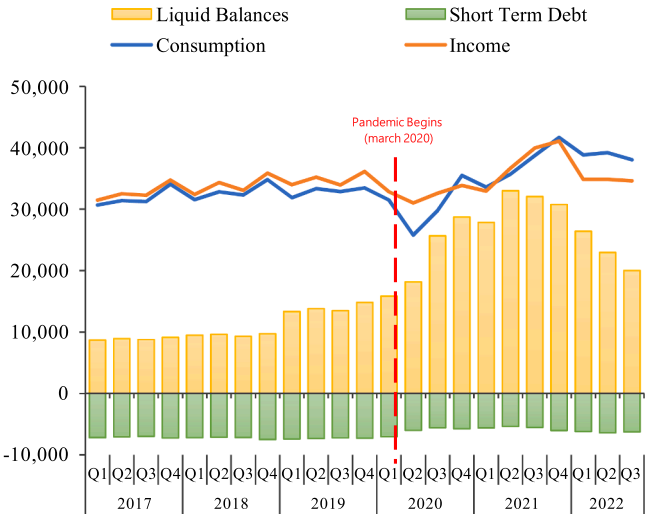


**Fig. 5.** Main aggregates for the household sector
Note: This figure shows the evolution of main aggregates for the household sector. The solid red and blue lines represent household disposable income and consumption, respectively. The yellow and green bars represent the liquid balances and short-term debt, respectively All figures are expressed in thousands of millions of Chilean pesos at December 2021.
Source: Central Bank of Chile, based on national accounts and the National Institute of Statistics (INE).

households. Table 1 shows the total amounts allocated by each country for employment protection measures and direct transfers to households, as well as the amounts of early pension withdrawals, expressed as a percentage of the GDP of 2019, the last year before the pandemic. Transfers to households in Chile were twice as high those provided in the United States. Most of these transfers (87.5 %) are accounted for by the Emergency Family Income (*Ingreso Familiar de Emergencia*, IFE) in its various forms, with the Universal Emergency Family Income (Universal IFE) being the largest one, accounting for 66.7 % of the total IFE transfers (Ministerio de Hacienda, 2021).

In addition to direct transfers, Chilean households had access to part of their mandatory pension savings. This allowed the release of nearly twice the liquid funds provided by direct transfers. A comparable measure was adopted in Peru, albeit substantially smaller in size. Taken together, the measures adopted in Chile represented a unique experiment, providing households with massive amounts of liquid resources for their free disposal.

A significant portion of this liquidity reached households during the final phase of the pandemic. The third pension withdrawal (late April 2021) and the Universal IFE program (June to November 2021) took place amid a recovery in the level of employment and the reopening of economic activity. Fig. 6 illustrates the intensity of mobility and economic activity restrictions using the Step-by-step index constructed by the Center for Mathematical Modeling at the University of Chile. This index reflects the average phase of the gradual reopening program "Step-by-step" active in each district at every point in time. It shows that the economy reopened rapidly from mid-2021, with the unemployment rate continuously declining to its pre-pandemic level. This coincides with the approval of the third pension withdrawal and the implementation of the Universal IFE. Taking into account all the different variants of the IFE, 85.6 % of the IFE expenditure was disbursed during 2021. On the other hand, the third pension withdrawal represented 30.4 % of the pension

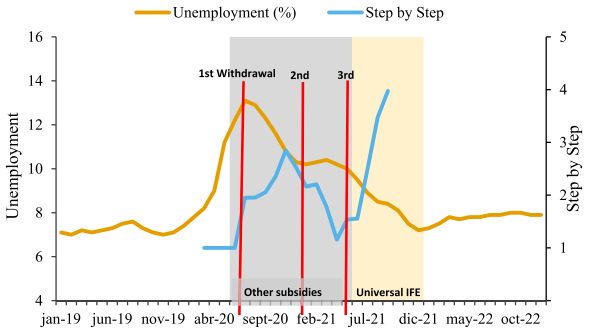


**Fig. 6.** Main aggregates for the household sector
Note: This figure shows the unemployment (orange), confinement index (blue), and household liquidity policies (red). The Step-by-step index is a population weighted average of the phase in which each *comuna* was at each moment in time, with 1 being the strictest confinement and 5 being the maximum openness. 1 is attributed to the months between the first confinement and the launch of the Step-by-step plan (March-June 2020).
Source: The data was obtained from the Central Bank of Chile, based on the National Institute of Statistics (INE) and the Center for Mathematical Modeling of the University of Chile.

**Table 1**
Scale of economic measures to support households as GDP percentage (international comparison).

| | Employment protection | Direct transfers | Pension withdrawal |
|---|---|---|---|
| Chile | 1,1 | 9,8 | 19,1 |
| Brazil | 0,3 | 3,0 | – |
| Peru | – | 1,4 | 7,7 |
| USA | 0,1 | 4,0 | – |
| Belgium | 1,3 | 1,8 | – |
| Spain | 1,7 | 0,6 | – |
| UK | 3,3 | 1,3 | – |

Note: This table provides an international comparison of the scale of economic measures to support households as a percentage of their 2019 GDP. It accounts for the total cost of employment protection programs, direct transfers, and pension saving withdrawals allowed in the context of the pandemic.
Source: Central Bank of Chile, based on public information. Chile: Ministry of Finance and Pension Supervisor. Brazil: Ministry of Economics. Perú: Ministry of Finance and Economics. USA: Internal Revenue Service. Belgium: National Bank of Belgium. Spain: Ministry of Inclusion, Social Security, and Migrations. UK: HM Revenue and Customs.

assets withdrawn by households since the beginning of the pandemic.

Due to the substantial volume of resources and the design of these measures, the provision of liquidity reached most households, regardless of their exposure to the pandemic shock. The transfers introduced during the pandemic had some progressivity. They reached a higher proportion of low-income households and proportionally increased their incomes by more. However, the IFE reached even almost half of the households in the highest income quintile (Fig. 11). Pension withdrawals had the opposite effect, providing more resources to higher-income households. This pattern became starker as additional withdrawals were granted (Inzunza and Madeira, 2025).

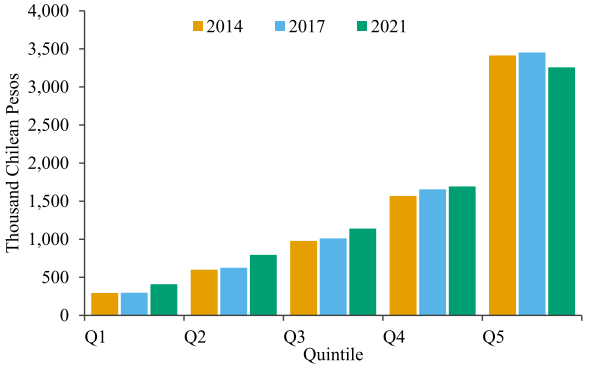


**Fig. 7.** Household median income by income quintile
Note: Household median income by income quintile for each EFH wave.
Source: Data were retrieved from the Central Bank of Chile, based on the Household Financial Survey for the 2014, 2017 and 2021 waves.

The flow of transfers to households was sufficient to more than compensate for the loss of labor income for most households towards the second half of 2021. Fig. 7 shows that only the median disposable income of the highest quintile of the distribution was lower than in 2017 in real terms (−5.6 %). For quintiles 1 to 4, median income grew in real terms by 37.1 %, 27.2 %, 12.8 % and 2.2 %, respectively. Substituting labor income with transfers resulted in a change in the composition of household income, especially for lower income households. Fig. 8 illustrates this point. The share of labor income in total household income decreased for 80 % of households. In turn, the weight of transfers increased significantly, particularly for the lower quintiles.

In contrast, the distribution of pension fund withdrawals was skewed towards higher income households. To illustrate this point, we leverage the computations in Inzunza and Madeira (2025). They performed an imputation of pension withdrawals for households in the EFH using administrative records from the Superintendence of Pensions (Fig. 9). This exercise allows us to estimate the amounts withdrawn by each quintile of the income distribution, revealing that pension withdrawals had an opposite focus to transfers: households with higher incomes withdrew higher amounts, while households with lower incomes liquidated a higher proportion of their pension funds (Fig. 10).

Pension withdrawals entailed multiple costs. In the absence of an increase in long-term savings to offset the withdrawals made in 2020 and 2021, current workers will receive lower contributory pensions. This reduction will be partially offset by increases in solidarity (noncontributory) pensions, with a negative impact on the fiscal deficit. Additionally, this fiscal cost could materialize in a context of lower private savings. For some workers, the likelihood of receiving a solidarity pension, instead of a self-financed pension, increased drastically with the withdrawals, shifting their incentives to save. A more detailed analysis of the direct and indirect costs of households' early liquidation of pension assets can be found in Madeira (2022) and Inzunza and Madeira (2025).

## 4. The household response to the shock and the policy measures

### 4.1. Aggregate household response

As previously shown, households reduced their consumption spending at the beginning of the pandemic and the onset of the sanitary response. This initial reduction in spending happened earlier than the reduction in household income, and was more pronounced, leading to an increase in saving. This was especially true for households with higher income. Low income households allocate a higher share of their expenditure to essential goods, which are more inelastic (Inzunza and Romero, 2023b). Therefore, households in the lower quintiles of the income distribution reduced their spending by less, and recovered their spending levels sooner (Crossley et al., 2022; Stantcheva, 2022). As shown in Fig. 5, the decrease in real consumer spending between the fourth quarter of 2019 and the second quarter of 2020 (22.9 %) far exceeds the reduction in income (14.2 %) during the same period. This translated into a slight increase in checking account balances and a reduction in short-term debt.

After the first pension withdrawal and the implementation of the IFE, consumption recovered more quickly than income, surpassing it by the end of 2020. Short-term debt declined even further, and the accumulation of balances in liquid accounts accelerated (see Fig. 5).

Throughout 2021, the recovery of employment and the introduction of the Universal IFE led to a faster growth of household income, but consumption grew at the same pace. In the second half of the year, short-term household debt increased again and the previously accumulated liquid balances started to decrease, despite the approval of the third pension withdrawal in May 2021. Simultaneously, there was a significant increase in the inflation rate (see Fig. 4).

By the end of 2021, the IFE program expired, and no new pension fund withdrawals were approved, thus ending the provision of liquidity directly to households. Consumption remained higher than income throughout 2022, financed with consumer debt and the previously accumulated liquid balances. By the end of 2022, households had depleted a significant portion of the buffers built up during 2020 and 2021. However, they still had more liquidity than before the pandemic, implying a greater capacity to sustain their level of consumption expenditures in the face of unfavorable events.

In the following subsections, we use the EFH 2021 to characterize the response of households across the income distribution. This more detailed analysis allows us to evaluate the situation of those groups that were more at risk before the pandemic, and others who may have accumulated vulnerabilities during the pandemic, in its aftermath. Moreover, having a picture of the financial situation of households the beginning of 2022 can help us understand the resilience of aggregate consumption as inflation increased, followed by a monetary contraction.

### 4.2. Liquid assets accumulation

During 2020 and 2021, households accumulated a significant amount of liquid assets. The decision to keep most of the liquidity injection in liquid assets is explained by two reasons: an intertemporal motive and a precautionary motive. The intertemporal motive consists in financing higher expenditure flows beyond the period in which the liquidity was received, considering the temporary nature of the transfers and the characteristics of pension withdrawals (single, large payouts). Such behavior is consistent with economic theory and existing empirical evidence (Friedman, 1957; Gourinchas and Parker, 2002). Furthermore, among households that reported saving in the EFH 2021, the main reason given was caution against unexpected expenses (Central Bank of Chile, 2022b). The emphasis on precautionary motives is consistent with the high uncertainty over the duration of the pandemic and the economic prospects afterward, as documented for other economies (cfr. Christelis et al., 2020).

The increase in liquid balances occurred across the entire income distribution. Fig. 12 shows the fraction of households that reported maintaining some balance in a checking or current account as savings in the last three rounds of the EFH. The accumulated

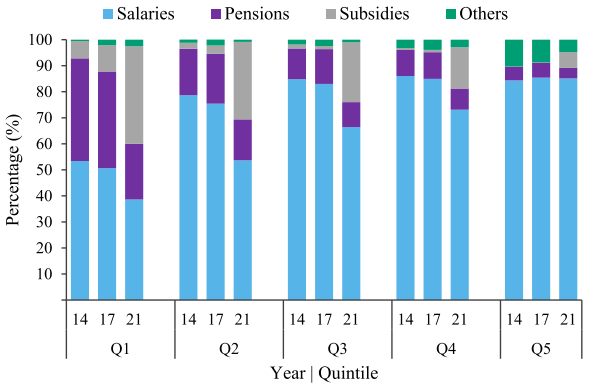


**Fig. 8.** Percentage composition of income, by quintile

Note: The figure shows the decomposition of household income by source across income quintile for each EFH wave. Labor: income from paid activities for someone else or self. Pensions: income from self-financed and solidarity pensions (does not include pension withdrawals). Subsidies: direct monetary transfers received by the household. Others: capital income, leases, settlements, tax refunds, self-consumption, and other income not linked to occupation.

Source: data were retrieved from the Central Bank of Chile, based on the Household Financial Survey for the 2014, 2017 and 2021 wave.

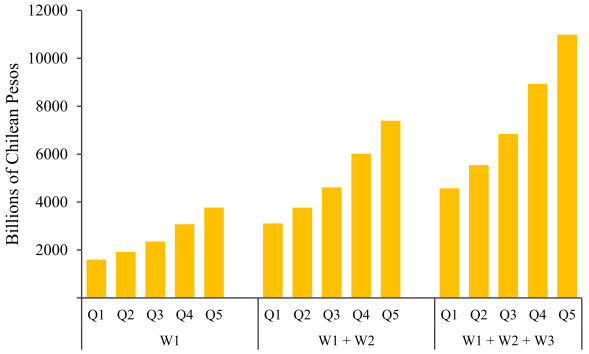


**Fig. 9.** Withdrawn amounts by quintile

Note: This figure shows the pension savings early withdrawn amount in billions of Chilean pesos by income quintile. W1, W2 y W3 stand for first, second and third withdrawal.

Source: The graph was retrieved from Inzunza and Madeira (2025), and based on the Household Financial Survey for the 2021 wave and withdrawal information from the Pension Supervisor.

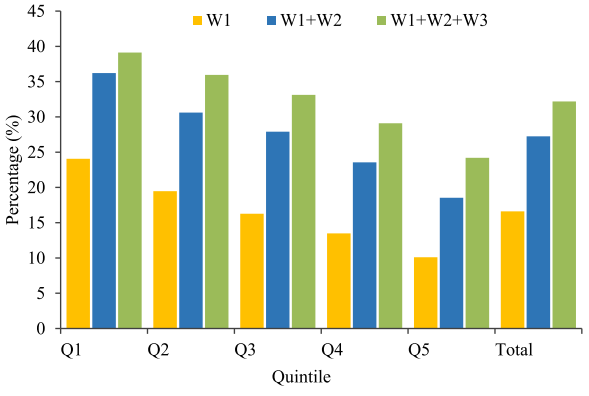


**Fig. 10.** Withdrawn amounts by quintile

Note: This figure shows the pension savings early withdrawn amount as percentage of total pension savings by income quintile. W1, W2 y W3 stand for first, second and third withdrawal.

Source: The graph was retrieved from Inzunza and Madeira (2025), and based on the Household Financial Survey for the 2021 wave and withdrawal information from the Pension Supervisor.

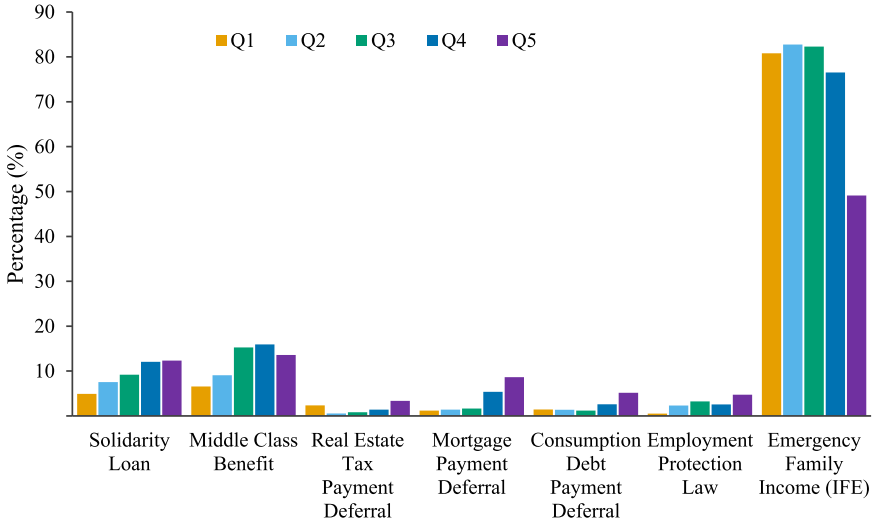


**Fig. 11.** Percentage of household that accessed government support measures, by income quintile
Note: This figure shows the percentage impact of household support measures by income quintile.
Source: data were retrieved from the Central Bank of Chile, based on the Household Financial Survey for the 2021 wave.

balances in these accounts are particularly indicative of households' overall liquidity accumulation. As observed in Fig. 12, the proportion of households with savings in their checking or current accounts in 2021 was much higher compared to previous rounds, especially in the lower income quintiles. However, it is evident that the conditional median balance increased more for high-income households. Taken together, these two results imply an accumulation of liquidity in all income quintiles, but with a greater emphasis on the extensive margin for lower-income households and the intensive margin for higher-income households.

The intensive use of liquid assets to manage the resources provided to households had an impact on their balance sheet. The weight of liquid assets (savings accounts plus checking account balances held as savings) within financial assets increased for all quintiles, even more so for the 60 % of households with lower income (Fig. 13). It should be noted that the EFH reflects voluntary financial assets, but does not capture balances in mandatory pension accounts. However, the accumulation of liquid assets coincides with the liquidation of pension assets prompted by the three approved withdrawals. Therefore, as shown in Appendix A, including the balances in pension accounts in the analysis reinforces our result, showing a sharp shift in the composition of households' balance sheets towards liquid financial assets.

Liquid assets also increased as a proportion of annual income. Fig. 13 shows a particularly significant increase for the first quintile of the income distribution. Therefore, households with lower income had a greater short-term capacity to respond to adverse shocks after the pandemic. This result is consistent with the estimates of Inzunza and Romero (2023a), who document a reduction in the fraction of households facing active liquidity constraints according to various indicators. The ability to absorb shocks provided by these liquid balances at the beginning of 2022 gradually diminished as households spent more than their income, and inflation accelerated,

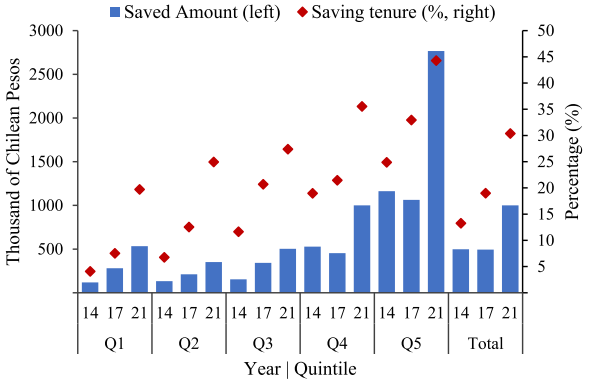


**Fig. 12.** Saving percentage holding and amounts in liquid balances with saving motive
Note: This figure shows the percentual saving tenure and median amounts in current accounts with saving motive by income quintile. The amounts are in thousands of Chilean pesos as of December 2021, and the savings participation rate is the percentage of households that state saving in their checking account or debit account.
Source: Data were retrieved from the Central Bank of Chile, based on the Household Financial Survey for the 2014, 2017 and 2021 waves.

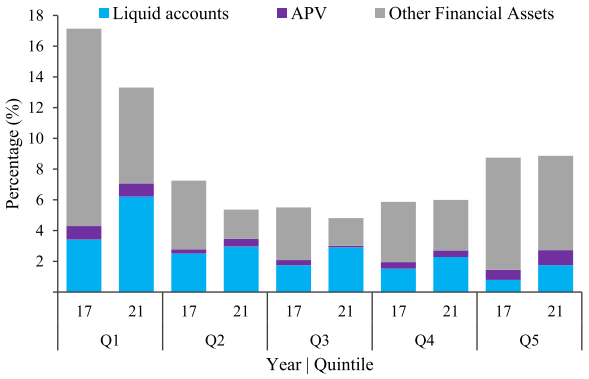


**Fig. 13.** Financial assets to income ratio, as percentage of annual income
Note: This figure shows the liquid assets to annual income ratio, by income quintile. Liquid assets: savings accounts and balances held as savings in checking/sight accounts. APV: Voluntary pension savings. Other financial assets: shares, mutual funds, fixed income assets, derivatives, and participation in companies.
Source: data were retrieved from the Central Bank of Chile, based on the Household Financial Survey for the 2014, 2017 and 2021 waves.

due to these balances being nominal.

Real assets, which are less liquid and better suited for medium- or long-term investment, do not exhibit a similar increase. Fig. 14 shows the amounts of real assets held by households as a percentage of their annual income. The trend toward higher investment in secondary real estate properties seems to continue in 2021, especially at the extremes of the distribution, but there are no movements to suggest that a substantial share of the liquidity provided to households was funneled into this type of asset.

### *4.3. Reduction of consumer debt and household indebtedness*

We can see the effects of the pandemic and the policy response on the liability side of the balance sheet. The reduction in consumer debt observed in the aggregate (Fig. 5) is mainly explained by a decrease in the fraction of households holding this type of debt, especially among low-income households (Fig. 15). On the contrary, there are no changes in the holding of mortgage debt, in line with the relative stability of this indicator in the previous rounds of the EFH (see Fig. 16).

The reduction in non-mortgage indebtedness was driven by the more expensive debts, which generate a higher financial burden per unit of debt, as shown in Appendix A. Figs. 17 and 18 show the holding of revolving debt (credit cards and credit lines) and installment loans, respectively. Both figures indicate a decrease in the fraction of households holding the respective type of debt. However, the reduction in the holding of revolving credit, associated with higher interest rates and shorter horizons, is much steeper, especially among the lower-income quintiles. For these households, the reduction in the holding of installment loans was not as sharp, although they already had lower holdings before the pandemic.

Considering the type of lender, the reduction in the percentage of indebted households was larger for non-bank debt. This difference is more significant for households in the first quintile of the income distribution, as they did not reduce their holding of bank debt (Fig. 19). On the other hand, the holding of non-bank debt decreased by almost half since 2014 for this group (Fig. 20). It is worth noting that access to bank debt is more limited for low-income households, making non-bank debt much more prevalent for this group. The reduction in debt holdings during the pandemic has narrowed that gap.

The composition of total non-mortgage debt by quintiles (Fig. 21) shows the net effect of the changes in the extensive and intensive margins. Revolving debts accounted for a lower share of non-mortgage debt, while the total volume of non-mortgage debt decreased for most quintiles. The decline in total amounts observed in 2021 is less drastic than in holdings (Fig. 15), suggesting that a portion of the reduction in holdings comes from debt repayment by households with low debt.

The outstanding balances of mortgage debt increased for higher-income households, despite no changes in the fraction of households holding this type of debt. The change can be attributed to households borrowing to invest in secondary properties. The loans associated to these properties were larger in 2021 compared to previous rounds of the EFH. This increased indebtedness among real estate investors was primarily seen in the upper quintile of the distribution, without leading to a deterioration in risk indicators for this group (Fig. 22). The perceived level of financial risk among households after the end of the liquidity provision measures is discussed in more detail in the following subsection. The decline in non-mortgage household indebtedness is due to two factors: a reduction in consumer credit demand by households, and the use of part of the liquidity received to repay existing debts (Central Bank of Chile, 2022a; Cerletti et al., 2023).

The decline in consumer credit demand is the result of the evolution of household spending and income over time, as well as the impact of pension withdrawals. The contraction in spending at the beginning of the pandemic mechanically led to a lower demand for consumer debt. The recovery in expenditures took place at the same time as the increase in direct transfers to households and the approval of early pension withdrawals. This liquidity allowed households to finance their renewed consumption spending without resorting to credit, keeping short-term debt suppressed. Furthermore, according to the EFH 2021, the fraction of households that did not apply for loans was larger than in 2017. Moreover, a higher proportion stated that they did not apply because they did not need


**Fig. 14.** Real assets to income ratio, as percentage of annual income
Note: This figure shows the real assets to annual income ratio, by income quintile.
Source: Data were retrieved from the Central Bank of Chile, based on the Household Financial Survey for the 2014, 2017 and 2021 waves.

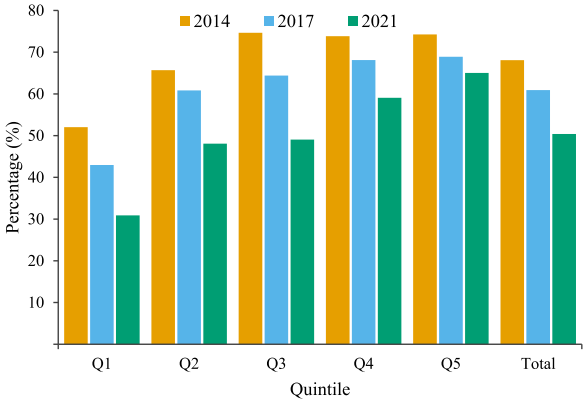


**Fig. 15.** Consumer debt holdings
Note: This figure shows the fraction of households with consumption debt holdings, by income quintile.
Source: Data were retrieved from the Central Bank of Chile, based on the Household Financial Survey for the 2014, 2017 and 2021 waves.

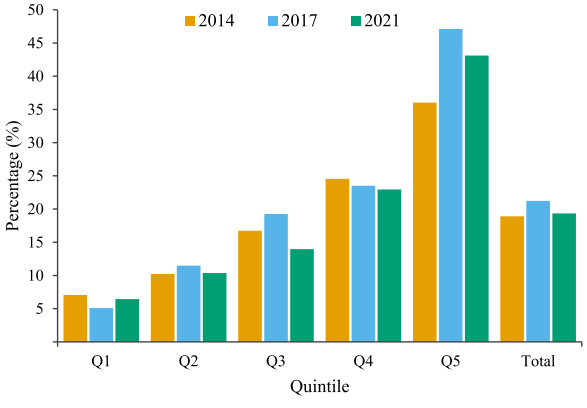


**Fig. 16.** Share of households with a mortgage
Note: This figure shows the fraction of households with a mortgage by income quintile.
Source: Data were retrieved from the Central Bank of Chile, based on the Household Financial Survey for the 2014, 2017 and 2021 waves.

credit. The Bank Credit Survey also shows a reduction in demand for consumer debt (Central Bank of Chile, 2022a).

Regarding the repayment of existing consumer debt, Cerletti et al. (2023) find a causal effect of pension withdrawals on the reduction of consumer debt. This study exploits the existence of inflection points in the rule that determined the amount an affiliate could withdraw based on the accumulated balance in their individual accounts in each of the three pension withdrawals. The authors

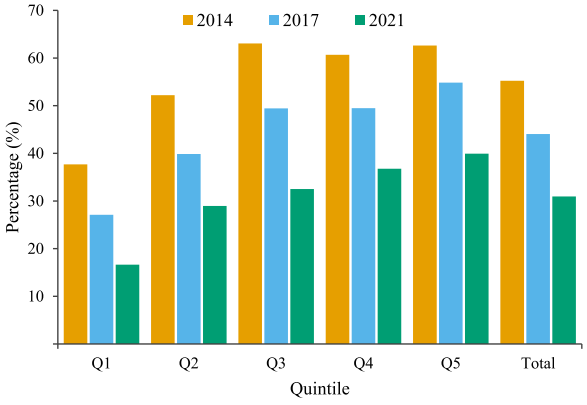


**Fig. 17.** Share of households with revolving credit
Note: This figure shows the fraction of households with revolving credit by income quintile. Considers bank credit cards, bank credit lines and retail credit cards.
Source: Data were retrieved from the Central Bank of Chile, based on the Household Financial Survey for the 2014, 2017 and 2021 waves.

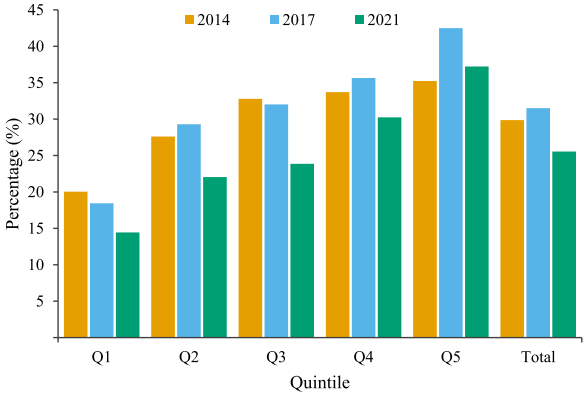


**Fig. 18.** Share of households with installment loans
Note: This figure shows the fraction of households with installment loans by income quintile. Considers bank consumer loans, retail loans and cooperatives.
Source: Data were retrieved from the Central Bank of Chile, based on the Household Financial Survey for the 2014, 2017 and 2021 waves.

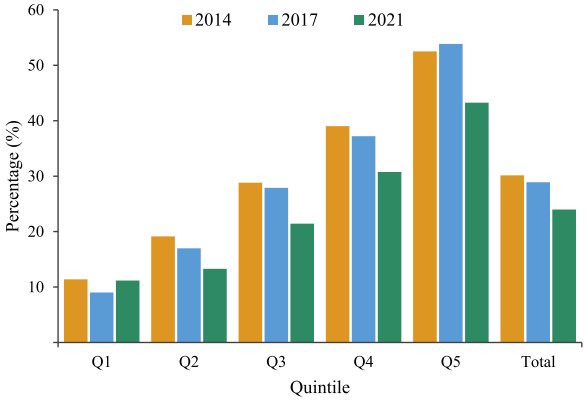


**Fig. 19.** Share of households with banking debt
Note: This figure shows the fraction of households with banking debt by income quintile.
Source: Data were retrieved from the Central Bank of Chile, based on the Household Financial Survey for the 2014, 2017 and 2021 waves.

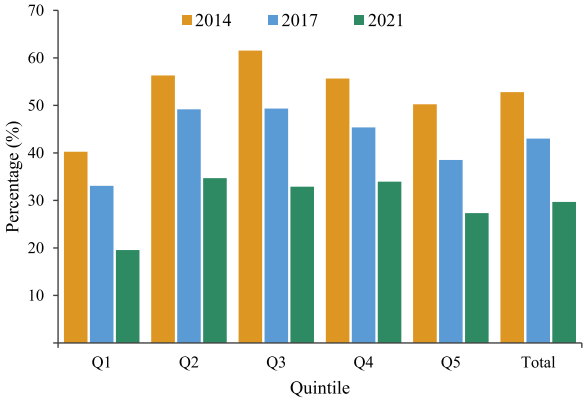


**Fig. 20.** Share of households with non-bank debt
Note: This figure shows the fraction of households with non-bank debt by income quintile. Source; data were retrieved from the Central Bank of Chile, based on the Household Financial Survey for the 2014, 2017 and 2021 waves.

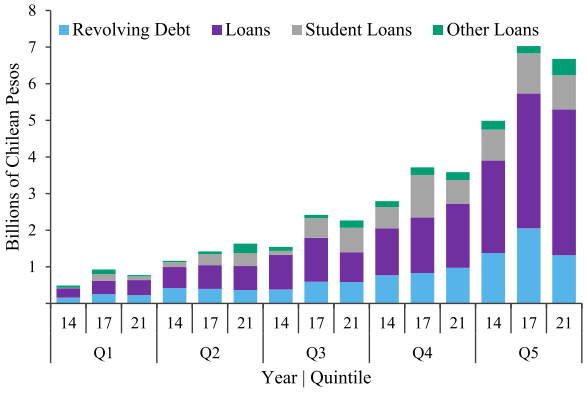


**Fig. 21.** Total consumption debt
Note: The figure shows total consumption debt by source in billions of Chilean pesos at December 2021, by income quintile. Revolving debt refers to credit cards and lines.
Source: Data were retrieved from the Central Bank of Chile, based on the Household Financial Survey for the 2014, 2017 and 2021 waves.

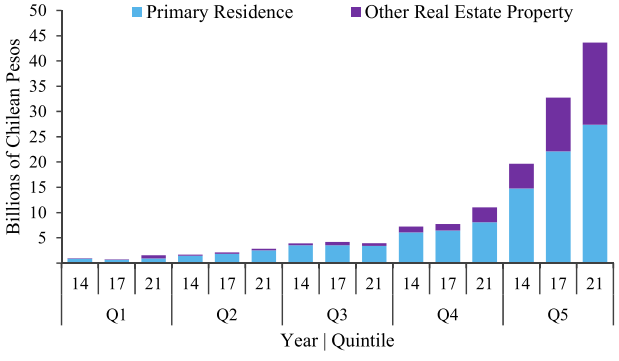


**Fig. 22.** Total mortgage debt
Note: The figure shows total mortgage debt in billions of Chilean pesos at December 2021, by income quintile.
Source: Data were retrieved from the Central Bank of Chile, based on the Household Financial Survey for the 2014, 2017 and 2021 wave.

find that, around the first of these inflection points, there is a causal effect of liquidating an additional unit of funds on the reduction of the affiliate's revolving debt.

### 4.4. Household financial risks after the end of liquidity measures

In this subsection, we conduct a stylized assessment of the financial vulnerability of households at the beginning of 2022, once the measures providing liquidity directly to households had expired. We characterize households according to their holding of debt and their debt service to income ratio (DSR), distinguishing three groups: households without debt, households with low DSR, and households with high DSR. The threshold between low DSR and high DSR is set at 0.4. Therefore, high-DSR households allocate at least 40 % of their monthly income to debt payments. The purpose of this simple exercise is to rationalize the improvement in the default indicators for consumer debt and mortgages observed from mid-2020 until 2022, using the household as the unit of observation. For a prospective analysis, we refer to Córdova and Toledo (2023). They propose a methodology to perform more detailed household stress tests, suitable for quantifying the exposure of Chilean banks to the household sector in different counterfactual scenarios.

Fig. 23 shows the fraction of households in each income quintile that belongs to each of the three groups considered. First, we observe that there is a higher percentage of households without debt in 2021, mainly due to the growth of this group in the first three quintiles. Second, among households with debt, a lower proportion had an excessive financial burden relative to their income, compared to the waves of the EFH collected before the pandemic.

Among indebted households, it is possible to construct a measure of debt at risk based on the percentage of total debt held by high-DSR households. Fig. 24 shows that debt at risk was lower for the household sector as a whole in 2021 compared to 2017. This reduction in the percentage of debt at risk is also verified within each income quintile except the first one: among the lowest-income households, there were fewer households with a high financial burden in 2021, but they amounted to a higher share of the total debt of that group. Nevertheless, this does not imply that the absolute value of debts at risk increased, given the lower number of debtors in the first quintile (Fig. 23) and the reduction in the total amount of non-mortgage debt (Fig. 21), which typically implies a higher financial burden.

On the other hand, despite the increase in the amount of mortgage debt from secondary properties, the financial burden of households in the highest income did not increase. The risk highlighted in 2019 for real estate investors has not increased significantly. The higher level of mortgage debt for this group is accounted for by the relatively recent dates of acquisition of these loans. Hence, although the outstanding debt amount is high, the maturity is also high, translating into moderate payments (Central Bank of Chile, 2022b).

As a word of caution, it should be noted that part of the reduction in the number of households with a high financial burden can be explained by changes in the denominator. The increase in income recorded between 2017 and 2021 for lower-income quintiles was linked to transitory transfer programs. When using an alternative measure of income that excludes transfers, the debt-to-income ratios and debt-at-risk measures are much more similar between 2017 and 2021. Specifically, the percentage of households with a high financial burden would increase from 13.2 % to 18.3 % in 2021, reducing the gap between 2017 and 2021 by 4.7 percentage points. Most of the households added to the high-risk group under the alternative measure belong to the first two quintiles of the income distribution, where the importance of direct transfers in total household income was greater (Fig. 7). The increase in the percentage of households without debt, however, would remain unchanged.

After the measures providing liquidity to households came to an end, the reduction in short-term debt observed during the pandemic has partially reverted, and the delinquency rate of consumer portfolios is approaching its pre-pandemic level (Central Bank of Chile, 2022a). On the other hand, the mortgage portfolio, which is more concentrated among high-income debtors, remained at a lower delinquency rate as of November 2022 than before the pandemic. These differences suggest that the buffers accumulated by households during the pandemic have been depleted asymmetrically, persisting to a greater extent in the upper part of the income

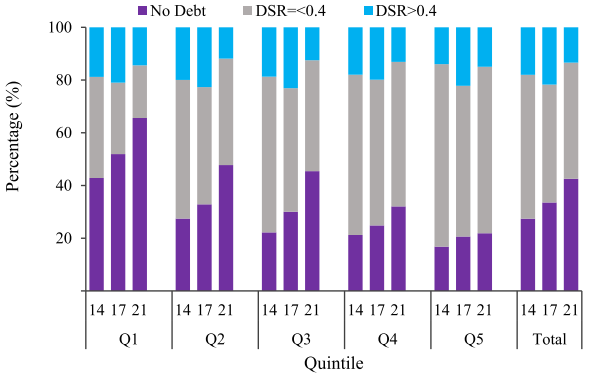


**Fig. 23.** Financial burden by income quintile
Note: This figure shows the fraction of households in each category of DSR by income quintile. DSR: Debt Service-to-Income Ratio corresponds to the percentage of monthly income that a household allocates to meet its financial obligations.
Source: Central Bank of Chile, based on the Household Financial Survey for the 2014, 2017 and 2021 waves.

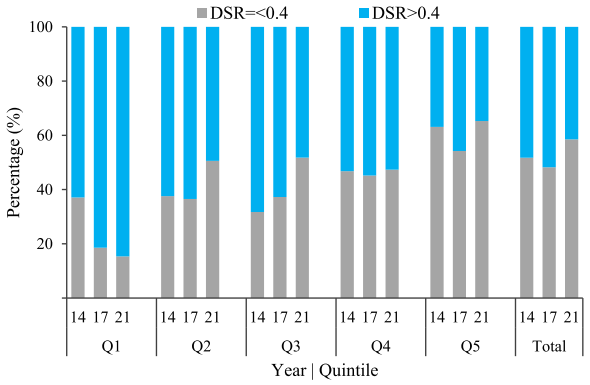


**Fig. 24.** Debt at risk by income quintile.
Note: This figure shows the fraction of debt in each category of DSR, by income quintile. DSR: Debt Service-to-Income Ratio corresponds to the percentage of monthly income that a household allocates to meet its financial obligations.
Source: Central Bank of Chile, based on the Household Financial Survey for the 2014, 2017 and 2021 waves.

distribution.

## 5. Conclusion

In this article we analyzed in detail how the Covid-19 pandemic and the policies implemented to mitigate its economic effects impacted the finances of Chilean households.

The pandemic declared at the beginning of 2020 and the sanitary measures adopted to contain it caused a significant disruption in the activity of many economic sectors that rely on in-person interactions for their normal operation. The contraction in spending in the affected sectors quickly translated into a decrease in employment and household labor income. To cope with the economic impact of the pandemic, governments adopted measures aimed at preventing job destruction until the economy could reopen and providing liquidity to households to compensate for the loss of labor income. In Chile, the provision of liquidity to households was of an unprecedented magnitude. The scope and size of direct transfers to households exceeded what was observed in other jurisdictions. The three extraordinary withdrawals of a significant portion of mandatory pension funds provided an even larger amount of liquid funds to households. These measures reached most households and only loosely targeted those most affected by the economic consequences of the pandemic. Moreover, the flow of liquidity to households intensified in the second year of the pandemic.

Households used these funds to recover their consumption levels, reduce their indebtedness, and accumulate liquid assets. The decrease in indebtedness came from a lower use of revolving credit and non-bank consumer debt, especially among low-income households. On the other hand, the accumulation of liquid assets allowed households to cushion additional shocks and finance their consumption expenditure long after the liquidity provision ceased. As these measures were phased out, households retained liquid buffers that allowed them to maintain their level of expenditure in the face of unfavorable changes in the macroeconomic environment.

The massive provision of liquidity to households had significant costs, contributing to the macroeconomic imbalances that fueled inflation after the pandemic. The direct transfers to households had an immediate impact on fiscal balances. The pension withdrawals brought about direct and indirect costs for households, including lower expected contributory pensions, an increased reliance on the solidarity pillar of the pension system, entailing a future fiscal cost, and an expected decline in private savings.

By the time the main measures aimed at providing liquidity to households expired, the financial risk of households remained contained. Large segments of the population had no debt or a low financial burden relative to their income. However, since then, the accumulated liquid balances have been eroded due to persistently high expenditure levels. Consumer debt has gradually returned toward its pre-pandemic level, while credit risk has increased, especially for low-income debtors.

Our results have important implications for the financial behavior of households in the context of an emerging economy. On one hand, households seem to respond rationally to a transitory boost in income and liquidity, paying off their most expensive debts and accumulating liquid buffers against negative shocks. On the other hand, most of the changes in their balance sheets involved short-term instruments, with little response in long-term debts and savings. Moreover, despite the uniquely large amount of funds provided to households, most of the changes in the households' balance sheets seem short lived. These could be important insights for any discussion around overindebtedness, financial fragility, financial inclusion, and potential policies to address these issues in emerging economies.

Finally, our analysis can also contribute to future discussions on the design of pension systems. As a response to the pandemic, several countries with defined contribution systems allowed exceptional early withdrawals of mandatory pension funds, including Chile, Peru and Australia. It is plausible that similar policies may be discussed in the event of another major crisis. Since the eligibility and magnitude of these exceptional measures varied widely across countries, the combined lessons from the different experiences would be very valuable in the context of such discussions. Our paper provides some insights on the effects of this policy and its

interaction with other policies in Chile. We found that it entailed significant costs, it was not particularly targeted at the households hit harder by the pandemic shock, and that it compounded the effects of direct transfers to households.

## CRediT authorship contribution statement

**Enzo Cerletti:** Writing – review & editing, Writing – original draft, Supervision, Project administration, Methodology, Investigation, Formal analysis, Conceptualization. **Magdalena Cortina:** Writing – original draft, Visualization, Software, Investigation, Formal analysis, Data curation. **Alejandra Inzunza:** Writing – original draft, Visualization, Software, Investigation, Formal analysis, Data curation. **Felipe Martínez:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Conceptualization. **Patricio Toro:** Writing – review & editing, Writing – original draft, Supervision, Project administration, Methodology, Formal analysis, Conceptualization.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Appendix A: The portfolio of Chilean households and its recent trends

In this section, we characterize the portfolio of Chilean households and examine its evolution using national waves of the EFH conducted in 2014, 2017, and 2021.[6]

The primary residence is the main asset of Chilean families, both at the aggregate and individual levels. In 2021, 62 % of households owned a home (Fig. A.2), representing 52 % of their total assets (Fig. A.1). Following the primary residence in importance are mandatory pension savings and other real estate properties. While both types of assets represent, on average, 18 % of total assets between 2014 and 2021, households owning other properties reach only 15 % in 2021, while 91 % of households have at least one member affiliated with the pension fund administrators (AFP system).

A relatively high proportion of households hold some financial assets, distinct from mandatory pension savings; however, these represent a small fraction of the families' total assets. On the one hand, between 2014 and 2021, the ownership of financial assets increased from 26 % to 37 %. On the other hand, the importance of these financial assets in the aggregate value of household assets is relatively low and decreased in the last measurement from 6 % in 2014–17 to 4.5 % in 2021.

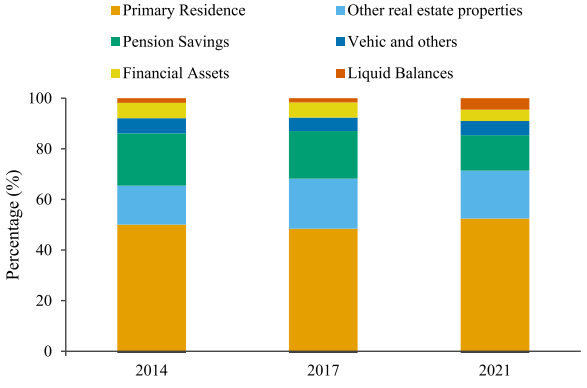


**Fig. A1.** Total assets composition.
Source: Household Financial Survey 2007–2021. (*) Other properties include second household, properties for lease, storage units, parking, and any type of real estate other than the main residence.

[6] The EFH does not have pension information for all household members, therefore, we impute administrative data on pension balances from the Superintendencia de Pensiones (Chilean Pensions Supervisor). Additionally, we adjust the reported balances in checking and sight accounts (liquid balances) in the EFH to their administrative counterparts. We do this the survey asks about the balance in liquid assets that is not intended for regular household expenses only. As a result, the EFH does not capture the total balance that households maintain in their liquid balances.

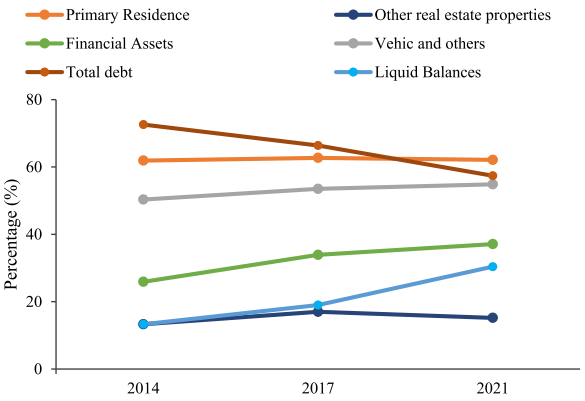


**Fig. A2.** Assets ownership by asset type.
Source: Household Financial Survey 2007–2021. (*) Other properties include second household, properties for lease, storage units, parking, and any type of real estate other than the main residence.

In line with the relevance of the main residence in the asset side of Chilean households' balance sheet, mortgages are the main type of debt at the aggregate level. However, mortgage ownership is low compared to short-term debt. In fact, although aggregate short-term debt is substantially lower than mortgages, its ownership is high, around 68 % in 2014. During the last decade, Chilean households have reduced their indebtedness in this type of debt in both extensive and intensive margins. At the individual level, debt ownership declined considerably to 55 % in 2021 (see Fig. A.2).

Two financial ratios commonly used in the literature (De Vaney, 1994; D'Alessio e Iezzi 2013; Cifuentes y Martínez, 2020) can be used to quantify the financial burden and leverage of Chilean households. The first ratio is the debt service-to-income ratio (DSR), which indicates the percentage of monthly income that a household allocates to meet its financial obligations. The second ratio is the debt-to-income ratio (DTI), which shows the fraction of the annual income required to fully settle household debts. Fig. A.4 shows the evolution of the median DSR and median DTI for households with debt between 2014 and 2021.

Starting with the DSR, we observe that in 2021, the median indebted household allocates 21 % of its monthly income to meet its financial obligations, barely different from the value observed in 2014. There was an increase in DSR between 2014 and 2017, mainly explained by the more intensive use of revolving debt by households during that period (Banco Central de Chile, 2019). Indeed, between 2017 and 2021, there was a decline in the DSR primarily associated with the reduction in the use of non-mortgage debt. This decline in the DSR indicates that households are allocating a smaller portion of their monthly income to meet their financial obligations, which can be attributed to the lower reliance on non-mortgage debt during this period.

On the other hand, the DTI reached 29 % in 2021, indicating that the debt of the median indebted household represents almost one-third of its annual income. Regarding its recent evolution, we see a 15 percentage point increase in the indicator between 2014 and 2017, primarily explained by the increase in mortgage debt, both for the primary residence and other properties. (Banco Central de Chile, 2019). Between 2017 and 2021, the indicator remained stable, consistent with the slowdown in the mortgage market, both in terms of the fraction of households with mortgages and the volume of mortgage debt relative to assets.

Fig. A.3

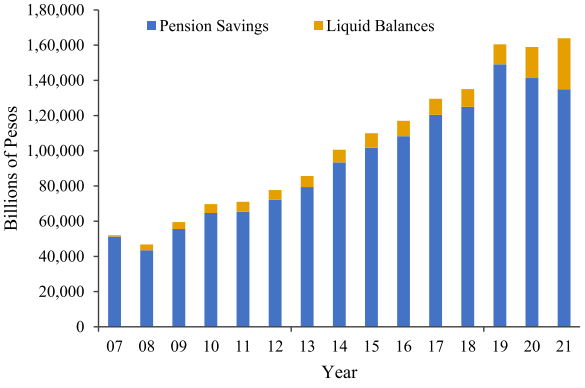


**Fig. A3.** Mandatory pensions and balance in current/vista account.
Source: Central Bank of Chile and Superintendence of Pensions.

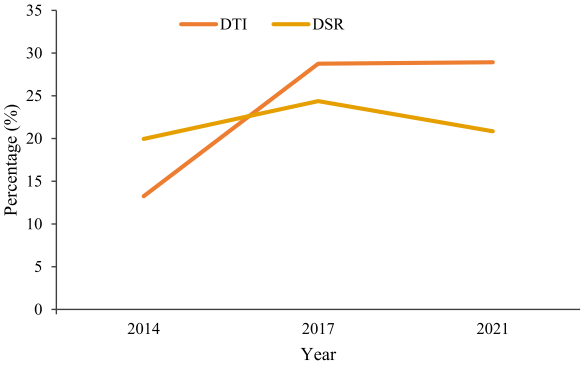


**Fig. A4.** Evolution of financial ratios.
Note: (*) Median of the ratios conditional on having debt. DSR: Debt Service-to-Income Ratio, DTI: Debt-to-Income Ratio.
Source: Central Bank of Chile based on information from the EFH 2007–2021.

## Appendix B: International comparison of the households' portfolio

In this appendix, we compare data from the EFH with that obtained from similar surveys in other countries. The objective is to understand the main similarities and differences in the structure of the financial balance between families in Chile and the rest of the world. The surveys considered in the analysis are the SCF of the United States, the HFCS, which contains information for 21 countries in Europe, the ENFIH of Mexico, and the EFHU of Uruguay. For each survey, we used the most recent publicly available data for comparison. The analysis considers the level of development of the countries in the sample, which we approximate with the GDP per capita of each country. It should be noted that most of the countries used for the comparison have a higher level of development than Chile. This is due to the lack of financial surveys in other Latin American countries or countries with a similar level of development.

Regarding assets, we observe that for all the countries in the sample, real assets are more important than financial assets as a proportion of total assets (see Fig. B.3). However, the importance of financial assets grows with the level of development of the economies (see Fig. B.4). This result is consistent with the idea that countries with a higher level of development have deeper financial markets, which, in turn, facilitates households' access to financial instruments other than real estate assets. In the sample of available countries, the weight of financial assets in total assets reaches an average of 8 %, but it exceeds 20 % for countries such as the United States or The Netherlands. Specifically for Chile, the proportion of financial assets to total assets is 8 %, which is around the average of the analyzed countries and above the level shown by economies of a similar level of development.

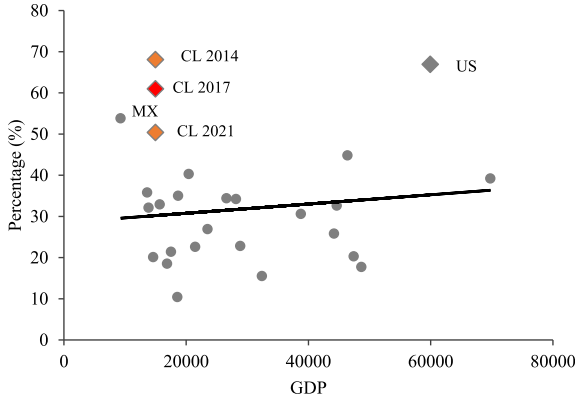


**Fig. B1.** Holding of total non-mortgage debt (percentage; US$*).
Source: Central Bank of Chile based on information from the EFH 2007–2021. (*) Median of the ratios conditional on having debt. DSR: Debt Service-to-Income Ratio, DTI: Debt-to-Income Ratio.

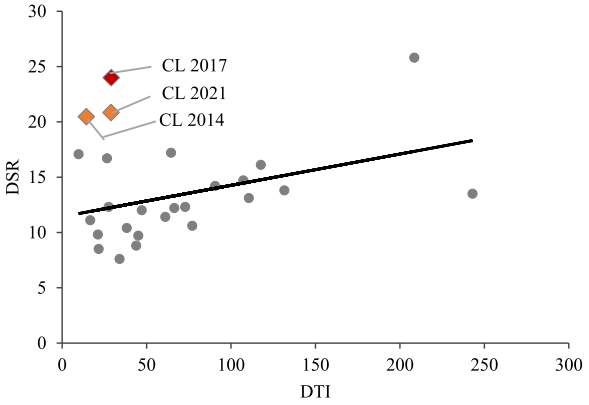


**Fig. B2.** Financial ratios (percentage*).
Source: Central Bank of Chile based on information from EFH 2017, SCF 2016, HFCS 2017, ENFIH 2019, World Bank 2017. (*) Median.

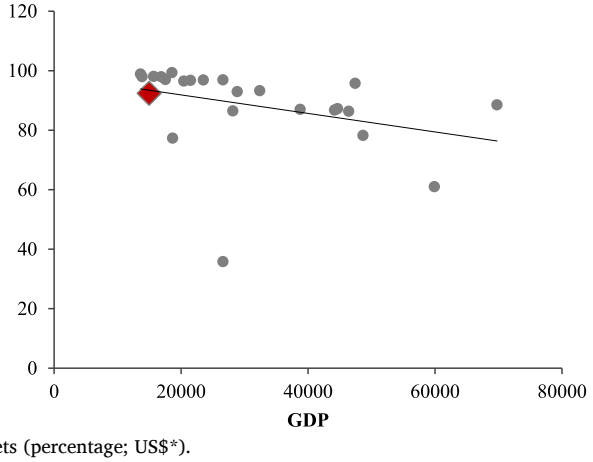


**Fig. B3.** Real assets as % of total assets (percentage; US$*).
Source: Central Bank of Chile based on information from EFH 2017, SCF 2016, HFCS 2017, ENFIH 2019, World Bank 2017. (*) GDP per capita 2017.

However, despite the high possession of non-mortgage debt in Chile, the fraction that it represents of the total debt is slightly above the average of economies with a similar level of development (see Fig. B.7). This indicates that while non-mortgage debt is widespread among Chilean households, the amounts associated with it are lower compared to those of mortgage debt.

One consequence of the high percentage of households with non-mortgage debt in Chile is a high financial burden relative to their income level (see Fig. B.8). As indicated in the Financial Stability Report for the first semester of 2019 (Banco Central de Chile, 2019), non-mortgage debt is associated with a higher financial burden, even when the amounts related to this type of debt are low. In the sample, the DSR for Chile reaches 21 % in 2021, which is higher than the overall average of 14 % for the entire sample and close to Mexico's 17 % DSR, a country that also exhibits high possession of non-mortgage debt.

On the other hand, when looking at the relationship between the DTI and GDP the per capita (see Fig. B.9), we can observe that Chile is slightly below the line. This is mainly explained by a sharp disparity between the fraction of households holding-non mortgage debt (see Fig. B.1) and mortgage debt (see Figs B.10 and B.11). This makes non-mortgage debt, which is characterized by low amounts in Chile, relatively more prevalent than mortgage debt compared to other countries (see Fig. B.7). In 2021, Chile's DTI reaches 29 %, which is similar to the levels shown by countries like Hungary or Slovenia (see Fig. B.9) and below the average of countries with a similar level of development.

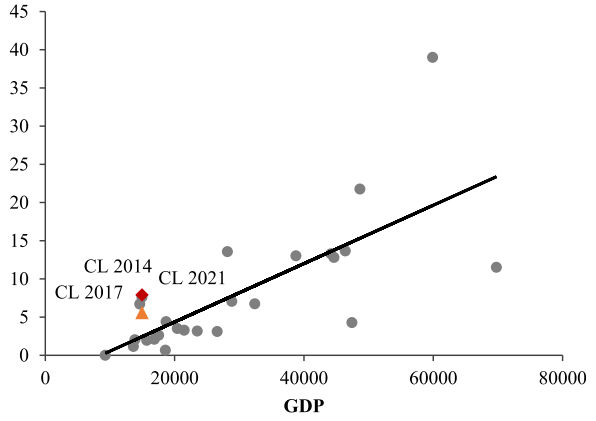


**Fig. B4.** Financial assets as % of total assets (percentage; US$*).
Source: Central Bank of Chile based on information from EFH 2017, SCF 2016, HFCS 2017, ENFIH 2019, World Bank 2017. (*) GDP per cápita 2017.

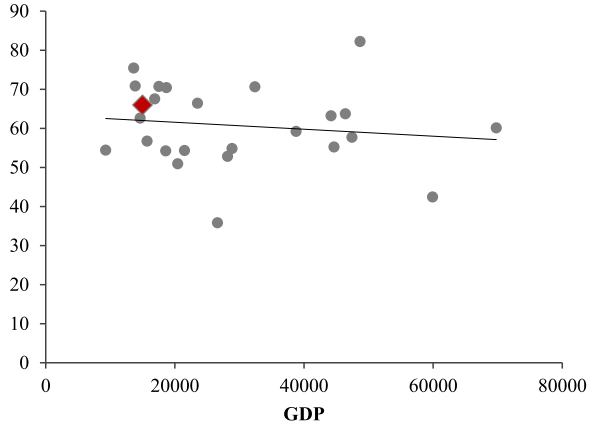


**Fig. B5.** Household main residence as % of real assets (percentage; US$*).
Source: Central Bank of Chile based on information from EFH 2017, SCF 2016, HFCS 2017, ENFIH 2019, World Bank 2017. (*) GDP per capita 2017.

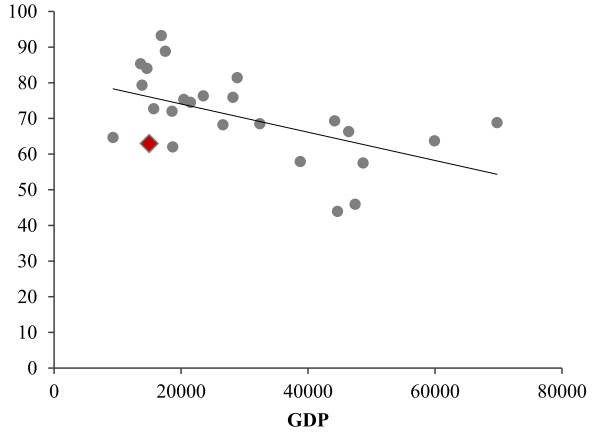


**Fig. B6.** Holding of household main residence (HMR) (percentage; US$*).
Source: Central Bank of Chile based on information from EFH 2017, SCF 2016, HFCS 2017, ENFIH 2019, World Bank 2017. (*) GDP per capita 2017 at current prices.

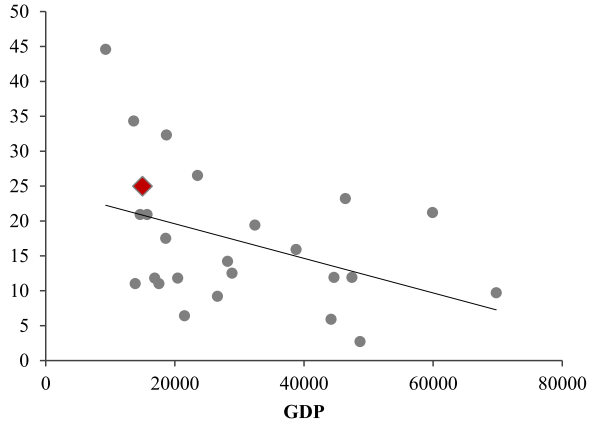


**Fig. B7.** Total non-mortgage debt as % of total debt (percentage; US$*).
Source: Central Bank of Chile based on information from EFH 2017, SCF 2016, HFCS 2017, ENFIH 2019, World Bank 2017. (*) GDP per capita 2017 at current prices.

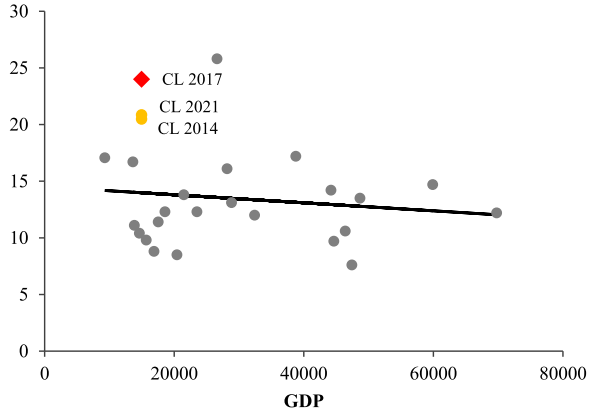


**Fig. B8.** Debt service to income ratio (DSR) (percentage; US$*).
Source: Central Bank of Chile based on information from EFH 2017, SCF 2016, HFCS 2017, ENFIH 2019, World Bank 2017. (*) PTI median, GDP per capita 2017.

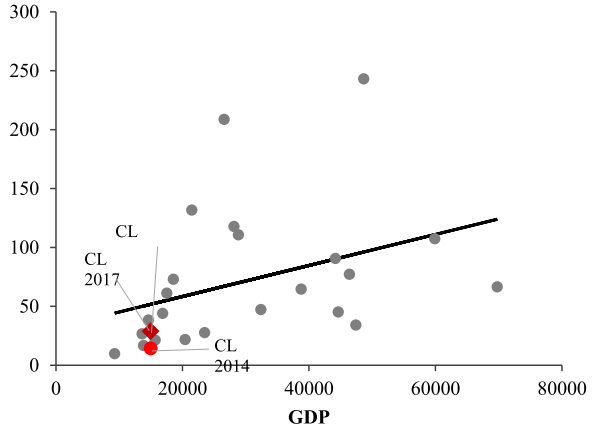


**Fig. B9.** Debt-to-income ratio (DTI) (percentage; US$*).
Source: Central Bank of Chile based on information from EFH 2017, SCF 2016, HFCS 2017, ENFIH 2019, World Bank 2017. (*) DTI median, GDP per capita 2017.

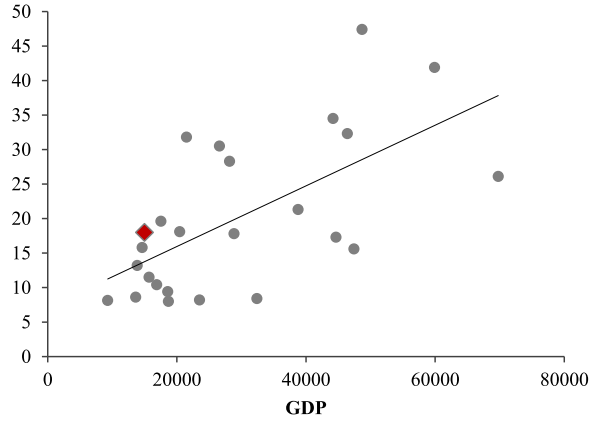


**Fig. B10.** Holding of mortgage debt: household main residence (percentage; US$*).
Source: Central Bank of Chile based on information from EFH 2017, SCF 2016, HFCS 2017, ENFIH 2019, World Bank 2017. (*) GDP per capita 2017 at current prices.

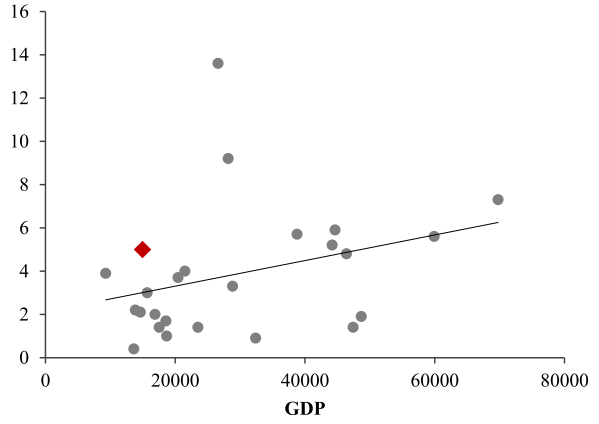


**Fig. B11.** Holding of mortgage debt: other properties (percentage; US$*).
Source: Central Bank of Chile based on information from EFH 2017, SCF 2016, HFCS 2017, ENFIH 2019, World Bank 2017. (*) GDP per capita 2017 at current prices.

## References

Atuesta, B. & T. Van Hemelryck (2022). "Protección social de emergencia frente a los impactos de la pandemia de COVID-19 en América Latina y el Caribe: evidencia y aprendizajes sobre sistemas universales, integrales, sostenibles y resilientes de protección social", Documentos de Proyectos (LC/TS.2022/143), Comisión Económica para América Latina y el Caribe (CEPAL). https://www.cepal.org/es/publicaciones/48199-proteccion-social-emergencia-frente-impactos-la-pandemia-covid-19-america-latina.

Barrero, A., Kirchner, M., Pérez, C., Sansone, A., 2020. Estimación del impacto del Covid-19 en los ingresos de hogares, medidas de apoyo y efectos en el consumo. En: Informe de Política Monetaria, diciembre de 2020. Central Bank of Chile. https://www.bcentral.cl/contenido/-/detalle/ipom-diciembre-2022.

Central Bank of Chile (2019). "Financial Stability Report. First semester 2019". https://www.bcentral.cl/contenido/-/detalle/informe-de-estabilidad-financiera-primer-semestre-2019-11.

Central Bank of Chile (2022a). "Financial Stability Report. Second semester 2022". https://www.bcentral.cl/contenido/-/detalle/informe-de-estabilidad-financiera-segundo-semestre-2022-1.

Central Bank of Chile (2022b). "Encuesta Financiera de Hogares 2021. Principales Resultados". https://www.bcentral.cl/web/banco-central/areas/encuestas-economicas/encuesta-financiera-de-hogares.

Central Bank of Chile (2023). "Financial Stability Report. First semester 2023". https://www.bcentral.cl/contenido/-/detalle/informe-de-estabilidad-financiera-primer-semestre-2023.

Cerletti, E., T. Cortés & P. Toro (2023). "Efectos causales de los retiros previsionales en el repago de deuda de los hogares". Technical note, Financial Stability Report first Semester 2023, Central Bank of Chile. https://www.bcentral.cl/contenido/-/detalle/informe-de-estabilidad-financiera-primer-semestre-2023.

Cifuentes, R., & Martínez, F. (2020). "Over-indebtedness in households: measurement and determinants." Working Paper N° 869, Central Bank of Chile. http://doi.org/10.13140/RG.2.2.25420.28805.

Chetty, R., J.N. Friedman, H. Hendren, Michael Stepner & The Opportunity Insights Team (2022). "The economic impacts of Covid-19: evidence from a new public database built using private sector data", NBER Working Paper 27431. https://www.nber.org/papers/w27431.

Christelis D., D. Georgarakos, T. Jappelli & G. Kenny (2020). "The Covid-19 crisis and consumption: survey evidence from six EU countries", ECB Working Paper N° 2507. https://www.ecb.europa.eu/press/research-publications/resbull/2021/html/ecb.rb210527~b7370d7722.en.html.

Córdova, F., & Toledo, C. (2023). "Estrés financiero de los hogares en Chile: un enfoque basado en microdatos." Technical Note, Financial Stability Report First Semester 2023, Central Bank of Chile. https://www.bcentral.cl/contenido/-/detalle/informe-de-estabilidad-financiera-primer-semestre-2023.

Crossley, T., Fisher, P., Low, H., 2021. The heterogeneous and regressive consequences of COVID-19: evidence from high quality panel data. J.. Public. Econ. 193. https://doi.org/10.1016/j.jpubeco.2020.104334.

Crossley, T., Fisher, P., Low, H., Levell, P., 2022. A year of COVID: the evolution of labour market and financial inequalities through the crisis. Oxf. Econ. Pap 1–24. https://doi.org/10.1093/oep/gpac040.

D'Alessio, G., & Iezzi, S. (2013). "Household over-indebtedness: definition and measurement with Italian data". Bank of Italy Occasional Paper N° 149. https://dx.doi.org/10.2139/ssrn.2243578.

DeVaney, S., 1994. The usefulness of financial ratios as predictors of household insolvency: two perspectives. Financ.. Couns.. Plan. 5. https://www.afcpe.org/news-and-publications/journal-of-financial-counseling-and-planning/volume-5/%EF%BB%BFthe-usefulness-of-financial-ratios-as-predictors-of-household-insolvency-two-perspectives/.

Du Caju, P., 2013. Structure and distribution of household wealth: an analysis based on the HFCS. Econ.. Rev.. (II) 41–62. https://www.nbb.be/en/articles/structure-and-distribution-household-wealth-analysis-based-hfcs-1.

Friedman, M., 1957. A Theory of the Consumption Function. Princeton University Press. https://press.princeton.edu/books/ebook/9780691188485/theory-of-the-consumption-function.

FSB (2020). "COVID-19 Pandemic: financial Stability impact and policy responses", Financial Stability Board (FSB), 17 de noviembre de 2020. https://www.fsb.org/2020/11/fsb-publishes-annual-report-on-implementation-and-effects-of-financial-regulatory-reforms-2/.

FSB (2022). "Financial policies in the wake of COVID-19: supporting equitable recovery and addressing effects from scarring in the financial sector", Financial Stability Board, 14 de noviembre de 2022. https://www.fsb.org/2022/11/financial-policies-in-the-wake-of-covid-19-supporting-equitable-recovery-and-addressing-effects-from-scarring-in-the-financial-sector-final-report/.

García, P. (2021). "The monetary and financial policy response to the CV19 crisis: the case of Chile", Documento de Política Económica N° 69, Banco Central de Chile. https://www.bcentral.cl/contenido/-/detalle/informe-de-politica-monetaria-septiembre-2021.

Gourinchas, P.-O., Parker, J.A., 2002. Consumption over the life cycle. Econometrica 70 (1). https://doi.org/10.1111/1468-0262.00269.

IMF (2021): "A fair Shot", Fiscal Monitor, International Monetary Fund (IMF), april 2021. https://www.imf.org/en/Publications/FM/Issues/2021/03/29/fiscal-monitor-april-2021#:~:text=Full%20Report%20%3A%20A%20Fair%20Shot,fairer%2C%20and%20more%20durable%20recovery.

Inzunza, A. & D. Romero (2023a). "Hogares restringidos financieramente". Technical note, Financial Stability Report first Semester 2023, Central Bank of Chile. https://www.bcentral.cl/contenido/-/detalle/informe-de-estabilidad-financiera-primer-semestre-2023.

Inzunza, A. & D. Romero (2023b). "Heterogeneidad en Gasto, Inflación e Ingreso Discrecional". Technical note, Financial Stability Report first Semester 2023, Central Bank of Chile. https://www.bcentral.cl/contenido/-/detalle/informe-de-estabilidad-financiera-primer-semestre-2023.

Inzunza, A., Madeira, C., 2025. The Chilean pension withdrawals and the 2025 reform: Fiscal and retirement consequences. Journal of Pension Economics and Finance 1–27. doi:10.1017/S1474747225000580.

Madeira, C., 2022. The impact of the Chilean pension withdrawals during the Covid pandemic on the future savings rate. J. Int. Money. Finance 126. https://doi.org/10.1016/j.jimonfin.2022.102650.

Ministerio de Hacienda, 2021. Estado de la Hacienda Pública 2021. Ministerio de Hacienda de Chile. https://www.hacienda.cl/areas-de-trabajo/presupuesto-nacional/estado-de-la-hacienda-publica/estado-de-la-hacienda-publica-2021.

Sierminska, E., & Medgyesi, M. (2013). "The distribution of wealth between households". Research note (European Commission, Brussel 2013). https://ec.europa.eu/social/BlobServlet?docId=11782&langId=en.

Slacalek, J., Tristani, O., Violante, G.L., 2020. Household balance sheet channels of monetary policy: a back of the envelope calculation for the euro area. J.. Econ.. Dyn.. Control, 103879. https://doi.org/10.1016/j.jedc.2020.103879.

Stantcheva, S. (2022). "Inequalities in the Times of a Pandemic", NBER Working Paper 29657. https://ssrn.com/abstract=4010506.