Tracing the International Transmission of a Crisis Through Multinational Firms

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Motivation

The business cycles of economies all over the world are positively correlated.

- Explanation 1: **Common shocks** affect many countries simultaneously.
- Explanation 2: **International linkages** between countries transmit idiosyncratic shocks.

This paper focuses on one specific linkage through which country-specific shocks can become global crises: the **internal networks of multinationals**.

Identification and Institutional Details

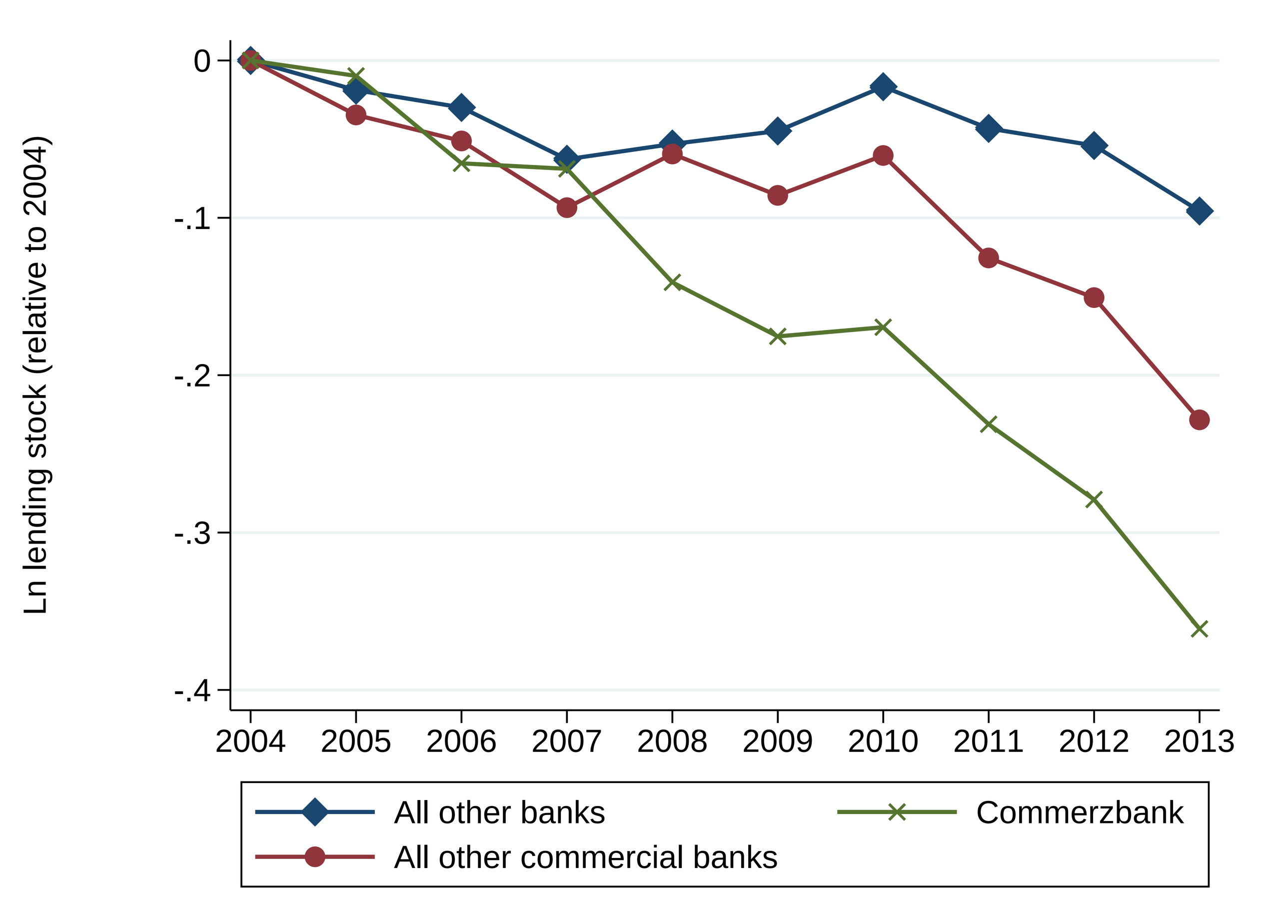
The key **identification challenge** is that multinational parent firms and their international affiliates are subject to common shocks (e.g., common demand shock).

- The identification strategy overcomes the challenge by identifying an exogenous shock to the credit supply of multinational parent corporations located in Germany.
- The shock is an exogenous lending cut by **Commerzbank**, a large German bank during the financial crisis in 2008/2009.

Commerzbank made significant losses due to investments in international financial markets (asset-backed securities and institutional debt).

- Trading and investment losses led to a reduction in equity by 68% between 2007 and 2009.
- The losses were unrelated to Commerzbank's German corporate loan portfolio.

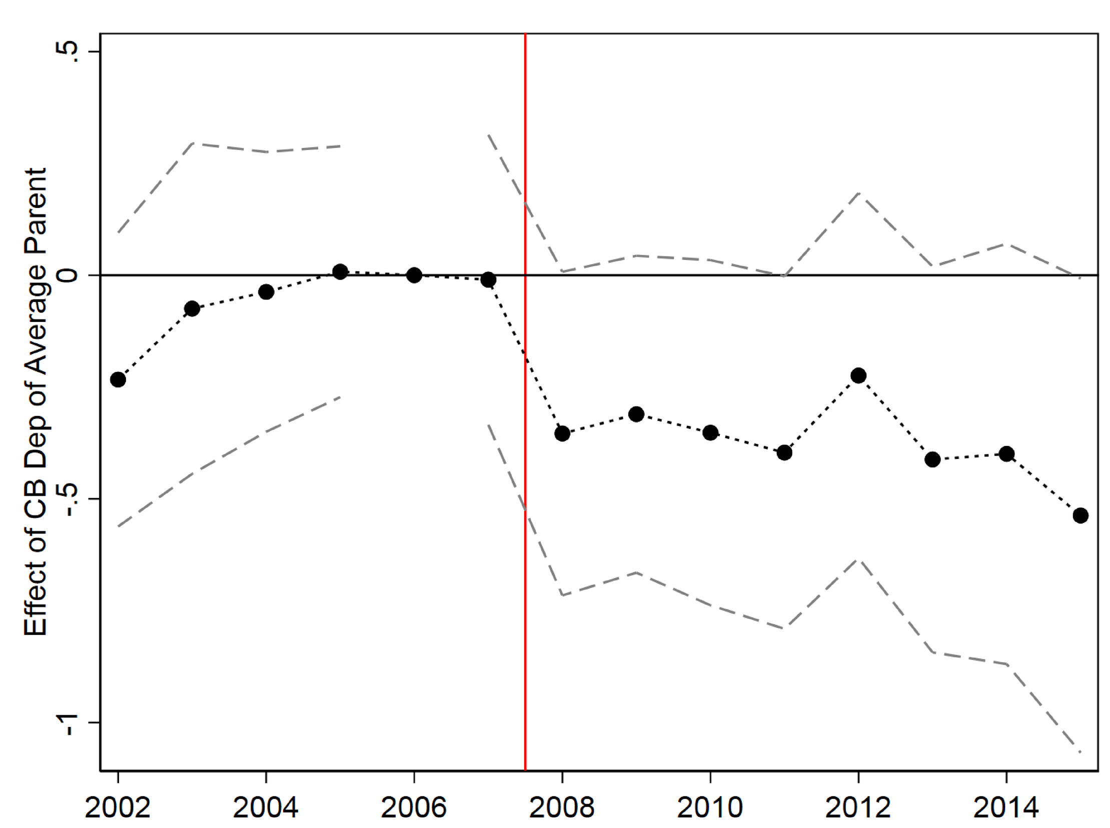
The lending stock of German banks



Key Results

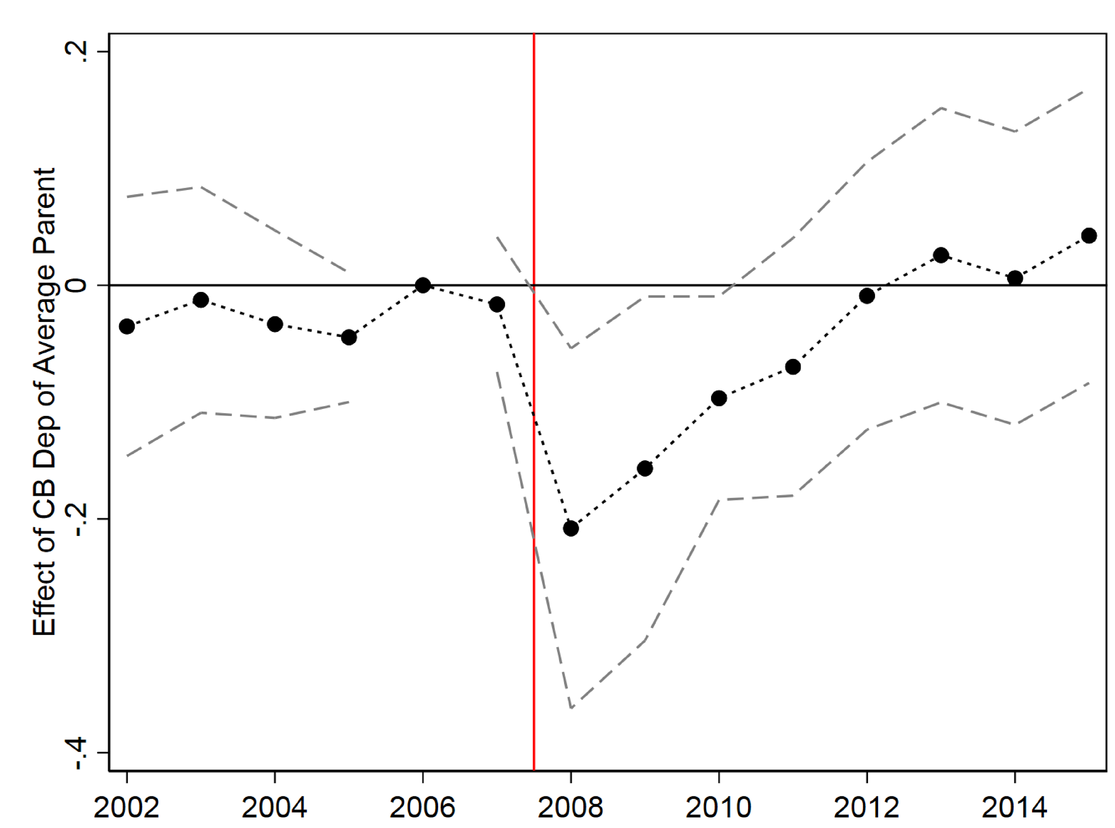
We investigate the effect of Commerzbank's lending cut on the growth of German parents and of their international affiliates. We use a differences-in-differences approach, where we compare parents with high Commerzbank dependence to parents with low Commerzbank dependence. The regressions control for a range of firm characteristics, e.g., industry, size, leverage.

Impact of Commerzbank dependence on parent bank debt



⇒ **Commerzbank's lending cut persistently lowered the bank debt of parents**

Impact of Commerzbank dependence on affiliate sales



⇒ **After Commerzbank cut lending to German parents affiliate sales fell**

Transmission Mechanism

We use unique data on the bilateral linkages between parents and affiliates to shed light on the transmission mechanism.

- **Intrafirm trade channel:**
  - Parents buy fewer products from their affiliates
    ⇒ Decrease in demand by parents for affiliate products
- **Financial channels:**
  - Lending from affiliates to parents increases (**internal capital market**), parents invest less into their affiliates (**equity**)
    ⇒ Affiliates become **financially constrained**

⇒ Consistent with **frictions in financial markets and in goods markets**, we find that affiliates experience reduced sales for 3 years.

Aggregate and Policy Implications

- The transmission effect of Commerzbank's lending cut on aggregate sales was most pronounced for Germany's neighboring countries: **Czech Republic (0.37%), Austria (0.30%)**, and **Poland (0.28%)**.
- A financial shock of similar magnitude to the parents of all affiliates in the **European Union (United States)** would have reduced aggregate sales by **2.49% (1.03%)**.
- The international transmission of financial shocks also operates **indirectly through multinational firms**. The effects can be global, therefore policy responses need to be global.
- To monitor international shock transmission, regulators need to be aware of within-firm capital flows and crises in other countries.