The Effects of Fiscal Policy through the Banking Sector: Evidence from Deferred Tax Assets

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Abstract:
One of the primary motivations for corporate tax rate decreases is to stimulate investment. However, because deferred tax assets (DTA) are a component of bank capital and valued at the relevant tax rate, tax rate cuts can diminish the value of DTA capital. Since banks' ability to lend depends on their capital, this suggests that the impact of the tax rate cut on bank lending could depend on the extent of DTA capital. Using the corporate tax rate cut in the Tax Cuts and Jobs Act, we find that banks with significant DTA balances experienced meaningful reductions in the value of their DTA capital. The banks with higher reductions in DTA capital, in turn, exhibit lower commercial lending post-TCJA, particularly in lending to small businesses, relative to other banks. Using granular bank-county-level data on small business lending, we find that the lower lending for high DTA capital decline banks relative to other banks is concentrated in smaller counties and low-income counties. Finally, we document that, after the TCJA, counties that have more small business lending from high DTA capital decline banks experience lower small business lending post-TCJA, as well as reduced local employment and establishments, relative to other counties. Overall, our findings highlight that the impact of tax policy on economic growth can depend on how these policies filter through the regulatory aspects of the banking sector.

Keywords: deferred tax assets, bank capital, tax policy, bank lending, regulatory capital, local economic growth, new business formation

JEL classification: G21, G28, H25

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1. Introduction

Policymakers and academics assess how fiscal policy affects the economy through its impact on the firm's cost of capital (Hall and Jorgenson 1967), which, in turn, influences the firm's demand for capital to fund investment. For example, statutory rate cuts are expected to spur investment and employment by lowering the user cost of capital. We highlight a different, often overlooked channel through which fiscal policy affects the economy—the regulation of the banking sector and its effect on the *supply* of capital. Banks are a primary supplier of credit, in particular to smaller and private firms (Strahan and Weston 1998; Berger, Klapper, and Udell 2001; Cetorelli and Strahan 2006). Thus, factors that impact banks' ability to act as a financial intermediary can have widespread effects in the economy (Demirgüç-Kunt and Maksimovic 1998, 1999; Levine and Zervos 1998; Levine 2003; Smolyansky 2019). In sum, a tax policy change can affect economic activity not only by altering firms' incentives, but also by impacting banks' ability to intermediate. Further, because regulatory constraints are not equally binding for all banks, tax policy changes may have heterogeneous effects that are driven by differences in banks, and subsequently affect the regions that rely on them. In this paper, we study a setting in which a corporate tax rate cut impacts banks' regulatory capital, allowing us to examine how prudential bank regulation can shape the credit-supply and real effects of fiscal policy.

Regulatory capital is the buffer that regulators require banks to hold against their risk-weighted assets. The purpose of regulatory capital is to ensure that banks can absorb losses and remain viable intermediaries, and regulators implement this aspect of regulatory oversight by requiring that banks meet certain capital ratio thresholds (for example, by requiring banks maintain tier 1 capital equal to or greater than 6 percent of risk-weighted assets, a measure of the riskiness of the bank's assets). Even when banks have substantial capital cushions, they manage their capital actively (Berger, DeYoung, Flannery, Lee, and Öztekin 2008; Gropp and Heider 2010; Memmel and Raupach 2010). This means that a reduction in regulatory capital can therefore prompt a bank to make changes, and in particular reduce their lending, as lending directly affects risk-weighted assets and therefore the denominator of capital ratios (Peek and Rosengren 1995). In particular, banks may curtail lending to businesses, which, relative to other types of lending (e.g., mortgages), are assigned a higher risk weight in the regulatory capital calculation (Gropp, Mosk, Ongena, and Wix 2019; Juelsrud and Wold 2020).

We are interested in one specific component of regulatory capital—deferred tax assets (DTAs), which represent future tax benefits and, subject to strict limits, can be included in Tier 1 capital. Because DTAs are valued at the enacted statutory tax rate, a corporate rate cut mechanically reduces DTA values and therefore reduces regulatory capital for banks with larger DTA positions. Banks that seek to maintain regulatory (and internal) capital targets can respond by contracting risk-weighted assets, which naturally shows up as reduced lending—particularly in segments like commercial and small business credit—potentially creating downstream effects in counties that are more exposed to DTA-intensive banks. Thus, the tax rate cut may lead to reductions in the supply of credit to firms which vary across regions, shaping the heterogeneity in the extent to which the tax rate cut spurs economy activity.

To examine how fiscal policy changes affect economic activity depending on the regulation of the banking sector, and specifically the inclusion of DTAs into regulatory capital, we examine the period around the 2016 U.S. election and the subsequent passage of the Tax Cuts and Jobs Act (TCJA), which was the most significant reform to U.S. taxation in over thirty years. The 2016 U.S. election resulted in the U.S. executive and legislative branches being fully controlled by the Republican Party. This outcome was unexpected, and it also substantially increased the likelihood of material changes to corporate tax policy, and in particular a reduction in the statutory tax rate (Armstrong, Glaeser, and Hoopes 2024; Gallemore, Hollander, Jacob, and Zheng 2025). Then, in December 2017, President Donald Trump signed the Tax Cuts and Jobs Act into law. The centerpiece provision of the TCJA was a reduction in the corporate statutory tax rate from 35 to 21 percent, which substantially decreased the value of DTA.

While the change in the statutory tax rate as part of the TCJA affected all U.S. banks, the specific impact on the value of DTA capital depended on the extent to which the bank relied on DTA for capital prior to the tax rate cut. Put differently, banks with more DTAs included in regulatory capital before the election likely anticipated a larger revaluation of the DTA component of their regulatory capital as a result of a tax rate cut, whereas banks with little or no DTA capital would not have anticipated that the statutory tax rate cut would impact their capital. Thus, our design exploits variation in banks' exposure to the potential tax rate cut's impact on DTA by sorting banks on the extent of their DTA immediately before the tax cut.

We begin our analyses by examining the impact of the TCJA on the value of bank DTA capital. Consistent with the tax rate cut impacting the value of DTA, we find that the ratio of bank DTA to total tier 1 capital declined by 33 percent, from 2017 Q3 (the last quarter before the TCJA was passed) to 2017 Q4 (the first quarter after the TCJA was passed).[1] Further, when we compare high DTA banks (i.e., those with above-median ex-ante values of the percent of capital made up of DTA) to low DTA banks (i.e., those with below-median values), we find that for high DTA banks, the ratio of bank DTA to total tier 1 capital declined by 32 percent more than for banks with

[1] Because DTAs are valued at the enacted tax rate, revaluations of DTAs occurred during Q4 2017, even though the TCJA did not become effective until 2018.

low DTA. These reductions are close to the TCJA's 40 percent reduction in the statutory tax rate.[2] Thus, the TCJA did appear to reduce the extent of bank DTA capital.[3]

Next, we examine the impact of the TCJA on bank lending via the DTA capital channel. Following the unexpected outcome of the 2016 U.S. election, expectations of a statutory corporate tax rate cut increased sharply, implying that banks with greater DTA exposure could anticipate a decline in regulatory capital and begin adjusting lending in the post-election period (Gallemore et al. 2025).[4] We find that banks with large declines in DTA capital (which we refer to as large DTA decline banks) curtail lending relative to other banks in the immediate aftermath of the 2016 U.S. election. This decline is primarily concentrated in commercial loans, as opposed to real estate loans. This result is likely driven by the fact that commercial loans receive higher risk weights in regulatory capital calculations and are thus more likely to be affected by changes in bank capital. These findings suggest that large DTA capital decline banks reduced their commercial lending in response to the impact of the statutory tax rate reduction on the value of their DTA capital.

We conduct three additional tests to support this interpretation. First, we visually present the dynamics underlying this treatment effect. We find that the trends in commercial lending were similar between large DTA capital decline banks and other banks in the run-up to the 2016 U.S. election, at which point the large DTA capital decline banks reduce their commercial lending. This finding is consistent with large DTA capital decline banks anticipating that a statutory tax rate cut

[2] For high DTA banks in our sample, DTAs represent approximately 5.98% of CET1 capital in the quarter prior to the 2016 election. A TCJA-induced reduction in DTA values of up to 40% therefore implies a mechanical decline in CET1 capital of roughly 2.4% (= 5.98% × 40%), absent any offsetting capital or balance-sheet adjustments.

[3] In practice, it is possible that a devaluation of a bank's DTAs as a result of the TCJA may not impact the bank's regulatory capital if it had substantial DTAs that were excluded from capital prior to the TCJA.

[4] Consistent with this anticipation, we found several examples of banks discussing the potential impact of the 2016 U.S. election outcome in their corporate disclosures. For example, Capital One noted in its 2016 10-K, filed after the 2016 U.S. election results but before the legislation that became the TCJA was introduced, that "legislative changes to the corporate tax code could result in material impacts to our results of operations due to changes to the valuation of our deferred tax assets."

was likely to occur following the election and beginning to curtail commercial lending. Further, observing similar trends between high DTA capital decline banks and other banks prior to the election suggests that the assumption of parallel trends underlying our difference-in-differences design is reasonable.

Second, we note that a regulatory change that occurred during our sample period also impacted the value of DTA capital. Basel III reduced the extent to which DTAs count toward regulatory capital by (i) deducting DTAs tied to NOLs and tax credit carryforwards, (ii) imposing threshold-based deductions on temporary-difference DTAs that rely on future taxable income, and (iii) applying higher risk weights to DTAs not deducted. We address the concern that this regulatory change—and not the statutory tax rate change—is responsible for our findings in several ways. First, we note that banks were aware of these changes to the inclusion of DTAs into regulatory capital well in advance of our sample period (e.g., early 2016). Further, the deductions for DTAs in terms of their inclusion into regulatory capital were gradually phased in during our sample period.[5] Additionally, using a stylized example, we show that the impact of these changes on the tier 1 capital ratio is likely to be small relative to the statutory tax rate cut included as part of the TCJA.

To address the Basel III changes empirically, we conduct two tests that exploit banks' mortgage servicing agreements (MSAs), since MSAs were also subject to the increase in risk weight from 100 to 250%. First, we re-estimate our test with high MSA banks as the control group and continue to find similar results. Second, we use high MSA banks as a placebo test (as they are affected by the same regulatory change in risk weighting but are not directly influenced by corporate tax rate cuts) and find no significant changes in commercial loans. Collectively, these

[5] For non-advanced approaches banks, the threshold deduction was 40% in 2015, 60% in 2016, 80% in 2017, and 100% in 2018.

tests mitigate concerns that the Basel III changes to DTA inclusion into capital are responsible for our findings.

Third, to mitigate concerns about general declines in lending by the large DTA decline banks for reasons other than the tax cut's impact on DTA capital, we conduct a placebo test where we examine lending under the Small Business Association's 7(a) program. Because these loans are guaranteed by the government, they carry no capital or risk-weighted asset implications and therefore should not respond to changes in banks' incentives to manage regulatory capital. Consistent with this prediction, applying our baseline design to 7(a) lending yields no differential change for large DTA decline banks relative to other banks after the 2016 election. These findings indicate that our results are not driven by a broad contraction in small business lending, but rather by shifts in lending that affect regulatory capital. Next, we dig deeper into the commercial lending result by examining how the TCJA impacted small business loans—that is, loans to businesses in amounts of $1 million or less—via the DTA capital channel. Using data reported under the Community Reinvestment Act, we find that banks with large declines in DTA capital also curtail small business lending, particularly for loan amounts between $100,000 and $1 million. We further find that banks are more likely to cut back on loans extended to small businesses in counties in which the bank lacks a physical branch location, consistent with banks responding to the TCJA-induced DTA capital reduction by curtailing lending in areas where they do not have a soft information advantage.

Finally, we examine the local economic consequences of the decline in DTA capital value induced by the TCJA's tax rate cut. We sort counties into their pre-TCJA exposure to small business lending from banks, and specifically banks with greater reliance on DTA capital. Since small business lending is generally based on relationships and soft information, reductions in lending from the existing relationship banks in these counties are unlikely to be fully offset by lending from other banks or other capital providers, at least in the short run. Consistent with this idea, we observe that counties with greater pre-TCJA exposure to banks with large declines in DTA capital experience declines in aggregate small business lending relative to other counties around the TCJA. The reduction in lending is even more pronounced in smaller counties and counties with low income. Furthermore, the counties with greater exposure to affected banks subsequently experience declines in employment and establishments. Overall, the evidence is consistent with tax policy having unintended consequences on local economies through the variation in lending created by the banking sector, and specifically the composition of bank regulatory capital.

We contribute to several literatures. First, our study adds to the extant research on the impacts of tax policy on economic activity and growth (Djankov, Ganser, McLiesh, Ramalho, and Shleifer 2010; Ljungqvist and Smolyansky 2018; Ljungqvist, Zhang, and Zuo 2017; Ohrn 2018; Giroud and Rauh 2019; Langenmayr and Lester 2018; Lester 2019). Most prior work finds that lower tax rates stimulate economic activity, because lower taxes reduce the user cost of capital and thus increase the net present value of investment projects (Hall and Jorgenson 1967). More recent research has documented drivers of heterogeneity in the impact of tax policy on economic activity (Suárez Serrato and Zidar 2016; Zwick and Mahon 2017; Gallemore et al. 2025). We extend this literature by documenting a novel source of this heterogeneity—the banking sector, and specifically the role of regulatory capital.

Second, our paper adds to the broad literature examining the effects of banks' regulation, and specifically the accounting for regulatory capital (Beatty and Liao 2014), by showing that the value of the assets that comprise capital can be affected by fiscal policy. Our findings are relevant for regulators such as the Office of the Comptroller of the Currency, the Federal Reserve System, and the Federal Deposit Insurance Corporation in weighing the potential costs and benefits of DTA inclusion rules for financial institutions.

Finally, we contribute to the ongoing debate on DTA admittance into Tier 1 capital.[6] The media repeatedly draws attention to banks' DTA, identifying them as a potential cause for poor financial performance.[7] The concern is that if expected future profitability declines, tax assets are written down, so the value of the buffer declines precisely when the bank needs it, increasing bank risk. Consistent with idea, Basel III introduced new limitations on the inclusion of DTA into capital. Our findings highlight a different consequence of including DTA into capital—regulatory capital, and consequently bank lending, becomes more exposed to changes in the statutory tax rate. In doing so, we contribute to the literature examining the inclusion of DTA into bank capital, which has primarily focused on the determinants as opposed to the consequences (Skinner 2008).

2. Institutional details

2.1. Bank regulation and capital in the United States

This study examines commercial banks, which are regulated by the Federal Reserve, the Federal Deposit Insurance Corporation (FDIC), Office of the Comptroller of the Currency (OCC), or the Office of Thrift Supervision (OTS). Each regulator's mission includes monitoring bank operations to protect the banking system.[8] Specifically, one regulatory objective is to ensure financial institutions have the ability to absorb some losses. This is accomplished by requiring banks to maintain certain levels of capital (Ryan 2007). Regulators monitor bank capital levels

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[6] See Banks Gain in Rules Debate

[7] See Tax Assets: Here Today, Gone Tomorrow?, Citigroup's 'capital' was all casing, no meat, and Citi, BofA show investors can't bank on capital

[8] For example, the Federal Reserve System states as one of its responsibilities "supervising and regulating banking institutions to ensure the safety and soundness of the nation's banking and financial system (http://www.federalreserve.gov/generalinfo/faq/faqfrs.htm).

through quarterly reports. If a financial institution is unable to maintain specified capital levels, the regulator can take actions which can include closing and liquidating the institution.

Capital ratios represent a tool for assessing the soundness of financial institutions (Estrella, Park, and Peristiani 2000). The primary measure is the tier 1 capital ratio, which is tier 1 capital divided by total risk-weighted assets. Tier 1 capital is calculated by making a series of adjustments to bank common equity. To arrive at the denominator of the ratio (risk-weighted assets), a bank multiplies each of its assets by a risk weight. For example, U.S. government bonds generally receive a risk weight of zero, meaning the bank is not required to hold any capital in reserve for government bonds. However, most bank assets receive the maximum risk weight (100 percent). Thus, adding risky assets (such as mortgages or commercial loans) to the bank's balance sheet will require additional capital should the bank desire to maintain the same tier 1 ratio, whereas buying assets with a zero risk weight (such as riskless bonds) does not require any additional capital.

2.2. Deferred tax assets and liabilities

Deferred tax assets and liabilities arise when there is a temporary difference between the financial accounting and tax treatments for a transaction. The DTA (DTL) recorded is the dollar value of the difference between the book value of an asset (liability) and its tax value, multiplied by the enacted future tax rate. Once a firm determines its total DTA balance, it then evaluates the likelihood of recognizing the tax deductions, which depends on having adequate future taxable income. SFAS No. 109 (now ASC 740) allows firms to record DTA to the extent that they will be realized in future periods and requires a valuation allowance to be recognized if "on the weight of the available evidence, it is more likely than not that some portion or all of the deferred tax asset will not be realized" (FASB 1992). Thus, the valuation allowance reduces the net value of the

DTA. As such, the net DTA balance represents the value of the tax benefit that is more likely than not to be realized.

Common sources of DTAs for banks are loan loss provisions, security and loan valuations, employee compensation, and net operating loss (NOL) and tax credit carryforwards. Loan loss provisions often create DTAs because they generate a temporary difference between book and tax, as financial accounting requires banks to record an accrual for loans that may not be collected, whereas tax rules only grant deductions for uncollectible loans when they are eventually written off. Security and loan valuations also create DTAs because financial accounting rules recognize unrealized gains and losses in stockholders' equity, while tax rules do not recognize gains or losses until the eventual sale. Common sources of DTLs are fixed assets and leases, security and loan valuations, and mortgage servicing rights (MSR).[9]

2.3. Rules governing inclusion of DTA in regulatory capital

The inclusion of deferred tax assets (DTAs) in regulatory capital is shaped by both accounting standards and bank capital rules. In addition to the accounting standards, regulatory capital rules distinguish between DTAs that are dependent on future taxable income (such as DTAs arising from operating loss and tax credit carryforwards and certain temporary-difference DTAs that are not realizable through carrybacks) and DTAs that can be realized through carrybacks or offsets. In general, DTAs dependent on future taxable income receive more conservative treatment in regulatory capital calculations: they are deducted from CET1 or admitted only up to specified limits, and any non-deducted amounts are risk-weighted. Banks report both their net DTA (or net

[9] MSRs generate DTLs because GAAP recognizes MSRs at fair value, but MSRs often have little or no tax basis when originated/retained, meaning that their book value exceeds their tax basis.

DTL) position and the relevant capital adjustments in regulatory filings, which allows researchers to observe DTA exposures and their treatment in regulatory capital ratios.[10]

Specifically, prior to Basel III (i.e., under the pre-CET1 Tier 1 capital framework), regulatory rules indicated that the amount of DTA dependent upon future taxable income allowed in capital was limited to the lesser of: (1) the amount of such DTA the bank expects to recognize within one year of the quarter-end report based on its projection of future taxable income, or (2) ten percent of the amount of the bank's adjusted Tier 1 capital.[11] Any excess amount was excluded (i.e., deducted) for regulatory capital purposes. Banks generally report the net DTA (or net DTL) position and the amount of DTA excluded from the regulatory capital calculation in their regulatory filings.[12,13] Appendix B reproduces excerpts from Citibank's 2019 Q2 Call Report (Schedule RC-R) that illustrate how banks translate these DTA-related adjustments into regulatory capital ratios. Appendix C provides a stylized numerical example that walks through these mechanics and highlights the key implication for our setting: because DTAs are measured at the enacted tax rate, a statutory tax-rate cut mechanically revalues DTAs and can affect regulatory capital ratios even holding the regulatory treatment of DTAs fixed.

Basel III changed how certain DTAs enter regulatory capital, primarily by treating some DTAs as "threshold items" alongside mortgage servicing assets and certain significant investments.

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[10] According to the instructions to the FR Y-9C form, filed by bank holding companies, DTA that are dependent upon future taxable income are (a) DTA arising from deductible temporary differences that exceed the amount of taxes previously paid that a bank could recover through loss carrybacks if the bank holding company's temporary differences (both deductible and taxable) fully reverse at the report date and (b) DTA arising from operating loss and tax credit carryforwards.

[11] Adjusted tier 1 capital is the tier 1 capital amount reported on the call report plus disallowed DTA, disallowed service assets, and purchased credit card relationships.

[12] Banks can net DTA and DTL across jurisdictions in their regulatory filings, and thus generally only report a net DTA or net DTL position.

[13] Banks do not directly report the amount of DTA included (which is net DTA minus the DTA excluded). This calculation must be made manually. Banks also do not indicate how much of their DTA are dependent on future taxable income, nor do they separate out excluded DTA into amounts excluded due to the expected profitability limitation and amounts excluded because of the ten percent limitation.

For temporary-difference DTAs that are not realizable through net operating loss carrybacks (net of valuation allowances and applicable DTL offsets), the rules apply 10% (individual) and 15% (aggregate) CET1 deduction thresholds: amounts above the thresholds are deducted from CET1, while any non-deducted remainder is included in risk-weighted assets. The phase-in of these threshold deductions was gradual (40%/60%/80% for advanced approaches institutions in 2015–2017, and 100% beginning in 2018), and the risk-weight applied to the non-deducted portion stepped up for advanced approaches institutions beginning in 2018 (while non-advanced approaches institutions continued to apply transitional treatment). Appendix C also provides a short numerical illustration that separates the mechanical effect of the tax-rate remeasurement of DTAs from these Basel III capital-rule features, and Section 4 reports robustness tests designed to ensure our findings are not attributable to contemporaneous Basel III implementation.

The inclusion of DTA in bank regulatory capital has been the subject of ongoing debate. Unlike other forms of capital a bank can hold, DTA can only be utilized if a bank generates sufficient taxable income in future periods, making them a less reliable component of capital. Critics argue that the inclusion of DTA in tier 1 capital weakens a bank's financial position because it is a less stable buffer against losses, particularly during periods of economic downturn or tax rate changes, when capital is most important. While regulators have considered requiring banks to fully exclude DTA from tier 1 capital to address these concerns, they instead imposed strict limitations on the amount and type of DTA banks are able to include in their regulatory capital. Despite these safeguards, the fluctuating nature of DTA has continued to be a source of controversy.

2.4. The Tax Cuts and Jobs Act of 2017

The Tax Cuts and Jobs Act (TCJA) is the most substantial change to U.S. tax policy since the Tax Reform Act of 1986. It included several major changes to business taxation, most notably lowering the top statutory corporate income tax rate from 35 to 21 percent, moving from a worldwide tax system to a modified territorial tax system, and expanding the ability to immediately expense new investments. The TCJA was introduced in the U.S. House of Representatives on November 2, 2017, was signed into law on December 22, 2017, and became effective on January 1, 2018. The Council of Economic Advisors hailed the TCJA as being pro-growth and claimed it spurred corporate investment.

The TCJA affected firms' DTA and DTL values in several ways. Most prominently, the tax rate cut required firms to revalue all DTAs and DTLs at the new rate, resulting in a one-time adjustment to firms' DTA and DTL values. Beyond this one-time revaluation, other provisions of the TCJA affected firms' DTAs and DTLs by changing net operating loss rules, limiting interest deductibility, and introducing new international tax provisions. Restricting NOL utilization to 80 percent while simultaneously changing the carryforward and carryback years (reducing the carryback from 2 to 0 years and increasing the carryforward from 20 to unlimited years) likely reduced firms' DTAs.[14] However, the change in NOLs is unlikely to affect the bank capital channel we have in mind because DTAs arising from NOLs depend on future taxable income and are thus excluded from bank capital. Limiting interest deductibility (and allowing the disallowed amount to be carried forward) potentially generated new DTAs. Collectively with the international tax changes, these provisions affected DTAs and DTLs in several (sometimes opposing) directions. However, as we discuss below in section 3, we find that the average decline in DTA capital (i.e., bank DTA as a percentage of total Tier 1 capital) is 34% in Q4 2017, which is similar to the 40% decline in the corporate tax rate and suggests that the total effect of TCJA is comparable to the tax-rate-only effect.

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[14] Alternatively, instead of reducing DTAs, the TCJA may have increased DTAs for firms with high expected taxable income in 20+ years.

3. Effect of the TCJA on the value of bank DTA assets and capital

We begin by studying the effect of the TCJA on the value of bank DTA. We view this as a validation test—the idea being that the TCJA is unlikely to affect bank lending via DTA if it did not have a direct impact on the value of DTA.

First, we visually examine how the value of DTA included in tier 1 capital evolved around the TCJA in Figure 1. Specifically, we plot the average value of bank DTA included in tier 1 capital (as a percentage of total assets in 2017) over the period from 2015 Q1 to 2019 Q4. Since the TCJA was signed into law on December 22, 2017, banks (like all other companies) would be required to write down the value of their DTAs using the new statutory tax rate (21%) beginning in 2017 Q4 (which reports financial results after the TCJA's enactment). Consistent with this idea, we observe a clear decline in the value of bank DTA capital from 2017 Q3 to 2017 Q4. Furthermore, the economic significance of the decline in Figure 1 almost identically matches the cut in the statutory tax rate: we observe a decline in DTA value of 34 percent, and the TCJA cut the statutory tax rate by 40 percent (from 35% to 21%). Thus, Figure 1 provides strong evidence that the TCJA led to a decrease in the value of bank DTA capital.

Since we are interested in how the TCJA's impact on DTAs affects bank lending via a regulatory capital mechanism, we next examine whether a similar pattern emerges when scaling DTA by Tier 1 capital rather than total assets, which more directly captures the extent to which a bank's regulatory capital base was affected by the TCJA. Thus, in Figure 2, we repeat this analysis using *DTA Percent*, which is the amount of DTA included as part of regulatory capital scaled by total tier 1 capital. We observe a similar decline in *DTA Percent*, and this decline is approximately 33 percent, again similar to the statutory tax rate cut.

We also explore the impact of the TCJA on DTA capital in a multivariable framework, which allows us to account for other factors that could shape DTA capital during our sample period. Specifically, we estimate a difference-in-differences specification on a bank-quarter panel:

$$DTA\ Percent_{i,q} = \boldsymbol{\beta}_0 + \boldsymbol{\beta}_1\, High\ DTA_i \times Post\ Tax\ Cut_q + \gamma' X_{i,q} + Y_i + Z_q + \boldsymbol{\varepsilon}_{i,q} \qquad (1)$$

The dependent variable is *DTA Percent*, which again is the percent of a bank's tier 1 capital made up of DTA for bank *i* in quarter *q*. The main independent variable is the interaction of *High DTA* and *Post Tax Cut*.[15] *High DTA* is an indicator variable equal to one if the bank's DTA included in Tier 1 capital is above the median value for banks in the third quarter of 2017, the quarter immediately before the TCJA is passed.[16] *Post Tax Cut* is an indicator variable for calendar quarters beginning in the fourth quarter of 2017. *X* is a vector of time-varying bank-level control variables, including the amount of *Brokered Deposits*, *Cash to Deposits ratio*, *Loans to Deposits ratio*, *Net Interest Margin*, *Noninterest Ratio*, *ROA*, and *Size*. We also include bank and year-quarter fixed effects. We cluster standard errors at the bank level. To aid comparability between treated and control banks, we limit our analysis to only include banks with non-zero amounts of DTA included in tier 1 capital prior to the TCJA.

We tabulate descriptive statistics for all banks in Table 1 Panel A and for high DTA banks in Panel B. High DTA banks are larger, less-well capitalized, and have higher C&I and real estate loans as a percent of their total loan portfolio.

We tabulate the results from estimating equation (1) in Table 2. We report results without control variables in column 1 and with control variables in column 2 to address potential issues from "bad controls" (Angrist and Pischke 2009). Across both columns, we find a negative coefficient estimate on *High DTA* × *Post Tax Cut*. In terms of economic magnitude, the 0.32

[15] *High DTA* and *Post* both drop out of the equation because of bank and year-quarter fixed effects.
[16] Results are robust to using the highest quartile as well.

coefficient estimate suggests that banks with the highest DTA percentage in capital experience a 32% decline in the percent of capital made up of DTA, which is again is close to the 40% tax rate cut in the TCJA. Collectively, the findings in Figures 2 and Table 2 are consistent with the TCJA reducing the extent of DTA included in bank tier 1 capital.

4. Effect of the TCJA on bank lending via DTA capital

4.1. Research design

Next, we examine whether the decline in DTA capital induced by the TCJA affected bank lending. Banks are required to maintain certain capital ratios, where the capital ratio is the ratio of capital to risk-weighted assets. While most U.S. commercial banks have capital ratios that are well above regulatory minimums, banks generally prefer to maintain target capital ratios and thus will likely respond to a reduction in the value of capital (the numerator of the capital ratio) by either raising capital or reducing factors that shape risk-weighted assets (e.g., loans). Since raising capital is unlikely on short notice, we predict that firms with the largest declines in DTA capital will instead reduce their lending, relative to other banks.

To test this prediction, we estimate the following regression on a bank-quarter panel:

$$Loan\ Amount_{i,q} = \boldsymbol{\beta}_0 + \boldsymbol{\beta}_1\, DTA\ Decline_i \times Post\ Election_q + \gamma' X_{i,q} + Y_i + Z_q + \boldsymbol{\varepsilon}_{i,q} \qquad (2)$$

The dependent variable is *Loan Amount*, which is the natural logarithm of loan amounts for three different types of loans: *C&I*, *Real Estate*, and *Total*. We examine C&I lending and real estate lending because these two types of lending have the largest impacts on aggregate economic growth: C&I lending via encouraging business growth and employment, and real estate lending by facilitating construction and building ownership by both firms and households. Both loan types likely increase durable assets and expand the productive capacity of the economy.

The main independent variable is the interaction of *DTA Decline* and *Post Election*. *DTA Decline* is an indicator variable equal to one if a bank's decline in DTA included in tier 1 capital following TCJA is greater than the sample median.[17] *Post Election* is an indicator variable for calendar quarters beginning in the fourth quarter of 2016. We specify the post period to begin in 2016 because Donald Trump was unexpectedly elected in November 2016, and he campaigned heavily in favor of lowering the corporate tax rate. As such, the expectation for future corporate tax rates declined in 2016, creating a period of time where banks could preemptively adjust their lending behavior in anticipation of lower future tax rates and the resulting impacts on DTA capital. For example, in Capital One's 2016 10-K, its managers state, "legislative changes to the corporate tax code could result in material impacts to our results of operations due to changes to the valuation of our deferred tax assets." However, results are comparable when we examine the post-TCJA period rather than the post-election period and exclude the potentially contaminated quarters between Trump's presidential election and the passage of the TCJA.

If banks are responding to declines in DTA capital by reducing lending, we expect that the coefficient on $\boldsymbol{\beta}_1$ will be negative. We include the same vector of time-varying bank-level controls as in equation 1. We also include bank and calendar year-quarter fiscal year fixed effects. We cluster standard errors at the bank level. In addition, for each loan type, we require that banks have originated at least one such loan prior to the TCJA. For instance, in the case of C&I loans, a bank must have made at least one C&I loan before the TCJA. This restriction ensures that we observe how banks with prior experience in a given loan category adjust their lending behavior following the TCJA.

[17] Results are comparable when comparing the highest and lowest quartile of *DTA Decline*.

4.2. Results

We present results from estimating equation (2) in Table 3 Panel A, with columns 1-3 examining changes in C&I, real estate, and total loans, respectively. In column 1, we find evidence suggesting a 4.3% decline in C&I loans following the election (and the subsequent tax cut). In columns 2-3, the coefficient estimates for real estate and total loans are economically small and statistically insignificant, suggesting that there was no corresponding change in real estate or total loans following the election.[18] Given that C&I loans are assigned a higher risk weight than real estate loans, it is not surprising that banks affected by the tax rate cut pull back on riskier lending to adjust their capital ratios accordingly. Overall, these results suggest that while high DTA capital decline banks did not change significantly their overall lending following the election relative to other banks, these banks appeared to curtail their riskier C&I lending, potentially to mitigate the impact of the DTA value decline on their capital ratios.

To examine changes in lending behavior over time, we estimate equation (2) by quarter for C&I loans and plot 90% confidence intervals over time in Figure 2 Panel A. Event time 0 references the fourth quarter of 2016. There is no evidence of a pre-treatment trend in lending behavior, suggesting that the parallel trends assumption is not violated. For the post-treatment trend, we find that C&I loans start to decline two quarters after the presidential election, and then decrease again 6 quarters after the election, or in the second quarter of 2017, soon after the TCJA is passed. Overall, the graph suggests that the tax rate cut anticipated by the presidential election and enacted in the TCJA significantly affected C&I lending for banks that eventually experienced larger DTA capital declines.

[18] Note in Table 1 Panel B that real estate loans account for a much larger percentage of high DTA banks' loan portfolio than C&I loans, so it is unsurprising that a decline in C&I loans coupled with no significant change in real estate loans leads to no significant changes in overall loans.

Table 1 Panels A and B suggest there are some observable differences between banks with high DTA capital and those without. To ensure these differences are not driving our results, we re-estimate equation 2 by using an entropy-balanced sample. To improve the comparability between treated and control banks, we apply entropy balancing using pre-TCJA bank characteristics. Specifically, we use the coefficients from our previous tests and assign weights to control banks such that the reweighted control group matches the treated group on the first moments of these covariates. This procedure ensures that differences in post-TCJA outcomes are not driven by observable pre-treatment imbalances. Table 3 Panel B presents the entropy-balanced results. Overall, we find inferences consistent with the ordinary least squares regression results and conclude that the results in Table 3 Panel A are not meaningfully biased because of observable differences between treated and control banks.

4.3. Robustness: Basel III

One wrinkle in our research design is that the TCJA coincides with the passage of Basel III, which increased the risk weight of DTA from 100 to 250% starting in 2018. Since risk-weighted assets is the denominator of the capital ratio, an increase to the denominator (via the increased DTA risk-weight) could potentially have the same directional effect as a decrease to the numerator (through the TCJA rate cut's impact on DTA valuation), potentially conflating our results.

To verify that our results are not driven by the Basel III change, we estimate two different tests. First, we re-estimate equation (2) with an alternative control group: *High MSA* banks. These are banks with above the median level of mortgage servicing agreements (MSA), which represent the capitalized value of future servicing fees that banks expect to earn from managing mortgage loans they originate or purchase. MSAs are also subject to the Basel III increase in risk weight from 100 to 250%, making them a useful placebo for DTAs: they are affected by the same regulatory change in risk weighting but are not directly influenced by corporate tax rate cuts.

To isolate the effect of tax rate cuts on bank lending through DTAs while removing the variation in lending created by changes in the risk weight, we drop the 138 high MSA banks that also have high DTA levels and present results in Table 4 Panel A.[19] We continue to find a significant decline in C&I lending but no statistically or economically significant effect on real estate or total loans, suggesting that the main results are not driven by the changes in DTA risk weights.

Second, we estimate a falsification test by comparing changes in lending behavior between high MSA banks and low MSA banks. If the changing risk weight is the factor driving our main results, we would expect high MSA banks to also cut C&I lending, like the DTA banks do. We re-estimate equation (2) with *High MSA* banks as the treatment group and present results in Table 4 Panel B. We find no significant changes in C&I loans for high MSA banks in the post period, but we find a significant negative effect on real estate lending. This pattern is intuitive given that MSAs are created when banks originate and sell mortgage loans but retain the servicing rights—activities that are tightly linked to residential real estate lending. Banks with large MSA balances tend to be more exposed to the mortgage market and often adjust real estate lending in response to regulatory or capital constraints affecting those assets. Thus, when Basel III increased the risk weight on MSAs from 100 to 250%, it is reasonable to expect that the resulting rise in risk-weighted assets would disproportionately constrain lending in mortgage-related categories, mechanically leading

[19] Banks with above-median values of DTA have lower DTA than banks with above-median values of MSA have of MSAs. As such, we also estimate an alternative test examining solely banks with MSAs at similar levels as DTAs for banks in our main sample (that is, we re-estimate the test in Table 4 Panel A using a control sample of High MSA banks and limiting the sample to banks with either 1%-5% DTA in Tier 1 Capital or 1%-5% MSA in Tier 1 Capital). Inferences remain unchanged.

to a decline in real estate loans. In contrast, C&I lending is largely unrelated to mortgage origination or servicing, which likely explains why we observe no significant change in this test. Collectively, the results in Table 4 suggest that the main results are not meaningfully biased because of the Basel III change.

4.4. Robustness: SBA 7(a) Lending

To mitigate concerns about general declines in lending by the large DTA decline banks for reasons other than the tax cut's impact on DTA capital, we conduct a placebo test where we examine lending under the Small Business Association's 7(a) program. Loans under this program are guaranteed and thus have no capital or risk-weighted asset implications. Therefore, we do not expect the changes to DTA capital caused by the 2016 election and TCJA to affect 7(a) lending. We obtain loan-level data on all SBA-guaranteed 7(a) loans from the publicly available SBA database, aggregate the data to the bank-quarter level, and merge them with our bank-quarter sample from our previous analyses. We then re-estimate our baseline specification using 7(a) lending as the outcome variable.

We report these findings in Table 5. In Column 1, we include all bank-quarters conditional on a bank providing 7(a) lending in that quarter. In Column 2, we include all bank-quarters conditional on the lender providing 7(a) lending in at least one quarter in the pre-period. In contrast to our main findings, in both specifications, we find that large DTA decline banks do not exhibit differential 7(a) lending relative to other banks after the 2016 election. This result mitigates the concern that our Table 3 findings are attributable to broad-based declines in commercial lending for large DTA capital decline banks.

5. Effect of the TCJA on bank lending via DTA capital – CRA banks

5.1. Research design – Bank level

We next examine the effect of the tax rate cut on small business loans. In the U.S., small businesses make up 99% of all businesses and 46% of employment in the private sector.[20] Further, 64% of former business owners who struggled to access capital identified a lack of capital as a primary reason for closing their business. Thus, small business lending is critical to overall economic growth. Furthermore, small business loans are typically information-intensive, relationship-based, and illiquid, making them among the most capital-constrained forms of lending. Because the TCJA's impact on the value of DTAs directly affects bank capital ratios, the negative impact on lending capacity would likely show up first in loan categories that are costly to monitor and difficult to securitize, such as small business lending. Thus, examining this segment provides a particularly useful test of whether changes in bank DTA capital induced by the TCJA translated into real effects on credit supply.

In our next set of tests, we estimate equation (2) but change the dependent variable to different categories of small business loans. We obtain data on small business loan originations from the Federal Financial Institutions Examination Council's (FFIEC) Community Reinvestment Act (CRA) database. The CRA data provide detailed information on the number and dollar amount of small business loans originated by each reporting bank, disaggregated by borrower revenue size and geographic location (county). The dataset covers all banks subject to CRA reporting requirements and is publicly available through the FFIEC's website.

We collect CRA small business loan origination data for the years 2014 through 2019 and merge these data with our sample of bank-level financial information from regulatory Call Reports.

[20] Source: https://bipartisanpolicy.org/download/?file=/wp-content/uploads/2024/04/BPC_Small-Business-Trinet.pdf. Accessed October 13, 2025.

This merge allows us to link lending activity to bank characteristics and balance sheet information, including a bank's decline in DTA included in tier 1 capital following TCJA. We construct three related samples from the merged data: a bank-level sample that aggregates CRA lending across all counties for each bank; a bank-county-level sample that retains geographic variation in lending within banks; and a county-level sample that aggregates small business loan originations across all banks operating in a given county. These datasets enable us to analyze both cross-sectional and within-bank variation in small business lending around the TCJA.

5.2. Results – Bank level

Table 6 presents results. Columns 1-4 examine the changes in loans extended for different loan amounts: under $100,000; between $100,000 and $250,000; between $250,000 and $1 million; and total small business loans. In column 5, instead of loan amounts, we examine loans extended to firms with less than $1 million in revenue. We find a 16% reduction in loans between $100,000 and $250,000, and a 24% reduction in loans between $250,000 and $1 million. We further find a 26% reduction in loans extended to firms with revenue below $1 million. When we examine the dynamic effects over time in Figure 3, we find that the decline in *Loans to Firms with Revenue < $1M* occurs 1-2 years after the election, and we further find no evidence of a pre-treatment trend in loans. Overall, these results continue to suggest that banks affected most by the decline in DTA capital reduced small business lending relative to other banks.

5.3. Research design – Bank-county level

We next turn to a more granular test that allows us to examine how the TCJA's effects on DTA capital translate into local credit supply, and specifically how this varies with banks' access to soft information on existing or potential borrowers. Small business lending often relies on relationship-based knowledge—such as the borrower's reputation, reliability, and community ties—that is most readily obtained when banks maintain a physical branch in the local market. In the face of reductions in capitalization, banks may curtail lending that depends heavily on this type of non-verifiable information, and thus our findings may be concentrated in markets where banks lack local branches and thus must rely on harder, more standardized screening.

To test this channel, we estimate the following regression, which is similar to equation (2) but at the bank-county-year level, and includes county fixed effects and replaces county-year fixed effects with year fixed effects:

$$Loan\ Amount_{i,t,c} = \boldsymbol{\beta}_0 + \boldsymbol{\beta}_1\ DTA\ Decline_i \times Post\ Election_t + \gamma' X_{i,t} + W_c + Y_i + Z_t + \boldsymbol{\varepsilon}_{i,t,c} \qquad (3)$$

5.4. Results – Bank-county level

We report results in Table 7 column 1. Column 1 shows that, following the election, banks with high ex-post declines in DTA capital reduced total small-business lending by roughly 36 percent on average at the county level. Although this magnitude may appear large, small-business lending at the bank–county level is highly volatile and often concentrated among a few lenders, so percentage changes around a low base can appear economically sizable.

Next, we examine whether the presence of a branch affects small business lending. Based on (Granja, Makridis, Yannelis, and Zwick 2022), we predict that declines in lending will be concentrated in areas without a branch, as these are likely higher-risk loans because of the lack of soft information available to lenders. Consistent with this expectation, we find in Table 7 columns 2-3 that declines in lending are concentrated in counties with no branch location (i.e., column 2). Further, between counties with and without a branch, the difference in the relation is statistically significant (F-statistic of difference is 5.53). We conclude that the effect of tax rate cuts on local lending behavior is concentrated in certain counties, a phenomenon that we explore further in the next section.

6. Effect of the TCJA on local lending and economic growth via DTA capital

6.1. Research design

In our final set of analyses, we explore the impact of the decline in DTA capital attributable to the TCJA on local economic factors. Specifically, we estimate variants of the following regression on a county-year panel:

$$County\ outcome_{c,t} = \boldsymbol{\beta}_0 + \boldsymbol{\beta}_1\ High\ Exposure_c \times Post_t + \gamma' X_{c,t} + Y_c + Z_t + \boldsymbol{\varepsilon}_{c,t} \qquad (4)$$

The dependent variable takes on the value of one of several variables that captures local economic conditions, including total small business lending, employment, and the number of business establishments. *High Exposure* is an indicator variable equal to one for counties with above-median exposure to banks with high DTA declines (in terms of loans received). We include a vector of time-varying county-level control variables, including population, unemployment, various demographic controls, etc. We also include county and year fixed effects. We cluster standard errors at the county level.

6.2. Results – County-level lending

We first examine the effect of high exposure to DTA-affected banks on small business lending. Table 8 Panel A presents results. We find that the coefficient on the interaction term suggests that counties with high exposure to affected banks experienced 9% declines in small business lending, an estimate that is both statistically and economically significant. When we examine the dynamic effects over time in Figure 4, we find that the decline in *Loans to Firms with Revenue < \$1M* occurs in the first years after the election, and we further find no evidence of a pre-treatment trend in these counties. The results suggest that the reductions in lending from the tax rate cut had varying effects on different counties, a phenomenon we explore further in the next two tests.

Table 8 Panel B compares results for small and large counties in columns 1-2. We find that while both small and large counties experience significant declines in small business lending, the decline for small counties is approximately double the decline for large counties (13% and 5% declines, respectively). When we compare the two coefficients, we find that the difference between small and large counties is significant (*F*-statistic of 5.83). The results suggest that small counties are disproportionately affected by the declines in small business lending.

Further, in Panel C, we compare results for low- and high-income counties.[21] The evidence suggests that small business lending declined in both low- and high-income counties. While the magnitude of the coefficient more negative for low-income counties, the difference between effects for low- and high-income counties is not statistically significant at conventional levels. We conclude that while many counties experienced declines in lending, the extent of the decline varies by county.

6.3. Results – County-level establishments and employment

Lastly, we examine the consequences of constrained lending on the local economy. We estimate equation (4) with establishments and employment as the outcomes. We present results in Table 9. We find that counties with high exposure to banks affected by the DTA decline experienced a 0.9% reduction in the number of establishments and a 0.5% reduction in employment. We conclude that the pullback on small business lending has meaningful consequences for local economies.

7. Conclusion

We study how corporate tax rate cuts affect bank lending behavior and subsequent local economic growth through reducing the value of DTAs. To do so, we examine changes in bank

[21] We find that the correlation between low-income and small counties is 0.29, suggesting that the difference between Table 8 Panel B and Panel C is meaningful.

lending behavior around the TCJA, which reduced the corporate tax rate from 35 to 21 percent, substantially decreasing the value of DTA. After verifying that the TCJA did in fact lower the ratio of bank DTA to total tier 1 capital, we find that banks with greater declines in DTA capital curtail commercial lending relative to other banks in the immediate aftermath of the TCJA. We further find that banks with large declines in DTA capital also curtail small business lending, particularly in small and less wealthy counties, as well as in counties where the bank lacks a physical branch location. Finally, we find that counties with greater exposure to affected banks subsequently experience declines in employment and establishments. Overall, we conclude that tax policy can have unintended consequences on local economies through the banking sector.

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Appendix A: Variable Appendix

Treatment Variables

Variable	Definition	Source
DTA Decline	An indicator variable for whether a bank's decline in DTA included in tier 1 capital following TCJA is greater than the sample median.	FFIEC
High DTA	An indicator variable for whether a bank is above the median of DTA included in tier 1 capital in Q3 2017.	FFIEC
High Exposure	An indicator variable for whether in 2016 a county was above the median for loans received from banks where *DTA Decline* = 1.	FFIEC
Post Election	An indicator variable for periods after the 2016 presidential election. For quarterly data, post equals 1 starting in Q4 2016. For annual data, it starts in 2017.	
Post Tax Cut	An indicator variable for periods after the passage of TCJA. For quarterly data, post equals 1 starting in Q4 2017.	

Outcome variables

Variable	Definition	Source
C&I Loans	Natural logarithm of commercial & industrial loans.	FFIEC
County Establishments	Natural logarithm of the number of establishments in a county.	QCEW
County Employment	Natural logarithm of employment levels in a county.	QCEW
DTA Percent	The percent of a bank's tier 1 capital made up of DTA.	FFIEC
Loans to Firms with Revenue < $1M	Natural logarithm of county-level small business lending amounts of loans to borrowers with >$1m in revenues.	FFIEC
Real Estate Loans	Natural logarithm of real estate loans.	FFIEC
SBL Under $100K	Natural logarithm of the amount of county-level small business loans less than $100k.	FFIEC
SBL $100K–$250K	Natural logarithm of the amount of county-level small business loans between $100k-$250k.	FFIEC
SBL $250K–$1M	Natural logarithm of the amount of county-level small business loans less than $100k	FFIEC
Total Loans	Natural logarithm of all loans.	FFIEC
Total SBL	Natural logarithm of the aggregate amount of county-level small business loans.	FFIEC

Bank-level control variables

Variable	Definition	Source
Brokered Deposits	Brokered deposits, scaled by total liabilities.	FFIEC
Cash to Deposits Ratio	Cash and liquid assets, scaled by total deposits.	FFIEC
Loans to Deposits Ratio	Total loans, scaled by total deposits.	FFIEC
Net Interest Margin	Net interest revenue, scaled by interest revenue.	FFIEC
Noninterest Ratio	Non-interest revenue, scaled by interest revenue.	FFIEC
ROA	Net income, scaled by total assets.	FFIEC
Size	Natural logarithm of total assets.	FFIEC
Tier 1 Ratio	Tier 1 capital ratio.	FFIEC

County-level control variables

Variable	Definition	Source
Number of EITC	Natural logarithm of the number of tax returns filed that claim the Earned Income Tax Credit in the county.	IRS SOI
Number of exemptions	Natural logarithm of the number of exemptions on the tax returns filed in the county.	IRS SOI
Number of returns	Natural logarithm of the number of tax returns filed in the county.	IRS SOI
Number of unemployed	Natural logarithm of the number of tax returns that report unemployment compensation in the county.	IRS SOI
Population	Natural logarithm of the county population.	Census
Population Asian	Natural logarithm of the number of people in the county who are Asian.	Census
Population Black	Natural logarithm of the number of people in the county who are Black.	Census
Population Native	Natural logarithm of the number of people in the county who are Native American.	Census
Population Pacific	Natural logarithm of the number of people in the county who are Pacific Islander.	Census
Population White	Natural logarithm of the number of people in the county who are White.	Census

Appendix B: Example of Call Report Regulatory Capital Calculations

Source: Citibank, N.A., Call Report, Q2 2019.

The following excerpt provides an example of the portions of DTA that banks include in their Call Reports for calculating Tier 1 Capital. These key portions of the Call Report form and instructions outline regulatory capital calculations specifically relating to the inclusion of DTA. Calculations are based on risk-weighted assets, capital adequacy ratios, and regulatory thresholds as defined by applicable banking regulations. In its 2019 Q2 Call Report, Citibank provided the following disclosure on its DTAs, including:

Net DTAs

The Federal Financial Institutions Examination Council requires banks to report the net DTA amount measured "after offsetting deferred tax assets (net of valuation allowance) and deferred tax liabilities measured at the report date for a particular tax jurisdiction if the net result is a debit balance." A portion of this is included in a bank's tier 1 capital calculation.

2. Net deferred tax assets (3)................	2148	9,918,000	2.

DTAs arising from net operating losses and tax credit carryforwards

The Federal Financial Institutions Examination Council requires banks to "report the amount of DTAs that arise from net operating loss and tax credit carryforwards, net of any related valuation allowances and net of DTLs" and exclude these from tier 1 capital.

8. LESS: Deferred tax assets (DTAs) that arise from net operating loss and tax credit carryforwards, net of any related valuation allowances and net of DTLs................	P843	2,100,000	8.

DTAs arising from temporary differences

The Federal Financial Institutions Examination Council requires banks to "Report the amount of the institution's total DTAs arising from temporary differences that could not be realized through net operating loss carrybacks, net of related valuation allowances and net of DTLs, exceeding the 10 percent common equity tier 1 capital deduction threshold" and exclude these from tier 1 capital.

15. LESS: DTAs arising from temporary differences that could not be realized through net operating loss carrybacks, net of related valuation allowances and net of DTLs, that exceed the 10 percent common equity tier 1 capital deduction threshold................	P855	0	15.

Complete Tier 1 Capital Calculation

Dollar Amounts in Thousands	RCFA	Amount	
Common Equity Tier 1 Capital			
1. Common stock plus related surplus, net of treasury stock and unearned employee stock ownership plan (ESOP) shares	P742	146,902,000	1.
2. Retained earnings (1)	KW00	20,893,000	2.
a. To be completed only by institutions that have adopted ASU 2016-13: Does your institution have a CECL transition election in effect as of the quarter-end report date? (enter "1" for Yes; enter "0" for No.)	0=No 1=Yes RCOA JJ29	NR	2.a.
	RCFA	Amount	
3. Accumulated other comprehensive income (AOCI)	B530	(19,606,000)	3.
a. AOCI opt-out election (enter "1" for Yes; enter "0" for No.) (Advanced approaches institutions must enter "0" for No.)	0=No 1=Yes RCOA P838	0	3.a.
	RCFA	Amount	
4. Common equity tier 1 minority interest includable in common equity tier 1 capital	P839	154,000	4.
5. Common equity tier 1 capital before adjustments and deductions (sum of items 1 through 4)	P840	148,343,000	5.
Common Equity Tier 1 Capital: Adjustments and Deductions			
6. LESS: Goodwill net of associated deferred tax liabilities (DTLs)	P841	11,053,000	6.
7. LESS: Intangible assets (other than goodwill and mortgage servicing assets (MSAs)), net of associated DTLs	P842	3,883,000	7.
8. LESS: Deferred tax assets (DTAs) that arise from net operating loss and tax credit carryforwards, net of any related valuation allowances and net of DTLs	P843	2,100,000	8.
9. AOCI-related adjustments (if entered "1" for Yes in item 3.a, complete only items 9.a through 9.e; if entered "0" for No in item 3.a, complete only item 9.f):			
a. LESS: Net unrealized gains (losses) on available-for-sale securities (if a gain, report as a positive value; if a loss, report as a negative value) (2)	P844	NR	9.a.
b. LESS: Net unrealized loss on available-for-sale preferred stock classified as an equity security under GAAP and available-for-sale equity exposures (report loss as a positive value) (3)	P845	NR	9.b.
c. LESS: Accumulated net gains (losses) on cash flow hedges (if a gain, report as a positive value; if a loss, report as a negative value)	P846	NR	9.c.
d. LESS: Amounts recorded in AOCI attributed to defined benefit postretirement plans resulting from the initial and subsequent application of the relevant GAAP standards that pertain to such plans (if a gain, report as a positive value; if a loss, report as a negative value)	P847	NR	9.d.
e. LESS: Net unrealized gains (losses) on held-to-maturity securities that are included in AOCI (if a gain, report as a positive value; if a loss, report as a negative value)	P848	NR	9.e.
f. To be completed only by institutions that entered "0" for No in item 3.a: LESS: Accumulated net gain (loss) on cash flow hedges included in AOCI, net of applicable income taxes, that relates to the hedging of items that are not recognized at fair value on the balance sheet (if a gain, report as a positive value; if a loss, report as a negative value)	P849	231,000	9.f.
10. Other deductions from (additions to) common equity tier 1 capital before threshold-based deductions:			
a. LESS: Unrealized net gain (loss) related to changes in the fair value of liabilities that are due to changes in own credit risk (if a gain, report as a positive value; if a loss, report as a negative value)	Q258	118,000	10.a.
b. LESS: All other deductions from (additions to) common equity tier 1 capital before threshold-based deductions	P850	216,000	10.b.
11. LESS: Non-significant investments in the capital of unconsolidated financial institutions in the form of common stock that exceed the 10 percent threshold for non-significant investments	P851	0	11.
12. Subtotal (item 5 minus items 6 through 11)	P852	130,742,000	12.
13. LESS: Significant investments in the capital of unconsolidated financial institutions in the form of common stock, net of associated DTLs, that exceed the 10 percent common equity tier 1 capital deduction threshold	P853	0	13.
14. LESS: MSAs, net of associated DTLs, that exceed the 10% common equity tier 1 capital deduction threshold	P854	0	14.
15. LESS: DTAs arising from temporary differences that could not be realized through net operating loss carrybacks, net of related valuation allowances and net of DTLs, that exceed the 10 percent common equity tier 1 capital deduction threshold	P855	0	15.
16. LESS: Amount of significant investments in the capital of unconsolidated financial institutions in the form of common stock, net of associated DTLs; MSAs, net of associated DTLs; and DTAs arising from temporary differences that could not be realized through net operating loss carrybacks, net of related valuation allowances and net of DTLs; that exceeds the 15 percent common equity tier 1 capital deduction threshold	P856	0	16.
17. LESS: Deductions applied to common equity tier 1 capital due to insufficient amounts of additional tier 1 capital and tier 2 capital to cover deductions	P857	0	17.
18. Total adjustments and deductions for common equity tier 1 capital (sum of items 13 through 17)	P858	0	18.
19. Common equity tier 1 capital (item 12 minus item 18)	P859	130,742,000	19.
Additional Tier 1 Capital			
20. Additional tier 1 capital instruments plus related surplus	P860	2,100,000	20.
21. Non-qualifying capital instruments subject to phase-out from additional tier 1 capital	P861	0	21.
22. Tier 1 minority interest not included in common equity tier 1 capital	P862	33,000	22.
23. Additional tier 1 capital before deductions (sum of items 20, 21, and 22)	P863	2,133,000	23.
24. LESS: Additional tier 1 capital deductions	P864	0	24.
25. Additional tier 1 capital (greater of item 23 minus item 24, or zero)	P865	2,133,000	25.
Tier 1 Capital			
26. Tier 1 capital (sum of items 19 and 25)	8274	132,875,000	26.

Appendix C: Stylized Example

This appendix provides an illustration of how a statutory corporate tax rate cut affects banks' common equity tier 1 (CET1) ratios through the remeasurement of deferred tax assets (DTAs), and how this channel differs from Basel III implementation affecting the regulatory capital treatment of DTAs. The purpose is to clarify the magnitude of changes to the capital ratio resulting from the change in the statutory tax rate under the TCJA relative to the Basel III implementation.

C.1. Setup and regulatory classification of DTAs

DTAs are measured using the enacted tax rate that is expected to apply when the underlying book-tax differences reverse. Accordingly, a tax-rate cut from τ_0 to τ_1 mechanically rescales DTAs:

$$DTA_{post} = DTA_{pre} \cdot \frac{\tau_1}{\tau_0}.$$

Regulatory capital rules treat DTA categories differently, generally breaking them down into DTAs that can be realized via NOL carrybacks (i.e., can be monetized immediately via a refund of taxes previously paid) and those whose realization depends on the bank having future taxable income. Furthermore, there are two types of DTAs that are dependent upon future taxable income: (i) DTAs from deductible temporary differences that exceed the amount realizable through loss carrybacks under a full reversal assumption, and (ii) DTAs from operating loss and tax credit carryforwards.

In the stylized calculations below, we distinguish between two types of DTAs that are dependent on future taxable income:

- DTA^{CB}: DTAs that can be realized via NOL carrybacks (e.g., can be monetized via a refund of previously paid taxes)
- DTA^{CF-NOL}: DTAs from NOL/tax credit carryforwards
- DTA^{CF-DTD}: DTAs from deductible temporary differences that rely on future taxable income (e.g., differences between book and tax treatments of the allowance for credit losses)

For DTA^{CB}, the current regulatory guidance assigns a 100% risk weight and does not deduct these DTAs from regulatory capital. In contrast, DTA^{CF-DTD} receive a 250% risk weight for advanced approach banks (and also for non-advanced approach banks beginning in 2020), and banks also face limitations on the extent to which CET1 can be comprised of these assets (e.g., 10% for advanced approach banks and 25% for non-advanced approach banks). Finally, DTA^{CF-NOL} are entirely removed from regulatory capital (and risk-weighted assets).

C.2. CET1 ratio under a tax-rate cut

Let E denote book common equity and RWA^{other} denote risk-weighted assets unrelated to DTAs. Furthermore, assume that DTA^{CF-NOL} is fully deducted from CET1. A simple stylized CET1 numerator is:

$$CET1 = E - DTA^{CF-NOL} \text{(abstracting from other adjustments).}$$

A key implication is that a tax-rate-driven change in DTA^{CF-NOL}tends to be mechanically offset in CET1: the tax rate cut reduces equity via the DTA write-down, but it also reduces the deduction. In contrast, the tax-rate remeasurement of DTA^{CF-DTD}reduces equity without an automatic, one-for-one offset in deductions unless threshold rules bind. Thus, in many stylized settings, the net CET1 impact of a tax-rate cut is driven primarily by the temporary-difference DTA component.

C.3. Basel III impact on DTA capital

Separately from tax rate remeasurement, Basel III implementation affects the capital treatment of "threshold items" (including certain DTAs). Under the transition schedule applicable to institutions subject to it, beginning January 1, 2018, the risk weight applied to the portion of threshold items not deducted from CET1 increased to 250% (from 100% under the transition schedule prior to that date).

Importantly, U.S. banking agencies finalized rules extending certain transition provisions for non-advanced approaches banking organizations, while advanced approaches organizations remained subject to the fully phased-in treatment. This distinction matters in practice because our full sample includes all U.S. commercial banks (many of which are non-advanced), while our CRA-based analyses focus on larger institutions where the fully phased-in/advanced-approaches regime is more relevant.

C.4. Numerical illustration: tax-only versus Basel-only effects

Consider an advanced approach bank with the following values:

- E= 200
- RWA^{other} = 2,000
- DTA^{CB} = 20
- DTA^{CF-NOL} = 80
- DTA^{CF-DTD} = 40 (we abstract from binding threshold caps for simplicity)

Baseline (pre-TCJA tax rate cut and elimination of carrybacks; transition risk weight 100% on DTA^{TD})

CET1 numerator:

$$CET1_0 = E - DTA^{NOL} = 200 - 80 = 120.$$

RWA:

$$RWA_0 = RWA^{other} + 1.0 \cdot DTA^{CB} + 1.0 \cdot DTA^{CF-DTD} = 2{,}000 + 20 + 40 = 2{,}060.$$

CET1 ratio:

$$\frac{CET1_0}{RWA_0} = \frac{120}{2{,}060} = 5.83\%.$$

Tax-only shock (Tax rate declines from 35% to 21%)

DTAs scale by $\tau_1/\tau_0 = 21/35 = 0.60$. Further, carrybacks are eliminated (as they are in the TCJA).

Thus:

$$DTA_1^{CF-DTD} = 24, DTA_1^{CB} = 0, \text{and } DTA_1^{CF-NOL} = 60\ (48 + 12),$$

as losses that would have otherwise been carried back must now be carried forward.

The equity write-down equals the decline in total DTAs:

$$\Delta E = -0.40 \cdot \left(DTA^{CF-NOL} + DTA^{CF-DTD}\right) - DTA^{CB} = -0.40 \cdot (80 + 40) - 20 = -68,$$

so $E_1 = 132$.

The CET1 numerator becomes:

$$CET1_1 = E_1 - DTA_1^{CF-NOL} = 132 - 60 = 72.$$

RWA becomes:

$$RWA_1 = 2{,}000 + 24 = 2{,}024.$$

CET1 ratio:

$$\frac{CET1_1}{RWA_1} = \frac{72}{2{,}024} = 3.56\%.$$

Change: -2.27 percentage points (227 basis points)

<u>Basel-only shock (Including 2018 risk-weight step-up; tax rate held fixed)</u>

Hold DTAs at baseline levels but increase the risk weight on $DTA^{CF-NOL}$from 100% to 250%:

$$RWA^{Basel} = 2{,}000 + 20 + 2.5 \cdot 40 = 2{,}120.$$

CET1 numerator stays at 120. CET1 ratio:

$$\frac{120}{2{,}120} = 5.66\%.$$

Change: -0.17 percentage points (17 basis points)

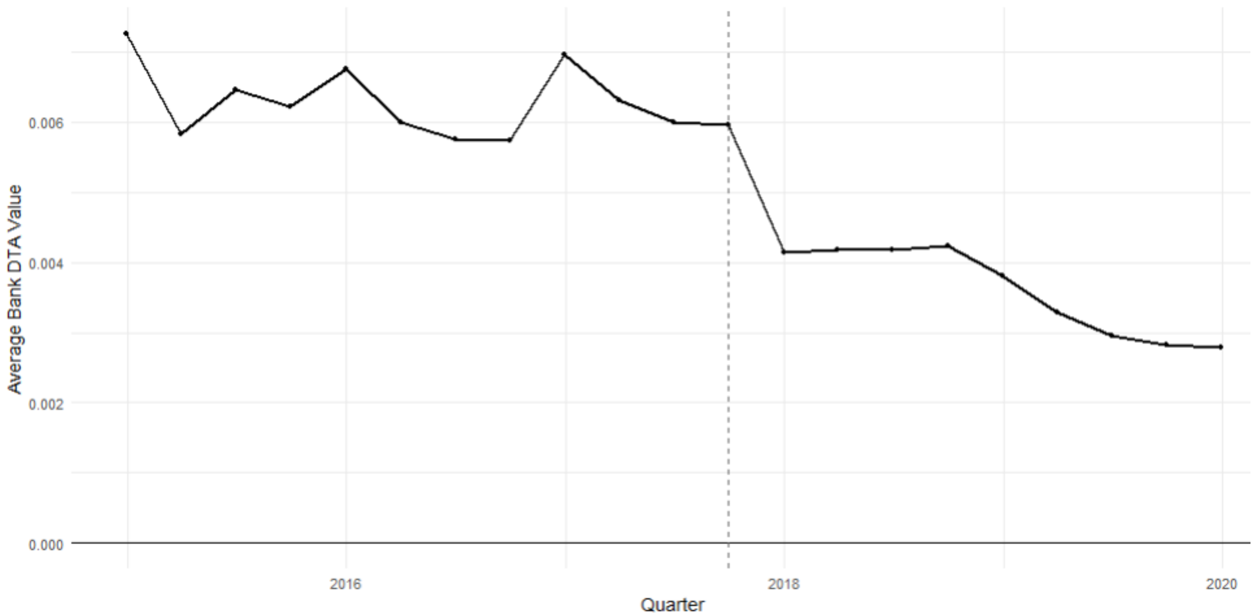
<u>Takeaway from the example</u>

In this stylized case, the TCJA DTA remeasurement channel produces a materially larger change in the CET1 ratio than the Basel 2018 risk-weight step-up (−168 bps vs. −17 bps). The intuition is that the tax rate cut and the elimination of carrybacks directly reduces the CET1 numerator through the DTA write-down (net of any offset from deductions), whereas the risk-weight step-up operates primarily through RWA and is proportional to the non-deducted threshold-item amount relative to total RWA. The relative magnitudes can obviously vary with banks' DTA composition and whether threshold deductions (e.g., the 10% cap) bind. However, the illustration above makes clear which parameters must be large for Basel implementation to plausibly account for a lending response attributed to tax-rate-driven DTA capital changes.

Figure 1: Average Value of Bank DTAs

This figure presents the average value of DTA for each bank-quarter from 2015 to 2021 in Panel A, and the average value of bank DTA scaled by tier 1 capital from 2015 to 2021 in Panel B. The vertical line indicates the quarter before the TCJA was passed.

Panel A



Panel B

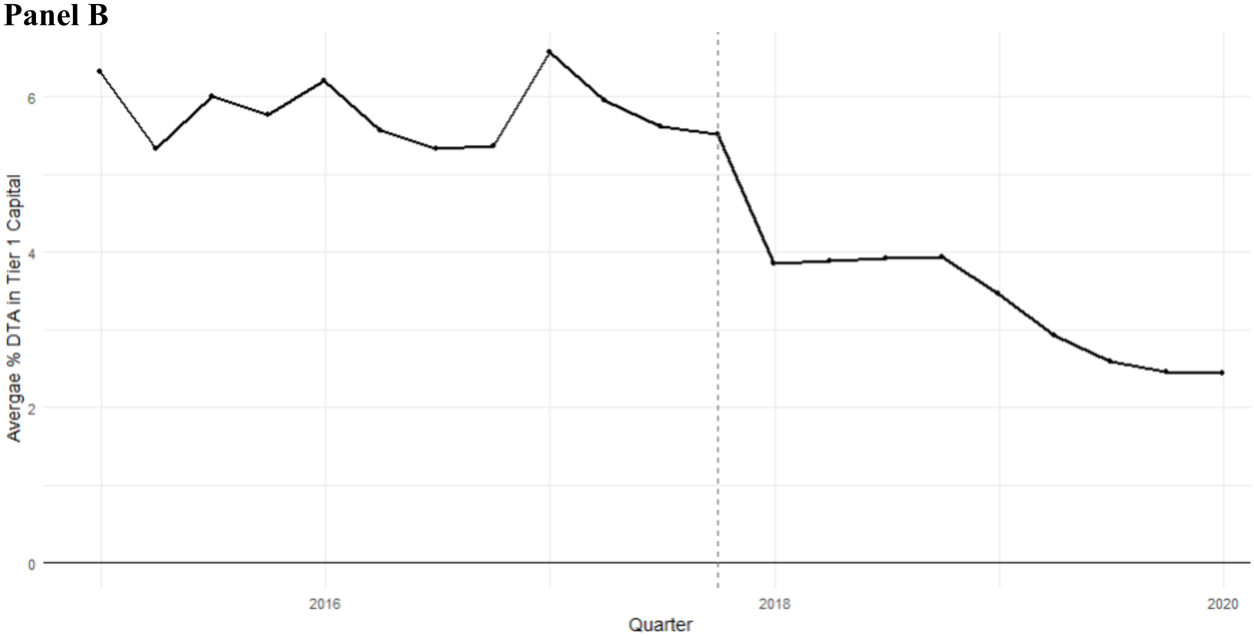


Figure 2: Change in DTA Capital and Bank Lending, Treatment Dynamics

This graph presents the coefficient and 90% confidence intervals from a bank-quarter panel regression in Table 3, Panel A, examining how C&I lending responds to declines in DTAs included in Tier 1 capital following the 2016 presidential election and the TCJA. The vertical line indicates the 2016 election.

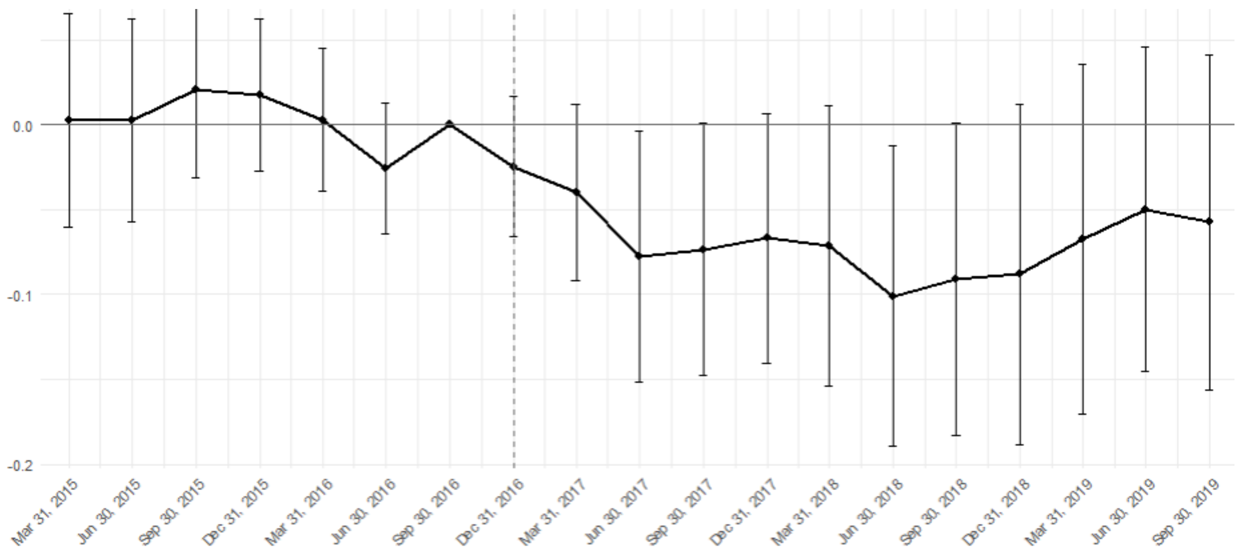


Figure 3: Bank Level Small Business Lending Amounts and TCJA, parallel trends

This graph presents the coefficient and 90% confidence intervals from a bank-year panel regression in Table 5, examining how *Loans to Firms with Revenue < $1M* responds for large DTA decline banks following the 2016 presidential election and the TCJA.

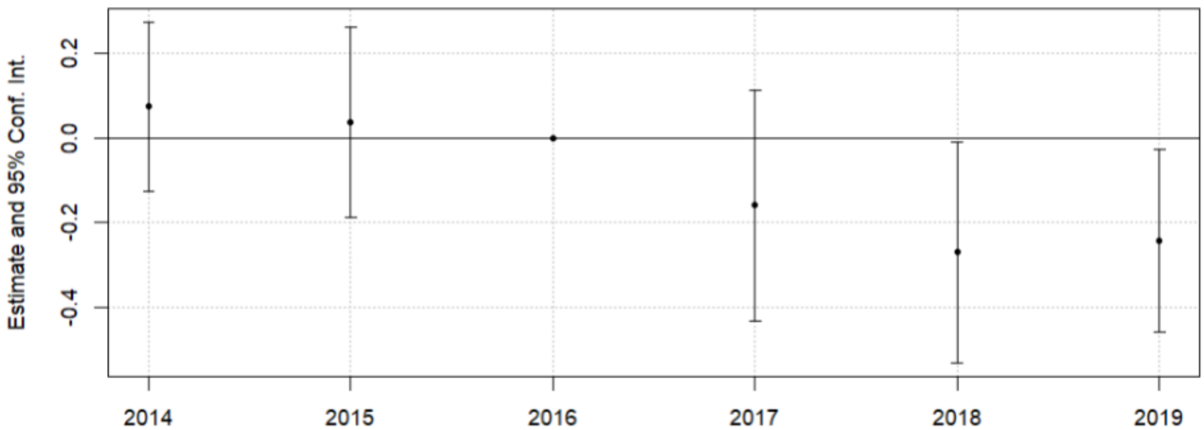


Figure 4: County Level Small Business Lending Amounts and TCJA, parallel trends

This graph presents the coefficient and 90% confidence intervals from a bank-year panel regression in Table 8, Panel A, examining how *Loans to Firms with Revenue < $1M* responds for counties with higher exposure to large DTA decline banks following the 2016 presidential election and the TCJA.

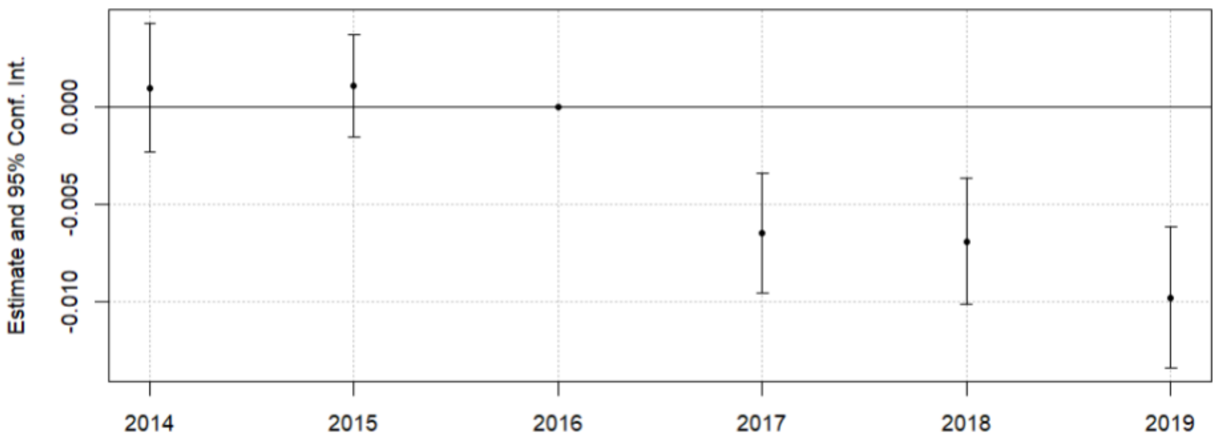


Table 1. Descriptive Statistics

This table presents descriptive statistics for the data used in regressions. Panel A reports statistics for all bank quarters from FFIEC call reports, while Panel B reports statistics for banks that have above the median level of DTA included in tier 1 capital. Panel C reports statistics for the sample of bank-years from FFIEC CRA data. Panel D reports statistics for the sample of bank-county-years from FFIEC CRA data. All variables are defined in Appendix A.

Panel A: FFIEC Call Report Data – All Banks

Variable	N	Mean	Std. Dev.	Q1	Median	Q3
DTA Percent	23,572	3.082	2.756	1.000	2.486	4.341
C&I Loans	22,837	11.027	2.127	9.710	10.978	12.234
Real Estate Loans	23,224	12.894	1.742	11.795	12.946	13.906
Total Loans	23,572	13.263	1.778	12.099	13.272	14.222
DTA Decline	23,572	0.502	0.500	0.000	1.000	1.000
Brokered Deposits	23,572	0.042	0.075	0.000	0.010	0.055
Cash to Deposits Ratio	23,572	0.090	0.106	0.034	0.060	0.110
Loans to Deposits Ratio	23,572	0.845	0.200	0.740	0.872	0.969
Net Interest Margin	23,572	0.865	0.075	0.823	0.877	0.920
Noninterest Ratio	23,572	0.163	0.125	0.086	0.138	0.205
Percent C&I Loans	23,572	14.103	11.144	6.841	11.828	18.624
Percent Real Estate Loans	23,572	73.365	19.719	65.039	77.714	86.427
ROA	23,572	0.002	0.002	0.002	0.002	0.003
Size	23,572	13.690	1.698	12.536	13.651	14.572
Tier 1 Ratio	23,572	15.903	7.920	11.782	13.569	16.840

Panel B: FFIEC Call Report Data – High DTA Banks Only

Variable	N	Mean	Std. Dev.	Q1	Median	Q3
DTA Percent	11,843	3.518	2.794	1.526	2.943	4.837
C&I Loans	11,538	11.409	1.980	10.181	11.424	12.558
Real Estate Loans	11,719	13.329	1.546	12.376	13.415	14.229
Total Loans	11,843	13.653	1.589	12.643	13.666	14.587
DTA Decline	11,843	1.000	0.000	1.000	1.000	1.000
Brokered Deposits	11,843	0.048	0.076	0.000	0.018	0.066
Cash to Deposits Ratio	11,843	0.083	0.097	0.030	0.055	0.101
Loans to Deposits Ratio	11,843	0.885	0.185	0.793	0.907	0.993
Net Interest Margin	11,843	0.859	0.079	0.813	0.872	0.918
Noninterest Ratio	11,843	0.170	0.126	0.090	0.145	0.213
Percent C&I Loans	11,843	14.769	12.417	6.485	12.086	19.415
Percent Real Estate Loans	11,843	74.828	18.786	67.012	78.765	87.328
ROA	11,843	0.002	0.002	0.002	0.002	0.003
Size	11,843	14.039	1.529	13.016	14.010	14.933
Tier 1 Ratio	11,843	14.822	6.142	11.570	13.065	15.800

Panel C: CRA Bank-Year Data

Variable	N	Mean	Std. Dev.	Q1	Median	Q3
log(Loans to Firms with Revenue < $1M)	2,673	9.730	1.978	9.275	9.870	10.645
log(SBL Under $100K)	2,673	8.896	2.114	8.181	9.012	9.836
log(SBL $100K–$250K)	2,673	8.950	1.869	8.384	9.067	9.821
log(SBL $250K–$1M)	2,673	10.312	1.763	9.763	10.393	11.185
log(Total SBL)	2,673	10.950	1.443	10.273	10.895	11.689
Loans to Firms with Revenue < $1M	2,673	57,382	180,914	10,663	19,350	41,966
SBL Under $100K	2,673	53,874	230,121	3,571	8,199	18,686
SBL $100K–$250K	2,673	24,609	66,489	4,377	8,662	18,423
SBL $250K–$1M	2,673	79,999	177,344	17,386	32,645	72,017
Total SBL	2,673	174,292	500,336	28,929	53,913	119,202
DTA Decline	2,673	0.637	0.481	0.000	1.000	1.000
Brokered Deposits	2,673	0.051	0.078	0.000	0.024	0.068
Cash to Deposits Ratio	2,673	0.065	0.072	0.025	0.043	0.078
Loans to Deposits Ratio	2,673	0.891	0.177	0.799	0.914	0.993
Net Interest Margin	2,673	0.863	0.077	0.817	0.875	0.923
Noninterest Ratio	2,673	0.183	0.113	0.106	0.167	0.234
ROA	2,673	0.002	0.002	0.002	0.002	0.003
Size	2,673	15.154	1.267	14.233	14.786	15.740
Tier 1 Ratio	2,673	13.420	2.938	11.398	12.613	14.540

Panel D: CRA County-Year Data

Variable	N	Mean	Std. Dev.	Q1	Median	Q3
log(Loans to Firms with Revenue < $1M)	4,571	10.058	0.871	9.467	10.050	10.723
log(Total SBL)	4,571	11.133	0.901	10.511	11.075	11.817
Loans to Firms with Revenue < $1M	4,571	33,284	29,597	12,923	23,145	45,389
Total SBL	4,571	101,166	97,866	36,710	64,518	135,544
High Exposure	4,571	0.502	0.500	0.000	1.000	1.000
Number of EITC	4,571	9.699	0.931	9.002	9.495	10.262
Number of exemptions	4,571	12.141	0.905	11.424	11.931	12.704
Number of returns	4,571	11.490	0.914	10.768	11.293	12.053
Number of unemployed	4,571	8.023	1.071	7.237	7.871	8.700
Population	4,571	12.261	0.889	11.551	12.040	12.806
Population Asian	4,571	8.430	1.626	7.218	8.178	9.421
Population Black	4,571	9.447	1.678	8.190	9.412	10.648
Population Native	4,571	6.091	0.907	5.449	6.087	6.709
Population Pacific	4,571	5.374	0.789	5.047	5.303	5.665
Population White	4,571	11.994	0.827	11.354	11.852	12.510

Panel E: CRA Bank-County-Year Data

Variable	N	Mean	Std. Dev.	Q1	Median	Q3
log(Loans to Firms with Revenue < $1M)	251,604	2.887	3.236	0.000	0.000	6.080
log(Total SBL)	251,604	4.900	3.122	2.708	5.591	7.222
Loans to Firms with Revenue < $1M	251,604	609	1,292	0	0	436
Total SBL	251,604	1,852	3,618	14	267	1,368
DTA Decline	251,604	0.565	0.496	0.000	1.000	1.000
Brokered Deposits	251,604	0.095	0.123	0.015	0.051	0.111
Cash to Deposits Ratio	251,604	0.089	0.091	0.030	0.055	0.111
Loans to Deposits Ratio	251,604	0.940	0.205	0.834	0.936	1.039
Net Interest Margin	251,604	0.857	0.078	0.811	0.867	0.918
Noninterest Ratio	251,604	0.216	0.132	0.121	0.195	0.293
Number of EITC	251,604	9.996	1.067	9.167	9.796	10.712
Number of exemptions	251,604	12.463	1.033	11.596	12.313	13.212
Number of returns	251,604	11.818	1.043	10.949	11.641	12.574
Number of unemployed	251,604	8.283	1.187	7.359	8.134	9.166
Population	251,604	12.577	1.019	11.742	12.408	13.301
Population Asian	251,604	8.944	1.795	7.560	8.829	10.230
Population Black	251,604	9.906	1.748	8.596	10.006	11.199
Population Native	251,604	6.294	0.950	5.620	6.292	6.929
Population Pacific	251,604	5.496	0.829	5.118	5.347	5.924
Population White	251,604	12.282	0.943	11.510	12.140	12.969
ROA	251,604	0.003	0.003	0.002	0.003	0.004
Size	251,604	16.567	1.565	15.205	16.614	18.276
Tier 1 Ratio	251,604	13.014	2.540	11.328	12.362	14.070

Table 2. TCJA and DTA Capital

This table presents an OLS regressions of equation (1) on a bank-quarter panel sample. *DTA Percent* is the percent of a bank's Tier 1 capital that is made up of DTAs. *High DTA* is an indicator variable for banks with above-median values of *DTA Percent* in the quarter immediately preceding the TCJA. *Post Tax Cut* is an indicator for quarters after the TCJA (e.g., 2017 Q4). All variables are defined in Appendix A. t-statistics reported in parentheses and are based on standard errors clustered by bank. ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two–tail). Descriptive statistics are reported in Table 1 Panels A and B.

	(1)	(2)
Dependent variable:	*DTA Percent*	
High DTA × Post Tax Cut	-0.319***	-0.316***
	(-12.736)	(-12.678)
Brokered Deposits		-0.087
		(-0.412)
Cash to Deposits Ratio		-0.298
		(-1.041)
Loans to Deposits Ratio		0.048
		(0.343)
Net Interest Margin		0.513**
		(2.111)
Noninterest Ratio		0.087
		(0.708)
ROA		-14.557***
		(-3.089)
Size		-0.148**
		(-2.537)
Observations	23,572	23,572
Adj. R^2	0.767	0.768
Year Fixed Effects	YES	YES
Bank Fixed Effects	YES	YES

Table 3. Change in DTA Capital and Bank Lending

This table presents regressions estimating equation (2) on a bank-quarter panel sample. Panel A presents ordinary least squares regressions while Panel B presents entropy balanced regressions. *C&I Loans, Real Estate Loans,* and *Total Loans* are the log-transformed dollar amounts of loans issued by banks in these different categories. *DTA Decline* is an indicator variable for banks whose decline in Tier 1 capital made up of DTA (as a percentage) from the TCJA is above the sample median. *Post Election* is an indicator for quarters after the 2016 election. All variables are defined in Appendix A. t-statistics reported in parentheses and are based on standard errors clustered by bank. ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two–tail). Descriptive statistics are reported in Table 1 Panels A and B.

Panel A: OLS

	(1)	(2)	(3)
Dependent variable:	*C&I Loans*	*Real Estate Loans*	*Total Loans*
DTA Decline × Post Election	-0.043**	0.006	-0.002
	(-2.001)	(0.387)	(-0.394)
Brokered Deposits	0.286	0.170	0.110***
	(1.080)	(1.211)	(3.404)
Cash to Deposits Ratio	-0.433*	-0.487***	-0.265**
	(-1.828)	(-3.340)	(-2.246)
Loans to Deposits Ratio	0.623***	1.051***	1.023***
	(4.278)	(3.079)	(8.042)
Net Interest Margin	0.297	-0.701	-0.102
	(1.404)	(-1.023)	(-1.298)
Noninterest Ratio	0.000	0.163	-0.167
	(0.003)	(0.480)	(-1.526)
ROA	4.594	-10.203	0.743
	(1.513)	(-0.917)	(0.469)
Size	1.054***	0.914***	0.967***
	(17.054)	(21.668)	(31.257)
Tier1 Ratio	-0.020***	0.006	-0.004**
	(-4.806)	(0.488)	(-2.532)
Observations	23,224	22,837	23,572
Adj. R^2	0.989	0.987	0.998
Year Fixed Effects	YES	YES	YES
Bank Fixed Effects	YES	YES	YES

Panel B: Entropy-Balanced Regressions

	(1)	(2)	(3)
Dependent variable:	*C&I Loans*	*Real Estate Loans*	*Total Loans*
DTA Decline × Post Election	-0.054**	-0.0001	-0.0002
	(-2.524)	(-0.002)	(-0.046)
Brokered Deposits	0.198	0.159*	0.131***
	(0.602)	(1.875)	(3.973)
Cash to Deposits Ratio	-0.519	-0.351***	-0.199**
	(-1.620)	(-3.273)	(-2.41)
Loans to Deposits Ratio	0.671***	0.937***	1.017***
	(4.023)	(4.125)	(9.352)
Net Interest Margin	0.318	-0.369	-0.076
	(1.318)	(-0.002)	(-1.095)
Noninterest Ratio	-0.029	0.154	-0.108
	(-0.320)	(0.761)	(-1.216)
ROA	5.520*	-6.729	0.396
	(1.878)	(-0.989)	(0.322)
Size	1.119***	0.900***	0.954***
	(14.533)	(31.717)	(62.931)
Tier1 Ratio	-0.021***	0.0001	-0.005***
	(-4.102)	(0.262)	(-2.860)
Observations	23,195	22,808	23,538
Adj. R^2	0.992	0.987	0.998
Year Fixed Effects	YES	YES	YES
Bank Fixed Effects	YES	YES	YES

Table 4: Robustness—Basel III risk-weight change

This table presents regressions estimating Equation 2 on a bank-quarter panel sample. Panel A estimates Equation 2 using a control sample of *High MSA* banks. Panel B presents ordinary least squares regressions. *C&I Loans, Real Estate Loans,* and *Total Loans* are the log-transformed dollar amounts of loans issued by banks in these different categories. *High MSA* is an indicator variable for banks whose MSA included in Tier 1 Capital is above the sample median. *DTA Decline* is an indicator variable for banks whose decline in Tier 1 capital made up of DTA (as a percentage) from the TCJA is above the sample median. *Post Election* is an indicator for quarters after the 2016 election. All variables are defined in Appendix A. t-statistics reported in parentheses and are based on standard errors clustered by bank. ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two–tail). Descriptive statistics are reported in Table 1 Panels A and B.

Panel A: DTA Decline banks Relative to High MSA Banks.

	(1)	(2)	(3)
Dependent variable:	*C&I Loans*	*Real Estate Loans*	*Total Loans*
DTA Decline × Post Election	-0.080**	0.011	0.003
	(-2.033)	(0.658)	(0.489)
Brokered Deposits	0.289	0.314	0.089**
	(0.848)	(1.170)	(2.459)
Cash to Deposits Ratio	0.147	-0.536*	-0.052
	(0.394)	(-1.690)	(-0.312)
Loans to Deposits Ratio	0.890**	1.165*	1.046***
	(2.407)	(1.922)	(4.392)
Net Interest Margin	0.505	-1.419	0.032
	(1.028)	(-1.135)	(0.455)
Noninterest Ratio	-0.094	0.317	-0.230
	(-0.831)	(0.452)	(-1.244)
ROA	4.922	-19.888	-1.832
	(1.088)	(-0.977)	(-0.684)
Size	0.983***	1.003***	0.964***
	(14.096)	(13.865)	(98.406)
Tier1 Ratio	-0.053***	0.016	-0.006**
	(-3.091)	(0.642)	(-2.439)
Observations	11,455	11,593	11,713
Adj. R^2	0.976	0.966	0.997
Year Fixed Effects	YES	YES	YES
Bank Fixed Effects	YES	YES	YES

Panel B: High MSA Banks

	(1)	(2)	(3)
Dependent variable:	*C&I Loans*	*Real Estate Loans*	*Total Loans*
High MSA × Post Election	0.035	-0.028**	-0.004
	(1.024)	(-2.148)	(-0.828)
Brokered Deposits	0.434	0.328	0.118***
	(1.313)	(1.625)	(3.487)
Cash to Deposits Ratio	-0.487	-0.742**	-0.262**
	(-1.309)	(-2.144)	(-2.159)
Loans to Deposits Ratio	1.092***	1.082***	1.029***
	(3.802)	(3.160)	(7.887)
Net Interest Margin	-0.040	-0.932	-0.106
	(-0.111)	(-1.337)	(-1.297)
Noninterest Ratio	-0.003	0.026	-0.172
	(-0.018)	(0.073)	(-1.542)
ROA	5.624	-5.990	0.757
	(1.015)	(-0.520)	(0.460)
Size	1.034***	0.986***	0.968***
	(11.146)	(10.658)	(30.339)
Tier1 Ratio	-0.027***	0.009	-0.004**
	(-2.899)	(0.706)	(-2.485)
Observations	22,960	23,220	23,548
Adj. R^2	0.965	0.977	0.998
Year Fixed Effects	YES	YES	YES
Bank Fixed Effects	YES	YES	YES

Table 5: Robustness—SBA 7(a) Lending

This table presents regressions of equation (2) on a bank-quarter sample. *7(a) Loans* is alog-transformed dollar amount of 7(a) loans provided by a lender. *DTA Decline* is an indicator variable for banks whose decline in Tier 1 capital made up of DTA (as a percentage) from the TCJA is above the sample median. *Post Election* is an indicator for quarters after the 2016 election. Column 1 includes all bank-quarters where the bank provided at least one 7(a) loan. Column 2 includes all bank-quarters for banks who made at least one 7(a) loan prior to the 2016 election. All variables are defined in Appendix A. t-statistics reported in parentheses and are based on standard errors clustered by bank. ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two–tail). Descriptive statistics are reported in Table 1 Panels A and B.

	(1)	(2)
Dependent variable:	*7(a) Loans*	
DTA Decline × Post Election	0.017	-0.064
	(0.0247)	(-0.244)
Brokered Deposits	1.190**	1.048
	(2.186)	(0.420)
Cash to Deposits Ratio	-0.232	-1.103
	(-0.420)	(-0.591)
Loans to Deposits Ratio	0.097	-1.121
	(0.282)	(-0.995)
Net Interest Margin	-1.418**	-2.548
	(-1.979)	(-1.028)
Noninterest Ratio	0.742	-0.201
	(1.636)	(-0.126)
ROA	-0.306	24.749
	(-0.021)	(0.483)
Size	0.070	-0.927**
	(0.616)	(-2.193)
Observations	8,002	13,513
Adj. R^2	0.769	0.630
Year Fixed Effects	YES	YES
Bank Fixed Effects	YES	YES

Table 6. Change in DTA Capital and Bank Small Business Lending

This table presents OLS regressions of equation (2) on a bank-year panel sample. *SBL Under $100K, SBL $100-$250K,* and *SBL $250K-1M* are the log-transformed dollar amounts of small business lending loans extended by banks in different dollar thresholds. *Total SBL* is the log-transformed dollar amount of all small business lending loans. *Loans to Firms with Revenue < $1M* is the log-transformed dollar amount of loans extended to firms with under $1 million in revenue. *DTA Decline* is an indicator variable for banks whose decline in Tier 1 capital made up of DTA (as a percentage) from the TCJA is above the sample median. *Post Election* is an indicator for years after 2016. All variables are defined in Appendix A. t-statistics reported in parentheses and are based on standard errors clustered by bank. ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two–tail). Descriptive statistics are reported in Table 1 Panel C.

	(1)	(2)	(3)	(4)	(5)
Dependent variable:	*SBL Under $100K*	*SBL $100K–$250K*	*SBL $250K–$1M*	*Total SBL*	*Loans to Firms with Revenue < $1M*
DTA Decline × Post Election	-0.103	-0.162**	-0.235**	-0.089	-0.261**
	(-1.330)	(-2.158)	(-2.444)	(-1.638)	(-2.425)
Brokered Deposits	0.589	0.511	0.138	0.105	-2.293*
	(0.585)	(0.450)	(0.151)	(0.162)	(-1.829)
Cash to Deposits Ratio	-1.809*	-1.006	-1.136	-0.970	-4.140**
	(-1.882)	(-1.264)	(-1.318)	(-1.211)	(-2.527)
Loans to Deposits Ratio	-0.832**	-0.254	-0.206	-0.276	-0.927*
	(-2.040)	(-0.617)	(-0.410)	(-0.812)	(-1.813)
Net Interest Margin	0.977	0.337	1.059	0.806	0.869
	(0.883)	(0.381)	(1.103)	(1.524)	(0.801)
Noninterest Ratio	0.607	0.577	0.211	0.200	-0.291
	(0.920)	(0.834)	(0.396)	(0.534)	(-0.403)
ROA	-5.518	-5.047	-34.419**	-1.863	-3.182
	(-0.544)	(-0.528)	(-2.274)	(-0.261)	(-0.244)
Size	0.825***	0.832***	0.697***	0.791***	0.775***
	(5.025)	(5.577)	(4.838)	(6.288)	(3.387)
Tier 1 Ratio	-0.071***	-0.048**	-0.019	-0.046***	-0.034
	(-3.697)	(-2.422)	(-0.649)	(-3.589)	(-0.734)
Observations	2,673	2,673	2,673	2,673	2,673
Adj. R^2	0.910	0.864	0.834	0.904	0.841
Year Fixed Effects	YES	YES	YES	YES	YES
Bank Fixed Effects	YES	YES	YES	YES	YES

Table 7. Change in DTA Capital and Bank Small Business Lending, County-Level Heterogeneity

This table presents OLS regressions of equation (3) on a bank-county-year panel sample. Column 1 pools regressions across all counties, while Column 2 and Column 3 examine the effect separately for counties without a bank branch located within their borders and counties with a bank branch. *Total SBL* is the log-transformed dollar amount of all small business lending loans. *DTA Decline* is an indicator variable for banks whose decline in Tier 1 capital made up of DTA (as a percentage) from the TCJA is above the sample median. *Post Election* is an indicator for years after 2016. All variables are defined in Appendix A. t-statistics are reported in parentheses and are based on standard errors clustered by bank. ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two–tail). Descriptive statistics are reported in Table 1 Panel C. We do not report coefficient estimates for control variables for parsimony.

	(1)	(2)	(3)
Dependent variable:		*Total SBL*	
	Full Sample	*No Branch*	*Branch*
DTA Decline × *Post Election*	-0.360**	-0.404**	-0.035
	(-2.135)	(-2.416)	(-0.516)
F-statistic of *Branch* - *No Branch* = 0		5.53**	
F-statistic *p*-value		0.019	
Observations	251,604	217,460	34,144
Adj. R^2	0.284	0.337	0.451
Controls	YES	YES	YES
Year Fixed Effects	YES	YES	YES
County Fixed Effects	YES	YES	YES
Bank Fixed Effects	YES	YES	YES

Table 8. Exposure to High DTA Change Banks and County-level Small Business Lending

This table presents OLS regressions of equation (4) on a county-year panel sample. Panel A pools regressions across all counties, Panel B examines the effect separately for small and large counties, and Panel C examines the effect separately for high and low income counties. *Total SBL* is the log-transformed dollar amount of all small business loans. *Loans to Firms with Revenue < $1M* is the log-transformed dollar amount of loans extended to firms with under $1 million in revenue. *High Exposure* is an indicator variable for counties that received an above-median share of loans from banks whose decline in Tier 1 capital made up of DTA (as a percentage) from the TCJA is above the sample median. *Post Election* is an indicator for years after 2016. All variables are defined in Appendix A. t-statistics reported in parentheses and are based on standard errors clustered by county. ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two–tail). Descriptive statistics are reported in Table 1 Panel D.

Panel A. Overall Effect

	(1)	(2)
Dependent variable:	*Total SBL*	*Loans to Firms with Revenue < $1M*
High Exposure × Post Election	-0.090***	-0.089***
	(-6.199)	(-5.312)
Number of EITC	0.390***	0.170
	(2.892)	(0.993)
Number of exemptions	-0.574	0.120
	(-1.003)	(0.183)
Number of returns	1.133**	0.644
	(2.274)	(1.167)
Number of unemployed	-0.013	-0.008
	(-0.523)	(-0.252)
Population	0.234	0.037
	(0.563)	(0.075)
Population Asian	-0.007	-0.013
	(-0.471)	(-0.769)
Population Black	0.020	0.034
	(0.877)	(1.095)
Population Native	0.006	0.009
	(1.176)	(1.363)
Population Pacific	0.004	0.006
	(0.872)	(1.342)
Population White	0.267**	0.263*
	(2.140)	(1.940)
Observations	4,571	4,571
Adj. R^2	0.972	0.957
Year Fixed Effects	Yes	Yes
County Fixed Effects	Yes	Yes

Panel B. Split by large vs. small counties

	(1)	(2)	(3)	(4)
Dependent variable:	*Total SBL*		*Loans to Firms with Revenue < $1M*	
	Small County	*Large County*	*Small County*	*Large County*
High Exposure × Post Election	-0.133***	-0.054***	-0.128***	-0.056***
	(-4.912)	(-4.110)	(-4.135)	(-3.748)
F-statistic of *Small County − Large County* = 0	5.83**		3.57*	
F-statistic *p*-value	0.016		0.059	
Observations	2,237	2,344	2,237	2,344
Adj. R^2	0.897	0.976	0.860	0.962
Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
County Fixed Effects	Yes	Yes	Yes	Yes

Panel C. Split by low vs. high income counties

	(1)	(2)	(3)	(4)
Dependent variable:	*Total SBL*		*Loans to Firms with Revenue < $1M*	
	Low Income	*High Income*	*Low Income*	*High Income*
High Exposure × Post Election	-0.113***	-0.067***	-0.114***	-0.061***
	(-4.802)	(-3.878)	(-4.048)	(-3.237)
F-statistic of *Low Income − High Income* = 0	2.11		2.47	
F-statistic *p*-value	0.146		0.116	
Observations	2,260	2,311	2,260	2,311
Adj. R^2	0.957	0.976	0.860	0.964
Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
County Fixed Effects	Yes	Yes	Yes	Yes

Table 9. Exposure to High DTA Change Banks and County-level Economic Activity

This table presents OLS regressions of equation 4 on a county-year panel sample. *County Establishments* is the log-transformed number of establishments in a county, and *County Employment* is the log-transformed number of employed individuals in a county. *High Exposure* is an indicator variable for counties that received an above-median share of loans from banks whose decline in Tier 1 capital made up of DTA (as a percentage) from the TCJA is above the sample median. *Post Election* is an indicator for years after 2016. All variables are defined in Appendix A. t-statistics reported in parentheses and are based on standard errors clustered by county. ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two–tail). Descriptive statistics are reported in Table 1 Panel D.

	(1)	(2)
Dependent variable:	*County Establishments*	*County Employment*
High Exposure × Post Election	-0.009***	-0.005***
	(-3.096)	(-2.834)
Number of EITC	-0.229***	-0.249***
	(-6.805)	(-9.379)
Number of exemptions	0.099	-0.205***
	(0.785)	(-3.022)
Number of returns	0.328***	0.785***
	(2.858)	(10.348)
Number of unemployed	0.011**	-0.011***
	(2.386)	(-3.207)
Population	0.663***	0.592***
	(7.674)	(8.804)
Population Asian	-0.000	0.001
	(-0.066)	(0.982)
Population Black	-0.001	0.001
	(-0.209)	(0.286)
Population Native	-0.000	0.000
	(-0.410)	(0.610)
Population Pacific	0.001	-0.000
	(1.222)	(-0.491)
Population White	0.026	-0.055**
	(0.797)	(-2.502)
Observations	4,571	4,571
Adj. R^2	0.999	1.00
Year Fixed Effects	Yes	Yes
County Fixed Effects	Yes	Yes