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# How Important Are Asset Price Fluctuations for Business Investment?

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Previous recessions in the U.S. revealed to economists and policymakers that weak macroeconomic conditions may have been worsened by financial distress. Economists have theorized that this association is explained by a decline in physical asset prices that often precede recessions. When physical asset prices decline, firms pledge less-valuable assets to banks, which leads banks to reduce lending. Consequently, firms are not able to finance their investments, which reduces overall economic activity. In this article, we review more recent literature that may indicate that this mechanism is weaker than once believed.

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Asset price collapses in either the housing market or the stock market often precede severe economic recessions:

- House prices started declining in 2006, prior to the Great Recession of 2007-09.
- The Great Depression started with an unprecedented stock market collapse in 1929.
- The dot.com stock market crash occurred just prior to the 2001 recession.

How can a decline in the price of financial or real assets lead to such widespread and systematic disruption in economic activity? One of the most popular explanations comes from the 1997 paper "Credit Cycles" by Nobuhiro Kiyotaki and John Moore. Its main argument is that firms can typically obtain external funds by pledging assets as collateral, which helps overcome a lack of internal funds for expansion and growth. A decline in asset prices, however, restricts the ability of firms to issue debt and undertake profitable investments. Thus, a relatively mild macroeconomic shock may lead to a severe recession through an "asset-price feedback loop."

While theoretically plausible, is there empirical evidence to support this mechanism? And to what extent do firms rely on physical assets in particular to secure external financing? In this article, we discuss recent academic studies that shed light on the relevancy of the asset-price feedback loop for business investment as well as on the prevalence of different types of borrowing affecting the strength of this channel.

**The Collateral Channel of Firm Investment**

In the 2012 paper "The Collateral Channel: How Real Estate Shocks Affect Corporate Investment?," the authors test empirically whether asset price declines generate contractions in investment spending. Based on a sample of public firms, they make two analyses:

- First, whether companies that own real estate decrease their investment spending more than companies that do not when real estate prices decline
- Second, among the set of companies that own real estate, whether investment spending declines more for companies with the largest declines in real estate prices

The study finds that, in aggregate, investment increases by 6 cents for every $1 increase in collateral value. This effect can be large considering the size of the real estate sector and the magnitude of price movements prior to or during severe economic episodes.

In addition, the authors classify firms as financially constrained or unconstrained along different measures of credit constraints, such as dividend payments, firm size and bond ratings. In line with the implications of the asset-price feedback loop mechanism, the authors find that financially constrained firms are twice as sensitive to changes in real estate value prices as financially unconstrained firms.

**What Is the Exact Order of Causality?**

There is an identification problem with this type of analysis, however: House prices and macroeconomic activity are jointly determined in equilibrium. For example, households may cut back on consumer spending when their housing wealth declines.

According to the 2015 book "House of Debt," this mechanism is particularly strong for highly indebted households with high loan-to-value ratios on their mortgages. In macroeconomics parlance, the marginal propensity to consume out of housing wealth is larger for highly indebted households. In fact, the authors highlight the combination of severe house price declines and high household debt during the period 2005 to 2007 as a primary reason behind the pullback in consumer spending prior to and during the Great Recession. Thus, it is possible that researchers find associations between house price declines and business investment not due to some inability of companies to borrow funds but due to negative shifts in consumer demand patterns.

Indeed, how household debt affects the housing wealth effect on consumer demand has been a subject of recent debate. The 2021 paper "Housing Wealth Effects: The Long View" finds that the effect of housing wealth on economic activity was not larger in the post-2000 period relative to the pre-2000 period, when households did not experience a large run-up in their liabilities.

To support the argument against this type of endogeneity, the authors of the "Collateral Channel" paper use information on local land supply constraints. This is a common technique that aims to tease out house price movements that are independent of the local business cycle to some extent.[1]

In a subsequent 2022 paper titled "Quantifying Reduced-Form Evidence on Collateral Constraints," the "Collateral Channel" paper authors build a model with firms that face borrowing constraints. They perform an exercise where they simulate two economies: one with borrowing constraints and one without those constraints. Relative to an economy that does not face such financial frictions, borrowing constraints induce output losses of around 7 percent through reductions in investment and labor demand.

**A Primer on Borrowing Constraints**

Although theoretically sound and empirically relevant, the asset-price feedback loop assumes that firms borrow primarily by pledging physical assets (such as real estate) as collateral. The 2021 paper "Anatomy of Corporate Borrowing Constraints" by Chen Lian and Yueran Ma shows that only 20 percent of borrowing by (typically large) publicly listed companies takes place by pledging physical assets (defined by the authors as asset-based borrowing). A substantial part of debt issuance is actually based on the firm's ability to generate cash flows going forward (called cash-flow-based borrowing).

In the case of asset-based borrowing, lending is secured by specific physical assets. Such assets include real estate, inventories, fixed assets or accounts receivable. If a business cannot make its payments and declares bankruptcy, creditors are compensated based on the liquidation value of these assets. Thus, capacity is based on these liquidation values.

In cash-flow-based borrowing — which includes corporate debt issuance and other unsecured types of borrowing — creditors have claims against the firm as a whole. Payoffs are based on the cash flows from a company's continuing operations. Thus, capacity is based on measures of current and future earnings.

Using a discontinuity in accounting rules, the authors find that debt issuance increases by 28 percent for every $1 increase in a firm's earnings, suggesting that earnings play an important role in determining borrowing capacity.

The distinction between asset-based and cash-flow-based borrowing suggests that drops in the liquidation value of physical assets may not be as important a financial constraint for firms as the Kiyotaki and Moore model implies. Lian and Ma test this by creating two versions of the Kiyotaki and Moore model.

The first version of their model imposes a traditional borrowing constraint, where firms can borrow up to a specified fraction of the liquidation value of their physical assets. In the second version, they consider a borrowing constraint where firms can borrow up to a multiple of their operating earnings. The authors then compare the impact of a shock on a firm's internal funds across these two models.

The results show that the impact on firms' capital and production is about 10 times stronger with traditional borrowing constraints, meaning that the prevalence of cash-flow-based constraints significantly dampens the asset-price feedback loop mechanism.

**Additional Distinctions Between Types of Debt Issuance**

The distinction between asset-based and cash-flow-based debt is separate from the distinction between secured and unsecured debt. The former distinction is based on creditors' payoff:

- In asset-based lending, payoffs are determined by the liquidation value of the pledged physical assets.
- In cash-flow-based lending, they are determined by the value of the firm as a whole.

The latter distinction is about priority: Secured debt has priority over unsecured debt. As detailed in the 2022 working paper "Collateral and Secured Debt (PDF)," secured debt is explicitly collateralized and has

a perfected security interest in specific assets. A perfected security interest is any secured interest in an asset that cannot be claimed by any other party.

Unsecured debt, however, is implicitly collateralized and does not have a perfected security interest. There are still covenants in place that give the lenders a claim on the firm's assets free of creditor claims or liens, but the claims on these types of assets are not as strong.

Although distinct, there is a natural overlap between these concepts. Asset-based debt is predominantly secured and pays creditors the liquidation value of specific assets in the case of a default. Critically, cash-flow-based debt can also be secured, as with blanket liens for example, where creditors have priority over the cash-flow stream. In addition, a company may issue corporate debt (which is classified as cash-flow-based borrowing) at different levels of seniority (or priority). The distinction between asset-based versus cash-flow-based debt is more important for the asset-price feedback loop than for whether the debt is secured or unsecured.

It is also useful to connect these concepts to the different ways in which creditors receive payment for defaulted loans as outlined in U.S bankruptcy laws. (The following discussions of Chapter 7 and Chapter 11 largely come from the Investopedia article "Chapter 7 vs. Chapter 11: Know the Difference.")

Firms that file for Chapter 7 typically liquidate their assets. A bankruptcy court assigns a trustee to ensure that creditors are paid off in the right order, following the rules of "absolute priority." More specifically, secured debt takes precedence over unsecured debt, and creditors that hold secured debt contracts are paid first. The remaining assets and cash are pooled together and distributed to creditors with unsecured debt.

Firms that file for Chapter 11 can reorganize and repay creditors with cash from ongoing operations. When Chapter 11 is initiated (either by the firm or creditors), the firm creates a plan to reorganize its finances and continue its operations. This may include cost-cutting, renegotiating debt contracts and selling assets. This is important for companies without significant physical assets (such as producers of software), because they can promise future cash flows as repayment to creditors if they default. Meanwhile, creditors have assurance that they will obtain some repayment through the Chapter 11 restructuring process.

In sum, the main distinction between the two bankruptcy procedures is the way in which creditors receive payment when firms default on their loans.

**Conclusion**

The collateral channel of investment is one of the main ways economists connect asset-price fluctuations and economic recessions. When asset prices collapse, firms' liquidation values of assets decline, so firms have more difficulty securing borrowing. Data from publicly listed companies confirm this result: When real estate prices decline, companies that own real estate decrease their investment spending more than companies that do not. But the strength of this result relies on the popularity of asset-based borrowing among businesses. Since many companies borrow based on cash flow, asset-price fluctuations may play a smaller factor in economic recessions.

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For example, see the 2010 paper "The Geographic Determinants of Housing Supply."

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