Micro-evidence from a system-wide financial meltdown: The German crisis of 1931

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Three research objectives

1. What are the dynamics of a bank run?
   - How do banks meet withdrawals?
   - Are deposits being reshuffled within the banking system?

2. What predicts bank stability *during* a bank run?
   - Liquidity mismatch
   - Leverage

3. What predicts credit provision during and *after* a bank run?

Motivation

- **Theoretical** literature has made progress in understanding bank runs
  - Diamond and Dybvig (1983), Goldstein and Pauzner (2005), He and Xiong (2012), etc.

- However, **empirical** understanding of bank runs is confined to
  - Single bank runs:
    see, e.g., Iyer and Puri (2012); Martin, Puri, and Ufier (2018)
  - Low frequency data:
    see, e.g., Calomiris and Mason (2003)

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Why the German Crisis of 1931?

1. Exogenous shock leads to **system-wide** run
   - Failure of **Austrian** Creditanstalt in May 1931
   - Run on German banks with variation in the cross section
   - Culminates in failure of one of Germany's largest banks in July 1931

2. **Limited central bank intervention**

3. Detailed, monthly **micro-level** data

Dynamics of aggregate banking data

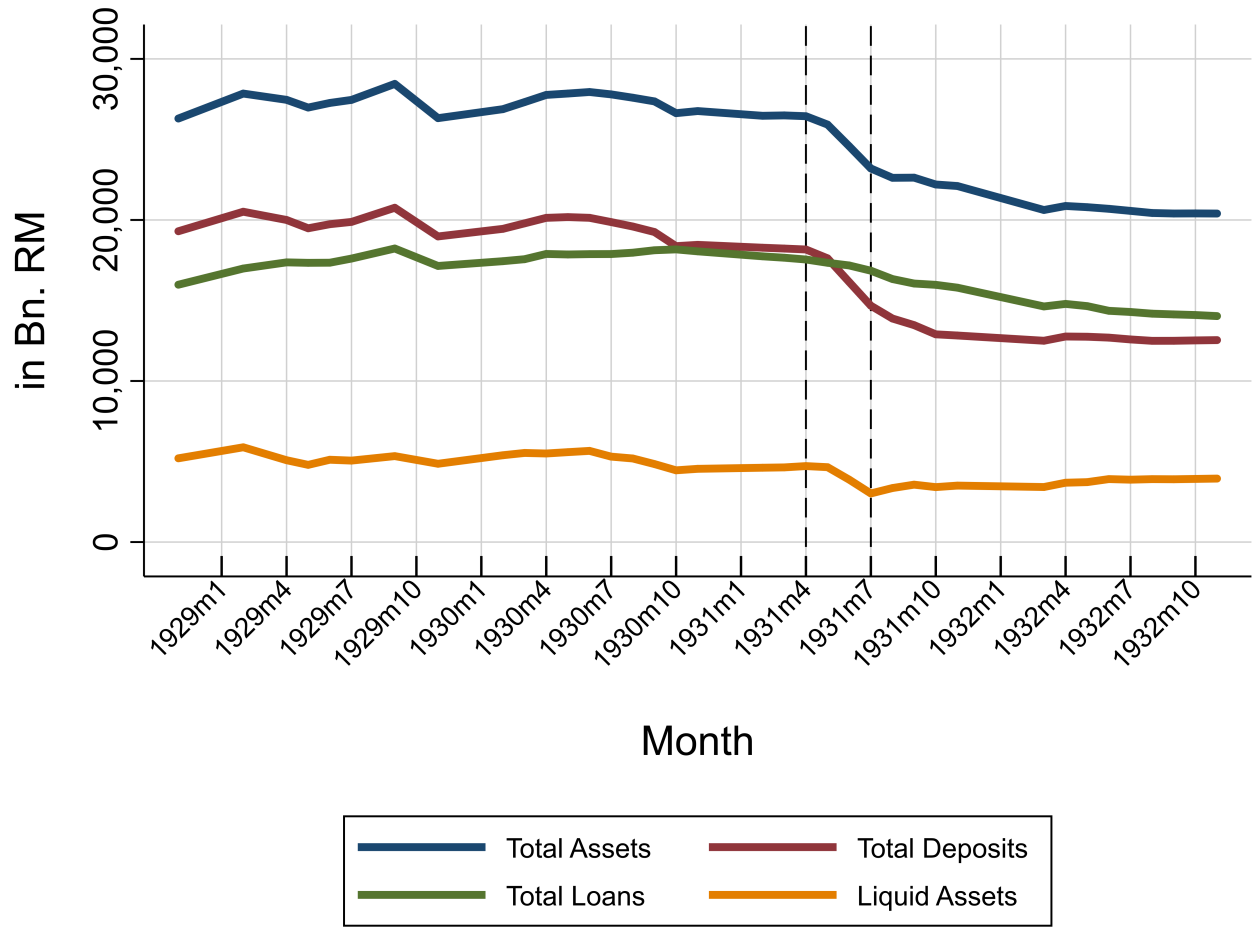
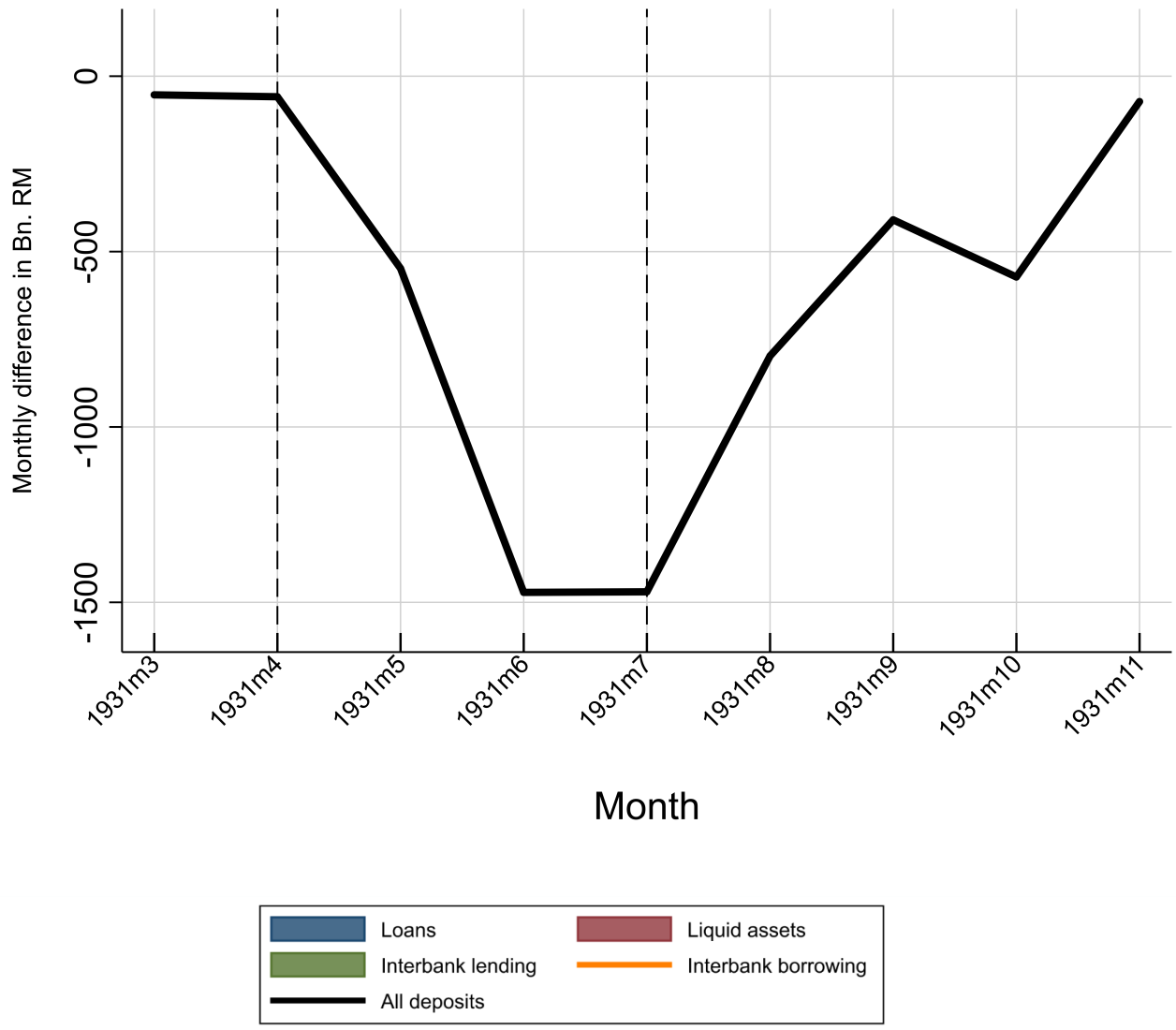


Figure: Levels of aggregate bank assets, deposits, loans, interbank lending, and liquid funds 1929-1932.

Aggregate monthly changes in 1931



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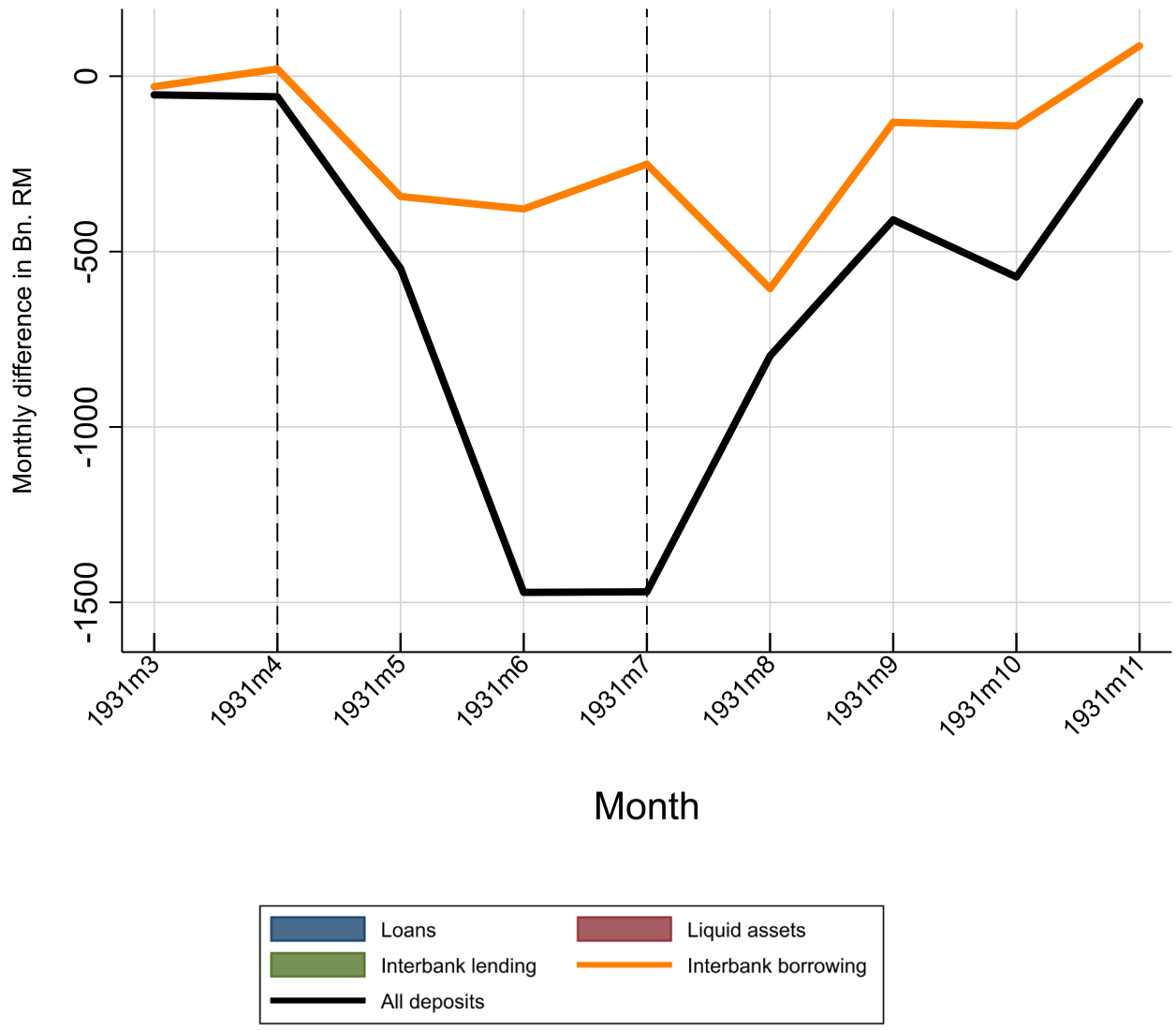

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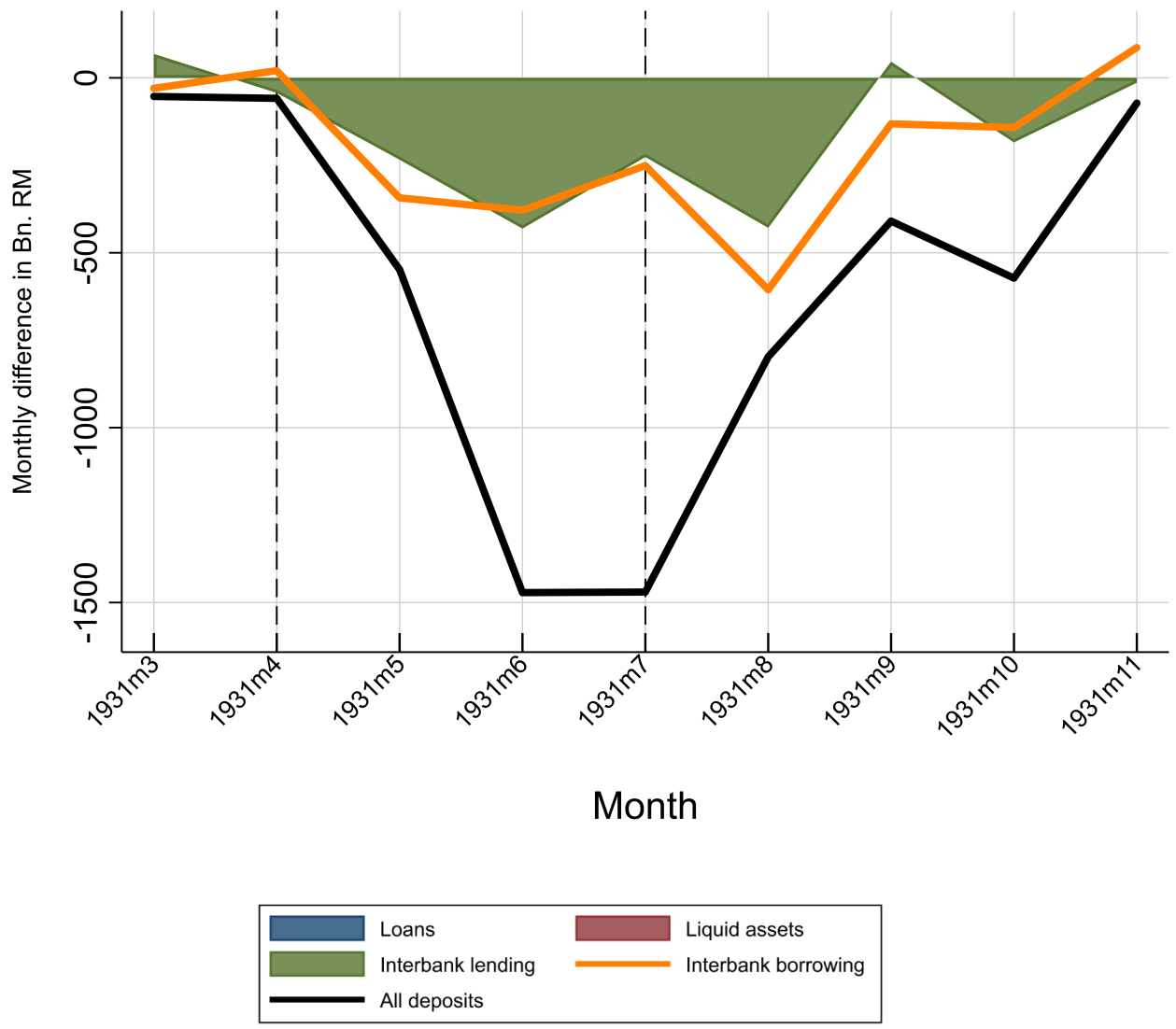

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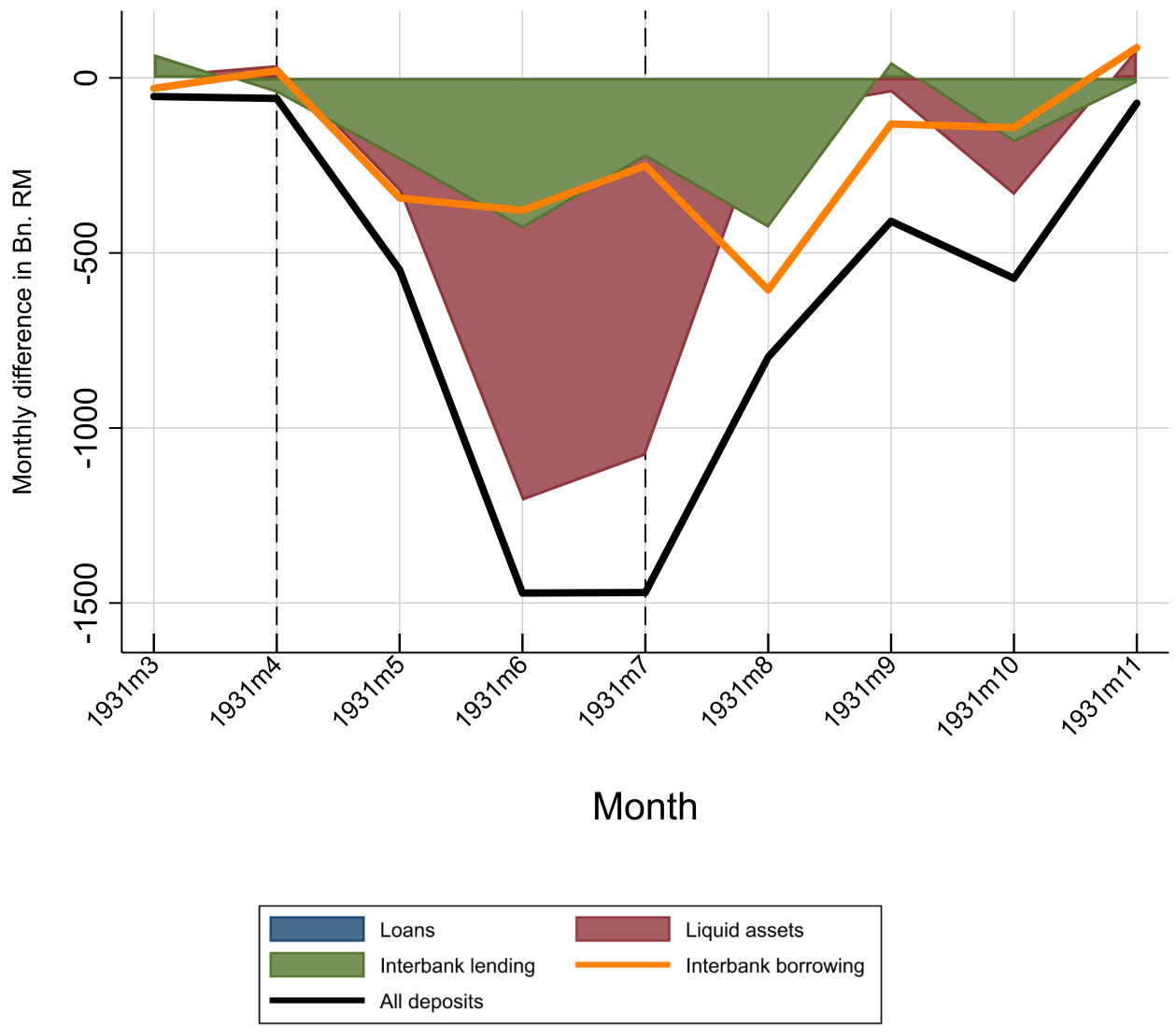

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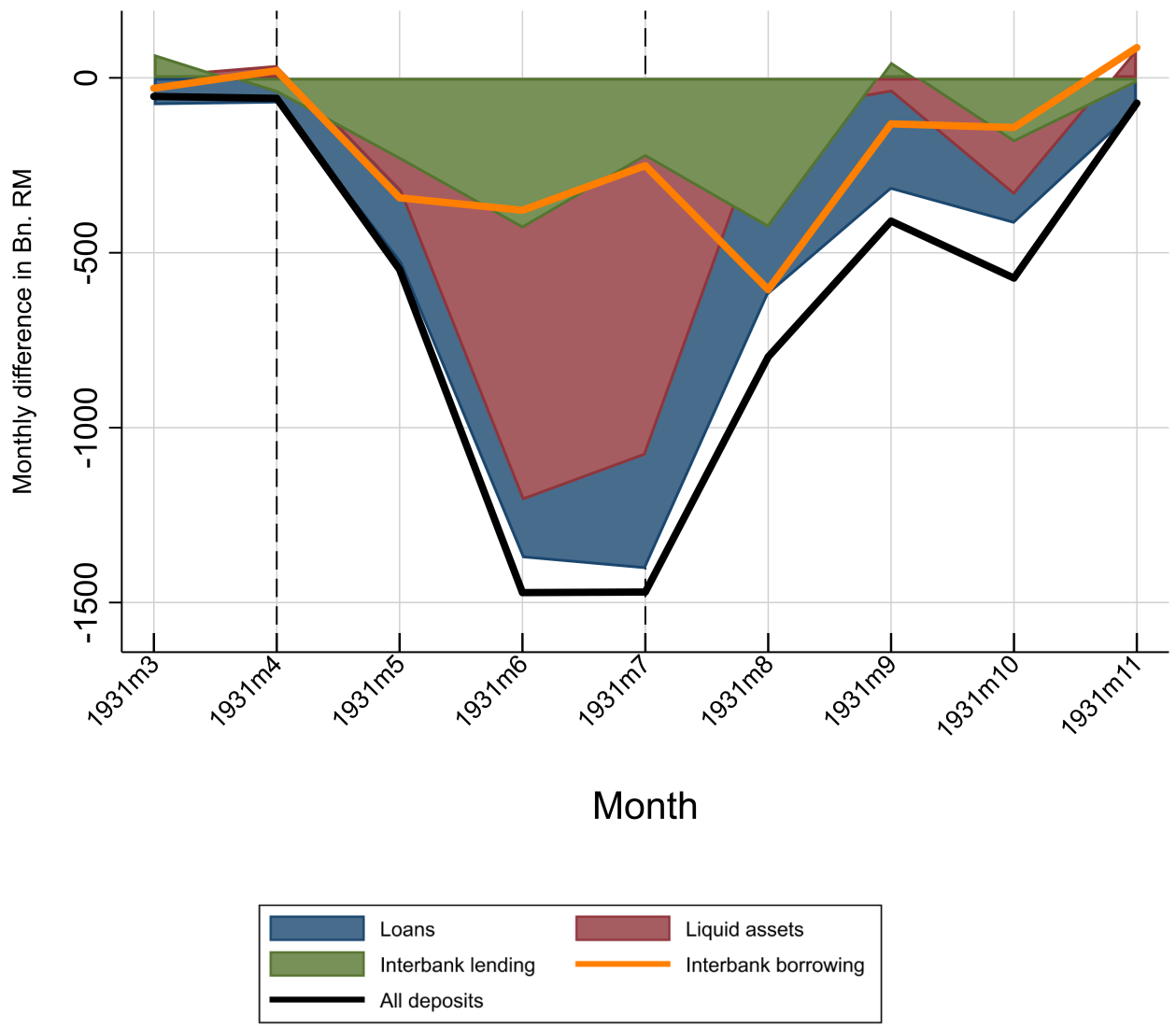
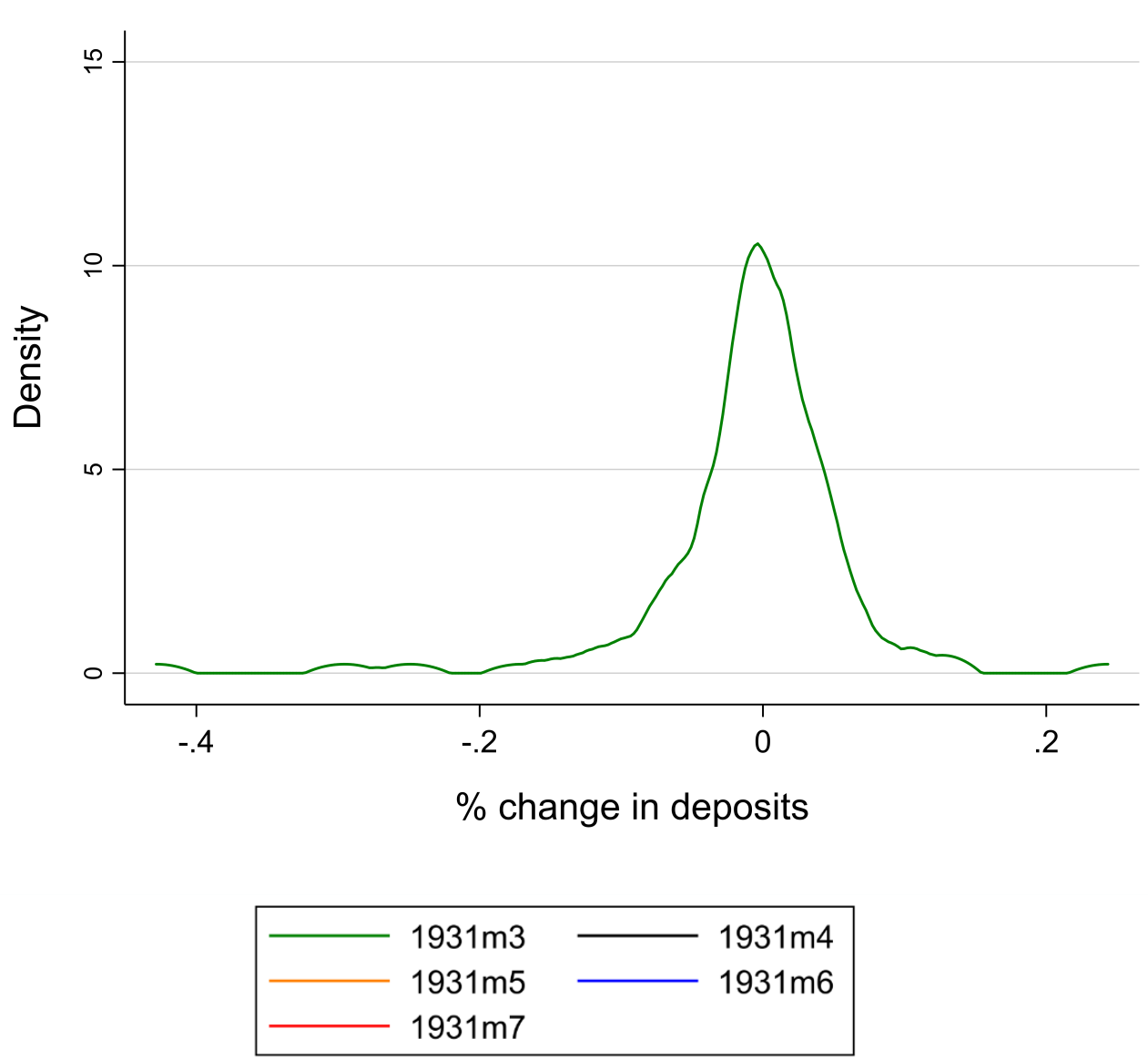


Significant heterogeneity in deposit outflows



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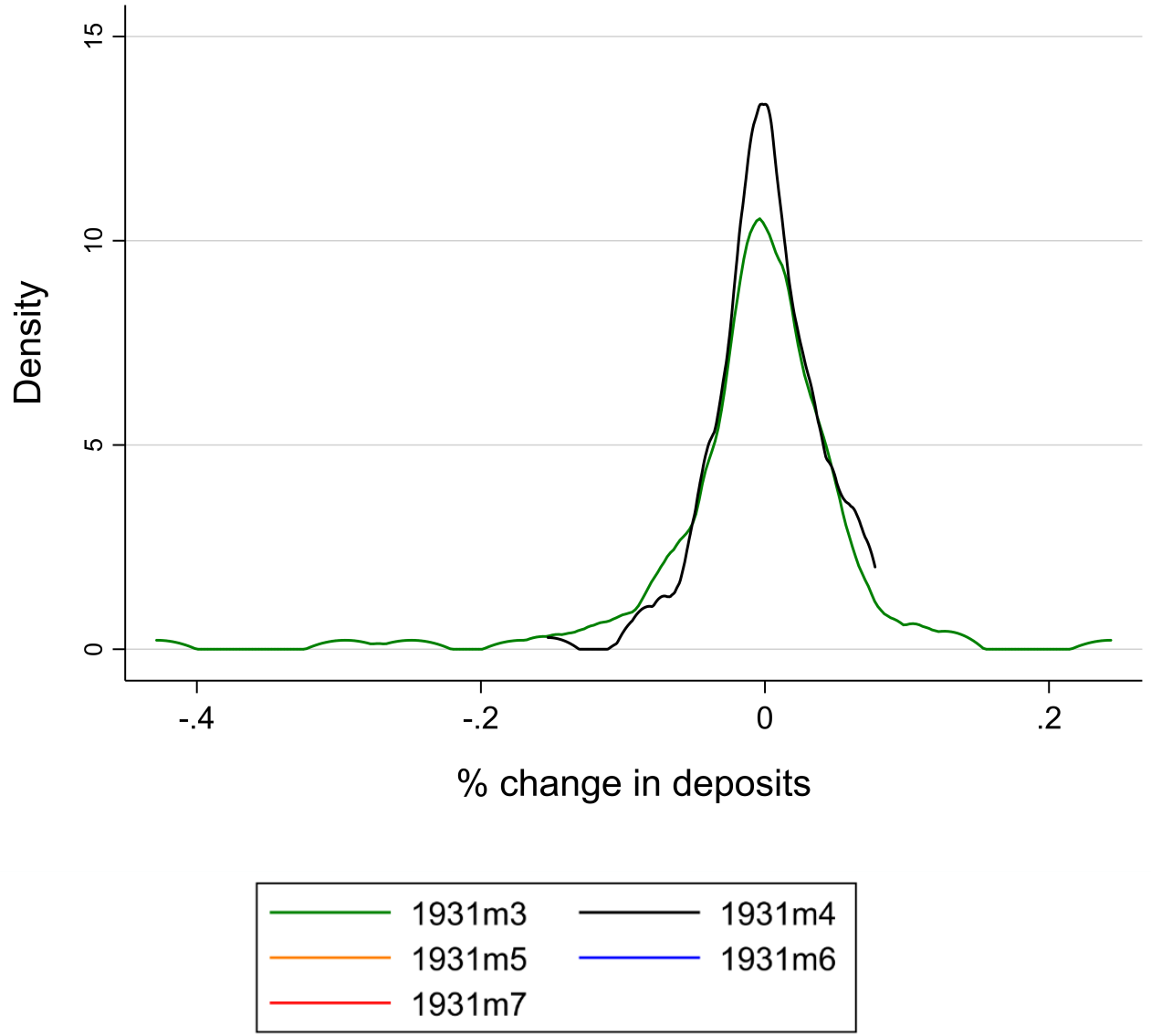

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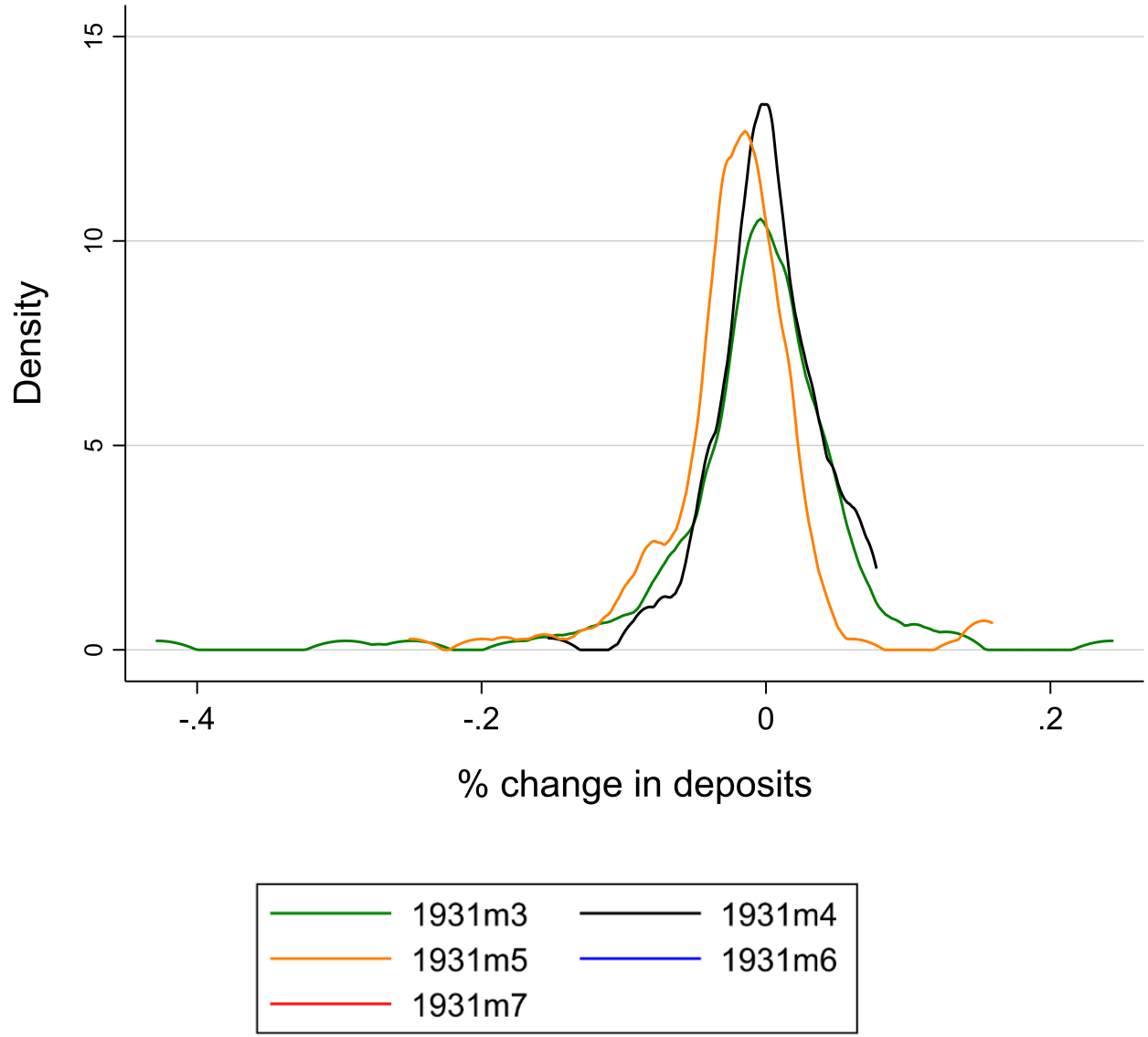

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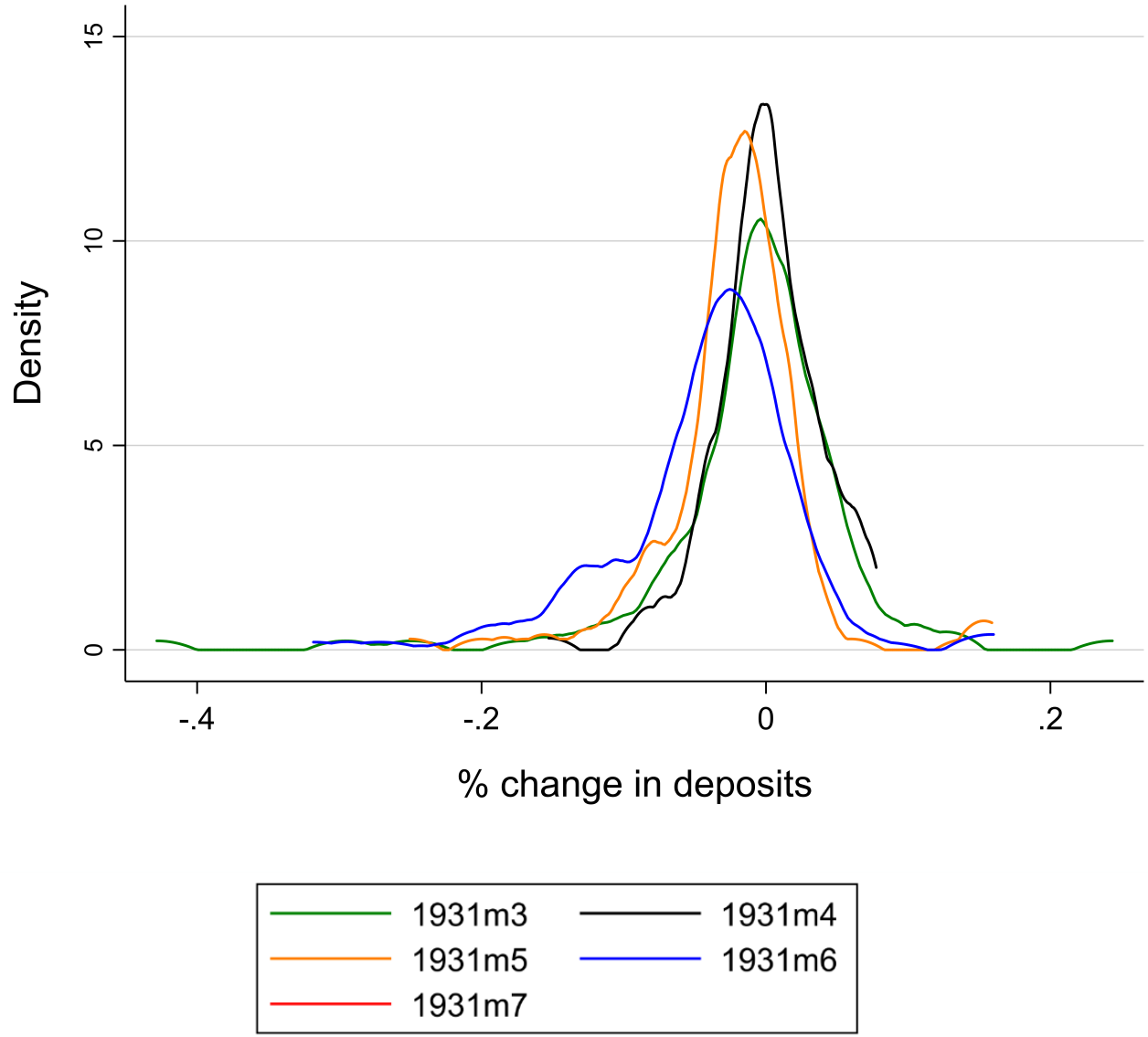

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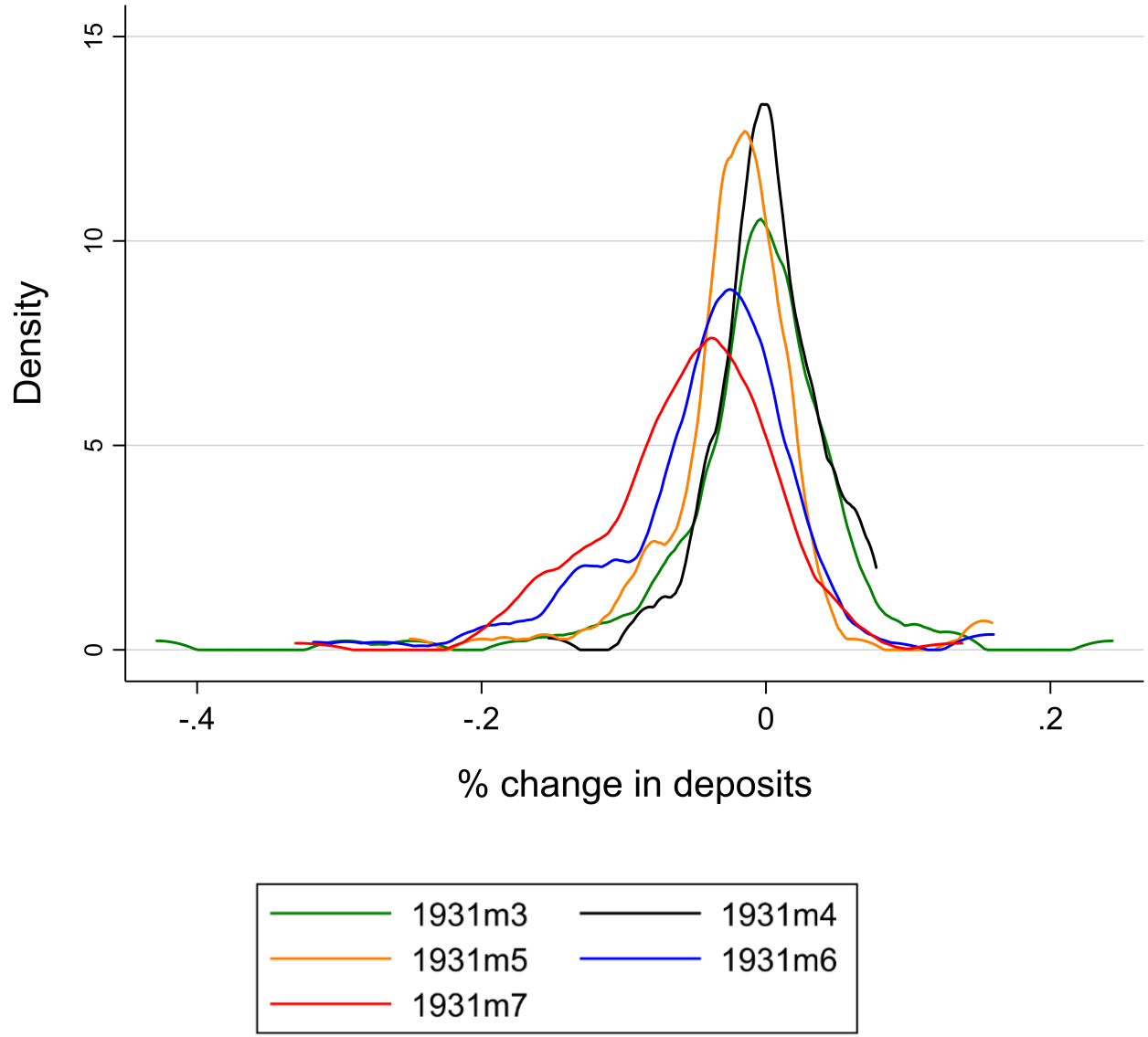


Time vs. demand deposits

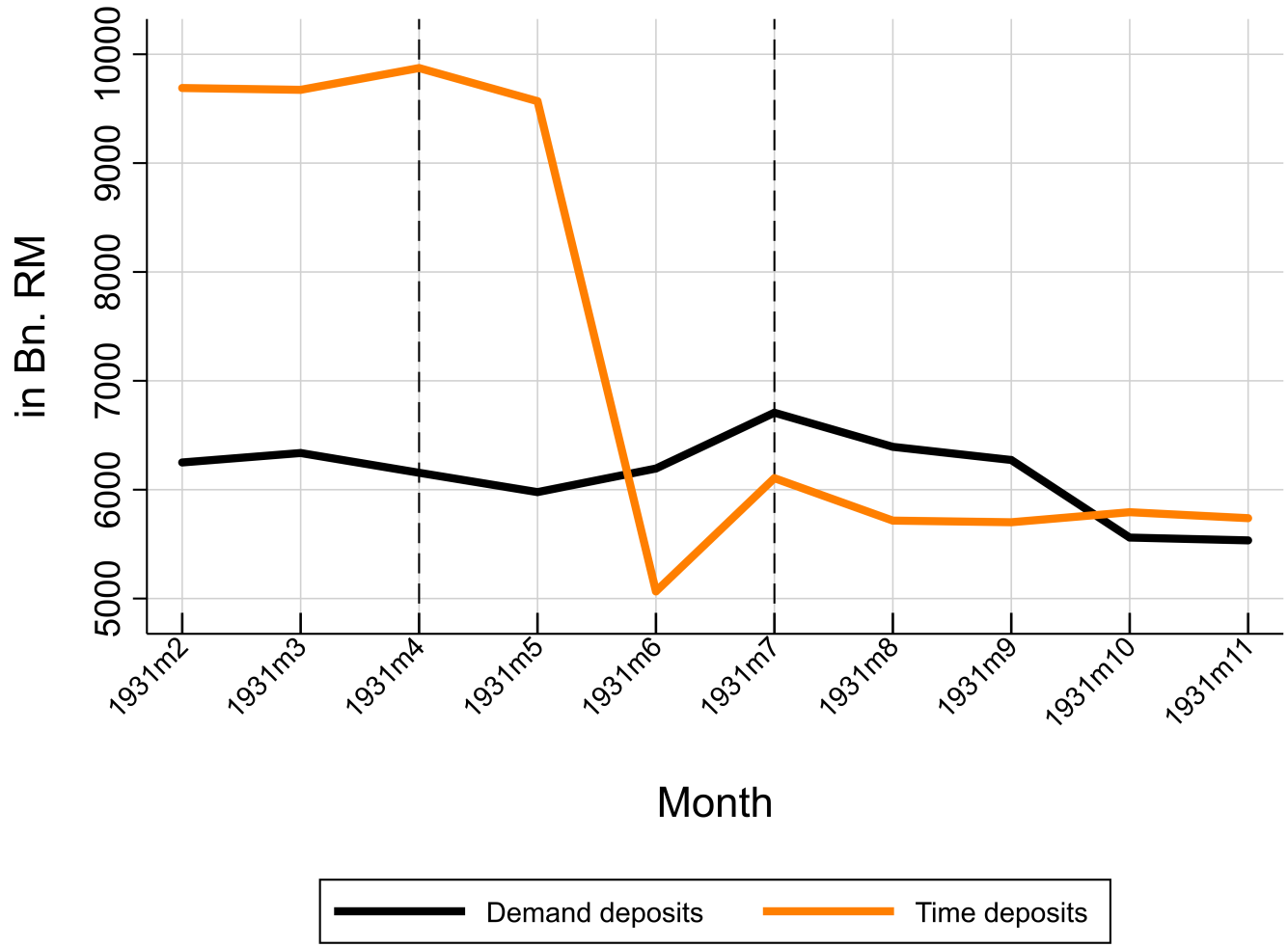
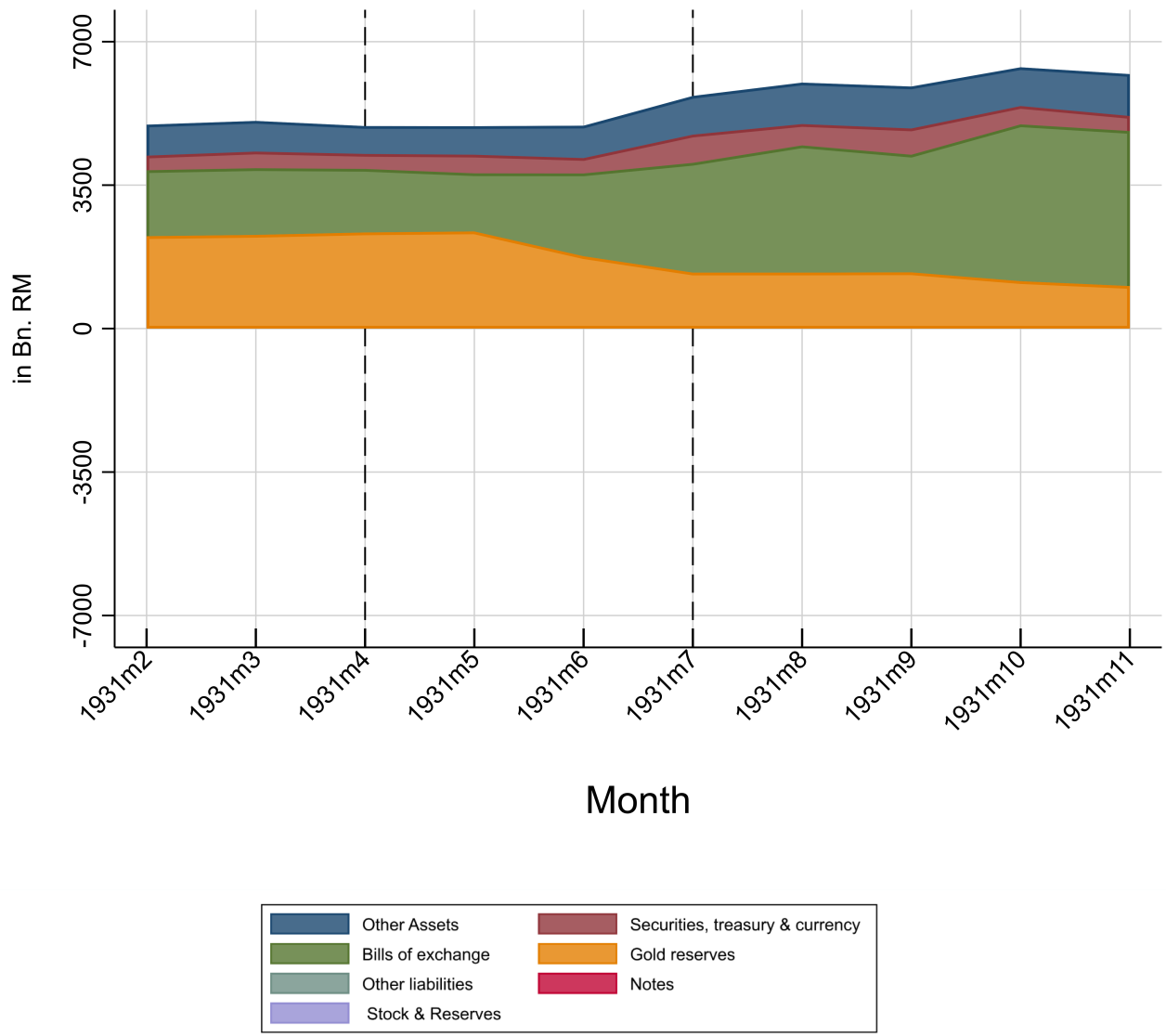
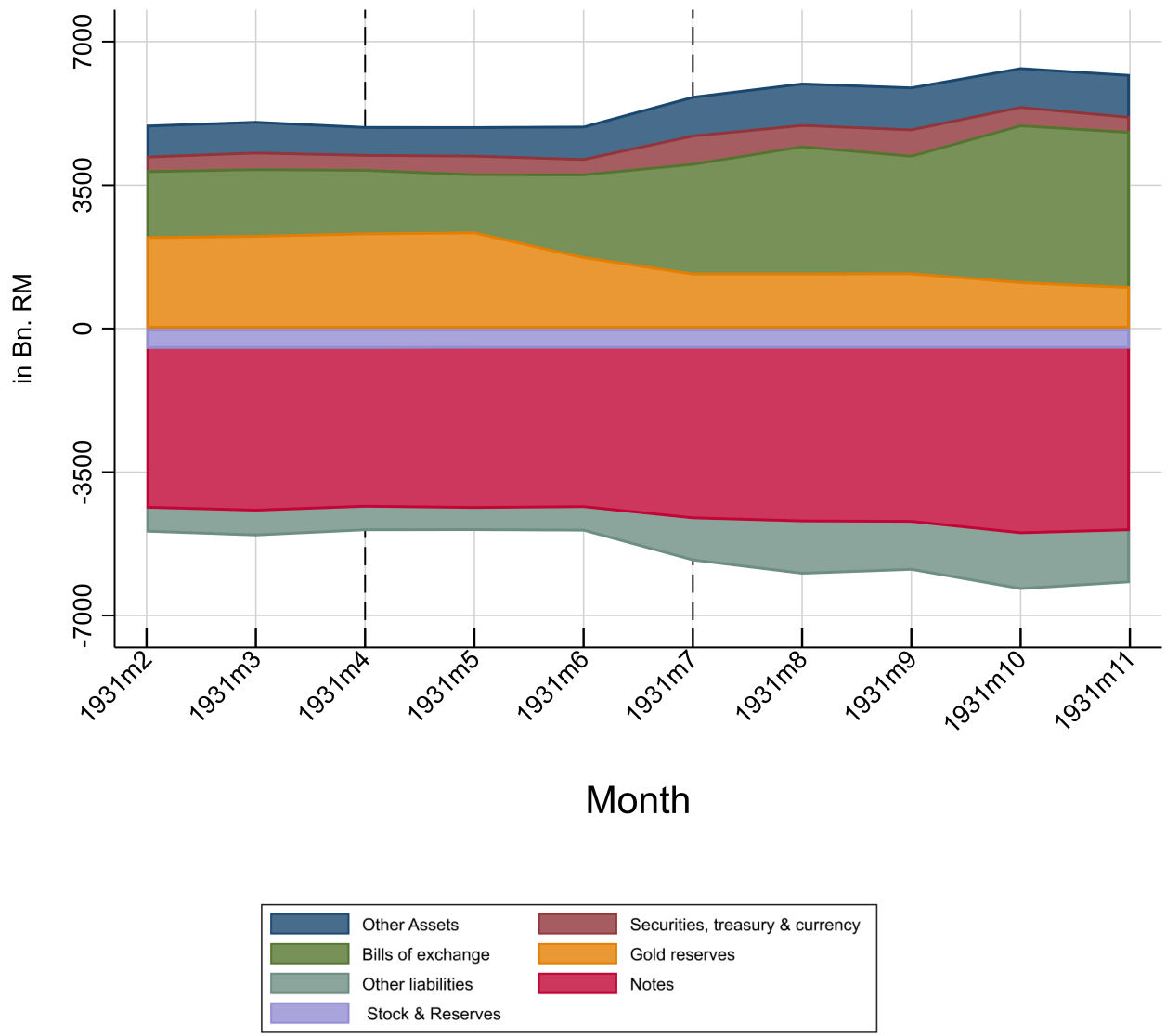


Figure: Aggregate levels of time and demand deposits throughout 1931

The Reichsbank's Balance Sheet: Assets



The Reichsbank's Balance Sheet: Liabilities



Empirical findings

When we exploit the cross sectional dimension, we find:

1. **Leverage** and **liquidity mismatch** are predictors of draw-downs
2. Only **leverage** predicts credit contraction
3. Other characteristics (such as foreign deposits or size) of marginal importance

Last Slide

We exploit a unique situation to fulfill 3 research objectives. We show:

1. Bank run dynamics
2. Bank stability during the run is predicted by leverage and liquidity
3. Credit growth after the run is predicted by leverage