What Makes Depositors Tick?

Bank Data Insights into Households' Liquid Asset Allocation

Fernando Cirelli Arna Olafsson*

June 2025

Abstract

We use transaction-level bank data covering 2016-2024 to study household portfolio choice within a narrowly defined asset class: liquid, short-term, safe assets. These assets are virtually identical in risk, maturity, and liquidity, and balances can be shifted between them instantaneously at no cost, yet their yields differ markedly. We document that portfolio returns rise strongly with individuals' wealth: the top decile earns on average about two percentage points more than the bottom decile by favoring higher-yield assets. Nonetheless, wealthy households still leave more interest income, worth roughly 2.5 percent of their annual consumption, on the table while the median household leaves about 0.3 percent. We show that portfolio allocations react sharply to wealth changes but only modestly to interest-rate spreads—except among the richest depositors, whose responsiveness is ten times the average. Linking survey evidence to the bank data, we show that greater financial literacy and accurate inflation knowledge are associated with stronger reallocation toward high-yield accounts. We also document that during the Covid cycle, movements in aggregate shares of low-return deposits were driven mainly by wealthy savers responding to widening spreads, highlighting the importance of monetary policy decisions for banks' funding costs and credit supply.

*Cirelli (f.cirelli@columbia.edu): School of International and Public Affairs, Columbia University. Address: 420 W 118th Street, New York, NY 10027; Olafsson (ao.fi@cbs.dk): Copenhagen Business school, Danish Finance Institute, CEPR; Olafsson gratefully acknowledges support from the Center for Big Data in Finance (grant no. DNRF167). We thank the bank providing the data for their collaboration and Ines Kishkill for her research assistance.

1 Introduction

What drives the allocation of household liquid safe assets is a central question in economics as they constitute a key link between monetary policy, the banking sector, and the real economy. For instance, the distribution of liquid assets shapes the transmission of both monetary and fiscal policy Auclert et al. (2025). The stickiness of bank deposits—the primary form of household liquid assets—influences bank lending Hanson et al. (2015) and fluctuations in deposits shape financial intermediation along the business cycle Drechsler et al. (2017). The liquid safe assets of household are also an important store of value, making up the largest share of financial portfolios of households, as well as a source of revenue, and play a key role in households' ability to smooth consumption Badarinza et al. (2016). However, despite the importance of this asset class, there is limited understanding of what drives its allocation.

In this paper, we contribute to the understanding of household financial portfolio allocation by focusing on the portion comprised of liquid, short-term, safe assets. While narrow in scope, this category is economically important: for the median household, it represents their only form of financial wealth, and for the vast majority, it makes up the largest share of their financial portfolio. These assets also play a key role in the financial system where they serve as a primary funding source for banks. Focusing on this part of the financial portfolios of household allows us to abstract from differences in risk, maturity, and liquidity, and isolate variation in portfolio choices not driven by these characteristics.

To study household portfolio decisions, we leverage detailed transaction-level data from one of the largest banks in Iceland. The bank offers all clients access to multiple liquid, short-term, safe assets that are nearly identical in non-pecuniary characteristics but differ significantly in interest rates, with these differences widening over the business cycle.[1] Importantly, moving funds between these accounts is nearly frictionless: transfers are instantaneous and free of charge. Despite this, we document large differences in portfolio returns across individuals, show that many households leave a substantial share of consumption in the form of forgone interest payments, and find that portfolio allocations are largely unresponsive to interest rate

[1]These assets—defined more precisely in Section 2.4—include checking and savings accounts, and a money market account.

spreads—except among wealthy individuals.

Central to our analysis is the richness of the data. We observe detailed daily information covering roughly one-third of the Icelandic population, including individual bank account balances, loans, interest rates, inflows and outflows, as well as financial portfolios managed by an affiliated broker. The data are linked to demographic characteristics and survey responses from bank clients, allowing us to measure financial literacy, inflation knowledge, expectations, and other individual characteristics. Furthermore, Iceland provides an ideal environment to address our research question, as it is among the most advanced countries in digital banking, with near-universal use of online financial services for a long period of time and frictionless, real-time transfers between accounts.

We begin by examining how individuals allocate their liquid, short-term, safe assets during the sample period of 2016–2024. We show that despite the nearly identical non-pecuniary characteristics of these assets and their equal accessibility to all bank clients, individuals at the top of the wealth distribution earn returns that are, on average, 2 percentage points higher than those at the bottom. Crucially, this difference in returns arises solely from portfolio choices favoring higher-yielding accounts, rather than from differences in risk, maturity, or liquidity. Nevertheless, despite earning higher returns, wealthier households leave more money on the table, forgoing interest income equivalent to approximately 2.5 percent of their annual consumption, compared to a median cost of 0.3 percent.

We next examine whether households adjust their portfolios as their wealth rises or as the spread between low- and high-yield liquid assets widens—two forces that raise the cost of holding funds in low-return deposits. Specifically, we study whether balances shift out of low-yielding checking deposits. We find that portfolio shares in low-return deposits fall sharply with wealth: individuals in the top asset decile hold, on average, more than 40 percentage points less in checking deposits than those in the bottom decile. By contrast, sensitivity to interest-rate spreads is modest: the share kept in low-return deposits declines by only about 0.1 percentage points for every 1 percentage point increase in the spread.

We find significant heterogeneity in how households' respond to changes in interest-rate spreads. The wealthiest individuals are roughly ten times more responsive than the average depositor: those in the top decile reduce their checking-deposit share by about 1 percentage

point for every 1-percentage-point increase in the spread, whereas the bottom 60 percent of the distribution hardly react at all. Survey evidence further shows that higher financial literacy and better inflation knowledge substantially amplify households' responsiveness to changing spreads.

Finally, we examine what drove deposit dynamics over the Covid business cycle. During this period, two forces moved in tandem: (i) a surge in household savings—driven by reduced consumption opportunities and boosted disposable income from government transfer programs—and (ii) a sharp widening of spreads on liquid assets as policymakers tightened rates to curb inflation. We show that since deposits are so heavily concentrated among wealthy households, the large swings in banks' low-return deposit shares were driven primarily by wealthy savers reallocating in response to higher spreads, rather than by changes in the wealth of the broader population. Overall, these findings highlight how monetary policy decisions shape banks' funding costs and, ultimately, their lending.

Related Literature

This paper contributes to several strands of the literature. First, we add new evidence to the long-standing question of what drives household portfolio allocation—see, for example, Guiso et al. (2002); Campbell (2006)—by documenting large heterogeneity in choices even within a narrowly defined asset class. We also contribute to the literature on portfolio sensitivity to interest rates Koijen and Yogo (2019), showing that investor wealth is a key determinant of responsiveness. In addition, we show that individual characteristics—such as financial literacy, as emphasized by Lusardi and Mitchell (2014)—help explain cross-household differences in sensitivity to interest rate spreads.

We also contribute to the literature on deposit stickiness . In our setting, all transfers—both within and across banks—are settled instantaneously, allowing us to rule out transfer delays as a source of inaction, in contrast to findings in Lu et al. (2024). Additionally, our findings speak to the broader literature on the importance of stable deposits for bank funding Hanson et al. (2015); Egan et al. (2021); d'Avernas et al. (2023); DeMarzo et al. (2024); Kundu et al. (2024); Koont et al. (2024) and the role of monetary policy in shaping lending through deposit reallocation Drechsler et al. (2017); Li et al. (2023).

We contribute to the literature on household inaction in response to financial incentives, such as Andersen et al. (2020b), Chetty et al. (2014) and Andersen et al. (2025). Despite a frictionless environment and sizable potential gains, we find that most households do not reallocate toward higher-yielding assets—highlighting widespread inaction in household portfolio decisions.

Our reliance on transaction-level bank data relates to a growing literature that uses these kind of data, either from financial aggregators or directly from banks (see, e.g., Gelman et al., 2014; Baker, 2018; Olafsson and Pagel, 2018; Andersen et al., 2020a; Carlin et al., 2022; Gathergood and Olafsson, 2024) and another literature that links administrative data containing information on individuals' real-world financial behavior, from either tax records or transaction-level bank data, with survey evidence from the same individuals (see, e.g., Epper et al., 2020; Carvalho et al., 2024; Schnorpfeil et al., 2024)

Finally, we contribute to the literature on heterogeneous and persistent returns across households Fagereng et al. (2020). While our findings align with their documented return gaps, we highlight the cyclical component: differences in portfolio adjustments over the business cycle.

2 Data

We use proprietary data from one of the largest banks in Iceland. The data set includes all individual bank account balances, the interest rates paid on each account, overdraft limits, and usage. It covers all loans—such as mortgages, car loans and leases, and consumer loans—as well as financial portfolios managed by an affiliated broker, with daily information on portfolio composition and all transactions. The data also contain all inflows and outflows from each account, accompanied by transaction descriptions that allow us to classify them. In addition, we observe debit and credit card expenditures, including credit limits and detailed information on the time, location, merchant, category, and amount of each transaction.

In addition to the bank information, we also have demographic data that allow us to identify individuals and their families, including age, gender, and registered place of residence. We also use survey information from the bank customers that were obtained through four

online surveys administered to bank customers by a researcher from Copenhagen Business School over the past few years. In all surveys, participants have similar characteristics to other bank customers as well as the general population. Each survey was tailored to address specific research questions related to the project, and as a result, the questions varied across surveys. These surveys provide information on individuals' financial knowledge, understanding of inflation's effects, discounting and risk preferences, decision-making abilities, education levels, and other relevant characteristics.

2.1 Environment

Iceland provides an ideal setting to study questions related to household portfolio allocation in a digital financial environment. For context, its GDP per capita in 2023 was approximately 30% higher than that of France, after adjusting for its higher cost of living.[2] Crucially, Iceland is among the most advanced countries in the adoption of online banking and electronic payments. In 2021, 95% of Icelanders reported using internet banking, compared to 75% in France and 45% in Italy.[3] Cash usage is also exceptionally low: in 2022, only 7% of transactions in Iceland were conducted in cash, versus 50% in France and 70% in Italy.[4]

In addition, bank accounts in Iceland are personal and there are therefore no joint accounts, even within households. The fact that there are no joint accounts in Iceland means that all transactions we observe are related to the individual under investigation and not to the spouse. Moreover, motives for holding funds in low-return accounts for precautionary reasons are limited: interbank transfers are free and instantaneous, and unexpected bills are rare. Most bills are linked to a resident's social security number and appear automatically in their online banking interface without requiring explicit enrollment. Finally, 70% of surveyed customers at our partner bank report banking exclusively with that institution and not holding accounts elsewhere.

[2] International Monetary Fund (2025)
[3] Eurostat (2025)
[4] Central Bank of Iceland (2024), European Central Bank (2022)

2.2 Sample selection

We use a panel data set tracking the daily balances, spending, income, borrowing, and investing of an average of 133,751 individuals per year, representing approximately 44.7% of Iceland's total adult population. We observe account balances from January 2016 to September 2024, but transaction movements and interest rates are available only from January 2018 onward. Most of our analysis focuses on a subset of customers we define as *active*.

We call a customer active if he or she is an adult with a checking account at the bank, registered as residing in Iceland, and appear economically active. Specifically, we require individuals to have at least one monthly income inflow—such as labor income, unemployment or invalidity benefits, pension payments, or student loans—and at least one food-related expense in at least 8 of the past 24 months. This criterion excludes dormant account holders and individuals who primarily bank elsewhere. After applying this filter, we identify an average of 94,400 active customers, representing 32% of the adult population.

2.3 Data Representativeness

One concern is whether individuals bank activities at one bank provide an accurate picture of their finances. In surveys of bank clients, we found that 67% of bank customers bank exclusively with the collaborating bank and among those with multiple accounts, over 35% mention that they only have inactive accounts at other banks. Additionally, the distribution of age and gender in our bank data set closely aligns with the population distribution in Iceland, as shown in Table 1 for 2023.

Our data set includes deposits from all individuals with an account in the collaborating bank. Figure 16 in the appendix shows that these deposits account for an average of 30% of total household deposits reported by the Central Bank of Iceland, with this share remaining stable over time. We interpret this as evidence supporting the representativeness of our deposit data.

We also benchmark our expenditure data with measures of national consumer behavior. First, we compare observed spending among bank customers to data from the Household

Table 1: Demographics of Icelandic Adults and Active Bank Clients

2023	Iceland	Active Clients
Total (adults)	291,061	94,400
Women	49%	49%
Age		
Mean	46.7	46.4
St Dev	18.4	17.8
share 18-35	0.34	0.36
share 36-50	0.26	0.28
share 45+	0.40	0.36

Note: This table compares the demographic composition of the adult population in Iceland to the sample of active clients used in our analysis. "Active clients" refers to individuals with observable account activity. Population statistics are drawn from national registers; sample statistics are computed from the bank's internal data.

Final Consumption Expenditure collected by the Statistics Iceland. This comparison is not straightforward, as we observe outflows of funds from accounts, some of which cannot be classified as consumption or lack detailed categorization. Additionally, expenditure surveys include spending by tourists, who in a country like Iceland account for around 20% of total expenses (and close to 100% in categories like transportation and accommodation), but are absent from our data set. Fortunately, in 2019, the statistical agency reported separate data on consumption by locals and tourists, enabling a more precise comparison with our bank data.

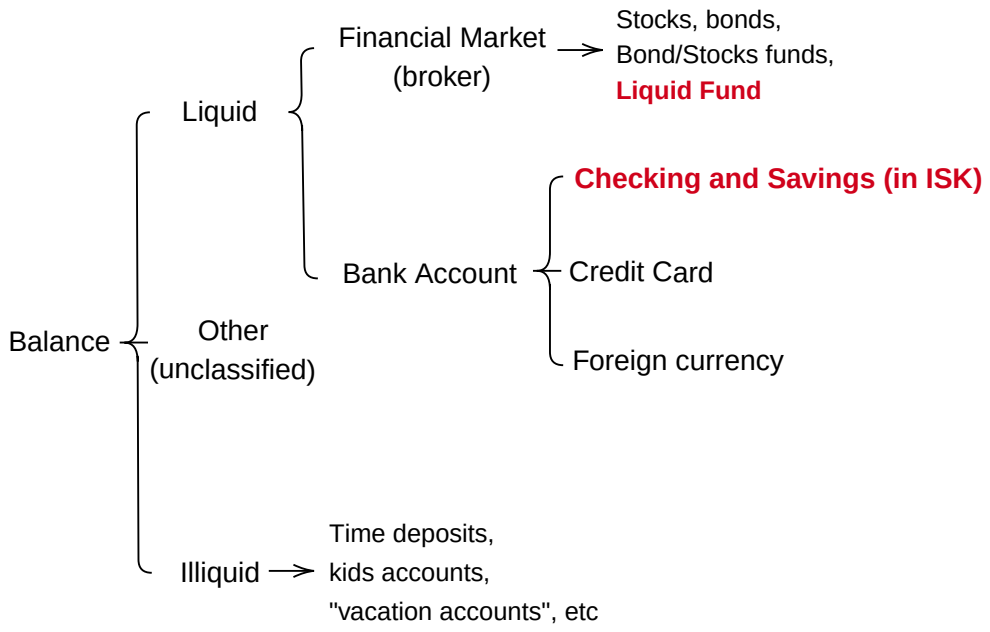
Figure 17 in the appendix illustrates how closely the expense shares in our data set align with those reported for locals in the 2019 Household Final Consumption Expenditure by Statistics Iceland. The close match across multiple spending categories shows that our data set is representative and reliable for capturing broader consumer behavior patterns.

2.4 Accounts Classification and Characteristics

We analyze the balance holdings of individuals within the bank and in their associated brokerage accounts, if such an account is open. The bank offers a wide variety of account types. Using information provided by the bank, its public website, and the internet archives, we classify these accounts into categories that are straightforward to interpret and comparable

to other countries. Figure 1 presents a summary of this classification along with examples.

Figure 1: Accounts Classification



Note: This figure displays our classification of individual bank accounts into interpretable categories along with examples. Accounts highlighted in red are those we categorize as liquid, short-term, safe assets—the primary focus of our study.

Individual balances can be *liquid*—meaning funds can be transferred to an account that can be used for payments at full value without time or quantity constraints—or *illiquid*, if they do not meet this criterion. Liquid accounts are further divided into funds held in bank accounts or in the brokerage account affiliated with the bank. We refer to balances held in the brokerage account as balances in the *financial market*. Bank accounts are categorized into classic checking and savings accounts, which offer a secure return in Icelandic Krona (ISK), and foreign currency accounts, whose return in ISK is uncertain. We also observe daily credit card balances. Finally, there is a small share of accounts that we could not classify and which we labeled as *other*.

Checking account balances can be positive or negative, as most come with an overdraft facility, where account balances can be negative up to a limit based on credit history, income,

and assets. Overdrafts dominate the unsecured consumer credit market in Iceland and are generally used extensively. Credit card balances can also be either positive (prepaid credit cards) or negative (outstanding balances). Credit cards in Iceland are issued by the banks and their balances are rarely rolled over on their due dates but rather paid in full, and if individuals lack funds to pay them, they rather take an overdraft to pay the bill.

Table 2 provides a summary of account balances from both the individuals' and banks' perspectives. Each figure represents the time series average across the sample, with values reported in 2024 Icelandic Kronas.[5] Checking and savings accounts are by far the most common financial assets, as nearly every individual in the sample holds a non-zero balance in these accounts. On average, these accounts constitute the largest shares of individual portfolios. In contrast, holdings in foreign currency accounts and financial market accounts are relatively uncommon and exhibit a higher concentration of funds. For the bank, the bulk of funds come in the form of savings deposits, which are also relatively stable.

Table 2: Balances Descriptive Statistics

	Checking	**Savings**	**FX**	**Time Dep**	**Other Illiquid**	**Financial Market**
Individuals						
Share with Non-zero Holdings	0.97	0.8	0.15	0.1	0.3	0.12
Mean portfolio share	0.37	0.38	0.02	0.02	0.14	0.05
Share held by top 10% holders	0.68	0.70	0.92	0.80	0.66	0.76
Bank						
Mean share	0.14	0.54	0.04	0.08	0.17	-
Std. Dev. (share)	0.025	0.03	0.009	0.012	0.005	-

Note: Statistics represent sample averages. The share held by top holders of each asset is calculated for each year, with the reported value being the time-series average.

Liquid Short-Term Safe Assets

As mentioned, our focus is on individuals' allocation of liquid, short-term, safe assets, with only limited and explicitly noted exceptions. Figure 1 highlights in red the account types included in this category: checking accounts, savings accounts, and "liquid funds" held at the broker. These assets are considered liquid because transfers between them are free, instantaneous, and unrestricted in terms of time, amount, or frequency. Additionally, they

[5]For reference, the US/ISK exchange rate was \$129 ISK per US Dollar during the sample period.

carry no price risk, as they have zero maturity.

Table 3 provides a detailed overview of the differences between these account types. Checking accounts can be used for payments—both debit and credit card transactions are settled through them—can be accessed via ATMs, and also function as a credit line due to an overdraft facility. Transfers from checking accounts to other banks are immediate and free of charge throughout the sample period. Moreover, checking deposits are insured up to EUR 100,000 under Icelandic legislation.[6] Savings accounts are nearly identical to checking accounts, with two key exceptions: they cannot be linked to payment cards and do not offer overdraft facilities. However, transfers between checking and savings accounts are instantaneous, free, and unlimited in amount. Liquid funds, finally, are short-term money market funds offered through the associated broker. Transfers into and out of these funds incur a 24-hour delay. The underlying assets are typically short-term government securities, virtually free of price risk.

Table 3: Liquid Short-Term Safe Assets Characteristics

	Payments (Debit card / ATM / Overdraft)	Deposit Insurance	Liquidity (transfer to checking)	Transfers (other banks)
Checking	✓	✓	-	✓
Savings	✗	✓	Instant	✓
Liquid Funds	✗	✗	24hrs	✗

Note: the table summarizes the differences across liquid short-term safe assets. A check mark indicates features available to bank clients for each account type, while a cross denotes unavailable features.

We therefore study portfolio allocation in a clean and transparent environment: the assets in our category do not differ in risk, maturity, or liquidity, and transfers between them are frictionless. While our focus is limited to a narrow set of asset types, this category is particularly important. As shown in Table 2, for many households this is their only form of financial wealth, and for most, it constitutes a substantial share of their overall portfolio. Moreover, these assets represent a primary funding source for the banking sector

[6] Central Bank of Iceland (2025)

3 Allocation of Liquid Short-Term Safe Assets

In this section, we analyze how individuals allocate their liquid, short-term safe assets—namely, checking deposits, savings deposits, and liquid funds held at the broker. As discussed earlier, these assets are similar in their non-pecuniary characteristics. We begin by showing that, despite this similarity, they offer significantly different interest rates. We then document how portfolio allocations vary across individuals and quantify the foregone interest income associated with observed asset choices.

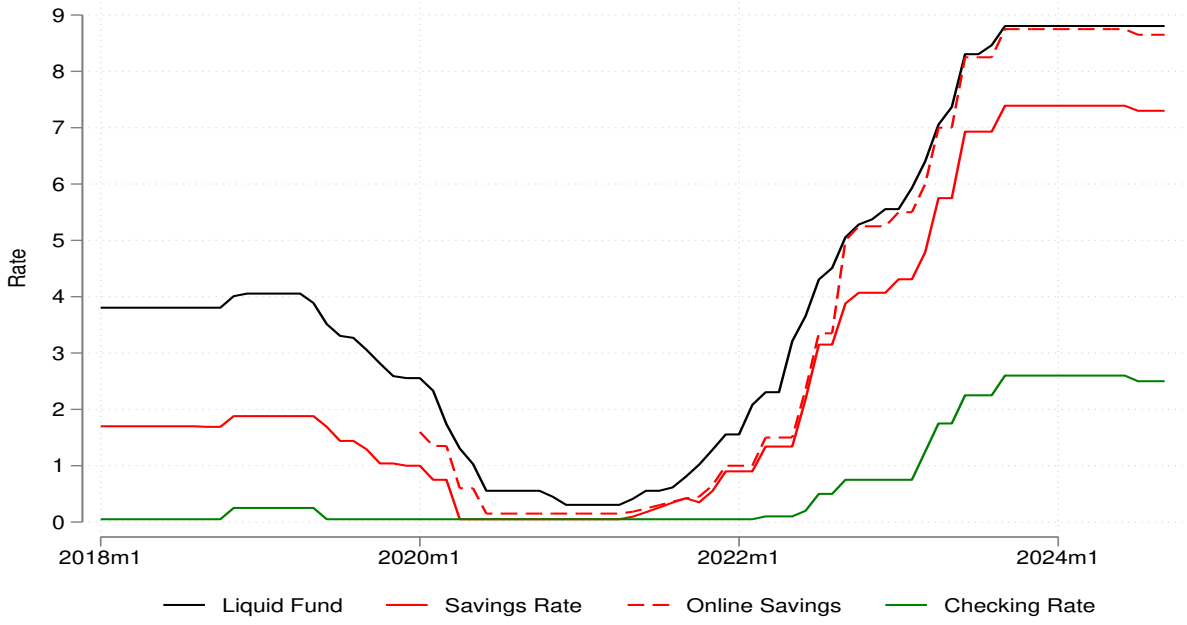
Interest Rates

Figure 2 presents the time series of interest rates for a set of liquid, short-term safe assets available to bank clients over the sample period. Among all the available products, the figure reports the returns on high-yield checking and savings accounts, a product labeled "Online Savings" that became available in 2020, and the net return (after operational costs) on the liquid fund offered through the broker.

Figure 2 highlights that the spread, defined as the difference between the return on the liquid fund—the highest-yielding liquid safe asset—and deposit returns, is consistently positive and, in the case of checking accounts, widens as interest rates rise. This suggests that holding funds in deposits, particularly in checking accounts, becomes increasingly costly during periods of monetary tightening. The figure also shows that in recent years, all bank clients had access to a high-return, safe asset through a savings account at their bank—without needing to move funds elsewhere or forgo deposit insurance.

Our setting, where the high-rate and low-rate co-exist within the same institution, is ideal for evaluating the importance of interest rates in the allocation of wealth to low-rate and high-rate accounts as it allows us to control for factors that have been suggested as explanations for the stickiness of deposits, like deposit insurance (Hanson et al., 2015), superior liquidity services (d'Avernas et al., 2023) and delay in transfers (Lu et al., 2024).

Figure 2: Time Series of Interest Rates on Bank Account and the Liquid Fund



Note: The figure shows the interest rates offered by the bank on its high-yield checking and savings accounts, as well as on the "Online Savings" account introduced in 2020. It also includes the net interest rate (after fees) on the liquid fund available through the broker.

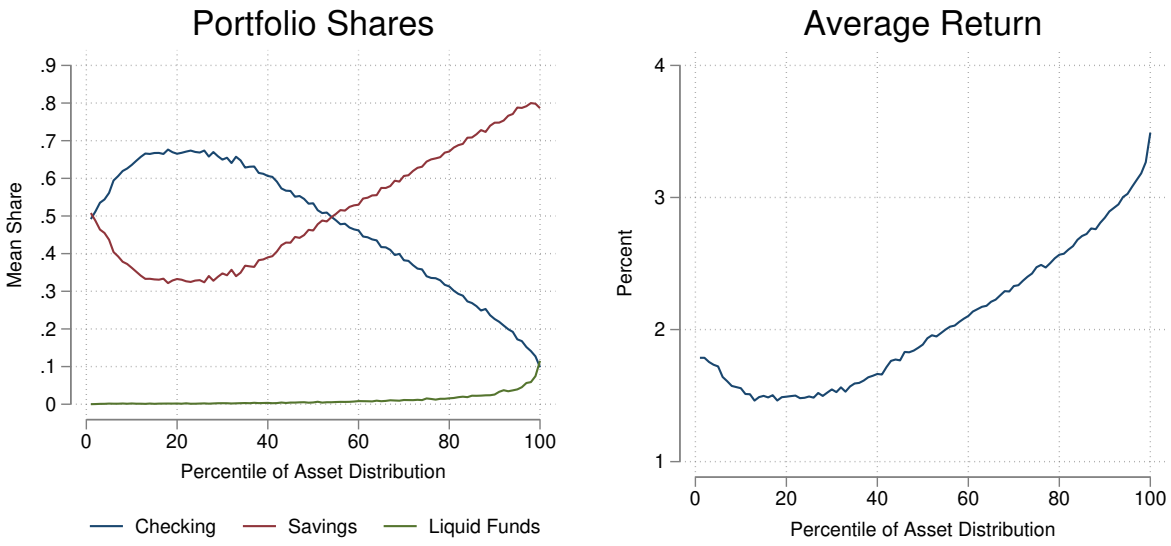
Portfolio Allocation and Return

Given the substantial differences in returns between accounts offering nearly identical non-pecuniary benefits, we examine how individuals allocate their funds and the resulting costs.

The left panel of Figure 3 shows portfolio allocation across the distribution of liquid short-term safe asset holdings. To construct the figure, we compute each individual's average daily share in each asset class for a given year, then group individuals into percentiles based on their average holdings that year. The figure reports the sample average across all years.

The figure shows that wealthier households allocate a smaller share of their portfolio to low-return checking deposits, favoring higher-return savings accounts instead. For example, individuals in the top percentiles hold only about 20% of their liquid portfolio in checking deposits—roughly 50 percentage points less than those in the bottom percentiles. However, liquid funds held within brokers remain a marginal asset class, even among the very wealthy.

Figure 3: Portfolio Shares and Return on Liquid Safe Assets



Note: This figure summarizes portfolio allocation of liquid short-term safe assets (left panel) and the return (right panel) across the distribution of holdings. For each year, we compute individuals' average daily share in each asset class and group individuals into percentiles based on their average holdings. The left panel shows the average portfolio composition by percentile; the right panel displays the corresponding weighted average return. Both panels plot the sample average across all years.

A lower portfolio share in low-return assets allows wealthier households to earn systematically higher returns on their portfolios, making the return on liquid short-term safe assets wealth-dependent. The right panel of Figure 3 shows the weighted average return on these assets by percentile, grouping individuals each year based on their average asset holdings. The figure reveals that households in the top percentiles earn, on average, returns that are 2 percentage points higher than those in the bottom percentiles. Importantly, this return gap does not reflect differences in risk, maturity, or liquidity—only differences in how households allocate their liquid, short-term, safe assets.[7]

The wealth dependence of returns on assets with similar characteristics—and its implications for wealth inequality—has been emphasized in prior research (see Fagereng et al., 2020). However, less attention has been paid to the cost associated with forgone interest income, which we examine in the following section.

[7]All asset types shown are accessible to bank clients.

The Cost of Liquid Asset Allocation

A higher return on assets reduces the *unit* cost per Krona, but it does not necessarily reduce the *total* cost, as the latter scales with wealth. To formalize this, we define the cost of individual i's portfolio allocation at time t as the forgone interest income, normalized by consumption expenditures:

$$\text{cost}_{it} = \frac{\left(r_t^L - r_{it}\right) a_{it}}{c_{it}} \tag{1}$$

Here, r_t^L denotes the return on the liquid fund at time t—the highest available rate among liquid safe assets—while r_{it} is the return on individual i's liquid portfolio. The term $(r_t^L - r_{it})$ thus captures the forgone spread, that is, the return gap relative to the allocation that maximizes returns. The product $(r_t^L - r_{it})a_{it}$ represents the total forgone interest income. By dividing this by c_{it}, individual i's consumption expenditure at time t, we express the cost in consumption-equivalent units. Equation (1) therefore measures how much consumption is effectively left on the table by individual i in the allocation of liquid short-term safe assets.[8] To compute this, we use total forgone after-tax interest income and consumption expenditures over a twelve-month period.[9]

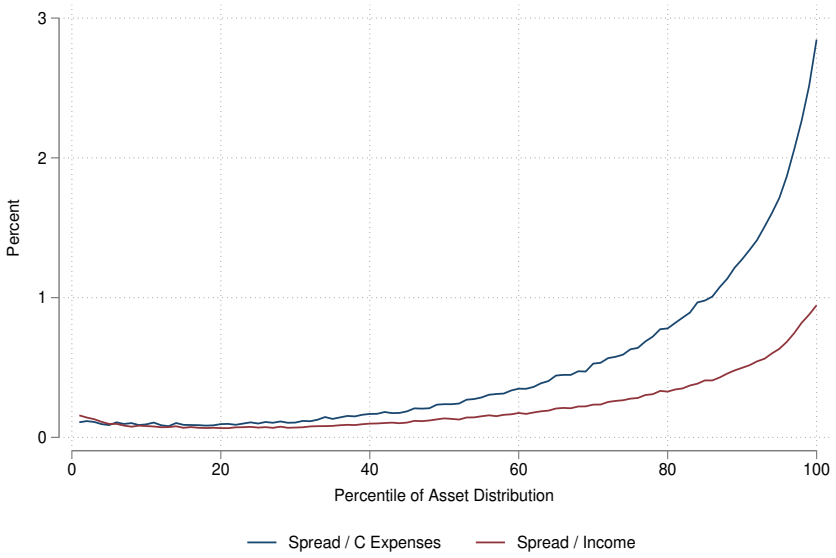
Figure 4 shows that while wealthier households earn higher returns on their liquid safe assets, the cost increases with wealth. Moreover, the figure highlights that these costs are substantial for a large share of the population, ranging from 0.33 percent of annual consumption for the sixth decile to close to 3 percent for the wealthiest individuals.

In this section, we show that wealthier individuals allocate their liquid short-term safe assets into higher-return assets and, as a result, earn higher returns on average. Yet, they are also the ones who bear larger costs. In the next section, we examine whether households respond to these costs by reallocating their portfolios as the cost increases.

[8]We do not interpret a higher cost as evidence of suboptimal behavior. There may be valid reasons for choosing lower-yielding allocations. Instead, the measure can be read as: if such reasons exist, then the measured cost is what would be required to rationalize the observed allocation.

[9]We winsorize a_{it}/c_{it} at the 2.5th and 97.5th percentiles to mitigate the influence of outliers. To compute after-tax returns, we apply a capital income tax rate of 22%, consistent with the rate in place in Iceland since 2018. We also replicate the analysis using income during the year in place of consumption expenditure.

Figure 4: Cost of Liquidity



Note: This figure plots the cost of liquidity, defined as the difference between the return on a individual's liquid safe assets and the average after-tax return available in the market. We winsorize the cost at the 2.5th and 97.5th percentiles to reduce the influence of outliers. After-tax returns are computed using a capital income tax rate of 22%, in line with the Icelandic tax code since 2018. We report results based on consumption expenditure and also using annual income.

4 Portfolio Adjustments

As shown in equation (1), the cost of holding the allocation fixed increases with both wealth and spreads. In this section, we examine whether individuals respond to these rising costs by reallocating their portfolios away from low-return assets as they accumulate wealth or as spreads widen. Our focus remains on short-term, safe, liquid assets, which—while nearly identical in non-pecuniary benefits—exhibit widening spreads as interest rates rise.

The Role of Wealth and Spreads

To begin answering this question, we examine how the share of low-return checking deposits in an individual's portfolio responds to fluctuations in their wealth, the level of the interest rate, and several controls. We divide active individuals in the sample into asset deciles $d_{it} = \{1, 2, \ldots, 10\}$ using three different specifications to capture different notions of wealth.

In the first, we sort individuals into deciles based on their level of assets in a given month relative to others. In the second, we sort by each individual's average level of assets across the sample period. In the third, deciles are calculated uniquely for each individual by ranking their monthly asset levels from 1 (lowest) to 10 (highest) over time.

We estimate the following regression:

$$\text{share}_{it}^{C} = \alpha + \beta^{r} \cdot r_{t}^{L} + \sum_{j=1}^{10} \beta_{j}^{a} \cdot \mathbb{I}_{(d_{it}=j)} + X_{it}' \cdot \delta + \nu_{i} + \varepsilon_{it} \tag{2}$$

where share_{it}^{C} is the share of individual i's portfolio held in checking deposits among liquid, safe, short-term assets in month t; r_{t}^{L} is the interest rate on the liquid fund normalized to have mean zero; $\mathbb{I}_{(d_{it}=j)}$ is an indicator function equal to one if individual i is in decile j in month t; ν_{i} denotes individual fixed effects, which we include in some specifications; and X_{it}' represents a vector of controls for which we include individual age and age^2, a linear time trend and a gender dummy.

Table 4 shows that the share of low-return checking deposits declines with wealth. This pattern holds across all three decile definitions. Column (1) shows that individuals in the top decile of the asset distribution in month t hold, on average, a 42.6 percentage point lower share of checking deposits compared to those in the bottom decile. A similar gap is observed in column (2), where deciles are based on individuals' average asset levels over the sample period. Column (3) shows that the relationship also holds within individuals: when individuals are in the highest wealth decile relative to their own distribution, they hold on average 15.8 percentage points less in checking deposits compared to when they are in their lowest decile. This confirms that wealthier individuals—both in the cross section and over time—allocate a smaller share of their liquid portfolios to low-return assets.

Table 4 also shows that the share of low-return checking deposits declines as the interest rate on the highest-return short-term safe asset, r_{t}^{L}, increases, and—as shown in Figure 2—spreads widen. To gauge the magnitude, column (1) indicates that a 1 percentage point increase in the liquid fund rate is associated with a 0.13 percentage point decrease in the checking deposit share. This implies that the 9 percentage point increase in the liquid fund rate observed between 2021 and 2024—during which the spread between the liquid fund and

Table 4: Share of Checking Deposits in Liquid Short-Term Safe Portfolios

	Decile Classifications		
	(1) Monthly levels	(2) Sample average	(3) Own wealth
Decile levels (relative to 1st)			
2.	9.59	-2.38	-0.12
	(0.19)	(0.42)	(0.056)
3.	9.99	-7.74	-1.34
	(0.22)	(0.42)	(0.075)
4.	6.26	-13	-2.92
	(0.24)	(0.43)	(0.09)
5.	-0.66	-17.4	-4.68
	(0.26)	(0.439)	(0.097)
6.	-8.83	-20.9	-6.47
	(0.27)	(0.44)	(0.10)
7.	-16.42	-26.55	-8.69
	(0.281)	(0.442)	(0.11)
8.	-24.08	-32.12	-10.96
	(0.29)	(0.44)	(0.11)
9.	-32.65	-39.34	-13.67
	(0.3)	(0.44)	(0.12)
10.	-42.66	-49.48	-15.81
	(0.31)	(0.42)	(0.12)
Liquid Fund rate (r^L)	-0.13	-0.18	-0.31
	(0.014)	(0.015)	(0.013)
age	0.722	0.884	-0.718
	(0.0261)	(0.0266)	(0.0570)
age^2	-0.00679	-0.00837	0.00867
	(0.000267)	(0.000273)	(0.000503)
Female	-8.14	-8.46	
	(0.192)	(0.195)	
Time trend	-0.0168	-0.0327	-0.0503
	(0.00164)	(0.00177)	(0.00305)
Constant	47.83	56.21	70.59
	(0.609)	(0.651)	(1.636)
FE	N	N	Y
N	7970266	7970266	7959582
adj. R^2	0.182	0.142	0.661

Note: The table reports estimates from regression (2) of the share of checking deposits in portfolios on asset deciles, the liquid fund interest rate, and controls. We use three alternative decile definitions. In the first column, individuals are sorted each month based on their asset holdings relative to the rest of the sample. In the second, individuals are sorted based on their average asset holdings over the entire sample period. In the third, each individual's monthly asset holdings are ranked relative to their own asset distribution across the sample period. Standard errors are clustered at the individual level and shown in parentheses.

checking deposits widened by over 6 percentage points—is associated with an average decline in the checking share of only about 1.2 percentage points. This suggests a relatively modest average response to spreads.

There are a few additional results from Table 4 worth noting. First, we observe a negative time trend in the share of checking deposits, which may reflect improvements in the accessibility and usability of alternative accounts. Second, gender plays a significant role: female clients hold, on average, 8 percentage points less in low-return checking deposits compared to male clients with similar characteristics. Lastly, the substantial increase in the R^2 when individual fixed effects are included (column (3))—relative to when they are excluded (columns (1) and (2))—highlights the importance of persistent individual characteristics in explaining portfolio heterogeneity.

Instrumenting Spread Changes with Monetary Policy Shocks

Concerns about the identification of the coefficient on r_t^L are valid, since movements in the liquid fund rate are closely tied to changes in the central bank's policy rate, which in turn responds endogenously to macroeconomic conditions—potentially correlated with the share of checking deposits. To address this endogeneity, we instrument changes in r_t^L using monetary policy surprises—unexpected changes in the policy rate around central bank announcements—following a well-established approach in the monetary economics literature.[10]

Unlike in the US, Iceland does not have a liquid market for government bond futures that can be used to infer monetary policy surprises around central bank meeting times. However, commercial banks in Iceland regularly publish forecasts of central bank decisions ahead of the monetary policy meetings at which the policy rate, r_t, is set by the Monetary Policy Committee. We define a monetary policy surprise on date τ as the difference between the actual policy rate announced by the committee, r_τ, and the most recent forecast from our partner bank, r_τ^f:

$$\text{surprise}_\tau = r_\tau - r_\tau^f \tag{3}$$

We work with monthly data and define the monthly shock as the sum of all surprises within a

[10] See, for example, Nakamura and Steinsson (2018).

given month.[11] Figure 14 in Appendix A shows the time series of changes in the central bank policy rate and the corresponding surprises. While most policy changes were anticipated, the figure reveals several sizable surprises—particularly during the tightening cycle following the Covid pandemic.[12]

We follow the literature on monetary policy transmission and use monetary policy surprises as instruments for changes in the interest rate on liquid assets. Specifically, we estimate a version of equation (2) in six-month differences:

$$\Delta \text{share}_{it}^{C} = \alpha + \beta^{r} \cdot \Delta r_{t}^{L} + \beta^{a} \cdot \Delta \log\left(a_{it}\right) + \varepsilon_{it} \tag{4}$$

where Δx_t denotes the six-month change in variable x, and $\log(a_{it})$ is the log of liquid safe assets held by individual i.

We estimate equation (4) using two-stage least squares (2SLS), where the change in the liquid asset interest rate, Δr_t^L, is instrumented using the sum of monetary policy surprises over the previous six months:

$$\Delta r_{t}^{L} = \alpha + \gamma \cdot \sum_{\tau=0}^{5} \text{surprise}_{t-\tau} + \varepsilon_{t} \tag{5}$$

Table 5 presents the results, with column (1) reporting the OLS estimates and column (2) showing the 2SLS estimates using monetary policy surprises as instruments. Two points are worth noting. First, estimating the specification in differences and using levels of wealth—as in equation (4)—yields a coefficient on β^r that is similar in magnitude to the one obtained in levels and using deciles of wealth in equation (2), suggesting the results are not sensitive to this transformation. Second, and more importantly, instrumenting for the change in interest rates in column (2) increases the coefficient on Δr_t^L, but the effect remains economically modest.

While we remain cautious about drawing strong causal claims, the similarity in the

[11] There is only one month with two central bank meetings—March 2020—when the committee met unexpectedly due to the Covid emergency. Given the unscheduled nature of the meeting, we assume a forecast of no change for that announcement.

[12] In Appendix A we show that these surprises are a valid instrument and generate impulse responses in macro variables aligned with previous studies.

Table 5: Six Month Change in Share of Checking Deposits

	(1)	(2)
	OLS	IV
$\Delta \log(a_{it})$	-2.72	-3.63
	(0.039)	(0.044)
Δr_t^L	-0.21	-0.33
	(0.012)	(0.018)
constant	-0.61	-0.59
	(0.010)	(0.012)
N	7005567	5898464
adj. R^2	0.018	0.029

Note: This table reports estimates of equation (4). The dependent variable is the six-month change in the share checking deposits in liquid short-term safe assets. Column (1) reports OLS estimates. Column (2) reports 2SLS estimates instrumenting the change in the interest rate on liquid assets, Δr_t^L, with the sum of monetary policy surprises over the previous six months. Standard errors are clustered at the individual level.

magnitude of the estimated coefficients across specifications—whether in levels, differences, or using monetary surprises as instruments—gives us some reassurance that the baseline estimate captures a meaningful relationship rather than being entirely driven by endogeneity concerns.

Heterogeneity in Response to Interest Rates

The average insensitivity to interest rate changes does not imply that no individuals respond to them. In this section, we explore whether there is heterogeneity in the response to interest rate changes across individuals. We begin by examining whether individuals with different levels of wealth react differently to changes in interest rates. We then use survey data to go beyond wealth and investigate other individual characteristics that may help explain this heterogeneity.

Heterogeneous Responses Across Wealth Levels

To examine whether wealthier individuals are more responsive to interest rate changes—and to the resulting increase in the spread—we estimate equation (2) augmented with an interaction

between wealth deciles and the interest rate:

$$\text{share}_{it}^{C} = \alpha + \beta^{r} \cdot r_t^{L} + \sum_{j=1}^{10} \beta_j^{a} \cdot \mathbb{I}_{(d_{it}=j)} + \sum_{j=1}^{10} \beta_j^{ar} \cdot \mathbb{I}_{(d_{it}=j)} \cdot r_t^{L} + X_{it}' \cdot \delta + \nu_i + \varepsilon_{it} \tag{6}$$

the coefficients of interest are the $\left\{\beta_j^{ar}\right\}_{j=1}^{10}$, which capture how the sensitivity to interest rate varies across the wealth distribution.

Figure 5 plots the estimated coefficients $\left\{\beta^{r}, \left\{\beta_j^{a}, \beta_j^{ar}\right\}_{j=1}^{10}\right\}$ using wealth deciles defined at the monthly level. The left panel replicates a familiar pattern: the share of checking deposits in the liquid safe asset portfolio declines sharply with wealth. The right panel presents the novel finding: wealthier individuals are also more responsive to changes in interest rates. For example, individuals in the top decile reduce their portfolio share in checking deposits by an average of 1.15 percentage points in response to a 1 percentage point increase in the liquid fund interest, rate—nearly ten times the average sensitivity reported in Table 4.[13]

The heterogeneity in sensitivity across wealth levels is clearly illustrated in Figure 6, which plots the average share of checking deposits in liquid safe asset portfolios by monthly wealth decile. The left axis shows the share of checking deposits across deciles, while the right axis plots the interest rate on liquid funds, which serves as a measure of the opportunity cost of holding funds in checking accounts.

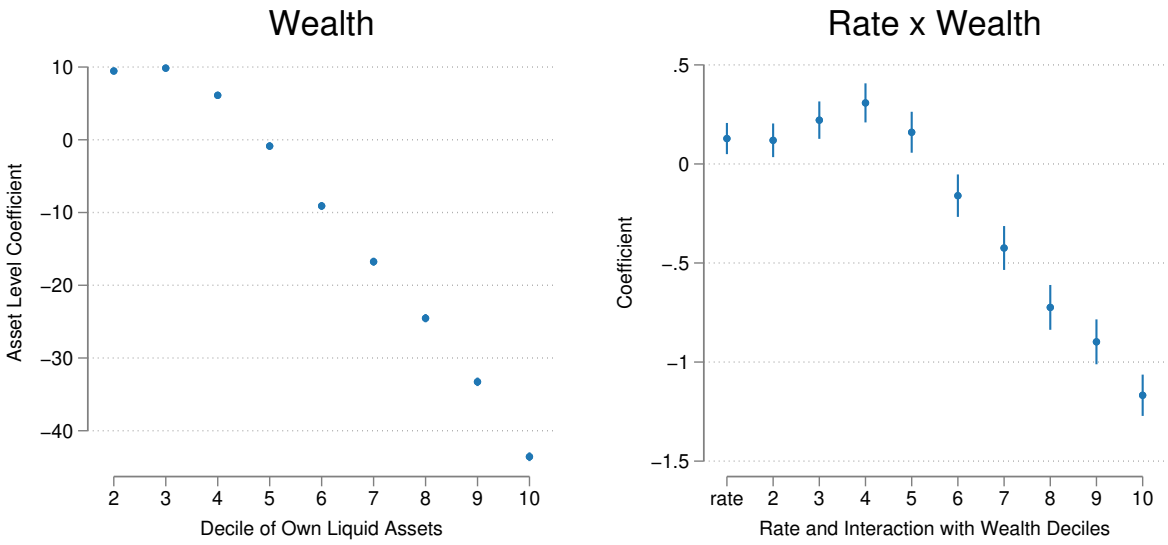
Two facts stand out from the figure. First, wealthier individuals consistently hold a lower share of their liquid safe portfolios in checking deposits. Second, over the monetary policy easing and tightening cycle observed during the sample period, only individuals in the top deciles appear to adjust their portfolio allocations in response to changes in interest rates. In particular, the red and orange lines—representing the top deciles—exhibit a clear negative correlation with the level of interest rates, consistent with more active reallocation toward higher-yielding assets.

Beyond Wealth: The Role of Individual Characteristics

Do financially informed individuals adjust their holdings of liquid safe assets more in response to interest rate changes? To investigate this, we use survey data collected from bank clients

[13] See Table 6 for the regression table including the other deciles definitions.

Figure 5: Heterogeneity in Response to Interest Rates



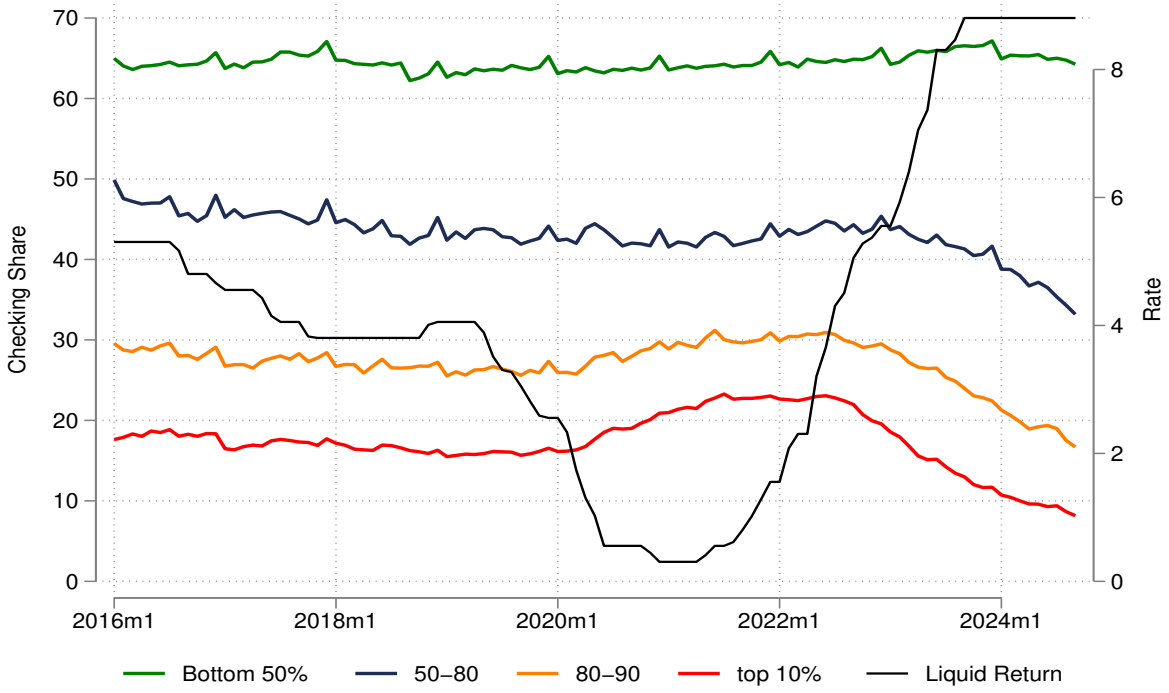
Note: This figure shows estimates from equation (6), using wealth deciles defined at the monthly level. The left panel plots the coefficients β_j^a, which capture average differences in checking share across the wealth distribution. The right panel plots the coefficients β^r, β_j^{ar}, which capture the interest rate sensitivity of individuals in each wealth decile. Confidence intervals are based on standard errors clustered at the individual level.

to link portfolio behavior with financial knowledge. We examine whether individuals with higher financial literacy, better awareness of current inflation, and a clearer understanding of how inflation affects asset values reduce their share of low-return liquid assets more than others when the interest rate spread increases.[14]

To assess individuals' financial knowledge, the survey asks bank clients to answer four questions similar to those commonly used in the financial literacy literature (see Lusardi and Mitchell (2014)). These questions cover key concepts: compound interest, the impact of inflation on purchasing power, the relationship between bond yields and bond prices, and differences in mortgage payments across maturities. Based on the number of correct answers, we classify individuals into two groups: those with high financial literacy, who scored above the median number of correct responses, and those with low financial literacy, who scored at or below the median.

[14]The exact survey questions and the distribution of answers are provided in Appendix C.

Figure 6: Share of Checking Deposits in Liquid Portfolios by Wealth Decile



Note: This figure shows the time series of average checking deposit shares in liquid portfolios for each wealth decile (monthly classification). The left axis corresponds to portfolio shares, and the right axis shows the liquid fund interest rate.

To evaluate individuals' knowledge about inflation, we use two distinct measures. The first captures inflation awareness. Clients are asked to state the inflation rate over the past 12 months, and we compute the absolute error as the linear distance between their response and the actual inflation rate. Based on this measure, we classify individuals into two groups: those with high precision, whose response deviates from actual inflation by no more than 2 percentage points, and those with low precision, whose error exceeds that threshold.

The second measure captures inflation-related knowledge through a set of 8 questions covering the effects of inflation on purchasing power, future interest rates, the stock market, and related topics. As with financial literacy, we classify individuals into two groups: those with high inflation knowledge, who answered more questions correctly than the median respondent, and those with low inflation knowledge.

To assess the influence of individual characteristics we estimate the following specification:

$$\Delta \text{ share}_{it}^{C} = \alpha + \beta^{r} \cdot \Delta \ r_t^{L} + \beta^{sr} \cdot \text{survey}_i \cdot \Delta \ r_t^{L} + \beta^{a} \cdot \Delta \ln(a_{it}) + \varepsilon_{it} \tag{7}$$

where Δx_t denotes the 6-month change in variable x_t, defined as $\Delta x_t \equiv x_t - x_{t-6}$, and survey_i denotes the individual characteristic of interest: a high financial literacy indicator, a high inflation knowledge indicator, or high inflation precision indicator. This approach allows us to evaluate how each characteristic correlates with sensitivity to the interest rate spread (via β^{sr}).

Figure 7 presents the results, and Table 10 in the appendix reports the corresponding regression estimates.[15] The figure shows that individual characteristics shape how people respond to interest rate changes (β^{sr}). Individuals with high financial literacy, more precise inflation responses, and better knowledge of inflation effects reduce their share of checking deposits more when spreads increase than those with lower values on these measures. The estimated magnitudes are similar across indicators: on average, individuals with low financial knowledge do not adjust their portfolio in response to interest rate changes, whereas those with high knowledge reduce their share in checking deposits by 0.5 percentage points for every 1 percentage point increase in interest rates.

Adjustment Behavior and Destination of Funds

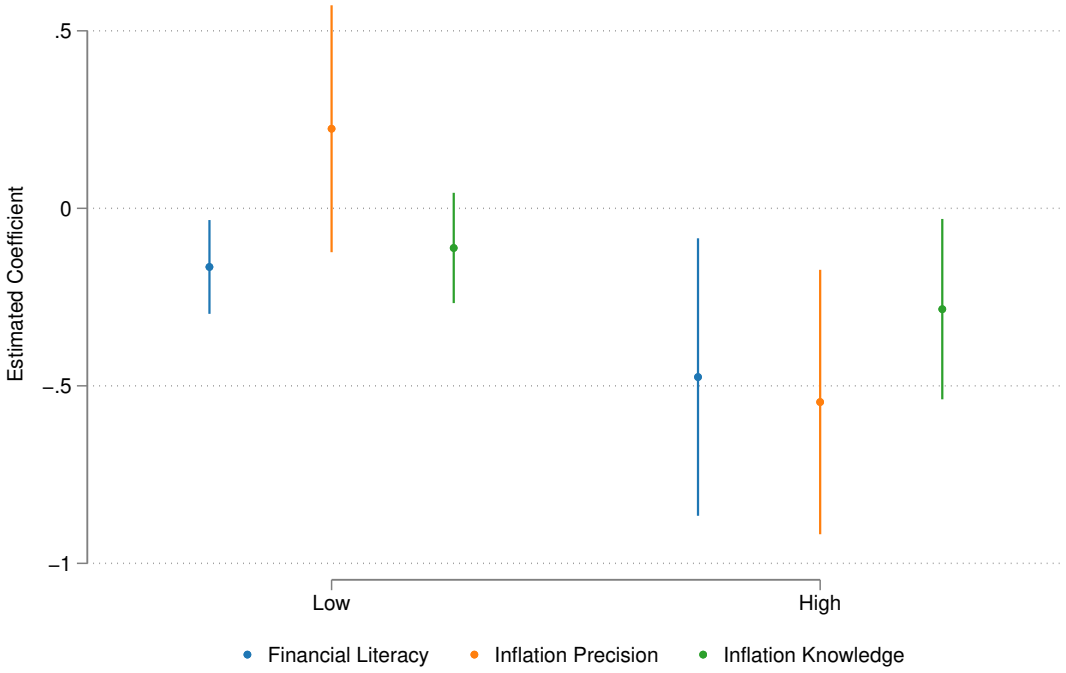
Our data set enables us to track the movement of funds between accounts within the bank and transfers to broker accounts.[16] We use this information to reinforce our previous findings by providing direct evidence that wealthy individuals actively reallocate away from low-return deposits during periods of high interest rates. It also enables us to analyze where these funds are moved.

Figure 9 shows that fund reallocation is relatively common: around 40% of individuals make at least one monthly transfer between their own checking and savings accounts. However, this adjustment probability appears largely insensitive to changes in the spread between

[15] Table 11 also includes a version that allows for heterogeneity in responses by average wealth levels.

[16] We identify all transfers to the bank's affiliated brokerage platform and use available transfer metadata to track movements to external brokers as accurately as possible.

Figure 7: Rate Sensitivity and Individual Characteristics



Note: This figure plots the estimated coefficients β^{sr} from regression (7), showing how sensitivity to interest rate changes varies with individual characteristics. Each bar corresponds to a separate regression using one of the survey-based indicators: high financial literacy, high inflation knowledge, and high inflation precision. Error bars represent 95% confidence intervals based on standard errors clustered at the individual level. All variables are measured in 6-month changes.

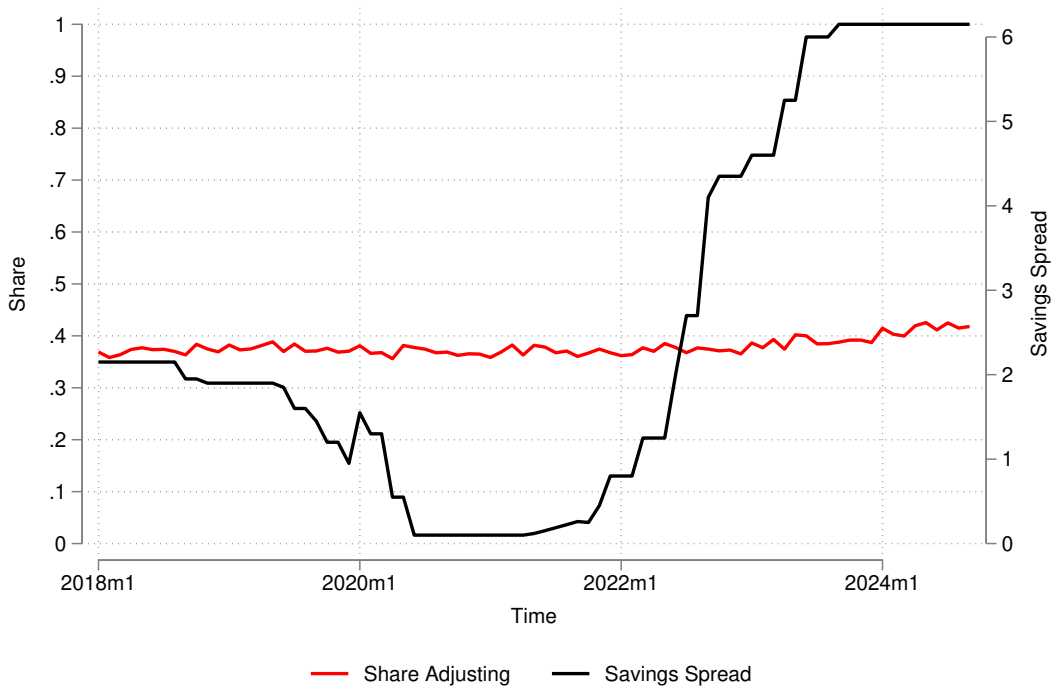
checking and savings rates (right axis).

Similarly to previous sections, we now examine whether there is heterogeneity in reallocation behavior across the wealth distribution, particularly in response to changes in interest rate spreads. In this case, we can also study the direction of the adjustment—that is, where the funds are reallocated. Specifically, we estimate the following equation:

$$tr_{it}^{c,k} = \alpha + \beta^r \cdot r_t^L + \sum_{j=1}^{10} \beta_j^a \cdot \mathbb{I}_{(d_{it}=j)} + \sum_{j=1}^{10} \beta_j^{ar} \cdot \mathbb{I}_{(d_{it}=j)} \cdot r_t^L + X_{it}' \cdot \delta + \varepsilon_{it} \tag{8}$$

where $tr_{it}^{c,k} \in \{0, 1\}$ is an indicator for whether individual i transfered funds from a checking account to another asset k in month t. The destination k can be savings deposits, time deposits, or a broker account. The coefficient β_j^a capture baseline differences in reallocation

Figure 8: Share of Individuals Adjusting and Interest Rate Spread



Note: This figure plots the share of individuals making at least one transfer between their own checking and savings accounts each month (left axis). The right axis shows the interest rate spread between maximum rate on savings and checking accounts.

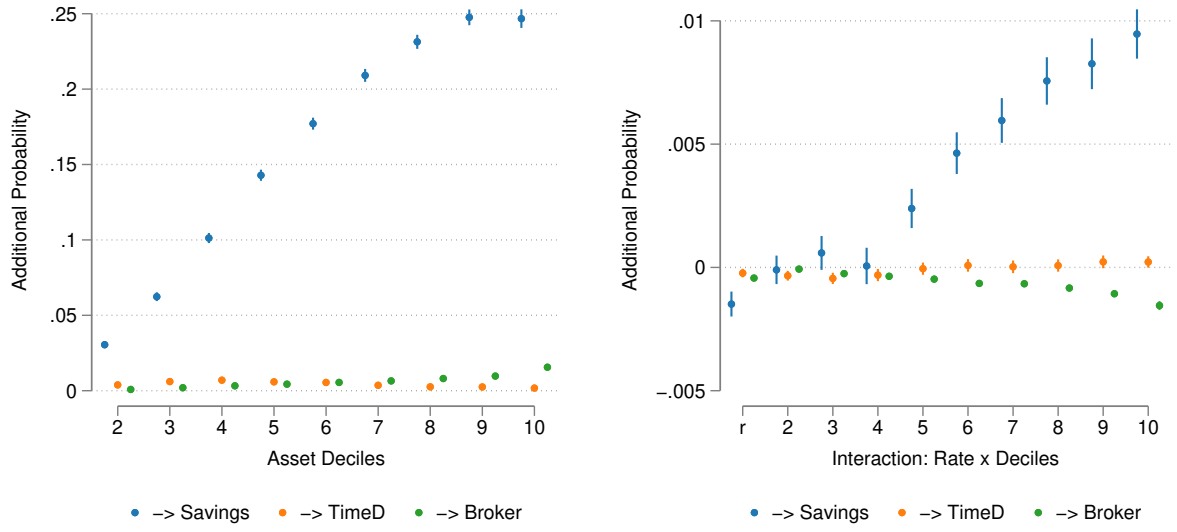
probability across wealth deciles, while β_j^{ar} measure how interest rate sensitivity varies across the wealth distribution.

Figure 9 presents the estimated coefficients for wealth deciles (β_j^a, left panel) and their interaction with the interest rate (β_j^{ar}, right panel), separately for transfers from checking into savings deposits, time deposits, and broker accounts.[17] The left panel shows that wealthier individuals are on average significantly more likely to move funds from checking into savings: individuals in the top two asset deciles are about 25 percentage points more likely to do so compared to those in the bottom decile. In contrast, this pattern does not hold for reallocation into time deposits or broker accounts.

The right panel of Figure 9 shows that not only are wealthy individuals more likely to reallocate funds from checking to savings, but they also respond more strongly to changes

[17] Table 7 shows the regression outcome.

Figure 9: Adjustment Probability: Wealth and Interest Rate Sensitivity Across Deciles



Note: This figure shows the estimated coefficients from regression (8). The left panel reports the coefficients β_j^a, which capture baseline differences in the probability of reallocating funds out of checking into other accounts across wealth deciles. The right panel reports the interaction terms β_j^{ar}, measuring how sensitivity to interest rate varies across the wealth distribution. Points represent coefficient estimates, and vertical bars show 95% confidence intervals based on standard errors clustered at the individual level.

in the interest rate. The wealthiest individuals increase their probability of adjusting by approximately 1 percentage point for every 1 percentage point increase in the interest rate. In contrast, the response of transfers into time deposits or broker accounts remains almost muted across the wealth distribution.

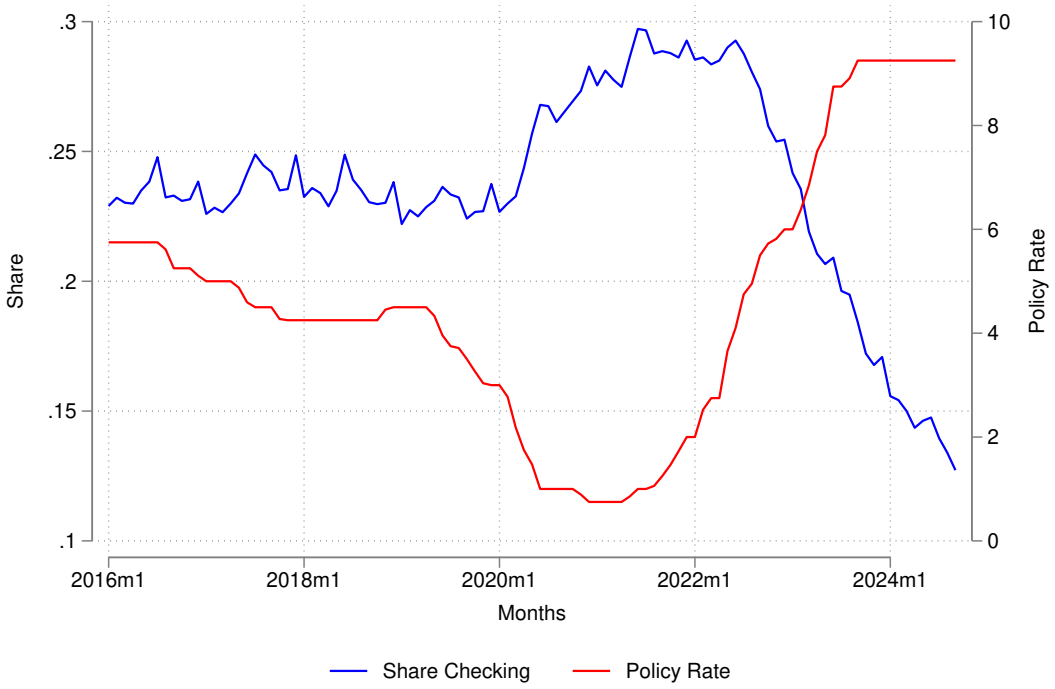
5 Aggregate Deposits Fluctuations

Low-yield deposits are central to bank lending, as they are not perfectly substitutable by other funding sources and directly affect banks' credit supply (Kashyap and Stein, 1995). While it is well documented that their share declines when central banks raise policy rates (Drechsler et al., 2017), the mechanisms behind these fluctuations remain unclear. In particular, it is not known whether the decline reflects active portfolio reallocation in response to yield changes, or whether it rather stems from either heterogeneous income changes (Salgado et al.,

2019) or shifting consumption desires (Sterk and Tenreyro, 2018) that coincide with the monetary cycle—and, as shown earlier, also shape portfolio choices. To shed light on the relative importance of these channels, we exploit the Covid recession episode.

We focus on whether individuals reallocate funds from low-yield checking accounts into high-yield savings accounts as interest rates rise. Throughout this section, we refer to the sum of checking and savings deposits as *core deposits*. Figure 10 plots the evolution of the share of checking deposits within core deposits at the bank level, alongside the central bank policy rate. Consistent with findings from other countries, we observe a negative correlation: as policy rates increase—and the spread widens—the share of funds held in low-return checking deposits declines.

Figure 10: Policy Rate and Share of Checking Deposits



Note: This figure plots the evolution of the share of checking deposits relative to total checking plus savings at the bank level alongside the central bank policy rate.

To better understand movements in the aggregate share of checking deposits, note that it

can be expressed as a weighted sum of individual portfolio shares:

$$s_t = \sum_i \omega_{it} \cdot s_{it} \tag{9}$$

where s_{it} denotes the share of checking deposits in individual i's core deposit portfolio at time t, and ω_{it} is the weight given by individual i's share of total core deposits at time t.[18]

We can decompose the change in the aggregate checking share between time τ and t, Δs_t, into two components:[19]

$$\Delta s_t \approx \underbrace{\sum_i \Delta\omega_{it} \cdot s_{it-\tau}}_{\text{Redistribution}} + \underbrace{\sum_i \omega_{it-\tau} \cdot \Delta s_{it}}_{\text{Portfolio Adjustment}} \tag{10}$$

The first term, *Redistribution*, captures movements in the aggregate checking share due to changes in the distribution of core deposit balances across individuals, $\Delta\omega_{it}$, interacted with heterogeneity in individual checking shares, $s_{it-\tau}$. Based on our earlier findings, if funds shift toward low-wealth individuals—who tend to hold a higher fraction of their deposits in checking—this redistribution will mechanically increase the aggregate share of checking deposits. In other words, movements in s_t can reflect shifts in who holds deposits, even if individuals' own portfolio shares remain unchanged.

The second term, *Portfolio Adjustment*, captures movements in the aggregate checking share due to individuals adjusting their own portfolios, Δs_{it}. That is, even if the distribution of core deposits across individuals remains unchanged, shifts in the checking share within individual portfolios can drive aggregate changes.

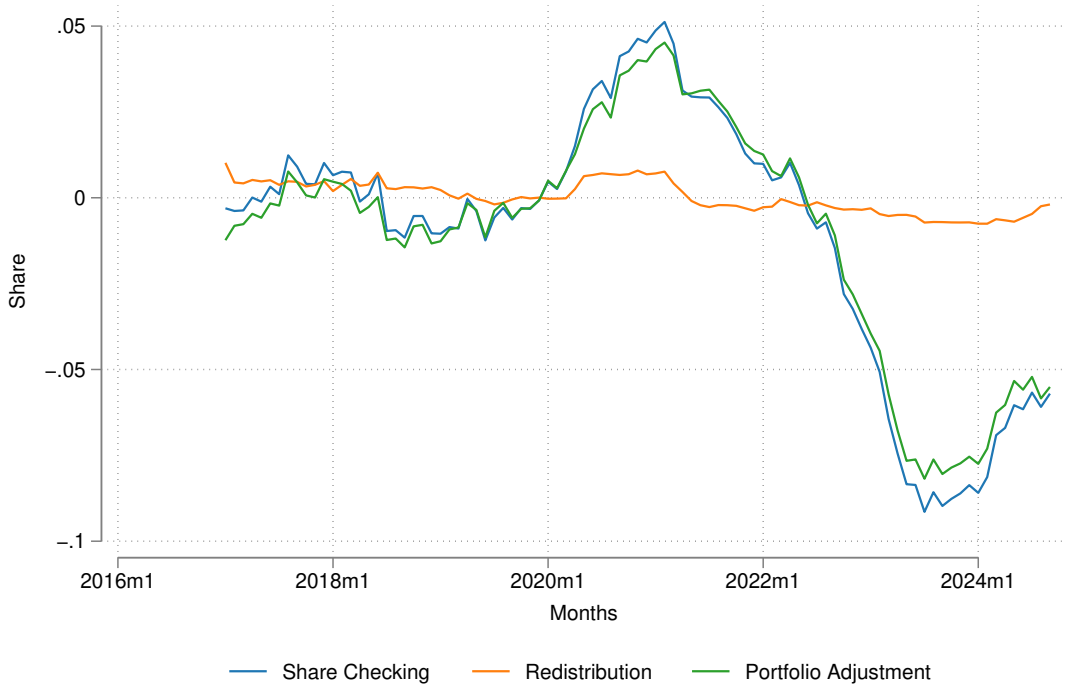
Figure 11 presents the decomposition of 12-month changes in the aggregate checking share into the *Redistribution* and *Portfolio Adjustment* components. The figure shows that most of the variation in the checking share is driven by the *portfolio adjustment* term—that is, individuals changing the share of checking deposits within their own portfolios—rather than by *redistribution* across individuals. Even during the Covid recession—widely recognized

[18] Specifically, $s_{it} \equiv \frac{\text{checking}_{it}}{\text{checking}_{it}+\text{savings}_{it}}$ and $\omega_{it} \equiv \frac{\text{checking}_{it}+\text{savings}_{it}}{\sum_i(\text{checking}_{it}+\text{savings}_{it})}$.

[19] The decomposition ignores the cross-product term $\sum_i \Delta\omega_{it} \cdot \Delta s_{it}$, which is latern shown to be quantitatively negligible.

for the increase in household savings due to government transfer programs—the bulk of the change in aggregate checking shares reflects within-household portfolio decisions, rather than shifts in the distribution of core deposits across the population.

Figure 11: Decomposition of Changes in the Aggregate Checking Share



Note: This figure shows the 12-month change in the aggregate share of checking deposits, decomposed into two components: *Portfolio Adjustment* (green), capturing changes in individuals' checking shares within their own portfolios, and *Redistribution* (orange), capturing changes due to shifting weights in the distribution of core deposits across individuals.

The redistribution component contributes little to the overall change because core deposits are heavily concentrated among the wealthiest households. Individuals in the top decile alone hold over 60% of total core deposits, meaning that substantial shifts in wealth would be required to affect the aggregate share of checking deposits. During the Covid recession, there is a modest redistribution toward lower-wealth individuals—the share of core deposits held by the top 10% declines from 62.2% in 2019 (pre-pandemic) to 60.7% in 2021 (during the downturn)[20]—but this change is not large enough to significantly move the aggregate checking share.

[20] Figure 18 in the appendix shows the distribution of core deposits by wealth group.

Next we would like to investigate what drives these portfolio adjustments, Δs_{it}. One possibility is that income changes during the Covid recession led to temporary shifts in deposit allocations. Another is that changes in interest rate spreads account for the observed variation. While average responses to interest rates are modest, deposits are highly concentrated among wealthy households—who, as shown earlier, are significantly more responsive to rate changes. This suggests that interest rate movements may explain much of the portfolio reallocation, even if income effects play a role for most households.

To this end, we estimate a slightly more flexible specification than those used earlier:

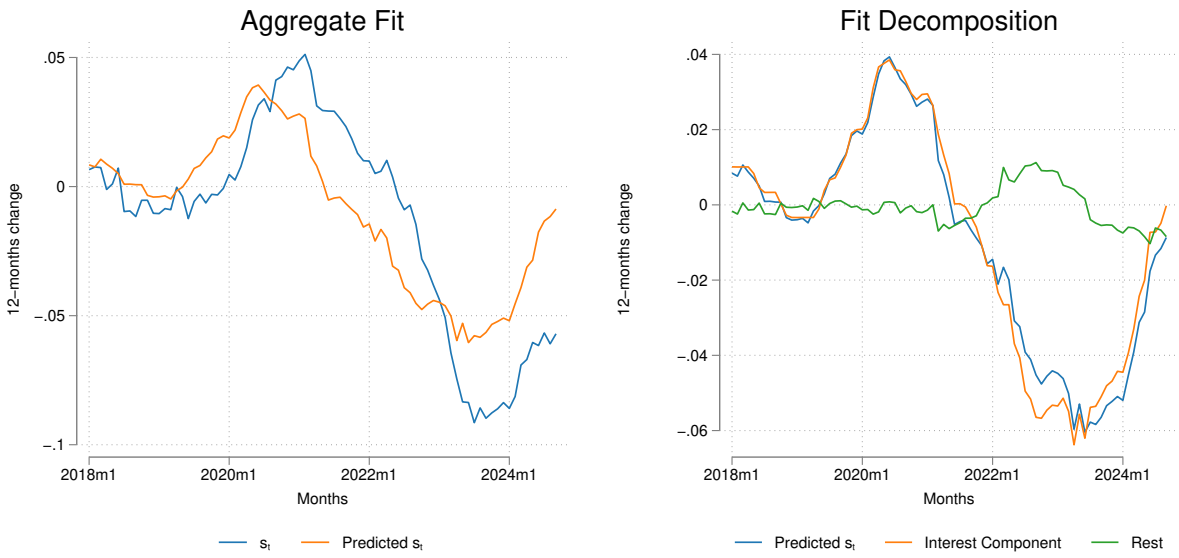
$$s_{it} = \underbrace{\beta^r \cdot r_t^L + \sum_{j=1}^{10} \beta_j^{ar} \cdot \mathbb{I}_{(d_{it}=j)} \cdot r_t^L}_{\text{Interest rate terms}} + \sum_{j=1}^{10} \beta_j^a \cdot \mathbb{I}_{(d_{it}=j)} + \sum_{j=1}^{10} \beta_j^{a\log(a)} \cdot \mathbb{I}_{(d_{it}=j)} \cdot \log(a_{it}) + X_{it}'\delta + \alpha + \varepsilon_{it} \tag{11}$$

where r_t^L is the interest rate on the liquid fund—the safe, liquid, high-return asset—, d_{it} denotes individual i's wealth decile at time t, a_{it} is their level of liquid wealth, and X_{it} includes controls such as a polynomial in age, gender and group-specific time trends. This specification generalizes the baseline regression in the paper by allowing for decile-specific slopes in both the interest rate, the time trend, and the log of wealth, $\log(a_{it})$. The rationale is that both the rank and the level of wealth within the group may shape portfolio responses.

To understand the role of interest rates in driving time-series variation in low-return deposit shares, we aggregate individual-level predictions from equation (11) to construct a predicted aggregate share: $\widehat{s}_t = \sum_i \omega_{it} \cdot \widehat{s}_{it}$. The left panel of Figure 12 shows that the model-predicted changes in aggregate checking shares, $\Delta\widehat{s}_t$, closely track the observed changes, Δs_t, indicating that our specification captures the main sources of variation. The right panel decomposes these predicted changes and shows that nearly the entire time series variation is accounted for by the interest rate terms in equation (11). In contrast, the contribution of the wealth and control terms—as well as the residual—is minimal. This highlights the central role of interest rate movements in explaining aggregate shifts in shares of checking deposits.

The central role of interest rates in explaining time series variation reflects two facts: deposits are highly concentrated among wealthy households, and these households exhibit

Figure 12: Decomposing Aggregate Changes in the Share of Low-Return Deposits

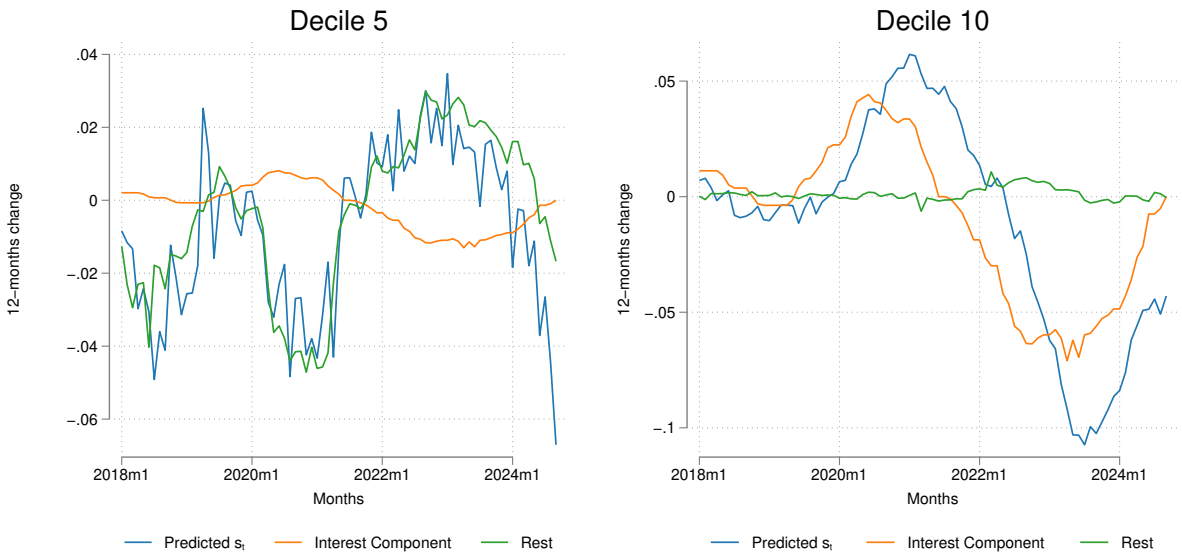


Note: This figure shows the 12-month change in the aggregate share of checking deposits. The left panel compares the observed change in the aggregate share, Δs_t, with the predicted change from our model, $\Delta \widehat{s}_t$. The right panel decomposes the predicted change into components driven by interest rate terms, wealth and controls, and residuals.

greater sensitivity to interest rate changes, as we have already established in this paper. Figure 13 illustrates this by plotting 12-month changes in the average checking share across wealth groups.[21] The left panel shows that, for individuals in the fifth decile of wealth, interest rates explain little of the variation: most changes in checking shares are driven by other covariates. In contrast, for individuals in the top wealth deciles, these other factors account for little, and interest rate movements explain nearly all of the observed fluctuations. This pattern has direct implications for aggregate dynamics: Because wealthy individuals hold the majority of deposits and respond more strongly to interest rates, aggregate shifts in checking shares are largely driven by portfolio responses to interest rate changes.

[21]Specifically, we plot $s_t^g = \sum_{i \in g} \frac{\omega_{it}}{\omega_t^g} s_{it}$ where g is a wealth group and $\omega_t^g = \sum_{i \in g} \omega_{it}$. Note that the aggregate can be writen as $s_t = \sum_g \omega_t^g \cdot s_t^g$.

Figure 13: Decomposition of Changes in Checking Deposit Share by Wealth Level



Note: This figure shows the decomposition of 12-month changes in the share of checking deposits (in blue) into components attributed to interest rate terms (in orange) and others (in green), based on equation (11). Results are shown separately for individuals in the fifth and top deciles of the liquid asset distribution.

6 Conclusion

This paper studies household portfolio choices within a narrowly defined asset class—liquid, short-term, safe assets—using high-frequency administrative data from a major Icelandic bank. Despite a frictionless environment and sizable interest rate differentials within this asset category, we document limited reallocation toward higher-yielding accounts among most households. Portfolio responsiveness is heavily concentrated among the wealthy, who account for the bulk of cyclical fluctuations in aggregate deposit shares. We also show that financial literacy and inflation knowledge are strongly associated with greater responsiveness to interest rate changes.

These findings emphasize the importance of household heterogeneity and asset concentration in shaping the transmission of monetary policy. In particular, the behavior of wealthy households—who hold the majority of deposits and respond actively to rate movements—plays a central role in shaping banks' funding conditions and, ultimately, credit supply.

References

A. L. Andersen, N. Johannesen, and A. Sheridan. Bailing out the kids: New evidence on informal insurance from one billion bank transfers. Technical report, 2020a.

H. Y. Andersen, C. S. Christensen, C. T. Kreiner, and S. Leth-Petersen. Are households systematically inactive across financial decisions? linking evidence from mortgage and retirement saving decisions. Preliminary draft, Apr. 2025. URL mailto:hya@nationalbanken.dk.

S. Andersen, J. Y. Campbell, K. M. Nielsen, and T. Ramadorai. Sources of inaction in household finance: Evidence from the danish mortgage market. *American Economic Review*, 110(10):3184–3230, 2020b.

A. Auclert, M. Rognlie, and L. Straub. Fiscal and monetary policy with heterogeneous agents. *Annual Review of Economics*, 17, 2025.

C. Badarinza, J. Y. Campbell, and T. Ramadorai. International comparative household finance. *Annual Review of Economics*, 8(Volume 8, 2016):111–144, 2016. ISSN 1941-1391. doi: https://doi.org/10.1146/annurev-economics-080315-015425. URL https://www.annualreviews.org/content/journals/10.1146/annurev-economics-080315-015425.

S. R. Baker. Debt and the response to household income shocks: Validation and application of linked financial account data. *Journal of Political Economy*, 126(4):1504–1557, 2018. doi: 10.1086/698106. URL https://doi.org/10.1086/698106.

J. Y. Campbell. Household finance. *The journal of finance*, 61(4):1553–1604, 2006.

B. Carlin, A. Olafsson, and M. Pagel. Mobile apps and financial decision making*. *Review of Finance*, 27(3):977–996, 06 2022. ISSN 1572-3097. doi: 10.1093/rof/rfac040. URL https://doi.org/10.1093/rof/rfac040.

L. Carvalho, A. Olafsson, and D. Silverman. Misfortune and mistake: The financial conditions and decision-making ability of high-cost loan borrowers. *Journal of Political Economy*, 132 (9):3173–3213, 2024.

Central Bank of Iceland. Cost of Retail Payments 2024, 2024. URL https://cb.is/library/lisa/reports/Cost_of_Retail_Payments_2024.pdf. Accessed: 2025-05-15.

Central Bank of Iceland. Depositors and Investors' Guarantee Fund for Financial Undertakings, 2025. URL https://cb.is/financial-supervision/other-undertakings/depositors-and-investors-guarantee-fund-for-financial-undertakings/. Accessed: 2025-05-15.

R. Chetty, J. N. Friedman, S. Leth-Petersen, T. H. Nielsen, and T. Olsen. Active vs. passive decisions and crowd-out in retirement savings accounts: Evidence from denmark. *The Quarterly Journal of Economics*, 129(3):1141–1219, 2014.

A. d'Avernas, A. L. Eisfeldt, C. Huang, R. Stanton, and N. Wallace. The deposit business at large vs. small banks. Working Paper 31865, National Bureau of Economic Research, November 2023. URL http://www.nber.org/papers/w31865.

P. DeMarzo, A. Krishnamurthy, and S. Nagel. Interest rate risk in banking. Working paper, December 2024.

I. Drechsler, A. Savov, and P. Schnabl. The deposits channel of monetary policy*. *The Quarterly Journal of Economics*, 132(4):1819–1876, 05 2017. ISSN 0033-5533. doi: 10.1093/qje/qjx019. URL https://doi.org/10.1093/qje/qjx019.

M. Egan, S. Lewellen, and A. Sunderam. The cross-section of bank value. *The Review of Financial Studies*, 35(5):2101–2143, 08 2021. ISSN 0893-9454. doi: 10.1093/rfs/hhab089. URL https://doi.org/10.1093/rfs/hhab089.

T. Epper, E. Fehr, H. Fehr-Duda, C. T. Kreiner, D. D. Lassen, S. Leth-Petersen, and G. N. Rasmussen. Time discounting and wealth inequality. *American Economic Review*, 110 (4):1177–1205, April 2020. doi: 10.1257/aer.20181096. URL https://www.aeaweb.org/articles?id=10.1257/aer.20181096.

European Central Bank. Study on the payment attitudes of consumers in the euro area 2022, 2022. URL https://www.ecb.europa.eu/stats/ecb_surveys/space/html/ecb.spacereport202212~783ffdf46e.en.html. Accessed: 2025-05-15.

Eurostat. Individuals using the internet for internet banking (TIN00099), 2025. URL https://ec.europa.eu/eurostat/databrowser/view/tin00099/default/table?lang=en. Accessed: 2025-05-15.

A. Fagereng, L. Guiso, D. Malacrino, and L. Pistaferri. Heterogeneity and persistence in returns to wealth. *Econometrica*, 88(1):115–170, 2020. doi: https://doi.org/10.3982/ECTA14835. URL https://onlinelibrary.wiley.com/doi/abs/10.3982/ECTA14835.

J. Gathergood and A. Olafsson. The coholding puzzle: New evidence from transaction-level data. *The Review of Financial Studies*, page hhae016, 05 2024. ISSN 0893-9454. doi: 10.1093/rfs/hhae016. URL https://doi.org/10.1093/rfs/hhae016.

M. Gelman, S. Kariv, M. D. Shapiro, D. Silverman, and S. Tadelis. Harnessing naturally occurring data to measure the response of spending to income. *Science*, 345(6193):212–215, 2014. doi: 10.1126/science.1247727. URL http://www.sciencemag.org/content/345/6193/212.abstract.

L. Guiso, M. Haliassos, and T. Jappelli. *Household portfolios*. MIT press, 2002.

S. G. Hanson, A. Shleifer, J. C. Stein, and R. W. Vishny. Banks as patient fixed-income investors. *Journal of Financial Economics*, 117(3):449–469, 2015. ISSN 0304-405X. doi: https://doi.org/10.1016/j.jfineco.2015.06.015. URL https://www.sciencedirect.com/science/article/pii/S0304405X1500121X.

M. B. Holm, P. Paul, and A. Tischbirek. The transmission of monetary policy under the microscope. *Journal of Political Economy*, 129(10):2861–2904, 2021.

International Monetary Fund. World Economic Outlook Database, April 2025 Edition, Apr. 2025. URL https://www.imf.org/en/Publications/WEO/weo-database/2025/April. Accessed: YYYY-MM-DD.

Ò. Jordà. Estimation and inference of impulse responses by local projections. *American economic review*, 95(1):161–182, 2005.

A. K. Kashyap and J. C. Stein. The impact of monetary policy on bank balance sheets. *Carnegie-Rochester Conference Series on Public Policy*, 42:151–195, 1995. ISSN 0167-2231. doi: https://doi.org/10.1016/0167-2231(95)00032-U. URL https://www.sciencedirect.com/science/article/pii/016722319500032U.

R. S. Koijen and M. Yogo. A demand system approach to asset pricing. *Journal of Political Economy*, 127(4):1475–1515, 2019.

N. Koont, T. Santos, and L. Zingales. Destabilizing digital "bank walks". Working Paper 32601, National Bureau of Economic Research, June 2024. URL http://www.nber.org/papers/w32601.

S. Kundu, T. Muir, and J. Zhang. Diverging banking sector: New facts and macro implications. Technical report, Available at SSRN: https://ssrn.com/abstract=4798818 or http://dx.doi.org/10.2139/ssrn.4798818, April 2024.

L. Li, E. Loutskina, and P. E. Strahan. Deposit market power, funding stability and long-term credit. *Journal of Monetary Economics*, 138:14–30, 2023. ISSN 0304-3932. doi: https://doi.org/10.1016/j.jmoneco.2023.04.004. URL https://www.sciencedirect.com/science/article/pii/S0304393223000429.

X. Lu, Y. Song, and Y. Zeng. Tracing the impact of payment convenience on deposits: Evidence from depositor activeness. Working paper, Jacobs Levy Equity Management Center for Quantitative Financial Research, Available at SSRN: https://ssrn.com/abstract=4699426 or http://dx.doi.org/10.2139/ssrn.4699426, 2024.

A. Lusardi and O. S. Mitchell. The economic importance of financial literacy: Theory and evidence. *American Economic Journal: Journal of Economic Literature*, 52(1):5–44, 2014.

E. Nakamura and J. Steinsson. High-frequency identification of monetary non-neutrality: the information effect. *The Quarterly Journal of Economics*, 133(3):1283–1330, 2018.

A. Olafsson and M. Pagel. The liquid hand-to-mouth: Evidence from personal finance management software. *The Review of Financial Studies*, 31(11):4398–4446, 04 2018. ISSN 0893-9454. doi: 10.1093/rfs/hhy055. URL https://doi.org/10.1093/rfs/hhy055.

S. Salgado, F. Guvenen, and N. Bloom. Skewed business cycles. Technical report, National Bureau of Economic Research, 2019.

P. Schnorpfeil, M. Weber, and A. Hackethal§. Households' response to the wealth effects of inflation. Working ppaper, December 2024.

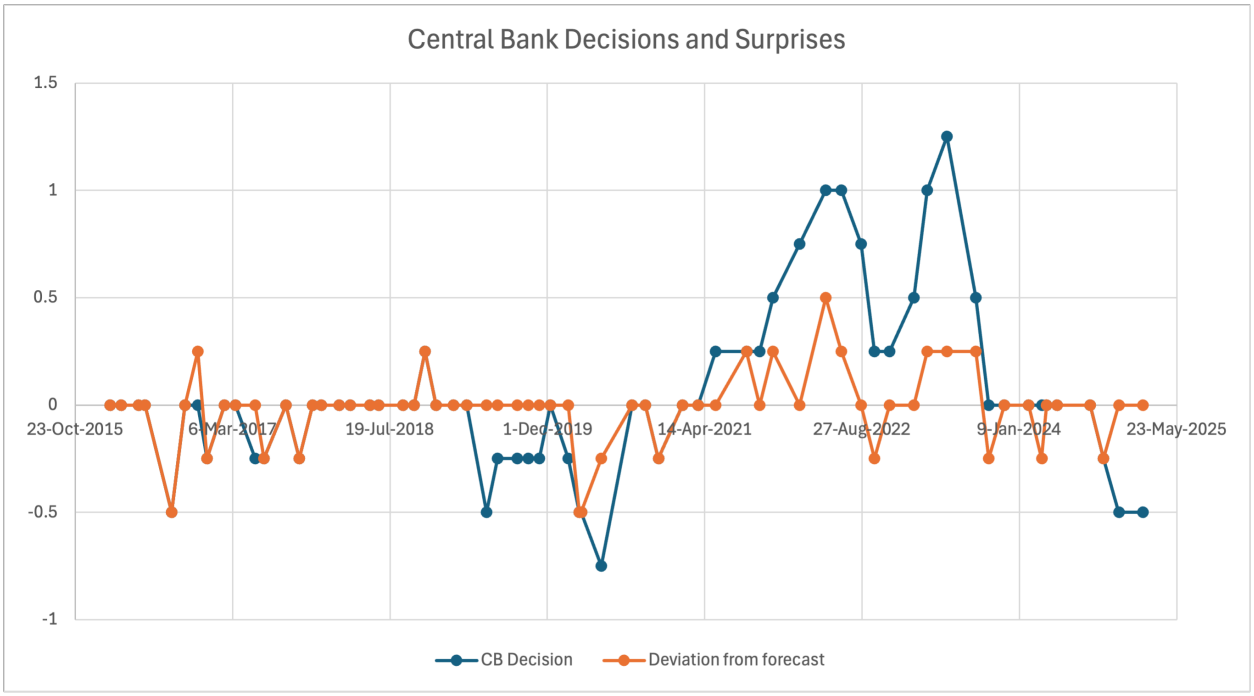
V. Sterk and S. Tenreyro. The transmission of monetary policy through redistributions and durable purchases. *Journal of Monetary Economics*, 99:124–137, 2018.

A Monetary Policy Surprises

We define a surprise as the difference between the announced policy rate and the most recent forecast. Aggregating these at the monthly level, we construct a series of monetary policy shocks. This appendix provides further evidence on the validity of this measure as an instrument for identifying the effects of monetary policy.

Figure 14 displays the time series of monetary policy surprises together with the Central Bank's decisions on the policy rate.

Figure 14: Monetary Policy Shocks



Note: This figure displays changes in the Central Bank of Iceland's policy rate (blue line) and the corresponding monetary policy surprises (orange line), measured as the difference between the actual rate change and the most recent forecast from our partner bank. Surprises are aggregated at the monthly level.

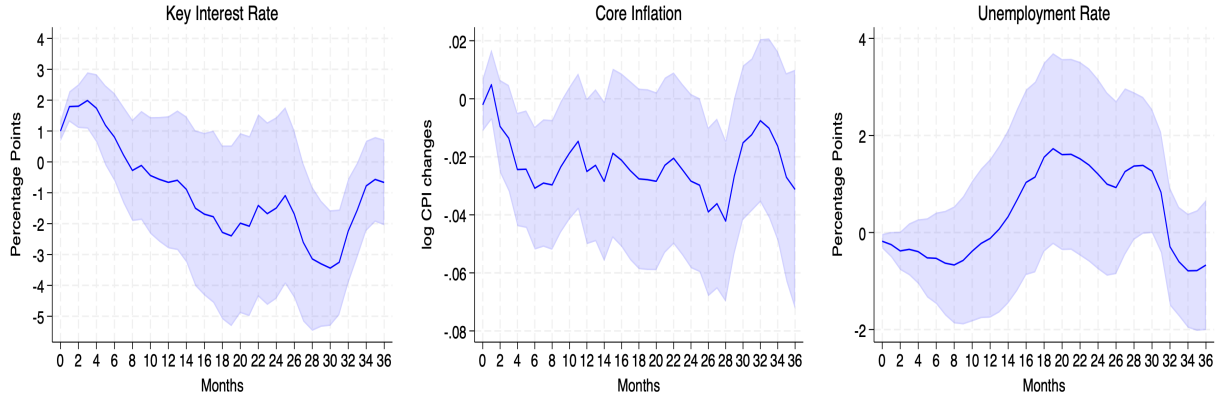
To assess the validity of our monetary policy shocks, we estimate the impulse responses of macroeconomic variables using local projections à la Jordà (2005):

$$y_{t+h} = \alpha_h + \beta_h \cdot \text{shock}_t + \sum_{\ell=1}^{p} \delta'_{h,\ell} w_{t-\ell} + \varepsilon_{h,t} \tag{12}$$

where y_{t+h} denotes the macroeconomic variable of interest h months after the shock at time t, and shock$t$ is the monthly monetary policy surprise, as previously defined, and normalized to generate a 1 percentage point increase in the central bank policy rate in the following month. The vector $w_{t-\ell} = (x_{t-\ell}, y_{t-\ell}, \text{shock}_{t-\ell})$ includes lagged values of the dependent variable, the shock, and other control variables x_t.

We focus on the coefficient β_h, which captures the effect of a monetary policy surprise at time t on a macroeconomic variable y_{t+h} observed h months later. Specifically, we study the impact of shocks on the Icelandic central bank policy rate, log of core CPI, and the unemployment rate. The control vector includes two lags of the dependent variable, the shock, and the other macroeconomic variables under study. Figure 15 presents the estimated impulse responses over a 36-month horizon. The responses are broadly consistent with findings from similar economies (see Holm et al. (2021)): the policy rate initially increases and then reverts, core inflation declines modestly, and the unemployment rate rises. However, the limited sample reduces statistical power, leading to imprecise estimates.

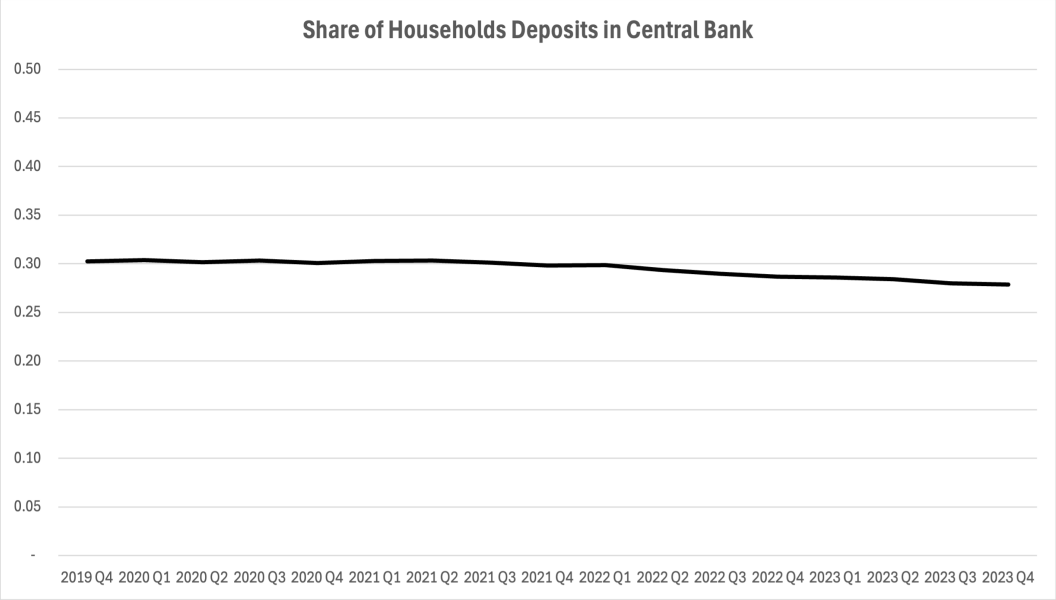
Figure 15: Impulse Responses to Monetary Policy Shocks



Note: Estimated impulse responses of the central bank policy rate, core CPI, and the unemployment rate to a monetary policy shock normalized to generate a 1 percentage point increase in the policy rate. Responses are based on local projections over a 36-month horizon with two lags of each variable included as controls. Shaded areas denote 90% confidence intervals.

B Additional Figures and Tables

Figure 16: Share of Household Deposits Held at Bank



Note: The figure shows the share of household deposits held at the collaborating bank relative to total household deposits reported by the Central Bank of Iceland.

Table 6: Share of Checking Deposits in Liquid Short-Term Safe Portfolios

	(1) Monthly levels	(2) Sample average	(3) Own wealth
Decile levels (relative to 1st)			
2.	9.594	-2.304	0.0910
	(0.191)	(0.425)	(0.0560)
3.	9.993	-7.643	-0.993
	(0.226)	(0.430)	(0.0748)
4.	6.262	-12.93	-2.535
	(0.245)	(0.432)	(0.0877)
5.	-0.664	-17.35	-4.292
	(0.261)	(0.440)	(0.0967)
6.	-8.835	-20.79	-6.089
	(0.273)	(0.442)	(0.104)
7.	-16.42	-26.46	-8.353
	(0.281)	(0.443)	(0.110)
8.	-24.09	-32.04	-10.63
	(0.291)	(0.446)	(0.115)
9.	-32.66	-39.27	-13.29
	(0.300)	(0.443)	(0.120)
10.	-42.67	-49.41	-15.31
	(0.311)	(0.429)	(0.126)
Liquid Fund rate (r^L)	0.112	0.559	0.578
	(0.0404)	(0.0420)	(0.0277)
2.#r^L	0.126	-0.341	-0.146
	(0.0436)	(0.0586)	(0.0223)
3.#r^L	0.228	-0.559	-0.386
	(0.0485)	(0.0606)	(0.0271)
4.#r^L	0.313	-0.681	-0.611
	(0.0505)	(0.0623)	(0.0289)
5.#r^L	0.161	-0.799	-0.757
	(0.0529)	(0.0626)	(0.0296)
6.#r^L	-0.158	-0.904	-0.840
	(0.0549)	(0.0640)	(0.0299)
7.#r^L	-0.415	-0.997	-1.008
	(0.0566)	(0.0647)	(0.0304)
8.#r^L	-0.708	-1.026	-1.168
	(0.0578)	(0.0631)	(0.0315)
9.#r^L	-0.869	-1.139	-1.511
	(0.0579)	(0.0619)	(0.0336)
10.#r^L	-1.123	-0.991	-1.909
	(0.0534)	(0.0577)	(0.0372)
age	0.717	0.883	-0.781
	(0.0261)	(0.0266)	(0.0567)
age^2	-0.00674	-0.00836	0.00939
	(0.000267)	(0.000273)	(0.000500)
Female	-8.148	-8.453	
	(0.192)	(0.194)	
Time Trend	-0.0168	-0.0334	-0.0511
	(0.00164)	(0.00177)	(0.00305)
constant	47.93	56.14	71.44
	(0.609)	(0.651)	(1.631)
N	7970266	7970266	7959582
adj. R^2	0.183	0.142	0.663

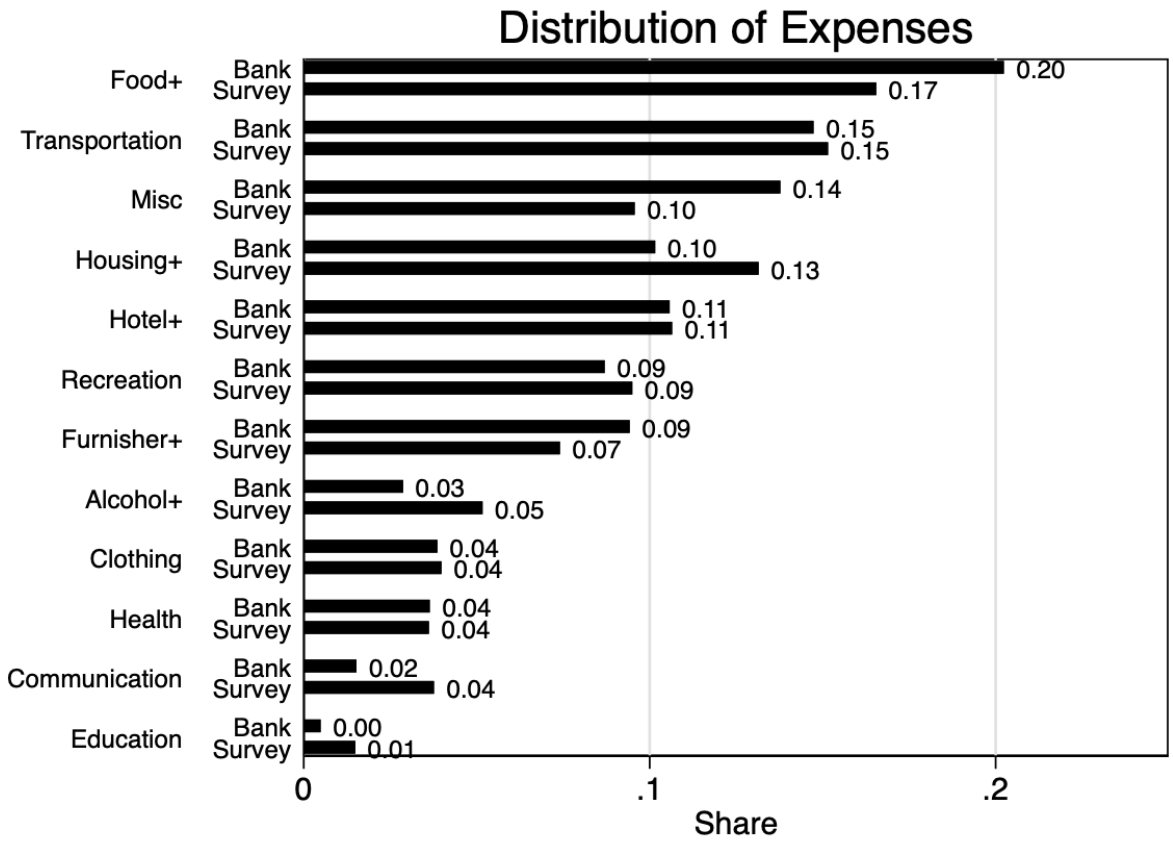
Note: The table reports estimates from regression (6), which augments regression (2) by interacting asset deciles with the liquid fund interest rate. The dependent variable is the share of checking deposits in portfolios. We use three alternative decile definitions. In the first column, individuals are sorted each month based on their asset holdings relative to the rest of the sample. In the second, individuals are sorted based on their average asset holdings over the entire sample period. In the third, each individual's monthly asset holdings are ranked relative to their own asset distribution across the sample period. Standard errors are clustered at the individual level and shown in parentheses.

Table 7: Adjustment Probability: Wealth and Interest Rate Sensitivity Across Deciles

	(1) Checking -> Savings	(2) Checking -> Time Deposits	(3) Checking -> Broker
Monthly decile levels (relative to 1st)			
2.	0.0305	0.00384	0.000838
	(0.00116)	(0.000353)	(0.000106)
3.	0.0623	0.00605	0.00198
	(0.00149)	(0.000454)	(0.000129)
4.	0.101	0.00700	0.00323
	(0.00171)	(0.000509)	(0.000152)
5.	0.143	0.00589	0.00435
	(0.00188)	(0.000543)	(0.000168)
6.	0.177	0.00547	0.00550
	(0.00203)	(0.000591)	(0.000188)
7.	0.209	0.00361	0.00651
	(0.00219)	(0.000579)	(0.000216)
8.	0.231	0.00258	0.00808
	(0.00237)	(0.000593)	(0.000260)
9.	0.248	0.00250	0.00972
	(0.00266)	(0.000635)	(0.000308)
10.	0.247	0.00175	0.0156
	(0.00314)	(0.000689)	(0.000470)
Liquid Fund rate $\left(r^L\right)$	-0.00149	-0.000230	-0.000431
	(0.000258)	(0.0000882)	(0.0000290)
2.#r^L	-0.0000983	-0.000337	-0.0000679
	(0.000294)	(0.000101)	(0.0000329)
3.#r^L	0.000588	-0.000445	-0.000251
	(0.000351)	(0.000117)	(0.0000380)
4.#r^L	0.0000595	-0.000311	-0.000358
	(0.000376)	(0.000126)	(0.0000451)
5.#r^L	0.00239	-0.0000521	-0.000474
	(0.000406)	(0.000126)	(0.0000492)
6.#r^L	0.00463	0.0000814	-0.000649
	(0.000431)	(0.000130)	(0.0000530)
7.#r^L	0.00596	0.0000238	-0.000663
	(0.000463)	(0.000130)	(0.0000575)
8.#r^L	0.00756	0.0000760	-0.000836
	(0.000490)	(0.000127)	(0.0000626)
9.#r^L	0.00826	0.000225	-0.00107
	(0.000525)	(0.000132)	(0.0000679)
10.#r^L	0.00947	0.000221	-0.00155
	(0.000510)	(0.000118)	(0.0000895)
age	-0.00270	0.000135	0.000223
	(0.000260)	(0.0000666)	(0.0000267)
age^2	-0.00000379	-0.00000345	-0.00000349
	(0.00000267)	(0.000000643)	(0.000000266)
Female	0.0796	0.00680	-0.00542
	(0.00186)	(0.000497)	(0.000203)
Time Trend	0.000400	-0.0000760	0.0000724
	(0.0000188)	(0.00000637)	(0.00000296)
constant	0.165	0.0138	-0.00335
	(0.00598)	(0.00159)	(0.000614)
N	6397861	6397861	6397861
adj. R^2	0.054	0.003	0.005

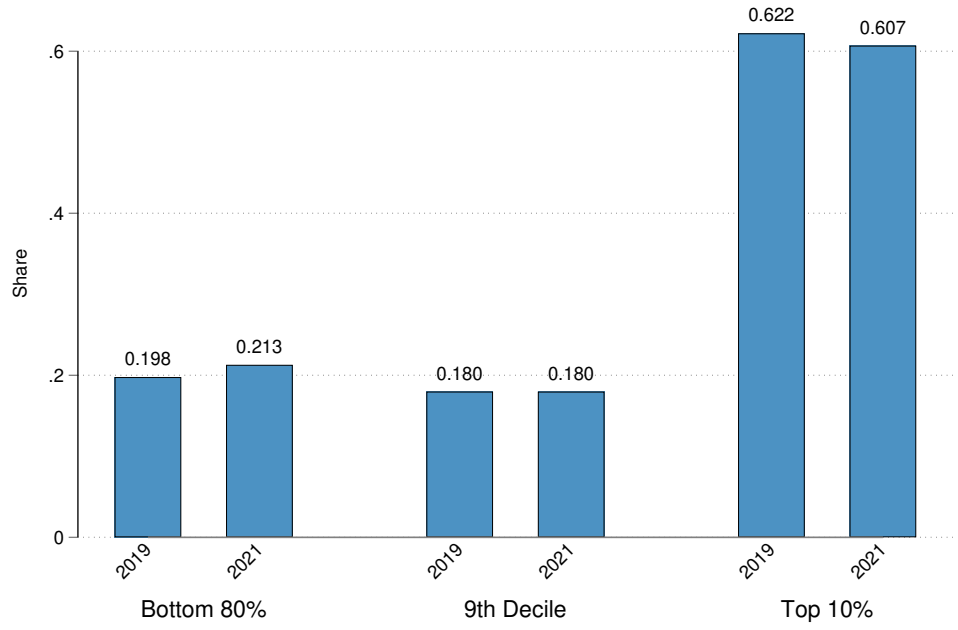
Note: The table reports estimates from regression (8). The dependent variables are indicator variables for whether individual i transferred funds from a checking account to savings deposits (column 1), time deposits (column 2), or broker accounts (column 3) in month t. The coefficients capture baseline differences in reallocation probability across wealth deciles and their interaction with the liquid fund interest rate. Standard errors are clustered at the individual level and shown in parentheses.

Figure 17: Household Consumption Shares



Note: Shares from the Statistic of Iceland correspond to consumption by locals in 2019 excluding rent.

Figure 18: Share of Core Deposits by Wealth Group



Note: This figure shows the share of total core deposits held by different wealth groups.

C Surveys

This appendix provides details on the survey used to collect data on inflation expectations, inflation and financial knowledge. The survey was administered to 4,085 individuals, of whom 4,059 successfully merged with our main dataset after applying the active client filter used throughout this paper. The following sections present the complete survey questions as they appeared to respondents, along with the distribution of correct answers where applicable.

C.1 Financial Knowledge Questions

This appendix provides the exact wording of the survey questions used to assess financial literacy. These questions follow standard formulations widely used in the literature (e.g., Lusardi and Mitchell (2014)). The correct answer to each question is shown in **bold**.

1. Suppose you had 1,000 kr. in a bank account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?
    - **More than 1,020 kr.**
    - Exactly 1,020 kr.
    - Less than 1,020 kr.
    - Don't know
    - Prefer not to say
2. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?
    - More than today
    - Exactly the same
    - **Less than today**
    - Don't know
    - Prefer not to say
3. If interest rates rise, what will typically happen to bond prices?
    - They will rise
    - **They will fall**

- They will stay the same
- There is no relationship between bond prices and the interest rate
- Don't know
- Prefer not to say

4. Please tell me whether this statement is true or false: A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less.

   - **True**
   - False
   - Don't know
   - Prefer not to say

C.1.1 Distribution of Correct Answers on Financial Knowledge

A total of 4,058 individuals provided valid responses to the financial literacy questions. Table 8 presents the distribution of correct answers across respondents.

Table 8: Distribution of Correct Answers on Financial Literacy Questions

Number of Correct Answers	Frequency	Percent
0	190	4.7
1	416	10.3
2	1,042	25.7
3	1,933	47.6
4	477	11.7
Total	**4,058**	**100.0**

The median number of correct responses is 3. For our analysis, we classify individuals as having high financial literacy if they scored above the median, i.e., answered all 4 questions correctly.

C.2 Inflation Awareness Question

To capture individuals' perceptions of recent inflation, the survey included a question asking respondents to identify whether there was inflation or deflation over the past year and to estimate its magnitude. The question was presented as follows:

"We would like to ask you about the rate of inflation or deflation over the past 12 months. Inflation refers to the percentage increase in overall prices in the economy, most commonly measured by the Consumer Price Index (CPI). Deflation is the opposite of inflation and indicates a percentage decrease in prices.

Over the past 12 months, do you think there was inflation or deflation?

Please select one:

- Inflation
- Deflation

What do you think the rate of [inflation if selected above / deflation if selected above] was over the past 12 months? Please give your best estimate as a percentage (0 or greater):

Over the past 12 months, I think the rate of [inflation/deflation] was: ___%."

C.2.1 Distribution of Deviations from Actual Inflation

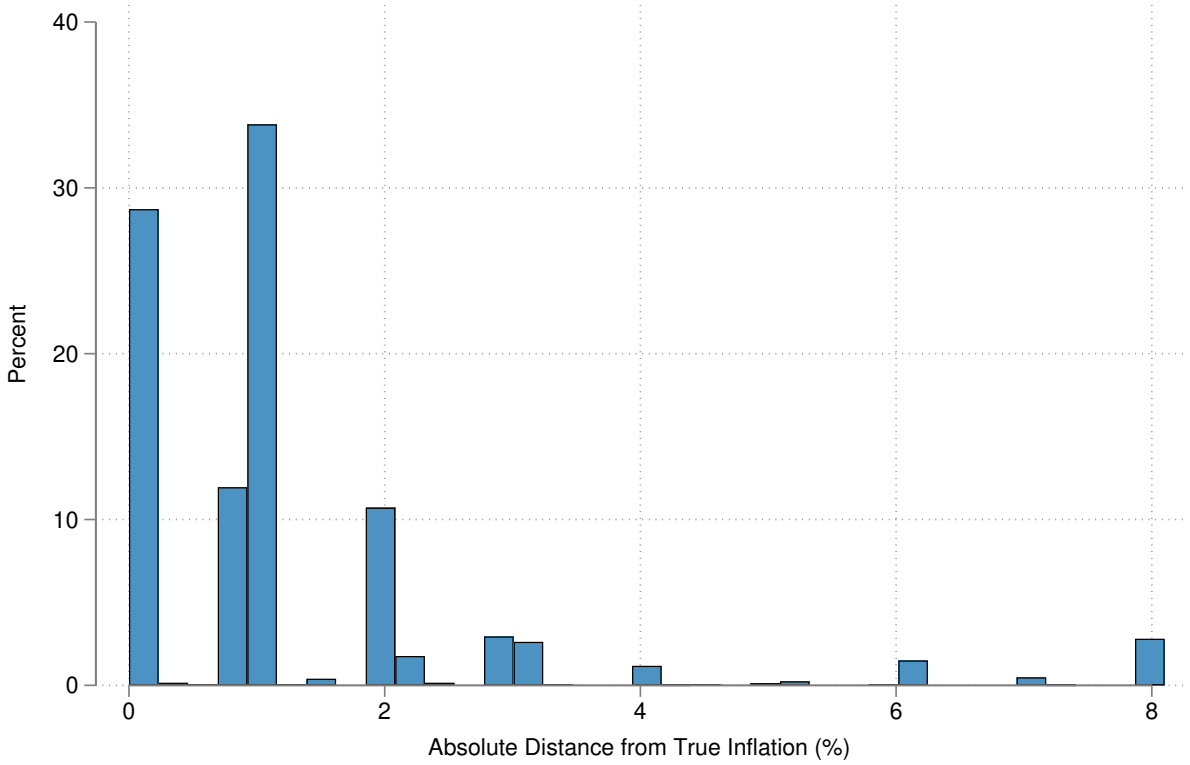
The survey was conducted between June and September 2023, with over 80% of respondents completing it in June and nearly all of the remaining 20% in September. To measure the actual rate of inflation, we use the 12-month inflation rate published by the Central Bank of Iceland, which stood at 8.9%, 7.6%, 7.7%, and 8.0% in June, July, August, and September 2023, respectively. A total of 3,733 individuals provided valid responses to the past inflation level.

Figure 19 shows the distribution of absolute errors in respondents' estimates of the inflation rate over the past 12 months. The figure plots the absolute distance between each individual's reported inflation rate and the actual rate at the time of the survey.

C.3 Inflation Knowledge Questions

This appendix provides the exact wording of the survey questions used to assess knowledge of the effects of inflation on asset prices and purchasing power. The correct answer to each question is shown in **bold**. Note that for some questions, multiple answers may be considered correct due to the inherent imprecision of economic relationships between response options.

Figure 19: Histogram of Errors on Inflation Level



When you expect inflation to be much higher for the next five years than today, what do you think happens to the following:

Future interest rates on mortgages and other loans

- **Go up**
- Go down
- No change
- Don't know

The amount of goods and services that can be bought in five years time with a fixed salary level

- Go up
- **Go down**
- No change

- Don't know

The value of stocks today

- Go up
- **Go down**
- No change
- Don't know

The future growth rate of the Icelandic economy. Please note that in the last 10 years (2013 through 2022) the average growth rate of the Icelandic economy has been 3.1% per year.

- **Lower than average**
- Higher than average
- About average
- Don't know

Future unemployment rate.

- **Go up**
- Go down
- **No change**
- Don't know

Future house prices

- **Go up**
- Go down
- No change
- Don't know

Do you think that an individual expecting high inflation should do the following?:

Adjust their purchases of durable goods

- **Buy any planned durable goods sooner rather than later.**
- Postpone buying any planned durable goods.
- Buy a cheaper version of the planned durable goods
- It depends. Please explain:

If an individual needed to take a mortgage to buy a home, what type of a mortgage should she take? Should she take a CPI-indexed loan or a non-CPI indexed mortgage and should it be a fixed-rate or a variable-rate mortgage?

- Fixed-rate CPI indexed mortgage
- **Fixed-rate non-CPI indexed mortgage**
- Variable-rate CPI indexed mortgage
- **Variable-rate non-CPI indexed mortgage**

C.3.1 Distribution of Correct Answers on Inflation Knowledge

A total of 4,034 individuals provided valid responses to the inflation knowledge questions. Table 9 presents the distribution of correct answers across respondents.

Table 9: Distribution of Correct Answers on Inflation Knowledge Questions

Number of Correct Answers	Frequency	Percent
0	23	0.57
1	72	1.78
2	185	4.59
3	417	10.34
4	779	19.31
5	992	24.59
6	907	22.48
7	526	13.04
8	133	3.30
Total	**4,034**	**100.0**

The median number of correct responses is 5. For our analysis, we classify individuals as having high inflation knowledge if they scored above the median, i.e., answered 6 or more questions correctly.

C.4 Regression Tables

Table 10: Rate Sensitivity and Individual Characteristics

	(1) $\Delta\text{share}_{it}^{C}$	(2) $\Delta\text{share}_{it}^{C}$	(3) $\Delta\text{share}_{it}^{C}$
Δr_t^L	-0.165	0.224	-0.112
	(0.0674)	(0.177)	(0.0792)
$\Delta \ln(a_{it})$	-3.357	-3.422	-3.374
	(0.183)	(0.190)	(0.184)
survey $\cdot\Delta r_t^L$	-0.475	-0.546	-0.284
	(0.199)	(0.190)	(0.130)
constant	-0.822	-0.807	-0.829
	(0.0475)	(0.0491)	(0.0477)
N	326231	301464	324077
adj. R^2	0.025	0.026	0.025

Note: the table reports estimates from regression (7). Each column includes a separate indicator, survey_i, capturing high financial literacy (column 1), high inflation knowledge (column 2), or high inflation precision (column 3). All regressions are estimated in 6-month differences. Standard errors are clustered at the individual level.

Table 11: Rate Sensitivity, Individual Characteristics and Average Wealth

	(1) $\Delta\text{share}_{it}^{C}$	(2) $\Delta\text{share}_{it}^{C}$	(3) $\Delta\text{share}_{it}^{C}$
Δr_t^L	1.091	1.405	1.238
	(0.501)	(0.539)	(0.503)
$\Delta \ln(a_{it})$	-3.356	-3.422	-3.374
	(0.183)	(0.190)	(0.184)
survey $\cdot \Delta r_t^L$	-0.434	-0.521	-0.259
	(0.200)	(0.190)	(0.130)
$\ln(\bar{a}_i) \cdot \Delta r_t^L$	-0.0957	-0.0910	-0.103
	(0.0373)	(0.0386)	(0.0376)
constant	-0.823	-0.809	-0.830
	(0.0475)	(0.0491)	(0.0478)
N	326231	301464	324077
adj. R^2	0.025	0.026	0.025

Note: the table reports estimates from regression (7), extended to include interactions between each survey-based indicator, survey_i, and average individual wealth $\overline{a}_i$. Each column includes a separate indicator for high financial literacy (1), high inflation knowledge (2), or high inflation precision (3). All regressions are estimated in 6-month differences. Standard errors are clustered at the individual level.