Relationship Lending: That Ship Has Not Sailed for Community Banks

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Abstract: We provide direct evidence of the value to banks arising from relationship lending by estimating the market premium placed on banks' small business loan portfolios. We find that small commercial and industrial (C&I) loans add value both in absolute terms and relative to the value contributed by larger C&I loans. The value-enhancing effect of small business loans is observed primarily at small community banks, and it was present during the Great Recession as well as during periods of more normal economic conditions. The evidence is consistent with a positive role played by small banks making relationship-based loans to small firms.

Keywords: Small business lending, relationship lending, bank value, community banks, commercial and industrial (C&I) loans, commercial real estate (CRE) loans
JEL Codes: G20, G21, G28, G30

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1. Introduction

The development of long-term bank–firm relationships should provide benefits by reducing informational asymmetries, particularly when the borrowers are smaller, more informationally opaque firms. Less clear, however, is how these benefits are allocated between the lenders and the borrowers. While opaque, privately held small and medium enterprises (SMEs) can benefit from increased credit availability on better terms, relationship lenders potentially can exploit their informational monopoly over these firms by subjecting them to "hold-up" costs, whereby lenders extract the benefits for themselves by making loans on noncompetitive terms to informationally captured borrowers. Although an extensive literature has established that such borrowers tend to accrue substantial benefits, little direct evidence exists about the value of lending relationships to lenders. Instead, studies focusing on benefits to lenders tend to provide only indirect evidence about the value-enhancing effects of lending relationships on banks.

Specialized knowledge, such as industry-specific or the soft information central to relationship lending, can enhance the performance of specialized lenders (see, for example, Blickle et al. 2023; Blickle et al. 2024). While relationship lenders can earn information rents by exploiting an informational monopoly and by using the soft information to improve both ex ante loan application screening and ex post borrower monitoring, they also have offsetting costs associated with producing the soft information and undertaking borrower monitoring that is at the core of the comparative advantage associated with a specialization in relationship lending. Because banks, like other firms, are profit maximizers, to add value relationship lenders need these rents from their information monopoly to exceed the information production costs.

Moreover, even though relationship lending to small firms may have been profitable in the past, the banking environment has evolved (and continues to evolve) in ways that may have weakened the comparative advantage of relationship lenders. For example, bank consolidation, tightened bank regulation, and technological advances have encouraged a shift from a reliance on soft information toward hard (quantifiable) information, such as the increased use of credit-scoring models for loan originations, that may have sharply reduced the use and profitability of soft-information-based relationship lending.[1] Furthermore, such changes have increased competitive pressures, both within the banking sector and from nonbank lenders, such as FinTech lenders, finance companies, and Business Development Corporations. Still, some studies argue that a focus on relationship lending by well-managed community banks remains an economically viable strategy (for example, DeYoung et al. 2004; Beck et al. 2018; Chiorazzo et al. 2018).

Whether, or to what degree, relationship lending enhances the value of a banking organization, and thus its viability, is an important empirical question yet to be answered clearly in the literature. This study addresses this question by focusing on market premiums/discounts associated with banks' small business loan portfolios, thus providing direct evidence of the value to banks of relationship lending. Because the great majority of U.S. banks, especially the smaller community banks that are more actively involved in relationship lending, are not publicly traded, we focus on the transaction prices for a set of target banks sold in merger and acquisition (M&A) deals to estimate the relationship between the book and market values of bank small business loan portfolios. Importantly, in addition to the absolute effects we also consider the relative

[1] See Jagtiani and Lemieux (2016) for an overview of trends, challenges, and opportunities in the small business lending sector.

effects, comparing the value enhancement of small loans with large loans at the same banks that have the same management expertise and face the same market conditions and marginal cost of funds. We also consider a much larger sample of publicly traded banks using their stock market values to confirm the results from the M&A sample that includes smaller bank targets that are more likely to engage primarily in relationship lending.

The results from our cross-sectional (M&A sample) estimations suggest that small commercial and industrial (C&I) loans command a 23 percent purchase premium over their book values for the target community banks sold in M&A transactions during the 1994–2021 period. The value-enhancing effect of C&I loans comes primarily from the smallest size category of C&I loans, those with original amounts of $100,000 or less, which are the most likely to be relationship-based. For those loans, the acquisition price premium is an even larger 39 percent of their book values. Moreover, because small C&I loans add value to community banks *relative to* large C&I loans that exceed $1 million, the price premium cannot be easily attributed to an overall bank premium paid by the acquirer. Similarly, the results from our panel estimations for publicly traded banks point to a 31 percent market premium associated with small C&I loans with original values of $100,000 or less. The premium, however, materializes exclusively when these loans are extended by community banks, particularly small community banks with book assets of less than $2 billion that are more likely to rely on relationship lending rather than the use of credit-scoring models.[2] Furthermore, because they are more transactional and tend to rely on collateral rather

[2] Throughout the paper, we use the terms *banks*, *banking organizations*, and *bank holding companies* interchangeably, and define *community banks* as those with total assets of less than $10 billion (see https://www.federalreserve.gov/supervisionreg/topics/community_banking.htm).

than relationships, small CRE loans do not appear to enhance the market value of community banks more than do large CRE loans.

Notably, we observe the value-enhancing effect of small business lending not only under normal economic conditions, but also amid the 2007–2009 Global Financial Crisis (GFC), a period when access to credit was critical for SMEs, consistent with the value of soft (private) information emanating from improved ex ante screening and ex post monitoring associated with the relationship lending model. Consequently, relationship lending to small businesses benefited community banks during the GFC, helping them protect their franchise values during the most severe recession in the United States since the Great Depression.

Moreover, we find no evidence that the evolution of the banking environment during our sample period weakened the value-enhancing effects of relationship lending. One explanation for this result is that most of the innovations were related to improving and expanding the use of hard information rather than impacting the use of soft information associated with relationship lending. For example, while Gopal and Schnabl (2022) document the sharp growth in small business lending by finance companies and FinTech lenders following the GFC, He et al. (2022) show that the competitive response to the growth of the FinTech sector by traditional banks was an increase in IT investment in the form of software spending that improves automating and information processing technology, that is, handling the hard information most relevant for transactional lending, where FinTech lenders have a comparative advantage, rather than communications IT that is more relevant for relationship lending. Thus, the competitive pressures intensified on hard information (transactional) lending, such as credit scoring, rather than on small bank relationship lending.

Our findings underscoring the significance of small business lending in value creation for lenders, specifically community banks, contribute to the literature in several ways. First, unlike earlier studies that provide indirect evidence of the value-enhancing effects of relationship lending, we offer direct evidence by decomposing bank market valuations into premiums/discounts over the book values of the entire array of bank balance sheet items, including banks' small business loan portfolios. Second, we examine the value of small business lending to banks by studying the acquisition purchase price information contained in M&A transactions and then confirming our results using stock price information of publicly traded banks. Considering that many acquired banks tend to be smaller community banks that are privately held, remarkably consistent findings from the two distinct yet complementary samples over the same time period substantially enhance the validity of our results, providing a more comprehensive and cohesive picture of the value of small business lending to community banks. Third, we show that subsequent to bank acquisitions in which small C&I loan portfolios are valued at a premium, the acquirers grow small business loans faster than for a matched sample of non-acquirers, consistent with the premiums paid by acquirers reflecting their perceived value of the small business relationships and lending expertise of the targets.

Finally, we build on earlier research highlighting the adverse effects of the GFC on banks' loan portfolios and present the first direct evidence that small business loans, unlike other loan categories, played a pivotal role in safeguarding the franchise values of community banks at the height of the financial turmoil, thus further highlighting the importance of relationship lending for community banks.

In what follows, Section 2 provides a brief discussion of relationship lending, emphasizing how and why it might add value to a banking organization and summarizing the literature that investigates the sources and magnitudes of any such value. Section 3 discusses the data and the specifications we employ in our empirical tests. Section 4 presents and discusses the empirical results. Section 5 concludes.

2. Background

Much of the literature on relationship lending focuses on asymmetric information problems associated with SMEs that are informationally opaque compared with large firms that are much more transparent. Small firms often have little or no collateral and, in many cases, are relatively young, lacking an extensive history from which future performance can be extrapolated. Because of their small size and the absence of substantial public information about their quality, such firms have virtually no access to external funds from national markets, such as through the issuance of commercial paper, bonds, or publicly traded equity. Therefore, small firms tend to depend primarily on banks for external funds. However, banks are not well informed about the credit risk associated with these informationally opaque firms when they receive an initial loan application. Therefore, the formation of bank–firm relationships requires that banks invest in acquiring and processing information, as well as in subsequently monitoring the activities of the firms to which they decide to lend.

Over time, the borrowing firm develops a private reputation with its lender based on the accumulated payment history of the borrower and other information gleaned from bank-monitoring activities. For example, a bank–firm relationship typically involves the bank providing various additional financial products and services to the borrowing firm. Such cross-

selling of financial products and services to relationship borrowers facilitates the information-acquisition process of banks and strengthens the implicit long-term commitment to the relationships, in addition to enhancing bank revenues.

How might small business lending enhance bank value? First, relationship lending, unlike transactional lending, provides the bank with the opportunity to exploit the private information it acquires during the course of relationships.[3] Second, the bank can benefit from its opportunities to cross-sell additional products and services, such as relatively inexpensive core deposit services and merchant banking services, to its relationship borrowers. Third, the value to banks from relationship borrowers reflects not only the profitability from current business with these customers, but also the profits that might accrue from future opportunities to continue and broaden the menu of offerings provided to these customers as the firms expand in size and scope.

A relationship bank can earn rents from informationally captured firms by exploiting the proprietary (and superior) information acquired through repeated interactions to measure more precisely the credit risk of these firms. It does so by charging an interest rate that is higher than justified by the level of credit risk an informed lender perceives yet lower than the interest rate other potential lenders would charge to compensate for the added risk associated with having less information about the firm. Thus, the firm has an incentive to remain with the relationship bank rather than defect and begin a new relationship with another lender, given that establishing new lending relationships can be costly and time consuming. Consequently, the hold-up costs imposed on these relationship borrowers enhance bank profits.

[3] Boot (2000) provides an overview of the issues associated with relationship lending by banks.

At least partly offsetting these benefits for banks are the costly information collection and processing activities required for relationship-based finance, especially given the expense associated with screening and monitoring SMEs. In particular, the advantage to the relationship bank arises from the opportunity to collect "soft" information, which is more difficult and more costly to verify, about smaller, relatively opaque firms, rather than the more widely available, less costly, and easier to evaluate "hard" (quantifiable) information available to potential lenders about larger, more transparent firms. Only the additional revenues received by a relationship bank beyond the compensation for its information production and monitoring efforts would add value for that bank.

By contrast, much of bank lending is transactional in nature.[4] For example, many large banks, and some smaller banks as well as FinTech lenders, often lend to small firms using credit-scoring models, basing their loan decisions on quantifiable information rather than on private, more qualitative information acquired through direct interaction with the firm. Instead of making more subjective judgments based on direct interactions with a small firm, credit scoring applies statistical methods to quantifiable data, summarizing borrower characteristics to produce a score that can be used to evaluate the likelihood of repayment. Even though credit scoring can be applied to many small firms, lending to large firms remains quite different from lending to small firms because large firms tend to be more established, and lenders typically can evaluate more precisely the credit risk of the firm by using public information. Other transactions-based lending technologies, such as fixed-asset lending, are unlikely to benefit meaningfully from bank–firm

[4] See Berger and Udell (2006) for a discussion that classifies bank-lending technologies into relationship lending and five types of transactional lending: financial-statement lending, asset-based lending, factoring, fixed-asset lending, and small business credit scoring.

relationships based on private information, since the technology for valuing collateral is relatively straightforward. Rather, the benefit to banks tends to arise primarily from economies of scale. For example, CRE lending to larger firms, which relies primarily on hard-information technology (such as appraisal values) as well as "originate-to-securitize" banking practices centered on relatively informationally transparent loans, may grant large banks an economies-of-scale advantage over smaller banks. This advantage, as Berger and Black (2011) highlight, manifests in a value-enhancing comparative edge for large banks.

For the reasons outlined earlier, a bank can expect to receive greater value from an investment in forming and maintaining a relationship with a small firm than with a large, more transparent firm. And because large banks have greater potential to benefit from economies of scale in transactional lending, smaller banks would be expected to specialize in relationship lending, while larger, more complex banking organizations would be expected to specialize in transactional lending. Supporting this argument, Cole et al. (2004) find that large banks use standard criteria, whereas small banks use information about the character of the borrower in their small business lending decisions. However, the actual distinction affecting decision-making practices is not necessarily bank size, but rather the organizational structure of the banking organization. For example, Stein (2002) argues that large hierarchies are better at processing hard information, while a decentralized structure is more conducive to using soft information, leaving the large hierarchical banking organizations, which tend to suffer from organizational diseconomies, at a comparative disadvantage in processing soft information. Similarly, Berger and Udell (2002) emphasize the agency problems associated with hierarchal organizational structures, especially for dealing with the soft information upon which relationship lending is

based. In general, the literature concludes that small banks may have an advantage over large banks in relationship lending (see also, for example, Carter et al. 2004; DeYoung et al. 2004; Berger et al. 2005).

While the development of long-term bank–firm relationships certainly has the potential to provide benefits through a reduction in informational asymmetries associated with small opaque firms, the allocation of those benefits between the lenders and borrowers is unclear. In fact, previous studies establish that long-term lending relationships between banks and firms are valuable to small firms in terms of increased credit availability and protection against adverse credit shocks (for example, Petersen and Rajan 1994; Berger and Udell 1995; Cole 1998). More recently, Bharath et al. (2011) and Prilmeier (2017) find that lending relationships benefit small opaque firms via generally more favorable loan contract terms. And, even for large firms, the announcement of an origination or the renewal of a major bank loan has been shown to be a positive signal to the stock market (for example, James 1987; James and Wier 1990). Similarly, the termination (or increased probability of termination) of a lending relationship adversely affects a borrower's market value (for example, Slovin et al. 1993; Dahiya et al. 2003).

On the other hand, there is relatively little direct evidence of the value of lending relationships to lenders. Instead, studies focusing on the potential benefits to lenders tend to offer only indirect evidence of the value-enhancing effects on banks. For example, even if lenders can leverage their informational advantage over relationship borrowers, it remains unclear whether the resulting "hold-up" revenues more than compensate for the costly information collection and monitoring. Similarly, relationship lenders may share the benefits of cross-selling additional (current and future) products to relationship borrowers through discounted pricing. In terms of

future business opportunities, Bharath et al. (2007) find that relationship lenders are much more likely than non-relationship lenders to provide future loans to their borrowers. This is especially true for smaller, unrated borrowers that suffer from greater informational asymmetry.

The most likely way that banks can earn monopoly rents from informationally captured relationship borrowers is by increasing loan rates as the duration of the relationship lengthens. However, because the cost of monitoring decreases as a relationship progresses over time, a lender still can capture some of the value created by a relationship even if interest rates do not rise with the duration of the relationship. In fact, Petersen and Rajan (1994) find evidence consistent with banks capturing relationship value in this way. By contrast, Berger and Udell (1995) find that interest rates decline as relationships progress, although the important point for value creation for lenders is whether interest rates decline slower than the decay in costs of information collection and monitoring.[5]

By contrast, several studies find evidence that lenders raise interest rates as relationships progress, consistent with lenders exploiting the lock-in effect from having an informational monopoly over relationship borrowers. For example, Degryse and Van Cayseele (2000) find that interest rates rise with the duration of bank–firm relationships, although this effect is moderated to the extent that the relationship exhibits greater scope in terms of the firm purchasing additional products from the lender.

[5] While Bharath et al. (2011) also find that loan spreads tend to decline with repeated borrowing from the same lender, especially for the relatively opaque borrowers, their loan sample focuses on syndicated loans to publicly traded firms rather than on smaller bank-dependent firms that are more likely to be subject to rent extraction from informational capture.

Of course, before a lender can exploit the lock-in effect, it must entice the firm to begin a relationship with the bank. Sharpe (1990) and Rajan (1992) argue that banks may initially offer below-market rates to firms, relative to their perceived credit risk, and only later be compensated by higher interest rates as the relationship progresses. Ioannidou and Ongena (2010) find such a pattern. When a firm switches to a new bank, the initial loan tends to have an interest rate substantially lower than the rates charged on comparable new loans to existing customers by the firm's new bank and its current banks. While the interest rate charged by the new bank tends to fall further during the first year of the relationship, perhaps to cement the relationship, the new bank soon begins to increase the interest rate so that the interest rate advantage from switching lenders evaporates and the firm is again exposed to hold-up costs. Moreover, this interest rate cycle is more pronounced for firms with greater potential to be exposed to hold-up costs, such as firms with greater informational asymmetries between existing lenders and potential new lenders.

Given banks' costs associated with collecting and processing information, and with monitoring borrowers subsequent to originating a loan, it is not clear that any rents extracted from relationship firms will be sufficient to provide relationship lenders with excess returns. To be value enhancing to the lender, the lending relationship must be profitable for the bank, either directly through the loans, through future business opportunities, or through cross-selling other products and services to borrowers. With respect to the profitability of the loans, Carter et al. (2004) find that small banks earn greater risk-adjusted returns on C&I loans than do larger banks, concluding that smaller banks have an advantage in small business lending based on soft information. This suggests that small business lending, at least by smaller banks, could be value

enhancing to these banks. Looking at bank–firm relationships from a different angle, Puri et al. (2017) find evidence that banks that initially establish other (non-credit) forms of relationships with their customers collect information that helps reduce default rates of future business loans to those customers.

On the other hand, Ergungor (2005) interprets his empirical results as being pessimistic about the prospect of relationship lending adding value to banks by profitably exploiting their monopoly position over small opaque firms. He uses data on small business loans made by community banks to investigate whether banks that were more actively involved in small business lending outperformed those banks that did less small business lending. He finds that for small community banks, the more active small business lenders earned lower risk-adjusted income and had less profitable business loan portfolios, although the amount of lending activity made little difference for large community banks. While issuing several caveats, he concludes that relationship loans by community banks likely do not add value to the banks. Thus, the value-enhancing extent of relationship lending to banks remains an unsettled issue.

3. Data & Methods

3.1. Data

The data for this study come from four separate sources. The primary data sources are (1) the Federal Reserve's Quarterly Consolidated Financial Statements for Holding Companies (FR Y-9C) and the Federal Reserve's Consolidated Reports of Condition and Income for individual banks (Call Reports), (2) S&P Global Capital IQ merger transaction files, (3) the Federal Reserve

Bank of Chicago's merger database for banks and BHCs, and (4) the Center for Research in Security Prices (CRSP).

We obtain balance sheet and income statement data for each bank holding company and stand-alone bank from the Y-9Cs and Call Reports.[6] The data for small business loans are obtained from the small business loan survey section of the June bank Call Reports (Schedule RC-C, Part II).[7] The Small Business Lending Survey is conducted only once per year, beginning in June 1993. Furthermore, some of the explanatory variables (for example, trading assets and liabilities) can be consistently collected only starting from 1994. The Small Business Lending Survey provides information on loans with original balances of $1 million or less in two different loan categories: commercial and industrial loans to U.S. addresses in domestic offices (C&I loans) and commercial real estate loans secured by nonfarm, nonresidential properties in domestic offices (CRE loans). In addition, information on farm-related loans with original balances of $500,000 or less is collected for two categories: real estate loans secured by farmland in domestic offices and loans to finance agricultural production in domestic offices. The survey also disaggregates these loans into three size categories based on original loan amounts: $100,000 or less, more than $100,000 through $250,000, and more than $250,000 through $1 million (more than $250,000 through $500,000 for agricultural and farm loans). The present study, however, focuses only on C&I and

[6] The BHC asset-size threshold for filing the FR Y-9C increased several times during our sample period, from $150 million to $500 million in 2006, from $500 million to $1 billion in 2015, and from $1 billion to $3 billion in 2018. To avoid the loss of observations for BHCs that did not meet the minimum asset-size threshold for filing the FR Y-9C, we calculate the BHC-level series for those BHCs by aggregating balance sheet and income statement Call Reports data across the BHC's bank subsidiaries, presuming small BHCs have little in the way of nonbank subsidiaries.

[7] Schedule RC-C, Part II is titled "Loans to Small Businesses and Small Farms." However, the data are based on the size of the loans, not the size of the borrower. Given the small size of the loans, it is safe to assume that the vast majority of the borrowers are small businesses or small farms, with many of the loans that are somewhat larger than the $1 million threshold also going to small business borrowers.

CRE loans as a form of business lending to capture the effect of bank–firm relationships on bank value.[8] Our samples include both stand-alone banks and BHCs that have multiple bank subsidiaries. The data on small business loans are available only at the individual bank level; therefore, we calculate our BHC-level small business loans by aggregating the small business loan data across a BHC's bank subsidiaries.

Since this study investigates the contribution of relationship lending to the banks' market values evident in the market premium or discount placed on small business loans held by the banks, the population of interest here depends on (1) the sample of target banks purchased in non-assisted M&A transactions and (2) the sample of publicly traded U.S. banking organizations for which market capitalization information is available. For the former, the Capital IQ merger transaction files provide both "total transaction value" (total consideration paid for the entire business, including the equity value and net assumed liabilities) and "implied equity value" of target banks paid by acquirers for 100 percent of target bank equity. Given that the majority of target banks during our sample period are privately held community banks, which are arguably more involved in relationship lending than large publicly traded banking organizations, this sample is particularly relevant for studying the value of relationship lending to banks. Capital IQ does not provide regulatory identification numbers (RSSDIDs), which are necessary to match these banks with the data from regulatory Y-9Cs and Call Reports; therefore, we exploit the Federal Reserve Bank of Chicago's merger database for BHCs and banks to obtain RSSDIDs by matching the names of targets and acquirers, their locations, and merger announcement dates.

[8] For an average bank in our sample, the portfolio share of loans to farms is typically very small, with, on average, less than 1 percent of total assets devoted to agriculture-related loans. In fact, about one-third of the banks in our sample have no small farm loans in their portfolios.

For the sample of publicly traded banking organizations, we use CRSP to retrieve the daily market price for the common stock of each banking organization and the total number of shares outstanding to calculate the average monthly market capitalization of the banking organization.

After merging market values of banks with regulatory filings, we obtain two samples for the empirical analyses in our study. The first sample consists of cross-sectional data for target banks acquired in M&A transactions. Since the transaction and implied equity values of target banks are announced at any time throughout a given year, we merge the market value data obtained from acquisition announcements with banking data from the *current* year's June reports if an acquisition is announced between July and December. If, however, an acquisition is announced between January and June, we merge the market value data with banking data from the *previous* year's June reports. The sample contains cross-sectional observations beginning in 1994 and ending in 2021. The second sample consists of annual longitudinal data for publicly traded banking institutions. While the banking data in Y-9Cs and Call Reports are measured as of the end of June, they do not become publicly available until approximately September. However, the Securities and Exchange Commission requires publicly traded banking organizations to file 10-Q forms, which tend to become available earlier for market investors. Hence, we merge June banking data with the average of the daily market values for August. For robustness purposes, we also use September market values and obtain qualitatively very similar results. The sample contains annual observations that begin in 1994 and run through the end of 2021.

We implement several filters to clean the samples. Both samples exclude (1) foreign-owned banks, (2) banks located outside the continental United States, and (3) bank observations

with negative values for assets, loans and leases, equity, and other balance sheet items. In line with earlier research (for example, Gatev and Strahan 2006; DeYoung et al. 2015), we exclude very small micro-cap banks by removing those with a book value equity of less than $10 million. Further, to mitigate the noise in stock trading and bank valuations for publicly traded banks in our sample, we require them to be actively traded. In particular, we require non-missing daily prices during the month when bank market values are computed, and we require the market values for the banks to exist for at least three consecutive preceding years.[9] For the M&A target bank sample with cross-sectional data, we remove banks that had been in operation for less than three years.[10] Following earlier research (for example, Mehran and Thakor 2011), we exclude minority acquisitions of target banks whereby acquirers purchased less than 51 percent of a target bank. For the sample of publicly traded banks with longitudinal data, we remove bank-year observations in which the bank makes acquisitions to mitigate the noise resulting from an abrupt jump in bank assets and market values, consistent with Gatev and Strahan (2006) and DeYoung et al. (2015). Additionally, we remove all observations for banking organizations in both samples with book assets greater than $100 billion to eliminate the effect on bank valuation of implicit guarantees and safety nets pertaining to too-big-to-fail banks. We also remove observations for bank holding companies with consolidated *nonbank* subsidiary assets greater than 10 percent of the total assets of the entire banking organization to avoid the potential effect of extensive nonbanking businesses on bank valuations.

[9] The results remain similar when we require two or four consecutive years of market valuations.

[10] Following DeYoung and Torna (2013), we remove banks that are less than three years old because those banks' characteristics, risk-return relationships, and, in turn, valuations differ significantly from those of relatively established banks. Importantly, the de novo banks could not yet have established long-term lending relationships with businesses.

Finally, for all variables in both samples, we remove observations with extreme values (outliers), defined as observations with values that are beyond the 99.5 and 0.5 percentiles on the tails of the distribution. After we apply these filters, our M&A target bank sample contains cross-sectional data consisting of a total of 982 acquisition target observations from 1994 to 2021, and our sample of publicly traded banks is an unbalanced panel that includes a total of 6,225 bank-year observations from 860 unique banking organizations from 1994 to 2021.

3.2. Specification

The key hypothesis tested in this study is that relationship lending in the form of small business loans held by banking organizations is value enhancing, both in absolute terms and relative to the large loans held by the same banking organizations. To test this hypothesis, we must relate small business lending activity to the market value of the banking organization. To do so, it is necessary to relate market value to either the book values of assets and liabilities or the flows of income they produce. One benefit of using book values is the ease of interpreting the estimated coefficients, with the deviation of the estimated coefficient of an asset (liability) component from one (minus one) indicating the value creation or destruction of that activity. However, income measures must be used for off-balance-sheet activities, since the notional values reported by banks are uninformative about the value of such activities.

The market value of the equity (MVE) of a banking organization is equal to the market value of on-balance-sheet assets (MVA), less the market value of on-balance-sheet liabilities (MVL), plus the net market value of off-balance-sheet (MVOBS) activities, plus the market's valuation of other characteristics (MVCHAR) of the banking organization, such as management quality and efficiency:

$$MVE = MVA - MVL + MVOBS + MVCHAR \quad (1)$$

Because market values for assets, liabilities, and off-balance-sheet activities are generally not reported by banking organizations, we must replace them with reported measures. For the most part, these are based on amortized costs, which will deviate from market values. The magnitude of the deviation depends on the economic environment at the time and the quality of the bank's portfolio.[11] Thus, dividing both sides of the equation by *the total book value of assets (TA)* to account for heteroscedasticity, we can rewrite Equation (1) empirically as:

$$MVE/TA = \sum a_i A_i - \sum b_j L_j + \rho FEE + \gamma' \boldsymbol{CHAR} + v + t + \varepsilon, \quad (2)$$

where the A_i's represent the reported values of all categories of on-balance-sheet bank assets, scaled by the book value of total bank assets, and the L_j's represent the reported values of all categories of on-balance-sheet liabilities, scaled by the book value of total bank assets.[12] *FEE*, representing total noninterest income net of service charges on deposit accounts and net gains (losses) on sales of loans, leases, and other real estate owned, scaled by the book value of assets, serves as a proxy for the value of off-balance-sheet activities. CHAR in Equation (2) represents a vector of bank characteristics, while v and t represent state fixed effects and time fixed effects when we run cross-sectional estimations using the M&A sample and bank fixed effects and time fixed effects when we run panel estimations using the publicly traded bank sample. The last term is the measurement or approximation error. This empirical framework can be used to infer

[11] Certain balance sheet items, such as securities, are reported at "fair" value rather than at amortized cost.

[12] Note that the set of asset and liability categories spans the entire balance sheet items satisfying the balance sheet identity. Since many categories are correlated with other categories, a specification that excludes some asset or liability items could suffer from severe omitted variables bias, as the estimated coefficients on the included variables would partially reflect the effects of the omitted (and correlated) categories.

market values for individual bank asset and liability categories using reported balance sheet and income data for banking organizations. Furthermore, this specification is consistent with previous studies investigating the valuation of banking organizations (for example, Kane and Unal 1990; Venkatachalam 1996; Barth et al. 1998; Flannery and Houston 1999; Kohlbeck 2004).

This specification accommodates a disaggregation of the total market premium or discount placed on banks into its components by estimating separate valuation coefficients for the individual portfolio categories of banks. In this framework, the premium or the discount (in the case of a negative premium) that the marketplaces on the respective asset category is given by ($a_i - 1$). For liabilities, the premium or the discount would be ($1 - b_j$), given that the model predicts negative coefficients on liability terms. To the extent that the a_i's and b_j's differ from unity, the activity associated with the asset or liability category can be thought of as adding value to, or subtracting value from, the banking organization. Since most of these asset and liability holdings are reported at their book values, we expect some of the estimated coefficients to deviate from (plus or minus) unity, reflecting the extent to which the book values of the on-balance-sheet assets and liabilities deviate from their market values. However, the reported values of certain asset and liability categories will be expected not to deviate from their market value. These would include categories reported at fair value, such as securities holdings and tradable assets and liabilities, as well as very short-term maturity categories, such as federal funds sold or purchased.

Why do market participants discount some on-balance-sheet assets and/or liabilities while valuing others at a premium? There are two main sources of such deviations. First, unanticipated changes in prices, interest rates, exchange rates, economic conditions, or borrower credit risk after the bank assets and liabilities have been originated or purchased can cause unrecognized (in book

values) gains and losses. Second, the economic value of unbooked intangible assets closely associated with on-balance-sheet financial instruments contributes to the market capitalization of these instruments.[13] Thus, the values of these intangible assets should be included in the market capitalization of the assets or liabilities with which they are associated, causing their market values to deviate from their book values. Examples include lending relationships and demand deposit relationships, as well as the implicit value of deposit insurance guarantees.

For our purposes, the extent of a bank's existing long-term relationships is assumed to be related to the degree to which a bank participates in small business lending. Insofar as informational asymmetries are likely to be more severe for small firms than for large firms, the use of small business loans as an indicator of long-term bank–firm relationships is appropriate. Thus, the key identifying assumption used to investigate the value of lending relationships to banks is that such value is reflected in the relative valuations of small business loans compared with the valuations of larger loans.[14]

Consequently, this study focuses specifically on the estimated values of the a_i's associated with bank holdings of small business loans, with the key hypothesis tests being whether these estimated coefficients are significantly greater than unity and whether the effects on a bank's market valuation differ significantly from the effects of large loans of the same type. If so, then small business lending adds to the market value of banking organizations, either in absolute

[13] Under Generally Accepted Accounting Principles (GAAP), intangible assets are not recorded unless they are purchased as part of a business combination transaction.

[14] It is important to note that while most large loans are made to large businesses, some large loans are made to small businesses, given the low threshold size of $1 million for small loans, and, unfortunately, we cannot identify those larger relationship-based loans. The presence of relationship-based loans in our large-loan category introduces a downward bias to the estimated size of the differential value of loans to small firms versus large firms in our estimation.

terms, relative to large loans, or both. It is important to consider the relative as well as the absolute effects because the specification better controls for the average effects of changes in the economic environment (such as business cycles, unexpected changes in interest rates, etc.) on all business loans, as well as bank characteristics such as the marginal cost of funds and management expertise that may not be fully captured elsewhere.

Although we include two categories of small business loans—C&I and CRE—our primary focus is on small C&I loans, for which repetitive loan origination decisions are more likely to be based on private information arising from long-term relationships. Small CRE loans, on the other hand, tend to be more transactional in nature, since they are a form of asset-based lending, with the real estate itself serving as collateral. Therefore, we might not expect such lending to be particularly value enhancing to the lender, other than from, for example, economies of scale. For exposition purposes, our empirical specification shows individual coefficients only on business loans (coefficients β_1 through β_4) and denotes all other assets as *OAi's*, with their respective coefficients denoted as δ_i. Furthermore, given our focus on bank assets, we put the bank liability terms on the left-hand side, which makes our dependent variable, $(MVE + \sum Lj)/TA$, a Tobin's Q measure. The resulting baseline specification (Equation 3) is as follows:

$$\text{Tobin's Q} = \begin{aligned} &\beta_1 LGC\&I + \beta_2 SMC\&I + \beta_3 LGCRE + \beta_4 SMCRE + \sum \delta_i OA_i \\ &+ \varphi FEE + \lambda' \boldsymbol{CHAR} + v + t + \varepsilon \end{aligned} \tag{3}$$

For robustness, we also experiment with specifications in which the liability items (*Li's*) are on the right-hand side and the dependent variable is MVE/TA. Such a specification (Equation 4) offers insights into the market premia/discounts associated with various liability categories.

$$MVE/TA = \begin{array}{l} \gamma_1 LGC\&I + \gamma_2 SMC\&I + \gamma_3 LGCRE + \gamma_4 SMCRE + \sum \theta_i OA_i - \sum \mu_i L_i \\ +\vartheta FEE + \rho' \boldsymbol{CHAR} + v + t + \varepsilon \end{array} \quad (4)$$

In Equations (3) and (4), we include large C&I (*LGC&I*) and large CRE (*LGCRE*) loans as well as small C&I (*SMC&I*) and small CRE (*SMCRE*) loans, each scaled by total book value of assets. After estimating Equation (3), we test if $\beta_2 - \beta_1 = 0$ or $\beta_4 - \beta_3 = 0$ to gauge whether the estimated coefficients on *SMC&I* or *SMCRE* reflect added value above and beyond the corresponding large C&I or CRE loans. We implement similar tests for Equation (4).

Given the cross-sectional nature of the sample of target banks sold in M&A transactions, we cannot include bank fixed effects in our estimations, but we include time fixed effects and state fixed effects to soak up state-level macroeconomic conditions and market microstructure (for example, state-level banking regulation, competition, taxation, etc.) that may affect the purchase prices of target banks. We cluster the standard errors at the acquirer level to account for heteroscedasticity and the possibility of correlated errors, given that several banking institutions made multiple acquisitions during the sample period, consistent with Mehran and Thakor (2011). For our panel data estimations based on the longitudinal sample of publicly traded banks, we include time fixed effects and bank fixed effects, which allow us to additionally control for unobserved time-invariant bank characteristics, and we cluster the standard errors at the bank level to obtain heteroscedasticity-consistent estimators.

To make our equations operational, we need to specify and define not only the dependent variable, but also the various categories of assets and liabilities, off-balance-sheet activities, and the vector of other relevant bank characteristics. The variables used in Equations (3) and (4) are defined in detail as follows:

3.2.1 Dependent Variables

The dependent variable in our baseline specification, Equation (3), is Tobin's Q, defined as the market value of equity of the banking organization plus the bank's book debt in the form of borrowed money and deposits, subordinated notes and debentures, noncontrolling minority interests, preferred stock, and other liabilities, divided by its total book value of assets (*TA*). Earlier research extensively uses Tobin's Q as a proxy for total business or franchise value (Keeley 1990; Demsetz et al. 1996; Cronqvist and Nilsson 2003; Villalonga and Amit 2006; Mehran and Thakor 2011).[15] As an alternative to Tobin's Q, in Equation (4), we employ *MVE*/*TA* as our dependent variable, defined as the market value of equity divided by the book value of assets, consistent with Mehran and Thakor (2011). As explained in the previous sections, we use the data on bank M&A transactions to investigate the value of small business loans to smaller community banks that are mostly privately held. Therefore, for our M&A sample, the dependent variables are constructed using the "Implied Equity Value" of target banks based on the acquisition price paid by the acquirer for 100 percent of target bank equity. Furthermore, we explore whether small business loans contribute to the bank's stock market value for those banks that are publicly traded. The dependent variables in our sample of publicly traded banks are constructed using

[15] *Bank franchise value* is technically defined as bank value net of replacement cost. Keeley (1990) and Demsetz et al. (1996) empirically measure the latter as (*MVE+book debt*)/(*TA–goodwill*). Our results are very similar when we use this measure; thus, we do not report them separately. They are available upon request.

bank stock market values of equity, measured as the average of daily market values for August (or September as a robustness check), since the banking data are measured at the end of June and publicly released with a lag, as noted earlier.[16]

3.2.2 On-Balance-Sheet Assets and Liabilities

Each of the balance sheet items is scaled by the book value of total assets (*TA*). In addition to C&I and CRE loans, the asset categories include other loan categories, such as construction, land development, and other land loans (*CSTR*); one- to four-family residential loans (RES); multifamily residential loans (*MULT*); loans secured by farmland, defined as the combination of loans to finance agricultural production and other loans to farmers (*FARM)*; consumer loans, including credit card loans (*CONS*); and other loans and leases (*OTHLNS)*. The last category includes all remaining loan types, such as loans to depository institutions, foreign loans, and loans to foreign governments, and leases.

In addition to these loan categories, we include securities at fair value (*SEC*), trading assets (*TRADA*), reserves (*RESV*), net federal funds sold and securities repurchased under agreements to resell (*FF*), other real estate owned (*OREO*), premises and fixed assets (*FIX*), intangible assets (*INTAN*), and miscellaneous assets (*MiscA*), including investments in unconsolidated subsidiaries and other minor assets reported in Schedule RC-F. In addition, we include two measures of problem loans, nonperforming loans and other assets (*NPL*) and the loan loss reserve

[16] Similarly to our approach, Mehran and Thakor (2011) employ both Tobin's Q and *MVE/TA* as the dependent variable in an attempt to study the relationship between bank capital and value. Also note that apart from earlier research, Mehran and Thakor (2011) attempt to incorporate the market value of debt in lieu of the book value of debt when calculating Tobin's Q. However, as the authors acknowledge, the market value of debt is available *"for very few banks."* Therefore, they instead use the book values of debt for those banks. They further acknowledge that for banks that have information on their market value of debt and book value of debt, the difference between the two is *"minimal"* and *"the ratio of debt market to book values is close to 1."*

(*LLR*). Liability components include core deposits (*CORE*), other deposits (*OTHDEP*), trading liabilities (*TRADL*), and all other liabilities (*OTHLIAB*).

3.2.3 Off-Balance-Sheet Activities and Other Bank Characteristics

Off-balance-sheet activities are proxied by the fee income (*FEE*) generated by these activities, and the variable is scaled by the total book value of assets. This variable includes total noninterest income less any items not attributable to off-balance-sheet activities, such as service charges on deposit accounts, net gains on sales of loans and leases, and net gains on sales of other real estate owned.

The set of other bank characteristics includes bank asset concentration within the banking organization (*LHERF*) and operating (noninterest) expense relative to operating income (*OPEXPtoOPINC*) as a proxy for bank operational efficiency. For consistency of the estimated equation with Equation (1), one can think of each variable in the vector MVCHAR as having been multiplied by *TA*, so that *TA* cancels out when all variables in the equation are scaled by *TA*. As a part of bank characteristics, we also include size dummy variables that sort bank total assets into deciles.

As noted, a subset of the on-balance-sheet asset and liability categories are reported at fair values that should approximate their market values. Thus, the coefficients on such assets and labilities are expected to be equal to one and minus one, respectively. We therefore restrict the estimated coefficients on *RESV*, *SEC*, *FF*, and *TRADA* to be equal to one and the coefficient on *TRADL* to be equal to minus one. We were not able to reject these restrictions, as none of the

estimated coefficients on those variables in the unrestricted specification was statistically significantly different from one (minus one for *TRADL*).

For the estimations depending on the M&A sample only, we also control for merger-specific variables that are commonly used in the M&A literature and that are deemed to affect bank valuations, such as acquisition percentage (*ACQ%*) and relative size of target firm compared with the size of acquirer (*RELSIZE%*), as well as the percentage of cash offered in the total purchase price of a target bank (*CASH%*).

Table 1 shows the distribution of bank observations by asset-size class and across two sub-periods: GFC versus non-GFC periods. As Table 1 makes clear, the vast majority of observations in both of our samples, especially in our M&A sample, belong to community banks. Furthermore, as Panel A of Table 1 indicates, while there were some acquisitions during the GFC period (2008 through 2010), the overwhelming majority of the deals took place during the non-GFC period. For instance, we have full information for only 34 community banks and four larger banks that were acquired during the GFC. The lack of bank acquisition activity during the crisis makes it difficult for us to differentiate between the effects of small business lending on target bank values during this period versus the effects during the noncrisis period. Therefore, we focus on the full sample period for M&A transactions analyses and use only the sample of publicly traded banks to explore the value of relationship lending during the GFC versus the non-GFC periods. Table 2 presents information about the number of small business C&I (CRE) loans as a percentage of total C&I (CRE)loans. The information encompasses both the proportions of total small business loans and the breakdown into sub-loan-size categories. Table 2 reveals that small C&I loans constitute

64 percent of all C&I loans for an average community bank sold in M&A deals, and 59 percent for an average publicly traded community bank in our sample, suggesting that (1) small C&I loans dominate our banks' C&I loan portfolios and (2) a typical community bank tends to be more focused on small C&I loans. As for CRE loans, while small C&I loans comprise the majority of our banks' C&I loan portfolios, small CRE loans tend to play a lesser role in our banks' CRE loan portfolios. They constitute only 43 percent to 48 percent of all CRE loans in our samples, and CRE loans of $100,000 or less account for only about 4 percent.

4. Estimation Results

4.1. Results from Cross-sectional Estimations Based on M&A Target Bank Sample

We start our analyses by investigating how small business loans contribute to transaction multiples of target banks sold in M&A deals. One of the main advantages of focusing on M&A transaction multiples is that we can observe market premiums/discounts for smaller, non-publicly traded community banks, which are the most likely to be involved in relationship lending with smaller businesses.

Table 3 displays the descriptive statistics both for the 982 target banks sold in M&A transactions from 1994 to 2021 and for our sample of publicly traded banks for comparison. The summary statistics in Table 3 are obtained after all the filters are applied and all outliers are removed, as described in Section 3.1. The definition of each variable is provided in Appendix 1. The average values of both Tobin's Q and *MVE*/*TA* for target banks are about 1.06 and 0.18, respectively, which are larger than the average values of Tobin's Q (1.02) and *MVE*/*TA* (0.14)

derived from stock market information for publicly traded banks.[17] This is not surprising, since valuations derived from transaction multiples based on M&A transactions tend to result in a higher multiple range than valuations based on stock market multiples for at least two reasons: (1) the control premium paid by an acquirer when purchasing a target firm and (2) anticipated synergies as a result of an acquisition (Rosenbaum and Pearl 2013). Furthermore, the average asset size of $2.19 billion for target banks acquired (the median is $518.70 million) is substantially smaller than that of $5.85 billion (median of $1.8 billion) for the publicly traded banks, suggesting that banks sold in M&A transactions in our sample are predominantly community banks, the majority of which are indeed privately held.[18] Hence, we are able to explore the value of small business loans to smaller, relatively opaque community banks that are the most likely to engage in relationship-based lending to small businesses.

Table 4 displays the results from the cross-sectional estimation of Equation (3), with Tobin's Q as the dependent variable (Columns 1 and 2), as well as Equation (4), with *MVE*/*TA* as the dependent variable (Columns 3 and 4). The specifications across all columns in Table 4 include not only time fixed effects but also state fixed effects. For completeness, Columns 1 and 3 show the results for all target banks in our sample, regardless of their asset size. However, we focus our discussions primarily on community banks (Columns 2 and 4), which represent 96 percent of all acquisitions in our sample.[19] In Table 4 and throughout the rest of the paper, in addition to using the "stars" to indicate that a coefficient is statistically different from zero, we use "*a*," "*b*," and "*c*"

[17] Demsetz et al. (1996) also report an average Tobin's Q of 1.02 for publicly traded U.S banks, suggesting that the market value of assets for an average publicly traded bank exceeds the book value of assets, on average, by just 2 percent.

[18] Publicly traded target banks constitute 36.76 percent of all acquisitions in our sample.

[19] As shown in Table 1, our sample includes only 39 large-bank acquisitions (assets>$10 bil.).

superscripts to indicate a statistical difference from unity for balance sheet asset items at the 1 percent, 5 percent, and 10 percent significance level, respectively. Likewise, we employ "*d*," "*e*," and "*f*" superscripts to indicate a statistical difference from minus unity for balance sheet liability items at the 1 percent, 5 percent, and 10 percent significance level, respectively.

The point estimates for the loan categories shown in Table 4 tend to be very close to unity, although a few of the estimated coefficients do differ significantly from unity, as indicated by the superscripts. Focusing on Equation (3) with Tobin's Q as the dependent variable, Column 2 in Table 4 shows that the estimated coefficient on *SMC&I* is 1.2097***[a], suggesting a 21 percent premium in M&A transactions, whereas the coefficient on *LGC&I* is smaller and not statistically different from unity, indicating no appreciable added value by large C&I loans. To evaluate the *differential* value added by *SMC&I* compared with *LGC&I*, we test if the difference in the coefficients on *SMC&I* and *LGC&I* is statistically significant (shown at the bottom of Table 4). The estimated difference, 0.2161**, is not only statistically significant, but also economically significant, suggesting that small C&I loans command, on average, a 22 percent purchase price premium relative to large C&I loans for the community banks in acquisition transactions. This is consistent with community banks' expertise in originating and monitoring small C&I loans adding to their market values, as these banks tend to be in a better position to exploit the private information accumulated over the course of relationships with smaller, opaque borrowers. Unlike small C&I loans, small CRE loans, being transactional (hard information) loans, are not associated with any market premium either in absolute terms or in comparison with large CRE loans. Large CRE loans, on the other hand, are valued at approximately $1.05 per dollar of their book value,

differing significantly from unity (as indicated by the superscript *b*) perhaps arising from economies of scale.

With respect to the other components of the asset side of the balance sheet, *CSTR* has estimated coefficients that are greater than unity, indicating that construction and development loans accrue value to banking institutions, perhaps arising as compensation for their higher riskiness. By contrast, *MULT* and *INTAN* have coefficients that are statistically smaller than unity, suggesting that these assets contribute to banks' acquisition price less than they contribute to their book values.

With respect to measures of problems in the asset portfolio, the estimated coefficients on other real estate owned (*OREO*), nonperforming loans (*NPL*), and loan loss reserves (*LLR*) suggest a value-destroying effect, as expected, signaling further potential loan problems. Off-balance-sheet activities, proxied by *FEE*, have no significant effect on bank values for community banks, which is not surprising, given that community banks' involvement in off-balance-sheet activities is substantially limited. On the other hand, increased operating expenses relative to total income (*OPEXPtoOPINC*), serving as a proxy for operational and managerial inefficiency, significantly reduce bank values.

The results of estimating Equation (4) with *MVE*/*TA* as the dependent variable are generally consistent with the baseline results in that they confirm the value-enhancing effect of small C&I loans for community banks (Column 4 of Table 4). While no significant acquisition purchase price premium is associated with large C&I loans, each dollar of small C&I loans (*SMC&I*) originated by community banks results in a 22 percent acquisition price premium, adding 24 cents per dollar of small loans more to overall bank value compared with large C&I

loans. One of the advantages of Equation (4) is that it allows us to observe the effects of various bank liabilities on the implied bank equity values. As seen in Column 4, each of the estimated coefficients on the liability terms is negative, providing suggestive evidence for a well-identified empirical specification. One notable finding, as denoted by superscript "*d*," is that each dollar of core deposits (*CORE*) on a bank's balance sheet reduces its implied equity value by only 92 cents, consistent with acquirers perceiving core deposits as a valuable component of liabilities that provides banks with stable and relatively inexpensive funding and perhaps helps build relationships with customers.

During our sample period (1994-2001), the banking sector went through substantial technological changes, resulting in the emergence and proliferation of online banking platforms and fintech nonbank lenders (Gopal and Schnabl 2022). Hence, it is plausible that the nature of relationship lending, and hence the associated market premium, might have changed over time. To address this issue, we split our sample into two subperiods to compare the results from the earlier period [1994-2009] with the relatively late period [2010-2021]. Designating the year of 2010 to divide the sample into the two subperiods results in roughly the same number of observations in each subperiod. To make the comparisons between the two subsamples, we construct the second sample period dummy variable, *Scnd,* that takes the value of 1 if bank-year observations belong to the sample period between 2010-2021, and 0 otherwise, and interact *Scnd* with all the regressors in a full sample regression. Column 1 in Table 5 displays the partial results from (Eq.3), showing only the variables of interest for the sample of target community banks acquired during the full sample period, 1994-2021. Columns 2 and 3 show the absolute effects evaluated during the first half and second half of the sample period, respectively.

The results show that the interaction terms do not consistently carry statistically significant coefficients, suggesting an absence of evidence for a structural change in the contribution of relationship lending to bank values over time, although the point estimates are slightly smaller for the second subperiod. For instance, a dollar of SMC&I contributes $1.22 and $1.17 to bank acquisition value during the first and second halves of the sample period, respectively, with the difference not being statistically significant. In both subperiods, the contribution of SMC&I loans to bank values was beyond that of large business loans, LGC&I loans, as the tests at the bottom of the table indicate. For robustness, we also re-estimated the model removing all bank-year observations during the financial crisis period. The results (not shown, but available upon request) remain the same. Overall, these findings suggest that, at least in our sample, the emergence of FinTech lenders has not eliminated community banks' comparative advantage in relationship lending and their ability to extract value from those relationships. This is unsurprising in that the technical changes and FinTech lending tended to be related to hard information lending rather than the use of soft information central to relationship lending (for example, He et al. 2022).

To further explore the value of small business lending to community banks, we decompose small C&I and small CRE loans into two subcategories for each loan type: (1) C&I and CRE loans with original amounts of $100,000 or less, denoted as *SM1C&I* and *SM1CRE*, respectively, and (2) C&I and CRE loans with original amounts of more than $100,000 through $1 million, denoted as *SM2C&I* and *SM2CRE*, respectively.[20] The partial results of estimating

[20] As we mention in the Data section, the Small Business Lending Survey disaggregates loans into three size categories based on original loan amounts: $100,000 or less, more than $100,000 through $250,000, and more than $250,000 through

Equations (3) and (4) with small business loans split into subcategories are shown in Table 6. Focusing on estimates from Equation (3) for community banks (Column 2), we observe that the smallest C&I loans, *SM1C&I*, are associated with the largest acquisition price premium. In particular, C&I loans with original amounts of $100,000 or less are associated with an acquisition premium of 39 percent of book value and a statistically significant 39 percent premium relative to large C&I loans, as indicated at the bottom of Table 6. By contrast, C&I loans with original amounts of more than $100,000 through $1 million (*SM2C&I*) provide a 17 percent premium. The small CRE loans (either *SM1CRE* or *SM2CRE*), on the other hand, do not command any acquisition price premium over their book value, nor do they generate any value relative to large CRE loans. The estimates from Equation (4) are qualitatively similar (Column 4). The finding that the smallest category of small C&I loans is associated with the largest market premium (35 percent) in bank acquisition transactions provides further evidence consistent with relationship lending to small businesses enhancing the value of community banks.

As a follow-up analysis, we investigate if acquirer banks continued/maintained the relationship lending following the acquisitions of target banks. The rationale here is that if an acquirer pays a significant premium for the target's small business loan portfolio, it suggests that the acquirer values the lending relationships of the target, and, therefore is likely to continue growing those relationships after the acquisition. Thus, it would be inconsistent with our story to

$1 million. For our purposes, it is important to isolate the value-enhancing effect of the smallest loans ($100,000 or less) because for community banks, those loans are the most likely to be relationship-based. We therefore put those loans into a separate category. As for the loans with original amounts greater than $100,000, we experimented with putting them in two separate size categories (more than $100,000 to $250,000, and more than $250,000 to $1 million) or combining them into one size category (more than $100,000 to $1 million), and we found that in most of our analyses, those loans do not add value to banking organizations, regardless of the groupings. To avoid unnecessary clutter in the tables, we use the combined size category for those loans.

find that acquirer banks deemphasized, relative to other similar non-acquirer banks, small business lending following acquisitions. To investigate this, we calculated the total amounts of small business loans in the combined entity (target plus acquirer in a "forced merger") prior to acquisition at [t-1] and compared it with that after the acquisition at [t+3], where [t] represents the year of acquisition. To properly benchmark the compound annual growth rates in business loans from [t-1] to [t+3] at these combined entities, we construct a control group by matching these banks with non-acquirer banks based on the closest asset size (*Log_Assets*) and SMCI ratio (*SMCI*/*CI*) as of [t-1]. In order to eliminate the confounding effect of serial acquirers from our analysis, we remove the bank-year observations of banks that make multiple acquisitions within three years.

Table 7 shows the median compound annual growth rates (CAGR) in small business loan categories from [t-1] to [t+3] at the combined merged entities versus the matched control banks. Total *SMC&I* loans grew, on average, by 5.59% per annum from [t-1] to [t+3] following acquisitions. During the same time period, those loans grew, on average, by 3.01% at matched control banks. The difference of 2.58% growth is statistically significant, suggesting that acquirers more aggressively expanded their relationship-based small business loan portfolios compared with their closely matched peers, which is consistent with the finding that they paid premiums for the targets' relationship loan portfolios in M&A deals. If we consider the subcategories of SMC&I loans, i.e., SM1C&I and SM2C&I loans, we observe similar results. In contrast, the growth rate in small CRE loans at the combined merged entities was more modest, with the difference from the matched control banks not being statistically significant.

4.2. Results from Fixed-effect Estimations Based on the Sample of Publicly Traded Banks

While our results from the sample of bank acquisitions indicate clearly that the acquirers are paying a premium for the target bank small business loan portfolios, it is conceivable that such a premium may be affected by the transfer of control rights and potential anticipated merger synergies, thus indicating an overvaluation of small business loans themselves in the merger transactions, although that would also affect the estimates for large loans, which is why we also look at the differential effects. To further alleviate such concerns, we analyze the contribution of small business lending to bank stock market valuations using a sample of publicly traded banks with observable market values. Since we use longitudinal data in addition to the set of explanatory variables discussed earlier, each estimated equation includes not only a set of annual time dummies to control for effects emanating from general macroeconomic conditions, such as interest rates, the business cycle, and changes in stock price indexes, but also bank fixed effects to control for unobserved time-invariant bank characteristics. We cluster standard errors at the bank level to account for any correlation of residuals for a given banking institution across years.

Table 8 shows the results for the variables of interest for both Equations (3) and (4). While small C&I loans do not appear to be associated with any market premium in the full sample of publicly traded banks (Columns 1 and 3), once we restrict the sample to community banks, we observe that the smallest C&I loans with original values of $100,000 or less (*SM1C&I*) are valued at premiums of 34 to 36 percent, depending on whether we use Tobin's Q or *MVE/TA* as the dependent variable (Columns 2 and 4). Furthermore, compared with large C&I loans, the smallest C&I loans produce an additional premium of about 30 percent (shown at the bottom of the table). Comparing the estimated coefficients on *SM1C&I* in Table 8 and Table 6 reveals that the market

premium associated with the smallest category of C&I loans for publicly traded banks is somewhat smaller than that observed for target banks acquired in M&A transactions. Nonetheless, the economic magnitude of the premium remains substantial, underscoring the contribution of relationship lending to small businesses in value creation for community banks. Small CRE loans, on the other hand, because they are transaction-based rather than relationship-based, do not appear to add any market value relative to large CRE loans and do not differ significantly from their book value.

Similar to our analyses for the M&A sample, we test if the nature of the relationship lending, and hence the stock market premiums associated with small business loans might have changed over time for publicly traded banks. Column 1 of Table 9 displays the partial results from (Eq.3), showing only the variables of interest for the sample of publicly traded community banks acquired during the full sample period, 1994-2021. Columns 2 and 3 show the absolute effects evaluated during the first half and second half of the sample period, respectively.

The results in Table 9 provide no evidence of a sizable structural change in the contribution of relationship lending to bank values over time. The relationship-based smallest C&I loans, SM1C&I, are associated with a statistically significant market premium in both halves of our sample period. The point estimates indicate that, if anything, the premium increased in the second half of the sample, but the difference is not statistically significant. Most importantly, we do not observe a decline in the market premium associated with the relationship lending. Overall, these findings together with those from the M&A sample suggest that technological changes and the emergence of online lending platforms has not eliminated community banks' comparative advantage in relationship lending and their ability to extract value from those relationships.

4.2.1. Value of Small Business Lending at Community Banks during and outside the Global Financial Crisis

Given the findings from the previous section, which highlight significant market premiums tied to relationship-based small C&I lending by community banks, a natural question that follows is if, or to what extent, the value-enhancing effects of business lending extended to small firms by these banks withstood times of economic stress. Earlier research from the bank-failure literature finds that deteriorations in the performance of commercial real estate and construction and land development loans were among the primary drivers leading banking institutions into financial distress and eventually insolvency during the GFC (Cole and White 2012; DeYoung and Torna 2013). While Cole and Damm (2020) show that overall lending to small businesses declined significantly following the onset of the GFC, Bord et al. (2021) demonstrate that community banks increased their small business lending and gained market share after the crisis. Furthermore, Beck et al. (2018) show that, in general, relationship lending tends to alleviate borrowers' credit constraints during economic downturns. To provide insights into the role that business lending relationships might have played in determining community banks' market values during the most severe economic downturn since World War II (FDIC 2018), we expand Equations (3) and (4) by including a dummy variable, *Crs*, that flags the GFC period, interacting it with all our explanatory variables. We are primarily interested in the interaction terms with LG*C&I*, *SM1C&I* and *SM2C&I*, which can be expressed as follows:

$$\vartheta Crs + \xi_1 LGC\&I + \xi_2 LGC\&I \times Crs + \xi_3 SM1C\&I + \xi_4 SM1C\&I \times Crs + \xi_5 SM2C\&I + \xi_6 SM2C\&I \times Crs.$$

The effect of the category of the smallest C&I loans on bank values during the GFC period is given by $\xi_3 SM1C\&I + \xi_4 SM1C\&I \times Crs$, with $\xi_4 \neq 0$ suggesting that this effect is different from the effect during the non-GFC period (ξ_3). Similar calculations can be made for *SM2C&I*, *LGC&I*, and for small and large CRE loans.

Earlier research considered 2007:Q4 through 2010:Q4 as the period covering the beginning, the unravelling, and the immediate aftermath of the GFC (for example, DeYoung et al. 2015).[21] Given that we use annual data based on the June Call Reports, our 2007 bank-year observations precede the financial crisis. Therefore, we let *Crs* equal one for bank-year observations from 2008 through 2010, and zero otherwise. Our baseline results (Equation 3) with *Crs* interactions for the sample of publicly traded community banks are displayed in Column 1 of Table 10, showing only the focus variables to save space. Columns 2 and 3 show the absolute effect for each explanatory variable by evaluating the partial derivatives when *Crs* equals zero and one, respectively. The last column tests if the difference in coefficients between Columns 2 and 3 differs statistically from zero.

The coefficient on large C&I loans in Table 10 does not differ statistically from unity, regardless of the time period, consistent with large C&I loans being valued at book value during normal economic conditions as well as during the GFC period. By contrast, the coefficient on *SM1C&I* is economically and statistically larger than one for each subperiod, pointing to a remarkably consistent value-enhancing effect of small business lending for community banks across various economic conditions. A dollar of small C&I loans with original values of $100,000

[21] As a robustness check, we also exclude the COVID-19 pandemic period, 2020 through 2021, from our sample, because banks might have perceived increased risk during the pandemic, and therefore may have been less willing to lend. We show the results of this robustness check in Appendix 2.

or less has a 35 percent premium for community bank values during normal times (Column 2) and had an even larger estimated premium of 59 percent during the GFC (Column 3). Although the effect of *SM1C&I* on bank values during the financial crisis does not differ statistically from the effect during normal economic times, the presence of a statistically significant market premium associated with *SM1C&I* loans during the financial crisis suggests that community banks were able to use their relationships with SMEs (and the associated soft information) to maintain robust and value-enhancing loan portfolios, even during the most severe economic downturn since the Great Depression.

The coefficients on large CRE loans demonstrate an economically and statistically meaningful shift in the magnitude of their effect from more normal times to the financial crisis period. While these loans neither contributed to nor diminished bank values during more normal economic conditions, they were associated with a significant discount amid the financial turmoil, which is not surprising given the pivotal role of CRE loans in creating the crisis. In terms of economic significance, investors valued $1 of large CRE loans held by community banks at only 91.40 cents during the GFC. This evident discount on large CRE loans during the financial turmoil, when compared with the non-GFC period, is statistically significant, as demonstrated in the last column of Table 10. A similar effect is also observed for *SM2CRE*. The results indicate that each dollar of *SM2CRE* loans held in community banks' loan portfolios was valued at only 83.20 cents during the GFC, even less compared with their noncrisis valuation.[22] Overall, these

[22] While Table 10 displays the results for the variables of interest only, it is important to note that we find an economically and statistically similar discount during the GFC for construction loans (*CSTR*), which were valued at 87.03 cents per dollar of their book values. Also, when we estimate the GFC effects using the alternative specification with MVE/TA as the dependent variable (not shown), the results echo the findings shown in Table 10.

results support the view that relationship-based small business lending is an important value driver for community banks across business cycles.

4.2.2. Community Bank Size and Value of Small Business Lending

As implied by earlier research (Carter et al. 2004; Cole et al. 2004; DeYoung et al. 2004; Berger et al. 2005; Chiorazzo et al. 2018), relationship lending and the benefits accrued thereof may vary across banks of different size categories, with the general consensus that smaller banks are more likely to engage in relationship lending and, hence, extract more value from that practice. A natural extension of our analyses, therefore, is to explore whether bank size is associated with the value of small business lending. Most of our analyses so far have focused on community banks, defined as banks with assets of less than $10 billion. By this definition of community banks, there is minimal size variation in our M&A sample, where the median asset size for target community banks is only $486 million (and $2.3 billion at the 90th percentile). However, there is substantial variation, and a wider range of observations in our sample of *publicly traded community banks*, where the 50th and 90th percentiles correspond to $1.5 billion and $7.5 billion in assets, respectively. This apparent heterogeneity in bank size among publicly traded community banks allows us to explore the association between bank size and the value of small business lending for community banks that we documented in the previous sections.

Following earlier research, which historically employed a more conservative definition of community banks, we define small community banks as those with assets of less than $2 billion (DeYoung et al. 2015; Cortés and Strahan 2017; Chiorazzo et al. 2018).[23] Employing this sample

[23] DeYoung et al. (2015) and Chiorazo et al (2018) revised the $1 billion community bank size threshold that had long been used in earlier research, justifying it by the fact that the U.S. CPI approximately doubled from 1987 to 2012.

for the full sample period, we expand our specification by including a dummy variable, *2Bil*, that flags larger community banks with assets greater than $2 billion and interact it with all our explanatory variables, similar to our analyses in the previous section for *Crs*.

Table 11 shows the results for the main variables of interest for the Tobin's Q dependent variable specification. Column 1 shows the estimated coefficients, while Columns 2 and 3 show the estimated effects for community banks with $2 billion or less in assets and more than $2 billion in assets, respectively. The final column shows the difference between Columns 2 and 3. The coefficient on large C&I loans, 1.0150***, does not deviate statistically from unity for small community banks (assets≤$2 bil.) as displayed in Column 2, but the effect for larger community banks, 1.0985***[b], does deviate from unity, indicating that for larger community banks, $1 of *LGC&I* loans provide a 10 percent premium (Column 3). Furthermore, the difference in market premium associated with *LGC&I* between large and small community banks is statistically significant, as revealed by the statistically significant differential coefficient, –0.0835*, in the last column. On the other hand, the coefficient on *SM1C&I* is statistically larger than unity for small community banks but not for larger community banks. The coefficient, 1.4668***[a], suggests that *SM1C&I* loans held by small community banks contribute a 47 percent premium, and the market premium on *SM1C&I* loans exceeds that of large C&I loans as indicated at the bottom of Table 11. The effect of *SM1C&I* on bank values at small community banks is statistically different from and larger than the effect on larger community banks, as shown by the differential coefficient, 0.5321**. A large and statistically significant market premium associated with small C&I loans with original values of $100,000 or less made by small community banks implies that smaller community banks tend to be in a better position to extract value from their relationships with

SMEs. This result is consistent with Chiorazzo et al. (2018) and provides at least a partial explanation for their finding that small community banks that are more focused on traditional banking—defined by one of four hallmark characteristics as "*relationship lending*"—are more likely to survive in the long run (8 to 13 percentage points more compared with other small banks).

Focusing on loans with original values of more than $100,000 through $1 million, we observe that the coefficient on *SM2C&I* is smaller for small community banks compared with large community banks. However, it is not significantly different from unity for either group of banks, suggesting that C&I loans with original values of more than $100,000 through $1 million do not add value to either small or large community banks. Likewise, regarding commercial real estate lending, the coefficients on *LGCRE*, *SM1CRE*, and *SM2CRE* do not appear to differ from unity for either small or larger community banks, consistent with stock market investors valuing those loans at par value irrespective of whether they are made by small or larger community banks.[24]

Additionally, we implemented two sets of estimations for Tobin's Q and *MVE*/*TA*, interacting both the *2Bil* and the *Crs* dummy variables with all the regressors to examine the role of bank size in moderating the relationship between small business lending and bank values during and outside the GFC. Once again, the results and inferences concerning the effect of small business lending on bank values during and outside the GFC obtained from the previous section

[24] When we conduct the same analysis as in Table 11 for the specification with *MVE*/*TA* as the dependent variable (not shown), the results depict an overall consistent picture.

are primarily driven by small community banks with $2 billion or less in assets. We do not report the results in the paper to save space, but they are available upon request.

Overall, our findings substantiate the notion that bank size is associated with the ability of community banks to leverage advantages from relationship-based lending to SMEs. In line with the implications drawn from earlier research, our results suggest that smaller community banks are more adept at exploiting their comparative advantage in nurturing and sustaining lending relationships with SMEs, and as a result, deriving value from those relationships.

As a final robustness check, we address a potential endogeneity problem arising from focusing on the relationship lending at community banks. Even though we have fixed effects, there might be some unobserved, time varying private information/factors, e.g., expertise, skills etc., that affect these community banks' relationship lending and their valuations simultaneously. As discussed in the literature, community banks differ from large banks across several dimensions, including, but not limited to, economies of scale, operational complexities, and organizational structure. The distinctive features defining community banks may lead them to develop a comparative advantage in processing soft information. To address the potential bias resulting from some unobservable, private factors associated with being a community bank, we implement the two-step Heckman (1979) selection model. In the first stage, a Probit estimation regresses the community bank dummy on the very same set of variables we use in Eq.(3) plus at least one exclusive instrument. For identification, this instrument has to affect the likelihood of being a community bank in the first stage ("Selection Equation"), but it should be unrelated to bank value (Tobin's Q) in the second stage ("Outcome Equation"). One instrument we borrow from Campa and Kedia (2002) is "*idiosyncratic risk*". The idiosyncratic risk can indeed be one of

the important determinants of being a community bank. Nonetheless, the idiosyncratic risk itself, as opposed to systematic risk, is not priced by the markets. To be consistent with Campa and Kedia (2002), we also use lagged Tobin's Q as an additional instrument while implementing the two-stage Heckman model.

The results of the first stage of the Heckman model in Table 12 show that *Idiosyncratic Risk* is indeed positively and strongly associated with being a community bank. Even after controlling for the Heckman correction term, i.e., the Inverse Mills Ratio, which suggests that unobserved factors that determine community banks in the first place have no positive or negative association with bank value, *SM1C&I* in the second stage continues to carry a positive and significant coefficient, **1.3452*****[b]**,** quantitatively similar in magnitude to those from our baseline estimations.

5. Concluding Remarks

This study investigates the extent to which relationship lending enhances the market value of banking organizations. We use data on small business loans, defined as commercial and industrial loans and commercial real estate loans, obtained from the small business loan surveys conducted in the June Call Reports. We find that small C&I loans do enhance the market values of community banks. This suggests that, at least for these banks, the added revenue associated with relationship lending exceeds the added costs associated with evaluating and monitoring small business loans, although the estimated effect may also include the value of relationships emanating from the opportunity to profit from other lines of business with their relationship firms.

The value-enhancing effect of relationship lending manifests itself primarily at smaller community banks and arises primarily from the smallest size category of C&I loans, those with original amounts of $100,000 or less. Such loans likely represent the loans made to small opaque firms over which these banks are most likely to be able to exploit informational monopoly power, which constitutes their comparative advantage over larger banks. As opposed to small C&I loans, small CRE loans do not appear to enhance the market value of banks more than do large CRE loans. One explanation for the contrast of this result with that of small C&I loans is that CRE lending tends to be more transaction-based than small C&I (relationship) lending. CRE loans rely to a greater extent on the evaluation of physical collateral rather than superior soft information about a relationship borrower. As a result, the advantages stemming from information-intensive relationship lending based on soft information become relatively less important.

Importantly, our findings show that for community banks, relationship lending was valuable even during the Great Financial Crisis. Community banks stood ready to fund SMEs and were able to preserve the market values resulting from those lending relationships and the associated soft information. Given that loans for commercial real estate and construction and most of the other types of loans in community banks' portfolios were heavily discounted during the GFC, sustained value-enhancing effects associated with small C&I loan portfolios during this volatile period partially offset losses to those banks' franchise values and contributed to their ability to withstand the turmoil. Moreover, we find no evidence that technical change and the rise of FinTech small business lending has eroded the value-enhancing effects of small C&I lending by small community banks.

Our direct evidence that small business lending is a profitable, value-enhancing market niche for small community banks in the United States suggests that small community banks can continue to play a positive role by making relationship-based small loans to small firms. The evidence is consistent with these banks having a comparative advantage in originating and monitoring small business loans. In fact, our finding that acquirers that are paying a premium for small C&I loan portfolios subsequently grow those portfolios more than matched non-acquirer banks is consistent with the targets' lending relationships and lending expertise give rise to much of that premium.

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Table 1: Distribution of Observations by Asset Size and Time Period

This table displays the number of observations for target banks acquired in M&A transactions (Panel A) and for publicly traded banks (Panel B) for all banks in general and community banks specifically during the full sample period, 1994 to 2021, the Global Financial Crisis (GFC) period, 2008 through 2010, and the non-GFC period covering the full sample period excluding the years of 2008 through 2010. Community banks are defined as those with total assets of less than $10 billion.

Panel A: M&A Bank Sample			
Sample Period:	Full Sample Period (1994–2021)	GFC Period (2008–2010)	Non-GFC Period (1994–2007 & 2011–2021)
All Banks	982	38	944
Community Banks (< $10 bil.)	943	34	909
Panel B: Publicly Traded Bank Sample			
Sample Period:	Full Sample Period (1994–2021)	GFC Period (2008–2010)	Non-GFC Period (1994–2007 & 2011–2021)
All Banks	6,225	717	5,508
Community Banks (< $10 billion)	5,315	637	4,678

Table 2: Small Business Loans, Scaled by Total Business Loans for M&A Bank Sample and Publicly Traded Bank Sample
This table shows the small business loan categories as a proportion of total business loans by number for all banks as well as community banks in two different bank samples for the sample period, 1994 to 2021. Community banks are defined as those with total assets of less than $10 billion.

Samples:	**M&A Bank Sample**		**Publicly Traded Bank Sample**	
Bank Size Categories:	All Banks	Community Banks (< $10 billion)	All Banks	Community Banks (< $10 billion)
Total small C&I loans	62.31(%)	63.72(%)	54.68(%)	58.94(%)
- $100,000 or less	17.35	17.70	16.53	18.00
- between $100,000 and $1 million	44.97	46.03	38.15	40.93
Total small CRE loans	47.59	48.39	42.71	45.16
- $100,000 or less	3.70	3.78	3.82	4.11
- between $100,000 and $1 million	43.90	44.61	38.89	41.05

Table 3: Descriptive Statistics

This table displays descriptive statistics for the M&A bank sample and publicly traded bank sample. The M&A bank sample consists of 982 target banks sold in M&A transactions from 1994 to 2021. The publicly traded bank sample consists of 6,225 bank-year observations from 860 publicly traded banks from 1994 to 2021. Variable definitions are displayed in Appendix 1. The values for all variables except for dummy variables are truncated at 0.5 and 99.5 percentiles. All dollar-denominated variables are inflation-adjusted using the Consumer Price Index.

	M&A Bank Sample					**Publicly Traded Bank Sample**				
	Mean	Std.Dev	P25	P50	P75	Mean	Std.Dev	P25	P50	P75
Valuation Measures										
Tobin's Q	1.0584	0.1067	1.0164	1.0575	1.1063	1.0171	0.0684	0.9753	1.0128	1.0525
MVE/TA	0.1794	0.0729	0.1326	0.1713	0.2199	0.1424	0.0676	0.0990	0.1349	0.1763
Small Business Loans Variables										
SMC&I	0.0591	0.0416	0.0313	0.0498	0.0777	0.0540	0.0369	0.0293	0.0462	0.0693
SM1C&I	0.0147	0.0130	0.0055	0.0110	0.0196	0.0148	0.0126	0.0062	0.0116	0.0197
SM2C&I	0.0443	0.0329	0.0228	0.0367	0.0588	0.0392	0.0282	0.0205	0.0328	0.0494
SMCRE	0.0990	0.0563	0.0575	0.0922	0.1312	0.0776	0.0459	0.0448	0.0725	0.1029
SM1CRE	0.0059	0.0069	0.0015	0.0038	0.0078	0.0059	0.0066	0.0013	0.0037	0.0080
SM2CRE	0.0931	0.0536	0.0537	0.0859	0.1233	0.0718	0.0427	0.0413	0.0664	0.0951
Other Loans/Leases Variables										
LGCI	0.0444	0.0492	0.0107	0.0299	0.0596	0.0565	0.0563	0.0176	0.0386	0.0777
LGCRE	0.1287	0.0922	0.0534	0.1167	0.1878	0.1165	0.0768	0.0568	0.1025	0.1662
CSTR	0.0574	0.0490	0.0218	0.0470	0.0777	0.0566	0.0515	0.0211	0.0419	0.0745
RES	0.1924	0.1137	0.1138	0.1772	0.2533	0.2006	0.1047	0.1267	0.1901	0.2575
MULT	0.0260	0.0317	0.0067	0.0170	0.0330	0.0277	0.0405	0.0072	0.0159	0.0324
FARM	0.0198	0.0407	0.0002	0.0032	0.0170	0.0141	0.0241	0.0004	0.0036	0.0165
CONS	0.0323	0.0422	0.0057	0.0144	0.0429	0.0489	0.0544	0.0091	0.0253	0.0751
OTHLNS	0.0120	0.0183	0.0007	0.0052	0.0150	0.0199	0.0277	0.0032	0.0107	0.0250
Other Balance Sheet Items										
FF	-0.0038	0.0398	-0.0168	0.0000	0.0057	-0.0214	0.0443	-0.0394	-0.0125	0.0000
RESV	0.0595	0.0484	0.0286	0.0429	0.0738	0.0448	0.0324	0.0245	0.0358	0.0530
SEC_AFS	0.1748	0.1138	0.0899	0.1623	0.2428	0.1787	0.0967	0.1086	0.1634	0.2384
SEC_HTM	0.0284	0.0578	0.0000	0.0000	0.0306	0.0386	0.0666	0.0000	0.0054	0.0490
TRADA	0.0003	0.0026	0.0000	0.0000	0.0000	0.0012	0.0056	0.0000	0.0000	0.0000
LLR	0.0092	0.0037	0.0068	0.0086	0.0107	0.0096	0.0040	0.0071	0.0088	0.0109
NPL	0.0069	0.0082	0.0018	0.0043	0.0086	0.0083	0.0095	0.0028	0.0051	0.0097
FIX	0.0172	0.0103	0.0098	0.0157	0.0226	0.0164	0.0080	0.0109	0.0153	0.0208
INTAN	0.0063	0.0111	0.0000	0.0008	0.0079	0.0122	0.0142	0.0015	0.0070	0.0187
MiscA	0.0290	0.0147	0.0177	0.0279	0.0373	0.0325	0.0160	0.0207	0.0311	0.0404

OREO	0.0027	0.0050	0.0000	0.0007	0.0027	0.0024	0.0045	0.0002	0.0008	0.0024
CORE	0.5312	0.1439	0.4296	0.5307	0.6414	0.5012	0.1400	0.3956	0.4853	0.6060
OTHDEP	0.2807	0.1238	0.1887	0.2689	0.3747	0.2808	0.1210	0.1893	0.2829	0.3675
OTHLIAB	0.0670	0.0612	0.0173	0.0502	0.0997	0.0924	0.0716	0.0391	0.0777	0.1262
TRADL	0.0001	0.0006	0.0000	0.0000	0.0000	0.0004	0.0023	0.0000	0.0000	0.0000
Other Bank Characteristics & Measures										
FEE	0.0041	0.0040	0.0018	0.0031	0.0050	0.0066	0.0064	0.0029	0.0051	0.0081
OPEXPtoOPINC	0.5450	0.1559	0.4240	0.5348	0.6473	0.4795	0.1239	0.3878	0.4666	0.5615
LHERF	9.1541	0.2221	9.2103	9.2103	9.2103	9.0349	0.4199	9.2090	9.2103	9.2103
ASSETS($mil)	2,190.50	7,042.21	257.39	518.70	1,200.49	5,845.24	11,112.42	864.67	1,786.01	5,188.68
Crs	0.0387	0.1930	0.0000	0.0000	0.0000	0.1152	0.3193	0.0000	0.0000	0.0000
ACQ%	99.9997	0.0090	100.000	100.000	100.000					
RELSIZE%	25.4115	26.6371	7.7454	16.4912	34.0161					
CASH%	30.0137	35.9267	0.0000	19.2500	49.7300					

Table 4: Cross-section of Valuations for Target Banks Sold in M&A Transactions

This table displays results from cross-sectional estimations of valuations for target banks sold in M&A transactions from 1994 to 2021. The dependent variable in Columns 1 and 2 is Tobin's Q, defined as the implied market value of bank equity paid by acquirers for 100 percent of the target bank's equity in the M&A transaction plus the book value of target bank liabilities, scaled by the total book value of target bank assets. The dependent variable in Columns 3 and 4 is *MVE/TA*, defined as the market value of bank equity derived from the implied equity value of target banks paid by acquirers for 100 percent of the target banks' equity in M&A transactions, scaled by the total book value of target bank assets. Each equation includes *RESV, SEC, FF*, and *TRADA* with coefficients constrained to one, and *TRADL* with its coefficient constrained to minus one. Columns 1 and 3 focus on all banking institutions regardless of their asset size, while Columns 2 and 4 focus on community banks, defined as those banks with total assets of less than $10 billion. The specifications include bank size decile dummies based on total book assets. All dollar-denominated variables are inflation-adjusted using the Consumer Price Index. ***, **, and * indicate a statistical difference from zero at the 1 percent, 5 percent, and 10 percent significance levels, respectively. For balance sheet asset categories, superscripts a, b, and c indicate that a coefficient differs from unity at the 1 percent, 5 percent, and 10 percent significance levels, respectively. For balance sheet liability categories, superscripts d, e, and f indicate that a coefficient differs from minus unity at the 1 percent, 5 percent, and 10 percent significance levels, respectively. The specifications include state fixed effects and year fixed effects. Standard errors are clustered at the acquirer bank level, as some acquirers were involved in multiple acquisitions throughout the sample period. All variables are defined in Appendix 1.

Sample:	M&A Sample, 1994–2021			
Dependent Variable:	Tobin's Q		*MVE/TA*	
Sample:	All Banks	Community Banks	All Banks	Community Banks
	(1)	(2)	(3)	(4)
LGC&I	1.0351***	0.9936***	1.0193***	0.9802***
	(0.0558)	(0.0578)	(0.0537)	(0.0564)
SMC&I	**1.1858*****a**	**1.2097*****a**	**1.2000*****a**	**1.2192*****a**
	(0.0987)	(0.0608)	(0.0624)	(0.0999)
LGCRE	**1.0491*****c**	**1.0539*****b**	1.0410***	**1.0428*****c**
	(0.0271)	(0.0274)	(0.0258)	(0.0263)
SMCRE	1.0357***	1.0200***	1.0103***	0.9930***
	(0.0421)	(0.0417)	(0.0418)	(0.0417)
CSTR	**1.0844*****c**	**1.0839*****c**	**1.0709*****c**	**1.0723*****c**
	(0.0452)	(0.0451)	(0.0435)	(0.0433)
RES	1.0156***	1.0079***	1.0231***	1.0126***
	(0.0216)	(0.0215)	(0.0225)	(0.0227)
MULT	**0.8522*****a**	**0.8441*****a**	**0.8868*****b**	**0.8797*****b**
	(0.0489)	(0.0523)	(0.0490)	(0.0519)
FARM	0.9853***	0.9857***	0.9782***	0.9738***
	(0.0415)	(0.0424)	(0.0409)	(0.0419)
CONS	1.0034***	1.0042***	1.0054***	1.0033***
	(0.0465)	(0.0478)	(0.0468)	(0.0481)
OTHLNS	0.9030***	0.9635***	0.8936***	0.9634***
	(0.0885)	(0.0922)	(0.0901)	(0.0914)
LLR	**-0.6367**[a]	**-0.5082**[a]	**-1.0290***[a]	**-0.8326**[a]
	(0.5403)	(0.5916)	(0.5474)	(0.5981)
NPL	**-1.2064*****a**	**-1.1785*****a**	**-1.1030*****a**	**-1.0843*****a**
	(0.2151)	(0.2243)	(0.2174)	(0.2266)
FIX	0.7564***	0.8265***	**0.6884*****c**	0.7610***
	(0.1714)	(0.1693)	(0.1721)	(0.1696)
INTAN	**0.2657**[a]	**0.2657**[a]	**0.2364**[a]	**0.2453**[a]
	(0.1783)	(0.1785)	(0.1779)	(0.1809)

MiscA	0.9922***	1.0089***	1.0808***	1.1003***
	(0.1165)	(0.1177)	(0.1218)	(0.1239)
OREO	**0.2950**[b]	**0.2981**[b]	**0.4532**[c]	**0.4280**[c]
	(0.3153)	(0.3190)	(0.3132)	(0.3193)
CORE			**-0.9150***[d]	**-0.9167***[d]
			(0.0204)	(0.0196)
OTHDEP			-0.9768***	-0.9719***
			(0.0277)	(0.0273)
OTHLIAB			-1.0514***	-1.0561***
			(0.0387)	(0.0388)
FEE	-0.0626	-0.1331	-0.1585	-0.2244
	(0.3786)	(0.3645)	(0.3755)	(0.3676)
OPEXPtoOPINC	-0.0653***	-0.0629***	-0.0889***	-0.0861***
	(0.0167)	(0.0173)	(0.0192)	(0.0198)
LHERF	0.0094	0.0149**	0.0084	0.0134*
	(0.0077)	(0.0070)	(0.0075)	(0.0070)
ACQ%	-0.0170	-0.0420	-0.0338	-0.0608
	(0.0435)	(0.0466)	(0.0426)	(0.0456)
RELSIZE%	-0.0003***	-0.0003***	-0.0002***	-0.0002***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
CASH %	-0.0001*	-0.0001*	-0.0001	-0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Constant	1.6936	4.1483	3.3583	6.0149
	(4.3448)	(4.6574)	(4.2614)	(4.5598)
Test SMC&I-LGC&I=0	0.1507	**0.2161****	**0.1807***	**0.2390****
	(0.0987)	(0.1046)	(0.0987)	(0.0999)
Test SMCRE-LGCRE=0	-0.0134	-0.0339	-0.0307	-0.0497
	(0.0539)	(0.0536)	(0.0527)	(0.0526)
State Fixed Effect	Yes	Yes	Yes	Yes
Time Fixed Effect	Yes	Yes	Yes	Yes
Clustered Std Errors	Yes	Yes	Yes	Yes
Observations	982	943	982	943
Adj R-squared	0.901	0.905	0.886	0.889

Table 5: The Value of Relationship Lending Over Time

This table investigates the value of relationship lending at community banks that were acquired during the first sample period [1994-2009] vs. the second sample period [2010-2021]. Column 1 displays the partial results from (Eq.3) interacting the second sample period dummy (*Scnd*) with all the regressors (showing only the variables of interest to save space) for the sample of target community banks acquired during the full sample period, 1994-2021. The dependent variable is *Tobin's Q*. The *Scnd* dummy variable takes the value of 1 if bank-year observations belongs to the sample period between 2010-2021, and 0 otherwise. The estimation includes *RESV, SEC, FF*, and *TRADA* with coefficients constrained to one, and *TRADL* with its coefficient constrained to minus one. Columns 2 and 3 show the absolute effects evaluated during the first half and second half of the sample period, respectively. ***, **, and * indicate a statistical difference from zero at the 1%, 5%, and 10% significance levels, respectively. The superscripts a, b, and c indicate that a coefficient differs from unity at the 1%, 5%, and 10% significance levels, respectively. The specification includes bank size decile dummies based on total book assets. All dollar-denominated variables are adjusted to constant dollars using the Consumer Price Index. The specification includes state fixed effects and time fixed effects. Standard errors are clustered at the acquirer bank level. All variables are defined in Appendix 1.

		Testing Absolute Effects		
		First Sample Period	Second Sample Period	
Dependent Variable:	*Tobin's Q*	∂*Tobin's Q*/ ∂X | *Scnd*=0	∂*Tobin's Q*/ ∂X | *Scnd*=1	*Diff*
	(1)	(2)	(3)	*(2)-(3)=0*
LGC&I	0.9660***	0.9660***	0.9917***	0.0257
	(0.0950)	(0.0950)	(0.0589)	(0.1085)
LGC&I x Scnd	0.0257			
	(0.1085)			
SMC&I	1.2157***	**1.2157***ᵇ**	**1.1696***ᵇ**	-0.0461
	(0.0840)	(0.0840)	(0.0674)	(0.1051)
SMC&I x Scnd	-0.0461			
	(0.1051)			
LGCRE	1.0431***	1.0431***	**1.0689***ᵇ**	0.0258
	(0.0562)	(0.0562)	(0.0291)	(0.0626)
LGCRE x Scnd	0.0258			
	(0.0626)			
SMCRE	1.0438***	1.0438***	0.9921***	-0.0517
	(0.0640)	(0.0640)	(0.0521)	(0.0800)
SMCRE x Scnd	-0.0517			
	(0.0800)			
Test SMC&I-LGC&I=0		**0.2497***	**0.1779***	0.0718
		(0.1452)	(0.1077)	(0.1746)
Test SMCRE-LGCRE=0		0.0007	-0.0768	0.0775
		(0.0917)	(0.0636)	(0.1070)
Controls	Yes			
State Fixed Effect	Yes			
Time Fixed Effect	Yes			
Clustered Std Errors	Yes			
Observations	943			
Adj R-squared	0.908			

Table 6: Cross-section of Valuations for Target Banks Sold in M&A Transactions

This table displays the results from cross-sectional estimations of valuations for target banks sold in M&A transactions from 1994 to 2021 for our variables of interest. The specifications in Columns 1 and 2 estimate Equation (3) with all its regressors (but not shown to save space), where Tobin's Q is specified as the dependent variable, defined as the implied market value of bank equity paid by acquirers for 100 percent of the target bank's equity in the M&A transaction plus the book value of target bank liabilities, scaled by the total book value of target bank assets. The specifications in Columns 1 and 2 estimate Equation (4) with all its regressors (but not shown to save space), where *MVE/TA* is specified as the dependent variable, defined as the market value of bank equity derived from the implied equity value of target banks paid by acquirers for 100 percent of the target banks' equity in M&A transactions, scaled by the total book value of target bank assets. Each equation includes *RESV, SEC, FF*, and *TRADA* with coefficients constrained to one, and *TRADL* with its coefficient constrained to minus one. Columns 1 and 3 focus on all banking institutions regardless of their asset size, while Columns 2 and 4 focus on community banks, defined as those banks with total assets of less than $10 billion. All specifications include bank size decile dummies based on total book assets. All dollar-denominated variables are inflation-adjusted using the Consumer Price Index. ***, **, and * indicate a statistical difference from zero at the 1 percent, 5 percent, and 10 percent significance levels, respectively. The superscripts a, b, and c indicate that a coefficient differs from unity at the 1 percent, 5 percent, and 10 percent significance levels, respectively. All specifications include state fixed effects and time fixed effects. Standard errors are clustered at acquirer bank level as some acquirers involve in multiple acquisitions throughout the sample period. All variables are defined in Appendix 1.

Sample:	M&A Sample, 1994–2021			
Dependent Variable:	Tobin's Q		*MVE/TA*	
Sample:	All Banks	Community Banks	All Banks	Community Banks
	(1)	(2)	(3)	(4)
LGC&I	1.0432***	1.0008***	1.0242***	0.9843***
	(0.0604)	(0.0634)	(0.0578)	(0.0612)
SM1C&I	**1.3763***[b]	**1.3876***[b]	1.3300***	**1.3463***[c]
	(0.1984)	(0.1993)	(0.2097)	(0.2099)
SM2C&I	1.1363***	**1.1645***[c]	**1.1669***[b]	**1.1880***[b]
	(0.0868)	(0.0868)	(0.0848)	(0.0850)
LGCRE	**1.0496***[c]	**1.0527***[c]	1.0399***	1.0403***
	(0.0284)	(0.0285)	(0.0274)	(0.0276)
SM1CRE	0.7019**	0.6275**	0.6991**	0.6150**
	(0.2975)	(0.2954)	(0.3015)	(0.2996)
SM2CRE	1.0495***	1.0376***	1.0244***	1.0111***
	(0.0454)	(0.0445)	(0.0450)	(0.0443)
Test SM1C&I-LGC&I=0	**0.3331***	**0.3868****	0.3058	**0.3620***
	(0.1882)	(0.1892)	(0.2024)	(0.2031)
Test SM2C&I-LGC&I=0	0.0930	0.1637	0.1427	0.2036
	(0.1313)	(0.1342)	(0.1258)	(0.1291)
Test SM1CRE-LGCRE=0	-0.3477	-0.4252	-0.3408	-0.4253
	(0.2940)	(0.2931)	(0.2972)	(0.2962)
Test SM2CRE-LGCRE=0	-0.0001	-0.0150	-0.0155	-0.0292
	(0.0591)	(0.0577)	(0.0582)	(0.0571)
Controls	Yes	Yes	Yes	Yes
State Fixed Effect	Yes	Yes	Yes	Yes
Time Fixed Effect	Yes	Yes	Yes	Yes
Clustered Std Errors	Yes	Yes	Yes	Yes
Observations	982	943	982	943
Adj R-squared	0.901	0.905	0.886	0.889

Table 7: Growth in Small Business Loans at Merged Banks and Matched Control Banks

This table shows the median Compound Annual Growth Rates (CAGR) in small business loan categories from [t-1] to [t+3] at combined merged entities versus matched control banks where [t] represents the year of merger. Control banks are matched with the forced-merged entity at [t-1] based on the closest asset size (*Log_Assets*) and SMC&I ratio (*SMC&I/C&I*). Serial acquirer banks that made multiple acquisitions within three years are removed from the analysis. The differences in median values are tested as shown in the last two columns with a nonparametric two-sample test with the null hypothesis that the two samples have the same median.

	Combined Merged Entity	Matched Control Banks	*Difference*	
	(1)	(2)	*(1)-(2)*	*p-value*
SMC&I CAGR [t-1,t+3]	0.0559	0.0301	0.0258	0.018**
SM1C&I CAGR [t-1,t+3]	0.0316	0.0098	0.0218	0.038**
SM2C&I CAGR [t-1,t+3]	0.0638	0.0354	0.0283	0.001***
SMCRE CAGR [t-1,t+3]	0.0364	0.0257	0.0107	0.156
SM1CRE CAGR [t-1,t+3]	-0.0345	-0.0524	0.0179	0.154
SM2CRE CAGR [t-1,t+3]	0.0406	0.0325	0.0081	0.211

Table 8: Fixed-effect Model of Stock Market Valuation for Publicly Traded Banks

This table displays the results from a fixed-effect model of the stock market valuation for publicly traded banks from 1994 to 2021 for the variables of interest. The specifications in Columns 1 and 2 estimate Equation (3) with all of regressors (but not shown to save space), where Tobin's Q is specified as the dependent variable, defined as the stock market value of bank equity plus book value of liabilities, scaled by the total book value of assets. The specifications in Columns 1 and 2 estimate Equation (4) with all its the regressors (but not shown to save space), where *MVE/TA* is specified as the dependent variable, defined as the stock market value of bank equity scaled by the total book value of assets. Each equation includes *RESV*, *SEC*, *FF*, and *TRADA* with coefficients constrained to one, and *TRADL* with its coefficient constrained to minus one. Columns 1 and 3 focus on all banking institutions in our sample, while Columns 2 and 4 focus on community banks, defined as those banks with total assets of less than $10 billion. All specifications include bank size decile dummies based on total book assets. All dollar-denominated variables are inflation-adjusted using the Consumer Price Index. ***, **, and * indicate a statistical difference from zero at the 1 percent, 5 percent, and 10 percent significance levels, respectively. The superscripts a, b, and c indicate that a coefficient differs from unity at the 1 percent, 5 percent, and 10 percent significance levels, respectively. The specifications include bank fixed effects and time fixed effects. Standard errors are clustered at the bank level. All variables are defined in Appendix 1.

Sample Period:	Full Sample Period (1994–2021)			
Dependent Variable:	Tobin's Q		*MVE/TA*	
Sample:	All Banks	Community Banks	All Banks	Community Banks
	(1)	(2)	(3)	(4)
LGC&I	1.0187***	1.0469***	1.0106***	1.0392***
	(0.0329)	(0.0321)	(0.0325)	(0.0325)
SM1C&I	1.2483***	**1.3598*****b**	1.2175***	**1.3407*****b**
	(0.1546)	(0.1561)	(0.1529)	(0.1548)
SM2C&I	0.9445***	0.9367***	0.9544***	0.9426***
	(0.0677)	(0.0513)	(0.0611)	(0.0523)
LGCRE	0.9800***	0.9650***	0.9820***	0.9636***
	(0.0319)	(0.0341)	(0.0319)	(0.0341)
SM1CRE	1.0319***	1.0719***	1.0930***	1.1086***
	(0.2074)	(0.2122)	(0.2007)	(0.2066)
SM2CRE	1.0129***	0.9964***	0.9943***	0.9784***
	(0.0370)	(0.0374)	(0.0359)	(0.0363)
Test SM1C&I-LGC&I=0	0.2296	**0.3129****	0.2069	**0.3015***
	(0.1575)	(0.1588)	(0.1554)	(0.1582)
Test SM2C&I-LGC&I=0	-0.0742	**-0.1102***	-0.0562	-0.0966
	(0.0677)	(0.0577)	(0.0680)	(0.0592)
Test SM1CRE-LGCRE=0	0.0520	0.1069	0.1110	0.1450
	(0.2110)	(0.2175)	(0.2038)	(0.2112)
Test SM2CRE-LGCRE=0	0.0329	0.0314	0.0123	0.0148
	(0.0408)	(0.0408)	(0.0394)	(0.0392)
Controls	Yes	Yes	Yes	Yes
Bank Fixed Effect	Yes	Yes	Yes	Yes
Time Fixed Effect	Yes	Yes	Yes	Yes
Clustered Std Errors	Yes	Yes	Yes	Yes
Observations	6,225	5,315	6,225	5,315
Number of Banks	860	790	860	790
Adj R-squared	0.823	0.846	0.843	0.862

Table 9: Value of Relationship Lending Over Time at Publicly Traded Community Banks

This table investigates the value of relationship lending at publicly traded community banks during the first sample period [1994-2009] vs. the second sample period [2010-2021]. Column 1 displays the partial results from (Eq.3) interacting the second sample period dummy (*Scnd*) with all the regressors (showing only the variables of interest to save space) for the sample of target community banks acquired during the full sample period, 1994-2021. The dependent variable is *Tobin's Q*. The *Scnd* dummy variable takes the value of 1 if bank-year observations belongs to the sample period between 2010-2021, and 0 otherwise. The estimation includes *RESV, SEC, FF*, and *TRADA* with coefficients constrained to one, and *TRADL* with its coefficient constrained to minus one. Columns 2 and 3 show the absolute effects evaluated during the first half and second half of the sample period, respectively. ***, **, and * indicate a statistical difference from zero at the 1%, 5%, and 10% significance levels, respectively. The superscripts a, b, and c indicate that a coefficient differs from unity at the 1%, 5%, and 10% significance levels, respectively. The specification includes bank size decile dummies based on total book assets. All dollar-denominated variables are adjusted to constant dollars using the Consumer Price Index. The specification includes bank fixed effects and time fixed effects. Standard errors are clustered at the acquirer bank level. All variables are defined in Appendix 1

		Testing Absolute Effects		
		First Sample Period	Second Sample Period	
Dependent Variable:	Tobin's Q	∂Tobin's Q/ ∂X | *Scnd*=0	∂Tobin's Q/ ∂X | *Scnd*=1	*Diff*
	(1)	(2)	(3)	*(3)-(2)=0*
LGC&I	1.0082***	1.0082***	**1.0724***c**	0.0642
	(0.0401)	(0.0401)	(0.0490)	(0.0543)
LGC&I x Scnd	0.0642			
	(0.0543)			
SM1C&I	1.3225***	**1.3225***b**	**1.4199***b**	0.0974
	(0.1653)	(0.1653)	(0.2165)	(0.2386)
SM1C&I x Scnd	0.0974			
	(0.2386)			
SM2C&I	0.9544***	0.9544***	0.9404***	-0.0140
	(0.0541)	(0.0541)	(0.0685)	(0.0826)
SM2C&I x Scnd	-0.0140			
	(0.0826)			
LGCRE	0.9446***	0.9446***	0.9858***	0.0412
	(0.0378)	(0.0378)	(0.0347)	(0.0475)
LGCRE x Scnd	0.0412			
	(0.0475)			
SM1CRE	1.0711***	1.0711***	0.8647***	-0.2064
	(0.2112)	(0.2112)	(0.3735)	(0.4188)
SM1CRE x Scnd	-0.2064			
	(0.4188)			
SM2CRE	0.9839***	0.9839***	0.9618***	-0.0221
	(0.0446)	(0.0446)	(0.0524)	(0.0607)
SM2CRE x Scnd	-0.0221			
	(0.0607)			
Test SM1C&I-LGC&I=0		**0.3143***	**0.3476***	0.0333
		(0.1693)	(0.2165)	(0.2364)
Test SM2C&I-LGC&I=0		-0.0538	-0.1320	-0.0782
		(0.0659)	(0.0828)	(0.1045)
Test SM1CRE-LGCRE=0		0.1265	-0.1211	-0.2476
		(0.2107)	(0.3727)	(0.4122)
Test SM2CRE-LGCRE=0		0.0393	-0.0240	-0.0633
		(0.0456)	(0.0566)	(0.0705)
Bank Fixed Effect	Yes			
Time Fixed Effect	Yes			
Clustered Std Errors	Yes			
Observations	5,315			
Number of Banks	790			
Adj R-squared	0.849			

Table 10: Value to Banks of Relationship Lending at Community Banks during and outside the Global Financial Crisis

This table investigates the value to community banks of relationship lending during the GFC and non-GFC periods using the sample of publicly traded community banks. Column 1 displays the results from the fixed-effect model of bank valuation (Equation 3) interacting the crisis dummy variable (*Crs*) with all the regressors (showing only the variables of interest to save space) for the sample of publicly traded community banks from 1994 to 2021. *Crs* takes on a value of one if the bank-year observation belongs to years from 2008 to 2010, and zero otherwise. The dependent variable is Tobin's Q. The estimation includes *RESV*, *SEC*, *FF*, and *TRADA* with coefficients constrained to one, and *TRADL* with its coefficient constrained to minus one. Columns 2 and 3 show the absolute effects evaluated during the non-GFC and GFC periods, respectively. ***, **, and * indicate a statistical difference from zero at the 1 percent, 5 percent, and 10 percent significance levels, respectively. The superscripts a, b, and c indicate that a coefficient differs from unity at the 1 percent, 5 percent, and 10 percent significance levels, respectively. The specification includes bank size decile dummies based on total book assets. All dollar-denominated variables are adjusted to constant dollars using the Consumer Price Index. The specification includes bank fixed effects and time fixed effects. Standard errors are clustered at the bank level. All variables are defined in Appendix 1.

		Testing Absolute Effects		
		Non-GFC Period	GFC Period	
Dependent Variable:	Tobin's Q	∂Tobin's Q/ ∂X | *Crs*=0	∂Tobin's Q/ ∂X | *Crs*=1	*Diff*
	(1)	(2)	(3)	*(3)-(2)=0*
LGC&I	1.0456***	1.0456***	0.9976	-0.0480
	(0.0323)	(0.0323)	(0.0490)	(0.0455)
LGC&I x Crs	-0.0480			
	(0.0455)			
SM1C&I	1.3509***	**1.3509***b**	**1.5876***a**	0.2368
	(0.1585)	(0.1585)	(0.2362)	(0.2310)
SM1C&I x Crs	0.2368			
	(0.2310)			
SM2C&I	0.9396***	0.9396***	0.9360***	-0.0037
	(0.0527)	(0.0527)	(0.0838)	(0.0836)
SM2C&I x Crs	-0.0037			
	(0.0836)			
LGCRE	0.9700***	0.9700***	**0.9140***b**	**-0.0560***
	(0.0367)	(0.0367)	(0.0344)	(0.0340)
LGCRE x Crs	-0.0560*			
	(0.0340)			
SM1CRE	1.0617***	1.0617***	0.8390***	-0.2227
	(0.2253)	(0.2253)	(0.3805)	(0.3960)
SM1CRE x Crs	-0.2227			
	(0.3960)			
SM2CRE	1.0077***	1.0077***	**0.8320***a**	**-0.1757****
	(0.0378)	(0.0378)	(0.0536)	(0.0499)
SM2CRE x Crs	-0.1757***			
	(0.0499)			
Test SM1C&I-LGC&I=0		**0.3053***	**0.5900****	0.2847
		(0.1615)	(0.2329)	(0.2319)
Test SM2C&I-LGC&I=0		**-0.1058***	-0.0615	0.0443
		(0.0588)	(0.1053)	(0.1043)
Test SM1CRE-LGCRE=0		0.0917	-0.0750	-0.1668
		(0.2297)	(0.3836)	(0.3987)
Test SM2CRE-LGCRE=0		0.0377	-0.0820	**-0.1197****
		(0.0451)	(0.0558)	(0.0600)
Bank Fixed Effect	Yes			
Time Fixed Effect	Yes			
Clustered Std Errors	Yes			
Observations	5,315			
Number of Banks	790			
Adj R-squared	0.851			

Table 11: The Role of Bank Size in Value of Relationship Lending to Publicly Traded Community Banks

This table examines if the role of community bank size matters in value generation of relationship lending using the full sample period for publicly traded community banks. Column 1 displays the results from the fixed-effect model of bank valuation (Equation 3) interacting the *2Bil* dummy with all the regressors (showing the variables of interest to save space) for the full sample period from 1994–2021. The *2Bil* dummy variable takes on a value of one if the bank-year observation belongs to a community bank with book assets greater than $2 billion. The dependent variable is Tobin's Q. The estimation includes *RESV*, *SEC*, *FF*, and *TRADA* with coefficients constrained to one, and *TRADL* with its coefficient constrained to minus one. Columns 2 and 3 show the absolute effects evaluated at small community banks (assets $ 2 billion or less) and larger community banks ($2 billion < assets < $10 billion), respectively. The specification includes bank size decile dummies based on total book assets. All dollar-denominated variables are adjusted to constant dollars using the Consumer Price Index. ***, **, and * indicate a statistical difference from zero at the 1 percent, 5 percent, and 10 percent significance levels, respectively. The superscripts a, b, and c indicate that a coefficient differs from unity at the 1 percent, 5 percent, and 10 percent significance levels, respectively. The specification includes bank fixed effects and time fixed effects. Standard errors are clustered at the bank level. All variables are defined in Appendix 1.

		Testing Absolute Effects		
		Small Community Banks	Larger Community Banks	
Dependent Variable:	Tobin's Q	∂Tobin's Q/ ∂X | *2Bil*=0	∂Tobin's Q/ ∂X | *2Bil*=1	*Diff*
	(1)	(2)	(3)	*(2)-(3)=0*
LGC&I	1.0150***	1.0150***	**1.0985***b**	**-0.0835***
	(0.0345)	(0.0345)	(0.0442)	(0.0490)
LGC&I x 2Bil	0.0835*			
	(0.0490)			
SM1C&I	1.4668***	**1.4668***a**	0.9347***	**0.5321****
	(0.1768)	(0.1768)	(0.2241)	(0.2528)
SM1C&I x 2Bil	-0.5321**			
	(0.2528)			
SM2C&I	0.9083***	0.9083***	1.0745***	**-0.1662***
	(0.0572)	(0.0572)	(0.0850)	(0.0957)
SM2C&I x 2Bil	0.1662*			
	(0.0957)			
LGCRE	0.9743***	0.9743***	0.9588***	0.0155
	(0.0347)	(0.0347)	(0.0435)	(0.0411)
LGCRE x 2Bil	-0.0155			
	(0.0411)			
SM1CRE	1.0906***	1.0906***	0.9953***	0.0953
	(0.2288)	(0.2288)	(0.3795)	(0.3859)
SM1CRE x 2Bil	-0.0953			
	(0.3859)			
SM2CRE	0.9796***	0.9796***	1.0125***	-0.0319
	(0.0398)	(0.0398)	(0.0719)	(0.0759)
SM2CRE x 2Bil	0.0319			
	(0.0759)			
Test SM1C&I-LGC&I=0		**0.4518****	-0.1638	**0.6156****
		(0.1806)	(0.2227)	(0.2523)
Test SM2C&I-LGC&I=0		-0.1068	-0.0240	-0.0829
		(0.0660)	(0.1028)	(0.1210)
Test SM1CRE-LGCRE=0		0.1163	0.0365	0.0798
		(0.2323)	(0.3763)	(0.3797)
Test SM2CRE-LGCRE=0		0.0053	0.0527	-0.0474
		(0.0424)	(0.0558)	(0.0842)
Controls	Yes			
Bank Fixed Effect	Yes			
Time Fixed Effect	Yes			
Clustered Std Errors	Yes			
Observations	5,315			
Number of Banks	790			
Adj R-squared	0.848			

Table 12: Robustness Check: The Heckman Correction

This table shows the results from the Heckman (1979) estimation to correct a bias resulting from unobservable factors and private information associated with being a community bank influencing both bank loan compositions and bank values simultaneously. The first stage of the Heckman model runs a probit estimation on the determinants of being community banks. In addition to the usual regressors from Eq.(3), the specification in the first stage includes two instruments: Idiosyncratic risk (***IDIOSYNRISK*)** and one-year-lagged Tobin's Q (***LagTOBIN'sQ*).** The second stage is the outcome equation, the estimation of Eq.(3) after controlling for the bias. The estimation in the first stage uses observations from the full sample of publicly traded banks and employs time fixed effects, while the estimation in the second stage uses observations from community banks and employs bank fixed effects and time fixed effects. Standard errors are clustered at the bank level. ***, **, and * indicate a statistical difference from zero at the 1%, 5%, and 10% significance levels, respectively. The superscripts a, b, and c indicate that a coefficient differs from unity at the 1%, 5%, and 10% significance levels, respectively. The specification includes bank size decile dummies based on total book assets. All dollar-denominated variables are adjusted to constant dollars using the Consumer Price Index.

	First-Stage "Selection Equation"	Second Stage "Outcome Equation"
Dependent Variable:	Community Bank Dummy	Tobin's Q
	(1)	(2)
LGC&I	-1.3921	1.0432***
	(2.1163)	(0.0324)
SM1C&I	-4.7712	**1.3452***[b]
	(16.4289)	(0.1590)
SM2C&I	8.7200	0.9371***
	(6.6829)	(0.0520)
LGCRE	1.5955	0.9658***
	(2.8981)	(0.0341)
SM1CRE	17.7071	1.0812***
	(31.4623)	(0.2095)
SM2CRE	7.2405	1.0016***
	(5.8834)	(0.0374)
CSTR	3.1761	1.0394***
	(2.8559)	(0.0287)
RES	2.8518*	1.0231***
	(1.6279)	(0.0254)
MULT	2.2626	0.9334***
	(2.3227)	(0.0396)
FARM	8.4989	0.7676***[b]
	(6.0572)	(0.1115)
CONS	0.4453	0.9873***
	(2.3780)	(0.0407)
OTHLNS	-0.8277	1.0459***
	(3.0056)	(0.0574)
LLR	-38.6467	-1.6935***[a]
	(25.1389)	(0.3392)
NPL	-0.9238	-0.7886***[a]
	(17.3044)	(0.1183)
FIX	-45.2727***	0.5655**[b]
	(15.4417)	(0.2388)
INTAN	-12.3082**	0.0864a
	(5.8505)	(0.1077)
MiscA	10.1765	0.8369***
	(7.1898)	(0.1776)
OREO	-16.6022	0.5823**[b]
	(42.3245)	(0.2330)
FEE	1.9380	1.4361***
	(14.0623)	(0.2907)
OPEXPtoOPINC	2.2684**	-0.0780***
	(1.1566)	(0.0227)
LHERF	-0.0048	0.0009
	(0.1879)	(0.0047)
IDIOSYNCRISK	**42.7415*** **	
	(15.3960)	
LagTOBIN'sQ	-1.6170	
	(1.1937)	
Lambda		0.0050
		(0.0072)
Bank Fixed Effects	No	Yes
Time Fixed Effects	Yes	Yes
Clustered Std Errors	Yes	Yes
Observations	6,098	502

Appendix 1: Variable Definitions

Variable	Definition
Valuation Measures	
Tobin's Q	Market value of bank equity plus book value of liabilities, scaled by the total book value of assets. The market value for the publicly traded bank sample is constructed as the average of daily market values for the month of August. The market value (implied) for the M&A target bank sample is the total market value of bank equity paid by acquirers for 100 percent of a target bank's equity in an M&A transaction.
MVE/TA	Market value of equity, scaled by total book value of assets. The market value for the publicly traded bank sample is constructed as the average of daily market values for the month of August. The market value (implied) for the M&A target bank sample is the total market value of bank equity paid by acquirers for 100 percent of a target bank's equity in an M&A transaction.
Small Business Loans	
SMC&I	Total small commercial and industrial loans; measured as the bank's total commercial and industrial loans with original amounts of $1 million or less, divided by the book value of bank assets.
SM1C&I	Small commercial and industrial loans with original amounts of $100,000 or less; measured as the bank's commercial and industrial loans with original amounts of $100,000 or less, divided by the book value of bank assets.
SM2C&I	Small commercial and industrial loans with original amounts of more than $100,000 through $1 million; measured as the bank's commercial and industrial loans with original amounts of more than $100,000 through $1 million, divided by the book value of bank assets.
SMCRE	Total small commercial real estate loans; measured as the bank's total real estate loans secured by nonfarm, nonresidential properties with original amounts of $1 million or less, divided by the book value of bank assets.
SM1CRE	Small commercial real estate loans with original amounts of $100,000 or less; measured as the bank's real estate loans secured by nonfarm, nonresidential properties with original amounts of $100,000 or less, divided by the book value of bank assets.
SM2CRE	Small commercial real estate loans with original amounts of more than $100,000 through $1 million; measured as the bank's real estate loans secured by nonfarm, nonresidential properties with original amounts of more than $100,000 through $1 million, divided by the book value of bank assets.
Loans and Leases	
LGC&I	Total large commercial and industrial loans; measured as the bank's total commercial and industrial loans minus total small commercial and industrial loans (*SMC&I*), divided by the book value of bank assets.
LGCRE	Total large commercial real estate loans; measured as the bank's total loans secured by nonfarm, nonresidential properties, minus the total small commercial real estate loans (*SMCRE*), divided by the book value of bank assets.
CSTR	Total construction loans; measured as the bank's total construction, land development, and other land loans, divided by the book value of bank assets.
RES	Total loans secured by 1–4-family residential properties; measured as the bank's total loans secured by 1–4-family residential properties, divided by the book value of bank assets.
MULT	Total loans secured by multifamily residential properties; measured as the bank's total loans secured by multifamily residential properties, divided by the book value of bank assets.
FARM	Total loans to farmers; measured as the sum of the bank's loans secured by farmland and loans to finance agricultural production and other loans to farmers, divided by the book value of bank assets.
CONS	Total consumer loans including credit card and other revolving plan loans, divided by the book value of bank assets.
OTHLNS	Total other loans and leases; measured as the sum of the bank's loans to depository institutions, loans to foreign governments, loans made by the bank's foreign offices plus all lease financing receivables, divided by the book value of bank assets.

Other Balance Sheet Items	
SEC_AFS	Fair value of the available for sale securities holdings; measured as the sum of the bank's available for sale securities and equity securities, each measured at fair value, divided by the book value of bank assets.
SEC_HTM	Fair value of the held-to-maturity securities holdings; measured as the bank's securities held to maturity recorded at fair value, divided by the book value of bank assets.
RESV	Reserves, measured as the bank's cash and balances due from depository institutions, divided by the book value of bank assets.
FF	Net federal funds sold and securities purchased under agreements to resell; measured as the bank's federal funds sold and securities purchased under agreements to resell net of the bank's federal funds borrowed and securities sold under agreements to repurchase, divided by the book value of bank assets.
TRADA	Trading assets; measured as the bank's trading assets, divided by the book value of bank assets.
NPL	Nonperforming loans; measured as the sum of the bank's loans over 90 days past due and nonaccruing loans, divided by the book value of bank assets.
FIX	Fixed assets, divided by the book value of bank assets.
INTAN	Intangible assets, divided by the book value of bank assets.
MiscA	The sum of investments in unconsolidated subsidiaries and other assets reported in Schedule RC-F, divided by the book value of bank assets.
OREO	Other real estate owned, divided by the book value of bank assets.
CORE	Core deposits; measured as the sum of the bank's demand deposits, NOW and other transaction accounts, money market deposit accounts, and other savings accounts, divided by the book value of bank assets.
OTHDEP	Other deposits; measured as the bank's time deposits, divided by the book value of bank assets.
TRADL	Trading liabilities; measured as the bank's trading liabilities, divided by the book value of bank assets.
OTHLIAB	Other liabilities; measured as the sum of the bank's other borrowed money, liability on acceptances executed and outstanding, subordinated notes and debentures, minority interest in consolidated subsidiaries, perpetual preferred stock and related surplus, and other liabilities, divided by the book value of bank assets.
Other Bank Characteristics & Measures	
FEE	Fee income; measured as the bank's total noninterest income net of service charges on deposit accounts in domestic offices and net gains (losses) on sales of loans, leases, and other real estate owned, divided by the book value of bank assets.
OPEXPtoOPINC	Noninterest (operating) expense; measured as the sum of the bank's expenses on salaries and employee benefits, expenses of premises and fixed assets, and other noninterest expenses, divided by operating income.
LHERF	The logarithm of the Herfindahl index that measures the concentration of assets within a multibank holding company; constructed as follows: $\text{LHERF} = Log\sum_{i=1}^{n}\left(\frac{100 * \text{Assets of Subsidiary}_i}{\text{Sum of Assets of All Subsidiaries}}\right)^2$
Crs	Crisis dummy which equals 1 for bank-year observations from 2008 to 2010, 0 otherwise.
ACQ%	Percentage of ownership acquired in target banks sold in M&A transactions.
CASH%	Percentage of cash offered by acquirers in the total purchase price of target banks.
RELSIZE(%)	Relative size measured as the book assets of target bank divided by the book assets of acquirer.

Appendix 2: Value to Community Banks of Relationship Lending during and outside the Global Financial Crisis Period, Excluding the COVID-19 Pandemic Period

The estimations shown in this table are the same as in Table 10 except that they *exclude the COVID-19 pandemic period*, 2020 to 2021. Column 1 displays the estimates for the variables of interest from the fixed-effect model of bank valuation (Equation 3) interacting the *Crs* dummy variable with all the regressors (showing only the variables of interest to save space) for the sample of publicly traded community banks from 1994 to 2019. The *Crs* dummy takes on a value of one if the bank-year observation belongs to the years of the GFC, from 2008 to 2010, and zero otherwise. The dependent variable is Tobin's Q. The estimation includes *RESV*, *SEC*, *FF*, and *TRADA* with coefficients constrained to one, and TRADL with its coefficient constrained to minus one. Columns 2 and 3 show the absolute effects of assets evaluated during the non-GFC period and GFC period, respectively. ***, **, and * indicate a statistical difference from zero at 1 percent, 5 percent, and 10 percent significance level, respectively. The superscripts a, b, c indicate that a coefficient differs from unity at the 1 percent, 5 percent, and 10 percent significance level, respectively. The specification includes bank size decile dummies based on total book assets. All dollar-denominated variables are adjusted to constant dollars using the Consumer Price Index. The specification includes bank fixed effects and time fixed effects. Standard errors are clustered at the bank level. All variables are defined in Appendix 1.

		Testing Absolute Effects		
		Non-GFC Period	GFC Period	
Dependent Variable:	Tobin's Q	∂Tobin's Q/ ∂X | *Crs*=0	∂Tobin's Q/ ∂X | *Crs*=1	*Diff*
	(1)	(2)	(3)	*(3)-(2)=0*
LGC&I	1.0408***	1.0408***	0.9973	-0.0435
	(0.0345)	(0.0345)	(0.0503)	(0.0450)
LGC&I x Crs	-0.0435			
	(0.0450)			
SM1C&I	1.3171***	**1.3171***b**	**1.5713***b**	0.2542
	(0.1670)	(0.1666)	(0.2359)	(0.2292)
SM1C&I x Crs	0.2542			
	(0.2292)			
SM2C&I	0.9346***	0.9346***	0.9378***	-0.0032
	(0.0556)	(0.0556)	(0.0844)	(0.0839)
SM2C&I x Crs	0.0032			
	(0.0839)			
LGCRE	0.9647***	0.9647***	**0.9073***a**	**-0.0574***
	(0.0394)	(0.0394)	(0.0361)	(0.0347)
LGCRE x Crs	-0.0574*			
	(0.0347)			
SM1CRE	1.1056***	1.1056***	0.7952***	-0.3104
	(0.2234)	(0.2234)	(0.3819)	(0.3956)
SM1CRE x Crs	-0.3104			
	(0.3956)			
SM2CRE	0.9962***	0.9962***	**0.8268***a**	**-0.1694****
	(0.0392)	(0.0392)	(0.0552)	(0.0501)
SM2CRE x Crs	-0.1694***			
	(0.0501)			
Test SM1C&I-LGC&I=0		**0.2763***	**0.5740****	0.2977
		(0.1690)	(0.2321)	(0.2297)
Test SM2C&I-LGC&I=0		-0.1062	-0.0595	0.0467
		(0.0618)	(0.1063)	(0.1036)
Test SM1CRE-LGCRE=0		0.1409	-0.1121	-0.2530
		(0.2281)	(0.3853)	(0.3984)
Test SM2CRE-LGCRE=0		0.0315	-0.0805	**-0.1120***
		(0.0468)	(0.0568)	(0.0609)
Controls	Yes			
Bank Fixed Effect	Yes			
Time Fixed Effect	Yes			
Clustered Std Errors	Yes			
Observations	5,016			
Number of Banks	771			
Adj R-squared	0.847			