Market-Priced Savings, Bank Deposit Market Power, and Monetary Policy Transmission

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Abstract

Banks' deposit market power is customer-specific: depositors who hold stocks, bonds, or investment fund shares (market-priced savings, MPS) have stronger outside options and therefore more elastic deposit demand. Using Danish administrative data linking the universe of deposit accounts to each depositor's complete investment portfolio, we show that banks price this elasticity: MPS holders receive a 6.6 bps larger deposit-rate increase per 100 bps policy-rate increase than comparable non-holders at the same bank in the same year. The premium opens when depositors acquire MPS and fades when they sell these assets. Inheritances following unexpected parental deaths provide exogenous variation: heirs who inherit stocks or bonds see pass-through rise 3 to 6 pp relative to heirs inheriting cash or real estate. Higher pass-through only partially offsets MPS holders' greater elasticity: per 100 bps of tightening, they reduce deposits 2.4 pp more, and the resulting funding pressure leads high-MPS banks to cut lending.

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1 Introduction

Retail deposit rates respond incompletely to monetary policy. When the Federal Reserve raised rates by 525 basis points (bps) between March 2022 and July 2023, average deposit rates increased by only 150 bps, a pass-through of less than a third, while bank deposits fell by $1 trillion as households shifted toward financial instruments whose returns tracked policy rates more closely (Kang-Landsberg et al. 2023, Drechsler et al. 2023, Afonso et al. 2023). The episode illustrates the central trade-off in deposit pricing: a bank can preserve a wider spread by keeping deposit rates low, but only at the risk of outflows from depositors who can move into higher-yielding alternatives.

The deposit spread a bank can sustain therefore depends on how readily its depositors substitute toward those alternatives when policy tightens, and that readiness varies widely. Holding stocks, bonds, and funds instead of deposits means overcoming participation frictions, from information and transaction costs to financial literacy, that keep many households out of financial markets (e.g., Campbell 2006, Calvet et al. 2007, Guiso & Sodini 2013, Christelis et al. 2013). A bank's pass-through thus reflects the composition of its deposit base: how elastic its customers' deposit demand is, and how readily they can move money into higher-yielding instruments.

This paper shows that banks price against this depositor-level demand elasticity, offering higher deposit-rate pass-through to depositors who are more able to move into non-deposit assets. We proxy a depositor's demand elasticity by her market-priced savings (MPS): the stocks, bonds, and funds she already holds alongside her deposits. Holding MPS demonstrates both the ability and the willingness to substitute deposits for higher-yielding instruments, a signal a bank can observe and price against.[1]

Using Danish administrative data covering the universe of bank-depositor relationships from 2003 to 2022, we compare MPS holders to non-holders at the same bank in the same year. These records link deposit accounts to tax filings that report each individual's complete financial portfolio, so we observe deposit rates, deposit balances, and MPS holdings for every depositor at every bank. MPS holders receive 6.6 percentage points (pp) higher pass-through of policy rate changes than otherwise comparable non-holders, equivalent to 6.6 bps more in deposit-rate adjustments for a 100 bps policy-rate increase.

Our main specification makes this comparison within bank-year, with person fixed effects and demographic-year controls absorbing persistent depositor heterogeneity and life-cycle trends. It also controls flexibly for prior-year multi-bank status: depositors with accounts at several banks can shift balances across existing relationships to chase better rates, a separate source of deposit-demand elasticity that may be correlated with MPS ownership. These comparisons establish that the same bank in the same year pays observably similar depositors differently according to their MPS holdings. Why banks do so is a question the comparison itself cannot answer: the conceptual framework supplies the candidate explanation, outside-option pricing, and the empirical designs that follow test it against competing interpretations.

[1] When a depositor invests through her own bank, the bank observes the holdings directly. When she invests through an outside broker, the bank observes the deposit outflows that fund the investment account. We do not observe banks' information sets, but either way MPS holdings are visible to the deposit-taking bank.

Conceptually, a profit-maximizing bank with market power prices its deposits against how readily each depositor will substitute into market alternatives (Drechsler et al. 2017): the optimal deposit spread narrows as that substitution becomes easier. When depositors differ in their ability to substitute, and MPS holdings reveal it, three predictions follow: depositors with more elastic demand receive higher pass-through; they still withdraw more when policy tightens if that higher pass-through does not fully offset their greater demand elasticity; and the deposit funding of a bank that serves more of them is more sensitive to the policy rate. We confirm all three predictions in the data. This pricing logic does not require a bank to post a separate rate for each depositor. It can operate through product menus and account tiers, or through relationship and targeted pricing. We document realized pricing conditional on outside-option access, not any single pricing technology.

Our baseline proxy for outside-option access is lagged MPS participation. It captures effective substitutability between deposits and market alternatives, but participation is not randomly assigned. The main threat is that MPS holders may receive higher pass-through for reasons other than outside-option pricing. They may be wealthier, have higher incomes, be more financially sophisticated, be more attentive, or be more valuable to the bank through large accounts and cross-selling opportunities. Adding granular controls for depositors' gross income and gross wealth reduces the pricing premium by about half, but does not eliminate it. Interpreting the source of the MPS premium requires distinguishing outside-option pricing from correlated depositor traits.

Three empirical designs address the remaining concerns. First, we disaggregate to the individual deposit account, a finer level than the individual-bank-year data of our main analysis, which allows us to control for account fixed effects. The premium survives essentially unchanged (7.6 pp against an account-level baseline of 7.8 pp), so it is not driven by time-invariant account characteristics. Second, event studies around MPS entry and exit show that the premium rises when depositors acquire MPS and falls after they exit. This timing is difficult to reconcile with sophistication driving the MPS premium because financial literacy should not disappear when a depositor sells her portfolio.

The third design, and our sharpest evidence, exploits inheritances following unexpected parental deaths (heart attacks, strokes, or traffic accidents) (Andersen & Nielsen 2011). A sudden death rules out anticipatory transfers, and whether the estate contains stocks and bonds rather than cash or real estate is outside the heir's control. Among heirs with no MPS before inheritance, those who inherit stocks or bonds experience a 3 to 6 pp increase in deposit-rate pass-through relative to heirs who inherit only cash or real estate. This response is what outside-option pricing predicts: banks reprice the same depositor once her portfolio contains stocks or bonds. Because both groups receive an inheritance and face an occasion to make financial decisions, the inheritance design helps separate outside-option acquisition from wealth shocks and attention. Taken together, the account-level, event-study, and inheritance evidence is consistent with banks pricing against active outside-option access.

Higher pass-through does not fully eliminate withdrawal pressure. In our preferred specification, MPS holders reduce deposits by 2.4 pp more than non-holders per 100 bps of policy tightening. The deposit-volume response is essentially unchanged when additionally controlling for depositors' gross wealth and gross income. At the bank level, the differential in deposit withdrawals has implications for credit supply. Comparing lending by different banks to the same firm in the same year, following Khwaja & Mian (2008) so that loan demand is held fixed, banks with one standard deviation higher deposit-weighted MPS exposure cut lending growth by 0.7 to 0.8 pp more per 100 bps of policy tightening. These credit supply contractions appear in both net lending growth and new credit extended within existing relationships.

To assess external validity beyond the Danish institutional setting, we analyze 175 banks across the euro area during the 2022 to 2023 tightening cycle. We measure each country's MPS share as the ratio of household stock and bond holdings to household financial wealth (deposits plus stocks and bonds); in the regression sample, this share ranges from 5 to 41 percent. Consistent with our micro-evidence, banks in countries with higher household MPS shares exhibit stronger deposit rate pass-through. Moving across this observed range raises pass-through by roughly 20 pp. Country-level MPS shares correlate with financial development, market structure, and household wealth, so we read the cross-country magnitude as directional corroboration of the customer-composition mechanism rather than as a second clean estimate. The depositor-level Danish data provide the direct test.

Our paper contributes to three literatures. First, it shows that deposit market power is customer-specific within the bank. The same bank in the same year passes monetary policy through to different depositors at different rates, according to each depositor's outside-option access. The industrial-organization foundations (Klemperer 1995, Sharpe 1997, Kim et al. 2003) and the deposit-franchise literature

(Drechsler et al. 2021) characterize deposit demand and market power primarily at the bank or market level. Here the elasticity-to-pass-through link operates across depositors inside the same bank-year. This changes the economic object: the deposit franchise of a bank depends on which depositors it serves, and two otherwise identical banks transmit policy differently because their deposit bases differ.

Second, our paper tests a primitive of the deposits channel directly. Depositors' outside option is an essential component of the deposits channel of monetary policy (Drechsler et al. 2017): when policy rates rise, depositors must be able to move into higher-yielding alternatives for deposit spreads to generate funding outflows. We observe that outside option at the depositor level and show that banks price against it while holding fixed the bank's competitive environment and balance sheet. Closest in spirit, Bisetti & Sarkar (2025) show that U.S. banks offer higher deposit rates in areas where households are more likely to participate in nondeposit markets. We provide depositor-level evidence on the underlying portfolio mechanism, measuring outside-option access from each depositor's actual portfolio and using entry, exit, and quasi-random inheritance of MPS assets to show that active MPS holdings shape realized pass-through within banks. This portfolio channel complements recent evidence that depositor inattention and sleepiness sustain deposit market power (Lu & Wu 2026, Egan et al. 2025).

Third, our paper documents an indirect return to household financial market participation. Non-MPS depositors miss market returns and also receive lower pass-through on their deposits, extending the household-inaction agenda (Andersen et al. 2020, Ramadorai 2026) and the financial-participation literature (Lusardi

& Mitchell 2014, Deuflhard et al. 2019) from portfolio choice to the pricing of household deposits.

The remainder of this paper proceeds as follows. Section 2 develops our conceptual framework and derives testable hypotheses. Section 3 describes Denmark's administrative data, documents MPS participation patterns, and defines our MPS measures. Section 4 presents baseline individual-level pass-through and deposit flow responses, examines the mechanism through switcher and inheritance designs, and aggregates to the bank level before documenting lending transmission. Section 5 provides euro area evidence. Section 6 concludes with implications for monetary policy and financial regulation.

2 Conceptual Framework

This section develops the intuition behind our empirical setup and hypotheses. An accompanying more formal stylized model can be found in Appendix A.1. The model takes bank market power as the source of incomplete pass-through, in the spirit of Drechsler et al. (2017) and the IO foundations in Klemperer (1995), Sharpe (1997), and Kim et al. (2003). A higher policy rate raises the return a bank earns on the assets funded by deposits. At the same time, it raises the return depositors can earn outside the bank. Deposit pricing therefore reflects a trade-off. A bank can keep deposit rates low and preserve a wide spread on each unit of funding, but doing so risks losing deposits to outside options. The optimal rate balances the value of a wider spread against the cost of deposit outflows.

Our model adds depositor heterogeneity to this trade-off. Some depositors hold market-priced savings (MPS), such as stocks, bonds, and investment funds. The returns on these assets move with the monetary policy rate. Other depositors hold only deposits and cash-like assets. Their outside option responds weakly when policy rates rise. The same bank therefore faces different effective demand elasticities across its own customers. An MPS holder is more willing and able to move balances into market instruments when the deposit rate is unattractive; a non-holder is more captive to the deposit account.

This distinction matters for pricing. When policy rates rise, the bank earns more on each retained unit of deposit funding, but MPS holders also become more costly to retain because their outside option improves. As shown in the stylized model in Appendix A.1, a profit-maximizing bank responds by granting higher pass-through to depositors whose outside options move more strongly with policy rates.[2] This gives the first prediction:

Hypothesis 1: *Banks pass policy rate changes through to deposit rates more strongly for depositors with MPS holdings.*

Higher pass-through, however, does not imply that MPS holders leave deposits unchanged. The bank optimally shares part of the policy-rate increase with the more elastic depositor, but it need not fully match the outside option. Full matching would protect deposit volumes but compress the deposit spread too much. The bank therefore accepts some outflow from depositors whose outside option is strongest, i.e. MPS holders. This yields the second prediction:

[2] The logic does not require posted depositor-specific rates. It can operate through account menus, balance tiers, relationship pricing, targeted offers, or differential timing of repricing. What matters is that realized deposit rates can vary with the bank's assessment of a depositor's outside-option strength.

Hypothesis 2: *When policy rates rise, the deposit balances of MPS holders decline more than those of non-holders at the same bank.*

The same mechanism aggregates from depositors to banks. A bank whose customer base contains many MPS holders faces a more rate-sensitive funding base than an otherwise similar bank serving mainly non-MPS depositors. When policy tightens, the high-MPS bank must either raise deposit rates more aggressively or accept larger outflows. Either way, its funding advantage weakens relative to banks with a less elastic depositor base. Because deposits are a valuable source of bank funding, and cannot be fully replaced by wholesale funding without cost, this customer-composition channel should affect credit supply. This gives the third prediction:

Hypothesis 3: *Banks with a higher share of MPS-holding depositors contract lending more strongly when policy rates rise.*

The model in Appendix A.1 is, in essence, a depositor-level statement of the deposits channel of Drechsler et al. (2017). Both rest on bank market power as the source of incomplete pass-through, and both deliver pass-through that increases with the elasticity of the funding curve. Drechsler et al. (2017) generate variation in pass-through across markets via local concentration; our model generates variation across depositors within a market via portfolio composition. The two mechanisms are complementary, and the empirical specifications in this paper hold bank-year fixed effects constant, absorbing the market-level variation while isolating the depositor-composition variation.

3 Data and Empirical Setup

3.1 Data Sources

Denmark's comprehensive administrative registers enable precise measurement of deposit pricing, reallocation, and credit allocation. Our analysis combines matched administrative datasets from Statistics Denmark spanning 2003–2022 and covering the universe of deposit and lending relationships at Danish banks.

Deposit data. The deposit register covers all deposit accounts through mandatory year-end reporting to the Danish tax authority (SKAT). We observe each deposit account an individual holds at any Danish bank. For each account, we observe the outstanding balance at year-end and the interest paid on the account over the preceding year. Aside from anonymous identifiers for each account, for the respective bank, and for the depositor, the register carries no product-type label, so we cannot directly distinguish e.g. checking from savings deposits. We compute effective deposit rates as annual interest payments divided by the average of deposit balances across two consecutive year-ends. Our main analyses aggregate deposit balances across the accounts an individual holds at a given bank and compute effective rates from these aggregated quantities. The within-account mechanism test in Section 4.3 exploits the disaggregated account-level data directly.

Wealth data. We augment deposit records with individual wealth information that decomposes each person's holdings into real estate, deposits, stocks, and bonds, with values observed at year-end. Money market funds appear within the stocks category due to Danish reporting conventions, while investment funds are classified as either stocks or bonds based on their primary asset class. This classification means our measure of market-priced savings (MPS) captures all non-deposit financial assets available as substitutes for bank deposits.

Credit data. We link deposit records to comprehensive credit registry information covering all loans from Danish banks to non-financial firms at year-end from 2003 to 2022. The registry identifies borrowers, lenders, and outstanding loan amounts for each relationship, enabling construction of bank-firm-year panel data. We compute credit growth as the percentage change in outstanding credit relative to the previous year. New lending volume measures the logged amount of credit extended in relationships where positive new credit occurs. The sample contains approximately 410,000 bank-firm-year observations. This structure enables within-firm comparisons across lenders to isolate credit supply responses following Khwaja & Mian (2008).

Sample definition. We focus on the adult population (age 20+) and banks supervised by the Danish Financial Supervisory Authority. The sample covers 140 unique banks.

Policy rate. We measure policy rate changes, denoted $\Delta \text{MP rate}_t$, as the December-to-December change in the Danish National Bank's CD rate.

MPS measures. We construct two measures of MPS exposure. MPS participation equals one if an individual holds any stocks, investment fund shares, or bonds, and zero otherwise. MPS wealth share measures the fraction of total financial wealth (MPS plus deposits) held in market-priced savings. For bank-level analysis, we compute deposit-weighted averages across each bank's customers, ensuring that larger depositors who drive aggregate deposit flows receive appropriate weight; the same deposit-weighting applies when we collapse to municipality-year averages for aggregate tests.

3.2 MPS Participation and Bank Heterogeneity

Table 1 reveals three patterns central to our identification strategy. First, substantial heterogeneity exists in MPS participation despite universal access to financial markets. Only 31 percent of Danish adults hold any market-priced savings, with the median individual holding no MPS (Panel A). Among participants, MPS averages 40 percent of total financial wealth, with a median of 34 percent. This limited participation, despite Denmark's developed financial markets, creates the variation necessary to identify how outside options affect bank pricing power.

Second, banks differ in their exposure to MPS-holding depositors, generating within-country variation comparable to cross-country differences. Deposit-weighted MPS participation ranges from 31 percent at the 10^{th} percentile bank to 70 percent at the 90^{th} percentile (Panel B). The deposit-weighted share of total financial wealth held in MPS varies similarly from 8 to 20 percent across this range. These differences in customer composition persist over our sample period, suggesting that depositor sorting into banks reflects stable preferences rather than temporary market conditions.

Third, customer composition translates into heterogeneous monetary transmission. Deposit rate pass-through and deposit flow sensitivities vary meaningfully across banks (Panel B). These patterns suggest that customer composition shapes monetary policy transmission through individual banks.

MPS participation correlates with standard demographics documented in Table 2.

Participants are older (average 56 versus 49 years), wealthier (DKK 2.2 million versus DKK 0.8 million in gross wealth), more educated, and more likely to be male or married. MPS participants also hold larger total deposit balances (DKK 277,400 versus 108,800), giving their behavior substantial weight in aggregate deposit flows. Appendix Table A.1 reports regression estimates.

MPS status also changes within person: roughly 5 percent of participants exit MPS each year and 3 percent of non-participants enter (Appendix Table A.2). We exploit this margin in Section 4.3.

Figure 1 translates individual-level heterogeneity into bank-level exposure measures. Panel (a) shows the distribution of deposit-weighted MPS participation across Danish banks: the interquartile range spans 40 to 67 percentage points, and deposit-weighting raises the level relative to equal-weighted averages, reflecting that larger depositors participate in MPS at higher rates. Panel (b) shows the analogous distribution for deposit-weighted MPS wealth share, for which the interquartile range spans roughly 5 to 10 percentage points across banks. This cross-sectional variation in bank-level MPS exposure underlies the bank-level and lending analyses in Section 4.4. The depositor-level analysis instead exploits variation in MPS participation across depositors within banks and years: Equation (1) in Section 4.1 compares MPS holders to non-holders within banks, years, and demographic cells.

4 Empirical Results

We test the three hypotheses from Section 2 in turn. The tests use the universe of Danish bank depositors from 2003 to 2022, with each deposit account linked at the individual-bank-year level to the depositor's complete financial portfolio. These data let us identify the deposit pricing and deposit flow responses to monetary policy at the level of the individual depositor. Section 4.1 tests Hypothesis 1 on deposit pricing. Section 4.2 tests Hypothesis 2 on deposit flows. Section 4.3 isolates the pricing mechanism using within-account variation and exogenous variation in MPS acquisition. Section 4.4 aggregates the individual responses to the bank level and tests Hypothesis 3 on credit supply.

4.1 Deposit Rate Pass-Through

We begin with Hypothesis 1: MPS holders receive higher deposit rate pass-through than non-holders. We estimate

$$y_{ibt} = \alpha_i + \gamma_{bt} + \delta_{X_it} + \beta_1 \text{MPS}_{i,t-1} + \beta_2(\Delta\text{MP rate}_t \times \text{MPS}_{i,t-1}) + \epsilon_{ibt} \qquad (1)$$

at the individual-bank-year level, where y_{ibt} denotes either the change in the effective deposit rate or log deposits of individual i at bank b in year t, $\Delta\text{MP rate}_t$ is the year-on-year change in the Danish monetary policy rate, and $\text{MPS}_{i,t-1}$ is the lagged indicator for ownership of market-priced savings (stocks, bonds, or funds). Standard errors are two-way clustered at the individual and bank levels.

The preferred pooled specification (column 5 of Table 3) includes person fixed effects α_i, bank-year fixed effects γ_{bt}, and covariates-year fixed effects δ_{X_it}: year dummies interacted separately with age group, municipality, homeownership status, marital status, presence of children, university education, and multi-bank status. All depositor characteristics entering these fixed effects are measured at $t-1$, matching the timing of the MPS indicator. Person fixed effects absorb time-invariant individual heterogeneity; bank-year fixed effects absorb time-varying bank policies; covariates-year fixed effects absorb time-varying shocks that differentially affect demographic and relationship groups. The identifying comparison is within bank, within year, and within observed demographic and prior multi-bank status cells: MPS holders are compared to non-holders at the same bank in the same year who share the same observable characteristics. Column 6 adds gross-wealth-decile-by-year and gross-income-decile-by-year fixed effects, where gross wealth and gross income are measured at $t-1$ and each sorted into deciles within calendar year. Because these controls absorb broad pricing cells that are closely related to the outside option, we read column 6 as a saturation and lower-bound diagnostic rather than as the baseline estimate.

MPS holders receive higher pass-through of policy rate changes to their deposit rates. Table 3 reports estimates of Equation (1) on individual-bank-year observations; the dependent variable is the year-on-year change in the individual's effective deposit rate, in percentage points. The baseline OLS estimate (column 1) is 0.075: MPS holders receive 7.5 pp higher pass-through than non-holders. Adding person fixed effects and bank-year fixed effects leaves the premium between 7.6 and 8.0 pp in columns 3 and 4. The preferred pooled specification in column 5, which adds observed covariate-year and prior multi-bank-status-year fixed effects, delivers a 6.6 pp premium. In column 6, the premium falls to 3.5 pp but remains statistically significant at the 1% level. Wealth and income therefore explain part of the pass-through premium, but MPS status continues to predict pricing within wealth-income-year cells.

When the policy rate rises by 100 bps, the preferred estimate implies that MPS holders receive 6.6 bps more in deposit-rate adjustments than otherwise similar non-holders at the same bank in the same year. The saturated wealth-income specification implies a smaller but still economically meaningful 3.5 pp pass-through premium, equivalent to 3.5 bps for a 100 bps policy rate increase. This confirms Hypothesis 1: MPS holders receive higher pass-through than observationally equivalent non-holders at the same bank.

Why do wealth and income absorb part of the premium? Recent evidence shows that banks price deposit balances directly and that depositor responsiveness to deposit rates rises with wealth. Usenko (2025) documents that large deposits at U.S. banks receive substantially higher pass-through than small deposits, and argues that this tiered pricing reflects more than a risk premium on balances above the deposit insurance limit. Cirelli & Olafsson (2025) show that even in a low-friction setting, reallocation toward higher-yielding products is concentrated among wealthy and financially informed households. Deposit balances and total wealth both correlate positively with MPS ownership, and Danish banks segment clients by balance explicitly: Danske Bank, for example, offers a "private banking" package to clients with deposits of at least DKK 5 million (about EUR 670,000), and such clients plausibly receive more proactive advice on which deposit products reprice fastest.[3] Because deposit balances are a component of gross wealth, the

[3]See https://danskebank.dk/private-banking, last accessed May 6, 2026. In May 2025, the Danish financial supervisor reminded banks of their duty to inform all clients, not only pri-

wealth-income-year cells in column 6 absorb much of this balance-based segmentation. The premium that survives within those cells reflects holding market-priced savings rather than wealth or income. Section 4.3 provides complementary evidence supporting this interpretation by showing that the premium opens and closes around MPS entry, exit, and inheritance.

We also estimate the intensive margin of MPS participation, replacing the binary participation dummy with the MPS wealth share. The estimates in Appendix Table A.3 are positive but smaller. Participation itself, not intensity of holdings, governs the pricing response: once a depositor holds market-priced savings, the marginal share of wealth held there is second-order.

4.2 Deposit Flows

The pricing result in Section 4.1 rests on a substitution mechanism: MPS holders have a higher elasticity of substitution between deposits and market instruments (Equation 11 in the appendix), making their deposit balances more sensitive to the deposit spread. Hypothesis 2 predicts that this elasticity differential generates a deposit flow differential when policy rates rise. We re-estimate Equation (1) with log deposits as the outcome, using the same identification structure as Section 4.1.

MPS holders reduce their deposits when policy rates rise. In the preferred pooled specification (column 5 of Table 4), the interaction coefficient is -0.024 (significant at the 1% level): a 100 basis point policy rate increase is associated with a 2.4 pp larger reduction in MPS holders' deposits compared to non-holders at the same

vate banking clients, about available deposit products (Finanstilsynet, "Vejledende udtalelse om Finanstilsynets fortolkning af rådgivningsforpligtelsen," May 2025).

bank in the same year and within the same observed covariate-year and prior multi-bank-status-year cells. MPS holders receive higher pass-through (Section 4.1), yet they still reduce deposits more than non-holders when policy rates rise. The extra pass-through does not fully offset their elevated deposit sensitivity. Adding gross-wealth-decile-by-year and gross-income-decile-by-year fixed effects leaves the flow differential at −0.022 (column 6), equivalent to a 2.2 pp larger deposit reduction per 100 bps. Unlike the pricing premium, the deposit-volume response is essentially unchanged after absorbing broad wealth and income cells.[4]

4.3 Mechanism

The 6.6 pp preferred pooled pass-through premium admits three alternative interpretations: ex-ante sorting across deposit products, confounding channels that coincide with MPS status changes, and endogenous selection into MPS ownership. We address each in turn.

Ex-ante product selection. Person fixed effects absorb time-invariant individual characteristics but leave time-invariant account characteristics uncontrolled. MPS holders who sort into savings or term deposits before policy rates changed would receive higher pass-through for compositional reasons, not because banks price MPS status differentially.

We address this concern by disaggregating to the account level, rather than aggregating across the accounts a person holds at each bank (as in Sections 4.1 to 4.2). Each account appears in the register as an anonymous identifier with no product-

[4] Appendix Table A.4 replaces the participation dummy with MPS wealth share and yields consistent effects.

type label, so account fixed effects absorb product category without requiring explicit classification. The sample expands from 51.6 million individual-bank-year observations to 96.2 million account-level observations, roughly 1.9 accounts per individual-bank relationship. We estimate a version of Equation (1) at this finer level.

Table 5 reports the results. Column 3 estimates the account-level counterpart to the pooled pass-through regression: the coefficient is 7.8 pp. Adding account fixed effects in column 4 reduces this to 7.6 pp. The 0.2 pp difference is small relative to the account-level premium: the premium reflects repricing within existing accounts rather than time-invariant differences across the accounts MPS holders hold. Because account fixed effects require accounts observed in consecutive years, column 4 excludes accounts opened or closed during the year (the sample falls from 96.2 to 90.1 million observations). We use the account-level comparison as a product-composition check rather than as a replacement baseline because it does not add the multi-bank and wealth-income saturation used in Table 3. Account fixed effects absorb account-specific rate levels; they do not absorb product-specific repricing sensitivities.

Because the deposit register does not record deposit product type, we complement the account-FE design with a proxy for product type built from observed rates. Appendix A.4 uses each account's effective rate relative to the person-bank-year mean as a proxy for checking versus savings accounts. The MPS premium is positive within both proxied categories and larger for savings accounts, further alleviating concerns about ex-ante product selection.

Confounding channels around MPS status changes. Person fixed effects exploit within-person variation in MPS status over time. Individuals who acquire MPS, however, may experience correlated changes, such as gradual wealth accumulation that raises both MPS ownership and deposit-rate bargaining leverage, or consolidation of banking relationships that independently improves pricing. Both would produce pre-trends or a gradual build-up in pass-through differentials, not a sharp break at MPS entry.

We first restrict the estimation to depositors who switch in or out of MPS participation within the sample. Columns 2 to 4 of Table 5 include person fixed effects, but the bank-year effects are identified from all depositors, including permanent MPS holders and permanent non-holders; if those groups respond to bank-year shocks for reasons correlated with MPS ownership, the contamination carries into the estimated MPS pass-through premium. Column 5 removes permanent holders and non-holders entirely, so both the MPS variation and the bank-year effects are identified from the same switcher group. The comparison becomes the same person's deposit rate at the same bank, in years when she holds MPS versus when she does not. The switcher coefficient is 1.8 pp, identified within person, within account, and within bank-year.

The residual 1.8 pp is difficult to reconcile with explicit price discrimination on a posted rate schedule. Banks may face reputational costs from charging materially different rates on the same advertised product. A more plausible mechanism is tiering within a nominal account category: targeted new-money offers, relationship-pricing tiers triggered by portfolio composition, or differentially timed re-pricing. The 1.8 pp estimate sets a lower bound on the within-product bank pricing response to MPS status.

The static MPS switcher estimate is an average premium within the switcher population. Two event studies test when the premium opens and when it closes relative to the date of the MPS status change, which distinguishes a sharp causal break from gradual pre-trends or reverse causality. The estimating equation is

$$\Delta r_{ibt} = \sum_{s \neq -1} \beta_s \, \mathbf{1}[s_{it} = s] \times \Delta \text{MP rate}_t + \alpha_i + \gamma_{bt} + \epsilon_{ibt}, \tag{2}$$

where s_{it} denotes event time relative to individual i's year of first MPS acquisition (so $s_{it} = 0$ in the acquisition year), and $s_{it} = -1$ is the omitted reference year. We estimate the equation on the individuals who change MPS status at least once, using not-yet-treated switchers as the control group following Callaway & Sant'Anna (2021).

We begin with MPS entry and depict the event study in Figure 2. Pre-entry coefficients are close to zero and show no upward drift; if anything, future MPS acquirers receive below-average pass-through before entering MPS participation. Upon first acquiring MPS, a positive, significant and persistent MPS pass-through premium emerges. The clean break at entry rules out a pre-existing trend.

The exit event study estimates an analogous equation with s_{it} redefined as event time relative to individual i's year of first MPS exit. The control group consists of individuals who entered MPS in the same calendar year as the out-switcher and had not yet exited at the time of exit. Pre-exit coefficients in Figure 3 are close to zero and statistically insignificant. Two years after exit, pass-through declines by 1.1 to 1.3 pp, significant at the 1% level. The two-year lag matches the maturity profile of savings and term deposits: banks do not re-price the remaining book instantly once the outside option disappears.

Symmetric entry and exit responses rule out a sophistication-based explanation in which financial knowledge is acquired permanently at MPS entry: a depositor who sells all MPS holdings retains whatever knowledge prompted the original acquisition, yet pass-through declines after exit. The symmetric pattern is exactly what the outside-option mechanism predicts, because the competitive threat from alternative savings vehicles disappears when the depositor no longer holds them.

A residual concern remains, however: financial attention itself may track portfolio composition. An individual might spend a few years focused on optimizing returns across MPS and deposits, later shift focus to other things, and have MPS holdings cycle with these attention phases. Such attention cycling produces the same symmetric pattern and is observationally equivalent to outside-option pricing in the switcher design. Rejecting it requires a setting where financial engagement is comparable across treatment and control.

Endogenous MPS acquisition. We obtain exogenous MPS variation from unexpected inheritances, following Andersen & Nielsen (2011). Sudden parental deaths force all heirs to make active portfolio decisions regardless of what they inherit, so treatment and control groups face equivalent demands on financial attention: the difference between them is the type of assets inherited, not the incidence of financial decision-making. When a parent dies suddenly from a heart attack, stroke, or traffic accident, the death is by definition unanticipated: no tax-motivated pre-death transfer of assets to heirs is possible, and heirs cannot borrow against an inheritance they did not foresee. Within this sudden-death sample, the type of assets in the parental estate varies for reasons unrelated to the heir's financial behavior: one heir receives stocks and bonds, another receives real estate or cash, depending on how the parent chose to hold wealth. Danish estate tax is levied on net wealth regardless of asset composition, so heirs have no tax incentive to liquidate inherited MPS assets immediately after receipt (Andersen & Nielsen 2011), ensuring that the treatment persists.

The sudden-death subsample consists of 58,556 individuals. Of these, 19,201 inherit MPS assets (stocks or bonds; the treated group) and 39,355 inherit non-MPS assets (cash deposits, real estate, or consumer durables; the control group). We restrict the estimation sample to heirs who, in the year prior to their inheritance ($s = -1$), own no MPS. Hence, the treatment variation is purely acquisition of MPS. We estimate a triple-difference with event-time $\times$ inherited-MPS $\times$ ΔMP rate interactions.

Appendix Figure A.1 shows the first-stage event study: MPS-inheritors experience a sharp differential increase in MPS ownership after the inheritance event, rising by 4 pp in the year of parental death and by 8 to 9 pp in the following three years, before decaying gradually as inherited portfolios are partially liquidated. The within-inheritor triple-difference estimate of the MPS pass-through premium in Figure 4 tracks this first stage. Prior to inheritance, pass-through differences between MPS-inheritors and other inheritors are indistinguishable from zero. The absence of a response in the year of the parent's death and one year after reflects the roughly one-year lag with which inheritance assignment is recorded in the register data (Appendix A.5): the bulk of the ownership increase and the corresponding pass-through response are recorded one to two years after the parent's death. From two years after inheritance onwards, a significant pass-through premium of 3 to 6 pp emerges and persists, consistent with MPS as an outside option that banks price against. Expanding the control group to never-inheritors (see Appendix Figure A.2) delivers near-identical point estimates on a significantly larger estimation sample.

4.4 From Depositors to Banks: Aggregation and Credit Supply

Having established that MPS functions as an outside option at the individual-bank-year level, we now ask whether individual-level pass-through heterogeneity accumulates to bank-level pricing dispersion and, through deposit flows, to credit supply. We aggregate the individual-level deposit-pricing results in two steps: first to the bank-municipality level, comparing banks that serve the same locality but differ in the MPS exposure of their local depositor base, then to the bank-year level, exploiting cross-bank variation in deposit-weighted MPS participation. We then follow the implications of MPS depositors' differential withdrawal behavior for bank credit supply to non-financial firms.

The municipality-year specification compares deposit pricing across banks serving the same locality in the same year:

$$\Delta DR_{bmt} = \beta_1 \text{MPS}_{b,m,t-1} + \beta_2(\Delta \text{MP rate}_t \times \text{MPS}_{b,m,t-1}) + \gamma_{bt} + \mu_{mt} + \epsilon_{bmt}, \quad (3)$$

where γ_{bt} are bank-year fixed effects and μ_{mt} are municipality-year fixed effects; standard errors are two-way clustered at the bank and municipality-year levels. Bank-municipality MPS exposure is the deposit-weighted average of individual MPS participation within each bank's municipal depositor base; the bank-municipality deposit rate is the simple mean of individual effective deposit rates within that base. The identifying variation for β_2 comes from within-municipality-year comparisons across banks that differ in the MPS exposure of their local depositors. Table 6 shows that a one-standard-deviation increase in municipal MPS participation raises pass-through by 1.3 pp. The estimate is stable when local deposit-market concentration (Herfindahl-Hirschman Index, HHI) enters as a control.

Moving from within-municipality variation to cross-bank variation, the bank-year specification is:

$$\Delta DR_{bt} = \alpha_b + \tau_t + \beta_1 \text{MPS}_{b,t-1} + \beta_2(\Delta \text{MP rate}_t \times \text{MPS}_{b,t-1}) + \epsilon_{bt}, \tag{4}$$

with bank fixed effects α_b, year fixed effects τ_t, and standard errors clustered at the bank level. Bank-level MPS exposure is the deposit-weighted average of individual MPS participation across all of a bank's depositors; the bank-level deposit rate is the simple mean of individual effective deposit rates. Bank fixed effects absorb time-invariant bank characteristics and year fixed effects absorb common time shocks, so β_2 is identified from cross-bank variation in MPS-exposed depositor bases and captures how pass-through to ΔMP rate$_t$ differs across those bases. Table 7 shows that a one-standard-deviation increase in deposit-weighted MPS participation raises pass-through by 4.2 pp. Moving from the 10th to the 90th percentile of deposit-weighted MPS participation raises pass-through by 10 pp, a 50% increase relative to baseline transmission. The effect is robust to controlling for bank-level deposit market HHI: competition from outside the banking system and concentration within it both shape deposit pricing, complementing Drechsler et al. (2017). MPS wealth-share specifications (Appendix Tables A.5 and A.6) confirm these findings.

We now turn to the implications of the MPS substitution channel for the real economy. If MPS depositors withdraw more when policy rates rise, banks with more MPS-exposed depositor bases may face relatively tighter funding and may cut credit supply. We test whether this funding channel operates at the firm-bank-year level, using granular borrower-year fixed effects following Khwaja & Mian (2008) to control for credit demand.

The credit-supply specification is:

$$y_{fbt} = \alpha_{ft} + \alpha_b + \beta_1 \text{MPS}_{b,t-1} + \beta_2 (\Delta \text{MP rate}_t \times \text{MPS}_{b,t-1}) + \epsilon_{fbt}, \tag{5}$$

where y_{fbt} denotes either (i) credit growth, the year-on-year percentage change in outstanding credit within a firm-bank pair, which captures the intensive-margin response on existing relationships; or (ii) new credit (log), the log of net new credit extended within a firm-bank pair in year t conditional on a positive credit flow, which captures the volume of new lending. α_{ft} are firm-year fixed effects following Khwaja & Mian (2008), complemented by industry-location-size-time fixed effects following Degryse et al. (2019); standard errors are two-way clustered at the bank and firm levels. Table 8 shows that banks with one-standard-deviation higher deposit-weighted MPS exposure reduce credit growth by 0.7 to 0.8 pp more per 100 bps of policy tightening (columns 1 to 2), and reduce new credit by 3 to 22 log points more per 100 bps (columns 3 to 4). Banks protect existing relationships and curtail new credit first when deposits decline. Heterogeneity in the depositor base translates into heterogeneity in the transmission of monetary policy to the real economy.

5 External Validity: Euro Area Evidence

The Danish analysis establishes that depositor MPS access shapes deposit pricing and monetary policy transmission within a single country's banking system. We examine whether these mechanisms operate more broadly using data from 175 banks across the euro area during the 2022–2023 monetary tightening cycle.

5.1 Data and Measurement

We use monthly bank-level data on household deposit rates and volumes from the ECB's Individual Balance Sheet Item (IBSI) and Individual MFI Interest Rate (IMIR) databases covering January 2022 through December 2023. We measure country-level MPS exposure using the Securities Holdings Statistics (SHS), which reports household holdings of stocks and bonds quarterly. The MPS share equals the ratio of household stock and bond holdings to the sum of household deposits and stock and bond holdings, calculated at the country level in December 2021. This country-level measure sacrifices the depositor-level granularity available in Denmark but enables assessment across diverse regulatory and institutional environments.

Appendix Table A.9 shows substantial cross-country variation. The ECB's Deposit Facility Rate increased from -0.5 to 4.0 percentage points over the sample period, with year-on-year changes averaging 1.92 percentage points. Deposit rates increased much less, averaging 0.33 percentage points year-on-year and ranging from -0.26 to 1.72 percentage points, reflecting incomplete pass-through. The MPS share varies across countries, averaging 16 percent and ranging from 5 to 41 percent. This heterogeneity provides cross-country variation comparable to the cross-bank variation documented in Denmark.

5.2 Empirical Strategy for the Euro Area

We estimate bank-level regressions with bank and month fixed effects:

$$\begin{aligned}\Delta DR_{bct} = \alpha_t + \alpha_b + \beta_1 \Delta \text{MP rate}_t + \beta_2 \text{MPS\_share}_{c,12/21} \\ +\beta_3(\Delta \text{MP rate}_t \times \text{MPS\_share}_{c,12/21}) + \epsilon_{bct}\end{aligned} \tag{6}$$

where ΔDR_{bct} denotes year-on-year changes in the deposit rate at bank b in country c at month t, and ΔMP rate$_t$ measures year-on-year changes in the ECB's Deposit Facility Rate. Bank fixed effects α_b control for time-invariant institutional characteristics, while month fixed effects α_t absorb common shocks across the euro area. Standard errors are clustered at the bank level. We examine both deposit rate changes and deposit growth as dependent variables.

5.3 Deposit Pricing Results

Figure 5 provides visual evidence of the relationship between pass-through and MPS exposure. Panel A plots bank-level pass-through coefficients (obtained from regressing deposit rate changes on policy rate changes for each bank) against country-level MPS shares. Panel B aggregates to the country level. Both panels show clear positive relationships: banks and countries with higher MPS exposure exhibit stronger pass-through from policy to deposit rates.

Panel A of Table 9 examines deposit rate changes. Column 1 establishes baseline pass-through of 20 percent, similar to the 19 percent pass-through for non-MPS depositors in Denmark (the Δ MP rate coefficient in column 1 of Table 3). Column 2 implies that pass-through rises from 14 percent at the lowest observed MPS share (5 percent) to 33 percent at the highest (41 percent), an increase of roughly 20 percentage points across the observed range. Adding bank and month fixed effects (column 3) leaves the interaction coefficient virtually unchanged at 0.55. Column 4 adds the HHI of deposit market concentration, the key explanatory variable in Drechsler et al. (2017). The MPS share interaction remains significant (0.48) while the concentration interaction enters negatively (-0.38), indicating both within-banking-sector competition and competition from outside the banking system shape deposit pricing power. These results are consistent with households' market-priced savings shaping deposit rate pass-through across countries.

5.4 Deposit Flow Results

Panel B of Table 9 examines deposit growth. Column 1 shows that policy rate increases are associated with declines in deposit growth, consistent with substitution toward market alternatives despite incomplete pass-through. Columns 2 through 4 show this decline is larger in high-MPS-share countries: moving across the observed MPS-share range (5 to 41 percent) makes deposit growth 6 to 8 percentage points more negative per percentage point policy rate increase, depending on specification. The direction of these responses matches the individual-level substitution documented in Denmark: where households hold more market-priced savings, deposits flow out faster when policy tightens.

The euro area evidence supports external validity. Despite measuring MPS exposure at the country rather than depositor level, covering only the 2022–2023 tightening cycle rather than multiple cycles, and spanning a currency union with diverse regulatory environments, the core patterns persist: banks facing depositors with larger MPS holdings provide higher pass-through yet experience larger deposit outflows following rate increases. As noted in the introduction, country-level MPS shares correlate with financial development, market structure, and household wealth; we therefore read these magnitudes as directional corroboration of the customer-composition mechanism: competition from outside the banking system shapes deposit market power and monetary policy transmission beyond Denmark's institutional context.

6 Conclusion

Using Danish administrative data covering all bank-depositor relationships from 2003 to 2022, this paper shows that banks' deposit market power is customer-specific: deposit pricing and monetary policy transmission depend on each depositor's holdings of market-priced savings (MPS). First, depositors holding stocks, bonds, or funds receive 6.6 percentage points higher pass-through of policy rate changes than comparable non-holders at the same bank in the same year. This within-bank heterogeneity reveals that deposit pricing tracks each depositor's outside option, distinct from the cross-bank variation in market concentration documented in prior work. Second, three complementary designs address compositional and behavioral explanations for the premium: in granular account-level data, the premium survives account fixed effects, so it is not driven by time-invariant account characteristics; event studies around MPS entry and exit show that the MPS premium opens up with entry, and fades after exit; and heirs who acquire MPS through unexpected parental deaths experience a 3 to 6 percentage point rise in pass-through relative to heirs inheriting cash or real estate. Third, incomplete pass-through drives substitution: MPS holders reduce deposits by 2.4 percentage points more per 100 basis point policy rate increase, a differential that is essentially unchanged (2.2 percentage points) after controlling for wealth and income. These flows propagate to tighter credit supply at high-MPS banks. Evidence from 175 euro area banks corroborates these mechanisms beyond Denmark.

The deposit channel thereby generates clear winners and losers. Households with MPS holdings earn market returns on their stocks and bonds and, through their credible outside option, higher deposit-rate pass-through on their bank balances; non-participants forgo both.

Our findings carry three implications for monetary policy and financial regulation. First, because deposit market power is customer-specific, monetary policy transmission depends on the composition of each bank's deposit base. Central banks should anticipate stronger deposit outflows and credit contractions at institutions serving depositors with greater MPS holdings. Second, policies encouraging broader market participation may unintentionally strengthen monetary policy transmission by providing more households with outside options. Third, cross-country variation in households' market-priced savings generates heterogeneous monetary policy transmission within currency unions, complicating unified policy implementation across member states.

Three extensions look promising. First, structural estimation of the substitution elasticity between deposits and MPS would support welfare-relevant counterfactuals for the deposit channel. Second, banks cross-selling market-priced savings to their depositors face an unpriced trade-off: MPS generate fee income but, as our results show, erode the deposit franchise by raising pass-through and deposit flow sensitivity; quantifying the net effect would inform both retail banking strategy and the literature on bank cross-selling (Basten & Juelsrud 2023, 2025). Third, the outside-option channel has financial-stability implications: when depositors hold MPS and deposits at the same bank, correlated deposit outflows and fee-income losses during market downturns concentrate, rather than diversify, bank revenue risk, a dual exposure worth tracing through episodes of market stress.

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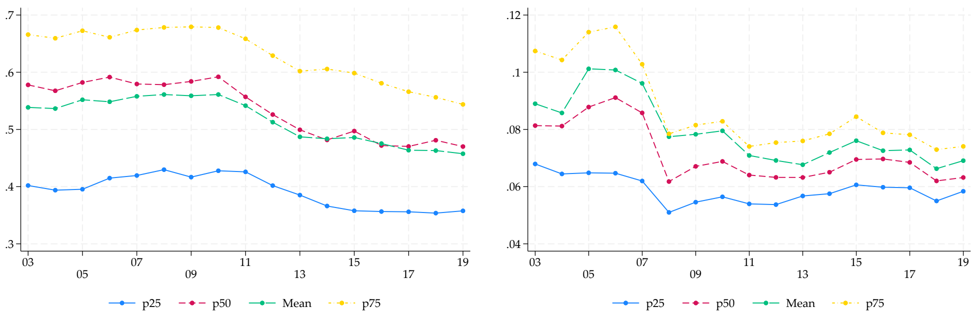
7 Figures and Tables



(a) Indicator: MPS participation, deposit-weighted

(b) MPS wealth share, deposit-weighted

Figure 1: Cross-Bank Distribution of Depositor MPS Exposure

Notes: This figure plots the cross-bank distribution of depositor MPS exposure, computed as deposit-weighted averages across a bank's depositors. Panel (a) shows the distribution of the deposit-weighted MPS participation rate (share of depositors holding any stocks or bonds). Panel (b) shows the distribution of the deposit-weighted MPS wealth share (MPS holdings as a fraction of total financial wealth). Lines mark the 25th percentile, median, mean, and 75th percentile of the cross-bank distribution in each year. Sample: Danish banks with at least 100 depositors in a given year, 2003 to 2019.

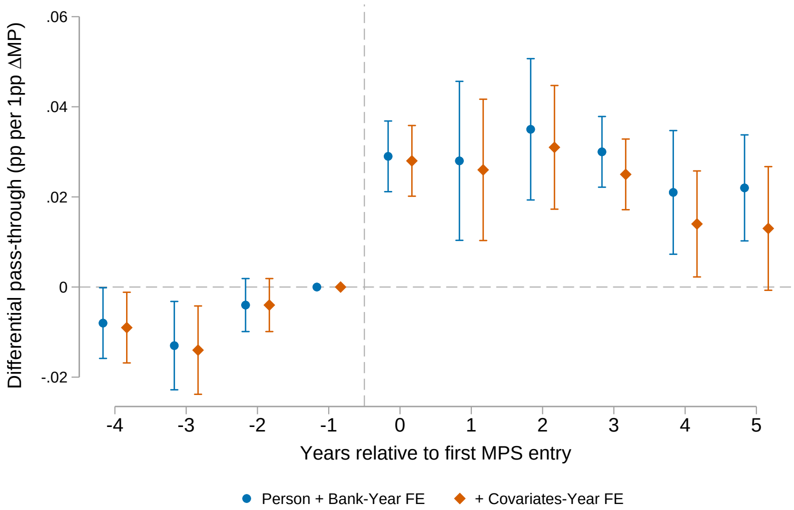


Figure 2: Deposit Rate Pass-Through around MPS Entry

Notes: This figure plots event-study coefficients $\hat{\beta}_s$ from Equation (2) against event time s relative to the year of first MPS entry ($s = -1$ normalized to zero). The dependent variable is the year-on-year change in the effective deposit rate (percentage points) interacted with the year-on-year policy rate change. Sample: 816,117 MPS in-switchers. Control group: not-yet-treated switchers following Callaway & Sant'Anna (2021). Endpoint bins pool all horizons at or below $s = -4$ and at or above $s = +5$. Blue circles: person and bank-year FE. Orange triangles: add year-interacted demographic controls (age group, municipality, homeownership, marital status, children, university education). The error bands depict 95% confidence intervals based on standard errors two-way clustered at the bank and individual level.

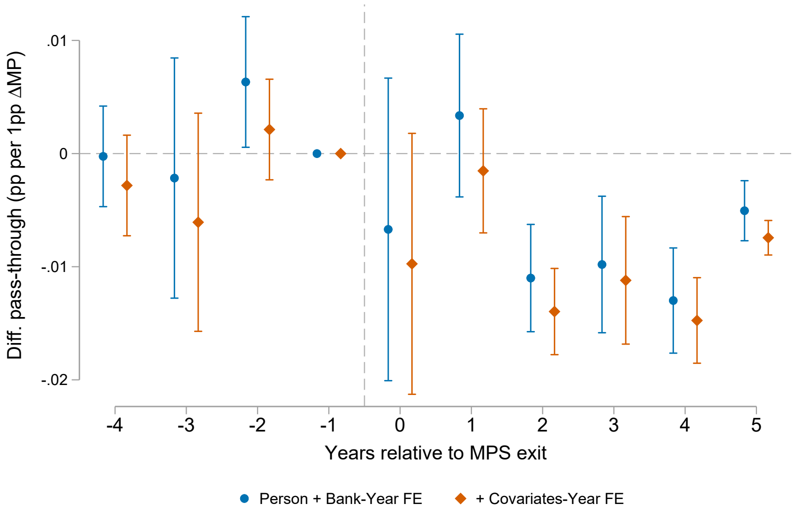


Figure 3: Deposit Rate Pass-Through around MPS Exit

Notes: This figure plots event-study coefficients $\hat{\beta}_s$ from Equation (2) applied to MPS exit events, against event time s relative to the year of MPS exit ($s = -1$ normalized to zero). The dependent variable is the year-on-year change in the effective deposit rate (percentage points) interacted with the year-on-year policy rate change. Sample: MPS out-switchers matched to a control group of individuals who entered MPS in the same calendar year as the out-switcher and had not yet exited at the time of exit. Specification: person and bank-year fixed effects. The error bands depict 95% confidence intervals based on standard errors two-way clustered at the bank and individual level.

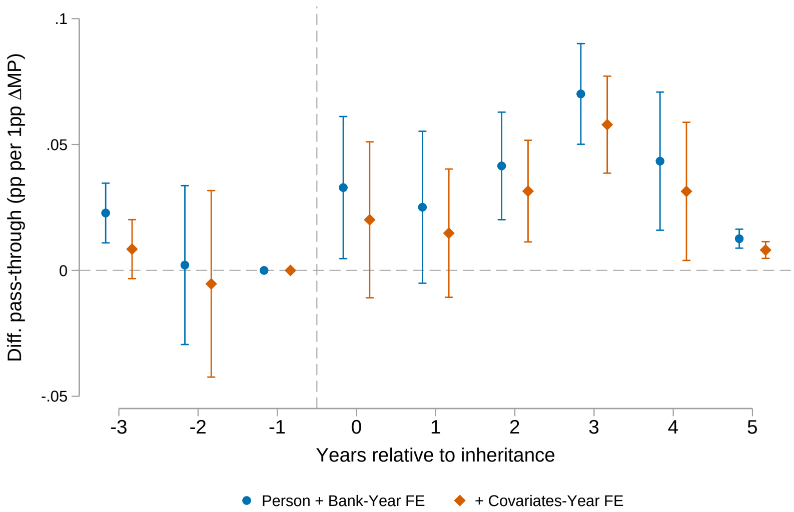
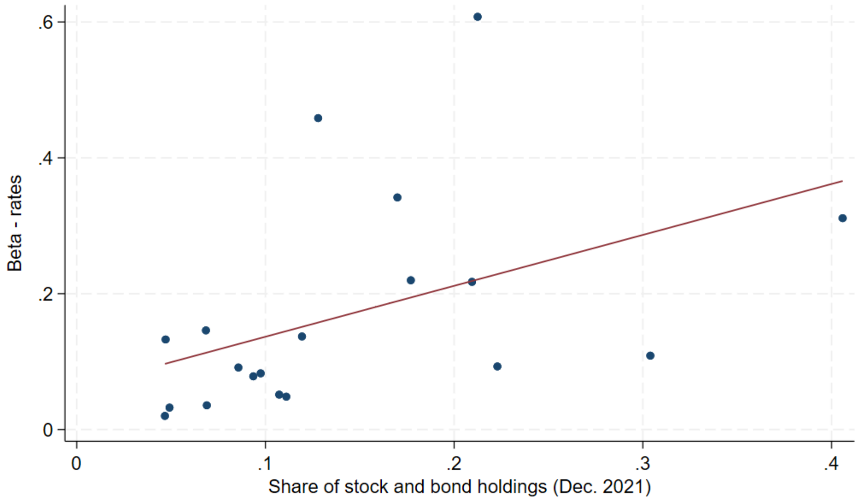


Figure 4: Pass-Through and Inherited MPS Exposure: Triple-Difference Event Study

Notes: This figure plots event-study coefficients on the event-time $\times$ inherited-MPS $\times$ Δ MP rate triple interaction, against event time s relative to the year of parental death ($s = -1$ normalized to zero). The dependent variable is the year-on-year change in the effective deposit rate (percentage points). Sample: baseline non-MPS owners at $s = -1$ (within-inheritor sample; $N = 422{,}935$). Treated group: baseline non-owners who inherited stocks or bonds from a suddenly deceased parent. Control group: baseline non-owners who inherited only non-MPS assets (cash deposits, real estate, or consumer durables), following Andersen & Nielsen (2011). Blue circles: person and bank-year FE. Orange triangles: add year-interacted demographic controls (age group, municipality, homeownership, marital status, children, university education). The error bands depict 95% confidence intervals based on standard errors two-way clustered at the bank and individual level.

(a) Bank level



(b) Country level

Figure 5: Deposit Rate Pass-Through and Country-Level MPS Exposure: Euro Area

Notes: This figure plots deposit rate pass-through against country-level MPS exposure across the euro area during the 2022 to 2023 monetary tightening cycle. Pass-through is estimated for each bank by regressing year-on-year deposit rate changes on year-on-year policy rate changes. MPS share equals the ratio of household stock and bond holdings to household deposits plus stock and bond holdings, computed at the country level in December 2021. Panel (a) plots bank-level pass-through estimates against country-level MPS share, with one point per bank. Panel (b) aggregates to the country level. Sample: 175 banks, January 2022 to December 2023.

Table 1: Summary Statistics: Danish Depositors, Banks, and Firm-Bank Pairs

Notes: This table reports summary statistics for the main estimation samples, Danish administrative data 2003 to 2022. Panel A reports depositor-year level statistics. Panel B reports bank-year level statistics. The deposit rate beta, deposit spread beta, and deposit flow beta in Panel B are estimated as bank-by-bank OLS coefficients from time-series regressions of, respectively, the change in the deposit rate, the change in the deposit spread, and log deposits on the change in the policy rate. Panel C reports firm-bank-year level statistics for the lending analysis. Market-priced savings (MPS) include directly held stocks and bonds, equity and bond mutual funds, and money market funds. MPS wealth share equals MPS holdings divided by total financial wealth (deposits plus MPS). MPS participation is an indicator equal to one if the depositor holds any MPS (Panel A) or the deposit-weighted fraction of depositors holding MPS (Panels B and C). Deposit balances and wealth measures are in 10,000 Danish kroner. Credit growth is the percentage change in outstanding credit, winsorized at the 1st and 99th percentiles. Log new credit is the log of credit extended in bank-firm pairs with positive new originations. Sample: individuals aged 18 and above with positive deposit balances.

	N	Mean	SD	p10	p50	p90
Panel A. Depositor-year level						
Deposit rate (%)	56,402,175	0.42	0.89	0.00	0.02	1.54
Deposit growth (%)	56,265,005	0.07	0.80	-0.91	0.04	1.11
MPS participation (0/1)	56,402,175	0.31	0.46	0.00	0.00	1.00
MPS wealth share (%)	56,380,202	12.59	26.19	0.00	0.00	60.45
Total deposits (10K DKK)	56,402,175	16.17	190.32	0.57	4.17	36.03
Gross wealth (10K DKK)	56,402,175	126.55	1198.04	1.01	69.78	272.77
Disposable income (10K DKK)	56,402,175	23.69	54.86	10.26	20.50	37.86
Age (Years)	56,402,175	51.38	17.14	28.00	51.00	75.00
Male (0/1)	56,402,175	0.49	0.50	0.00	0.00	1.00
University degree (0/1)	56,402,175	0.26	0.44	0.00	0.00	1.00
Married or in partnership (0/1)	56,402,175	0.52	0.50	0.00	1.00	1.00
Has children (0/1)	56,402,175	0.33	0.47	0.00	0.00	1.00
Real estate owner (0/1)	56,402,175	0.58	0.49	0.00	1.00	1.00
Panel B. Bank-year level						
MPS participation (deposit-wgt)	1,600	0.49	0.16	0.31	0.46	0.70
MPS wealth share (%, deposit-wgt)	1,600	14.07	7.67	8.27	12.26	20.12
Deposit rate, avg. (%)	1,600	0.62	0.65	0.01	0.44	1.50
MP rate (%)	1,600	1.27	1.78	-0.65	1.05	3.75
Δ MP rate (pp)	1,600	-0.08	0.96	-0.70	0.00	1.35
Total assets (log)	1,457	21.38	2.27	18.59	21.34	24.05
Equity ratio	1,457	0.14	0.08	0.07	0.13	0.22
Loan-to-deposit ratio	1,447	0.93	1.24	0.42	0.78	1.24
HHI (deposit-weighted)	1,600	0.21	0.04	0.16	0.21	0.27
Deposit rate beta	1,597	0.15	0.30	0.02	0.15	0.36
Deposit spread beta	1,597	0.85	0.30	0.64	0.85	0.98
Deposit flow beta	1,600	-0.23	3.53	-4.26	0.02	2.94
Panel C. Firm-bank-year level						
Credit growth (%)	412,359	253.20	1778.40	-100.00	-12.51	154.64
Log new credit	194,569	11.96	2.91	8.14	12.43	15.02
MPS participation, deposit-wgt	807,801	0.56	0.09	0.47	0.56	0.68

Table 2: Depositor Characteristics by MPS Participation

Notes: This table compares depositor-year characteristics between MPS participants (Column 1) and non-participants (Column 2), Danish administrative data 2003 to 2022. MPS participants are individuals holding any stocks or bonds. Column 3 reports the difference in means. Market-priced savings (MPS) include directly held stocks and bonds, equity and bond mutual funds, and money market funds. Wealth and income variables are measured in 10,000 Danish kroner (approximately 1,350 euros or 1,500 U.S. dollars at the 2022 exchange rate). *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	MPS owners			No MPS			Difference
	Mean	Std. Dev.	Median	Mean	Std. Dev.	Median	
Deposit rate (%)	0.62	1.04	0.11	0.34	0.80	0.00	-0.28***
Deposit growth (%)	0.05	0.76	0.03	0.07	0.81	0.04	0.02***
MPS participation (0/1)	1.00	0.00	1.00	0.00	0.00	0.00	-1.00
MPS wealth share (%)	40.13	32.87	33.73	0.00	0.00	0.00	-40.13***
Total deposits (10K DKK)	27.74	287.49	9.51	10.88	122.12	2.88	-16.86***
Gross wealth (10K DKK)	221.69	2,111.81	129.53	83.07	216.80	44.09	-138.62***
Disposable income (10K DKK)	28.12	86.80	23.19	21.66	30.46	19.51	-6.46***
Age (Years)	56.15	17.01	57.00	49.20	16.75	48.00	-6.95***
Male (0/1)	0.53	0.50	1.00	0.47	0.50	0.00	-0.06***
University degree (0/1)	0.31	0.46	0.00	0.24	0.43	0.00	-0.07***
Married or in partnership (0/1)	0.57	0.50	1.00	0.50	0.50	1.00	-0.07***
Has children (0/1)	0.27	0.45	0.00	0.36	0.48	0.00	0.09***
Real estate owner (0/1)	0.70	0.46	1.00	0.52	0.50	1.00	-0.19***
N	17,691,741			38,710,434			56,402,175

Table 3: Deposit Rate Pass-Through and MPS Participation: Depositor Level

Notes: This table reports OLS estimates of how deposit rate pass-through varies with depositors' MPS participation, using individual-bank-year observations from 2003 to 2022. The dependent variable is the year-on-year change in the depositor's effective deposit rate at a given bank (percentage points). The key regressor is the interaction of lagged MPS participation with the year-on-year policy rate change; the lagged MPS participation indicator equals one if the depositor held any stocks, bonds, or funds in the prior year. Bank controls include lagged log total assets, tier-1 capital ratio, and loan-to-deposit ratio. Covariates-Year FE are indicators for age group, municipality of residence, homeownership status, marital status, presence of children, university education, and multi-bank status, each interacted with year. Wealth/Income-Year FE are indicators for within-year deciles of gross wealth and of gross income, each interacted with year. All depositor characteristics are measured in the prior year ($t-1$). Standard errors two-way clustered at the individual and bank levels appear in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Δ MP rate	0.189***	0.165***	0.173***			
	(0.024)	(0.017)	(0.017)			
MPS participation (t-1) =1	-0.017***	-0.008*	-0.026***	-0.003	-0.004	-0.006*
	(0.004)	(0.004)	(0.006)	(0.005)	(0.004)	(0.003)
MPS participation (t-1) =1 × Δ MP rate	0.075***	0.075***	0.080***	0.076***	0.066***	0.035***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.009)	(0.004)
Observations	51,633,156	51,636,227	51,636,227	51,636,227	51,636,227	51,636,227
R2	0.08	0.08	0.12	0.24	0.25	0.26
Bank controls	Yes					
Bank FE		Yes	Yes			
Individual FE			Yes	Yes	Yes	Yes
Bank-Year FE				Yes	Yes	Yes
Covariates-Year FE					Yes	Yes
Wealth/Income-Year FE						Yes

Table 4: Deposit Balances and MPS Participation: Depositor Level

Notes: This table reports OLS estimates of how deposit balances respond to monetary policy rate changes, by depositors' MPS participation, using individual-bank-year observations from 2003 to 2022. The dependent variable is log deposit balances held by individual i at bank b in year t. The key regressor is the interaction of lagged MPS participation with the year-on-year policy rate change; the lagged MPS participation indicator equals one if the depositor held any stocks, bonds, or funds in the prior year. Bank controls include lagged log total assets, tier-1 capital ratio, and loan-to-deposit ratio. Covariates-Year FE are indicators for age group, municipality of residence, homeownership status, marital status, presence of children, university education, and multi-bank status, each interacted with year. Wealth/Income-Year FE are indicators for within-year deciles of gross wealth and of gross income, each interacted with year. All depositor characteristics are measured in the prior year ($t-1$). Standard errors two-way clustered at the individual and bank levels appear in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Δ MP rate	0.067**	0.120***	0.112***			
	(0.028)	(0.026)	(0.027)			
MPS participation (t-1) =1	0.612***	0.636***	-0.052***	-0.073***	-0.057***	-0.183***
	(0.056)	(0.036)	(0.013)	(0.013)	(0.012)	(0.020)
MPS participation (t-1) =1 × Δ MP rate	-0.050	-0.019*	-0.029***	-0.028***	-0.024***	-0.022***
	(0.035)	(0.011)	(0.006)	(0.004)	(0.003)	(0.002)
Observations	73,777,778	73,802,204	73,802,204	73,802,204	73,802,204	73,802,204
R2	0.02	0.04	0.43	0.46	0.47	0.50
Bank controls	Yes					
Bank FE		Yes	Yes			
Individual FE			Yes	Yes	Yes	Yes
Bank-Year FE				Yes	Yes	Yes
Covariates-Year FE					Yes	Yes
Wealth/Income-Year FE						Yes

Table 5: Decomposing the MPS Pass-Through Premium: Account-Level Evidence

Notes: This table reports OLS estimates of the MPS pass-through differential at the account-individual-bank-year level, Danish administrative data 2003 to 2022. The dependent variable is the year-on-year change in the effective deposit rate (percentage points). The reported coefficient is the interaction of lagged MPS ownership with the policy rate change (MPS $\times$ Δ MP rate). Bank controls in column (1) are lagged log total assets, tier-1 capital ratio, and loan-to-deposit ratio. Covariates interacted with year indicators include age group, municipality, homeownership status, marital status, presence of children, and university education. Column (4) restricts the sample to accounts observed in consecutive years, as required for account fixed effects; column (5) further restricts it to individuals who change MPS status during the sample. Standard errors two-way clustered at the individual and bank levels are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Full sample				MPS switcher sample
	(1)	(2)	(3)	(4)	(5)
MPS participation (t-1) $\times$ Δ MP rate	0.082***	0.083***	0.078***	0.076***	0.018***
	(0.006)	(0.004)	(0.004)	(0.004)	(0.001)
MPS participation (t-1)	-0.004	0.009***	0.008***	0.011***	-0.003**
	(0.005)	(0.001)	(0.002)	(0.002)	(0.001)
Δ MP rate	0.239***				
	(0.024)				
Observations	96,134,286	96,249,776	96,249,776	90,123,504	37,855,097
R^2	0.12	0.23	0.23	0.32	0.31
Bank controls	Yes	absorbed	absorbed	absorbed	absorbed
Individual FE		Yes	Yes	Yes	Yes
Bank-Year FE		Yes	Yes	Yes	Yes
Covariates-Year FE			Yes	Yes	Yes
Account FE				Yes	Yes

Table 6: Within-Bank Pass-Through and Municipal MPS Participation

Notes: This table reports OLS estimates of how deposit rate pass-through varies within banks across municipalities with different depositor MPS participation, using bank-municipality-year observations from 2003 to 2022. The dependent variable is the year-on-year change in the bank's arithmetic mean deposit rate among depositors residing in a given municipality (percentage points). MPS participation equals the deposit-weighted fraction of municipal depositors holding any stocks or bonds. MPS participation is standardized to mean zero and unit standard deviation within each municipality-year. Municipal deposit concentration is measured by the Herfindahl-Hirschman Index (HHI) at the municipality-year level. Bank controls include lagged log total assets, tier-1 capital ratio, and loan-to-deposit ratio. Standard errors two-way clustered at the bank and municipality-year levels appear in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
MPS participation (t-1, std.)	0.000	-0.002	-0.002	-0.003**	-0.003**	-0.003**
	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
Δ MP rate	0.189***	0.190***	0.190***			
	(0.012)	(0.012)	(0.012)			
MPS participation (t-1, std.) × Δ MP rate	0.025***	0.024***	0.024***	0.013***	0.013***	0.013***
	(0.005)	(0.005)	(0.005)	(0.002)	(0.002)	(0.002)
Municipal deposit concentration (HHI, t-1)						0.009
						(0.027)
Municipal deposit concentration (HHI, t-1) × Δ MP rate						0.038
						(0.025)
Observations	120,767	120,767	120,767	120,765	120,765	120,765
R2	0.14	0.16	0.16	0.43	0.44	0.43
Bank controls	Yes	Yes	Yes	Yes	Yes	Yes
Bank FE		Yes	Yes			
Municipality FE			Yes	Yes		Yes
Bank-Year FE				Yes	Yes	Yes
Municipality-Year FE					Yes	

Table 7: Deposit Rate Pass-Through and Bank-Level MPS Participation

Notes: This table reports OLS estimates of how deposit rate pass-through varies across banks with different depositor MPS participation, using bank-year observations from 2003 to 2022. The dependent variable is the year-on-year change in the bank's arithmetic mean deposit rate across all depositors (percentage points). MPS participation equals the deposit-weighted fraction of depositors holding any stocks or bonds, standardized to mean zero and unit standard deviation within each year. Bank controls include lagged log total assets, tier-1 capital ratio, and loan-to-deposit ratio. Standard errors clustered at the bank level appear in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)
MPS participation (t-1, std.)	0.006	0.039**	0.020	0.013
	(0.007)	(0.017)	(0.019)	(0.019)
Δ MP rate	0.190***	0.190***		
	(0.010)	(0.010)		
MPS participation (t-1, std.) × Δ MP rate	0.041***	0.042***	0.042***	0.036***
	(0.012)	(0.012)	(0.011)	(0.011)
Bank-level deposit concentration (HHI, t-1)				0.028
				(0.204)
Bank-level deposit concentration (HHI, t-1) × Δ MP rate				0.572**
				(0.224)
Observations	1,578	1,578	1,578	1,578
R2	0.30	0.36	0.71	0.72
Bank controls	Yes	Yes	Yes	Yes
Bank FE		Yes	Yes	Yes
Year FE			Yes	Yes

Table 8: Bank Credit Supply and Bank-Level MPS Participation

Notes: This table reports OLS estimates of how bank credit supply to non-financial firms responds to monetary policy rate changes, by bank-level depositor MPS participation, using bank-firm-year observations from 2003 to 2022. The dependent variables are year-on-year credit growth and the log of net new credit within each firm-bank pair (see column headers). Bank-level MPS participation is the deposit-weighted average across depositors, standardized to mean zero and unit standard deviation. Specifications alternate firm-year fixed effects (Khwaja & Mian 2008) and industry × location × size × year fixed effects (Degryse et al. 2019) to control for credit demand. Bank controls include lagged log total assets, tier-1 capital ratio, and loan-to-deposit ratio. Standard errors two-way clustered at the bank and firm levels appear in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Outcome: Credit growth		Outcome: New credit (log)	
	(1)	(2)	(3)	(4)
MPS participation (t-1, std)	0.057**	0.051**	0.126	-0.053
	(0.023)	(0.024)	(0.210)	(0.139)
MPS participation (t-1, std) × Δ MP rate	-0.757	-0.674*	-22.026***	-3.323**
	(0.772)	(0.376)	(6.928)	(1.538)
Observations	80,121	331,414	16,618	144,263
R2	0.46	0.17	0.61	0.35
Bank controls	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes
Firm-Year FE	Yes		Yes	
ILST FE		Yes		Yes

Table 9: Deposit Pricing and Flows by Country-Level MPS Exposure: Euro Area

Notes: This table reports OLS estimates of how deposit pricing and deposit flows vary with country-level MPS exposure following monetary policy rate changes, using monthly bank-level observations from January 2022 to December 2023 covering 175 euro area banks. In Panel A, the dependent variable is the year-on-year change in the bank's household deposit rate (weighted average of overnight and agreed-maturity rates, percentage points). In Panel B, the dependent variable is the year-on-year change in log household deposit volumes. Data on deposit rates are available for only a subset of banks, leading to differences in the number of observations across panels A and B. MPS share equals the ratio of household stock and bond holdings to household deposits plus stock and bond holdings, computed at the country level in December 2021. HHI denotes the Herfindahl-Hirschman Index of deposit market concentration at the country level. Standard errors clustered at the bank level appear in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)
Panel A: Outcome: Deposit rate				
Δ MP rate	0.197***	0.108***		
	(0.0130)	(0.0277)		
Δ MP rate × Market-Priced Savings share		0.547***	0.550***	0.478***
		(0.173)	(0.173)	(0.178)
Market-Priced Savings share		-0.0447		
		(0.0928)		
Δ MP rate × HHI - Household deposits				-0.384**
				(0.167)
Observations	4,100	4,100	4,100	4,100
R-squared	0.295	0.330	0.698	0.704
Bank FE	N	N	Y	Y
Month FE	N	N	Y	Y
Panel B: Outcome: Deposit flow				
Δ MP rate	-0.0120***	0.0262**		
	(0.00258)	(0.0113)		
Market-Priced Savings share		0.446***		
		(0.140)		
Δ MP rate × Market-Priced Savings share		-0.212***	-0.171***	-0.165***
		(0.0569)	(0.0555)	(0.0529)
Δ MP rate × HHI - Household deposits				0.0177
				(0.0406)
Observations	31,743	31,556	31,547	31,547
R-squared	0.004	0.007	0.484	0.484
Bank FE	N	N	Y	Y
Month FE	N	N	Y	Y

A Appendix

A.1 Formal Framework

This appendix sets out the stylized deposit-pricing model used in Section 2. A monopolist bank serves two depositor types, indexed $i \in \{H, L\}$, with masses μ_H and $\mu_L = 1 - \mu_H$. Type i has linear deposit demand

$$D_i(r_i^d; f) = \alpha_i + \gamma r_i^d - \beta_i f, \qquad \gamma > 0, \ \beta_i \geq 0, \tag{7}$$

where r_i^d is the type-specific deposit rate, f is the policy rate, γ governs own-rate sensitivity, and β_i governs how strongly type i's deposit demand responds to f through its outside option. Define

$$\eta_i \equiv \beta_i / \gamma,$$

which is the loading of the depositor's effective outside-option return on the policy rate. Depositors who hold MPS have outside-option returns that move with f, so η_H is large; depositors who hold only cash-like assets have outside-option returns that respond weakly to f, so η_L is small. We assume $\eta_H > \eta_L \geq 0$ throughout. The polar case $\eta_L = 0$ corresponds to a cash-only outside option, while $\eta_H = 1$ corresponds to an outside-option return that tracks the policy rate one-for-one.[5]

The bank invests deposits at the policy rate f and chooses $\{r_H^d, r_L^d\}$ to maximize

$$\pi = \sum_{i \in \{H,L\}} \mu_i (f - r_i^d) D_i(r_i^d; f). \tag{8}$$

[5]The participation-margin heterogeneity captured by η_i is consistent with household-finance evidence on uneven access to financial markets (Campbell 2006, Calvet et al. 2007, Guiso & Sodini 2013). We take this heterogeneity as exogenous to the bank's pricing problem and identify it from pre-existing portfolio holdings in the empirical analysis.

The first-order condition for each type yields

$$r_i^{d*}(f) = \frac{(1+\eta_i)f}{2} - \frac{\alpha_i}{2\gamma}, \qquad D_i^*(f) = \frac{\alpha_i + \gamma(1-\eta_i)f}{2}. \tag{9}$$

In the absence of an outside option that responds to policy ($\eta_i = 0$), the bank passes through half of any change in f. The term η_i governs how much of the depositor's effective rate exposure the bank must concede when the policy rate moves.

Differentiating the optimal deposit rate in Equation (9) with respect to f gives

$$\frac{\partial r_i^{d*}}{\partial f} = \frac{1+\eta_i}{2}. \tag{10}$$

Pass-through is increasing in η_i, so MPS holders receive higher pass-through than non-holders at the same bank. The $H - L$ differential is $(\eta_H - \eta_L)/2 > 0$. This is the within-bank prediction tested in Section 4.1, where bank-year fixed effects absorb f and any bank-specific pricing policy.

Equilibrium deposits respond as

$$\frac{\partial D_i^*}{\partial f} = \frac{\gamma(1-\eta_i)}{2}, \tag{11}$$

so deposits decline more, or rise less, for the type with the higher η_i. The $H - L$ differential is

$$\frac{\partial D_H^*}{\partial f} - \frac{\partial D_L^*}{\partial f} = -\frac{\gamma(\eta_H - \eta_L)}{2} < 0.$$

The higher pass-through to MPS holders compensates only partially for their stronger outside-option pull. The residual outflow is increasing in the outside-option wedge $\eta_H - \eta_L$.

A bank's aggregate funding response is the mass-weighted sum across types:

$$\sum_i \mu_i \frac{\partial D_i^*}{\partial f} = \frac{\gamma}{2} \left[1 - \mu_H \eta_H - \mu_L \eta_L\right]. \tag{12}$$

Holding type-specific parameters fixed, the bank's aggregate deposit response is decreasing in μ_H. Two banks identical along all other dimensions transmit a monetary shock differently when their depositor composition differs: a bank with a larger MPS-holder share faces a more rate-sensitive funding base and, under standard funding-cost assumptions, contracts credit more sharply when policy tightens.

The model is a depositor-level statement of the deposits channel in Drechsler et al. (2017). Both models rest on bank market power as the source of incomplete pass-through and both deliver pass-through that is increasing in the elasticity of the funding curve. Drechsler et al. (2017) generate variation in pass-through across markets through local concentration; the present model generates variation across depositors within a market through portfolio composition. The empirical specifications hold bank-year fixed effects constant, absorbing the market-level component while isolating depositor-composition variation.[6]

The model is silent on the absolute level of pass-through, which depends on features outside its scope, including the elasticity of the bank's asset-side return to the policy rate. Letting the bank's marginal asset return be νf with $\nu \leq 1$ replaces

[6] An extension of the market-level setup in Drechsler et al. (2017) with depositor-type heterogeneity within each bank's CES nest yields the same comparative statics as Equations (10)–(12), scaled by the bank's market share. We work with the monopolist baseline because the empirical strategy absorbs the market-level component.

Equation (10) with $(\nu + \eta_i)/2$, which can sit below one half and is consistent with the empirical magnitudes. The $H - L$ differential $(\eta_H - \eta_L)/2$ is unchanged. The cross-sectional predictions are therefore robust to richer investment technologies.

The intercept α_i captures any time-invariant, type-specific component of deposit demand, including transactional convenience, deposit insurance, and branch access. It shifts the level of equilibrium deposits and the level of r_i^d but drops out of the pass-through and response derivatives in Equations (10), (11), and (12). The empirical specifications use person fixed effects and interactions of demographics with year indicators to absorb the corresponding empirical analogs.

Table A.1: Correlates of MPS Participation: Individual Level

Notes: This table reports OLS estimates of the relationship between depositor characteristics and MPS holdings, using individual-year observations from 2003 to 2022. Panel A uses an indicator for MPS participation (holding any stocks or bonds) as the dependent variable. Panel B uses MPS wealth share (MPS divided by total financial wealth) as the dependent variable. The omitted education category is less than high school. Standard errors clustered at the individual level appear in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A. Outcome var: Financial asset ownership indicator									
Male	0.038***	0.038***							0.039***
	(0.000)	(0.000)							(0.000)
L.Married			0.065***	0.057***					0.071***
			(0.000)	(0.000)					(0.000)
L.High school education					0.247***	0.223***			0.205***
					(0.001)	(0.001)			(0.001)
L.Undergraduate					0.312***	0.290***			0.282***
					(0.001)	(0.001)			(0.001)
L.Graduate degree					0.388***	0.367***			0.358***
					(0.001)	(0.001)			(0.001)
L.Has children							-0.085***	-0.090***	-0.118***
							(0.000)	(0.000)	(0.000)
N	68,008,040	68,008,040	62,194,893	62,194,893	59,218,012	59,218,012	62,194,893	62,194,893	59,218,012
Observations"	0.00	0.02	0.01	0.02	0.01	0.03	0.01	0.03	0.05
B. Outcome var: Financial asset wealth share									
Male	-0.008***	-0.008***							-0.010***
	(0.000)	(0.000)							(0.000)
L.Married			-0.010***	-0.010***					-0.002***
			(0.000)	(0.000)					(0.000)
L.High school education					0.047***	0.047***			0.036***
					(0.000)	(0.000)			(0.000)
L.Undergraduate					0.050***	0.048***			0.042***
					(0.000)	(0.000)			(0.000)
L.Graduate degree					0.058***	0.053***			0.053***
					(0.000)	(0.000)			(0.000)
L.Has children							-0.044***	-0.045***	-0.046***
							(0.000)	(0.000)	(0.000)
Observations	66,167,207	66,167,207	60,813,253	60,813,253	58,089,047	58,089,047	60,813,253	60,813,253	58,089,047
R2	0.02	0.02	0.00	0.01	0.00	0.01	0.02	0.02	0.02
Year FE	Yes		Yes		Yes		Yes		
Year-Municipality FE		Yes		Yes		Yes		Yes	Yes

A.2 MPS Transition Matrix

Transitions between MPS ownership and non-ownership are frequent enough to support the switcher-based identification strategies in the main text. Table A.2 reports the year-over-year transition matrix across MPS ownership states, pooled over the 2003–2022 sample period. Of individuals holding no MPS at $t-1$, 2.9% acquire MPS by year t; of individuals holding MPS at $t-1$, 4.7% exit by year t. Over the twenty-year sample, 816,117 individuals enter MPS ownership for the first time; these in-switchers form the entry event-study sample in Section 4.3.

Table A.2: Year-over-Year MPS Ownership Transition Matrix

Notes: This table reports year-over-year transition probabilities between MPS ownership states. Rows condition on MPS status at $t-1$; columns show the fraction in each state at t. Pooled over all individual-year observations, 2003–2022.

	$\text{MPS}_t = 0$	$\text{MPS}_t = 1$
$\text{MPS}_{t-1} = 0$	0.971	0.029
$\text{MPS}_{t-1} = 1$	0.047	0.953

A.3 MPS Wealth Share Results (Intensive Margin): Robustness

This Appendix replicates the key results in the main text of the paper with an intensive-margin measure of depositors' MPS holdings: the share of financial wealth, the sum of all bank deposits and MPS, held in MPS.

Table A.3: Deposit Rate Pass-Through by MPS Wealth Share at the Depositor Level

Notes: This table reports OLS estimates of the year-on-year change in the depositor's effective deposit rate at each bank (in percentage points) on the MPS wealth share, a continuous, intensive-margin measure of MPS exposure, at the individual-bank-year level. See Table 3 for the extensive-margin counterpart with an MPS participation indicator. Bank controls include lagged log total assets, tier-1 capital ratio, and loan-to-deposit ratio. Demographic controls interacted with year indicators include age group, municipality of residence, homeownership status, marital status, presence of children, and university education. Standard errors two-way clustered at the individual and bank levels appear in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

(a) MPS wealth share

	(1)	(2)	(3)	(4)	(5)	(6)
MPS wealth share (t-1)	-0.000	-0.000	0.000***	0.000**	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Δ MP rate	0.196***	0.195***	0.200***	0.194***		
	(0.019)	(0.017)	(0.019)	(0.016)		
MPS wealth share (t-1) × Δ MP rate	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	65,111,201	65,111,201	64,883,775	64,883,775	64,883,772	53,369,597
R2	0.08	0.10	0.12	0.13	0.23	0.24
Bank controls	Yes	Yes	Yes	Yes	Yes	Yes
Bank FE		Yes		Yes		
Individual FE			Yes	Yes	Yes	Yes
Bank-Year FE					Yes	Yes
Covariates-Year FE						Yes

Table A.4: Deposit Flow Responses by MPS Wealth Share at the Depositor Level

Notes: This table reports OLS estimates of log deposit balances held by individual i at bank b in year t on the MPS wealth share, a continuous, intensive-margin measure of MPS exposure, at the individual-bank-year level. See Table 4 for the extensive-margin counterpart with an MPS participation indicator. Bank controls include lagged log total assets, tier-1 capital ratio, and loan-to-deposit ratio. Demographic controls interacted with year indicators include age group, municipality of residence, homeownership status, marital status, presence of children, and university education. Standard errors two-way clustered at the individual and bank levels appear in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

(a) MPS wealth share

	(1)	(2)	(3)	(4)	(5)
MPS wealth share (t-1)	0.005***	0.005***	-0.008***	-0.008***	-0.008***
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Δ MP rate	0.031	0.021	0.033*		
	(0.027)	(0.015)	(0.018)		
MPS wealth share (t-1) × Δ MP rate	-0.000	0.000***	0.000	-0.000*	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	77,990,696	77,990,696	77,750,171	77,750,171	64,399,546
R2	0.01	0.04	0.47	0.48	0.48
Bank controls	Yes	Yes	Yes	Yes	Yes
Bank FE		Yes	Yes		
Individual FE			Yes	Yes	Yes
Bank-Year FE				Yes	Yes
Covariates-Year FE					Yes

Table A.5: Within-Bank Deposit Rate Pass-Through by MPS Wealth Share: Bank-Municipality-Year Level

Notes: This table reports OLS estimates of the year-on-year change in the bank's arithmetic mean deposit rate among depositors residing in each municipality on the MPS wealth share, a continuous, intensive-margin measure of MPS exposure, at the bank-municipality-year level. See Table 6 for the extensive-margin counterpart with an MPS participation indicator. MPS wealth share equals the deposit-weighted mean MPS share among municipal depositors, standardized to mean zero and unit standard deviation within each municipality-year. Municipal deposit concentration is measured by the HHI at the municipality-year level. Bank controls include lagged log total assets, tier-1 capital ratio, and loan-to-deposit ratio. Standard errors two-way clustered at the bank and municipality-year levels appear in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

(a) MPS wealth share

	(1)	(2)	(3)	(4)	(5)	(6)
MPS wealth share (t-1, std.)	-0.000	-0.001	-0.001	-0.002	-0.002	-0.002
	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
Δ MP rate	0.189***	0.190***	0.190***			
	(0.013)	(0.012)	(0.012)			
MPS wealth share (t-1, std.) × Δ MP rate	0.013**	0.014**	0.014**	0.007***	0.008***	0.007***
	(0.006)	(0.005)	(0.005)	(0.002)	(0.002)	(0.002)
Municipal deposit concentration (HHI, t-1)						0.010
						(0.027)
Municipal deposit concentration (HHI, t-1) × Δ MP rate						0.037
						(0.026)
Observations	120,767	120,767	120,767	120,765	120,765	120,765
R2	0.14	0.16	0.16	0.43	0.43	0.43
Bank controls	Yes	Yes	Yes	Yes	Yes	Yes
Bank FE		Yes	Yes			
Municipality FE			Yes	Yes		Yes
Bank-Year FE				Yes	Yes	Yes
Municipality-Year FE					Yes	

Table A.6: Deposit Rate Pass-Through by MPS Wealth Share: Bank-Year Level

Notes: This table reports OLS estimates of the year-on-year change in the bank's arithmetic mean deposit rate across all depositors on the MPS wealth share, a continuous, intensive-margin measure of MPS exposure, at the bank-year level. See Table 7 for the extensive-margin counterpart with an MPS participation indicator. MPS wealth share equals the deposit-weighted mean MPS share across depositors, standardized to mean zero and unit standard deviation within each year. Bank controls include lagged log total assets, tier-1 capital ratio, and loan-to-deposit ratio. Standard errors clustered at the bank level appear in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

(a) MPS wealth share

	(1)	(2)	(3)	(4)
MPS wealth share (t-1, std.)	0.008	0.065*	0.058**	0.057**
	(0.010)	(0.033)	(0.024)	(0.024)
Δ MP rate	0.190***	0.190***		
	(0.010)	(0.009)		
MPS wealth share (t-1, std.) × Δ MP rate	0.042***	0.048***	0.047***	0.040***
	(0.015)	(0.014)	(0.012)	(0.013)
Bank-level deposit concentration (HHI, t-1)				-0.115
				(0.183)
Bank-level deposit concentration (HHI, t-1) × Δ MP rate				0.406*
				(0.237)
Observations	1,578	1,578	1,578	1,578
R2	0.31	0.37	0.72	0.72
Bank controls	Yes	Yes	Yes	Yes
Bank FE		Yes	Yes	Yes
Year FE			Yes	Yes

A.4 Deposit Product Composition

The main MPS pass-through estimates aggregate deposit rates to the individual-bank-year level, raising the possibility that MPS holders disproportionately hold savings or term deposit accounts, which carry mechanically higher and more rate-sensitive interest rates than checking accounts. We address this concern using a classification of deposit accounts into checking (low-rate) or savings (high-rate) based on relative deposit rates within each person-bank-year cell.

Table A.7 reports the full triple interaction at the account level. The MPS $\times$ Δ MP rate coefficient for checking accounts (the omitted product category) is 2.5–3.1 pp. The triple interaction MPS $\times$ savings $\times$ Δ MP rate is +2.5–2.7 pp ($p < 0.05$ in both specifications), indicating that the MPS pass-through differential is *larger*, not smaller, for savings accounts than for checking accounts. This is the opposite of a pure composition story: if the overall MPS effect were explained by MPS holders holding more savings accounts, the MPS premium conditional on savings-account status would be zero or negative. Table A.8 confirms the result using subsample splits. Restricting to checking accounts, the MPS pass-through differential is 1.0–1.2 pp (significant at 1%); restricting to savings accounts, it is 6.5–7.5 pp (significant at 1%). The MPS effect is present in both account types. A direction-of-bias argument reinforces the conclusion: MPS holders, who concentrate illiquid savings in stocks and bonds, should ceteris paribus hold more liquid checking balances as bank deposits, generating lower rates from composition alone. That the MPS premium is positive rules out a pure compositional driver. We note, however, that residual heterogeneity within the savings category (e.g., different commitment terms) cannot be fully excluded with the available account classifications.

Table A.7: MPS Pass-Through by Account Type: Triple Interaction

Notes: This table reports OLS estimates of the triple interaction of account type × MPS ownership × Δ MP rate at the account-individual-bank-year level. Accounts classified as checking (low-rate) or savings (high-rate) based on relative deposit rates within each person-bank-year cell (multi-account person-banks: the lowest-rate account is checking; single-account person-banks: accounts below the bank-year median deposit rate are checking). Standard errors two-way clustered at bank and individual level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)
MPS participation (t-1) =1	-0.007**	-0.007**
	(0.003)	(0.003)
MPS participation (t-1) =1 × Δ MP rate	0.031***	0.025***
	(0.004)	(0.005)
Savings (high-rate)	0.052***	0.052***
	(0.008)	(0.008)
MPS participation (t-1) =1 × Savings (high-rate)	-0.004	-0.003
	(0.003)	(0.004)
Savings (high-rate) × Δ MP rate	0.139***	0.136***
	(0.023)	(0.023)
MPS participation (t-1) =1 × Savings (high-rate) × Δ MP rate	0.025**	0.027**
	(0.012)	(0.013)
Observations	120,980,140	120,980,140
R2	0.24	0.24
Individual FE	Yes	Yes
Bank-Year FE	Yes	Yes
Covariates-Year FE		Yes

Table A.8: MPS Pass-Through by Account Type: Subsample Splits

Notes: This table reports OLS estimates of the MPS pass-through differential separately for checking (low-rate) and savings (high-rate) accounts. Each subsample is collapsed to the person-bank-year level; deposit rates recomputed as total interest over average balance within each subsample. Individual + bank-year FE in all columns. Standard errors two-way clustered at bank and individual level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

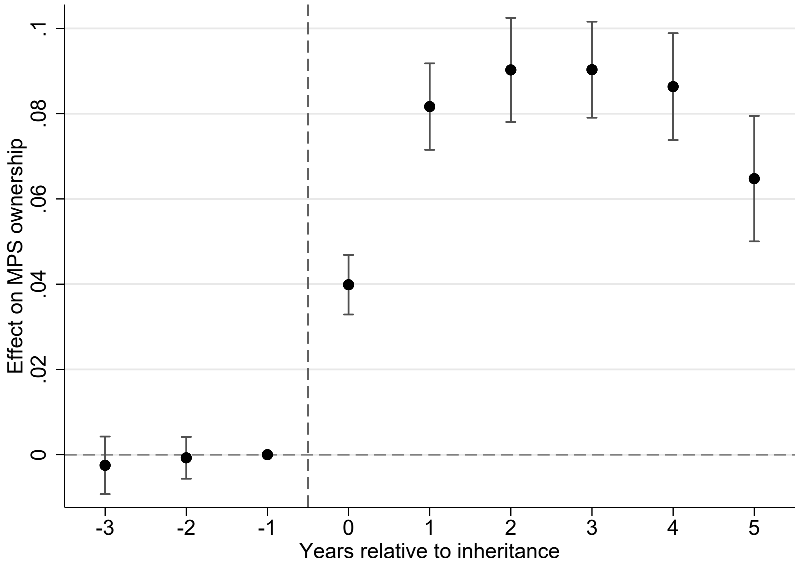
	(1) Checking	(2) Checking	(3) Savings	(4) Savings
MPS participation (t-1) =1	-0.001	0.000	-0.014***	-0.014***
	(0.001)	(0.001)	(0.002)	(0.002)
MPS participation (t-1) =1 × Δ MP rate	0.012***	0.010***	0.075***	0.065***
	(0.002)	(0.002)	(0.012)	(0.010)
Observations	27,905,255	27,905,255	35,282,839	35,282,839
R2	0.21	0.22	0.31	0.32
Individual FE	Yes	Yes	Yes	Yes
Bank-Year FE	Yes	Yes	Yes	Yes
Covariates-Year FE		Yes		Yes

A.5 Inheritance First Stage

We identify exogenous variation in MPS acquisition using sudden parental deaths (restricted to non-anticipatable causes: heart attacks, strokes, and traffic accidents) following Andersen & Nielsen (2011). This strategy treats the timing of sudden parental death as quasi-random for the purpose of inducing MPS ownership among offspring beneficiaries. Figure A.1 plots the first-stage event study, where the outcome is MPS ownership (binary) and the sample is restricted to the within-inheritor comparison (MPS-inheritors vs. non-MPS-inheritors, both conditional on sudden parental death and on having no prior MPS at $s = -1$). Pre-event coefficients at $s = -3$ and $s = -2$ are near zero, confirming that MPS-inheritors and non-MPS-inheritors held similar MPS ownership levels before the inheritance event. MPS ownership increases by approximately 4 percentage points at $s = 0$ (the year of parental death), rising to 8–9 percentage points at $s = +1$ through $s = +3$, and then decaying gradually as inherited portfolios are partially liquidated. We do not rescale the reduced-form pass-through estimates by this first stage: inheritance-induced compliers need not represent the average MPS holder, so the implied per-unit-of-ownership effect is not comparable to the pooled premium.

Figure A.1: First-Stage Event Study: MPS Ownership around Sudden Parental Death

Notes: This figure plots the first-stage event-study coefficients for the inheritance instrument used in Figure 4. The outcome is MPS ownership (binary). Sample is restricted to baseline non-MPS owners at $s = -1$, comparing MPS-inheritors to non-MPS-inheritors, both conditional on sudden parental death (heart attack, stroke, or traffic accident). Person + year fixed effects; reference period $s = -1$. Standard errors two-way clustered at bank and individual level.



A.6 Euro Area Summary Statistics

Figure A.2: Triple-Difference Pass-Through around Inheritance: Broader Control Group

Notes: This figure plots the triple-difference event-study coefficients for inheritance-driven MPS exposure, expanding the control group relative to Figure 4 to include never-inheritors who are also non-MPS owners. The sample rises from 422,935 to 31.1 million observations. Person + year fixed effects; reference period $s = -1$. Standard errors two-way clustered at bank and individual level.

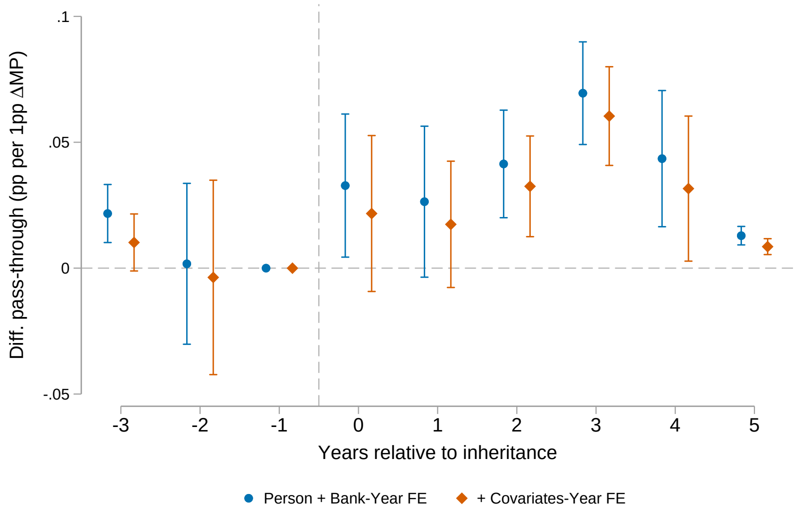


Table A.9: Summary Statistics: Euro Area Bank-Month Panel

Notes: This table reports summary statistics for 175 euro area banks from January 2022 through December 2023. Δ denotes year-on-year changes. Deposit rates are weighted averages of overnight and agreed maturity household deposit rates. MPS share equals the ratio of household stock and bond holdings to the sum of household deposits plus stock and bond holdings, calculated at the country level in December 2021 using Securities Holdings Statistics. HHI denotes the Herfindahl-Hirschman Index of deposit market concentration at the country level. Data sources include the ECB's Individual Balance Sheet Item (IBSI) and Individual MFI Interest Rate (IMIR) databases.

	N	mean	sd	p1	p5	p50	p95	p99
Δ Rates - Household deposits	4100	0.33	0.53	-0.26	-0.10	0.05	1.70	1.72
Δ MP rate	4100	1.92	1.46	0.00	0.00	2.00	3.75	4.00
Market-Priced Savings share (Dec. 21)	4100	0.16	0.08	0.05	0.05	0.17	0.30	0.41
HHI - Household deposits (Dec. 21)	4100	0.17	0.07	0.05	0.09	0.16	0.31	0.33