



Local financial capacity and asset values: Evidence from bank failures[☆]



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ABSTRACT

Using differences in regulation as a means of identification, we find that a reduction in local financial intermediation capacity reduces the recovery rates on assets of failing banks. It also depresses local land prices and is associated with subsequent distress in nearby banks. Fire sales appear to be one channel through which lower local intermediation capacity reduces the recovery rates on failed banks' assets. The paper provides a rationale for why bank failures are contagious, and why the value of specialized financial assets could depend on the size of the intermediary market that is available to buy it.

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1. Introduction

Does the loss in financial intermediation capacity in an area lead to a fall in the liquidation value of financial assets? Could any of the loss in value be ascribed to fire sales? And if the available local financial intermediation

capacity influences liquidation values, could the failure of a bank bring down nearby banks, not because they are subject to the same economic shocks but because one bank's failure reduces local intermediation capacity and hence the value of the other banks' assets? We examine these questions in this paper.

Why might financial asset values fall if local intermediation capacity falls? There are at least four channels through which a fall in intermediation capacity could transmit into asset value declines—local balance sheet linkages, a fall in the cash flows generated by the underlying real asset, a fall in the sale value of the real asset relative to its value in best use (which we term a real fire sale discount), and a fall in the sale value of the financial asset relative to the value in the hands of the seller (which we term a financial fire sale discount). These transmission channels of value decline are not mutually exclusive.

Let us be more specific. First, the balance sheets of intermediaries may be linked, either directly, as one intermediary lends to another, or indirectly as they both lend to a common borrower. The failure of one intermediary will

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directly reduce the value of the loans another intermediary has made to it. Also, the failure of one intermediary may result from, or cause, the failure of a common borrower, and therefore one would expect the loans the other intermediary has made to the common borrower to also be of lower value.

Second, to the extent that intermediaries have specific organizational capabilities in bringing borrowers and savers together, a fall in available local intermediation capacity will limit borrower access to finance, making some potential borrowers forego new investments or purchases, thus leading to a fall in local activity. This could depress the fundamental value of real assets such as firms and land. We will broadly refer to these two channels of value decline as *fundamental* channels.

To understand the other two channels, we elaborate on the reasons for fire sale discounts. In their seminal paper, [Shleifer and Vishny \(1992\)](#) argue that the sale price of an asset may depart from fundamental value if the best users of the asset are heavily indebted. The departure from fundamental value arises because users may be forced to sell the asset to buyers with money but with less capacity to use the asset well.¹ The real fire sale discount centers on the drop in fundamental value as the first best users of an asset give up ownership. A number of papers since [Pulvino \(1998\)](#) have uncovered a discount on real assets when distressed borrowers sell real assets to second best users.

Forced sales of financial assets can similarly occur when a lender, such as a bank, does not have the ability to roll over loans (see [Acharya, Shin, and Yorulmazer \(2011\)](#) or [Allen and Gale \(2000\)](#)). One alternative for the bank is to sell its loans to healthier banks. If loans are liquid assets with a large market—if there is no specificity between lender and borrower – there should be no discount from fundamental value in such sales. Because the real asset stays with the original borrower, there will be no real or financial fire sale. Discounts from fundamental value on sold loans can, however, be large if special knowledge is required to make a loan or special expertise is required to recover payment (see [Diamond and Rajan \(2001, 2005\)](#)) and there is too little financial intermediation capacity in the market among those with similar knowledge or expertise to take the loans over. Even if the loan sales market is competitive, the limited cash available with knowledgeable banks for loan purchases puts an upper limit on what can be paid for sold loans. A shortage of available, knowledgeable liquidity, sometimes termed *cash in the market* pricing, would mean that even though the value of the loan is high in the hands of the original lender, its realized value in a loan sale is lower and depends on available financial intermediation capacity (see [Allen and Gale \(1994\)](#) for an early exposition and [Allen and Gale \(2005\)](#) or [Brunnermeier and Sannikov \(2013\)](#) for comprehensive reviews). Here, any discount on the sold loan relative to its value in the originator's hands is a pure *financial fire sale discount*, since the real asset stays with the original borrower.

These channels of value loss are not mutually exclusive. For example, when a bank fails, its solvent borrowers could also be called upon to repay their loans, especially if they have borrowed short term. Clearly, those borrowers that have cash or liquid assets will be able to repay the full face value of their borrowing easily. In contrast, the capacity of illiquid borrowers to repay will depend on their ability to secure new financing from elsewhere. Even though a borrower may have the internal equity to continue rolling over loans from the original bank, once that bank is short of financing and has to recall loans, there may be few financiers that can match its lending skills. If so, only a fraction of the original loan may get refinanced—effectively a financial fire sale as the original loan is “sold” for a fraction of its value (see [Diamond and Rajan, 2001](#)). Because the borrower cannot refinance fully, borrower assets may be seized and sold to second-best users at a discount to their value in best use. So in addition to a financial fire sale discount, loan recovery may be subject to a real fire sale discount as the underlying real asset changes hands.

In sum, a loss in local financial intermediation capacity can lead to a loss in the value of financial assets such as loans because of a loss of fundamental value, a financial fire sale discount and any real fire sale discount. The consequent depressed value of financial assets in the local economy can lead to a contagion of bank failures and a widespread slowdown in real activity (see, for example, [Allen and Gale, 2005](#); [Bernanke, 1983](#); [Dell'Arcidia, Detriagache, and Rajan, 2008](#); [Diamond and Rajan, 2005](#); [Klingebiel, Kroszner, and Laeven, 2007](#); [Ramcharan, Verani, and Vandenheuevel, 2016](#)).

To examine the impact of changes in local financial intermediation capacity on the value of financial assets, we analyze data on failures of nationally chartered banks in the United States in the period leading up to the Great Depression—between 1920 and 1927. Bank failures before the Depression were often driven by a common source of distress, agricultural loans gone sour, allowing us to construct a comprehensive and comparable dataset on failed banks. Bank receivers were enjoined to recover bank assets “as early as practicable” and after obtaining a court order, this disposition of assets occurred through the forced sales of assets into the local area for most of the 1920s ([Upham and Lamke, 1934](#), p. 24).²

With the onset of the Depression, the number of bank failures mounted significantly within a relatively short period. The sources of economic distress were more varied in the 1930–1934 period, and authorities took actions to prevent fire sales. Nevertheless, the sheer number of failures provides another rich laboratory to study the importance of financial intermediation capacity and to undertake robustness tests of our underlying thesis.

Historical institutional features allow us to overcome many of the traditional hurdles associated with measuring

¹ See [Benmelech and Bergman \(2011\)](#), [Coval and Stafford \(2007\)](#), and [Shleifer and Vishny \(2011\)](#) for comprehensive reviews.

² Observers of the time noted that “It is a truism that at a forced sale it is usually impossible to secure more than a fraction of the thing sold, and all receivership sales are more or less of the “forced” variety. In so far as farms and chattels of various sorts must be disposed of during receivership, it may be expected that losses will result” ([University of Nebraska, 1931](#), p. 45).

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