

Central bank retail deposits and bank runs

Evidence from city-level panel data in Spain, 1922–1934

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Outline

- 1 Motivation
- 2 The 1931 banking crisis in Spain
- 3 Data
- 4 Empirical strategy
 - Annual data: two-way fixed effects
 - Quarterly data: difference-in-differences
 - Instrumental variables: electoral surprise
- 5 Conclusions

Central bank retail deposits

- Ongoing debate about potential consequences of “central bank digital currency” (BIS, 2020; Niepelt, 2021; Andolfatto, 2021; *inter alia...*)

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- Namely, allowing the public (non-financial agents) access to the monetary base in the form of **central bank retail deposits**

Central bank retail deposits

- Ongoing debate about potential consequences of “central bank digital currency” (BIS, 2020; Niepelt, 2021; Andolfatto, 2021; *inter alia...*)
- Namely, allowing the public (non-financial agents) access to the monetary base in the form of **central bank retail deposits**
- Historical precedent:
 - ▶ Central banks were private at origin (Goodhart, 1988; Ugolini, 2017)
 - ▶ Importance of retail deposits in comparative historical development of central banking (Gershenkron, 1962; Forsyth and Verdier, 2002)
 - ▶ e.g., in Spain Banco de España domination in the deposit market shaped banking industry (universal banking) (Martin-Aceña, 1995)

Theoretical debate

- Effective zero lower bound of interest rates (Rogoff, 2017; Bordo and Levin, 2017)
- Financial intermediation and the allocation of credit and welfare (Rogoff, 2017; Bordo and Levin, 2017; Brunnermeier and Niepelt, 2019; BIS, 2020; Fernández-Villaverde et al., 2021; Chiu and Rivadeneyra, 2021; Bank, 2021; Williamson, 2023; Abad et al. 2023)
- Financial inclusion (Andolfatto, 2021; Auer et al., 2022)
- **Financial stability and bank runs** (Niepelt, 2021; Monnet et al. 2021; Keister and Monnet, 2022; Tercero-Lucas, 2022; Williamson, 2022; Muñoz and Soons, 2023)

Implications for financial stability

What would determine the **demand for central bank retail deposits**?

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- Remuneration (Andolfatto, 2021; Tercero-Lucas, 2022; Li, 2023)
 - ▶ CB deposit rate vs. commercial bank rate
 - ▶ Causality: rate spread \Rightarrow banking instability

Implications for financial stability

What would determine the **demand for central bank retail deposits**?

Would this facility **contribute to bank runs**?

- Remuneration (Andolfatto, 2021; Tercero-Lucas, 2022; Li, 2023)
 - ▶ CB deposit rate vs. commercial bank rate
 - ▶ Causality: rate spread \Rightarrow banking instability
- Perceived safety of the banking system (BIS, 2021)
 - ▶ Central bank has zero probability of nominal default
 - ▶ Run at the first sign of fragility (Cecchetti and Schoenholtz, 2021)
 - ▶ Unclear direction of causality

This paper

I look at interwar banking instability in Spain.

Main research question: **How did Banco de España retail deposits react during the interwar banking crises in Spain?**

Key points:

- BdE retail deposits were non-remunerated
- Public could draw at call
- Bank deposits were remunerated
- Bank deposits were uninsured

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The 1931 banking crisis in Spain

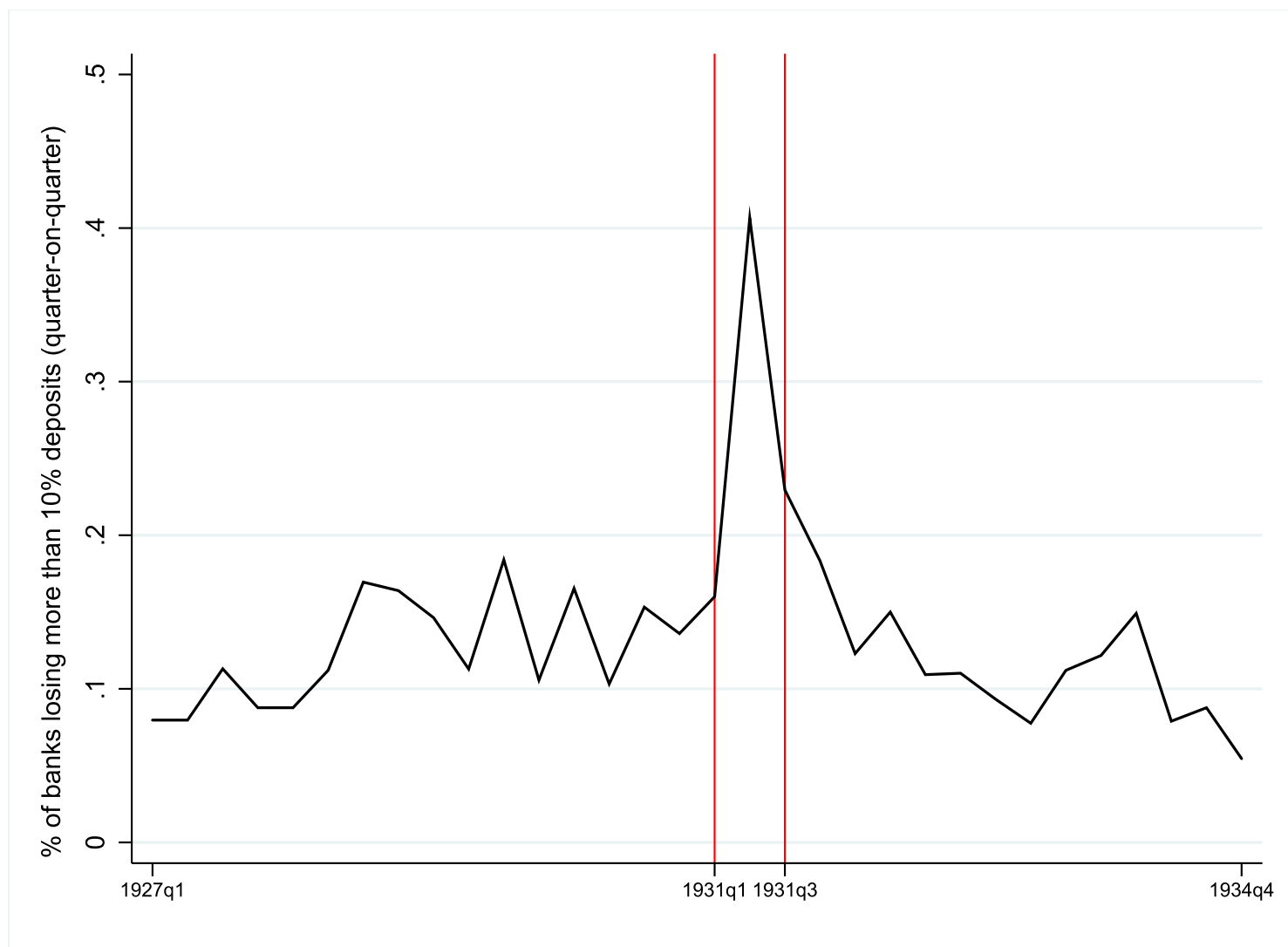


Figure 1: Share of banks losing more than 10% deposits (quarterly)

Source: *Boletines del Consejo Superior Bancario*

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Data

- Banco de España branches, annual balance sheets (1875-1935):
 - ▶ Assets: rediscount, lombard loans, ...
 - ▶ Liabilities: **retail deposits**
 - ★ *Cuentas corrientes* (checking accounts or **demand deposits**)
 - ★ *Cuentas corrientes (oro)* (current accounts in gold)
 - ★ *Depósitos de todas clases en efectivo* (all types of cash deposits)
 - ★ Composition
- Banks, quarterly balance sheets (1922-1934) (Jorge-Sotelo, 2019)
 - ▶ **Bank deposits:**
 - ★ Call and time (peseta)
 - ★ Forex
 - ★ Call Time Forex
 - ▶ Other items: total assets, liquidity and capital ratios, ...
- Other sources: 1931 local election results, strikes, social unrest, newspapers' accounts and BdE regulation.

Data



Figure 2: Banco de España branches (1930)

Note: black dots are included in the sample, grey dots are not included.

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Annual data: baseline model

$$\Delta BdERetail_{it} = \alpha + \Delta BankDep_{it} + \Delta BankDep_{it} * y1931 + X_{it} + \lambda_t + \varepsilon_i$$

- $\Delta BdERetail_{it}$: log-difference, BdE retail deposits
- $\Delta BankDep_{it}$: log-difference, bank deposits
- $y1931$: dummy for 1931
- X_{it} : controls
 - ▶ BdE controls: rediscount, lombard loans, other loans
 - ▶ Bank controls: total assets, capital ratio, liquidity ratio, interbank exposure, forex exposure
 - ▶ Political controls: strikes, social unrest
- λ_t : year fixed effects
- ε_i : branch/city fixed effects

Annual data: ALL deposits

| | 1 | 2 | 3 | 4 | 5 | 6 |
|--------------------------------------|--------------------|----------------------|---------------------|---------------------|---------------------|---------------------|
| $\Delta BankDep_{it}$ | -0.099* (0.046) | -0.046 (0.027) | -0.042 (0.025) | -0.038 (0.026) | -0.043 (0.027) | -0.041* (0.019) |
| y1931 | | 0.415*** (0.058) | 0.389*** (0.057) | 0.439*** (0.063) | 0.445*** (0.067) | 0.430*** (0.058) |
| y1931 \times $\Delta BankDep_{it}$ | | -1.097** (0.356) | -1.100** (0.358) | -1.157** (0.363) | -1.137** (0.386) | -0.891 (0.479) |
| Constant | -0.016* (0.007) | -0.059*** (0.006) | -0.033 (0.024) | -0.042 (0.026) | -0.047 (0.028) | -0.049 (0.028) |
| N | 408 | 408 | 408 | 408 | 372 | 372 |
| R ² (within) | 0.016 | 0.298 | 0.374 | 0.410 | 0.410 | 0.342 |
| Branch/City FE | No | Yes | Yes | Yes | Yes | Yes |
| Year FE | No | No | Yes | Yes | Yes | Yes |
| Bank controls | No | No | No | Yes | Yes | Yes |
| BdE controls | No | No | No | Yes | Yes | Yes |
| Political controls | No | No | No | Yes | Yes | Yes |
| Sample | All | All | All | All | Ex. Main 3 | Ex. Fail |

Source: see text

Table 1: Dependent variable: Banco de España retail deposits (log-diff)

Annual data: CALL deposits

| | 1 | 2 | 3 | 4 | 5 | 6 |
|--------------------------------------|---------------------|----------------------|----------------------|----------------------|----------------------|---------------------|
| $\Delta CallDep_{it}$ | -0.101** (0.038) | -0.031 (0.035) | -0.011 (0.039) | -0.007 (0.040) | -0.010 (0.040) | -0.006 (0.043) |
| y1931 | | 0.365*** (0.052) | 0.339*** (0.052) | 0.379*** (0.054) | 0.380*** (0.058) | 0.411*** (0.055) |
| y1931 \times $\Delta CallDep_{it}$ | | -1.311*** (0.181) | -1.331*** (0.181) | -1.309*** (0.162) | -1.298*** (0.170) | -1.095** (0.335) |
| Constant | -0.019 (0.014) | -0.060*** (0.004) | -0.034 (0.023) | -0.041 (0.027) | -0.045 (0.030) | -0.049 (0.029) |
| N | 408 | 408 | 408 | 408 | 372 | 372 |
| R ² (within) | 0.019 | 0.355 | 0.431 | 0.457 | 0.461 | 0.342 |
| Branch/City FE | No | Yes | Yes | Yes | Yes | Yes |
| Year FE | No | No | Yes | Yes | Yes | Yes |
| Bank controls | No | No | No | Yes | Yes | Yes |
| BdE controls | No | No | No | Yes | Yes | Yes |
| Political controls | No | No | No | Yes | Yes | Yes |
| Sample | All | All | All | All | Ex. Main 3 | Ex. Fail A |

Source: see text

Table 2: Dependent variable: Banco de España retail deposits (log-diff)

Annual data: TIME deposits

| | 1 | 2 | 3 | 4 | 5 | 6 |
|--------------------------------------|-------------------|----------------------|---------------------|---------------------|---------------------|---------------------|
| $\Delta TimeDep_{it}$ | -0.013 (0.036) | 0.027 (0.031) | 0.001 (0.032) | 0.010 (0.034) | 0.005 (0.035) | -0.022 (0.038) |
| y1931 | | 0.509*** (0.099) | 0.482*** (0.099) | 0.536*** (0.107) | 0.540*** (0.112) | 0.452*** (0.061) |
| y1931 \times $\Delta TimeDep_{it}$ | | -0.180 (0.417) | -0.155 (0.420) | -0.204 (0.364) | -0.176 (0.355) | -0.215 (0.268) |
| Constant | -0.016 (0.015) | -0.061*** (0.008) | -0.034 (0.023) | -0.050 (0.025) | -0.056* (0.027) | -0.046 (0.028) |
| N | 408 | 408 | 408 | 408 | 372 | 372 |
| R ² (within) | 0.001 | 0.245 | 0.320 | 0.356 | 0.353 | 0.329 |
| Branch/City FE | No | Yes | Yes | Yes | Yes | Yes |
| Year FE | No | No | Yes | Yes | Yes | Yes |
| Bank controls | No | No | No | Yes | Yes | Yes |
| BdE controls | No | No | No | Yes | Yes | Yes |
| Political controls | No | No | No | Yes | Yes | Yes |
| Sample | All | All | All | All | Ex. Main 3 | Ex. Fail A |

Source: see text

Table 3: Dependent variable: Banco de España retail deposits (log-diff)

Annual data: FOREX deposits

| | 1 | 2 | 3 | 4 | 5 | 6 |
|--|---------------------|----------------------|---------------------|---------------------|---------------------|---------------------|
| $\Delta \text{ForexDep}_{it}$ | -0.027 (0.016) | 0.008 (0.011) | -0.007 (0.016) | -0.158 (0.122) | -0.168 (0.120) | -0.084 (0.083) |
| y1931 | | 0.470*** (0.081) | 0.446*** (0.078) | 0.479*** (0.082) | 0.479*** (0.087) | 0.423*** (0.061) |
| y1931 \times $\Delta \text{ForexDep}_{it}$ | | -0.089* (0.043) | -0.072 (0.041) | -0.115* (0.048) | -0.117* (0.049) | -0.088** (0.030) |
| Constant | -0.021** (0.008) | -0.058*** (0.007) | -0.034 (0.023) | -0.041 (0.024) | -0.047 (0.027) | -0.046 (0.028) |
| N | 408 | 408 | 408 | 408 | 372 | 372 |
| R ² (within) | 0.008 | 0.250 | 0.326 | 0.370 | 0.371 | 0.336 |
| Branch/City FE | No | Yes | Yes | Yes | Yes | Yes |
| Year FE | No | No | Yes | Yes | Yes | Yes |
| Bank controls | No | No | No | Yes | Yes | Yes |
| BdE controls | No | No | No | Yes | Yes | Yes |
| Political controls | No | No | No | Yes | Yes | Yes |
| Sample | All | All | All | All | Ex. Main 3 | Ex. Fail A |

Source: see text

Table 4: Dependent variable: Banco de España retail deposits (log-diff)

Annual data: was it persistent?

| | 1 | 2 | 3 |
|---|---------------------|---------------------|---------------------|
| <i>Post1931</i> | 0.036 (0.040) | 0.023 (0.040) | 0.024 (0.040) |
| <i>Fail_A</i> | 0.978** (0.330) | | |
| <i>Post1931</i> × <i>Fail_A</i> | 0.214 (0.114) | | |
| <i>Fail_B</i> | | 0.358 (0.346) | |
| <i>Post1931</i> × <i>Fail_B</i> | | 0.403*** (0.119) | |
| <i>Fail_C</i> | | | -0.912* (0.414) |
| <i>Post1931</i> × <i>Fail_C</i> | | | 0.535*** (0.149) |
| Constant | 7.308*** (0.692) | 7.328*** (0.683) | 7.215*** (0.689) |
| N | 408 | 408 | 408 |
| R ² (w) | 0.484 | 0.556 | 0.585 |
| Bank controls | Yes | Yes | Yes |
| BdE controls | Yes | Yes | Yes |
| Political controls | Yes | Yes | Yes |
| Sample | All | All | All |
| Cities with failures | MAD, BCN, REU, TOR | BCN, REU, TOR | REU, TOR |

Source: see text

Table 5: Dependent variable: Banco de España retail deposits (log-level)

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Quarterly data: difference in differences

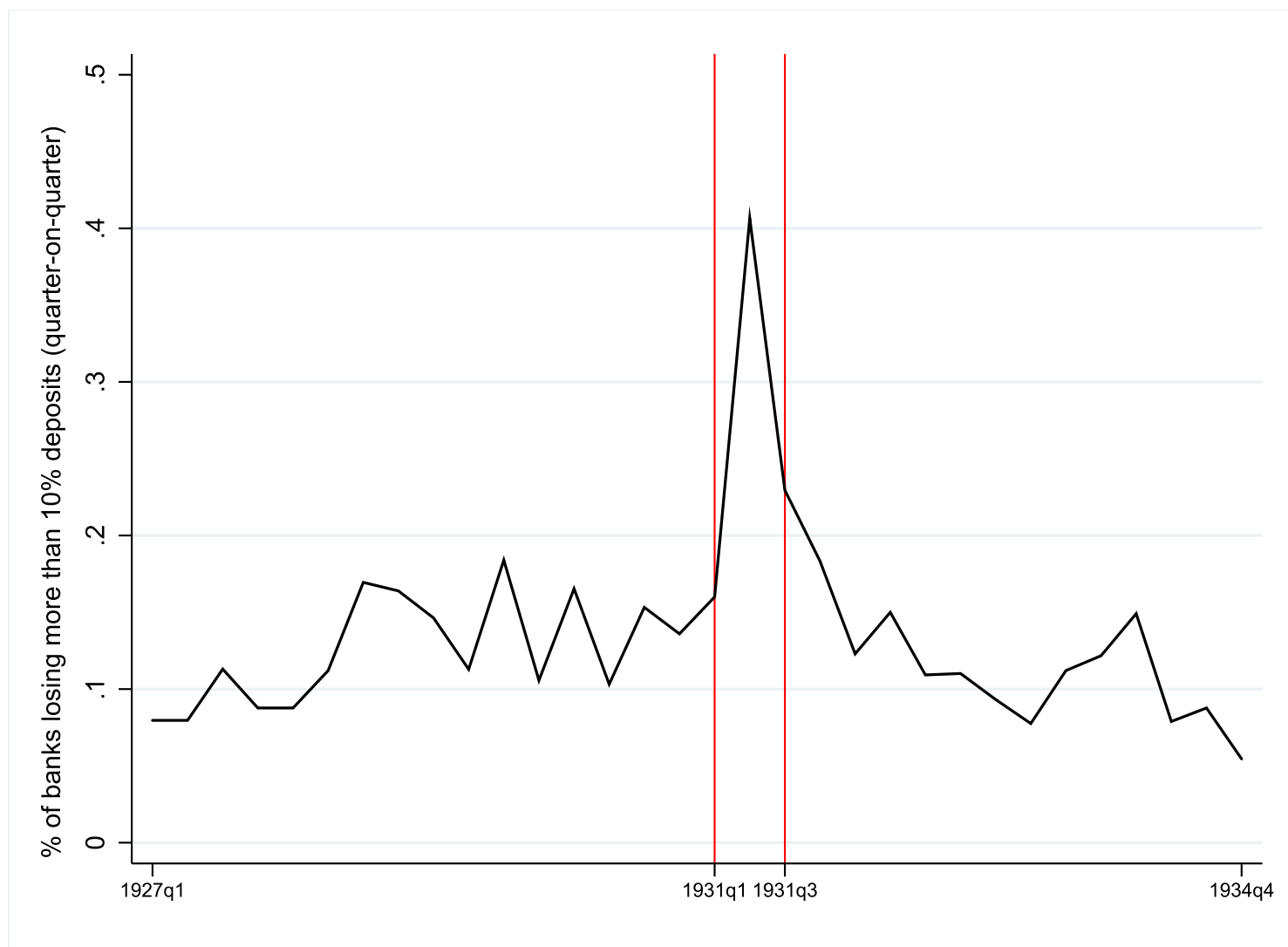


Figure 3: Share of banks losing more than 10% deposits (quarterly)

Quarterly data: difference in differences

I estimate the following difference-in-differences model:

$$BdERetail_{it} = \alpha + Post1931 + Shock_{it} + Post1931 * Shock_{it} + X_{it} + \lambda_t + \varepsilon_i$$

- Model estimated in levels
- Same controls as in previous estimation
- $Shock_{it} = 1$ if bank run in city i
- A threshold for bank run is defined:
 - ▶ Average **deposit loss in city i** > **10% during 1931q2-q3**
 - ▶ Other thresholds: > 5% and > 15%

Quarterly data: threshold at 10%

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---------------------------------|----------|----------|----------|----------|------------|----------|
| Post 1931 | -0.092* | -0.045 | -0.049 | -0.057 | -0.048 | -0.056 |
| | (0.039) | (0.043) | (0.047) | (0.051) | (0.051) | (0.048) |
| $Shock_{it}$ | 0.037 | -0.179 | -0.332 | -0.432* | -0.711*** | -0.300 |
| | (0.426) | (0.269) | (0.218) | (0.179) | (0.157) | (0.192) |
| Post 1931 \times $Shock_{it}$ | 0.244*** | 0.220*** | 0.241*** | 0.241*** | 0.243*** | 0.187** |
| | (0.060) | (0.065) | (0.068) | (0.072) | (0.073) | (0.071) |
| Constant | 8.794*** | 9.656*** | 7.471*** | 6.678*** | 7.769*** | 6.576*** |
| | (0.273) | (0.454) | (0.689) | (0.685) | (0.721) | (0.670) |
| N | 408 | 408 | 408 | 408 | 372 | 384 |
| R ² (between) | 0.002 | 0.465 | 0.673 | 0.702 | 0.375 | 0.699 |
| Bank controls | No | Yes | Yes | Yes | Yes | Yes |
| BdE controls | No | No | Yes | Yes | Yes | Yes |
| Political controls | No | No | No | Yes | Yes | Yes |
| Sample | All | All | All | All | Ex. Main 3 | Ex. Fail |

Source: see text

Table 6: Dependent variable: Banco de España retail deposits (log-level)

Other thresholds

Placebo test

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Instrumental variables: electoral surprise

Run on banks might be endogenous to availability to central bank retail deposit facility:

- Pre-crisis familiarity or use of the central bank retail deposit facility might make depositors more prone to run on banks and contribute to financial instability (Cecchetti and Schoenholtz, 2021).
- Causality: did the existence of such facility trigger the bank run or did it work as a temporary safety net for idle cash or hoarding?

Instrumental variables: electoral surprise

I use **electoral surprise** as an instrument for bank run:

$$\Delta BdERetail_{it} = \alpha + \Delta BankDep_{it} + \Delta ElectoralSurprise_{it} + X_{it} + \lambda_t + \varepsilon_i$$

- $ElectoralSurprise_i = RepublicanMajority_i \times Participation_i$
- I interact $RepublicanMajority_i$ with $Participation_i$ at the city level
- Rationale: + unexpected results \Rightarrow + bank run
- Exclusion restriction: electoral surprise not correlated with ex-ante use of BdE retail deposit facility

Instrumental variables: electoral surprise

| Panel A: 1st IV Stage | | | | | | |
|--|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| <i>RepMaj_i</i> | -1.137*** (0.155) | -1.165*** (0.154) | -1.169*** (0.161) | -1.242*** (0.163) | -1.271*** (0.178) | -0.767*** (0.097) |
| <i>Part_i</i> | -0.479** (0.158) | -0.488** (0.156) | -0.493** (0.163) | -0.550** (0.166) | -0.543** (0.171) | -0.619*** (0.096) |
| <i>RepMaj_i × Part_i</i> | 1.375*** (0.221) | 1.406*** (0.218) | 1.410*** (0.229) | 1.523*** (0.232) | 1.551*** (0.253) | 0.958*** (0.137) |
| Constant | -0.000 (0.009) | -0.000 (0.009) | 0.005 (0.010) | 0.005 (0.009) | 0.007 (0.010) | -0.000 (0.006) |
| Observations | 442 | 442 | 408 | 408 | 372 | 384 |
| R ² (within) | 0.358 | 0.385 | 0.394 | 0.405 | 0.399 | 0.453 |
| Branch FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Bank controls | No | Yes | Yes | Yes | Yes | Yes |
| BdE controls | No | No | Yes | Yes | Yes | Yes |
| Political controls | No | No | No | Yes | Yes | Yes |
| Sample | All | All | All | All | Ex. Main 3 | Ex. Fail |

| Panel B: 2nd IV Stage | | | | | | |
|--------------------------------------|---------------------|--------------------|---------------------|---------------------|---------------------|-------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| <i>y1931 × ΔBankDep_{it}</i> | -1.123** (0.422) | -1.054* (0.412) | -1.120** (0.408) | -1.259** (0.407) | -1.163** (0.415) | -0.791 (0.683) |
| <i>ΔBankDep_{it}</i> | -0.041 (0.039) | -0.040 (0.039) | -0.033 (0.039) | -0.035 (0.039) | -0.042 (0.039) | -0.042 (0.039) |
| Constant | -0.033 (0.042) | -0.037 (0.043) | -0.042 (0.043) | -0.041 (0.043) | -0.047 (0.045) | -0.050 (0.043) |
| N | 408 | 408 | 408 | 408 | 372 | 384 |
| R ² (within) | 0.374 | 0.379 | 0.397 | 0.410 | 0.410 | 0.344 |
| Branch/City FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Bank controls | No | Yes | Yes | Yes | Yes | Yes |
| BdE controls | No | No | Yes | Yes | Yes | Yes |
| Political controls | No | No | No | Yes | Yes | Yes |
| Sample | All | All | All | All | Ex. Main 3 | Ex. Fail B |

Source: see text

Table 7: IV estimation

Validity

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Conclusion

- ① Cities with stronger bank run saw more flight to BdE
- ② Only for call deposits → payments system
- ③ Temporary flight-to-safety, except where banks failed
- ④ Availability of the BdE deposit facility does not seem to have contributed to instability during the 1931 crisis but rather alleviated the consequences of financial disintermediation

“(...) the public has become aware of the facilities to open retail deposit accounts with Banco de España, because no large quantities are required to open a new account, as it was previously thought. (...) The public knows that the Banco will always be able to redeem its notes to the bearer.”

El Financiero, 28 August 1931

Instrumental variables: electoral surprise

- King Alfonso XIII calls for local elections
 - ▶ 23 March 1931: announced
 - ▶ 12 April 1931: celebrated
 - ▶ 14 April 1931: Second Republic proclaimed
 - ▶ **Unanticipated shock to banks**

Instrumental variables: electoral surprise

- King Alfonso XIII calls for local elections
 - ▶ 23 March 1931: announced
 - ▶ 12 April 1931: celebrated
 - ▶ 14 April 1931: Second Republic proclaimed
 - ▶ **Unanticipated shock to banks**

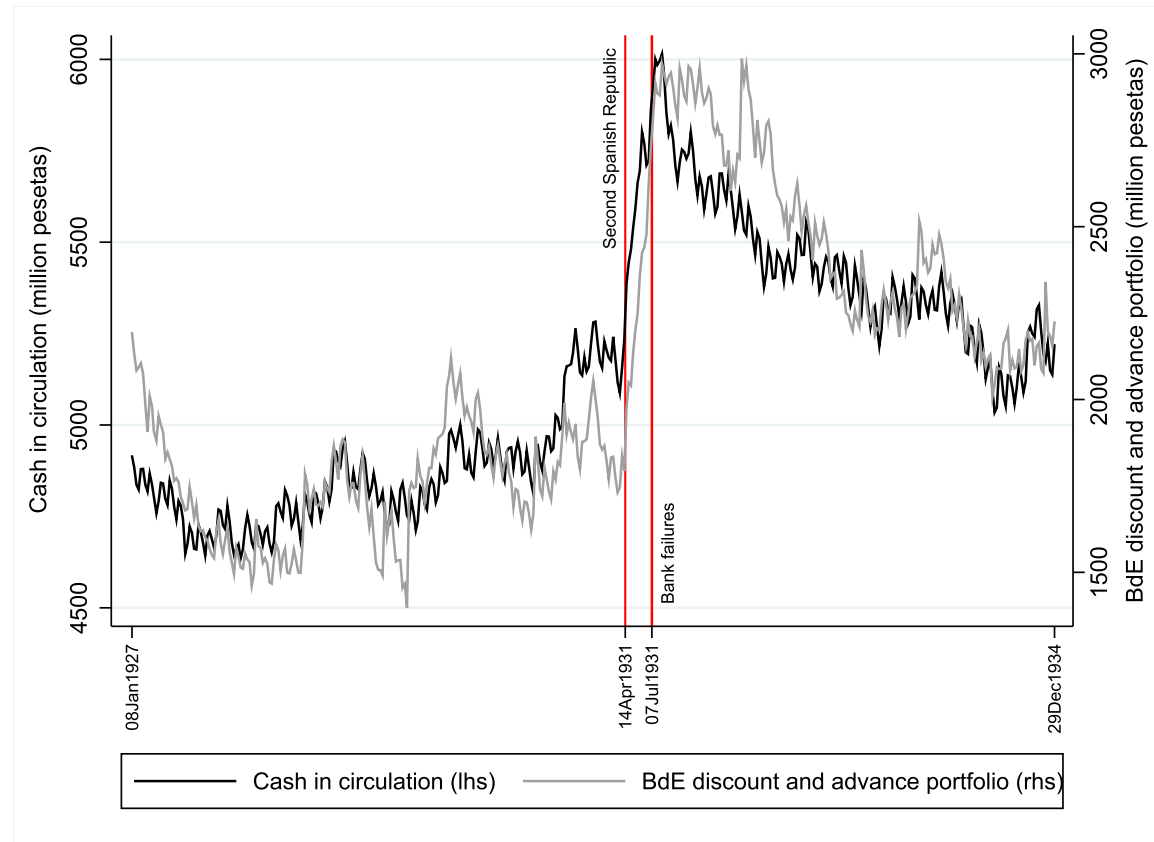


Figure 4: Cash in circulation and emergency liquidity

Instrumental variables: electoral surprise

One effect of the proclamation of the Spanish Republic was to cause a run on the Spanish banks and a rush to stop brokers' offices selling Spanish securities at any price. Numerous current accounts were hastily closed by private persons, a number of people having the impression that the Republican Government would put an immediate embargo on all private moneys at the banks.

The "El Sol" states that the fear shown by many people who realised their investments at disastrous prices was altogether unjustified. The Republican Government does not intend to interfere with any of the existing fundamental social, financial or judicial institutions.

Figure 5: "First alarm of change of regime", Financial Times, 20 April 1931

Quarterly data: difference in differences



Figure 6: Average % change in bank deposits (quarterly)

Composition of BdE retail liabilities



Figure 7: Average share of “*cuentas corrientes*” over total deposits (1922-34)

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Composition of bank deposits (call)

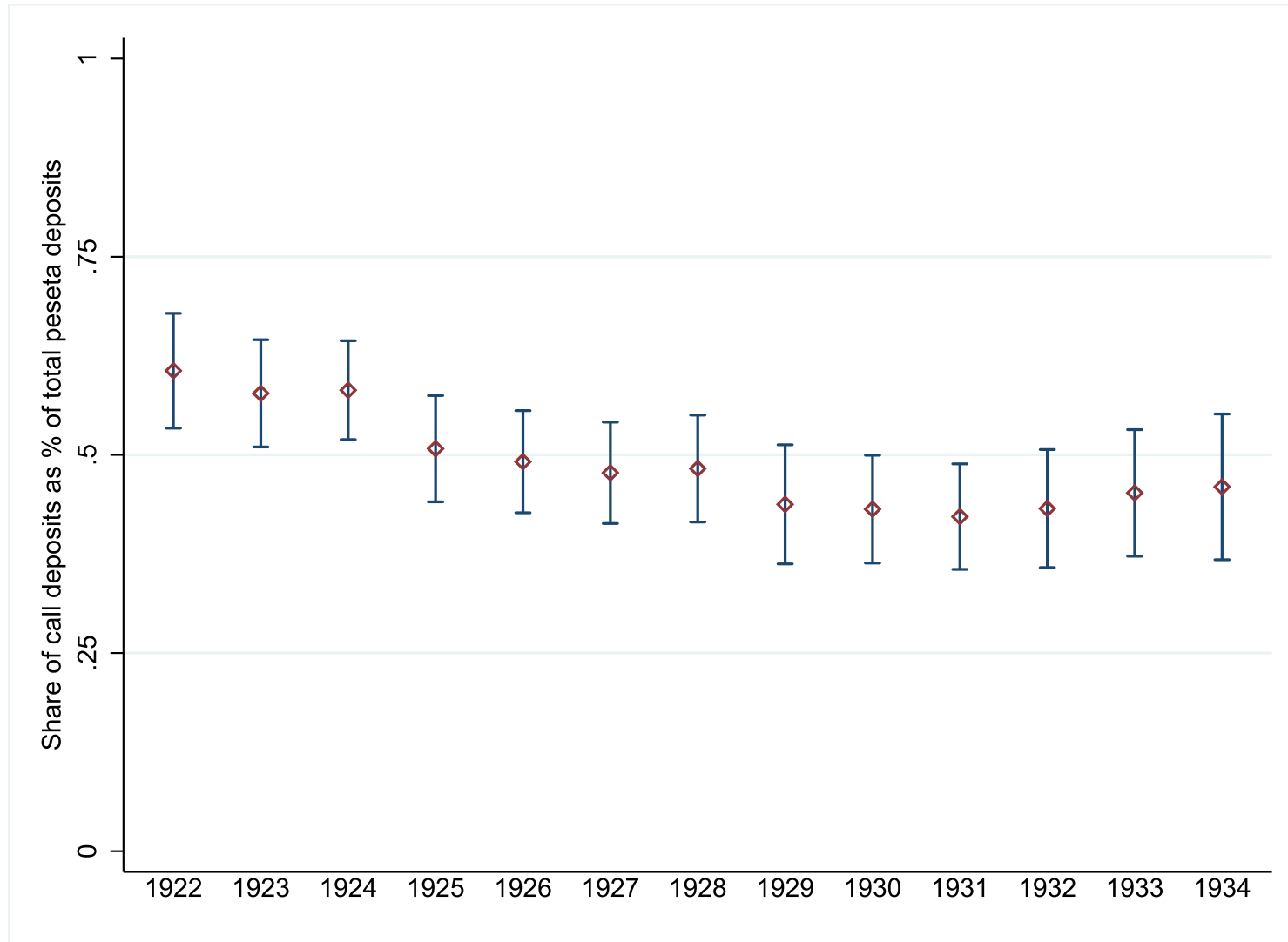


Figure 8: Average share of call deposits (1922-34)

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Composition of bank deposits (time)

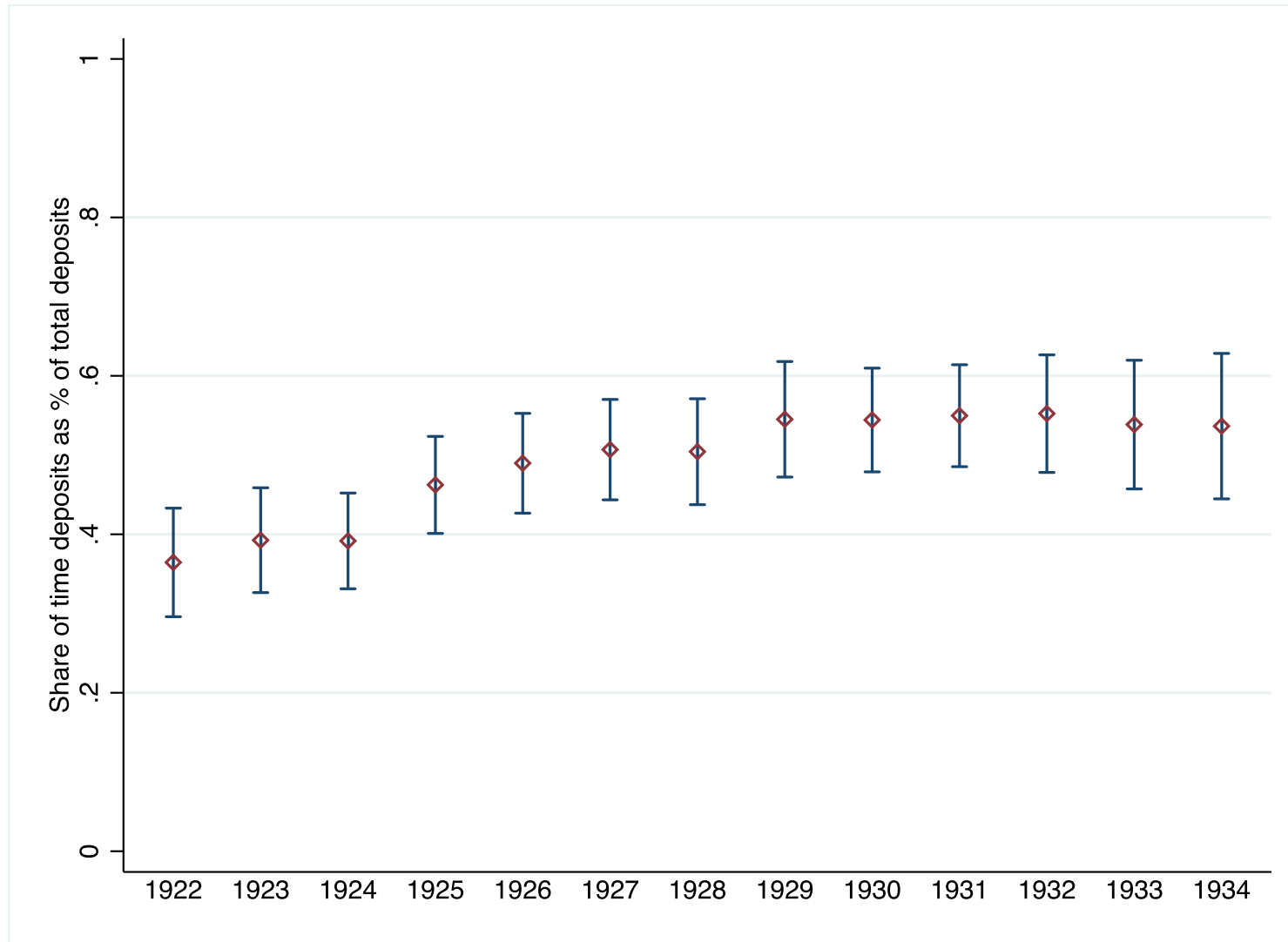


Figure 9: Average share of time deposits (1922-34)

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Composition of bank deposits (forex)



Figure 10: Average share of forex deposits (1922-34)

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Quarterly data: other thresholds

| | Threshold at -5% | | | Threshold at -15% | | |
|---------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Post 1931 | -0.079 (0.054) | -0.066 (0.053) | -0.080 (0.050) | 0.005 (0.046) | -0.010 (0.048) | -0.006 (0.044) |
| $Shock5_{it}$ | -0.232 (0.195) | -0.445* (0.178) | -0.389* (0.188) | | | |
| Post 1931 $\times Shock5_{it}$ | 0.239*** (0.068) | 0.230*** (0.066) | 0.216*** (0.064) | | | |
| $Shock15_{it}$ | | | | -0.016 (0.210) | -0.579** (0.186) | -0.516* (0.210) |
| Post 1931 $\times Shock15_{it}$ | | | | 0.146 (0.077) | 0.209** (0.078) | 0.147 (0.084) |
| Constant | 7.181*** (0.685) | 8.214*** (0.733) | 8.214*** (0.676) | 7.022*** (0.695) | 8.043*** (0.736) | 8.045*** (0.683) |
| N | 408 | 372 | 360 | 408 | 372 | 360 |
| R ² (between) | 0.641 | 0.223 | 0.178 | 0.601 | 0.299 | 0.211 |
| Bank controls | Yes | Yes | Yes | Yes | Yes | Yes |
| BdE controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Political controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Sample | All | Ex. Main 3 | Ex. Fail | All | Ex. Main 3 | Ex. Fail |

Source: see text

Table 8: Dependent variable: Banco de España retail deposits (log-level)

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Placebo test

Fake treatment to BdE branches in cities with no local bank.

Inflow into BdE retail deposits should not be different from the one in places with banks but without bank run.

| | 1 | 2 | 3 |
|--|----------------------|---------------------|---------------------|
| | b/se | b/se | b/se |
| Post 1931 | 0.443*** (0.102) | 0.055 (0.048) | 0.024 (0.052) |
| <i>ShockPlacebo_{it}</i> | 1.670** (0.581) | 0.892*** (0.198) | 0.815*** (0.171) |
| Post 1931 × <i>ShockPlacebo_{it}</i> | -0.536*** (0.142) | -0.131* (0.063) | -0.127 (0.067) |
| Constant | 7.124*** (0.416) | 6.787*** (0.613) | 6.049*** (0.620) |
| N | 468 | 445 | 445 |
| R ² (between) | 0.152 | 0.172 | 0.252 |
| BdE controls | No | Yes | Yes |
| Political controls | No | No | Yes |
| Sample | All | All | All |

Source: see text

Table 9: Placebo test

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Instrument validity

No correlation between republican voting, participation and the interaction term and the variation of retail deposits at BdE.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| <i>RepMaj_i</i> | 0.984 (0.746) | 0.952 (0.751) | 0.985 (0.745) | 0.985 (0.745) | 1.070 (0.757) | 1.210 (0.808) | 0.010 (0.727) |
| <i>Part_i</i> | 0.888 (0.761) | 0.873 (0.765) | 0.931 (0.757) | 0.931 (0.757) | 0.589 (0.771) | 0.511 (0.776) | 0.821 (0.722) |
| <i>RepMaj_i × Part_i</i> | -1.043 (1.060) | -1.011 (1.066) | -1.033 (1.058) | -1.033 (1.058) | -1.121 (1.076) | -1.367 (1.149) | 0.118 (1.025) |
| Constant | -0.034 (0.043) | -0.041 (0.045) | -0.047 (0.044) | -0.047 (0.044) | -0.048 (0.044) | -0.055 (0.046) | -0.049 (0.043) |
| N | 408 | 408 | 408 | 408 | 408 | 372 | 384 |
| R ² (within) | 0.335 | 0.339 | 0.363 | 0.363 | 0.372 | 0.367 | 0.336 |
| Branch FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Bank controls | No | Yes | Yes | Yes | Yes | Yes | Yes |
| BdE controls | No | No | Yes | Yes | Yes | Yes | Yes |
| Political controls | No | No | No | No | Yes | Yes | Yes |
| Sample | All | All | All | All | All | Ex. Main 3 | Ex. Fail |

Source: see text

Table 10: Instrument validity. Dependent variable: variation in BdE retail deposit

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Retail depositors' profile (only Madrid)

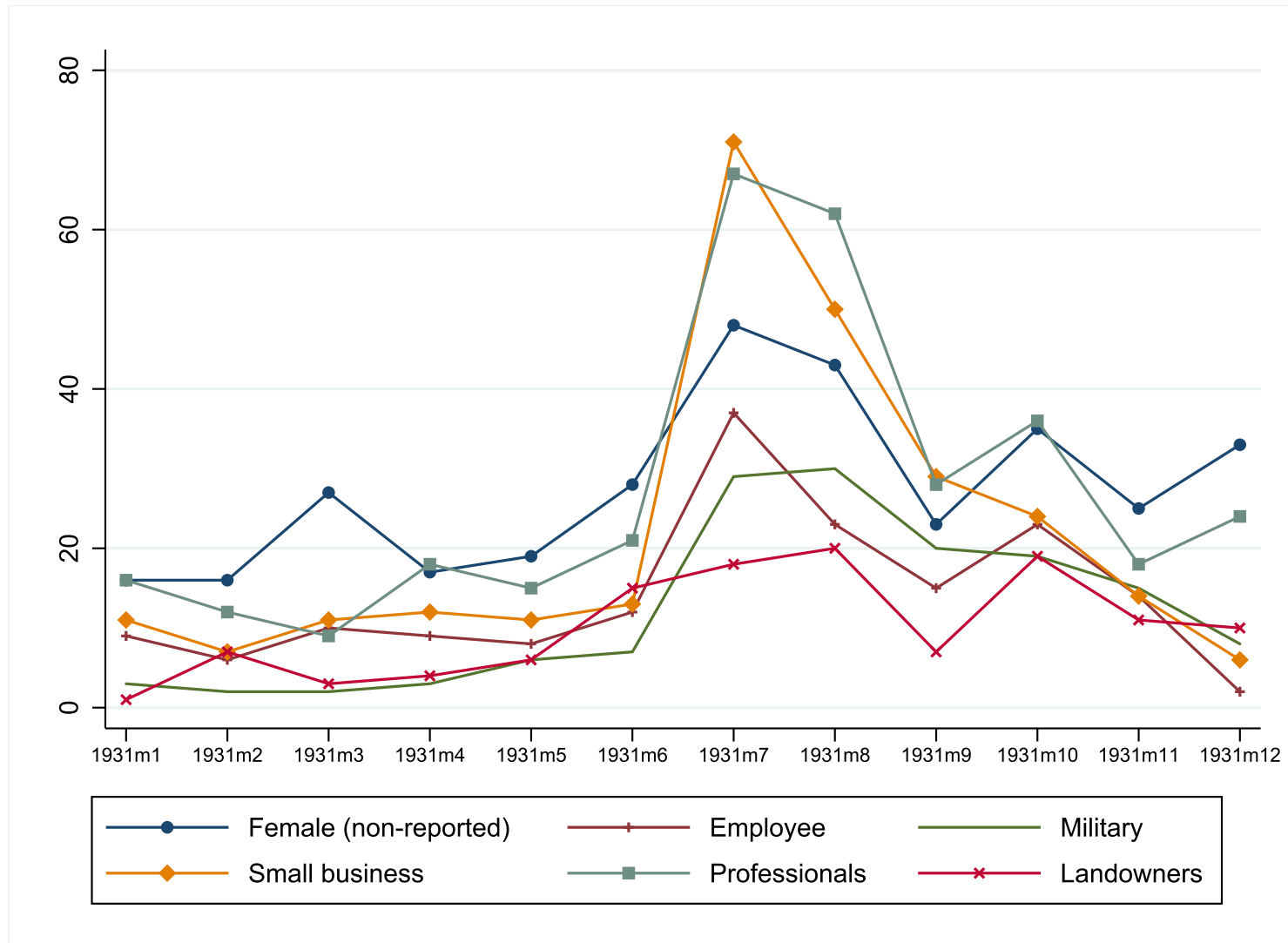


Figure 11: New BdE retail current accounts by occupation, Jan-1931 to Dec-1931