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Predicting Busts: Analyzing Credit Allocation Patterns During Booms

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By Casey Bayer

Cover Image Attribute: From a new database, the researchers created, they found credit expansions to the non-tradable sector — firms that produce goods and services that aren't traded internationally, like real estate and construction — more strongly predict future slowdowns and systemic banking crises. Credit expansions to the tradable sector are associated with sustained output and productivity growth without a higher risk of a financial crisis. Credit: anilakkus/iStock

New MIT Sloan research finds firms producing domestic goods and services most strongly predict potential economic slowdowns and systemic crises, with implications for policymakers looking to bolster the economy and safeguard the financial system.

Across history, some bursts of lending to companies and individuals, or so-called "credit booms," have led to busts, while others haven't. In a new study, MIT Sloan School of Management assistant professor of Finance Emil Verner and assistant professor of finance Karsten Müller from the National University of Singapore Business School, teased apart types of lending and discovered that how capital is allocated during a credit boom matters to the economy's ultimate health.

From a new database they created on private credit, the researchers found credit expansions to the non-tradable sector — firms that produce goods and services that aren't traded internationally, like real estate and construction — more strongly predict future slowdowns and systemic banking crises. Credit expansions to the tradable sector — industries with goods and services that trade internationally — are associated with sustained output and productivity growth without a higher risk of financial crisis.

"There are very particular systematic patterns," Verner said. *"If you're worried about financial stability risks, then one of the best predictors is these credit booms or bubbles where credit is going toward these non-tradable sectors. I wasn't expecting the pattern to be so stark, but in almost every case we examined, you see it."*

Verner and Müller analyzed over 100 lending booms — including Greece, Spain, and Portugal's in the early 2000s ahead of the Eurozone Crisis; Japan's in the 1980s, and the one preceding the 2007-2008 global financial crisis — as well as more than 65 major worldwide financial crises. They found that, overall during times of easy credit, credit flows disproportionately to the non-tradable sector. Amidst booms, lending toward non-tradable firms and households accounts for around 70% of total lending growth. They found and analyzed 24 tradable-biased booms and 87 non-tradable-biased booms.

According to the researchers, this specific type of credit growth predicts a boom-bust pattern and heightened financial fragility. Booms driven by heightened lending to the tradable sector see real gross domestic product (GDP) plateau 4 percentage points higher after the boom relative to periods with a boom. However, booms fueled by non-tradable lending ultimately lead to a sharp 5% drop in GDP. They found that over the next four years, the likelihood of a financial crisis amid rapid credit growth to the tradable sector would be 8%. For the non-tradable sector, it jumps to 23%.

Non-tradable versus tradable sector

This discrepancy happens partly because firms in the non-tradable sector — which also include hotels and restaurants — tend to be smaller, more financially constrained because of low net worth, and more vulnerable since they often rely more on collateral-based lending, according to the researchers. For example, an increase in the value of a hotel owner's land during a boom may prompt the owner to borrow more.

"This lending boost can then take on a life of its own," Verner said, *"with more and more lending to the upside. But when prices go the other direction, these are the types of borrowers that have to cut back the most. They're the most fragile. They're more likely to default during crises."*

That's opposed to the tradable sector, where firms have more of a global customer base and depend less on leverage and collateralized credit. Instead, when deciding whether or not to extend a loan, Verner noted that banks and other lenders tend to give more weight to tradable sector companies' fundamentals, audited financial statements, and profit-generating abilities.

"You don't have the same sort of feedback effects here based on the underlying collateral," Verner said. *"When crisis comes, these aren't the sorts of firms that are defaulting. They're less likely to be a source of risk."*

Methodology

In their study, Verner and Müller pulled together over 600 scattered sources to construct their database, digitizing many for the first time. Most are statistical publications and data appendices published by central banks and statistical offices. Data start in 1940 and cover private credit extended by commercial and savings banks, credit unions, and other housing finance companies across 117 countries comprising 53 advanced and 64 emerging economies. In contrast to more limited existing data, their set covers up to 60 distinct industries and four types of household credit. The researchers complement newly collected data with figures from the International Monetary Fund (IMF) and the Bank for International Settlements (BIS).

Implications for Policymakers

The research has implications for policymakers looking to bolster the economy and safeguard the financial system. Policymakers should understand that how credit is allocated during booms impacts the path of GDP, housing prices, and the likelihood of systemic banking crises. During booms driven by rapid credit expansion to the non-tradable sector, they should be extra attentive to making sure the banking system is well capitalized.

Future research can tap into the researchers' new novel database, which will be made available to the public, to further dissect boom-bust cycle drivers. "*One can use this data to construct better and better predictors of systemic financial risk,"* Verner said.

About the Author:

Casey Bayer, Director of Media Relations, MIT Sloan School of Management

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