

# Hot Money Inflows and Bank Risk-Taking: Germany from the 1920s to the Great Depression

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IHMOS, October 26, 2022



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<sup>1</sup>We thank Lasse Herbst for excellent research assistance. This research represents the authors' personal opinions and do not necessarily reflect the views of the Deutsche Bundesbank or its staff.

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*“... as the League [of Nations]’s economists argued, short-term capital flows were often “**disequilibrating** instead of equilibrating, or instead of simply coming to a stop.” That is, rather than reconciling payments imbalances, **hot money was understood... to overshoot.**”*

Sources: Abdelal (2007) quoting from League of Nations (1944), *International Currency Experience*.

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- *Can we learn anything from 1920s Germany?*

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  - ▶ → Let's take a look at bank risk-taking...
  - ▶ ... and explore the problems faced by the Reichsbank.



# Outline

- 1 The post-Dawes Plan debt boom
- 2 Empirical approach and results

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  - ▶ Depositors in 1931 ran especially on banks with lower liquidity and capital (Schnabel 2004).
  - ▶ Even Hardach (1984) who emphasised fiscal issues admitted banks "extremely vulnerable."

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- ▶ Esp. SMEs in textile, machinery, iron and steel wares (eg. JP Bemberg AG in artificial silk).

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  - ▶ Expansion incentive to take over or avoid being taken over.



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- Reichsbank policy overall restrictive, but at times a little looser.

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  - ▶ **Dell-Ariccia and Marquez (2006), Acharya and Naqvi (2012), Dinger and te Kaat (2020).**
- Foreign deposits increased by a **factor of 7.4** in 1925-1929.

## Foreign inflows: **demand** (pull) factors

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- **Tax avoidance** meant “foreign” funds not always foreign (James 1986).

## Foreign inflows: **supply** (push) factors

- Supply factors **dominated** long-term gross lending.
  - ▶ Accominotti and Eichengreen 2016.
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- The **Dawes Plan of 1924** contributed to boosting supply (Ritschl 2002, 2013).
  - ▶ Gave priority to commercial loans relative to reparations over foreign exchange.
- As a result, **interest rates fell** from their 1925 peak.
  - ▶ Felix Somary: "A system of short-term loans which have been granted to an extent that cannot be justified on financial grounds" (Straumann 2019).

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  - ▶ Eventually, most foreign lending through **simple deposits**. 3-month, in foreign currency (Lary 1943; Connelly 1936).

# Types of foreign liabilities (RM million)

**Table:** Types of foreign liabilities at German banks, 1925-1933 (millions of Reichsmarks)

State at end of June	"Liabilities for clients" (trade deposits)	Foreign-owned deposits
1925	391	837
1926	300	1312
1927	521	2485
1928	1136	3768
1929	1769	4020
1930	2062	3880
1931	2068	1530
1932	1324	615
1933	1116	527

*Source: Untersuchung des Bankwesens 1933, p. 512; Balderston 1993, Table 5.7, p. 144.*

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→ Shows **dilemmas faced by central banks in the boom phase**, not just crisis phase.

# Outline

1 The post-Dawes Plan debt boom

2 Empirical approach and results

# Two empirical challenges

- 1 Inflows may affect risk-taking, but bank behaviour affects inflows.
  - ▶ The co-movement of inflows and risk-taking does not have a causal interpretation.

$$\Delta Risk_{it} = \alpha_{risk} + \beta \Delta Inflows_{it} (\epsilon_{it}^{Risk}) + \epsilon_{it}^{Risk}$$

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  - ▶ 1920s deposit data does not explicitly separate the two.
  - ▶ But also have data on 1930 foreign liabilities.



# A new dataset

We hand-collected data on the [evolution of banks' balance sheets from 1925 to 1938](#).

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- And macro data principally from Ritschl (2002).

# Deutscher Reichsanzeiger und Preussischer Staatsanzeiger

## Bilanzübersichten deutscher Kredit

## banken vom 29. Februar 1928.

Bilanzübersichten deutscher Kredit										Bilanzübersichten deutscher Kredit									
Deutsche Reichsbank										Deutsche Reichsbank									
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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# Our approach

## A combined panel and instrumental variable approach.

- 1 **Explore** relationship b/w 1930 foreign liabilities and deposit growth.
  - ▶ → Extract relevant deposit types.

# “Foreign-inflow” banks attracted specific deposit types





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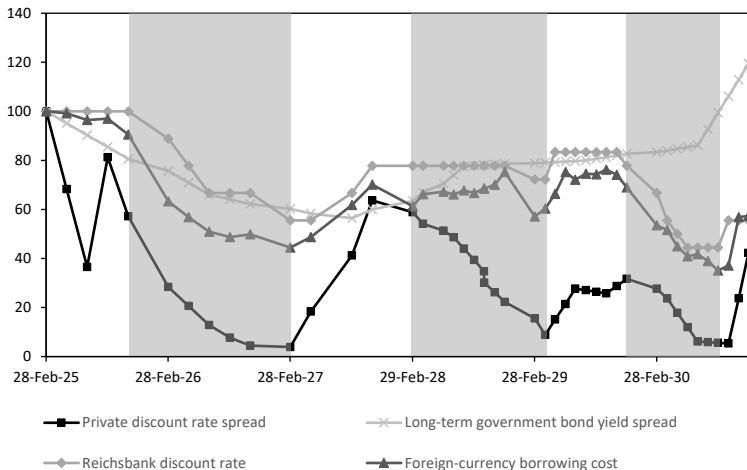
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  - ▶ → Extract relevant deposit types.
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# Panel analysis: months of falling spread



# Panel analysis: predictors of risk-taking

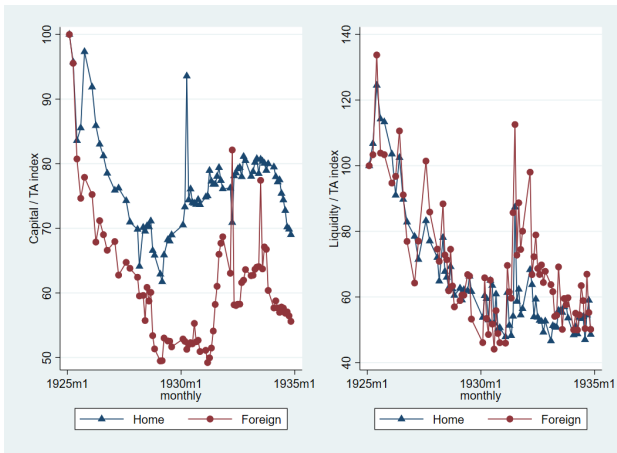
Table: Fixed effects panel regression model, falling spread periods (1925-1930)

	<i>Capital_TA</i>	<i>Capital_TA</i>	<i>Capital_TA</i>	<i>Liquidity_TA</i>	<i>Liquidity_TA</i>	<i>Liquidity_TA</i>
<i>Capital_Inflows</i> <sub>t-3</sub>	-0.078*** (0.015)	-0.0781*** (0.015)	-0.114*** (0.017)	0.024 (0.016)	0.027* (0.016)	0.047 (0.031)
<i>Dom_Deposits</i> <sub>t-3</sub>		-0.0153 (0.012)			0.006*** (0.002)	
<i>Capital_Inflows</i> <sub>t-3</sub> * <i>BigBerlin</i>			0.087 (0.077)			0.023 (0.016)
<i>Capital_Inflows</i> <sub>t-3</sub> * <i>Giro</i>			0.139*** (0.054)			0.019** (0.009)
<i>Capital_Inflows</i> <sub>t-3</sub> * <i>StaatLand</i>			0.141*** (0.037)			0.021** (0.009)
<i>Reichsbank</i>	-0.005 (0.005)	-0.005 (0.005)	-0.005 (0.005)	0.004 (.004)	0.003 (0.002)	0.003 (0.002)
<i>RM\USD</i>	-0.000 (0.001)	-0.000 (0.001)	0.000 (0.000)	0.000 (0.001)	0.000 (0.000)	0.000 (0.000)
<i>Other controls</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Constant</i>	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,670	1,670	1,670	1,670	1,670	1,670
N	137	137	137	137	137	137

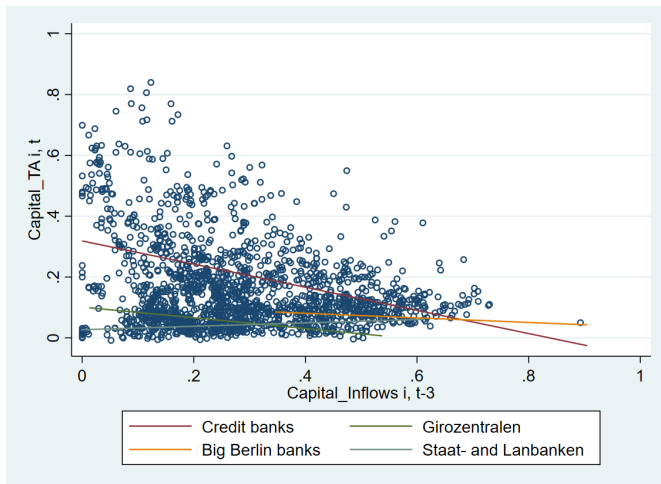
Notes: Falling rates periods only. \*\*\* significant at  $\alpha = 0.01$ , \*\* significant at  $\alpha = 0.05$ , \* significant at  $\alpha = 0.10$ . Standard errors in parentheses.



# “Foreign-inflow banks” ended up more levered, but not less liquid



# The effect was stronger among “typical” credit banks



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- 3 **IV analysis**: 2SLS in the pre-crisis cross-section → next slide.



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  - ▶ But no implicit bailout guarantee to speak of (Born 1967, Hardach 1995, Borchardt 1976).

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  - ▶ But case for endogeneity stronger → exclude liquidity.

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## IV analysis in the pre-crisis cross-section

Table: 2SLS regression, February 1929

Dependent	<i>Capital_TA</i>	<i>Capital_TA</i>	<i>Capital_TA</i>
Instrument	<i>ln TA_25m2</i>	<i>ln TA_25m8</i>	<i>ln TA_26m8</i>
<i>ForeignInflowBank</i>	-0.195*** (0.062)	-0.241*** (0.059)	-0.271*** (0.063)
<i>Constant</i>	-0.0539 (0.807)	-0.139 (0.854)	-0.002 (0.915)
Controls	Yes	Yes	Yes
10% Stock-Yogo critical value	16.38	16.38	16.38
1st Stage F- statistic	43.9	50.35	51.6
1st Stage P-value	0.000	0.000	0.000
Observations	69	95	106

Notes: \*\*\* significant at  $\alpha = 0.01$ , \*\* significant at  $\alpha = 0.05$ , \* significant at  $\alpha = 0.10$ .



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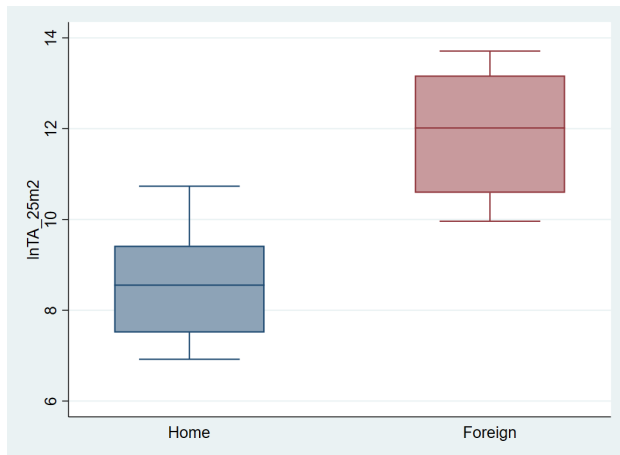
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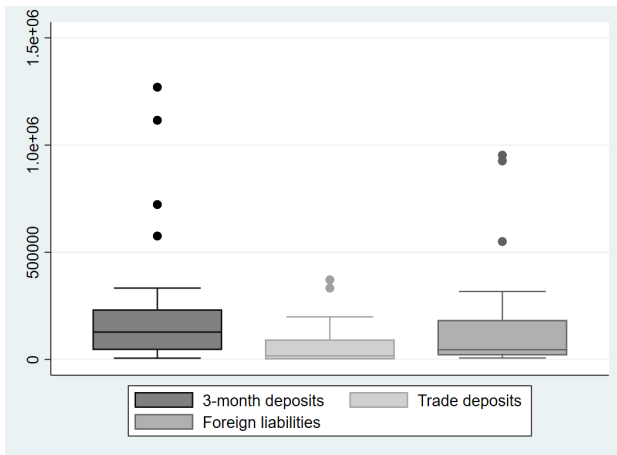
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  - ▶ Direct controls on inflows?

# Appendix

# Initially larger banks attracted more inflows



# Foreign liabilities exceeded trade deposits





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- In this case, size would have a direct effect on liquidity → include size control in liquidity regression, see next slide.