Preliminary Draft. Please Do Not Cite

Subchapter S Election and Bank Risk Taking

Takashi Yamashita
Bureau of Economic Analysis
Department of Commerce
4600 Silver Hill Road
Washington, DC 20233

Takashi.Yamashita@bea.gov

This Draft: October 2016

Abstract

Subchapter S corporations are flow-through entities that avoid double taxation of corporate profit and dividends. Given the features of pass-through taxation, S-corporation owners face incentives to pay out a higher proportion of income as dividends and not to accumulate retained earnings as equity, leading to higher leverage of the bank's balance sheet. Consequently, electing the S-corporation status not only increases the after-tax income of owners but also changes the riskiness of investment, which may influence the risk-taking appetite of bank owners. The Small Business Job Protection Act of 1996 for the first time allowed financial institutions to elect the Subchapter S corporation status. Taking advantage of this change as a quasi-natural experiment, this paper examines how banks that elect the S-corporation status evolve vis-à-vis other corporate banks that remain C corporations. Using longitudinal data that cover the universe of all commercial banks and savings institutions insured by the FDIC, I estimate changes in bank growth, composition of income sources, and portfolio compositions after the conversion using the difference-in-differences method. Between 1997 and 1999, banks that elect the S corporation status become more leveraged. In response, they grow less aggressively in revenues and total assets while relying more heavily on interest income rather than more volatile fee incomes. With respect to portfolio compositions, S-corporation banks exhibit a higher loan-to-assets ratio and generally safer compositions of assets and liabilities. I also find strong negative relationship among S-corporation banks between the past leverage ratio and growth rates and portfolio compositions suggesting higher leverage leads to slower growth and safer asset compositions. In sum, S-corporation banks operate more conservatively and rely on traditional banking and maintain safer asset portfolios as the balance sheets become highly leveraged. The results indicate the importance of risk considerations in evaluating the effects of taxes on corporate capital structure.

JEL Classification: H32, H25, G21, G35
Keywords: Subchapter S Corporation, flow-through entities, depository institutions, taxation and capital structure, bank portfolio composition, background risk, entrepreneurial risk taking

Flow-through entities such as proprietorships and partnerships are a dominant form of business organization in the United States, accounting for over 90% of business firms and over 50% of employment (Carroll and Parente 2011). Flow-through entities are an attractive form of organization as they avoid double taxation of corporate income and dividends. It is well known that firms choose their organizational forms in response to incentives offered in tax codes (Mackie-Mason and Gordon 1997). The bigger the wedge between corporate income tax and personal income tax, the stronger the incentives organize as flow-through entities. After the Tax Reform Act of 1986 when the personal income tax rate was substantially cut, there was a surge of flow-through formations (Slemrod 1995). Once a firm chooses a particular organizational form, how that choice affects the firm's operations is crucial in understanding the role of tax policy in the national economy.

The United States tax codes allow two types of corporations: C-corporations and subchapter S corporations (hereafter referred to as S-corporations). Both types of business entities are organized as "corporations" that enjoy the advantages of limited liability, free transferability of interest, and unlimited life. C-corporations, which face fewer restrictions on the number and types of shareholders are taxed twice; once on corporate income and again on distributed dividends as personal income of shareholders. S-corporations are treated as flow - through entities and avoid the double taxation of corporate income. Owners of S-corporations pay personal taxes on income of S-corporations in proportion to their ownership shares. The owners are taxed on the corporate net income regardless whether they receive distributions (dividends) from S-corporations, while C-corporation owners are taxed on actual dividends received. In exchange for tax advantages S-corporations enjoy, the tax codes stipulate a number of restrictions with regard to eligibility for electing the S-corporation status. Such restrictions

include the number of shareholders, type of shares and shareholders, allowable accounting methods, and how compensation is paid to owners who also work for the firm.

Naturally, one would imagine special features of S-corporations would influence their operations, payout policy, and capital structure. Data limitations, however, have often constrained studies of S-corporations versus C-corporations. First, the overwhelming majority of S-corporations are privately held thus their financial statements are not readily available in data sets commonly used by researchers such as Compustat and equity return data from the Center for Research in Security Prices (CRSP). Second, frequent tax law changes that affect both C- and S-corporations make it difficult to evaluate the effects of tax regime changes on corporate behavior unless there is a clear-cut abrupt changes that may be used as a natural experiment (Cummins, Hassett, and Hubbard 1994). Third, the degree in which corporations become S-corporations varies considerably by industry and the differences in profitability and asset compositions across industries make it challenging to disentangle the effects of tax regimes from other characteristics specific to industries in cross-sectional studies.

In this paper, I explore how C-corporation banks that elect the S-corporation status evolve compared to the other banks that remain C-corporations. The banking sector offers an ideal case to investigate how S-corporation election changes corporate behavior. Unlike other sectors, financial institutions were precluded from becoming an S-corporation prior to 1997. The Small Business Job Protection Act of 1996 allowed financial institutions to elect subchapter S corporation status starting the following year. The law change in 1996 thus offers a quasi-experimental setting to study how banks that became an S-corporation in 1997 performed compared to banks that remained as a C-corporation. Furthermore, the banking sector has a long series of extraordinarily high-quality data; all banks and savings institutions insured by the

Federal Deposit Insurance Corporation (FDIC) file Consolidated Reports of Condition and Income (Call Reports) which are publicly available at the individual institution level. Call Reports data encompass all publicly-traded, private, and mutually-owned banks thus alleviating many of the data problems. Finally, the banking sector is relatively homogeneous, selling similar services, making intra-industry analysis less muddled. Because banks face the same kind of regulatory oversight and micro-prudential requirements, homogeneity of accounting and business practices is ensured compared to cross-industry studies, or studies of industries that are relatively less regulated.

The main focus of this paper is that conversion to an S-corporation substantially alters the risk-return trade-off for bank owners. Many studies that investigate the relationship between tax law changes and firm behavior, particularly profitability and capital structures, are concerned with changes in tax rates (see, for example, Graham 2003). Conversion to an S-corporation, however, not only changes the tax rates but also increases the riskiness of investment. If we look at subchapter S election as simply the change in tax rates, we may miss an important aspect of flow-through entity operations. How would S-corporation owners respond to changes in risk-return trade-off? Are observed changes due to a reduction in tax rate or are they due to an increase in risk? This paper provides a framework to analyze S-corporation conversion in a broader perspective. To the best of my knowledge, this is the first study that takes into account the changes in risk in the study of subchapter-S conversion.

I. S-Corporations in the Banking Sector

The Small Business Job Protection Act of 1996 allowed financial institutions to elect Subchapter S corporation status beginning in 1997. Initially, the number of shareholders was

limited to 75 but this restriction was relaxed to 100 in 2004. In 1997, the first year of the law change, 603 banks (6.0% of all banks) converted to S-corporations. The proportion of S-corporation banks increased steadily as more banks elected S-corporation status while the banking industry consolidated and the total number of banks decreased. The number of S-corporation banks peaked at 2,488 (32.1%) in 2008 then gradually declined as some S-corporation banks were acquired by bigger C-corporation banks. As of December 2014, over one-third (35.2%) of all banks were organized as S-corporation banks out of a total of 6,081 banks.

Although S-corporation banks account for a considerable fraction of all banks in terms of the number, they are mostly small banks and their position in the overall industry is minuscule. Even at the height of their position in the industry (2005), S-corporation banks accounted for only 4.3% of total assets and 5.0% of total deposits. As of December 2014, S-corporation banks accounted for 3.7% of total assets of the industry, held 4.1% of deposits, and employed 7.0% of FTE workers. The size distribution of S-corporation banks vis-à-vis C-corporation banks in most recent year is shown in figure 1. The chart shows concentration of S-corporations among smaller banks. S-corporation banks account for more than 40% of all banks in the lower half of banks in terms of asset size while they represent only about 10% of all banks in the top decile. The decline in the proportion of S-corporation banks is monotonic from the second decile to the top decile. The fraction of C-corporation banks increases in the bottom decile suggesting election of S-corporation status may not be optimal to certain types of extremely small banks.

Earlier studies confirm that banks choose organizational forms to minimize taxes and their post-conversion behavior is consistent with optimization. Smaller banks that would benefit more (e.g., firms earning smaller share of income in passive income, having lower carry-over tax

credits, which cannot be used once converted to an S-corporation, having higher built-in gains that are taxed at the corporate tax rate if converted) more likely convert (Hodder, McAnally, and Weaver 2003, Cyree, Hein, and Koch 2005). In product pricing, S-corporation banks do not seem to pass tax savings onto their customers via higher deposit rates or lower loan interest rates (Depken, Hollands, and Swidler 2010). In terms of loan portfolio, S- and C-corporation banks have no difference in the level of lending to small businesses (Craig and Hardee 2002).

A handful of studies have looked at the performance of S-corporation banks taking advantage of the 1996 law change as a natural experiment as I do in this paper. The United States General Accounting Office's (GAO) report illustrates graphically that S-corporation banks, for twelve quarters following the conversion in 1997, increase dividend payout ratio and capital-asset ratio but show no difference in return on assets or loans-to-assets ratio (U.S. GAO 2000). Similarly, Harvey and Padget (2000) find S-corporation banks increase distribution to shareholders, reduce the holding of tax-exempt state and municipal bonds, and lower capital-to-asset ratio between 1996 and 1999. Gilbert and Wheelock (2007) attribute 0.1 percentage points disadvantage of C-corporation banks' pre-tax income relative to assets as they hold more tax-exempt bonds which accrue lower pre-tax yields to tax-paying C-corporations. Examining later data, Mehran and Suher (2009) find similar results (increases in payout ratio, return on assets and return on equity).

None of these studies, however, fully take advantage of the panel aspects of the available data. In this paper, I examine variations within the same banks before and after the subchapter S election. Specifically, I use the standard fixed-effects method within a difference-in-differences framework. My approach is similar to Yagan (2015) who documents behavioral response of C-corporations after dividend tax cut of 2003. Yagan uses S-corporations as a control group to test

whether the dividend tax cut, which only affects C-corporations, increases investment of C-corporations as standard corporate theory predicts. Surprisingly, he finds the dividend tax cut has no effect on investment or on employee compensation but only increases total payouts of C-corporations.

This paper contributes to the literature by advancing and updating the results of the previous studies. First, the aforementioned studies of before- and after-comparisons are essentially cross-sectional studies or a short-period panel of two years, looking at data in one year (2004 for Gilbert and Wheelock) or changes between two years (between 1996 and 1999 for Harvey and Padget). Mehran and Suher (2009) use three-year averages pre- and post-conversion for their before- and after-comparison. This paper, on the other hand, fully takes advantage of the dynamic structure of the data using a longer panel. Second, I am able to cluster standard errors at the individual-bank level with a longer panel comparing differences in trend between the treatment and control groups, which the previous studies fail to do. When errors within each bank are correlated across time, the estimates of standard errors are inconsistent and one may make erroneous inference. I correct this problem by clustering at the bank level. Third, I specifically pay attention to an increase in risk via higher leverage of the balance sheet to explain the changes of S-corporations. Previous studies often lack theoretical underpinnings and agnostically present a wide array of regression results. My approach, by focusing on the increase in risk, provides a more disciplined approach to estimation and interpretation of the data.

II. Risk and Return in S-Corporation Election

(a) Gross Return from S-Corporation Conversion

An increase in return from conversion to S-corporation from C-corporation is an immediate increase in after-tax income for the owners by avoiding double taxation of corporate profit. The advantages of S-corporation over C-corporation depend on corporate tax rate, personal tax rate, tax rates on dividends, capital gains, and the payout amount by a C-corporation. Following Denis and Sarin (2002), I model the tax advantage of electing S-corporation status. Let t_c, t_p, t_g represent rates on corporate income, personal income, and capital gains, respectively. Total tax liability of a C-corporation owner, T_c, is:

$$T_c = t_c Y + t_d p(1 - t_c)Y + t_g(1 - p)(1 - t_c)Y$$

in which Y is the corporate income before tax and p ($0 \leq p$) is the dividend payout ratio. Total tax liability of an S-corporation investor, T_s, is $T_s = t_p Y$ as an S-corporation does not pay corporate income tax and the owner's tax liability does not depend on distribution. Note that this formula assumes that tax on capital gains is paid this period. An alternative interpretation is that t_g is the present value of a shareholder's tax obligation per dollar of capital gain as capital gains will not be taxed until they are realized (Denis and Sarin 2002). In theory, taxes on capital gains could be postponed indefinitely and hence the present value of capital gains could be quite small.

The tax benefit of conversion, expressed as gross return, $\widetilde{R_s}$ is, therefore:

$$\widetilde{R_s} = \frac{\widetilde{Y_s}}{\widetilde{Y_c}} = \frac{(1 - t_p)}{\left[1 - t_c - t_d(1 - t_c)p - t_g(1 - t_c)(1 - p))\right]}.$$

in which $\widetilde{Y_s} = (1 - t_p)Y$ is the after-tax income for an S-corporation owner and $\widetilde{Y_c}$ is its C-corporation counterpart. The benefit of an S-corporation thus depends on the relative magnitudes of corporate income, personal income, dividend, and capital gains tax rates and dividend payout ratio. Holding tax rates constant, $\widetilde{R_s}$ is increasing in payout ratio p as long as

dividend tax rate is higher than capital gains tax rate $\left(\frac{\partial \widetilde{R_s}}{\partial p} = \frac{(t_d - t_g)(1-t_c)}{\left(\tilde{Y}_c/_Y\right)^2} > 0 \leftrightarrow t_d > t_g \right)$.

Since t_g is endogenous to the extent that an investor can decide when to realize capital gains this condition would almost always be satisfied. Even when an owner decides to pay capital gains tax in the current period, the return from S-corporation conversion is greater, the bigger the wedge between dividend tax rate and capital gains tax rate.

There are substantial benefits to electing the S-corporation status particularly before 2002. Panel (a) of figure 2 plots relevant tax rates for 1996 to 2014. During my analysis period (1996-1999), dividends were taxed at the same rate as personal income (top marginal rate of 39.6%) which was substantially higher than capital gains tax rate (28% in 1997 and 20% thereafter). The lower panel of figure 2 illustrates $\widetilde{R_s}$ as a function of payout ratio based on these tax rates. In 1996, the median payout ratio among privately held C-corporation banks was 0.32. The median bank was thus able to increase after-tax income by 36% by electing the S-corporation status.[1] After 2004 when the Jobs and Growth Tax Reconciliation Act (JGTRRA) reduced the rate on dividend income from a top personal income tax rate of 38.6% to 15%, the advantage of S-corporation conversion diminished substantially. The dividend and capital gains tax rates were set equal under JGTRRA, which significantly weakened the incentive to pay out profits to shareholders. Between 2004 and 2012, the return on S-corporation conversion stayed at 1.176× regardless of the payout ratio. With the increases in the top marginal rate for personal income and capital income tax rates, the return on electing S-corporation status further eroded to 1.162× with 100% payout.

(b) Payout Ratio, Leverage, and Probability of Conversion

[1] In 1998 and 1999, return from S-corporation conversion increases monotonically from 1.162× for 0% payout to 1.538× for 100% payout.

The analysis of $\widetilde{R_s}$ above indicates that banks with higher dividend payout ratios would benefit more by converting to S-corporations. I test whether or not pre-1996 bank characteristics are associated with the probability of electing an S-corporation status. In addition, if bank owners anticipate a more leveraged balance sheet after conversion, a pre-1996 leverage position of C-corporation banks may influence the decision to convert. Specifically, I hypothesize that (i) banks with higher pre-1996 dividend payout are more likely to convert, and (ii) banks with lower leverage ratios are more likely to elect the S-corporation status, ceteris paribus. I run probit regressions relating banks that convert to S-corporations and their pre-1996 characteristics. The dependent variable takes the value of 1 if a bank converts to an S-corporation between 1997 and 2000 and 0 otherwise. The regressors of interest are the 1995-1996 average of payout ratio (dividends divided by after-tax income) and the 1995-1996 average of year-end leverage ratio (total liabilities divided by the book value of equity). The regressions also control for a bank's age and its fourth-order polynomial, the average numbers of FTE employees and offices, the amounts of average assets, average revenues, the average return on equity, and the average growth rates of assets and revenues; averages are taken over 1995-1996 and the arithmetic means of annual growth rates are calculated for 1994-1995 and 1995-1996. In addition, fixed effects for the state of incorporation, regulating agency, and FDIC-designated asset concentration types are controlled for as well as whether or not if a bank is publicly traded and is eligible for the reserve method of accounting.

The results are reported in table 1. The upper panel of the table reports the marginal change in probability of conversion evaluated at the sample mean while the lower panel shows the average of marginal changes in probabilities evaluated at each observation . In all three specifications, the coefficient estimates have predicted signs and are statistically highly

significant; the higher the average payout ratio pre-conversion, the more likely to convert to an S-corporation, and the higher the leverage ratio, the lower the probability of conversion. The numerical magnitudes of the estimates are, however, quite modest. In column (3) in which both the payout ratio and the leverage ratio are controlled for, a one-percentage point increase in the average payout ratio is associated with 0.022% increase in probability of conversion while a full one point increase in the leverage ratio is correlated with a 0.6% reduction in conversion probability.

(c) Subchapter S Conversion and Increase in Risk

The substantial increase in after-tax income by electing S-corporation status entails cost, in addition to restrictions on owners, however. The most prominent, but often overlooked, cost of conversion is an increase in risk of investment for S-corporation owners. The first type of risk is to make the bank balance sheet more leveraged. Since the owners are taxed on pro rata shares of a bank's profit regardless of distribution, the bank tends to increase its dividend payout to its owners so that owners can cover their tax liabilities from income. Furthermore, in the case of banks where owners also operate as managers, banks have an incentive to shift manager's compensation from salaries to dividends to reduce payroll taxes, possibly by reducing owner-managers hours of employment.[2] Holding other factors constant, an increase in dividend payout would naturally lead to lower retained earnings on a bank's balance sheet and thus to higher leverage of the balance sheet.

Second, the accounting methods allowed for small S-corporation banks could also increase risk compared to comparable C-corporation banks. S-corporation banks regardless of

[2] IRS requires that S-corporations pay "reasonable" compensation to their shareholder-managers. However, in the companion paper that looks at the relationship between S-corporation conversion and employment and wages, I find S-corporation banks reduce the reported number of FTE employees and salaries and benefits per FTE employee after the conversion.

the size are required to use the specific charge-off method of loan-loss reserves while C-corporation banks may choose to use the reserve method if the total assets do not exceed $500 million. Under the specific charge-off method, banks write off a loan in the year when the loan is deemed worthless. In contrast, small C-corporation banks that use the reserve method may deduct from taxable income additions to the loan loss reserves to keep the reserve balance large enough to absorb anticipated future losses. As a result, small banks that choose to convert to an S-corporation would expect their profit to become more volatile while smaller C-corporation banks would be able to smooth their pre-tax earnings.[3]

The two features embedded in the S-corporation's tax system would substantially alter a bank owner's risk and return trade-off. If the owner is risk averse, such changes may impact operations of S-corporation banks to counteract the increase in the risk. Gollier and Pratt (1996) establish that risk-averse investors are vulnerable to background risk and behave in a more risk-averse way when an independent risk is present in the background. In the public finance literature, Cullen and Gordon (2007) demonstrate that lowering effective tax rates would weaken risk sharing between entrepreneurs and the government, leading to lower appetite for entrepreneurial risk taking. As conversion to S-corporation substantially reduces effective tax rates, election of subchapter-S status could dampen risk taking by owner-managers. Given the theory, I conjecture that S-corporation bank owners would like to see their banks managed more conservatively given the increase in risk coming from higher leverage of the balance sheet and higher expected volatility due to the charge-off method of loan loss reserves. I test the hypothesis that bank operations and portfolio compositions would counteract to the increase in risks by becoming more conservative.

[3] Furthermore, small banks that have used the reserve method and accumulated an excess reserve would have to recapture their reserve as income as built-in gain and pay taxes at the corporate rate upon conversion to S-corporations.

III. Statistics of Depository Institutions and Sample Construction

This paper uses longitudinal data of individual banks from the FDIC's Statistics of Depository Institutions (SDI), which is a harmonized data set compiled from Call Reports that each insured bank is required to file. SDI covers the universe of all commercial banks and savings institutions insured by the FDIC. I use annual data (December filing) from 1992 to 2014 downloaded from the FDIC's SDI site.

For the main difference-in-differences estimation, I use the balanced panel from 1992 to 1999. As I use growth rates and lagged variables as controls, the sample panel contains observations from 1994 to 1999; three years (1994-1996) before the law change and three post-conversion years (1997-1999) for comparison. The entire period is during the expansionary phase of the U.S. economy and does not include the recession that started in March 2001. I believe this sample selection is judicious as the recession of 2001 may have had disparate effects on different regions of the country (e.g., the September 11 terrorist attacks had a bigger impact in the Tristate and Mid-Atlantic regions). More importantly, the tax regime, the personal income and corporate income tax rates remained unchanged throughout this period (the top marginal personal income rate of 39.6% and corporate tax rate of 35%). A firm's capital structure is sensitive to corporate income tax rate (Faccio and Xu 2015, Hemmelgarn and Teichmann 2014) as well as to personal taxes (Lin and Flannery 2013). Limiting the sample to the period when the tax rates stay constant is thus crucially important to conclude any changes observed in this paper are not confounding effects from other changes in taxes but from election of the S-corporation status.

I further limit my sample with bank asset size and other characteristics. I limit my sample to domestic banks with the total assets between $5 million and $3 billion in constant 2013 dollars. I also exclude banks that have an international focus in its asset concentration (there is no S-corporation bank that is internationally focused), banks in the U.S. territories, any bank that has foreign offices, and U.S. branches of foreign banks. While parent and subsidiary banks both file Call Reports as long as they are legally separate entities, I only use data from parent banks that file consolidated statements to avoid double counting. In addition, I exclude from the sample banks that report no (or missing) office, deposits, loans, salaries and benefits, and employ no FTE employees so that banks in my sample are not shells held by bank-holding companies (BHCs) for tax or other legal purposes.

Another important change in this period is the enactment of the Gramm-Leach-Bliley Act (GLBA) in November 1999, which widened the range of activities that banks could conduct. The change mostly affected BHCs and financial holding companies while deposit-taking banks that were affected were large ones that had multi-state presence. As I limit my sample banks to those with less than $3 billion in assets and control for multistate charter and BHC-affiliation characteristics, the concern of GLBA contaminating my results would be ameliorated. In addition, as we see later, the differences between the treatment group and the control group appear starting in 1997, two year prior to GLBA, corroborating my assertion that S-corporation election is the main source of change rather than the law that is to be enacted two years later.

For the main analysis, my sample consists of banks that converted to S-corporation in 1997 as a treatment group. I use two separate groups as controls: publicly traded C-corporation

banks[4] and privately held C-corporation banks. Which banks to use for a control is not settled in the literature; Hodder et al. (2002) compare S-corporation banks to privately-held C-corporation banks whereas Mehran and Suher (2009) include both publicly-traded and privately-held C-corporation banks for comparison.

Arguments could be made to include privately held banks or exclude them from the control group in favor of either case. An argument in favor of the publicly traded bank control is that the treatment (the law change) is more exogenous to publicly traded banks. Publicly traded banks faced higher hurdles to elect the S-corporation status and their choices were more limited when the law allowed banks to convert to S-corporations. At the time of the change, the law limited the number of shareholders to 75, most publicly traded banks would require massive share buybacks to delist and convert to S-corporations. Although delisting of a publicly traded firm is possible, I doubt many banks would have done so given a trade-off between tax savings arising from conversion and access to the capital markets available to publicly traded companies. Furthermore, considering that the law was enacted in October 1996 and banks had to convert by June 1997 to be eligible to file income taxes as an S-corporation in 1997, publicly traded banks had only a few months to elect the S-corporation status to be included in my sample. Put another way, an option of converting to S-corporation was severely restricted to publicly traded C-corporation banks with a short notice and the law change in 1997 was plausibly exogenous and would not affect them in a way it would affect privately held banks.

An alternative point, in favor of using privately held banks as control, could be argued on the basis of the fact that S-corporation banks are almost exclusively privately held and such banks may behave differently from publicly traded banks. The boom of the stock markets in the

[4] Information on the public/private ownership of banks is not available from Call Reports. To identify publicly-traded banks, I use data from the Federal Reserve Bank of New York's CRSP-FRB linked data available at http://www.newyorkfed.org/research/banking_research/datasets.html.

late 1990s may have expanded publicly traded banks' access to capital but such opportunities may not have been available to privately held banks. The availability of capital may influence the behavior of publicly traded corporations in the way not available to unlisted companies. On the other hand, privately held banks that do not elect the S-corporation status may differ in important but unobservable ways from those that convert, thus comparing only among privately held banks may confound the issue of endogeneity of choice of electing S-corporation status. As a robustness check, I use both sets of banks and control and compare how the results differ.

Table 2 presents summary statistics of the analysis sample in 1997, the first year of conversion. The sample statistics reveal notable differences between C-corporation and S-corporation banks in size, growth rates, and asset concentration types. S-corporation banks are markedly smaller in terms of total revenue and assets as well as exhibiting substantially slower growth rates in revenues, assets, and liabilities. Nearly half of S-corporation banks have asset concentration in agriculture while lending to commercial, mortgage, and consumer borrowers is smaller.[5] In contrast to publicly traded banks, which are generally big, privately held C-corporation banks and S-corporation banks share certain similarities (e.g., smaller in size, a higher share of interest income in total revenues, a higher share of deposits in total liabilities). On the other hand, privately held C-corporation banks have a notably lower operating margin (pretax income divided by total revenue) and lower dividend payout ratio. Privately held C-corporation banks are far less likely to be affiliated with bank-holding companies. In contrast, more than 95% of publicly-traded C-corporation banks are subsidiaries of bank-holding companies. Nevertheless, in certain key dimensions, there exist substantial overlap and

[5] Asset concentration types are defined by the fraction of loans and leases to a specific sector; agriculture and commercial concentrations suggest banks with over 25% of loans to the agriculture and commercial and industrial borrowers, respectively, while credit card, mortgage, and consumer lending concentrations denote banks that have over 50% of loans extended to the respective sectors.

similarity across three types of banks such as years since establishment (age), the share of investment securities in total assets, and the leverage ratio.

IV. Changes after S-Corporation Conversion

I test the hypothesis that S-corporation banks behave in a more risk-averse way after conversion using the following difference-in-differences regression:

$$Y_{it} = \sum_{t=1995}^{1999} \alpha_t \, Year_t + \sum_{t=1995}^{1999} \beta_t SCorp_i \times Year_t + \mathbf{X_{it}}\boldsymbol{\gamma} + \delta_i + \varepsilon_{it}$$

Y_{it} is the outcome of interest. $Year_t$ is a dummy variable for year t and $SCorp_i$ is an indicator if bank i files taxes as an S-corporation. $\mathbf{X_{it}}\boldsymbol{\gamma}$ is a vector of controls that include lagged values of (log of) assets and revenues, lagged growth rates of assets and revenues, lagged values of average payout and leverage ratios, quartics in age, lagged number of FTE employees and the number of offices, dummy variables for affiliation with bank holding companies, FDIC's asset classification categories, and primary regulatory agencies. The term δ_i is the unobservable bank-specific characteristics that will be differenced out in the fixed-effect estimator.

The first set of outcome variables includes the dividend payout ratio and the leverage ratio, which tests the hypothesis that S-corporation banks face incentives to pay out higher proportion of income to shareholders and their balance sheets become more leveraged as a result. To calculate the dividend payout ratio, I divide dividends by pre-tax income rather than the standard after-tax profit. Comparing after-tax dividend payout distorts the payout ratio of C-corporations as S-corporations do not pay corporate income taxes after 1997, artificially inflating

the payout ratio after 1997 for S-corporations relative to C-corporations.[6] The leverage ratio is computed as total liabilities divided by the book value of bank equity.

Once I establish that S-corporation banks indeed become riskier, I examine if their operations appear more risk averse. The outcome variables for this purpose include various growth rates and compositions of income source and bank balance sheet. The growth-related outcome variables include the growth rate of total revenue, assets and liabilities. The income source variable is the share of interest income in total income. The portfolio composition variables include the share of loans in assets, the ratio of investment securities to assets, the share of cash holdings, the ratio of risk-weighted assets (RWA) to book value of assets, and the ratio of volatile liabilities to assets.

I estimate this model with the fixed-effects method taking advantage of the longitudinal aspects of the SDI. Parameters of interest are β_t, t = 1997, 1998 and 1999, which are difference-in-differences estimates indicating how S-corporation banks change differently from C-corporation banks after the law's enactment. The $\beta_{1995}, \beta_{1996}$ terms are included to test placebo effects[7] and I expect coefficient estimates of these terms statistically insignificant. In a difference-in-differences framework, the estimates inform us of changes in trend rather than differences in levels. Most previous studies that compare C-corporation banks to S-corporation banks around the time of conversion focus mostly on the differences in levels but not much in trends in pre-conversion. For example, Harvey and Padget (2000) find banks that convert to S-

[6] Note that the use of pre-tax income to compare S-corporation's performance to that of C-corporations does not necessarily put the two types of banks on an equal-footing basis. Gilbert and Wheelock (2007) document that C-corporation banks hold more tax exempt bonds in their portfolios as income earned from such bonds are not taxable thus reduces their corporate income tax. Their adjustments to S-corporation banks are relatively minor as they change pre-tax income to asset ratio by 0.07 to 0.2 percentage points depending on the asset size. Furthermore, despite small level changes, there is no discernible change in trends by adjustments. I thus conclude that the difference in holdings of tax-exempt bonds would be of second order and would not affect my results.

[7] Note that these year dummies are interacted with S-corporation status. Although S-corporation banks did not exist before 1996, I code this variable 1 if a bank converts to an S-corporation in 1997.

corporation have higher dividend payout ratio, slower growth, and lower debt-to-equity ratio in the year prior to conversion. My results will provide more dynamic pictures of the law's effects. Finally, standard errors are clustered at the individual bank level.

Table 3 presents the results from the regressions using publicly traded C-corporation banks as a control. The first column of the upper panel confirms that S-corporation banks increase the dividend payout ratio after conversion. Furthermore, the magnitude of increase is quite large: 13 percentage points in 1997 and 27 percentage points in 1998 compared to changes in C-corporation payouts. As S-corporation banks increase the payout, their balance sheets become more leveraged faster than the C-corporation counterpart after 1998 (the second column of the upper panel). Although the 1997 estimate is only marginally statistically significant at the conventional level (p-value of 0.072), the magnitude of divergence from the pre-1996 trend is quite large. In addition, the gap in the leverage ratios between S- and C-corporation banks grows bigger in later years reflecting the cumulative effects of payout increases. The results confirm that S-corporation banks increase dividend payout in response to the incentives embedded in the tax system and consequently their balance sheets become more leveraged.

This increase in leverage seems to have noticeable effects on S-corporation banks' operations. S-corporation banks rely more heavily on interest income from loans than C-corporation banks. In aggregate, banks earn an increasingly higher fraction of income from noninterest income (Stiroh 2004). As fee income is known to be more volatile than interest income and banks that earn a higher proportion of revenues from fees have lower risk-weighted return on equity (Stiroh 2004), S-corporations' focus on traditional banking operations seems to reflect a more conservative stance of S-corporation owners after conversion. The last three columns show that S-corporation banks grow far more slowly in revenues, assets, and liabilities

than publicly traded C-corporation banks after 1997. Furthermore, the magnitude of slowdown is substantial. The patterns seem consistent with the hypothesis that S-corporation banks become more conservative and expand their operations less aggressively than C-corporation banks.

With respect to the portfolio composition shown in the lower panel, the balance sheets of S-corporation banks appear to become less risky. In line with a larger share of income earned from interest, the share of loans in asset portfolio increases more rapidly for S-corporation banks, while the share of investment securities grows slower. S-corporation banks also increase the ratio of RWA to assets[8] faster than C-corporation banks and reduce the share of volatile liabilities.[9] With respect to cash holdings, I fail to find a statistically significant different trend but the estimates turn positive after 1998 and the 1999 estimate becomes marginally significant (p-value 0.063), implying there may be a small increase in cash holdings among S-corporation banks.

The estimates from difference-in-differences regressions using privately held C-corporations as a control, presented in table 4, confirm they key findings in table 3. The results indicate similarities in certain key aspects of the operations with the results in table 3 while showing much weaker differences in the others. Similar to publicly traded banks as a control, S-corporation banks pay out in dividends a higher fraction of pre-tax income after 1997 and their balance sheets become more leveraged compared to privately held C-corporation banks. Note that the coefficients on the pre-1996 terms are statistically significant, implying that there may be differences in trend even before the law change. Nonetheless, the increase of leverage after 1998 is numerically large and grows bigger as time goes by, similar to the results of the public-banks

[8] The risk-weighted adjustments are made by FDIC based on the risk-based capital definitions for prompt corrective action. The higher this ratio, therefore, the less risky is a bank's asset portfolio. For details of variable explanations, see SDI's web site (https://www5.fdic.gov/sdi/main.asp?formname=glossary).

[9] Volatile liabilities include inter-bank federal funds repo, demand notes issues to the U.S. Treasury and other borrowed money, large time deposits over $250,000, trading liabilities, and foreign office deposits.

control. The growth rates of revenue, assets and liabilities are also slower after 1997 vis-à-vis privately held banks, although the magnitudes of the estimates are somewhat attenuated implying that privately held banks do not grow as fast as publicly traded banks. The share of investment securities in assets and the ratio of volatile liabilities to assets grow slower as well. The estimates for cash holding become numerically large after 1997 although they are only marginally significant (p-value of 0.094 in 1997, 09049 in 1998, and 0.069in 1999) suggesting S-corporation banks shift to more liquid assets after conversion.

There are, however, some notable differences from the results in table 3. In contrast to the public bank control, S-corporation banks rely less on interest income relative to privately held banks. Despite this difference, the share of loans in total assets grows faster for S-corporation banks although the estimates are about a half in size of those in table 3 and only marginally statistically significant in 1997 and 1998 (p-values of 0.087 and 0.72, respectively). Similarly, the trend in the ratio of RWA to asset diverge less and the difference is only marginally significant (p-values of 0.090 in 1997, 0.081 in 1998, and 0.113 in 1999). Differences between S-corporation banks and privately held C-corporation banks seem smaller compared to publicly traded banks.

Overall, the results indicate that S-corporation banks after conversion grow more slowly and hold safer portfolios while they pay out a higher fraction of income as dividends and their balance sheets become more leveraged. They seem to rely on traditional banking operations more, focusing on bank lending, and earning less from volatile fee incomes, while refraining from rapid expansions. In other words, conversion to S-corporation seems to have made these banks more risk averse relative to C-corporation banks.

Research points to several reasons why banks differ in their appetite for risk. Managerially controlled banks are more likely to take risks than stockholder controlled banks (Saunders, Strock, and Travlos 1990). Publicly traded banks are large and they are managed by bank managers who account for a small fraction of shareholders. Agency theory posits that risk-taking appetite of managers does not necessarily align with that of owners. With the compensation structure that includes both fixed salaries and performance bonuses, managers face incentives to take more risks than owners would find optimal (International Monetary Fund 2014). On the other hand, smaller private banks are owned by the far smaller number of shareholders who often actively participate in the day-to-day operations of the bank. Shareholder-controlled banks would therefore behave in a more risk-averse way compared to publicly traded C-corporation banks. However, such differences are important in cross-sectional comparisons but less relevant in the current framework. Since my estimates are based on difference in differences using the panel fixed-effects method, any time-invariant differences in the governance and management structure are eliminated. In addition, there is no bias associated with attrition or composition change in my sample as I use the balanced panel of banks that only include banks that exist throughout the entire sample period.

Although the difference in unobservable attitude towards risk at the individual-bank level would not matter in the fixed effects estimation, it is interesting to consider possible differences in risk aversion between S-corporation banks and private C-corporation banks. Selection into S-corporation is voluntary and owners of banks that elect the S-corporation status in1997 may be different in some unobservable ways from those of the private banks that stay C-corporation. Could it be that the appetite for risk by S-corporation owners is lower and hence S-corporation banks exhibit a safer portfolio composition? I do not find this explanation plausible. Electing

the S-corporation status would increase both return and risk of the owner's investment. The margin of adjustment is thus whether an increase in risk is compensated for by a sufficiently large increase in after-tax returns. Owners who elect the S-corporation status evaluate this risk-return trade-off and decide to convert. Aside from certain binding constraints that some owners face (e.g., the number and types of shareholders), owners of privately held C-corporation banks, on the other hand, weigh the benefits of conversion against the cost and found the increase of the return would not compensate for the increase in risk. If anything, therefore, those who choose S-corporation are more risk tolerant than those who stay C-corporations.

A bank's own history may influence its attitudes towards risk taking. Bouwman and Malmendier (2015) demonstrate that banks that have been undercapitalized and experienced the threat of failure in the past take less risk and have higher equity. Although I control for lagged values of leverage, they cover only 2 years in the immediate past which may not capture long institutional memories of banks. If a bank's institutional memory has a long life (i.e., time invariant), however, any differences in past experiences would be captured by unobservable characteristics (the term δ_i) and are differenced out in the fixed-effects method. Hence any idiosyncratic differences in banks history would not bias my results.

Changes in the composition of board members could also change a bank's risk appetite. Using the timing of changes of the board member composition to identify the demographic effects on bank risk-taking, Berge, Kick, and Schaeck (2014) find German banks take less risk when members of the board become older or more educated. Because data from the Call Reports do not contain demographic information on banks' board members, I am not able to test this hypothesis directly. However, to explain the strong results I find with the changes in bank board member compositions, we would have to find massive changes in board members in or around

1997, which took place only among S-corporation banks but not at C-corporations. I find this possibility extremely unlikely, particularly when S-corporation banks are small, often family-owned banks with a long, stable history.

V. The Relationship between the Leverage Ratio and Portfolio Composition

My hypothesis is that a highly leveraged balance sheet increases the background risk and the increase induces S-corporation banks to take safer portfolio positions. However, it is possible that the previous results found in the difference-in-differences estimates may arise from the tax rate changes associated with the conversion to S-corporation and not related to changes in riskiness of the balance sheet. In addition, even if a highly leveraged balance sheet may influence bank risk-taking, it is not clear if the relationship between leverage and income and balance sheet composition is equal across different types of banks. To see how the past leverage ratio is associated with the outcomes of interest, I estimate the following regression:

$$Y_{it} = \alpha Leverage_{i,t-1} + \beta SCorp_{it} + \gamma SCorp_{it} \times Leverage_{i,t-1} + \mathbf{Year_t}\boldsymbol{\eta} + \mathbf{X_{it}}\boldsymbol{\theta} + \delta_i + \varepsilon_{it}$$

in which the lagged leverage is measured as the average of the leverage ratio over the previous two years. As before, $SCorp_i$ is an indicator if bank I files taxes as an S-corporation. $\mathbf{Year_t}$ is a vector of year dummies and $\mathbf{X_{it}}$ is a vector of set of controls that includes, in addition to the variables included in the previous regressions, an indicator for private C-corporation banks and its interaction with the leverage variable. As before, the term δ_i is the unobservable bank-specific characteristics that will be controlled for by the fixed-effect estimator.

The model is estimated with the fixed-effects method using data from 1999 to 2014 and table 5 reports the results. The upper panel shows the estimates related to income and growth rates. Recall that in table 3, the share of income earned from interest increases after conversion

vis-à-vis publicly traded C-corporations. However, in table 5, the interest income share seems uncorrelated with the lagged leverage or S-corporation status. The difference between the results here and earlier results is that the tax rates owners pay decreased in the difference-in-differences estimates for S-corporations between 1996 and 1997 whereas they stayed constant for C-corporation owners. Without clear correlation with the leverage ratio, the increase in interest income seems more to do with other factors such as the tax rate changes rather than the increase in risk. With respect to growth, various growth rates, which S-corporation banks show marked slow-down after conversion, are indeed correlated with the leverage. The terms related with the lagged leverage are all negative while the lagged leverage ratio seems to have very little to do with the growth rates of public C-corporation banks. For both S-corporation banks and privately held C-corporations, on the other hand, the lagged leverage strongly predicts a decline in growth in revenues, assets, and liabilities.

The negative association between leverage and future growth has been documented a study of the non-financial corporations. Looking mostly at the food processing industry and manufacturing firms, Lang, Ofek, and Stulz (1996) find a negative relation between leverage and future growth among firms with low Tobin's *q* ratio. They conjecture that leverage could be a proxy for the lack of future growth opportunities since managers choose leverage using their private information about the firm's investment opportunities. My results, however, cast doubt on such an interpretation. First, the high leverage of S-corporation banks is induced by the tax structure, the leverage ratio is a predictor of future growth opportunities does not necessarily hold for S-corporation banks. Furthermore, if leverage is a proxy for a firm's investment opportunities, then we would expect to see a negative relation between leverage and growth for any type of banks. However, the coefficient on the leverage variable is numerically small and

statistically insignificant for publicly traded C-corporation banks (omitted category) and the interaction term is only significant for S-corporation banks in case of future revenue growth. Furthermore, the interaction of the leverage ratio and privately held C-corporation banks is significant in the regressions of asset growth and liability growth, their magnitude is only about half of the estimates on the S-corporation interaction term, indicating that the nature of flow-through tax structures may strengthen the relationship between leverage and asset/liability growth for S-corporation banks.

The lower panel of table 5 reports the results for selected portfolio composition variables. Recall from tables 3 and 4 that S-corporation banks increase the share of loans and decrease investment securities more rapidly than C-corporation banks after 1997. The overall portfolio also becomes safer as measured by the ratio of RWA to total assets. The increases of the loan shares and the RWA-asset ratio are more associated with the subchapter S status itself rather than the lagged leverage ratio. On the other hand, the share of investment securities in total assets decreases as the lagged leverage increases, although statistically insignificant for S-corporation banks. Since the share of investment securities is not related to the lagged leverage, its relative increase for C-corporation banks may be due to C-corporations' shift towards tax-exempt municipal bonds as suggested by Gilbert and Wheelock (2007). Intriguingly, the share of cash holdings is positively associated with higher leverage for both S-corporation and private C-corporation banks, while there is only weak evidence that cash holding has increased after conversion in tables 3 and 4. The ratio of volatile liabilities to assets does not seem related to the lagged leverage ratios. Again, I cannot rule out the possibility that the results in tables 3 and 4 with respect to the ratios of investment securities and volatile liabilities are brought about by the changes in tax rates not related to the change lagged leverage.

VI. Conclusions

This paper presents evidence of how banking operations respond to changes in the risk-return-trade off brought about by tax law changes, using the conversion to S-corporation by banks under the 1996 Small Business Job Protection Act as a quasi-natural experiment. I find banks that convert to S-corporations pay out higher dividends to meet owners' tax liabilities, which in turn leads to lower equity and a higher leverage ratio. The accounting method for loan-loss reserves permitted to S-corporations also increases expected volatility of future income streams compared to small C-corporation banks. In response to this increase in background risk in the form of a more leveraged balance sheet, S-corporation banks after conversion grow their assets and operations less aggressively while relying more on interest income and less on volatile fee income to generate revenues. The evidence seems to point to a tendency that S-corporation banks are operated more conservatively compared to C-corporation banks. This tendency may be a result of higher leverage ratios of S-corporation banks as they face a stronger incentive to pay out profits as dividends and not to retain earnings within the banks.

Caution is required to generalize the findings from S-corporation banks in this paper to S-corporations in the other sectors. Since banks are heavily regulated, S-corporation banks deal with additional regulatory constraints that S-corporations in other sectors do not face. For example, given the capital adequacy requirements, banks may not be able to pay out profits as much as they want when changes in the capital base may call the attention of banking regulators. In addition, when tax policy and banking supervisory policy are in conflict, the clash of policy could create uncertainty in tax liabilities of shareholders until the policy inconsistency is resolved. Finally, an accounting method (e.g., the reserve method of loan-loss accounting)

allowed for small C-corporation banks but not for S-corporation banks or nonfinancial corporations may create an appearance of lower loan-loss reserves of S-corporation banks, while such an appearance may not reflect the true intention of S-corporation bank management. S-corporations that are not as regulated as the banking industry, therefore, may well behave differently from S-corporation banks.

This study could be extended in a few different directions. First, my results leave out a few unsolved questions. If S-corporation banks portfolios become safer as exemplified by an increase of RWA, what is the mechanism through which S-corporation banks behave in a more risk-averse way if it is not through an increase in risk by a more leveraged balance sheet? This effect cannot be totally explained by the disallowance of the reserve method of accounting because privately held C-corporation banks also hold a higher percentage of RWA than publicly traded banks. Why do the share of interest income and the ratio of volatile liabilities seem to respond to the changes in tax rates after the conversion but not to the higher leverage of the balance sheet? To answer these questions, we need to look into how tax codes treat different assets and liabilities differently and components of assets and liabilities change in detail. Second, one could investigate how S-corporation banks weathered the turmoil of the financial crisis with highly leveraged balance sheets but safer asset portfolios. Were they more likely to fail or survive during the financial crisis of 2008-2009? Similarly, are they more likely to be acquired by large banks in the era of banking consolidation (or remaining an S-corporation is a good strategy to small-bank owners against takeovers)? Third, one could examine how S-corporation banks react to changes in the Federal Reserve's monetary policy stance similar to Kashyap and Stein (2000). Since S-corporation banks seem to grow slower, it would be important to know if their responses to monetary policy are weaker or stronger because their

asset portfolios are stronger. In addition, how would their responses differ during the expansionary and contractionary phases of monetary policy? These topics are beyond the scope of this study and I leave them for future research.

References

Berger, Allen N., Thomas Kick, and Klaus Schaeck, "Executive Board Composition and Bank Risk Taking," *Journal of Corporate Finance*, 28: October 2014, 48-65.

Bouwman, Christa H. and Ulrike Malmendier, "Does a Bank's History Affect Its Risk-Taking?" *American Economic Review: Papers & Proceedings*, 105 (5): May 2015, 321-325.

Carroll, Robert and Gerald Parente, "The Flow-Through Business Sector and Tax Reform: The Economic Footprint of the Flow-through Sector and the Potential Impact of Tax Reform," Ernst & Young, April 2011.

Cullen, Julie Berry, and Roger H. Gordon, "Taxes and Entrepreneurial Risk-Taking: Theory and Evidence for the U.S." *Journal of Public Economics*, 91 (7-8): August 2007, 1479-1505.

Cummins, Jason G., Kevin A. Hassett, and R. Glenn Hubbard, "A Reconsideration of Investment Behavior Using Tax Reforms as Natural Experiments," *Brookings Papers on Economic Activity* 2: 1994, 1-74.

Craig, Steven G. and Polly T. Hardee, "Subchapter S, An Entrepreneurial Survival Strategy for Small Banks," *The Journal of Entrepreneurial Finance*, 7 (3): Fall 2002, 53-62.

Cyree, Ken B., Scott E. Hein, and Timothy W. Koch, "Avoiding Double Taxation: The Case of Commercial Banks," Unpublished Manuscript, Texas Tech University, July 2005.

Denis, David J., and Atulya Sarlin, "Taxes and the Relative Valuation of S Corporations and C Corporations," *Journal of Applied Finance*, Fall/Winter 2002, 5-14.

Depken II, Craig A., Harris Hollands, and Steve Swidler, "Do Tax Benefits Conferred to Sub-S Banks Affect Their Deposit or Loan Rates?" *Finance Research Letters*, 7 (4): December 2010, 238-245.

Faccio, Mara, and Jin Xu, "Taxes and Capital Structure," *Journal of Financial and Quantitative Analysis*, 50 (3): June 2015, 277-300.

Gilbert, R. Alton, and David C. Wheelock, "Measuring Commercial Bank Profitability: Proceed with Caution," *Federal Reserve Bank of St. Louis Review*, November/December 2007, 515-532.

Gilbert, R. Alton, Andrew P. Meyer, and James W. Fuchs, "The Future of Community Banks: Lessons from Banks that Thrived during the Recent Financial Crisis," *Federal Reserve Bank of St. Louis Review*, March/April 2013, 115-143.

Gollier, Christian, and John W. Pratt, "Risk Vulnerability and the Tempering Effect of Background Risk," *Econometrica*, 64 (5): September 1996, 1109-1123.

Graham, John R. "Taxes and Corporate Finance: A Review," *The Review of Financial Studies*, 16 (4): Winter 2003, 1075-1129.

Harvey, James, and Jane Padget, "Subchapter S – A New Tool for Enhancing the Value of Community Banks," *Federal Reserve Bank of Kansas City Financial Industry Perspective,* December 2000, 17-31.

Hemmelgarn, Thomas, and Daniel Teichmann, "Tax Reforms and the Capital Structure of Banks," *International Tax and Public Finance*, 21 (4): August 2014, 645-693.

Hodder, Leslie, Mary Lea McAnally, and Connie D. Weaver, "The Influence of Tax and Nontax Factors on Banks' Choice of Organizational Form," *The Accounting Review*, 78 (1): January 2003, 297-325.

International Monetary Fund, *Global Financial Stability Report - Risk Taking, Liquidity, and Shadow Banking: Curbing Excess While Promoting Growth*, Washington DC, October 2014.

Kashyap, Anil K., and Jeremy C. Stein, "What Do a Million Observations on Banks Say about the Transmission of Monetary Policy?" *American Economic Review*, 90 (3): 407-428, June 2000,

Lang, Larry, Eli Ofek, and René M. Stulz. "Leverage, Investment, and Firm Growth," *Journal of Financial Economics*, 40 (1): July 1996: 3-29.

Lin, Leming, and Mark J. Flannery, "Do Personal Taxes Affect Capital Structure? Evidence from the 2003 Tax Cut," *Journal of Financial Economics*, 109 (2): August 2013, 549-565.

Mackie-Mason, Jeffrey K. and Roger H. Gordon, "How Much Do Taxes Discourage Incorporation?" *Journal of Finance* 52 (2): June 1997, 477-505.

Mehran, Hamid, and Michael Suher, "The Impact of Tax Law Changes on Bank Dividend Policy, Sell-Offs, Organizational Form, and Industry Structure," *Federal Reserve Bank of New York Staff Report* No. 369, April 2009.

Saunders, Anthony, Elizabeth Strock, and Nickolas G. Travlos, "Ownership Structure, Deregulation, and Bank Risk Taking," *The Journal of Finance*, 45 (2): June 1990, 643-654.

Slemrod, Joel, "Income Creation or Income Shifting? Behavioral Responses to the Tax Reform Act of 1986," *American Economic Review*, 85 (2): May 1995, 175-180.

Stiroh, Keven J., "Diversification in Banking: Is Noninterest Income the Answer?" *Journal of Money, Credit, and Banking*, 36 (5): October 2004, 853-882.

United States General Accounting Office (GAO), *Banking Taxation: Implications of Proposed Revisions Governing S-Corporations on Community Banks*, Report to Congressional Committees GAO/GGD-00-159, June 2000.

Yagan, Danny, "Capital Tax Reform and the Real Economy: The Effects of the 2003 Dividend Tax Cut," *American Economic Review*, 105 (12): December 2015, 3531-3563.

Table 1 Probability of Electing the S-Corporation Status, 1997-2000

	(1)	(2)	(3)
(a) Marginal Probability evaluated at the sample mean			
Average (1995-1996) after-tax payout ratio	0.015**		0.015**
	(0.003)		(0.002)
Average (1995-1996) leverage ratio		–0.004**	–0.004**
		(0.001)	(0.001)
(b) Average of Marginal Probabilities evaluated at each observation			
Average (1995-1996) after-tax payout ratio	0.021**		0.022**
	(0.004)		(0.004)
Average (1995-1996) leverage ratio		–0.006**	–0.006**
		(0.002)	(0.002)
Log likelihood	–2929.1	–2935.1	–2922.5
Pseudo R^2	0.228	0.227	0.229
No. of obs.	7,750	7,750	7,750

The sample is limited to banks with total assets (in 2013 dollars) between $5 million and $5 billion, which include all banks that convert to S-corporation. The dependent variable takes the value of 1 if a bank elects the S-corporation status between 1997 and 2000, zero otherwise. Other control variables include a bank's age in quartics, 1995-1996 averages of the numbers of FTE employees and offices, total assets, total revenues, return on equity, growth rates of assets and revenues, dummy variables for state of incorporation, the main regulatory agency, asset concentration types, and publicly traded banks. The averages are taken over 1995-1996 and the arithmetic means of annual growth rates are calculated for 1994-1995 and 1995-1996. Robust standard errors in parentheses.

* significant at the 5% level ** significant at the 1% level

Table 2 Summary Statistics of Analysis Sample by Type of Banks, 1997

	S-Corp	Public C-Corp	Private C-Corp
Income Statement Related			
Total Revenue (in 2013 $ million)	10.1	47.4	14.8
Revenue growth rate	0.051	0.123	0.073
Pretax Income/Revenue	0.232	0.221	0.186
Dividends/Pre-tax income	0.598	0.387	0.194
Dividends/After-tax income	0.693	0.557	0.368
Average Payout ratio (t-1 & t-2)	0.620	0.555	0.377
interest income share	0.906	0.884	0.909
Charge-offs/gross assets	0.001	0.002	0.002
Pre-tax income/average equity	0.203	0.221	0.161
Balance Sheet related			
Total Assets (in 2013 $ million)	115.9	554.2	174.1
Asset growth rate	0.049	0.113	0.070
Loan growth rate	0.087	0.118	0.095
Loans/Assets	0.587	0.634	0.586
Securities/Assets	0.282	0.244	0.275
Risk-weighted assets/total assets	0.630	0.660	0.614
Loans in arrears	0.010	0.008	0.012
Deposits/Liabilities	0.966	0.908	0.956
Liability growth rate	0.048	0.114	0.068
Deposit growth rate	0.044	0.106	0.065
Volatile liabilities/total assets	0.117	0.156	0.132
Leverage Ratio	9.448	10.412	9.778
Other Characteristics			
Age	70.7	68.5	65.8
Asset concentration – agriculture	0.453	0.032	0.239
Asset concentration –credit card	0.000	0.006	0.004
Asset concentration – commercial	0.260	0.555	0.324
Asset concentration – mortgage	0.032	0.084	0.065
Asset concentration – consumer lending	0.019	0.040	0.037
Asset concentration – other, assets ≤ $1bn	0.236	0.261	0.329
Asset concentration – other, assets > $1bn	0.002	0.021	0.001
Primary regulator – FDIC	0.698	0.429	0.589
Primary regulator – FRB	0.061	0.181	0.100
Primary regulator– OCC	0.241	0.362	0.254
Primary regulator– OTS	0.000	0.028	0.056
No Holding Co. affiliation	0.135	0.046	0.471
No. of banks	539	652	3,951

Revenues and assets are converted to the 2013 dollar using CPI-U.

Table 3 Difference-in-Differences Regressions with Publicly Traded Banks as Control

	Dividend/ Pretax Y	Leverage Ratio	Int. income share	Revenue growth	Asset growth	Liability Growth
Subchapter S × 1995	–0.069	0.354	–0.001	–0.016	0.007	0.003
	(0.106)	(0.187)	(0.002)	(0.014)	(0.011)	(0.012)
Subchapter S × 1996	0.005	0.353	–0.003	–0.005	–0.008	–0.010
	(0.040)	(0.233)	(0.002)	(0.014)	(0.010)	(0.011)
Subchapter S × 1997	0.125*	0.558	0.001	–0.180**	–0.221**	–0.224**
	(0.058)	(0.310)	(0.006)	(0.032)	(0.031)	(0.032)
Subchapter S × 1998	0.266**	0.781*	0.015**	–0.186**	–0.218**	–0.218**
	(0.069)	(0.327)	(0.006)	(0.031)	(0.031)	(0.031)
Subchapter S × 1999	0.098	0.831*	0.018**	–0.203**	–0.230**	–0.227**
	(0.161)	(0.362)	(0.006)	(0.032)	(0.031)	(0.031)
overall R^2	0.006	0.071	0.080	0.433	0.286	0.280

	Loan/ Assets	Securities/ Assets	Cash/ Assets	RWA/ Assets	Loans in Arrears	Volatile Liab/ Assets
Subchapter S × 1995	0.004	–0.005	–0.002	0.000	0.001*	0.001
	(0.004)	(0.003)	(0.001)	(0.003)	(0.001)	(0.002)
Subchapter S × 1996	0.008	–0.011*	–0.002	0.005	0.002**	–0.010**
	(0.005)	(0.004)	(0.002)	(0.004)	(0.001)	(0.003)
Subchapter S × 1997	0.037**	–0.035**	–0.003	0.025**	0.001	–0.021**
	(0.008)	(0.007)	(0.002)	(0.007)	(0.002)	(0.007)
Subchapter S × 1998	0.039**	–0.051**	0.003	0.022**	0.001	–0.018**
	(0.008)	(0.008)	(0.002)	(0.007)	(0.002)	(0.007)
Subchapter S × 1999	0.033**	–0.034**	0.004	0.013	0.002	–0.036**
	(0.009)	(0.008)	(0.002)	(0.007)	(0.002)	(0.007)
overall R^2	0.228	0.201	0.225	0.261	0.043	0.221
No. of bank-years	7,135					
No. of clusters	1,191					

* significant at the 5% level ** significant at the 1% level

The sample is limited to banks with total assets (in 2013 dollars) between $5 million and $3 billion, which include all banks that convert to S-corporation. The treatment group is banks that converted to S-corporation in 1997 while the control group is publicly traded C-corporation banks that remained S-corporation. Control variables include dummy variables for years, a bank's age in quartics, lagged values of the number of FTE employees, the number of offices, total assets, total revenues, growth rates of assets and revenues, dummy variables for the main regulatory agency, FDIC-designated asset concentration types, interstate charter, and eligibility for the reserve method of loan-loss accounting. Robust standard errors clustered at the bank level in parentheses.

Table 4 Difference-in-Differences Regressions with Privately Held Banks as Control

	Dividend/ Pretax Y	Leverage Ratio	Int. income share	Revenue growth	Asset growth	Liability Growth
Subchapter S × 1995	–0.002	0.204**	–0.000	0.011	0.007	0.006
	(0.044)	(0.065)	(0.001)	(0.007)	(0.007)	(0.007)
Subchapter S × 1996	0.058	0.449**	–0.004*	0.018*	0.002	0.003
	(0.067)	(0.101)	(0.002)	(0.008)	(0.006)	(0.006)
Subchapter S × 1997	0.385**	0.249	–0.019**	–0.061**	–0.200**	–0.214**
	(0.136)	(0.300)	(0.007)	(0.019)	(0.033)	(0.038)
Subchapter S × 1998	0.396**	0.737*	–0.013	–0.066**	–0.199**	–0.212**
	(0.125)	(0.289)	(0.007)	(0.020)	(0.032)	(0.037)
Subchapter S × 1999	0.357	1.180**	–0.014*	–0.064**	–0.197**	–0.209**
	(0.257)	(0.316)	(0.007)	(0.020)	(0.033)	(0.038)
overall R^2	0.019	0.078	0.067	0.472	0.191	0.186

	Loan/ Assets	Securities/ Assets	Cash/ Assets	RWA/ Assets	Loans in Arrears	Volatile Liab/ Assets
Subchapter S × 1995	0.001	0.000	0.001	0.001	0.001	–0.003
	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)
Subchapter S × 1996	0.005	–0.007*	0.002	0.004	0.001	–0.007**
	(0.003)	(0.003)	(0.001)	(0.003)	(0.001)	(0.002)
Subchapter S × 1997	0.018	–0.026**	0.007	0.015	0.001	–0.059**
	(0.010)	(0.008)	(0.004)	(0.009)	(0.003)	(0.009)
Subchapter S × 1998	0.022*	–0.031**	0.008*	0.016	0.005	–0.061**
	(0.010)	(0.009)	(0.004)	(0.009)	(0.003)	(0.009)
Subchapter S × 1999	0.019	–0.027**	0.007	0.015	0.006	–0.062**
	(0.011)	(0.009)	(0.004)	(0.009)	(0.003)	(0.009)
overall R^2	0.239	0.207	0.152	0.235	0.011	0.174
No. of bank-years	26,869					
No. of clusters	4,489					

* significant at the 5% level ** significant at the 1% level

The same set of control variables are used as in table 3 except that the control group is privately held C-corporation banks that never converted to S-corporations.

Table 5 Leverage Ratio and Portfolio Compositions, 1999-2014

	Int. income share	Revenue growth	Asset growth	Liability Growth	
Leverage Ratio (t-1 & t-2 average)	–0.00002	–0.0005	–0.0003	–0.0005	
	(0.00015)	(0.0006)	(0.0005)	(0.0006)	
Subchapter S	–0.00122	0.1398**	–0.0672**	–0.0352	
	(0.0993)	(0.026)	(0.0174)	(0.0207)	
Subchapter S × Leverage	0.00057	–0.0076**	–0.0065**	–0.0097**	
	(0.0009)	(0.0015)	(0.0010)	(0.0012)	
Private C-Corp	00276	0.1532**	0.0207	0.0485*	
	(0.0058)	(0.027)	(0.0178)	(0.0235)	
Private C × Leverage	0.00011	–0.0035	–0.0036**	–0.0052*	
	(0.0003)	(0.0018)	(0.0014)	(0.0021)	
overall R^2	0.034	0.401	0.188	0.169	
No. of bank-years	119,030	119,022	119,052	119,047	
No. of clusters	10,840	10,840	10,840	10,839	
	Loan/ Assets	**Securities/ Assets**	**Cash/ Assets**	**RWA+/ Assets**	**Volatile Liab/ Assets**
Leverage Ratio (t-1 & t-2 average)	0.00002	0.00015	–0.00006	0.0001	0.00007*
	(0.00011)	(0.00008)	(0.0007)	(0.0003)	(0.00003)
Subchapter S	0.04221**	0.0102	–0.0097*	0.0471**	0.0071
	(0.00883)	(0.0091)	(0.0047)	(0.0090)	(0.0065)
Subchapter S × Leverage	–0.00071	–0.0006	0.0011**	–0.0017**	0.0003
	(0.00051)	(0.0005)	(0.0003)	(0.0006)	(0.0004)
Private C-Corp	0.02310**	0.0146*	–0.0057	0.279**	0.0049
	(0.0075)	(0.0074)	(0.0039)	(0.0072)	(0.0050)
Private C × Leverage	0.00002	–0.00067*	0.0006*	–0.0006	–0.0002
	(0.0002)	(0.00028)	(0.0002)	(0.0005)	(0.0002)
overall R^2	0.234	0.121	0.195	0.184	0.461
No. of bank-years	119,052	119,052	119,052	106,897	119,052
No. of clusters	10,840	10,840	10,840	10,814	10,840

* significant at the 5% level ** significant at the 1% level

The sample includes data from SDI from 1999 to 2014 and is limited to banks with total assets (in 2013 dollars) between $1 million and $10 billion, which include all banks that are S-corporations. Control variables include dummy variables for years, a bank's age in quartics, lagged values of the number of FTE employees, the number of offices, total assets, total revenues, growth rates of assets and revenues, dummy variables for the main regulatory agency, FDIC-designated asset concentration types, interstate charter, and eligibility for the reserve method of loan-loss accounting. Robust standard errors clustered at the bank level in parentheses.

+ The RWA variable is available up to 2012. Thus the regression is estimated using data from 1999 to 2012.

Figure 1 C-Corporation and S-Corporation Banks by Asset Decile, 2014

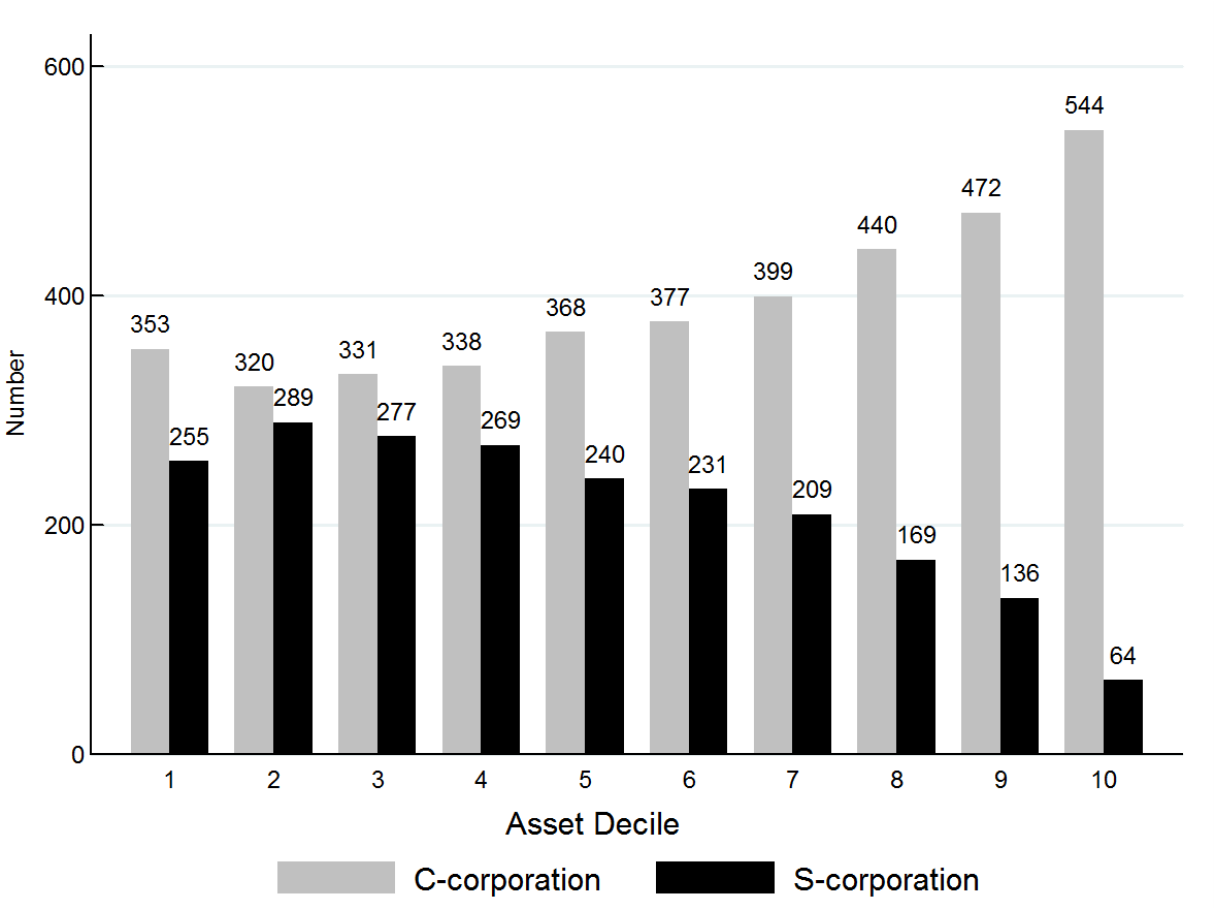
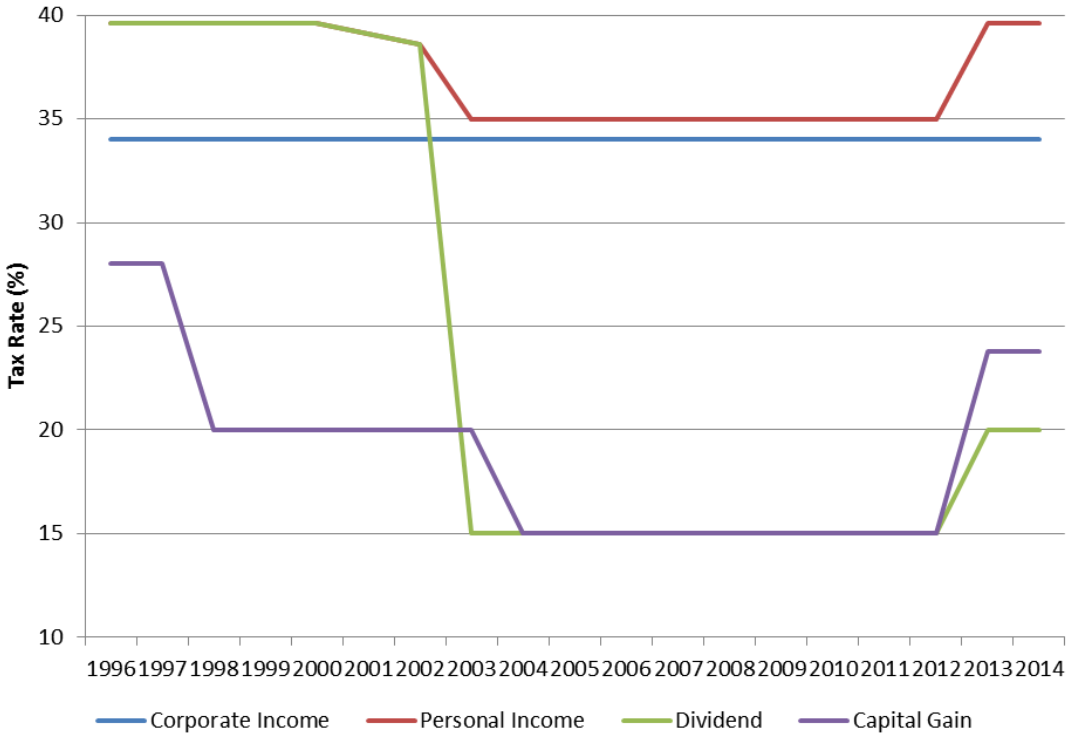


Figure 2 Tax Rates and Return on S-Corporation Conversion, 1996-2014

(a) Corporate and Personal Tax Rates



(b) Return on S-Corporation Conversion and Payout Ratio