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Partnership Law and Credit Availability  
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### **ABSTRACT**

Legal and economic historians now emphasize the centrality of organizational law in determining the contractual boundaries of the firm. Nineteenth-century US law recognized a small set of firm types – proprietorship, partnership and corporation – and enforced the creditor rights and priorities associated with them. This paper investigates how those creditor rights and priorities influenced the availability of credit. Using a unique data set from the nineteenth century United States and borrower fixed effects, I find that partnerships paid more for credit than proprietorships. The interest rate disadvantage for partnerships was offset by their ability to finance larger and longer-horizon entrepreneurial ventures.

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## 1. Introduction

After decades of economists treating the firm as a nexus of contracts, economic and legal historians are increasingly treating the firm as a separate and meaningful entity that exists because organizational law allows it to exist.<sup>1</sup> Contract law alone cannot generate several fundamental features of the firm. Moreover, statutory and common law constrained firms to standard forms of proprietorship, partnership or corporation.<sup>2</sup> Nineteenth-century American jurists, for example, held that any firm that looked like a partnership was subject to partnership law regardless of the organizers' intentions or contractual maneuvering (Lamoreaux 1995, Blair 2003). Instead of perfect contractual flexibility leading to myriad firm structures, as predicted by the nexus theory, historians observe a small number of distinct, clearly delineated firm types; proprietorship, at-will, term or limited partnership, and the chartered corporation were the available pigeonholes into which organizers had to fit their firms.

One economic rationale for a small set of standard-form contractual types is that limiting alternatives reduces the costs of negotiating and drafting routine agreements among prospective owners. A second important feature of standard-form structures is that they impose well established

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<sup>1</sup> The nexus of contract approach is formulated in Coase (1937) and Alchian and Demsetz (1972). It is the defining feature of such classic studies as Jensen and Meckling (1976), Williamson (1975; 1981). Cheung (1983) takes the approach to its logical conclusion, arguing the contractual boundaries of the firm are so fuzzy that it is impossible to distinguish between a firm and a contract.

<sup>2</sup> Hansmann and Kraakman (2000a, 2000b), Hansmann, Kraakman and Squire (2006), Mahoney (2000), and Lamoreaux and Rosenthal (2006) all discuss the emergence and importance of organization law, separate from the law of contract and trust, that allow firms to take on their modern forms.

creditor rights and priorities. A firm will have business creditors and the firm's owners will have personal creditors. In order to price credit efficiently, each class of creditors needs to know which assets -- either the firm's or its owners' -- are available to satisfy which debts (Mahoney 2000). Can the owners' personal creditors attach the firm's assets if the owner is bankrupt? Can the firm's creditors attach the personal assets of the owners if the firm is bankrupt? Clear answers to these questions are essential for capital markets to allocate efficiently. Default rules that impose on all firms that looked like partnerships, for example, the creditor priorities of partnerships reduce contracting costs between firms and their creditors. Moreover, a small set of standard-form contractual types may simplify enforcement, provide more secure creditor rights, and thereby increase the availability of credit (LaPorta et al 1998; Beck et al 2003; Rathinam and Raja 2010).

Nineteenth-century common law established two default rules for partnerships and proprietorships. The first was the well known rule of unlimited owner liability, which applied to both partners and proprietors. The second, less discussed rule, which applied only to partnerships, was the common law doctrine that provided partnerships with limited protection against the claims of the partners' personal creditors, a set of protections Hansmann and Kraakman (2000a, 2000b) label "weak entity shielding." Weak *entity* shielding meant that creditors of the firm held a prior (but not exclusive) claim on the assets of the firm relative to the owners' personal creditors. It also provided for weak *owner* shielding, meaning that personal creditors of the partnership's owners held a prior (but not exclusive) claim on the personal assets of the owners. The advantage of the partnership priority rule was that each class of creditors held a prior claim on a specific pool of assets, which lowered the risks of extending credit and may have translated into lower credit costs to firms and owners (Hansmann and Kraakman 2000a, 811; Skeel 2005, 20).

The disadvantage of partnerships relative to proprietorship was that they were subject to opportunism and hold-up, which explains why most partnerships had few members and were short lived (Lamoreaux 1995; 1998; Bodenhorn 2002). The right of partners to opt out at will, combined with the potential for hold-up, created circumstances in which dissolution was privately desirable, but socially inefficient. When a partner's opportunistic behavior led to inefficient dissolution, the firm's creditors might suffer losses if they could not realize the full value of the collateral assets in a forced liquidation sale. Because a partnership's creditors faced greater dissolution-related risks relative to a proprietorship's creditors, even if the partnership's creditors had prior claims the firm's assets, the partnership's creditors may have charged more for or rationed credit.

*A priori*, it is difficult to determine whether the entity effect or the opportunism and hold-up effect dominated in credit markets. Using individual loan records from the nineteenth century United States, this study tests the hypothesis that proprietorships and partnerships received credit on different terms. The data are particularly well suited to running this horse race because we sometimes observe individuals borrowing as proprietors and at other times as a member of a partnership. Individual borrower fixed-effects estimation controls for unobservable idiosyncratic influences on credit terms, yet capture the independent effect of firm type on credit costs.

The results are consistent with a powerful opportunism effect on credit. Controlling for other factors, fixed-effects estimators imply that partners paid 10 to 75 extra basis points for bank credit. That is, where a proprietor borrowing on his own account typically paid about 7 percent, when that same person borrowed as one of a partnerships his firm typically paid between 7.1 and 7.75 percent for a comparable bank loan. Moreover, when the proprietor joined in a large partnership, one with three or more partners and, therefore, more susceptible to opportunism, his firm paid a 100 basis

point premium over the rate he paid when borrowing on his own. On the interest rate dimension of the credit contract, at least, creditors protected themselves from the spillover costs of early firm dissolution by charging firms higher rates. This is not to say that partnership was without its credit-market advantages. Relative to proprietorships, partnerships were able to borrow at longer maturities, which afforded them the ability to capture profits from longer-than-average horizon entrepreneurial projects, and they could access larger pools of bank credit, which may have afforded partnerships the ability to capture economies of scale in trade not captured by proprietorships.

## **2. Partnerships, Creditor Priorities, and Credit Costs**

Accounts of the evolution of the firm in the nineteenth century are preoccupied with the liability of its owners. Proprietors and partners have joint and several (unlimited) liability for the firm's debts; the liability of corporate owners is limited to the value of their share holdings. As one observer notes, the opinion of nearly every legal scholar used to be that the limited liability of owners was the "historically most significant innovation" in organizational law, and represented one of the cornerstones of the modern market economy (Samuelson 2005, 20).<sup>3</sup> While not relegating the centrality of limited liability to the ash bin, modern legal appraisals and historical studies question its centrality to the transformation of business organization in the nineteenth century. Hansmann, Kraakman and Squire (2006) show that limited liability can be had through the instruments of contract and trust law without the intercession of specialized organizational law. Lamoreaux and Rosenthal (2005) argue that the apparent advantages of incorporation to modern scholars were not

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<sup>3</sup> Easterbrook and Fischel (1985) and Forbes (1986) subscribe to the central importance of corporate limited liability.

apparent to nineteenth-century entrepreneurs. And Acheson and Turner (2006) find that the transition from unlimited to limited liability did not induce fundamental changes in ownership structure. Despite its oft-noted costs, partnership sometimes dominated incorporation as an organizational form in the nineteenth century.

The issue at hand is whether partnership dominated proprietorship as well.<sup>4</sup> The advantages of partnership are well known and include the potential to pool capital and exploit economies of scale; the enhanced ability to exploit the division of labor and differences in partners' talents in management, sales and production; and the reduction of credit costs through entity shielding. The disadvantages of partnership included its susceptibility to partner opportunism (discussed below) and that unlimited liability increased the costs of equity capital.

An emergent "entity" approach places not limited liability but asset partitioning and entity shielding at the center of modern organizational law. The entity approach contends that the law's most important feature is its delineation of rights and priorities between the firm's creditors and the firm's owners' creditors (Hansmann and Kraakman 2000a, 2000b). Organizational law creates separate pools of assets (asset partitioning) that can be pledged as credible commitments to meet obligations; the firm's assets bond the firm's promises and the owners' personal assets bond the owners' personal promises. The ability to pledge specific assets provides security to creditors because the pledge provides collateral in the event of default. Moreover, the pledge reassures creditors that the firm or its owners will not default opportunistically.

While the delineation of separate pools of assets is important, the central characteristic of the

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<sup>4</sup> In the years between 1845 and 1859, the Black River Bank made approximately three dozen loans to corporations. The number of corporation observations is too small to conduct meaningful statistical analysis.

modern business firm, which is a consequence of organizational law, is that the law establishes and enforces clear priority rules. That is, the law shields the firm's assets from the claims of the owner's personal creditors (entity shielding).<sup>5</sup> Priority rules create clear property rights among creditors, which reduces creditor uncertainty, and thereby reduces credit costs.

In the case of a proprietorship, organizational law holds that firm and owner are one and the same and that the totality of the owner's personal and business assets serve as pledged collateral. Proprietorships do not operate under a default entity shielding rule. A partnership's creditors, on the other hand, hold a prior claim on the partnership's assets while the personal creditors of the partners hold a prior claim on the partner's personal assets (Hansmann and Kraakman 2000b). Partnership offers "weak entity shielding" in that the creditors of a bankrupt partner can force liquidation of the partnership by foreclosing on the partner's share of the firm, but the partners' personal creditors' claims on the assets of the firm are subordinated to the claims of the partnership's creditors. That is, if the firm's assets are insufficient to satisfy both the partner's business and personal creditors, the business creditors are paid first.

That these priority rules stood as the foundation of the common law of partnerships for two and a half centuries hint at their efficiency.<sup>6</sup> Lamoreaux (1997) and Bodenhorn (2002) show that the choice of setting up as a proprietorship with salaried managers and wage labor or as a profit-sharing partnership is influenced by myriad social and economic considerations. One element of that choice

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<sup>5</sup> Owner shielding (or limited liability) protects owners from the firm's creditors; entity shielding protects the firm from its owner's creditors.

<sup>6</sup> *Craven v. Knight* (21 Eng. Reports 664 (1683)) established the rule that partnership creditors have a prior claim on the firm's assets. *Ex Parte Crowder* (23 Eng. Reports 1064 (1715)) established the priority of personal creditor's claims on the partner's personal assets.



calculus is surely access to and the costs of credit under alternative organizational choices. The weak entity shielding enjoyed by partnerships would lead to lower credit costs, relative to proprietorships, due to four advantages that follow from entity shielding: lower monitoring costs; reduced managerial agency costs; reduced administrative costs of bankruptcy; and protection of the firm's going-concern value. Entity shielding lowers monitoring costs because a firm's creditors need only monitor the firm's actions. It reduces agency costs by limiting the amount of debt a manager might take on in the firm's name. And it protects going-value concern by reducing the incentives of an owner's personal creditors to foreclose and attach the firm's assets (Hansmann, Kraakman and Squire 2006, 1346-1348).

Entity shielding is not without its costs, however, which may operate to increase credit costs. Entity shielding opens the door for partner opportunism, which might subordinate the claims of the firm's creditors without their knowledge or consent. By shifting assets out of one partnership to a second one and then issuing additional debt secured by the transferred assets, the partner subordinates the original creditor. To the extent that they anticipate this form of tunneling, "creditors of the first partnership might not offer better credit terms than they would in the absence of entity shielding, and indeed might increase the interest rate they charge" (Hansmann, Kraakman and Squire 2006, 1351).

A second feature of partnership that may offset the net advantages of entity shielding in credit markets is each partner's incentive to capture a more than proportionate share of the firm's going-concern value after the firm is up and running. If the firm's assets are more valuable employed together rather than independently, there is a risk of hold-up by individual members of the firm (Williamson 1975; 1981). One partner may threaten dissolution to extract more favorable terms from the other members (Lamoreaux 1998, 68). Although a forced sale of the firm's assets may reduce the

value of the firm's assets to the member issuing the threat, he does not bear the full costs of premature dissolution. From a creditor's perspective, the threat of premature dissolution also imposes potential costs if forced liquidation diminishes the firm's ability to meet its obligations. The hold-up threat within the partnership, therefore, may lead to higher credit costs relative to the proprietorship, which is less subject to hold-up by employees.

Theory predicts two offsetting effects of organizational form on credit costs. On one hand, the law affords partnerships the ability to partition and shield firm and owner assets, which should lower credit costs by reducing creditor risks. On the other hand, entity shielding complicates bankruptcy proceedings and the partnership form opens the door to partner opportunism. A partner might shirk, enter into contracts binding all partners without universal consent, "tunnel" or otherwise use the partnership's assets to his personal advantage, all of which would increase the risks to creditors and lead to higher credit costs. Because theory cannot tell us which effects is more powerful, sorting out the relative weight of these offsetting credit effects falls on the evidence.

### **3. Data and Empirical Method**

The data consist of a subset of the 29,600 loans extended by the Black River Bank (1845-1859) of Watertown, New York between October 1845 and April 1859. Loveland Paddock opened the bank in late 1844 under the terms and conditions of New York's 1838 Free Banking Act. By 1844, Paddock, a dry goods merchant by trade, had considerable banking experience. He was elected to the board of directors of the Jefferson County Bank, also of Watertown, in 1828. When the nearby Sacket's Harbor Bank opened in 1834, he purchased shares and was elected to that bank's board of directors. He joined with several other men in 1840 to organize the Bank of Watertown and served

as its first president until 1842, when he sold his shares and resigned (*Albany Argus*, 17 June 1840). He continued in his dry goods business until 1844, when he liquidated his inventory, deposited \$40,000 in mortgages and New York State bonds with the state comptroller, and established the Black River Bank (hereafter BRB), which was known by locals as Paddock's Bank (*Albany Argus*, 19 February 1845; Emerson 1898). The BRB converted to a national charter in 1864 and operated into the 1880s when it was voluntarily liquidated by two of Loveland Paddock's sons.<sup>7</sup>

As with any case study, it is difficult to know how representative the BRB was of contemporary banks and banking practice. By several measures, the bank was typical. There were dozens of similarly closely held banks and there were dozens of free banks established along the Erie Canal and Lake Ontario to finance the shipment of local staples to eastern urban markets and to finance the region's emergent industrialization (Bodenhorn 1999). Located just a few miles from the convergence of the St. Lawrence River with Lake Ontario, the BRB resembled these banks. By other measures, the BRB was atypical. It was longer lived and somewhat larger than most.<sup>8</sup> One important difference between the BRB's operation and that of some other contemporary banks was its owners' willingness to violate New York's usury law. New York imposed a 7 percent interest rate limit, but the BRB regularly charged rates in excess of the 7 percent ceiling (Bodenhorn 2007). Other banks

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<sup>7</sup> In the period studied here (1845-1859), Loveland Paddock owned 90 percent of the bank's shares. Two of his three sons owned the remaining 10 percent, but extant records do not reveal the exact allocation. Shares of the BRB never traded. The eldest son served as the bank's vice president; the second son as its cashier or chief operating officer. Local legend holds that Loveland's third son was something of a spendthrift and was not asked to participate in the bank.

<sup>8</sup> Kahn (1985) estimates an average life of 21 years for New York's free banks; the BRB was in business for 36. Measured by assets, the BRB was also about 50 percent larger than the average free bank in 1850. By 1860 it was about 60 percent larger (*Albany Argus*, 25 November 1850; New York State 1862).

did not (Wang 2008). If the bank weighed the expected costs of a usury conviction – loss of principal and interest times probability of conviction – against the expected losses due to borrower default, the bank’s choice to violate the usury limit says a great deal about the perceived riskiness of some loans.

Among the bank’s extant records are two discount (loan) ledgers that provide detailed information on nearly 30,000 loans granted by the bank between October 1845 and April 1859. Both ledgers were double-sided with pre-printed column and row dividers. On each row, a clerk recorded the borrower’s name(s); the date the loan was made and the date it matured; the loan amount; and the total interest charge, or discount. Ledger #3 also recorded the names of all endorsers or cosigners, and indicated whether the loan was paid, renewed or protested for nonpayment at maturity.<sup>9</sup> Partnerships were identified by the recorded name of the borrowing firm. If the name was recorded in the style of Smith & Jones or Smith, Jones & Co., it was assumed that the borrowing entity was the partnership and not one of the individual partners.<sup>10</sup> When the borrower was recorded as an individual, as in E.S. Smith, it was assumed that the individual was borrowing on his or her own account even if he or she was involved in a partnership at the time.

Despite efforts to link borrowers to Watertown’s contemporary city directories, the New

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<sup>9</sup> Evidence collected from the local county court records suggests that the clerk’s recording of protested notes in the discount ledger was not comprehensive. It is impossible to determine the quality of the “renewed” notations. Recorded renewals were less common than typical at other banks, but it is difficult to determine whether this followed from differences in lending practice or from inconsistent recording.

<sup>10</sup> Firms with these types of names were not corporations. The records of the BRB are careful to identify corporate borrowers because the corporations’ directors all had to cosign the corporations’ loans. The BRB countered the limited liability default rule for corporate owners by requiring that each of the firm’s directors accepted personal responsibility for the corporation’s debts. In the nineteenth century, the corporate form lowered the costs of equity capital, but raised the cost of debt compared to partnerships.

York state censuses of 1845 and 1855, and the manuscript records of the 1850 and 1860 federal censuses, we know relatively little about the age, occupations or other characteristics of the majority of the bank's borrowers. To control for these unobservable characteristics, the empirical analysis employs fixed effects estimators on the individuals involved of the following form:

$$y_{it} = \alpha_i + \lambda_t + \rho P_{it} + \beta X_{it} + \epsilon_{it}$$

where  $\alpha_i = \alpha + \gamma A_i$  and  $A_i$  is vector of time-invariant, unobserved confounders;  $\lambda_t$  is year and month dummies,  $X_{it}$  is a vector of observable characteristics, namely whether the loan was a renewal, the length of the borrower's relationship and whether the borrower was female.  $\rho$  is the coefficient of interest and estimates the effect of partnership status on the borrower's credit terms,  $y_{it}$ . One assumption underlying the approach is that the individual as proprietor and individual as partner is engaged in the same business so that any observed difference in credit between the two types is due primarily to firm type. Though I do not observe the line of business for most borrowers, I know that a majority of borrowers were wholesale (commission) merchants, most of whom shipped goods between northern New York and New York City or Albany. The entrepreneurial skills of a commission merchant were not generally dependent on the nature of the goods shipped, though most shipped lumber, cattle and grain east and consumer goods west, so it is not unreasonable to assume that firm type is the only systematic factor that has a differential influence on credit availability. This assumption is not testable, it is supported by the available evidence (Bodenhorn 1999).

Although fixed effects estimators deal effectively with unobserved confounders, the estimated  $\rho$  coefficients are susceptible to attenuation bias from mismeasurement of  $P_{it}$  (Angrist and Pischke 2009, 225). The attenuation bias will be larger the more the mismeasurement follows from misreporting or miscoding the data such that observed changes from proprietorship to partnership

(or vice versa) are mostly noise.

The noise component in the BRB data should be low. When the borrower was a partnership, the ledgers identified the borrowers by the firm owner's last names and, typically, their given name or initial(s). The loan ledgers, for example, report seven loans to Geo. Babbitt between 1846 and 1853. They also report 11 loans to (F. B.) Hallett & (G.) Babbitt between 1848 and 1853. Because there are no other borrowers in the BRB records with the Babbitt family name, we can be reasonably confident that G. Babbitt (partner) and Geo. Babbitt (proprietor) are one and the same. Similarly, because the only Hallett in the loan records is F. B. Hallett, we can be confident that the partner and the proprietor are one and the same. If there is any uncertainty about a borrower's identity as individual or partner, they are not matched. Thus, despite several borrowers with the Smith surname, the only ones to appear in the sample are John B. Smith who also appears as part of John B. Smith & Co., and Timothy A. Smith who appears as part of the firm T.A. & A.P. Smith. Because I cannot positively differentiate A.P. Smith from an A. Smith, A. P. Smith is not matched in the sample.<sup>11</sup> Of the nearly 29,600 original loans, the matching process leaves 4,893 usable observations. Some individuals never borrowed as part of a partnership and are excluded. Similarly, some partners never borrowed on their own account and some who may have borrowed as both proprietor and partner could not be unambiguously matched and are dropped.

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<sup>11</sup> In a few instances, I was able to use information reported in the Watertown city directories to match individuals to partnerships. The directories sometimes identified the members of the partnership by given names or initials when the loan records did not. If one or more of the family names were sufficiently unusual that the individuals named in the directory could be matched to the partnership in the loan records, the individual and his partnership are included in the sample. One directory, for example, identified L. Ingalls and Lorenzo M. Stowell as the individuals constituting Ingalls & Stowell, printers. Thus, L. Ingalls and L. M. Stowell are each matched with Ingalls & Stowell.

Finally, the regressions are estimated using alternative partnership definitions. Partnerships are identified by the name(s) of the borrowers recorded in the discount ledgers. If the borrower is identified in the style of Smith & Jones or Smith, Jones & Co. or Smith, Jones & Johnson, it is assumed that the borrowing entity was a partnership. It is less obvious how to treat cases in which the borrower is recorded in the style of Smith & Co. Are these partnerships with one named senior partner and one or more junior (unnamed) partners? Or, Are these proprietors attempting to add heft to their firms through the addition of “& Co.”? A search of Watertown’s city directories and efforts to match individuals to firms suggests that most firms in the style of Smith & Co. were, in fact, partnerships. To account for the possibility that firms operating under names such as Smith & Co were not, generally, partnerships, the empirical analysis treats them separately. The results are consistent with their being partnerships rather than proprietorships.

Table 1 reports summary statistics for the full sample and each of the relevant subsamples. The average interest rate for all firm types is 7.06%. The subsample statistics reveal that most firm types paid an average rate close to the full sample average, with the exception of partnerships with three or more members, which paid an average of 7.58%.<sup>12</sup> The average loan amounts and maturities also imply differential credit availability across organizational structures. Partnerships, notably two-member partnerships tended to borrow larger amounts than proprietors, which may follow from partnerships pursuing larger projects or capturing economies of scale. But partnerships with three or more members actually received loans less than one-half the size of those granted to other types of firms. If the available scale of profitable operations influenced firm size, its effects are not evident in

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<sup>12</sup> The few partnerships with four or five named members are included in the three and more category.

the average loan amounts granted to large firms. Statistics on loan maturity and borrower relationships are also consistent with greater credit risks of larger partnerships. Larger partnerships, it appears, pooled capital in attempts to exploit longer-horizon investment opportunities: 96 days compared to 80 days for other firms. But increasing the number of partners may have reduced the life span of the firm. Partnership with three or more members maintained a relationship with the bank for an average of 19 months (and 9.5 previous loans) compared to 29 months (25 loans) for firms operating under the style of Smith & Co and 47 months (46 loans) for proprietorships.<sup>13</sup> Without knowing the details of these firms, it is impossible to know whether the short lives of partnership followed from opportunism or whether they were established as term partnerships with limited contractual lives from the outset. The less attractive credit terms offered larger firms hint at the lender's perception of greater risks from premature dissolution. Finally, there are no notable differences in the presence of female-run firms or in the percentage of renewed loans across organizational structures.

#### **4. Organizational Form and Bank Credit Terms**

Credit contracts are negotiated across several margins. So long as usury ceilings are not binding, interest rates, maturities, amounts, collateral represent the terms of the contract that can be altered to match the creditor's risk tolerances with the debtor's demand for funds. Ideally, we would like to control for the relevant features of the borrower, the loan and the market at the time the contract is formed and estimate a system of related equations, each of which captures a relevant

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<sup>13</sup> Recent reviews of the literature on relationship banking include Boot (2000), Ongena and Smith (2000), and Elyasiani and Goldberg (2004). Bodenhorn (2003) studies the effects of relationships on loan terms at the BRB.



margin. Because the present data provide little information about the personal characteristics of borrowers, we rely on borrower fixed effects to control for unobservable confounders and estimate interest rate, loan maturity and loan amount equations separately. The dependent variable,  $y_{it}$  is, alternatively, the interest rate, the interest premium over the prime rate, loan maturity (in days), and loan amount (in current dollars).

#### *4.1 Organizational form and bank interest rates*

Table 2 presents the results from fixed effects regressions where the dependent variable is the interest rate on the loan. Columns (1) and (3) include a simple partner variable where all partnerships are treated as a type. The results reveal that when an individual borrowed as one member of a partnership his firm paid about 11 to 12 basis points more for a loan than that same individual when he or she borrowed as an individual. The 11 to 12 basis point higher partnership rate represents about 12% of the sample standard deviation in interest rates. The effect is not only statistically significant, but appears to be economically meaningful.

Not all partnerships are alike, however, so Columns (2) and (4) separate partnerships into three categories: those of the Smith & Co. form; those with two named partners; and those with three or more named partners. Two notable features present themselves in the table. First, firms of the Smith & Co. style and two partner firms were treated similarly by the Black River Bank, at least in term of the interest rates they paid. When an individual borrowed as part of a two-member firm (either Smith & Co. or two partner), he or she paid between 8 and 15 basis points more for a loan relative to the rate he or she paid as an individual. Because there is no statistical difference in the size of the estimated coefficients on these two types of firms in these and subsequent regressions, it is not

unreasonable to conclude that Smith & Co. firms were mostly two-partner firms with a single named senior partner. They are considered separately throughout, however, on the possibility that they in fact differ in some important dimension from two-name partnerships.

The second notable feature of the regressions (2) and (4) are that when an individual borrowed as one of a partnership with three or more members, he or she paid 70 to 75 basis points more in interest. A test of the equality of coefficients also rejects the null hypothesis that all partnership firm types paid the same rate. Individuals as part of a partnership with three or more members paid significantly higher rates than they paid as proprietors or as one of a two person partnership.

The entity literature posits that, all else equal, partnerships should receive credit on better terms than proprietors because organizational law affords asset partitioning, entity shielding and the establishment of priority among creditors of different types. These features of organizational law reduce creditor uncertainty about their claims against a partnership relative to a proprietorship, which may induce them to lend to partnership at lower rates. On the other hand, the opportunism and hold-up literature posits that partnerships were fragile entities, susceptible to inefficient and premature liquidation as partners jockey for advantage within the firm. Because lenders cannot observe the internal machinations within the firm, their risks are greater if forced liquidation reduces the going-concern value of the assets. Evidence from the Black River Bank's loans is more consistent with the opportunism than the entity hypothesis. Whatever credit advantages organizational law provided entities was small relative to the disadvantages that followed from the partnership's inability to lock in capital and mitigate opportunistic behavior among the partners.

#### *4.2 Organizational form and the prime rate premia*

As a robustness check on the interest rate results, this section estimates equations of the same basic form, but uses the interest rate minus the prime rate as the dependent variable rather than the interest rate itself. The proxy for the prime rate is the monthly commercial paper rate (or the rate on first-class inland bills of exchange) reported for the New York City street market for the month in which the bank loan was made. Table 3 presents the results and they are consistent with the results for the interest rate equations discussed above. When all partnerships are grouped together, an individual borrowing as one of a partnership paid a 10 basis point premium over the prime rate though the coefficients are imprecisely estimated.

When partnerships are separated into the three types, the results reported in Columns (2) and (4) confirm the different treatment of alternative organizational forms. As one of two named partners, individuals did not pay a significant premium over the prime rate compared to their borrowing as proprietors. On the other hand, firms of the Smith & Co. form paid a 30 basis point premium over prime, which is about 12 percent of the standard deviation in the variable. An individual borrowing as one of three or more named partners paid 110 basis points over prime. It is likely that the premium charged to Smith & Co., as well as larger partnerships reflected greater risks to the creditors of these firms. Firms with unnamed junior partners and firms with three or more named partners were more susceptible to opportunism than firms with fewer or equal status members. Unnamed partners may have pushed for greater authority within the firm or a greater share of the profits, which increased the likelihood of forced liquidation, as did the machinations within larger partnerships.

#### *4.3 Organizational form and loan maturities*

Borrowers and lenders care not just about the interest rate; they care about the length or maturity of the loan. Entrepreneurs with long-horizons projects will prefer longer loans, all else equal. Lenders concerned with potential losses from firm dissolution prefer shorter loans or, at least, loans that are renegotiated at more frequent intervals. But more negotiating raises the costs to both parties. Contemporary nineteenth-century banking theory, known as the real-bills doctrine, held that loans should be short term (generally less than 90 days), rarely renewed and secured by collateral worth two to three times the amount of the loan. The BRB generally followed the tenets of the real-bills doctrine in that most loans matured within 90 days and were rarely renewed (Bodenhorn 1999). But statistics reported in Table 1 reveal an exception. The average loan length at firms with three or more named partners exceeded 95 days, which was about 15 days (18 percent) longer than loans to other firm types.

Results reported in Table 4 are consistent with the univariate statistics. After controlling for other features firms with three or more named partners borrowed at maturities 18 to 23 percent longer than other firms. Given the disadvantages of large partnerships, its advantage may have lain in the larger firm's ability to exploit longer horizon entrepreneurial projects. If long horizon projects pursued by larger firms required no more capital (see discussion in section 4.4) than shorter horizon projects, each of three partners would have to contribute less capital than each of two, but the larger partnership would have its equity capital locked in for a longer period. The longer horizon increased the number of occasions for opportunism in larger firms, but the profit potential made the large firm attractive in certain circumstances. Creditors compensated themselves for the increased risk of opportunism-induced dissolution, as seen previously, by charging three-partner firms notably higher

interest rates.<sup>14</sup>

#### *4.4 Organizational form and loan amounts*

It is not unreasonable to think that partnerships, by bringing together larger pools of human and financial capital, were able to capture economies of scale in trade not achievable by the proprietorship. Larger entrepreneurial projects may also have created firm demand for greater quantities of debt. Table 5 tests this hypothesis. The dependent variable is the natural logarithm of the loan amount (in current dollars). Columns (1) and (3) combine all partnerships and the coefficients reveal that when an individual borrowed as one of a partnership he borrowed between 20 and 25 percent more than when he borrowed on his own account. This result provides some evidence of larger firms capturing economies of scale.

Columns (2) and (4), in which partnerships are separated by type, show that the scale economies effect did not increase monotonically in the number of partners. Whereas individuals as one of a two-named partner firms borrowed about 20 percent more than as individuals and members of firms in the style of Smith & Co. borrowed about 30 percent more, firms with three or more named partners did not borrow substantially larger amounts than proprietorships.

### **5. Concluding comments**

Taken together, the results of fixed-effects regressions presented in Tables 2 through 5

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<sup>14</sup> To avoid circularity in the estimating equations, the reported equations do not include the interest rate or the loan amount. When they are included, the coefficients on the partner variables do not change in size or significance. The same is true when maturity and size are included in the rate equations, and when the rate and maturity are included in the loan amount equations.

provide a fairly clear portrait of the terms at which partnerships received credit in the nineteenth century. Two-member partnerships generally borrowed larger amounts than proprietors and paid higher interest rates in return. Larger partnerships borrowed at longer maturities, possibly to exploit longer-horizon opportunities, and paid significantly higher interest rates than proprietors and two-member partnerships. Because the results are derived from the records of a single bank, they cannot be taken as definitive, but they contribute to our understanding of two important literatures.

The entity approach created by legal scholars implies that because partnership law provided for asset partitioning and weak entity shielding, partnerships should have obtained credit at lower cost than proprietorships. The organizational literature created by economic historians, on the other hand, implies that because partnerships were fragile entities subject to partner opportunism and hold-up and at greater risk for inefficiently premature dissolution, partnerships should have paid for credit. One issue that these complementary literatures has not sorted out is the relative weight of the entity and the opportunism effects on credit costs and availability. My results suggest that the opportunism effect dominated. The partnership form afforded opportunities to borrow larger amounts and, sometimes, at longer maturities, but creditors protected themselves from the external costs of opportunism by charging higher, interest rates. Whatever advantages asset partitioning and entity shielding provided the partnership, they were seemingly outweighed by the disadvantages of opportunism.

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**Table 1: Summary Statistics**

|                              | <b>Full sample<br/>(N=4893)</b> | <b>Proprietors<br/>(N=3429)</b> | <b>All partners<br/>(N=1464)</b> | <b>One &amp; co<br/>(N=405)</b> | <b>Two partners<br/>(N=1008)</b> | <b>Three or more<br/>partners<br/>(N=51)</b> |
|------------------------------|---------------------------------|---------------------------------|----------------------------------|---------------------------------|----------------------------------|--|
| Interest rate (%)            | 7.06<br>(0.95)                  | 7.05<br>(0.84)                  | 7.09<br>(1.16)                   | 7.09<br>(1.08)                  | 7.07<br>(1.02)                   | 7.58<br>(2.96)                               |
| Loan amount (\$)             | 428.99<br>(843.02)              | 386.20<br>(594.57)              | 529.20<br>(1238.43)              | 525.43<br>(657.51)              | 546.88<br>(1431.13)              | 209.57<br>(152.31)                           |
| ln (amount)                  | 5.38<br>(1.09)                  | 5.32<br>(1.07)                  | 5.52<br>(1.12)                   | 5.76<br>(1.01)                  | 5.44<br>(1.16)                   | 5.06<br>(0.79)                               |
| Loan maturity (days)         | 81.72<br>(25.01)                | 82.30<br>(23.39)                | 80.37<br>(28.43)                 | 77.27<br>(34.96)                | 80.83<br>(24.97)                 | 95.88<br>(29.84)                             |
| ln (maturity)                | 4.33<br>(0.43)                  | 4.35<br>(0.41)                  | 4.30<br>(0.47)                   | 4.24<br>(0.50)                  | 4.32<br>(0.46)                   | 4.51<br>(0.33)                               |
| Previous loans               | 37.96<br>(52.38)                | 46.73<br>(57.41)                | 17.43<br>(29.12)                 | 25.33<br>(45.11)                | 14.65<br>(19.43)                 | 9.53<br>(5.68)                               |
| Relationship length (months) | 39.64<br>(35.63)                | 46.86<br>(36.40)                | 22.76<br>(27.06)                 | 29.14<br>(35.07)                | 20.38<br>(23.22)                 | 19.12<br>(13.00)                             |
| Loan renewal                 | 0.036                           | 0.036                           | 0.033                            | 0.049                           | 0.027                            | 0.039  |
| Female borrower              | 0.004                           | 0.002                           | 0.009                            | 0.00                            | 0.013                            | 0.00   |

Notes: standard deviations of continuous variables in parentheses. All partners includes all non-proprietorships. One & Co column includes firms with a name followed by "& Co." as in Jones & Co. Two partners includes all firms with two named partners, including names like Smith & Jones, Smith and Son, A.B. & C.D. Smith. Three and more partners includes all firms with three or more named partners.

Source: Black River Bank (1845-1859).

**Table 2: Firm type and interest rate**

| Variable       | 1                   | 2                    | 3                   | 4                    |
|----------------|---------------------|----------------------|---------------------|----------------------|
| Partnership    | 0.121<br>(0.050)*** | ---                  | 0.111<br>(0.042)*** | ---                  |
| One & Co.      | ---                 | 0.146<br>(0.074)**   | ---                 | 0.117<br>(0.069)*    |
| Two partners   | ---                 | 0.097<br>(0.058)*    | ---                 | 0.076<br>(0.053)     |
| Three partners | ---                 | 0.750‡<br>(0.214)*** | ---                 | 0.704‡<br>(0.205)*** |
| Relationship   | Months              | Months               | Prior loans         | Prior loans          |
| Individual FE  | Yes                 | Yes                  | Yes                 | Yes                  |
| Year dummies   | Yes                 | Yes                  | Yes                 | Yes                  |
| Month dummies  | Yes                 | Yes                  | Yes                 | Yes                  |
| R-sq: within   | 0.012               | 0.014                | 0.012               | 0.015                |
| R-sq: between  | 0.001               | 0.000                | 0.004               | 0.005                |
| R-sq: overall  | 0.008               | 0.009                | 0.010               | 0.012                |
| F-stat         | 1.86***             | 2.04***              | 1.97***             | 2.13***              |

Notes: Dependent variable = interest rate. N= 4893. Standard errors in parentheses. \* signifies p<0.10; \*\* signifies p<0.05; \*\*\* signifies p<0.01. ‡ signifies that “Three and More” coefficient is statistically different from “Two Partners” coefficient at p<0.01. All regressions include the monthly average commercial paper rate, whether the loan was a renewal, and whether the principal borrower was female.

Source: author's calculations from Black River Bank (1845-1859).

**Table 3: Firm type and rate premium over prime**

| Variable       | 1                | 2                    | 3                | 3                    |
|----------------|------------------|----------------------|------------------|----------------------|
| Partnership    | 0.101<br>(0.100) | ---                  | 0.119<br>(0.085) | ---                  |
| One & Co.      | ---              | 0.313<br>(0.150)**   | ---              | 0.299<br>(0.140)**   |
| Two partners   | ---              | -0.032<br>(0.117)    | ---              | -0.035<br>(0.106)    |
| Three partners | ---              | 1.099‡<br>(0.432)*** | ---              | 1.099‡<br>(0.414)*** |
| Relationship   | Months           | Months               | Prior loans      | Prior loans          |
| Individual FE  | Yes              | Yes                  | Yes              | Yes                  |
| Year dummies   | Yes              | Yes                  | Yes              | Yes                  |
| Month dummies  | Yes              | Yes                  | Yes              | Yes                  |
| R-sq: within   | 0.413            | 0.414                | 0.413            | 0.415                |
| R-sq: between  | 0.428            | 0.421                | 0.429            | 0.426                |
| R-sq: overall  | 0.423            | 0.423                | 0.423            | 0.423                |
| F-stat         | 112.22***        | 105.46***            | 112.34***        | 105.58***            |

Notes: Dependent variable = interest rate - commercial paper rate. Standard errors in parentheses. \* signifies p<0.10; \*\* signifies p<0.05; \*\*\* signifies p<0.01. ‡ signifies that “Three and More” coefficient is statistically different from “Two Partners” coefficient at p<0.01. All regressions include a loan renewal dummy and a female dummy.

Source: author's calculations from Black River Bank (1845-1859).

**Table 4: Firm type and loan maturity**

| Variable       | 1                 | 2                   | 3                  | 3                  |
|----------------|-------------------|---------------------|--------------------|--------------------|
| Partnership    | -0.014<br>(0.021) | ---                 | -0.031<br>(0.018)* | ---                |
| One & Co.      | ---               | -0.020<br>(0.032)   | ---                | -0.043<br>(0.030)  |
| Two partners   | ---               | -0.016<br>(0.025)   | ---                | -0.036<br>(0.022)* |
| Three partners | ---               | 0.232‡<br>(0.091)** | ---                | 0.184<br>(0.087)** |
| Relationship   | Months            | Months              | Prior loans        | Prior loans        |
| Individual FE  | Yes               | Yes                 | Yes                | Yes                |
| Year dummies   | Yes               | Yes                 | Yes                | Yes                |
| Month dummies  | Yes               | Yes                 | Yes                | Yes                |
| R-sq: within   | 0.054             | 0.055               | 0.053              | 0.055              |
| R-sq: between  | 0.132             | 0.145               | 0.122              | 0.135              |
| R-sq: overall  | 0.092             | 0.098               | 0.090              | 0.095              |
| F-stat         | 8.73***           | 8.44***             | 8.66***            | 8.32***            |

Notes: Dependent variable = ln(days). Standard errors in parentheses. \* signifies  $p < 0.10$ ; \*\* signifies  $p < 0.05$ ; \*\*\* signifies  $p < 0.01$ . ‡ signifies that “Three and More” coefficient is statistically different from “Two Partners” coefficient at  $p < 0.01$ . All regressions include the commercial paper rate, a loan renewal dummy and a female dummy.

Source: author's calculations from Black River Bank (1845-1859).

**Table 5: Firm type and loan amount**

| Variable       | 1                    | 2                   | 3                   | 3                   |
|----------------|----------------------|---------------------|---------------------|---------------------|
| Partnership    | 0.243<br>(0.0447)*** | ---                 | 0.224<br>(0.038)*** | ---                 |
| One & Co.      | ---                  | 0.314<br>(0.067)*** | ---                 | 0.285<br>(0.062)*** |
| Two partners   | ---                  | 0.208<br>(0.052)*** | ---                 | 0.200<br>(0.047)*** |
| Three partners | ---                  | 0.014<br>(0.192)    | ---                 | 0.015<br>(0.183)    |
| Relationship   | Months               | Months              | Prior loans         | Prior loans         |
| Individual FE  | Yes                  | Yes                 | Yes                 | Yes                 |
| Year dummies   | Yes                  | Yes                 | Yes                 | Yes                 |
| Month dummies  | Yes                  | Yes                 | Yes                 | Yes                 |
| R-sq: within   | 0.058                | 0.059               | 0.069               | 0.069               |
| R-sq: between  | 0.082                | 0.090               | 0.113               | 0.121               |
| R-sq: overall  | 0.049                | 0.052               | 0.076               | 0.080               |
| F-stat         | 9.49***              | 9.01***             | 11.38***            | 10.76***            |

Notes: Dependent variable = ln(loan amount \$). Standard errors in parentheses. \* signifies p<0.10; \*\* signifies p<0.05; \*\*\* signifies p<0.01. ‡ signifies that “Three and More” coefficient is statistically different from “Two Partners” coefficient at p<0.01. All regressions include the commercial paper rate, a loan renewal dummy and a female dummy.

Source: author's calculations from Black River Bank (1845-1859).