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A Contingency Theory of Entrepreneurial Debt Governance

Jonathan O'Brien

University of Nebraska Lincoln

College of Business

1240 R. Street

P.O. Box 880491

Lincoln, NE 68588-0491

Email: jobrien27@unl.edu

&

Amir Sasson

Department of Strategy

Norwegian School of Management

Nydalsveien 37, 0442

Oslo, Norway

Email: amir.sasson@bi.no

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ABSTRACT

Access to debt can be crucial for entrepreneurs who need capital. Embedding economic ties within a social relationship with the debt provider can ensure capital availability and attenuate opportunism. However, such a relationship requires substantial investments in time and effort. We advance a solution to this entrepreneurial conundrum by proposing a contingency theory which prescribes aligning the fundamental transactional properties (*i.e.*, asset specificity, uncertainty and frequency) with the nature of the entrepreneur-bank relationship (*i.e.*, embedded versus arm's length). Our theory predicts that transactional properties affect the optimal governance of the entrepreneur-bank relationship, and that social embeddedness can transform what looks like a market transaction (e.g., a debt transaction) into a hybrid form of governance more akin to a hierarchy. Using a sample of small businesses in the U.S., we find that congruence between the optimal governance structure and the actual governance structure results in higher firm performance.

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1. INTRODUCTION

Gaining access to the capital needed to start, manage, and grow a small business is a crucial challenge to entrepreneurs, most of whom rely primarily on commercial loans from banks for external financing (Ang, Lin & Tyler 1995; Binks & Ennew 1996). Yet, in deciding how to structure the banking relationship, the entrepreneur faces a critical conundrum. The entrepreneur can invest in developing an embedded relationship with a bank (*i.e.*, coalescing the economic relationship with social ties), or forgo this effort and maintain an arm's length relationship with the bank (Dacin, Ventresca & Beal 1999; Uzzi & Lancaster 2003). An embedded relationship can be distinguished from an arm's length relationship by "three main components that regulate the expectations and behaviors of exchange partners: trust, fine-grained information transfer, and joint problem-solving arrangements" (Uzzi 1997, p. 42). Concentrating transactions with a single bank is the first step to developing an embedded relationship. However, it is not sufficient, as the entrepreneur must also cultivate the interpersonal ties that underpin trust and reciprocity, which in turn help mitigate concerns about expropriation by the bank (Sharpe 1990; Uzzi 1999).

While developing an embedded relationship can attenuate the incidence of opportunism by either transacting party, it does come at a cost. Cultivating and maintaining an embedded relationship requires substantial investments in time and effort. These resources are of limited supply for most entrepreneurs. Although interpersonal ties can alleviate fears of deliberate malfeasance, concentrating the lending relationship with just one bank does expose the entrepreneur to certain risks. If the bank itself experiences trouble, it may simply be unable to assist the entrepreneur, despite its best intentions. Moreover, the bank may be unable to assist the entrepreneur during those times when the entrepreneur is most likely in need for assistance (e.g., during an economic downturn). Furthermore, acquisitions and personnel turnover at the bank can

erode away the investments made by the entrepreneur in developing an embedded relationship. While the extant literature concerning embeddedness theory (ET) has developed a good understanding of the pros and cons of developing an embedded relationship, the literature offers relatively little insight to entrepreneurs on how to weigh those pros and cons, and hence on deciding whether or not it would be worthwhile to develop an embedded relationship.

Following contingency theory, we contend the optimal structure of the entrepreneur-bank relationship hinges on the characteristics of the entrepreneur-bank transactions. Combining insights from ET and transaction cost economics (TCE), we argue that the entrepreneur-bank relationship serves as a mechanism to govern their transactions, and that, in line with TCE's major proposition, the optimal form of governance depends upon the fundamental properties of the transaction. More specifically, while market governance characterizes an arm's length relationship, an embedded relationship shares characteristics with hybrid governance and hierarchical governance. As such, the benefits of an embedded relationship are accentuated when the entrepreneur invests more heavily in specific assets, when there is more uncertainty regarding the entrepreneur's investment, and when the entrepreneur operates in a high growth industry and hence has to transact more frequently with the bank. Thus, the optimal nature of the entrepreneur-bank relationship depends upon both the firm's strategy and the environment in which it operates. Our empirical analysis of a large sample of small businesses, derived from the National Survey of Small Business Finance (NSSBF), supports our theory and reveals that the choice between arm's length and embedded debt can have profound performance consequences.

This paper makes three important contributions to the literature. First, we combine ET and TCE in order to advance a solution to the configuration of the entrepreneur-bank relationship. Although TCE offers an 'under-socialized' depiction of economic agents

(Granovetter 1985; Ghoshal & Moran 1996; Uzzi 1997), Williamson (1999b) has acknowledged that TCE is not all-encompassing, , but can be fruitfully combined with other theoretical perspectives to yield a more complete picture of organizational issues. Indeed, all organizations are simultaneously influenced by economic, institutional, and ecological processes (Dacin 1997). Accordingly, management scholars have integrated TCE with other organizational theories (Roberts & Greenwood 1997; Martinez & Dacin 1999). Notwithstanding that, ET has generally been regarded as being at odds with TCE (Uzzi 1997).We show, however, that the two theories can be synergistically combined to better understand the nature of governance in an embedded relationship. By so doing, we complement previous research that advanced alignment theories connecting transactional property with either institutional setting (James & McGuire 2016) or strong relational ties (David, O'Brien & Yoshikawa 2008). We extend this research into the governance properties of different types of debt by showing how the same type of debt may have very different governance properties depending on whether or not it is embedded in social ties.

Second, our study complements the relationship lending literature (Petersen & Rajan 1994; Stein 2002; Butler & Goktan 2013). This literature argues that commercial banks have an advantage in providing financial services to informationally opaque firms (Berger & Udell 2002). Banks invest in relationship lending and acquire soft information about the firm and its context, which banks utilize in financial decisions (Arrow 1998; Berger & Udell 2002; Stein 2002; Butler & Goktan 2013). Adding to this literature, we do not assume that soft information production accrues automatically from either the longevity of the entrepreneur-bank relationship (Petersen & Rajan 1994; 2002) or from the concentration of financial activities (Uzzi 1999). Instead, motivated by ET, we require a social dimension to the economic relationship between the entrepreneur and the bank. Furthermore, motivated by TCE specifications of the nature of the

financial transaction (*i.e.*, asset specificity, uncertainty, and frequency), we provide a theoretical framework for understanding the conditions that affect firms' informational opaqueness. More importantly, previous research has examined the direct effect of the entrepreneur-bank relationship or the degree of informational opaqueness on financial decisions (Petersen & Rajan 1994; Berger & Udell 1995; Butler & Goktan 2013). Our approach, which calls for an alignment between the actual entrepreneur-bank relationship and the nature of the transactions, suggests significant performance implications and is a novel contribution to these literatures.

Third, from a practical perspective, we offer prescriptive advice to entrepreneurs regarding the optimal structure of their banking relationships. Specifically, we demonstrate that the desirability of forging an embedded relationship will depend on both firm strategy and on external environmental factors. Moreover, our empirical results indicate that an entrepreneur's relationship with his or her banker can have very consequential performance implications.

In the following sections, we explain why TCE can be synergistically integrated with ET. We present Williamson's (1988) argument that debt serves as a form of market governance for safeguarding the capital invested in the firm. We then extend the TCE perspective by integrating arguments from the ET literature, and in particular work on the divergent properties of arm's length and embedded debt (Uzzi 1997; Uzzi & Gillespie 2002). We follow Williamson's (1991; 1996) conceptualization of governance options as varying along a continuum ranging from the ideal type market to the ideal type hierarchy. We show that what ostensibly might appear to be a form of market governance can be transformed by the social context, moving along the continuum, towards governance structure sharing properties with hybrid governance and hierarchical governance. Theoretically, we present the properties of the ideal governance and relationship types, and test alignment hypotheses in the context of small U.S. firms.

2. THEORY

The likely reason why TCE and ET have been juxtaposed as competing theories of organization (e.g., Ghoshal & Moran 1996; Uzzi 1997) is that many organizational theorists take exception to TCE's assumption that firms generally make efficient governance choices. However, TCE does acknowledge that significant governance mistakes do occur due to factors such as organizational inertia and adjustment costs (Nickerson & Silverman 2003), governance inseparabilities (Argyres & Liebeskind 1999), and perhaps most importantly, bounded rationality (Masten 1993). In fact, neoclassical economists have disparaged TCE as a heterodox theory of economics because it, in addition to focusing on market failure and eschewing mathematical models in favor logical arguments, embraces the Herbert Simon's (1957) concept of bounded rationality. TCE does not cast managers as all-knowing, it just assumes that the pressures of market competition will tend to select out (albeit weakly) firms that make egregious errors (Williamson, 1988). Therefore, TCE is not inherently incongruent with the notion that in uncertain situations, boundedly rational managers may simply conform to institutional expectations or social pressures, or simply decide to mimic high performing firms. Indeed, in many situations such acts may be quite (boundedly) rational. Accordingly, in integrating TCE and ET, we remain agnostic with respect to the positivist efficiency criterion and instead focus on the normative implications of the theory. That is, we derive predictions about how firms *should* generally organize in order to maximize performance, without assuming that they generally *do* organize in such a manner.

A second assumption that has limited the appeal of TCE to many management scholars concerns the assumption of opportunism. Although some have misinterpreted this assumption as suggesting that people will behave opportunistically whenever given the chance, or worse yet perhaps as advice that they *should* behave opportunistically (Ghoshal & Moran 1996; Ghoshal

2005) , such is not the intent of this assumption. Certainly the assumption of opportunism is a central tenet of TCE, as the assumption that people *might* act in their own best interest underpins everything from the entire study of governance to the practice of making witnesses swear an oath to be truthful (Williamson 1999b). Concerns of opportunism in economic transactions are at least as old as the ancient warning *caveat emptor* (i.e., let the buyer beware), and probably as old as the earliest economic transactions that ever occurred. Hence, we follow Granovetter (1985, p. 491) in assuming that we live in a world where "distrust, opportunism, and disorder are by no means absent". In order for economic activity to flourish, agents need confidence that benefits accruing from their actions will not "all be appropriated by others whom they do not love", and an institutional environment that allows agents to trust that contracts can be enforced is one means to mitigate this threat of opportunism (Stinchcombe 1965, p. 147). Hence, while we do not assume that all parties will act opportunistically when given the chance, we do assume (like Williamson, and not unlike Stinchcombe) that absent credible assurances, it is safest for transacting parties to assume that the other party *might* act opportunistically. However, following ET but unlike TCE, we do allow the social context to serve as a credible assurance against opportunism, in addition to more formal legal safeguards. Indeed, the social context and formal contracts may even actually reinforce one another (Mayer & Argyres 2004).

2.1 The Centrality of Adaptation and Continuity in TCE

Although the arm's length ties and strict reliance on contract law inherent in market governance produce strong incentives to adapt appropriately, they also result in tenuous relationships between firms. Such fluidic connections between parties may be efficient in many contexts, as they require little investment in monitoring and can potentially provide the ultimate in flexibility by allowing parties to terminate the relationship and go their separate ways with relative ease.

However, when asset specificity is high, termination of the relationship is costly for at least one party, and hence the continuity of relationship becomes a critical consideration. Although "hold-up" (Milgrom & Roberts 1992) is commonly cited as the primary hazard of asset specificity, Williamson (1999a, p. 34) contends that "simple hold-up is rare and that the central problem of economic organization is adaptation". That is, specific assets require strong safeguards for maintaining the continuity of exchange between the transacting parties, safeguards improve as transactions are govern by more hierarchical governance arrangements.[1] Absent such safeguards, agents lack the incentive to make specific investments even when hold-up *per se* is not feared.

Although the primary strength of hierarchical governance is that it ensures the continuity of the exchange, therein also lies their greatest weakness. Guaranteeing the continuity of the exchange entails a fundamental tradeoff, as it shields parties from the high-powered incentives of the market. In a market, the direct consequence of failing to adapt is either court intervention or organizational demise, whereas failing to adapt within a hierarchy is often met with forbearance. As hierarchies weaken the incentives to adapt autonomously, they must utilize administrative mechanisms such as administrative fiat to foster intentional and directed adaptation. Although adaptation within hierarchies sacrifices high-powered incentives, directed adaptation within the confines of a hierarchy is nonetheless made feasible by a much more detailed and rich exchange of information between pertinent parties than is possible in an arm's length market relationship. Hybrids present an intermediate solution whereby "long-term, incomplete contracts require

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[1] To clarify, our use of the term 'hierarchical governance' follows Williamson (1975) and should be distinguished from the banking literature studies of how banks' hierarchical, multi-layered, organizational structures impact agency problems (Berger & Udell 2002) and bank lending to small firms (Berger, Saunders, Scalise & Udell 1998). For example, a less hierarchical bank organizational structure may mitigate agency problems when loan officers possess 'soft' information while a more hierarchical structure is appropriate when banks use 'hard' information, such as standardized credit policies (Berger & Udell 2002).

special adaptive mechanisms to effect realignment and restore efficiency when beset by unanticipated disturbances." (Williamson 1991: 272)

2.2 TCE and Capital

Although transaction cost theory has been applied most commonly to vertical integration, its scope is far more general and includes the various "economic institutions of capitalism", such as the organization of labor, the M-form divisional structure, franchising, antitrust enforcement, and corporate governance (1985, p. 34). As Williamson (1988) explained, firms obtain capital from investors and then make investments that are intended to generate returns for the investors. Hence, the focal transaction is the money invested in the firm, and what becomes of it. Investors require governance safeguards to protect their investments. Debt and equity represent alternative governance structures for safeguarding the capital invested in the firm, and these governance structures can have a profound impact on strategic investments. That is, an entrepreneur could sell shares of ownership in the firm (*i.e.*, equity) to the public in order to raise capital. Unlike debt contracts, this equity is of indefinite duration and need not be paid back, thereby assuring the continuity of the relationship. The equity holders will elect a board of directors that actively and closely monitors managers, exercises ultimate discretion over them, and takes an active role in guiding adaptation. Furthermore, as hierarchies eschew court intervention (Williamson 1991), performance shortfalls are met not with external adjudication but with the board's discretionary tempering of administrative fiat with forbearance. An indefinite relationship, directed adaptation, greater monitoring costs, and dispute resolution via discretionary administrative mechanisms all characterize equity as a form of hierarchical governance.

Alternatively, an entrepreneur could raise capital by selling equity to select individuals, such as a potential business partner or to venture capitalists, who will likewise exercise

hierarchical governance and take an active role in guiding adaptation. However, such investors are hard to come by, and may not even be desired by the entrepreneur. Hence, entrepreneurs seeking external financing frequently turn to commercial loans from banks (Ang et al. 1995; Binks & Ennew 1996). According to Williamson (1988), debt can be characterized as a form of market governance because it relies on rigid contracts that provide strong incentives to adapt autonomously. Failure to adhere to this contract will likely result in court intervention via bankruptcy laws, which may result in the lender seizing the assets of the firm. This threat of bankruptcy provides the entrepreneur high powered incentives to curtail waste and keep performance strong. Furthermore, monitoring consists primarily of verifying the objective performance criteria specified in the contract. Rigid contracts that induce autonomous adaption with high-powered incentives, which are bolstered by dispute resolution via court intervention, and reliance on objective performance criteria all the defining hallmarks of market governance.

2.3 Embeddedness and the Governance Properties of Debt

Although TCE provides a powerful framework for understanding how the various characteristics of alternative governance regimes link together to make each optimal under different contingencies, it has limitations. Most importantly, it does not consider trust or reputation, and the key distinguishing characteristics of governance regimes (i.e., monitoring, dispute resolution, and means of adaptation) are predicated solely on legal authority. However, by integrating arguments from ET, we can understand how the social context can serve as an alternative to legal regimes in determining how governance is enacted.

While all debt contracts can be described in narrow economic terms as involving a loan subject to contractually stipulated covenant and repayment terms, lenders and borrowers may be bound by more than just atomistic ties and instrumental profit seeking. Economic transactions

such as lending do not occur in a vacuum but are embedded in a social context which can vary from relatively weak arms' length ties at one extreme, to embedded exchanges that may be heavily influenced by strong social ties at the other extreme (Uzzi & Lancaster 2003). Uzzi (1999) has demonstrated that debt, which may superficially appear to be a simple and homogenous financial instrument, can indeed vary significantly in the extent to which it is characterized by arms' length versus embedded ties. Although the distinction between arms' length and embedded debt has also been analyzed in the economics literature (Boot 2000; Berger & Udell 2002), we employ a sociological perspective because it yields richer insights into how the complex intertwined relationships between managers and bankers can alter the governance properties of debt, and hence the means by which adaptation is achieved.

When Williamson (1988) described the governance properties of debt, he was describing arm's length debt. This type of debt involves transactions where social ties are unimportant and lending decisions are based strictly on economic considerations of the direct financial returns available from holding debt securities (Uzzi & Lancaster 2003). The lender commits to forcing bankruptcy on the borrower should it default because, being bound only by a simple contract and arm's length ties, the lender has no other recourse available when the contract is violated (Williamson 1988). Furthermore, the length of the relationship is limited by the contractually pre-specified maturity of the securities issue. This form of market governance provides borrowers strong incentives to adapt autonomously in order to remain compliant with the debt contract and in order to secure new financing once the debt matures. Embedded debt, by contrast, involves transactions that are significantly shaped by social ties. Typically, managers forge close personal ties with their bankers within the context of what is expected to be a long-term relationship. Furthermore, these ties often extend to social activities such as golf and expand to

include the family members of those involved (Uzzi, 1999). This embeddedness has three components that regulate the expectations and behaviors of exchange partners: trust, fine-grained information transfer, and joint problem-solving arrangements (Uzzi 1999). Below, we explain how these characteristics mesh with the archetypical features of hierarchical governance, and hence how the social context affects the governance properties of debt.

2.3.1 Trust & Dispute Resolution. Trust is defined as the mutual confidence that transacting parties will not exploit each other's vulnerabilities (Barney & Hansen 1994). The embeddedness perspective emphasizes that trust appeared to operate like a heuristic "to assume the best when interpreting another's motives and actions" (Uzzi, 1997, p. 43). Trust emerges through a process of repeated interactions in which, over time, parties observed that "extra effort was voluntarily given and reciprocated" (Uzzi, 1997, p. 43). Reciprocity implies expectations of benefits that go beyond what is spelled out in the contract. For embedded lenders, there is an expectation of obtaining not just interest and principal repayment on the current debt contract, but also the continuity of the relationship in that the lender will continue to both borrow and to provide ancillary business relationships. Indeed, the profits arising from these additional fee based services (such as letters of credit, check clearance, brokerage, and cash management) may even dwarf the profits arising from managing loans (Davis & Mizruchi 1999). Conversely, for borrowers, there is an expectation that banks will not resort to liquidation at the first sign of financial distress, but rather that they will be forbearing and help them to work out problems.

Of course, interpersonal trust does not mean that an embedded relationship is devoid of calculative components. Embeddedness generally gives rise to bonds of dependence which deter opportunism, and trust can also emerge from rational consideration that the cost of opportunism exceeds the benefits (Barney & Hansen 1994). Borrowers may be deterred from opportunism for

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fear of loss of future loans and the support of their banks in working through financial distress. Likewise, banks are forbearing as they consider not just the cost of salvaging the current loan, but also take into account the potential profits from both all future loans as well as the lucrative ancillary business relationships (Boot 2000). Furthermore, developing a reputation for failing to help struggling clients may hinder the bank's ability to attract new clients (Chemmanur & Fulghieri 1994). Moreover, embedded lenders also frequently have business relationships with their client's suppliers and customers (Aoki & Patrick 1994; Sasson 2008). Thus, opportunism is curtailed not just by the dyadic ties, but by the enforceable trust created by the "potential sanctioning power of a broader social network" (Portes & Sensenbrenner 1993: p. 1332; Sasson & Fjeldstad 2009).

In an embedded banking relationship, both calculative and interpersonal factors likely foster the development of the trust that parties will not exploit each other's vulnerabilities. In terms of transaction costs, the critical implication of this trust is that the parties feel confident that they will be able to continue to work together amicably. That is, interpersonal trust bolsters confidence in the continuity of the relationship, the primary benefit of a hierarchy. Thus, the benefits of trust are akin to critical benefits of internal dispute resolution. While external court adjudication entails legal costs, the more consequential cost when asset specificity is high will be the almost certain termination of the relationship. Internal dispute resolution is beneficial not so much because of the *ex post* legal costs it saves, but because of the *ex ante* assurance it provides regarding the continuity of the relationship. From a TCE perspective, the most important trust is trust in the continuity of the relationship, which can be gained though either the administrative authority to resolve disputes internally, or from interpersonal trust, or ideally from both.

2.3.2 Fine-Grained Information Transfer & Monitoring. In arms' length transactions, economic exchanges are premised strictly on contractual terms, and monitoring of objective information to ensure compliance is sufficient. However, transactions embedded in close personal ties and bolstered by norms of reciprocity and trust include conduits for sharing rich subjective information. Fine-grained information obtained from an embedded relationship "includes strategic and tacit know-how that boosts a firm's transactional efficiency and responsiveness to the environment" and tends to be "more proprietary and more tacit than information exchanged at arms' length" (Uzzi, 1996, p. 678). Close social ties not only allow lenders to gather more information, they also "make information credible and interpretable, imbuing it with qualities and value beyond what is at hand." (Uzzi 1996, p. 678). Moreover, social ties make managers more willing to provide such information, as they trust that embedded lenders will not exploit their vulnerabilities or divulge the information. Furthermore, the extended business ties between the banker and client can provide lenders access to information about the client's checking and trust business, and possibly even the firm's suppliers and customers (Aoki & Patrick 1994; Boot 2000). Unlike arm's length lenders, embedded lenders are motivated to invest in gathering and processing this information, as they can amortize these sunk costs over multiple business relationships and an indefinite time horizon (Boot 2000). It is also worth noting that mitigating informational opacity of small and medium sized businesses is of particular importance to small and medium size banks, which are widely represented in our setting. Small banks represent a disproportionate share of FDIC losses (Critchfield *et al.*, 2004). Hence, those banks often specialize in the production of 'soft information' (Berger, Goulding and Rice, 2014) through embedded ties to also help mitigate the banks' failure risk.

From a TCE perspective, close monitoring and gathering rich subjective information is the lynchpin that makes hierarchical governance both feasible and effective. Hence, embeddedness bolsters not just trust in the continuity of the relationship, but also access to critical information.

2.3.3 Joint Problem-Solving & Adaptation. According to the TCE framework, market governance induces autonomous adaptation, while within a hierarchy close monitoring and dispute resolution via administrative authority allow for directed an coordinated adaptation. This perspective is very consistent with Uzzi's (1997, p. 47) argument that agents bound only by atomistic arm's length ties are both free to and compelled to work out their problems on their own, but that "embedded ties entail problem-solving mechanisms that enable actors to coordinate functions and work out problems". Within the context of debt, arm's length lenders rely on high-powered incentives to induce borrowers to adapt autonomously. In contrast, the governance exercised by embedded lenders is more akin to a hierarchy because the suppliers of capital take a much more active role in guiding (e.g. hybrid governance) or demanding (e.g. hierarchical governance) adaptation. Embedded lenders are able to take an active role in guiding adaptation because embeddedness provides avenues for lenders to influence the strategic decisions of their clients. The close personal relationships and informal ties provide the lenders the possibility of influencing the firm via persuasion. Furthermore, while arm's length debt tends to be dispersed amongst either multiple banks, embedded debt tends to be concentrated with one bank (Uzzi, 1999). Thus, it is simply more feasible for embedded lenders to renegotiate debt terms during times of financial distress than it is for arm's length lenders to do so. Finally, the access to richer information afforded by embedded debt facilitates more sophisticated adaptation to unfolding

circumstances and makes it possible for the bank to offer the firm "integrative solutions for lending problems that are not available through market ties" (Uzzi, 1999: 484).

3. HYPOTHESES

We have argued above that TCE and ET can be synergistically combined to understand better the nature of governance in an embedded bank-client relationship. Below, we advance a contingency theory whereby an alignment between the fundamental properties of a transaction (*i.e.*, asset specificity, uncertainty, and frequency) and the form by which the relationship is governed results in positive performance effects. Our focus is thus not on the direct effects of embeddedness or transaction properties which were studied previously (Williamson 1991; Uzzi 1997; 1999; Uzzi & Gillespie 2002) but on the joint effect of these properties.

The market governance of TCE is analogous to the arm's length relationship described by the embeddedness literature (Uzzi 1997; 1999). Within the TCE framework, the most critical feature of hierarchical governance is the assurance of the continuity of the relationship. This guarantee requires that parties have some sort of vested interest in or commitment to the transaction, which leads parties to work together towards coordinated adaptation, which in turn necessitates both closer monitoring and mechanisms to enable internal dispute resolution. While TCE focuses on formal legal mechanisms to guarantee continuity and enable internal dispute resolution, ET illustrates how social factors can serve as a substitute.

As social ties develop, especially if embedded in a broader social network where reputation is important, the parties develop trust and norms of reciprocity emerge. This leads to confidence that disputes will be worked out amicably, and to the rich information sharing that provides the knowledge necessary to resolve disputes by engaging in joint problem solving. In short, an embedded relationship enables critical characteristics associated with more hierarchical

than market governance structures, thereby allowing banks to safeguard their loans to entrepreneurs. As previously discussed, embedded relationships come at a cost and are not always optimal. They require substantial investments of time and effort, possibly resource commitments, and may soften performance incentives. However, governance that is more hierarchical can be quite beneficial for firms that make substantial investments in intangible assets, engage in uncertain R&D activities, or require frequent transactions with their bank.

Williamson (1988) argued that for firm governance, the focal transaction is the money invested in the firm by either equity holders or bond holders, who seek safeguards in the form of either a say in how things are done (equity) or rigid contracts (debt). Entrepreneurs, who are reluctant to relinquish control through selling equity and generally cannot access bond markets, can have either an embedded or arm's length relationship with a bank. Some firms make asset specific investments. "Asset specificity has reference to the degree to which an asset can be redeployed to alternative uses and by alternative users without sacrifice of productive value." (Williamson 1991: 281) If a firm invests in intangible assets, such as branding and reputation, their opacity will make the accurate evaluation of their alternative value difficult, making such assets suboptimal as collateral. If the entrepreneur has an embedded relationship with the banker, rich information sharing may allow better evaluation of intangible assets and therefore allow bankers to exercise some level of persuasion. It also creates the conditions for relationship continuity so much desired by informationally opaque entrepreneurs. The lack of easily evaluated alternative use for intangible assets makes rigid arm's length debt contracts, which generally respond to shortfalls with court adjudication, undesirable to both parties.

In contrast, entrepreneurs, investing in more tangible assets that serve as good collateral and the value of their alternative use is relatively easily ascertained, may find the ease and

simplicity of an arm's length relationship more efficient. Thus, having an embedded relationship

with a bank should become more beneficial as firm's asset specificity increases.

Hypothesis 1: An embedded relationship will be more positively associated with firm

performance for firms that invest more in intangible assets.

According to TCE, the use of hierarchical governance is more likely with increases in the

uncertainty surrounding the transaction (Williamson 1975). The payoffs from investments in

R&D can be highly uncertain (Laverty 1996). Entrepreneurs may also be reluctant to invest in

the highest risk (and highest potential payoff) R&D projects when such investments are optimal

because those investments can't be liquidated in the event of an economic downturn in order to

stave off bankruptcy (David et al. 2008). Furthermore, cash flows can be volatile, and meeting

the requirements of rigid arm's length debt contracts may induce disruptions to time sensitive

R&D projects. Complicating matters is the fact that a struggling entrepreneur may be reluctant to

reveal too much information about R&D projects to an arm's length lender, for fear that such

information may be leaked to competitors (Teece 1986).

Previous research has shown that hierarchical governance is more beneficial to firms that

invest heavily in R&D (Balakrishnan & Fox 1993; Simerly & Li 2000; David et al. 2008). Recall

that the focal transaction is the money invested in the firm. If the entrepreneur invests that money

in riskier projects than those agreed upon, the market governance of arm's length lenders, with

its limited information richness, may result in suboptimal performance.

In contrast, an embedded lender can exercise hybrid and even hierarchical governance

over investments in uncertain assets. Trust that favors will be reciprocated provide incentives to

work through difficulties rather than resort to the courts, and access to more detailed and rich

information helps make joint problem solving feasible. Hence, the well-informed banker can

work with an entrepreneur to adapt to unforeseen contingencies. The entrepreneur may further benefit from having the counsel and advice of the banker's more objective perspective (Sasson 2008). Cognitive biases can be accentuated by uncertain situations (Kunda 1999), but group decision making can help attenuate the effect of individual cognitive biases (Tetlock 2000). For firms that invest in less uncertain assets, the costs of maintaining an embedded relationship may outweigh these benefits. Thus, we predict that having an embedded relationship with a bank will be more beneficial to R&D intensive firms than to non-R&D intensive firms.

Hypothesis 2: An embedded relationship will be more positively associated with firm performance for firms that engage in more R&D.

Although uncertainty and asset specificity are probably the most commonly studied variables in TCE, the frequency of the transaction is also important (Williamson 1999b). The investments required to forge and maintain an embedded relationship are unlikely to be worthwhile if the entrepreneur seldom has need to conduct sophisticated transactions with the bank. We predict that an embedded relationship will be more beneficial to firms operating in high growth industries. In such industries, there is a greater likelihood that the entrepreneur will need to return frequently to the bank and request additional capital to fund the next stage of growth. An embedded relationship, whereby the banker maintains relatively continuous familiarity with the entrepreneur and his or her business, can help speed the transaction and make the process more efficient, giving the entrepreneur access to timely capital when opportunities arise. Thus, we predict that having an embedded relationship with a bank will be more beneficial for firms operating in high growth industries than it is for firms in low growth industries.

Hypothesis 3: An embedded relationship will be more positively associated with firm performance for firms that operate in higher growth industries.

4. METHODS

Our theory predicts that the degree of alignment between the nature of the relationship that the entrepreneur has with the bank and the optimal governance of this relationship affects the performance of entrepreneurial ventures. Hence, testing our hypotheses requires a sample of small businesses with detailed information on their performance and their banking relationships. Thus, we use the National Survey of Small Business Finance (NSSBF), which was commissioned by the Board of Governors of the Federal Reserve System, with the cooperation of the Small Business Administration. This has been widely used in the study of governance and financing (Uzzi 1999; Uzzi & Gillespie 2002). The 1993 NSSBF survey is specifically apt for testing hypotheses interacting embeddedness and transactional properties because it is the only survey that contains information on embeddedness, intangible assets, and firm R&D intensity. The target population for the survey was all for-profit, non-agriculture, non-financial firms that were not corporate subsidiaries and had fewer than 500 employees. The sampling frame for the survey was drawn from all small businesses listed in Dun's Market Identifier file. This file is broadly representative of all businesses operating in the U.S. (Bitler, Robb & Wolken 2001), and was deemed by the surveyors to be the best commercially available sampling frame (Haggerty, Grigorian, Harter & Stewart 2001). The survey was conducted via telephone interviews with the owner or top executive of sampled firms, and achieved an overall response rate of about 50%.

Although the NSSBF data provides a rigorously conducted, large sample survey, it is important to recognize that the sample was not a pure random sample. Rather, in order to ensure adequate representation across various regions of the country and across various size categories, the sample was stratified according to geographic region, employment size, and rural-versus-urban location. Additionally, larger firms and minority-owned businesses were over-sampled in

order to ensure that sufficient numbers of these groups were sampled to permit separate analyses of these specific groups. Fortunately, the NSSBF dataset includes variables identifying the sampling strata for each observation, as well as the final sampling weight. We took the strata and weight into account by using the specialized survey-regression procedures (e.g. the svyset and svy: commands in Stata) in order to permit inference to the general population.

We measure *performance* with the firm's return on sales (ROS), which was calculated as total net profit divided by total sales. ROS was preferred to return on assets (ROA) because several times more firms reported trivial values (i.e., under $10,000) for assets, resulting in skewed values for ROA. Although ROS produced fewer problems with outliers than ROA would have, the distribution of *performance* did contain some extreme observations. A nonlinear transformation of the data (e.g. taking the natural log) was not feasible because the data had some negative values, as well as some extreme positive values. Hence, rather than drop the outliers, we winsorized *performance* at the top and bottom 0.5$^{\text{th}}$ percentiles of its distribution. After winsorizing, analysis of Cook's D statistics suggested that no outliers had a statistically significant impact on the models (although several did if we did not winsorize). Furthermore, analysis of variance inflation factors indicated that collinearity was not a problem in our data.

The variable *embedded* indicates whether the firm's management has an embedded (economic and social) relationship with their primary financial institution. *Embedded* was coded as equal to one (and zero otherwise) if all three of the following conditions held: (1) the firm's bank deposits were highly concentrated with one institution; (2) the manager(s) generally conducts business with that institution in person; and (3) the survey respondent indicated that the reason that the firm uses that financial institution entails some interpersonal connections. The first condition corresponds to Uzzi's (1999) measure of concentration of economic activity. The

second and third conditions supplement this by directly addressing the interpersonal dimension

of the relationship. This is also an innovation relative to previous research, which infers

interpersonal relationship strictly from relationship longevity (Saparito, Elam & Brush 2013).[2]

To ensure that our results hold when we relax this strict definition of embeddedness, we also

measure embeddedness by: 1) the count (from 0 to 3) of the three conditions listed above and 2)

using each of these three conditions, individually, as our proxy.

We measure the firms R&D intensity with the variable *R&D*, which is calculated as the

total number R&D employees divided by the total number of full-time equivalent employees.

Approximately 74 percent of firms in the sample have no R&D personnel, while for five percent

R&D personnel constitute more than 2/3 of workers. While the proportion of firms with no R&D

activity may seem high, it is relatively consistent with samples drawn from public corporations

(O'Brien 2003). *Intangible* assets is the ratio of intangible and depletable assets to total assets. To

assess industry *growth*, we used data on real GDP (by industry) from the Bureau of Economic

Analysis at the U.S. Department of Commerce. In this data, industries were grouped into fifty-

one categories, which we mapped onto the two-digit SIC codes provided for each firm in the

NSSBF data. *Growth* is the industry specific percentage increase in GDP from 1988 to 1992.

We also controlled for a number of other factors that might influence firm performance.

Size is measured as the natural log of total sales. *Firm age* is the natural log of the firm's age in

years. *Experience* is the log of the total number of years of experience that the primary owner has

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[2] More specifically, with regards to the third condition, we assumed that there were interpersonal connections
between the firm and bank if the responded gave one of the following reasons for using the institution: (with survey
code): (43) Owner has personal or other business with institution, or owns stock; (44) Owner knows officers or
employees, relatives work or have business there; (45) Employees, friendly people, personal service, access to
institution management, professional or knowledgeable people; (46) Long-term or current relationship, primary
bank, started with institution, loyalty, firm when acquired was using inst.; (47) Institution does business with firm,
reciprocity. Our dichotomous measure of embeddedness, wherein an arm's length relationship is the default, is
consistent with the argument that exchange relationships can generally be regarded as being either arm's length or
embedded (Petersen & Rajan 1994; Dacin et al. 1999; Uzzi & Lancaster 2003).

had managing or owning a business. To account for the fact that sales, firm age and experience were sometimes zero, one was added to these variables before taking the log. *Leverage* is total loans, mortgages, notes and bonds divided by total assets. *Cash* is total cash holdings divided by total assets. *Family* equals one if more than fifty percent of the firm owned by a single family, and zero otherwise. *Incorporated* equals one if the firm is incorporated, and zero otherwise. *College* equals one if the primary owner of the firm has at least some post-secondary education, and zero otherwise. *Manager* equals one if a hired professional (as opposed to the owner) is responsible for day-to-day management of the firm, and zero otherwise. *Owner age* is the natural log of the primary owner's age (in years). *Owner share* is the percentage of the firm is owned by the principal owner. Finally, *industry performance* is the mean value of the variable *performance* for all firms in our sample competing in the focal firm's industry.

4.1 Econometric Approach

As previously discussed, we employed specialized survey-regression procedures to account for the fact that our data sample was a stratified random sample with over-sampling, as opposed to a pure random sample (as is assumed by OLS regression). Another methodological consideration is the potential endogeneity of some of our critical independent variables, most notably embeddedness and R&D intensity. An endogenous variable is one which is a function of other factors. If we can control for these other factors, or if these factors are unrelated to our dependent variable, then endogeneity does not pose a threat to our analysis. If, however, there are unobserved factors that influence both the endogenous variables and the dependent variable, then the endogenous variables will be correlated with the error term and hence traditional OLS methods will suffer from omitted variables bias. Two-stage least squares instrumental variables (2SLS-IV) regression methods can eliminate this bias by first regressing the endogenous

variables on all the independent variables, and then using the predicted values of the endogenous

variables in lieu of the observed values in the second stage when the dependent variable is

regressed on the predictor variables. Although this approach provides improved estimates of the

effect of an endogenous variable on a dependent variable, it is also less efficient because it tends

to produce much larger standard errors than OLS. Hence, it is preferable to not model a variable

as endogenous unless tests indicate that it is warranted (see Chapter 15 of Wooldridge 2003).

Accordingly, we test to see if any of our critical variables create an endogeneity problem.

To test for endogeneity problems, we must find valid instruments for each of the

potentially endogenous variables. These instruments should be exogenously determined, strongly

related to the endogenous variables, and weakly related to the dependent variable. Exploratory

regressions suggested that both the *distance* (in miles) between the firm and its bank and the

duration of the client-bank relationship could serve as good instruments for *embedded*. Our

analysis also revealed that the prevalence of embedded client-bank relationships varied

significantly across the nine geographic regions reported by the data. Hence, we created a

variable (*region*) that was equal to one if the firm was in the east south central or mountain

regions (the two regions with the highest prevalence of embedded relationships) and zero

otherwise. We believe that these variables serve as valid instruments because even though

entrepreneurs usually carefully select the location for their businesses, we generally should not

expect a strong relationship between location (either geographic region or distance to bank) and

performance. If a particular location did actually offered a competitive advantage, then other

entrepreneurs would locate there and the advantages would dissipate. Thus, performance effects

of location decisions, if there are any, should be transient. Moreover, the average firm in our

sample was 15.3 years old. This should help ensure not only a weak relationship between

location and performance, but also the exogeneity of the instrument since the variable was pre-determined many years before our test sample was drawn (and hence the current period error term should be uncorrelated with the location choice). Finally, while the duration of the relationship should be positively associated with the likelihood of forming an embedded relationship, it seems unlikely that it would have any appreciable impact on firm performance.

Interestingly, the *region* variable was also associated with the average rates of R&D intensity, and hence this variable also served as a suitable instrument for *R&D*. We also created an industry average measure of R&D intensity, which served as a second instrument for *R&D*. Hence, we had three instruments and two endogenous variables. Having more instruments than endogenous variables allowed us to conduct a test of overidentifying restrictions. This test verified both that the instrumental variables are appropriately excluded from the second stage regression and that they are uncorrelated with the error term in the second stage regression, which is a critical assumption of 2SLS regressions. Regressing the endogenous variables on all the predictor variables, producing residuals for these regressions, and then including those residuals in a regression where *performance* was the dependent variable (and the instruments were excluded in order to avoid perfect collinearity) revealed that *embedded* created an endogeneity problem but *R&D* did not. Testing the two variables individually yielded the same result. Thus, in our analysis we treat *embedded* as endogenous.

Finally, while we believe that our instruments are suitable, we acknowledge that instruments are rarely ever perfectly exogenous (Wintoki, Linck & Netter 2012). Hence, in the results section, we report post-estimation Sargan tests that help verify the validity of our instruments. As we used several different measures of embeddedness and had three potential

instruments, in each model we instrumented *embedded* on whichever two instruments yielded the best (i.e., least significant) Sargan statistic (See Appendix 1).

5. RESULTS

We provide descriptive statistics for all variables in Table 1. It is interesting to note that the average firm in our sample had leverage of 40%, thus indicating the importance bank loans as a source of financing for entrepreneurs. Furthermore, only 13% of firms in our sample had an embedded relationship with their bank. This indicate that the bulk part of small and medium sized firms maintain an arm's length relationship to their banks. This likely gave rise to the entry and growth of non-bank direct lenders, which target this large segment of firms. Interestingly, and consistent with our contingency perspective, the correlation between embeddedness and firm performance is merely 0.01, indicating a weak direct relationship. Thus, some firms likely over-invest in an embedded relationship while others under-invest. Embedded relationships are not a recipe for improved performance. As we will show below, the characteristics of the transaction determine whether an embedded relationship is beneficial or detrimental for firm performance.

--- Insert Tables 1 and 2 here ---

The results of our statistical analyses are provided in Table 2. All models use 2SLS-IV regressions that accounts for the survey-nature of our data. Model 1 serves as our base model and reveals that e*mbedded* has a negative and significant main effect. Models 2 through 4 add in the interactions predicted by hypotheses 1 through 3, while model 5 presents a fully saturated model. The Sargan overidentification test statistic was insignificant for our main models (*i.e.*, models 1 through 5), confirming that the instrumental variables are indeed statistically exogenous and correctly excluded from the *performance* equation. We do not report R-squared statistics because it has no natural interpretation in 2SLS regressions. While 2SLS yields better estimates of the

ceteris paribus effect of an endogenous variable on a dependent variable, overall model fit is not

a consideration and may very well decline when a variable is treated as endogenous (see Chapter

15 of Wooldridge 2003). We also report the results from our first stage regressions in Appendix

1, with model numbers corresponding to those of Table 2. As Appendix 1 illustrates, the

instruments generally serve as strong predictors of *embedded* and overall model fit is highly

significant, indicating that our models should produce reliable predicted values for *embedded*.

The positive and significant ($p < 0.05$) interaction term of *embedded* and *intangible* in

model 2 provides support for hypothesis 1 and indicates that the returns to forging an embedded

relationship will be more positive for firms that have higher proportions of intangible assets.

Hypothesis 2 predicted that having an embedded relationship with a bank would be more

beneficial to R&D intensive firms than to non-R&D intensive firms. The positive and significant

interaction between *embedded* and *R&D* in Model 3 ($p < 0.01$) supports this hypothesis. As firm

R&D intensity increases, embedded relationships are more suitable for governing exchange and

positively affect firm performance. For non-R&D intensive firms, maintaining an embedded

relationship comes at a cost, resulting in lower firm performance. Hypothesis 3, which predicted

that embeddedness would be more beneficial as industry growth increases, also receives support

as the interaction between *embedded* and *growth* in model 4 is significant ($p < 0.01$). Model 5

includes all the interaction terms and yields similar conclusions: hypotheses 1-3 are supported.

Corroborating the findings in model 5, model 6 uses *duration* and *region*, as oppose to *duration*

and *distance*, as the first stage instruments.

Models 7 to 10 are robustness checks for various operationalization of embeddedness.

Corroborating the results reported above, model 7 uses a count measure (0-3) that sums the

occurrences of the three conditions of embeddedness. Model 8 uses only condition 1, namely the

concentration of a firm's banking activity with one bank. This proxy for the strength of the relationship, which omits social context and is a noisy measure of embeddedness, provides support for hypotheses 1 and 3 but not for hypothesis 2. In model 9, we measure embeddedness by the 'interpersonal connection' reason for why the firm uses its financial institution. Findings further support all three hypotheses. In model 10, we measure embeddedness only by whether or not the owner conducts business in person or not. This proxy, which is likely a weak measure of embeddedness by itself, provides support only for the first hypothesis. As the Sargan statistic was marginally significant in models 8 and 10, these results should be interpreted with caution.

--- Insert Figure 1 here ---

Our results are not only statistically significant, but are also quite economically significant. To illustrate the economic significance of our results, we use model 5 of Table 2 to produce predicted values of *performance* for varying levels of *Intangible*, *R&D*, and *growth*, and we plot these relationships in Figure 1. For an 'average firm' (*i.e.*, whereby all variables are set equal to their means), maintaining an embedded relationship is less beneficial than an arm's length one. Relative to the average firm, maintaining an embedded relationship with a bank is more beneficial to firms in high growth industries and firms that engage in more R&D activity, although it is still associated with lower performance than an arm's length relationship. However, in each case, we defined 'high' as the mean plus one standard deviation, and higher values would increase the value of an embedded relationship. For firms that invest more heavily in intangible assets, an embedded relationship actually improves performance. Finally, embedded ties are substantially more beneficial than arm's length ties for firms that have high intangible assets, employ R&D personnel, and conduct business in a high growth environment.

6. DISCUSSION AND CONCLUSIONS

This paper has demonstrated that TCE and ET can be synergistically integrated to shed light on the nature of the entrepreneur-bank relationship. Specifically, ET is useful in understanding the governance implications of an embedded relationship, and TCE is useful in understanding the conditions that may make an embedded entrepreneur-bank relationship desirable. As such, this paper makes a distinct theoretical contribution to both the transaction costs and embeddedness literatures by demonstrating how the two perspectives can serve as complementary lenses.

Our theory and results reveal that governance regimes may depend on much more than just the extant legal framework and institutions (James & McGuire 2016). Social relations can shape economic exchanges and dramatically alter the manner in which governance is enacted. Arm's length ties minimize relationship specific investments, and thus are efficient when the continuity of the relationship is a trivial concern. While embedded ties may diminish the high-powered incentives to adapt autonomously, they can help ensure the continuity of investment and foster more hierarchical governance arrangements. Hybrid and hierarchical governance forms emerge when strong embedded ties, reinforced by norms of trust and reciprocity, make it possible for transacting parties to protect their investments by taking an active role in guiding or directing adaptation, and make taking such a role feasible by providing the parties conduits for sharing rich and detailed information. Although debt is generally regarded to exert market governance, trust, access to fine-grained information, and joint problem solving all interweave together to make the exercise of hierarchical-like hybrid governance feasible.

Our paper also makes a significant contribution to the growing literature on the managerial implications of capital structure (e.g., Balakrishnan & Fox 1993; Stearns & Mizruchi 1993; Kochhar 1996; Simerly & Li 2000; Vincente-Lorente 2001; O'Brien 2003). Choosing a

firm's capital structure is one of the most important decisions made by senior managers (Mizruchi & Stearns 1994; Romano, Tanewski & Smyrnios 2001). Yet, relatively little attention has been paid to this issue by management scholars. David et al. (2008) extended Williamson's view by arguing that private bank debt and public bonds are actually polar opposites with respect to the governance regimes they employ. Recently, James & McGuire (2016) showed that firms performance enhancing effects require an alignment between the institutional settings of finance (bank- and market-based systems) and the nature debt financing (bank-debt and bonds). We further this research stream by examining not how different types of debt can have varying governance properties, but rather how the same type of debt may have very different governance properties depending on whether or not it is embedded in social ties. In so doing, we make a make a theoretical contribution by demonstrating that TCE and ET can be integrated as highly complementary lenses.

Although ET and TCE have often been presented as being at odds (Granovetter, 1985; Uzzi 1999), we think it more reasonable that they should be seen as complimentary. After all, both theories emerged in response to real world observations, and both have found considerable empirical support over the years while evolving somewhat with those findings. Moreover, when looking at similar phenomena, they just look at them from slightly different perspectives. In studying the world, both theories identified polar opposite types of exchange relationships. It should come as no surprise that two poles are each describing the same phenomena, albeit while focusing on the variables of greatest pertinence to their theoretical roots. By acknowledging the unique contributions of each, we can enhance our understanding of organization theory.

Interestingly, a fairly low percent of firms in our sample that maintain embedded ties. We conjecture that this might be driven by the nature of our sample. In the context of Japanese

banking, poor performance of firms with embedded ties to their banks may originate from the failure of non-bank affiliated firms, leaving only successful non-affiliated firms in the sample (Weinstein & Yafeh 1998). We acknowledge that many of the research-intensive firms may prefer equity to debt financing and show that for these, which prefer to rely additionally on debt financing, embedded ties are more beneficial than arm's length ties.

There also exist numerous opportunities to extend our work. We have followed traditions in both literatures by treating the governance relationship as tending to exist closest to one of the polar extremes or the other: market/arm's length versus hierarchy/embedded. Yet, embeddedness can vary in strength, and hybrid forms of governance do exist. There is evidence that in practice embedded debt share critical characteristics with hierarchical governance (Uzzi 1999; Uzzi & Lancaster 2003; Sasson 2008). However, it is possible that it is not as perfect of a form of hierarchical governance as equity. Would entrepreneurs that make investments in specific and uncertain assets prefer equity investments instead of embedded debt, but it is simply unavailable? Alternatively, is embedded debt genuinely preferred to selling partial ownership to an outsider? What circumstances make one choice more attractive than the other?

This paper also allows for further extensions of the relationship lending literature (Petersen & Rajan 1994; Berger & Udell 1995; Butler & Goktan 2013). We complement this important body of research by showing that an alignment between the actual entrepreneur-bank relationship and the TCE-derived optimal governance has substantial economic effects. We also further specified the social dimension in the economic relationship between the entrepreneur and the bank, and the critical properties of the entrepreneur-bank transaction (*i.e.*, asset specificity, uncertainty and frequency). In doing so, we implicitly held bank properties constant. The relationship lending literature, however, argues that decentralized banking organizations have the

incentive to specialize in the production of soft information (Berger & Udell 2002; Stein 2002).

Future research can supplement this work by additionally examining the alignment between the

structure of the bank (e.g. decentralized or hierarchical), the optimal governance, and the actual

entrepreneur-bank relationship in deriving the conditions under which benefits accrue.

While we acknowledge that our empirical analysis employed a relatively older dataset,

the theory we advanced is highly generalizable across time periods and even institutional

contexts. With the reduction in the number of banks and the increase size of those remaining,

banks have standardized firm evaluation through the widespread use of credit scoring. The extent

to which this arm's length practice crowds out debt financing of investments in R&D and

intangible assets in small firms is still unknown. Our study shows that for this group of firms,

embeddedness enhances while arm's length relationship impairs performance. The lack of fit

between a non-differentiated bank-firm interface strategy and firm-specific transaction

properties, as shown in our study, is likely to hurt this fundamental subset of small firms.

Finally, another potentially fruitful avenue for extending our research would be to

examine longitudinal effects in the entrepreneur-bank relationship. While the sample we used to

test our hypotheses came from a very thoroughly planned and carefully conducted national

survey, one limitation of this database is that it is cross-sectional in nature. If researchers

constructed a longitudinal database that allowed them to assess the extent of embeddedness in

the entrepreneur-bank relationship, they could provide some additional insights in to the nature

of these relationships. For example, consistent with the extant literature, we have assumed that

an embedded relationship is more likely to persist in the future. However, this subject could

benefit from some empirical scrutiny in order to gauge the magnitude of the effect. Furthermore,

a longitudinal database could also help determine whether the support of having an embedded

relationship with a bank can be help struggling entrepreneurs to turn things around and improve performance in the future. Such dynamic questions cannot be adequately addressed by our data.

In summary, we advanced a contingency theory that explicates how firm performance is contingent upon the alignment between the structure of the entrepreneur-bank relationship and the properties of the debt transaction with respect to asset specificity, uncertainty, and the frequency of transactions. Our theory joins the characteristics of an embedded relationship (*i.e.*, trust, fine-grained information transfer, and joint-problem-solving) with the archetypical features of hierarchical governance (*i.e.*, internal dispute resolution, close monitoring, and directed adaptation). When transactions have attributes that call for more hierarchical governance arrangements, hierarchy may be substituted, if it is undesirable or impractical, or complemented by an embedded relationship to achieve efficient governance and hence enhanced performance.

7. **REFERENCES**

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Table 1: Descriptive Statistics

	Mean	St. Dev	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 Performance	0.08	0.47	-7.89	1.55																
2 Embed.	0.13	0.33	0.00	1.00	0.01															
3 Intang.	0.35	0.29	0.00	1.00	0.00	0.00														
4 R&D	0.08	0.23	0.00	1.00	0.02	-0.03	-0.01													
5 Growth	0.04	0.12	-0.30	0.33	0.02	-0.03	0.04	0.04												
6 Size	13.10	2.16	4.60	19.60	0.03	-0.03	-0.18	-0.19	-0.07											
7 Leverage	0.40	0.64	0.00	11.60	-0.15	-0.03	0.13	0.00	0.06	-0.04										
8 Cash	0.17	0.22	-1.53	1.00	0.06	0.02	-0.27	0.08	0.03	-0.18	-0.08									
9 Firm Age	2.52	0.73	0.00	4.88	0.06	0.03	-0.06	-0.11	-0.05	0.23	-0.10	0.03								
10 Family	0.18	0.38	0.00	1.00	-0.06	-0.04	-0.04	0.00	0.05	0.20	0.03	-0.03	-0.06							
11 Incorp.	0.61	0.49	0.00	1.00	-0.08	-0.02	-0.16	-0.08	-0.05	0.53	0.03	-0.08	0.08	0.20						
12 College	0.51	0.50	0.00	1.00	-0.02	-0.02	-0.07	-0.01	0.23	0.21	0.02	-0.03	-0.04	0.14	0.19					
13 Manager	0.19	0.39	0.00	1.00	-0.06	0.00	-0.03	-0.03	0.07	0.24	0.01	-0.05	0.09	0.11	0.21	0.07				
14 Own. Age	3.89	0.23	2.94	4.52	0.00	0.02	-0.05	-0.09	0.02	0.16	-0.03	-0.01	0.51	-0.02	0.06	-0.02	0.09			
15 Own. Share	0.76	0.28	0.00	1.00	0.05	0.02	0.06	0.06	0.01	-0.39	-0.02	0.10	-0.05	-0.47	-0.43	-0.15	-0.11	-0.06		
16 Experience	2.86	0.63	0.00	4.26	0.02	0.01	-0.04	-0.12	-0.05	0.28	-0.05	-0.05	0.58	-0.01	0.14	-0.03	0.08	0.63	-0.08	
17 Ind. Perform.	0.08	0.08	-0.39	1.00	0.16	0.01	0.09	0.02	0.12	-0.19	-0.02	0.09	0.02	-0.04	-0.16	0.00	-0.05	-0.03	0.14	-0.03

N=4506

Table 2: 2SLS Models

Model:	1	2	3	4	5	6	7	8	9	10
Constant	-0.26	-0.11	-0.23	-0.28	-0.09	-0.15	0.24	-0.03	-0.16	0.42
Embedded	-0.45 *	-1.18 *	-0.54 *	-0.45 *	-1.29 *	-0.84 **	-0.32 **	-0.56 *	-0.55 **	-0.71 *
Intangible	0.05	-0.25 *	0.05	0.05	-0.24 *	-0.14 +	-0.79 **	-0.37 +	-0.21 *	-0.92 *
R&D	0.02	0.04	-0.07	0.03	-0.06	-0.03	-0.22 +	-0.09	-0.04	-0.20
Growth	0.04	0.05	0.05	-0.12	-0.11	-0.04	-0.5 *	-0.29 +	-0.09	-0.38
Size	0.04 **	0.04 **	0.04 **	0.04 **	0.04 **	0.04 **	0.04 **	0.04 **	0.04 **	0.03 *
Leverage	-0.16 *	-0.16 *	-0.15 *	-0.16 *	-0.15 *	-0.15 *	-0.15 *	-0.15 *	-0.15 *	-0.15 *
Cash	0.13 **	0.13 *	0.13 **	0.13 **	0.14 **	0.13 **	0.12 **	0.1 +	0.14 **	0.13 **
Firm Age	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.02
Family	-0.05 +	-0.05 +	-0.05 +	-0.05 +	-0.05 +	-0.04 +	-0.06 *	-0.05 +	-0.04	-0.05 +
Incorporated	-0.12 **	-0.12 **	-0.12 **	-0.12**	-0.11 **	-0.11**	-0.12 **	-0.12 **	-0.11 **	-0.12 **
College	0.02	0.00	0.02	0,02	0.01	0.01	0	0.00	0.01	0.00
Manager	-0.08 **	-0.09 **	-0.09 **	-0.09 **	-0.10 **	-0.09 **	-0.09 **	-0.09 **	-0.10 **	-0.08 **
Owner Age	-0.02	-0.03	-0.03	-0.02	-0.03	-0.04	-0.02	-0.03	-0.04	-0.03
Owner Share	0.01	0.01	0.01	0.02	0.01	0.01	0.00	0.00	0.02	0.00
Experience	-0.01	-0.02	-0.01	-0.01	-0.02	-0.01	-0.01	-0.01	0.00	-0.01
Ind. Performance	0.87 **	0.99 **	0.86 **	0.88 **	0.99 **	0.97 **	1.03 **	1.00 **	0.95 **	1.01 **
Embed X Intan.		2.05 *			2.06 *	1.38 **	0.51 **	0.85 *	0.88 **	1.14 *
Embed X R&D			0.91 **		1.08 **	0.76 **	0.17 *	0.27	0.40 *	0.30
Embed. X Growth				1.15 **	1.17 *	0.81 *	0.34 *	0.75 *	0.39 +	0.58
Observations	4346	4346	4346	4346	4346	4348	4346	4348	4348	4346
F statistic	8.19 **	6.68	7.86 **	7.92 **	6.16 **	7.65 **	7.53 **	7.54 **	7.35 **	7.77 **
Sargan chi square	0.322	0.097	0.284	0.351	0.095	1.415	0.286	2.713 +	0.002	2.976 +

+p<0.10; * p<0.05; ** p<0.01

Appendix 1: First Stage Regressions from 2SLS Models

Model:	1	2	3	4	5	6	7	8	9	10
Constant	0.10	0.16+	0.14	0.06	0.16+	0.15+	0.17**	0.44**	0.25*	1.02**
Intangible	0.00	-0.24**	0.01	0.00	-0.21**	-0.21**	-2.40**	-0.72**	-0.44**	-1.25**
R&D	-0.06**	-0.01	-0.19**	-0.05*	-0.08*	-0.07**	-0.92**	-0.29**	-0.15**	-0.42**
Growth	-0.10+	-0.03	-0.08	-0.40**	-0.14**	-0.14**	-1.64**	-0.49**	-0.34**	-0.75**
Size	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.00	-0.01**
Leverage	-0.01	0.00	0.00	-0.01	0.00	0.00	0.02*	0.01	0.00	0.01*
Cash	-0.02	0.00	-0.02	-0.02	0.00	0.00	-0.05	-0.06+	0.01	0.00
Firm Age	-0.04**	-0.02*	-0.03**	-0.04**	-0.02+	-0.01	-0.07**	-0.01	-0.04**	-0.01
Family	-0.04*	-0.02	-0.04*	-0.04*	-0.02	-0.02	-0.08**	-0.04*	-0.01	-0.03+
Incorporated	-0.02	0.00	-0.01	-0.02	0.00	0.00	-0.01	-0.02	0.01	-0.01
College	0.01	-0.01	0.01	0.01	-0.01	-0.01	-0.05*	-0.02+	0.00	-0.03**
Manager	0.01	0.00	0.00	0.00	-0.01	0.00	-0.01	0.01	-0.03+	0.01
Owner Age	0.05	0.01	0.03	0.05	0.01	0.01	0.06	0.03	0.01	0.01
Owner Share	0.01	0.00	0.00	0.02	0.01	0.01	-0.01	-0.02	0.02	-0.01
Experience	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.02	0.01	-0.01
Ind. Performance	-0.14	0.04	-0.13	-0.12	0.04	0.03	0.29*	0.11	0.03	0.13*
Embed x Intang.		1.65**			1.53**	1.52**	1.48**	1.48**	1.50**	1.48**
Embed x R&D			1.33**		0.72**	0.72**	0.58**	0.55**	0.65**	0.50**
Embed x Growth				2.11**	0.81**	0.80**	0.96**	0.97**	0.78**	0.93**
Duration	0.69**	0.29**	0.60**	0.69**	0.27**	0.25**	1.02**	0.16*	0.61**	0.21**
Distance	-0.09**	-0.04**	-0.07**	-0.08**	-0.03*		-0.19*			-0.19**
Region						0.07**		0.09**	0.03*	
Observations	4346	4346	4346	4346	4346	4348	4346	4348	4348	4346
F-statistic	5.53**	146.6**	41.4**	17.1**	130.8**	131.5**	235.4**	504.7**	317.2**	153.4**

Figure 1: Predicted Performance
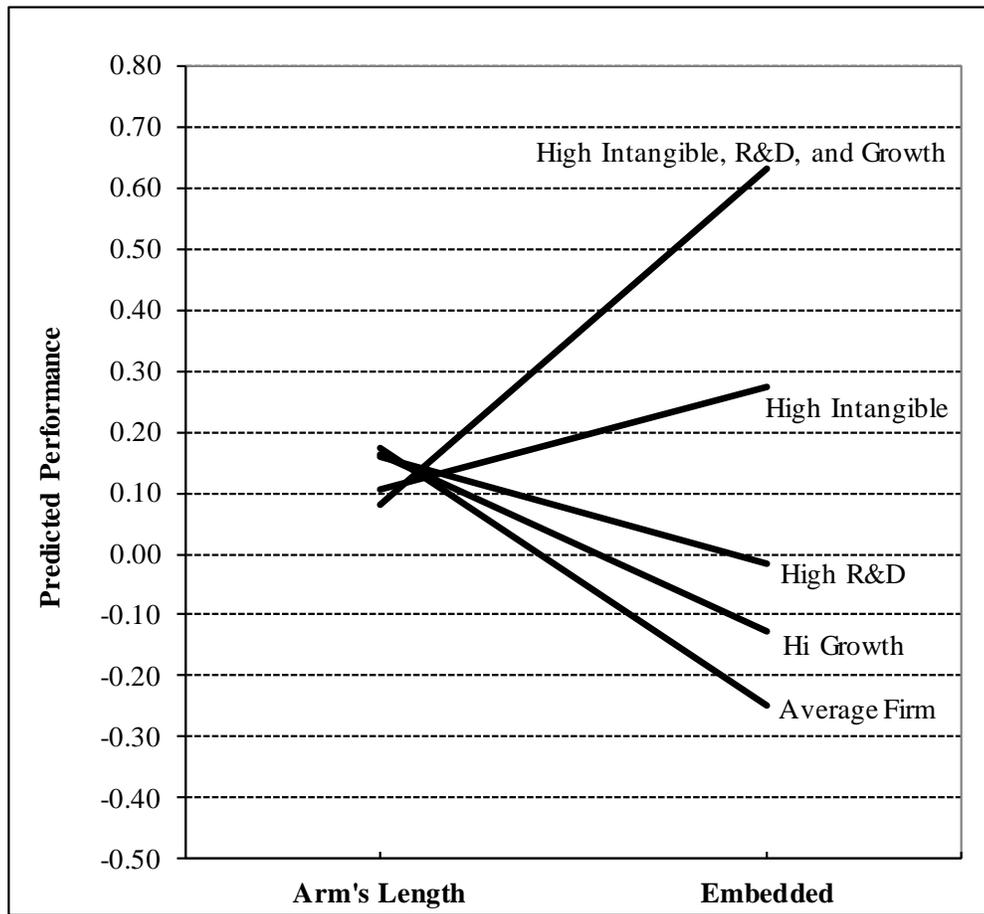
The x-axis plots arm's length versus embedded client-bank relationships, while the y-axis depicts performance, as predicted by Model 5 of Table 2. The lines labeled '*High Intangible*', '*High R&D*', and '*High Growth*' represent firms where the respective variable equaled the mean plus one standard deviation. The line labeled '*High Intangible, R&D, and Growth*' depicts a firm for which all three variables equaled the mean plus one standard deviation. All other variables were held constant at their mean. The line labeled '*Average Firm*' corresponds to a where all variables were set equal to their mean.