How Effective Are Relational Incentive Contracts? Evidence from Entrepreneurial Firms in Russia

Elena Kulchina
Duke University
Fuqua School of Business
elena.kulchina@duke.edu

Joanne Oxley
Rotman School of Management
University of Toronto
oxley@rotman.utoronto.ca

ABSTRACT

We present novel evidence on the use and impact of relational contracting between owners and managers of entrepreneurial firms. Our empirical observations support the intuition that relational contracts are particularly important for foreign entrepreneurs because of the obstacles that they face in observing managers' efforts and enforcing formal contracts. Our results are also consistent with theoretical arguments that relational contracts are most effective when owners and managers place a high value on future dealings (expected profits and growth are high), and short-run gains from opportunistic action are limited (return volatility is low). Finally, our empirical setting allows us to isolate the impact of changes to agents' outside options on the effectiveness of relational contracts. The study adds to our understanding of foreign entrepreneurship and the salience of contracting concerns in entrepreneurs' governance decisions, and contributes to ongoing efforts at redressing the imbalance between empirical and theoretical work on relational contracting.

INTRODUCTION

Economic relations are frequently governed by informal or relational contracts, i.e., 'handshake' agreements that are unenforceable in a court of law, but are instead supported by the threat of termination or exclusion (McCauley 1963). Contexts in which such agreements have been documented and described range from historical trading networks (Greif 1993; Milgrom, North and Weingast 1990) and emerging market business groups (Khanna and Yafeh 2007), to idiosyncratic procurement (Corts and Singh 2004; Ahmadjian and Oxley 2005) and employment relationships (Gillan, Hartzell and Parrino 2009; Gibbons and Henderson 2012; Helper and Henderson 2014). In each of these contexts, participants are thought to resort to relational contracts when writing and enforcing *formal* agreements is costly or infeasible due to missing or inadequate legal supports, or an inherent lack of observability and verifiability in the activities being governed.

While scholars' interest in relational contracts is longstanding, theoretical research really took off in the early 1990s with the application of incomplete contracting theory and game theoretic analysis of self-enforcing agreements (Baker, Gibbons and Murphy 1994; Baker, Gibbons and Murphy 1999). This research stream has generated a variety of nuanced insights into the conditions necessary to support relational contracts and sustain cooperation. Empirical research has lagged significantly, however, particularly for relationships that are internal to the firm – a domain in which relational contracts are thought to play a particularly important role (Gibbons and Henderson 2012). The reasons for this neglect are twofold: First, many of the predictions of theoretical models hinge on relational and activity characteristics that are inherently difficult or even impossible to observe; Second (and relatedly), in contrast to formal contracts, data on relational contracts are rarely maintained in forms that are readily available to researchers. As a result, case studies still constitute the majority of empirical studies in this area, and large-sample evidence on the existence and workings of relational contracts is quite sparse (see Gil and Zanarone 2015, for a recent review).

In this paper we present novel evidence on the use of relational contracts governing the relationship between owners and managers of entrepreneurial firms. More specifically, we focus on the relationship between an entrepreneur who sets up a small business overseas (hereafter, a 'foreign entrepreneur'), and a local agent hired to manage his or her venture. Our empirical sample captures the population of firms founded by foreign *and* domestic entrepreneurs in Russia during the period 1992-2008. This context allows us to assess the prevalence and impact of relational contracts by comparing changes in the relative performance of foreign and domestic owner-managed and agent-managed ventures as labor market and regulatory conditions vary. Our results support the intuition that relational contracts are particularly important for foreign entrepreneurs because of the heightened obstacles that they face in

directly observing managers' efforts and/or accessing the courts to enforce formal contracts. Our findings are also consistent with theoretical models suggesting that relational contracts are most effective in contexts where industry growth creates a substantial 'shadow of the future' and when managers' outside employment options are limited, such that termination of the relationships is more costly. Conversely, relational contracts are apparently *less* effective when high competition in an industry limits the rents available to engage managers' cooperation, and/or where environmental volatility undermines the self-enforcing nature of the agreement.

The remainder of the paper proceeds as follows: Immediately below, we briefly describe the growing phenomenon of foreign entrepreneurship. We discuss the particular challenges that such entrepreneurs face in managing their overseas ventures (either directly or through a local agent), and highlight the limitations of formal contracting in this context. We then summarize some key theoretical findings on the potential for relational contracts to align the interests of owners and managers and close the performance gap between owner-managed and agent-managed firms under different conditions. The details and results of our empirical study are laid out in subsequent sections of the paper, and we conclude by discussing the implications of our study for research and practice.

FOREIGN ENTREPRENEURSHIP

Entrepreneurial firms - small organizations founded by individuals and their families - constitute an important part of many economies. In the United States and Europe, for example, small businesses account for around 90 percent of all firms, employ more than 40 percent of the labor force, and generate over 20 percent of economy-wide sales (Fiscal Policy Institute 2012; Small Business Administration 2014; European Commission 2013). A similar picture can be found in emerging markets: In Russia, entrepreneurs own 95 percent of all business entities, employ a quarter of the labor force and generate almost 30 percent of total sales (Federal State Statistics Service 2012); in Brazil, entrepreneurs are responsible for 20 percent of gross domestic product (GDP) and half of the country's employment (Leme 2014); and in China, close to 99 percent of business entities are owned by entrepreneurs, and these firms account for over half of the country's GDP (Campbell 2004; MarketWatch 2013).

The prevalence and importance of entrepreneurial and family-owned firms has motivated an active stream of management research focusing on their operation and performance (e.g., Dahl and Sorenson 2012; Gomez-Mejia et al. 2007; Hamilton 2000; Kalnins and Chung 2006; Kulchina 2015; Wasserman 2003). Most extant studies in this area start from the premise that entrepreneurs typically manage the firms themselves, particularly in the early years of the venture (see also, Berglann, Moen, Roed, and Skogstrom 2011; Nanda and Sorensen 2010). The advantages of owner-management, relative to delegating

managerial authority to hired agents, are well understood: First and foremost, because agent managers are not 'residual claimants' of the profits and losses generated by their efforts there is the potential for principal-agent conflicts, managerial shirking, and lower performance relative to otherwise-similar owner-managed firms (Jensen and Meckling 1976; Fama and Jensen 1983; Eisenhardt 1989). In addition, the entrepreneur may be the repository of important knowhow that can only be exploited effectively if he or she is directly involved in the running of the business. It is important to note, however, that this second factor may cut both ways, as it may also be the case that agent managers contribute distinct capabilities and resources, particularly if the entrepreneur is inexperienced (Ang, Cole and Lin 2000; Luo and Chung 2013) or is fully employed elsewhere (Chen and Thompson 2012). The presence of such countervailing benefits of managerial delegation are also consistent with the empirical evidence: for example, about 20 percent of small businesses in Europe are agent managed (ORBIS 2013), and a significant number of start-up firms replace owner managers with hired managers at major financing rounds and/or when product development has been completed (e.g., Chang and Shim 2014; Wasserman 2003).

The potential contributions of hired managers likely represent an even more salient issue in *foreign* entrepreneurship, i.e., where an entrepreneur sets up a small business overseas.[1] Foreign entrepreneurs face a particularly vexing dilemma when deciding whether to employ a hired manager or to manage the venture themselves. On the one hand, these entrepreneurs may be quite reluctant to manage their own business since it means relocating to a foreign country, where they are likely to be disadvantaged relative to their domestic counterparts in accessing local resources, navigating regulatory barriers, etc. (Zaheer & Mosakowski 1997).[2] On the other hand, it is also reasonable to believe that difficulties in verifying agent managers' efforts and evaluating their direct influence on firm performance is exacerbated by potentially significant geographic and cultural distance, not to mention the uncertainties surrounding litigation processes in the foreign location (Mezias 2002). As a result, formal incentive contracts are unlikely to be an effective restraint on managerial shirking in this context, thus increasing the expected performance gap between owner-managed and agent-managed firms.

Below, we draw on incomplete contracting theory to assess the relative efficacy of formal and relational contracts in overcoming principal-agent conflicts arising between foreign and domestic entrepreneurs and their hired managers. We then derive implications and develop hypotheses about the

[1] Like domestic entrepreneurship, foreign entrepreneurship is an important and growing phenomenon. Foreign entrepreneurs reportedly own almost 20 percent of small businesses in the United States and employ almost 5 million people (Fiscal Policy Institute 2012), and similar trends are observed in Europe and elsewhere (Segreti 2009; Centre for Entrepreneurs and DueDil 2014).

[2] See Kulchina (2015) for more on the role of personal preferences in entrepreneurs' location choices.

relative performance – and thus the likely prevalence – of foreign owner-managed and agent-managed entrepreneurial firms under different economic and regulatory conditions.

THE ROLE OF FORMAL AND RELATIONAL CONTRACTS IN OVERCOMING PRINCIPAL-AGENT CONFLICTS BETWEEN FOREIGN ENTREPRENEURS AND HIRED MANAGERS

Theoretical Background

A principal-agent conflict arises when the interests of a hired manager (the agent) diverge from those of the firm owner (the principal), for example, because the manager favors the pursuit of leisure or the consumption of perquisites over actions that maximize firm profits (Jensen and Meckling 1976). Such principal-agent conflicts may be partially mitigated through the implementation of an appropriate formal incentive contract involving the payment of a bonus that is contingent on the manager following the specific action plan mandated by the owner and/or on the realization of specified outcomes; the contract is enforced by the threat of litigation and court-imposed damages in the event that the owner fails to make the contingent payment once the manager has performed as required.

In practice, formal incentive contracts cannot deliver the 'first best' profit-maximizing solution because owners are unable to perfectly monitor managers' actions and it is infeasible to contract for *all* relevant future contingencies that may mediate the link between managerial action and outcomes (Baker, Gibbons and Murphy 1994). Nonetheless, under many conditions, an acceptable 'second best' solution can be found, with a contract based on contractible but imperfect performance measures. And although such a contract may induce too much or too little effort in some states, or induce the agent to misallocate effort across tasks (Holmstrom and Milgrom 1991), it nonetheless yields positive returns for both the principal and his or her agent in many contexts, allowing for the effective separation of ownership and managerial control (Fama and Jensen 1983).

In situations where legal enforcement of contracts is problematic, where managerial effort is to a large extent unobservable, and/or where the relationship between effort and firm performance is non-verifiable, the performance gap between first best and second best arrangements increases dramatically; in the extreme, formal contracting may become infeasible in the face of these impediments. As a growing body of research suggests, however, it is in just such contexts that relational (informal) contracts may emerge as an alternative solution to the principal-agent problem described above.

In a relational contract, an agent promises to exert effort or take specific actions in exchange for a *discretionary* performance-related bonus or ongoing rent sharing arrangement, such as payment of an above-market salary (Levin 2003). Here, the assumption is that while an agent's effort and performance

may be partially observable to the principal, neither effort nor performance is verifiable in court, and the only recourse available to the owner in the event of agent 'underperformance' is termination of the relationship; similarly, if an owner fails to deliver on his or her rent-sharing promise, the agent has no recourse to the courts, and must simply vacate the position in favor of an alternative employment opportunity. By modeling a relational contract as the equilibrium of a repeated game between a principal and an agent it can be shown that as long as enough value is created in an ongoing relationship – and if the fall-back option is not 'too good' – then incentives for positive effort can be provided. Under these conditions, the temptation for either party to renege in the current period is smaller than the expected present value of the future net surplus generated by the relationship - i.e. the value that would be foregone were the relationship to be terminated (Baker et al. 1994) – and hence cooperation is sustained.

Compared with a formal contract, a relational contract will typically be more costly because economic rents must be shared with managers in order to engage their cooperation (Levin 2003). As a result, formal contracts will be preferred in contexts where contracting costs are sufficiently low. However, when contracting costs are high (due to the contracting impediments discussed above) relational contracts will be preferred, since they do not rely on third-party verification and are less distortionary with respect to the allocation of effort across tasks.

Taken as a whole, extant theoretical work in relational contracting points to a range of circumstances in which we would expect relational contracts to be more or less effective, and thus where firm owners are more or less likely to opt for such arrangements. In the section below, we build on these theoretical arguments and draw out implications for the behavior and performance of foreign entrepreneurial firms under varying institutional and economic conditions.

Hypothesis Development

In developing our hypotheses, we proceed from the basic premise that foreign entrepreneurs rely heavily on relational contracts in their employment relationships with local agent managers – both in absolute terms and relative to their domestic counterparts, *ceteris paribus*. This claim rests on well-accepted evidence that foreign entrepreneurs face elevated monitoring and litigation costs associated with geographic, cultural, and institutional distance (Zaheer 1995; Zaheer and Mosakowski 1997; Mezias 2002; Eden and Miller 2004). As a result, formal contracting for foreign entrepreneurs is significantly more

costly than for otherwise similar domestic firms, and employment contracts between foreign entrepreneurs and their agent managers must be essentially self-enforcing.[3]

Building on this premise, we link the effectiveness of relational contracts to different aspects of industry structure and economic conditions and draw out implications for the likelihood that foreign entrepreneurs will hire an agent manager (versus managing the venture themselves) in a particular industry / geographic region. We also consider how, according to extant theory, ex-post changes in economic conditions may enhance or undermine the effectiveness of relational contracts, thus changing the relative performance of owner-managed and agent-managed firms.[4] In this way we aim to generate evidence on the existence of relational contracts between foreign entrepreneurs and their agent managers and test some key predictions from relational contracting models, even in the absence of detailed information on employment contracts themselves. As a further point of comparison, we compare the predicted effects generated by relational contracting models with the effects that would be expected in the presence of *formal* incentive contracting between entrepreneurs and agent managers – something that we argue will be more relevant for domestic entrepreneurs.

As discussed above, the self-enforcing property of relational contracts rests on the disciplining effect of the so-called 'shadow of the future' (Axelrod 1984). In particular, for a relational contract to effectively align the incentives of foreign entrepreneurs and their agent managers, both parties must anticipate strictly positive profits from their future dealings. In contexts where free entry competes away all profits, relational contracts are predicted to be infeasible as there is no economic rent or surplus for the owner to share with the agent (Malcomson 2013). More generally, the size of available rents impacts the effectiveness of a relational contract because, as Levin (2003: 837) observes, "if a relationship does not generate a great deal of surplus, the terms of the relational contract will be quite rigid. In contrast, if the relationship is more productive, there will be scope to fine-tune performance to current conditions."

For relationships between foreign entrepreneurs and their agent managers, the implications of this 'positive surplus' condition are quite straightforward: First, with intense competition, expectations about future profits are low; as a result, incentives for the two parties to defect with respect to bonus payments or costly effort are increased (all else equal), and relational contracts are more likely to break down.[5] Second,

[3] See discussion on pages 21-22 for more on foreign entrepreneurs' access to courts and relative contracting costs for domestic versus foreign entrepreneurs in Russia and elsewhere.

[4] This approach aligns with the recommendation of Gil and Zanarone who, noting the difficulty in measuring informal contracts directly, suggest that "existing theories may predict patters that are unique to informal contracting environments, and hence can be used to develop indirect empirical tests that may be performed using more conventional data on contracts and outcomes" (2015: 3).

[5] The effect of increased competition on agent managers' incentives to defect may be muted if human capital is industry specific, such that an increase in competition also reduces the value of managers' outside employment

since the value of future dealings relative to current payoffs associated with defection also depend on the growth rate of returns, we would expect that relational contracts will be *more* effective in industries experiencing a high rate of growth in demand (i.e. revenues). Finally, high variability or uncertainty of returns also may undermine the self-sustaining nature of relational contracts, as high variance can lead to extreme situations that increase the short-run gains from reneging on agreement terms (Gillan et al. 2009; Malcomson 2013).

All of the above industry characteristics – level of competition, revenue growth, and return variability – should be readily observable to entrepreneurs planning new business ventures, allowing them to assess the likely effectiveness of relational contracts in their target market. Thus, given that foreign entrepreneurs rely primarily on relational contracts in dealings with their agent managers (as argued above), they can be expected to take these factors into consideration when deciding whether to manage the new venture themselves or to hire an agent manager. This reasoning leads to our first set of testable hypotheses:

H1 –The higher the level of competition in the target industry the less likely a foreign entrepreneur is to hire an agent manager (versus managing the new venture him/herself).[6]

H2 – The higher the revenue growth in the target industry the more likely a foreign entrepreneur is to hire an agent manager.

H3 – The higher the variability of returns in the target industry the less likely a foreign entrepreneur is to hire an agent manager.

Compared with relational contracts, *formal* contracts are less sensitive to the size and variability of current versus future returns: as long as monitoring and enforcement costs are not 'too high,' the courts can provide appropriate discipline even in the event that changing conditions increase the parties' incentives to renege on the terms of the agreement. Thus, if we are correct in our belief that domestic entrepreneurs rely on formal contracts to a significantly greater extent than their foreign counterparts, we should expect that the above hypothesised effects will be weaker – possibly even to the point where they are empirically unobservable - for domestic entrepreneurs.

Hypotheses H1-H3 all relate to conditions in the product market in which an entrepreneur plans to compete. However, the effectiveness of relational contracts is also expected to vary with conditions in the

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options. However, this is unlikely to be the case in the industries represented in our study - see footnote 7, below, and also discussion leading to hypothesis H4.

[6] This and all other hypotheses rely on *ceteris paribus* conditions

labor market – and more specifically in the market for agent managers. For example, one of the foundational results emerging from relational contracting models is that the equilibrium split of rents between the principal (owner) and the agent (manager) varies significantly with the outside employment options available to the agent. In particular, relational contracts are predicted to be most effective (in the sense of inducing maximum effort at minimum cost) when there is an 'excess supply' of potential agents such that the outside employment options of current managers are limited (MacLeod and Malcomson 1989). The intuition behind this result is quite straightforward: If candidates for the agent manager job are abundant and/or the current manager's alternative employment opportunities are few, then the threat of termination is sufficient to discipline the manager even in the absence of above-market wages, and the owner of the firm retains all economic rents. In this case, the performance of an agent-managed firm will approach that of an otherwise-similar owner-managed firm.

In practice, it may be quite difficult for foreign entrepreneurs to observe (and researchers to measure) the supply of suitable candidates for a particular agent manager position at the time a business is founded and/or to predict the change in supply over time.[7] However, the above arguments also have clear implications for the relative performance of owner-managed and agent-managed firms in the event of *ex post* changes in labor market conditions. In particular, we should expect that as the supply of potential agent managers rises or – equivalently – managers' outside employment options fall, then the performance of agent-managed entrepreneurial firms will also rise relative to that of otherwise-comparable owner-managed firms.[8] This leads to our final hypothesis:

H4 – Among foreign entrepreneurial firms, a decrease in the availability of outside employment options increases the performance of agent-managed firms relative to that of owner-managed firms.

Once again, if we compare domestic entrepreneurs with their foreign counterparts, we should expect that the impact of a change in agents' outside employment options will be weaker, since the entrepreneur will be bound by the terms of the formal employment / incentive contract signed at the time that the agent was engaged, and thus bonuses cannot as easily be adjusted according to contemporaneous changes in the 'market for agents.' It is nonetheless the case that the terms of formal incentive contracts are also conditioned on agents' outside options (Shapiro and Stiglitz 1984) and, as such, we can expect the performance of agent-managed firms owned by domestic entrepreneurs to also improve relative to owner-

[7] This is particularly true given that entrepreneurial firms tend to be concentrated in relatively 'low tech' sectors such as retail and wholesale trade or services (see, e.g., data description on p. 11). As such, potential agent managers may be drawn from both within and beyond the firms' immediate industry / product market.

[8] While the theoretical models are silent as to the exact mechanism through which this adjustment occurs, it could come through renegotiation of a manager's salary, adjustment of informal bonus payments, or even increased effort on the part of the manager (and thus a decrease in the *de facto* hourly wage).

managed firms as outside employment opportunities decrease, but to a lesser extent than is the case for foreign entrepreneurs.

In the next section we describe the empirical study testing these hypotheses in the context of foreign entrepreneurship in Russia.

EMPIRICAL ANALYSIS

Data

The population of interest for our empirical analysis comprises all foreign and domestic entrepreneurial firms founded in Russia between 1992 and 2008.[9] Following prior studies (e.g., Aldrich and Waldinger 1990; Sorensen 2007), we define an entrepreneurial firm as a small business owned by one or more individuals.[10] The *foreign* entrepreneurial firms in our study are also owned by individuals – in this case foreign nationals – and our empirical sample thus excludes subsidiaries of multinational firms.

Our data come from Ruslana, a segment of the Bureau van Dijk Amadeus database containing financial and other information on firms operating in Russia. This and related Bureau van Dijk databases such as ORBIS have been extensively used in management research (e.g., Belenzon, Berkovitz, and Rios 2013; Bloom, Kretschmer, and Van Reenen 2011; Kulchina 2015). As with ORBIS, the Ruslana database encompasses both public and private firms, and data are compiled from government filings and annual reports.[11] After removing firms with missing data, zero revenues, obvious reporting errors, and outliers,[12] we have an unbalanced panel dataset comprising 3,772 foreign entrepreneurial firms and 14,974 domestic (Russian) entrepreneurial firms. The sectoral distribution of these two samples is quite similar: 58 (61) percent of the foreign (domestic) firms are engaged in retail and wholesale trade, 18 (10) percent in

[9] The beginning of this period coincides with the dissolution of the Soviet Union. Because the first year of coverage of the Ruslana database is 1997, most of the measures used in our analysis are unavailable for the period 1992-1997 (with the exception of year of establishment, founder information, etc.) In the results reported below we use 1997 data in place of founding year data for firms established prior to 1997. Removing firms founded before 1997 (187 foreign-owned firms and 436 domestic firms) produces materially identical results.

[10] We follow the US Small Business Administration (SBA) definition and limit our attention to firms with a maximum of 500 employees. 88% of the foreign entrepreneurial firms in our sample actually have fewer than 50 employees (i.e. they also fall within the EU definition of small firms as established in EU recommendation 2003/361). Analysis of the reduced sample of firms with <50 employees yields almost identical results, with the one notable exception being that revenue growth is not significantly related to the presence of an agent manager in this sample. (Results available from authors on request)

[11] These filings generate consistent data across public and private firms in the Ruslana database because both public and private firms are required to submit the same annual reports in Russia.

[12] We removed the top and bottom 1 percent of observations based on OROA. Robustness tests show that our results are not sensitive to this cutoff; we also obtain consistent results if we include firms with zero revenues throughout the sample period (Results of these and all other robustness tests reported in the paper are available from the authors on request).

services, 12 (13) percent in manufacturing, 8 (11) percent in construction, and 4(5) percent in other industries. Both samples are also quite heterogeneous in terms of firm age and size, but Russian-owned firms are on average larger and older than foreign-owned enterprises: the average foreign firm in the sample is 3 years old and has 26 employees, while the average domestic firm is 6 years old and has 62 employees.[13] Given these differences in the two populations, for most of the analyses reported below we report results for a subsample of 5,247 Russian-owned entrepreneurial firms that are matched with firms in the foreign sample on key observables, most importantly, founding year, assets, location, sector, and first observation year.[14]

In addition to the usual income statement and balance sheet data, the Ruslana database provides information on the identity and nationality of firm owners, as well as the names of senior managers. We are therefore able to distinguish firms with owner managers and hired agent managers, and identify the nationality of firm owners and managers. We define a firm as being owner-managed when its CEO is also a shareholder with a minimum 20 percent ownership share;[15] an agent-managed firm is one for which the CEO is not a shareholder. There are no cases in our data in which a firm's management status (owner-managed or agent-managed) switches during the sample period.

Consistent with the claimed benefits of owner-management, we see that a substantial majority of the Russian (domestic) entrepreneurial firms are owner-managed according to our definition: 70% of domestic firms in both the complete sample and the matched sample are owner-managed. A somewhat smaller proportion of the foreign entrepreneurs in our data – 58 percent – also manage their own firm; the rest employ Russian agent managers, consistent with arguments that foreign entrepreneurs typically prefer

[13] The higher average age of domestic entrepreneurs primarily reflects the fact that Russian citizens began to found entrepreneurial ventures immediately after the dissolution of the Soviet Union and the opening up of investment opportunities, whereas foreign entrepreneurial firms took longer to appear. The domestically-owned firms also tend to have a slightly higher survival rate than foreign-owned entrepreneurial ventures in the sample.

[14] We construct the matched sample using a coarsened exact matching (CEM) method (Blackwell et al 2009). Foreign and domestic firms are matched using the following criteria: year of founding; 2-digit industry; region; assets and age when first observed in our data (usually the first year of positive revenues, except for firms founded before 1997, as discussed in footnote 9). The number of domestic firms matched with each foreign firm (and vice versa) depends on the number of firms from each category that are in the same 'strata,' based on the automated CEM data coarsening algorithm (Blackwell et al. 2009: 527). The results reported in the paper are based on the complete sample of foreign-owned firms and the matched sample of domestic firms; restricting the foreign-owned sample to those with positive domestic firm matches produces materially identical results. Removing the matching restriction on the domestic sample (i.e. using the entire sample of Russian-owned entrepreneurial firms) also produces very similar results; minor differences are reported in footnotes below.

[15] This is the lowest (most conservative) equity share threshold used to identify owner-management in the prior literature, (see, e.g., Villalonga and Amit 2006). The results reported below are robust to increases in this threshold up to and including 100 percent ownership. There are no managers in our sample with minority shareholdings below the 20 percent threshold, suggesting that entrepreneurs in Russia rarely if ever grant equity to hired managers as part of an incentive contract. See Kulchina (2015) for complete details of the procedure used to identify owner-managers and their agents.

domestic agent managers for their superior local knowledge. For foreign owners, the most common home country is China (17%), followed by Belarus (14%), Turkey (11%), India (5%), Ukraine (4%), Germany (4%), the United States (3%), and Italy (3%). This distribution highlights the role of distance (geographic, cultural, and institutional) in entrepreneurs' decisions to establish a foreign venture, a pattern that has been well-documented in other contexts (e.g., Ghemawat 2007).

Methods & Variables

Empirical testing of hypotheses H1 to H3 requires estimation of managerial choice (selection) models linking extant product market conditions to a foreign entrepreneur's decision to hire an agent manager versus managing the business him/herself. For this analysis we estimate a series of probit models using data for each firm in the year in which it first appears in our dataset (i.e. the first year of positive revenues), with the following general specification:

$$Pr(Agent_i = 1) = \beta_0 + \beta_1 X_{jr} + \beta_k Z_{ik} + C_i + Y_t + \varepsilon_i, \quad (1)$$

The dependent variable in these models, $Agent_i$ is a dummy variable equal to 1 for agent-managed firms (as defined above); $Agent_i$= 0 for ventures that are managed by the entrepreneur him/herself; X_{jr} is a vector comprising the independent variables featured in hypotheses H1 to H3; Z_{ik} is a vector of *k* control variables, C_i and Y_t are country of origin and observation year dummies respectively; ε_i is an error term; *i* is the firm; *t* is the year when the firm is first observed in the dataset; *j* is the industry; *r* is the region where the firm is located in Russia, X_{jr} are measured at time t-1; all other variables are measured at t.

It is reasonable to believe that the small entrepreneurial firms in our sample compete primarily with peer firms in their local area. For hypothesis H1 we therefore construct a measure of local industry concentration based on the total population of entrepreneurial firms (both domestic and foreign-owned) operating in the same geographic region.[16] More specifically, we calculate a Herfindahl–Hirschman index (HHI) for each industry within a focal region, based on firm revenues, with industries defined at the 2-digit industry classification level. [17] HHI can range from 0 to 1 and an increase in HHI implies a *decrease* in competition. From this we create a dummy variable ***High Competition,*** set equal to 1 for industry-

[16] As defined here Russian regions typically include several cities and are close in size to U.S. states. The full sample of domestic plus foreign entrepreneurial firms in the region is used in the construction of the competition measure (i.e., not only the matched sample for domestic firms).

[17] We use Russian 2-digit okved codes for industry indentification: okved is a Russian industry classification system comparable to ISO.

regions where HHI < 0.15.[18] This and all other independent variables in our selection models are evaluated in the year prior to the first appearance of the focal firm in our dataset, under the assumption that the decision about whether or not to hire an agent manager is likely to be one of the first decisions that a foreign entrepreneur makes upon starting a new venture.

For hypothesis H2, we construct a variable, ***Growth*** based on revenue growth in the industry over the five year period preceding firm entry. More specifically, we calculate the mean value of firm-level revenue growth for all entrepreneurial firms in the focal firm's industry-region over the five year period, t-5 to t-1 (where t is the first year the firm appears in our data). Similarly, for hypothesis H3, focusing on the variability of returns, we calculate the standard deviation of firm-level operating return on assets (OROA) over the window t-1 to t-5 and average this across firms in the focal industry and region. ***Variability,*** like *Growth* and *Competition*, is therefore evaluated at the industry-region-year level.

Our final hypothesis H4, linking *ex post* changes in labor market conditions to the relative performance of owner-managed versus agent-managed firms, poses some additional empirical challenges. As discussed above, incomplete contracting theory implies a process of endogenous matching between firm and industry characteristics and the decision to employ an agent manager. This means that simple regression analysis of performance differences across a pooled sample of owner-managed and agent-managed firms is likely to generate biased estimates and will not yield valid causal inferences. To address this problem, we identify an exogenous policy change (described in more detail below) that resulted in a significant decrease in the outside employment opportunities for agent managers in some regions within Russia, but not in others. We then estimate a 'difference in differences' model to compare the change in performance of the 'treated group' - agent-managed firms in affected regions – with two control groups: firms with owner managers in the affected regions, and agent-managed firms in unaffected regions. Since the policy shock occurred years after the establishment of the entrepreneurial ventures in our sample, we can safely assume that the anticipated change in policy was not a factor in owner-management versus agent-management decisions.

[18] This corresponds to the threshold level of concentration commonly adopted in antitrust laws as an indication of potentially harmful market power among incumbents. See, for example, U.S. Department of Justice and Federal Trade Commission merger guidelines (http://www.justice.gov/atr/horizontal-merger-guidelines-08192010.) Changing the threshold level to 25% in our analysis does not materially change the empirical results; using the continuous HHI measure also generates consistent results but with slightly lower significance, possibly reflecting the presence of a non-linear relationship between concentration and industry rents (see, e.g., discussion in Cunat and Guadalupe (2005).

The dependent variable for this analysis is firm performance as measured by operating return on assets (***OROA***), i.e., earnings before interest and tax divided by total assets.[19] The exogenous policy shock around which we focus our analysis is a January 2009 change in Russian import policy that resulted in a wave of small business closures and a significant increase in job market competition among small business management professionals. The policy change in question increased customs duties on imported used cars, which at that time constituted approximately 20 percent of Russian car sales, the majority coming from Japan and Europe. The impact of the policy change was quite dramatic: Russian car imports went down by 73 percent in 2009, leading to the closure of a large number of importing firms and dealerships - primarily small entrepreneurial firms concentrated in the border regions. In addition, the general unemployment rate in regions with the highest per-capita auto imports increased significantly, relative to average employment in regions less affected by the policy change.

In our analysis, we focus on changes in the performance of firms in our sample in 2008—the year preceding the policy change. Due to extensive media coverage in 2008, the increase in import duties and likely employment consequences were widely anticipated and quite well understood.[20] Since car importing firms employed a variety of professionals, including managers, interpreters, salesmen, and advertising and IT specialists, firm closures were expected to increase competition for jobs in many industries. By focusing on changes in firm performance in 2008, we are able to observe the impact of this anticipated change in managers' outside employment options *before* any direct impact on firm profits could occur. To ensure that we are observing the effect of anticipated changes in job market competition rather than direct impacts on profitability we drop the auto-trading industry from this analysis, since the impending policy change may have had an immediate adverse impact on these firms (and domestic entrepreneurs may have been better positioned to exploit any potential loopholes in the regulation).

We take advantage of the localized impact of the policy change described above, and divide our sample firms into those in affected and unaffected regions. Affected regions comprise the seven regions within Russia having the highest per capita auto imports in 2008 (top 10% of the distribution). [21] Hypothesis H4 implies that the performance of agent-managed firms from the affected regions will increase after the shock relative to both firms with owner managers in the affected regions *and* agent-

[19] This measure of performance has also been used in related prior research (e.g., Anderson and Reeb 2003). In robustness tests, we also examine an alternative dependent variable, the natural log of operating costs, ***ln(cost)*.**
[20] Consultation of relevant Russian media and online discussion groups yielded substantial evidence that the new duties were anticipated, and consequences for the local economy were discussed extensively.
[21] The affected regions are Kaliningrad, Primorsk, Sakhalin, Belgorod, Rostov, Kaluga, Lipetsk, Leningrad and Moscow regions. The unemployment rate in these seven regions increased on average by 7% in 2009, relative to the rate in unaffected regions. Moscow city and St. Petersburg also had high car imports in 2008, but these were primarily imports of new cars and the policy change had little impact on employment in these cities.

managed firms in the unaffected regions.[22] We therefore estimate the following difference-in-difference-in-differences model:

$$OROA_{it} = \beta_0 + \beta_1 Agent_i \times Affected_r \times Year2008 + \beta_2 Affected_r \times Year2008 + \beta_3 Agent_i \times Year2008 + \beta_k Z_{ikt} + Y_t + \varphi_i + \varepsilon_{it}\,, \quad (2)$$

In addition to the variables defined above, here $Affected_r$=1 indicates that region *r* in which focal firm *i* is located is one of the regions affected by the change in import duties (0 otherwise). $Year2008$=1 for observations in 2008, i.e., the year immediately prior to the change in import duties. Firm fixed effects (φ_i) capture any direct impact on firm performance of agent- versus owner-management, industry, and region, as well as interactions among these time-invariant characteristics. Hypothesis H4 implies a positive and significant coefficient for the three-way interaction term, $Agent_i \times Affected_r \times Year2008$.

The vector of control variables (Z_{ikt}) included in all regressions captures a range of firm characteristics that may simultaneously influence manager choice and firm performance (See, e.g., Anderson and Reeb 2003; Villalonga and Amit 2006; Kulchina 2015). These include logged values of assets, revenue, debt, and age, as well as the number of shareholders. Table 1 displays firm-level variable definitions and descriptive statistics for the complete samples of foreign-owned and Russian-owned entrepreneurial firms, and also for the matched sample of Russian-owned firms (Panels (a) to (c) respectively); Panel (d) provides summary statistics for industry-region level variables. Table 2 reports correlation matrices for all key variables for the foreign-owned and matched Russian-owned samples.

Insert Table 1 about here

Insert Table 2 about here

Results

The decision to hire an agent manager

Our first set of empirical results is presented in Table 3a. This series of probit models yield estimates of the likelihood that a foreign entrepreneur chooses to hire a local agent (versus managing the

[22] There are no significant differences between the treated and control groups on other variables of interest or pre-treatment trends.

company him/herself), as a function of industry conditions at the time of entry; Table 3b displays parallel results for the matched sample of Russian-owned ventures.

Insert Table 3a about here

Insert Table 3b about here

Looking first at Table 3a, we find empirical results consistent with each of our hypotheses H1-H3: entered separately (models 1-3) the coefficients on each of the industry-level variables of interest – *High Competition*, *Growth* and *Variability* – are in the expected direction and are statistically significant at the 5% level or better. The sign of the effects remains unchanged when the variables are included together in the regression (model 4), although the magnitude and significance of the coefficients change somewhat, with *Variability* dropping below conventional levels, reflecting the nontrivial correlation among the variables. The size of the effects is also quite large: for example, holding all other variables at their means and switching the *High Competition* variable from zero to one decreases the probably of employing an agent manager from 44.6% to 37.5%. The effect of a +/- standard deviation change around the mean for either *Growth* or *Variability* has an effect of a very similar magnitude.[23] Taken together these results thus suggest that, consistent with our hypotheses, foreign entrepreneurs in our sample are significantly more likely to employ an agent manager when they enter local industries where we would expect relational contracts to be more effective – i.e., in industries that are relatively less competitive, where revenue growth is higher and / or where the variability of returns is lower.

Comparing results for foreign and Russian firms reinforces our claim that foreign entrepreneurs rely on relational contracts to a greater extent in their relationships with agent managers than do their domestic counterparts. The patterns observed in the matched domestic sample (Table 3b) contrast quite starkly with those in Table 3a: none of the independent variables of interest carry significant coefficients in these regressions, and their directionality is unstable, sometimes running counter to the hypothesized direction. At the same time, coefficients for most other control variables are quite consistent across the two samples.[24] In the robustness section, below, we discuss possible alternative explanations for the

[23] Specifically, moving from one standard deviation below to one standard deviation above the mean for *Growth* or *Variability* with all other variables held at their mean changes the probability of employing an agent manager from 36.7% to 45.1% and from 45.8% to 35.3% respectively.

[24] The most notable difference with respect to control variables is the negative and significant sign associated with the number of shareholders. At first glance this effect appears to run counter to predictions of principal-principal agency models (see, e.g. Young, et al, 2008). However, it is important to keep in mind that the median number of owners / shareholders in the sample firms is 2, with shares typically divided equally among the owners; 95% of our

observed lack of sensitivity to industry conditions in domestic entrepreneurs' decision to hire an agent manager.

Taken together the results of our analysis of industry structure and economic conditions at the time of entry suggest that the ability to discipline agents via relational contracts is a highly salient issue for foreign entrepreneurs choosing whether to manage the firm themselves versus hiring a local agent. The results are also quite consistent with theoretical arguments that relational contracts are most effective when owners and managers place a high value on future dealings (because revenue growth is high and the industry is sufficiently concentrated that rents are unlikely to be competed away), and short-run gains from opportunistic action are limited (because the variability of returns is low).

Agents' outside employment options and the relative performance of owner-managed and agent-managed firms

We now shift our attention away from *product* market conditions and examine the link between *labor* market conditions and the effectiveness of relational contracts. In particular we analyze the impact of an exogenous change to agent managers' outside employment options on the relative performance of agent-managed and owner-managed firms (H4). As a precursor to this analysis we first establish some baseline estimates comparing the *average* performance of owner-managed and agent-managed firms across the sample period - albeit recognizing that these estimates, generated by simple OLS regressions, may be biased due to the endogenous-matching process discussed above. These OLS results, displayed in Table 4, suggest that there is indeed a nontrivial and persistent 'performance gap' between agent-managed and owner-managed firms, with agent-managed firms consistently under-performing otherwise-comparable owner-managed firms over the sample period. This is true for foreign and domestic entrepreneurs alike: while the gap is slightly larger for foreign-owned firms (2.1 percentage points) than for domestic firms (1.3 percent), this is not a statistically significant difference, given the within-sample variance. The results are nonetheless consistent with the general argument that the performance of agent-managed firms is limited by agency costs that are only partially remediable through appropriate contract design. They are also suggestive of the additional distance-related costs incurred by foreign entrepreneurs when they employ agent managers – and of foreign entrepreneurs' willingness to bear these costs so as to avoid the necessity of relocating to manage the business themselves (Kulchina 2015).

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sample firms have fewer than 4 shareholders. As such, protection of minority shareholders (the central issue in principal-principal agency models) is unlikely to be a major concern. A more intuitive explanation here is that increasing the number of owners (shareholders) increases the pool of potential owner-managers.

To further examine and better identify the causal mechanisms underlying these observed performance gaps we turn to our difference-in-differences analysis and examine the impact of an exogenous shock to agents' outside employment options on the relative performance of owner-managed and agent-managed firms.

Insert Table 4 about here

Table 5a presents the results of this diff-in-diffs analysis for foreign-owned entrepreneurial firms. The sample in the fully-specified model (Model 1) includes agent-managed and owner-managed firms located in both affected and unaffected regions. These results indicate that there is a large and statistically significant increase in the relative performance of firms in the treated group (agent-managed firms in the affected regions in the year immediately preceding the policy change) relative to untreated groups: the coefficient on the three-way interaction term in Model 1, *Agent-managed* X *Affected* X *Year2008*, is positive and significant, while the coefficients on each of the two-way interaction terms (*Affected* X *Year2008* and *Agent-managed* X *Year2008*) is statistically insignificant and much smaller in magnitude. This indicates that the only firms to benefit significantly from the shock to agent managers' outside employment options were indeed those firms that were located in the affected region *and* in which owners employed agent managers rather than managing the business themselves.

Insert Table 5a about here

Models 2 to 4 explore this result further by comparing the change in firm performance across different treatment and control groups (in each case assessing change around the time of the policy shock): Model 2 compares agent-managed firms in the affected regions with agent-managed firms in unaffected regions; Model 3 compares owner-managed firms in affected regions against owner-managed firms in unaffected regions; and Model 4 compares agent-managed versus owner-managed firms in affected regions only. These results are quite illuminating. The coefficient on *Affected* X *Year2008* in Model 2 implies an increase in OROA of 7 percentage points for agent-managed firms in affected regions relative to agent-managed firms in unaffected regions. This result provides strong support for the argument that the negative shock to managers' external employment options strengthened the disciplining effect of relational contracts between owners and agent managers. This inference is bolstered by the fact that we see no similar improvement in the performance of *owner*-managed firms in affected regions relative to those in unaffected regions (Model 3). Indeed, Model 4 results show that, within affected regions, the performance of agent-managed firms increased by almost 15 percentage points relative to firms with owner managers in

the face of the policy shock. Additional calculations (details available upon request) suggest that this increase was sufficient to completely close the performance gap between owner-managed and agent-managed firms in these regions during 2008.

Turning to the analysis of domestic entrepreneurial firms (Table 5b), we once again see a much weaker response: The direction of the estimated effects in this matched sample of Russian-owned firms is the same as those observed in our analysis of foreign-owned firms, but the coefficients are statistically insignificant and their magnitude is several times smaller (e.g., a three-way interaction effect of 4.4 percent for domestic ventures versus 14.4 for foreign firms).[25] This is consistent with our claim that domestic entrepreneurs are much more likely to rely on formal contracts in their relationships with agent managers, and that these contracts are less sensitive to (and slower to respond to) changes in agents' outside employment options.

Insert Table 5b about here

Robustness tests and alternative explanations

Taken as a whole, the results reported above provide substantial empirical support for our hypotheses derived from theoretical models on the emergence and sustainability of relational contracts. To further probe these results, we undertook a series of robustness tests. These tests (summarized below; results available from the authors on request) indicate that our results are quite robust to a variety of alternative measures and model specifications. For example, with respect to the decision to hire an agent manager, we generated very similar results on the link between industry conditions and the likelihood of agent-managed firms for models using (i) a continuous measure of industry concentration and (ii) lagged industry (pre-tax) profits in place of our high competition indicator variable.[26] We also found very similar results using *contemporaneous* values for *High Competition, Revenue Growth* and *Variability* in place of lagged values; two-year lags also produce coefficients of similar magnitude, although the precision of the

[25] Model estimation using a combined sample of foreign and domestically-owned agent-managed firms in the affected regions provides further confirmation of this result (not shown; available on request): the performance of foreign-owned agent-managed firms increased by an average of approximately 7.5% relative to comparable domestic-owned firms in the year preceding the policy change.

[26] Both of these changes resulted in slightly less precise estimates (10% significance level). While the robustness of our results to the use of the lagged profit measure is comforting, we believe that concentration ratio provides a better proxy for the level of competition in this context, since rent sharing with agent managers by incumbents may place a downward bias on net industry profits in precisely those industries where we would expect foreign entrepreneurs to opt for agent managers.

estimates is reduced, such that *Revenue Growth* and *Variability* are no longer significant at conventional levels.[27] Finally, we tested the robustness of all of our results to a variety of other specification changes, for example dropping assets from the set of control variables, and controlling for firm size with employment instead of assets and revenue. None of these changes had a material effect on the main results.

With respect to the impact of ex post changes in agents' outside employment options, we re-estimated the regressions in Table 5a focusing in on subsamples of firms likely to be most strongly affected by the policy change – i.e., firms operating in the auto sector, and/or very small firms with less than 20 employees. In each of these cases the effect sizes were larger than in the full sample, providing additional support for our arguments; as before, similar analysis of the matched domestic sample generated effects that were substantially smaller in magnitude and statistical significance. We also generated consistent results using the log of operating costs as an alternative dependent variable, but found no equivalent effect of the anticipated policy change on revenues. Together these results suggest that, as predicted, firm owners indeed respond to the tighter managerial labor market by reducing discretionary payments to their agent managers (and perhaps to other employees).

As discussed earlier, a key assumption underlying our analysis is that foreign entrepreneurs rely heavily on relational contracts in their dealings with agent managers, while domestic firms are more likely to use formal contracts (instead of or as a complement to relational contracts). This assumption in turn rests on the observation that foreign owners typically face significantly higher monitoring costs than their domestic counterparts and – crucially – are unable to rely on the courts for contract enforcement. A substantial body of anecdotal evidence supports this claim, both in general and in the Russian context *per se*. For example, as noted by Handley, in her analysis of trends in commercial litigation in post-Soviet Russia in the 1990s (1998: 379): "the number of cases involving foreigners is quite small across the board. The actual number was highest in the Moscow City court, but even so, it was only about one percent of the total civil cases heard. … [Foreign companies] fear that domestic courts will be biased in favor of the local party…." More recently, commenting on the Russian business climate in 2007, Glusker (2010: 595) also notes that, "direct foreign investment in Russia is still low compared to other European nations," and argues that "One of the biggest issues that foreign investors face in Russia is enforcement of contracts when deals fall apart or one side breaches the contract." Even in the US, where most would agree that the rule of law is significantly stronger than in Russia, evidence suggests that foreigners are still much more likely to settle or abandon lawsuits rather than litigate: a study by Clermont and Eisenberg, for example,

[27] Note that each time the lag is increased by a year, a year's-worth of entrants drop from the analysis due missing data, resulting in a reduced sample size.

concludes that "foreign firms . . . are reluctant to litigate in American courts for a variety of reasons, including the apprehension that American courts exhibit xenophobic bias and the pecuniary and non-pecuniary distastes for litigating in a distant place" (1996: 1133–113, cited in Mezias 2002).

With respect to Russian courts, Handley (1998) also observes that citizens of the Commonwealth of Independent States (CIS) appear to place significantly greater reliance on court ordering than other foreign firms: the majority of non-Russian litigants in commercial court during the period of Handley's study were citizens of CIS countries, albeit that these still represented just a tiny fraction (less than 1%) of total cases. To further probe whether differential access to the courts (or perceived bias against foreign litigants) is a key factor in the different management choices that we observe for foreign and domestic entrepreneurs we therefore re-estimated our choice models, this time distinguishing between firms owned by citizens of former Soviet Social Republics (SSRs) and other foreign entrepreneurial firms. The results of this analysis are consistent with our arguments: the coefficients for all of the effects are smaller in magnitude for former SSR entrepreneurs than for other foreign entrepreneurs, and typically not significant. With the exception of variability, the coefficients for former Soviet entrepreneurs also lie *between* the coefficients for other foreign and domestic firms.

Thinking about alternative explanations for our empirical results one might also be concerned that some of the effects that we observe for foreign entrepreneurs are not unique to relational contracts, and may apply even if the foreign entrepreneurial firms rely primarily on formal contracts. For example, if agents are risk averse and monitoring is imperfect, higher volatility also increases the expected value of total compensation in an optimal formal contract. This could then tip the balance in favor of owner-management, particularly if the participation constraint of the entrepreneur is binding (e.g., because industry profits are low due to intense competition).[28] Similarly, a decrease in outside employment options also decreases the expected compensation that the agent derives from an optimal (formal) incentive contract (Shapiro and Stiglitz 1984). As discussed earlier, however, the terms and stability of formal contracts are in general less sensitive to the size and variability of rents available because (i) rent sharing requirements are lower than in equivalent relational contracts (Malcomson 2013), and (ii) conditional on adequate enforcement, it is more costly for the parties to unilaterally alter formal contracts in response to changing economic conditions (Gillan et al. 2009). In addition, the relative inflexibility of formal contracts implies that the performance of agent-managed firms governed by formal contracts is unlikely to respond quickly to anticipated changes in agents' outside employment options. And finally, there is no theoretical

[28] Note however, that for this to be true, it has to be the case that agents are more risk-averse than owners. This is a very natural assumption for firms with diffuse shareholdings since owners can easily diversify their financial risk; it is much less likely in the case of entrepreneurs considering the alternative of hiring an agent manager or managing the business themselves.

basis for a relationship between the terms and stability of formal contracts and the relative size of future versus current returns (as captured in our empirical analysis by revenue growth rate). These points of divergence between the predictions of relational contracting and formal contracting models align remarkably well with the differences that we see in the samples of foreign and domestic entrepreneurial firms respectively (with firms owned by entrepreneurs from former SSRs as an intermediate case). This bolsters confidence in our interpretation of the results.

Conclusion

We believe that the analysis reported above provides novel and robust evidence that foreign entrepreneurs entering the Russian market rely primarily on relational contracts in their employment agreements with local agent managers. Management of these ventures by local agents is most prevalent in industries and regions where competition is low, revenue growth is high, and profits are relatively stable – i.e., in precisely those industry settings where theory suggests that relational contracts should be most effective. This contrasts with the pattern observed for domestic entrepreneurs who, if anything, appear to have a preference for managing the firm themselves under these attractive industry conditions. Our results thus suggest that impediments to formal contracting (i.e. specifying, monitoring and enforcing contracts through the courts) constitute an important aspect of the 'liability of foreignness' faced by foreign entrepreneurs. Our findings further indicate that the likely stability of relational contracts in a given location is a salient concern for foreign entrepreneurs as they decide whether to manage a new venture themselves or turn over control to a local agent in order to leverage the agent's greater local knowledge and connections.

In addition to contributing directly to research on foreign entrepreneurship, our study also provides new evidence on the performance of relational contracts as economic and/or institutional conditions change, thus contributing to efforts to redress the imbalance between empirical and theoretical work in the field of relational contracting. In particular, our results are consistent with theoretical arguments that relational contracts are most effective when owners and managers place a high value on future dealings (e.g., when expected profits and/or growth are high), and short-run gains from opportunistic action are limited (e.g., because return volatility is low). Moreover, our empirical setting allows us to isolate the impact of changing labor market conditions on the effectiveness of relational employment contracts, thus documenting an important mechanism that features centrally in theoretical models but has heretofore largely eluded empirical study. In particular, we see that when *ex post* changes in government policy reduce agent managers' outside employment options, the performance (profitability) gap between agent-managed and owner-managed foreign entrepreneurial firms closes significantly. This is true both in

absolute terms, and relative to the changes observed in purely domestic arrangements, which we argue are much more likely to rely on formal employment contracts.

The above contributions notwithstanding, it is important to acknowledge some significant limitations of our study. Like many empirical researchers doing work in this area, we lack access to actual employment contracts and thus cannot directly test the relative reliance on relational versus formal contracts in these relationships. Instead we must rely on indirect evidence based on entrepreneurs' decisions about whether to hire an agent or manage the business themselves under different industry conditions, as well as on the relative performance of these arrangements as conditions change. As such, our results are potentially subject to alternative explanations. As discussed in the previous section, to date we have been unable to identify any alternative explanation that can be reconciled with the findings of our study *in toto*, but more direct observational evidence on relational contracting would clearly be a significant addition. Indeed, this represents one of the most promising avenues for further research.

We believe that the quasi-experimental design of our study also points to interesting future research opportunities, even in the absence of data on employment contracts themselves. Our focus in the diff-in-diffs analysis was on the impact of changes in the outside employment options of agent managers (or, equivalently, on the supply of potential agents); future research may focus on other shocks that differentially change the magnitude or stability of future rents, monitoring costs, or contract enforceability across sectors and regions, thus identifying other important mechanisms believed to underpin the relative performance of formal and relational contracts. In this we share Gil and Zanarone's (2014:45) optimistic assessment that "empirical research on informal contracts has substantial room to grow and presents plenty of opportunities," and we look forward to a continued and active conversation on this important topic.

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Table 1. Variable definitions and descriptive statistics

a. Foreign-owned entrepreneurial firms (3,772 unique firms)

Variable	Description	Mean	Std. Dev.	Min.	Max	N[a]
Agent	Dummy variable= 1 for agent-managed firms, 0 otherwise	0.428	0.495	0	1	10,213
OROA	Operating profit (earnings before interest and taxes) / book value of assets	0.052	0.384	-2.865	1.36	10,213
Ln(assets)	Logged book value of assets	14.437	2.242	8.691	28.906	10,213
Ln(revenue)	Logged operating revenue	15.081	2.289	6.082	30.305	10,213
Ln(debt)	Logged debt	2.597	5.568	0	28.228	10,213
Ln(age)	Logged years since entry	1.205	0.702	0	2.833	10,213
Shareholders	Number of shareholders	1.085	0.383	1	8	10,213

b. All Russian-owned entrepreneurial firms (14,974 unique firms)

Variable	Description	Mean	Std. Dev.	Min.	Max	N[a]
Agent	Dummy variable = 1 for agent-managed firms, 0 otherwise	0.274	0.446	0	1	82,394
OROA	Operating profit (earnings before interest and taxes) / book value of assets	0.168	0.258	-0.995	1.399	82,394
Ln(assets)	Logged book value of assets	15.283	2.166	8.573	25.144	82,394
Ln(revenue)	Logged operating revenue	16.633	1.954	6.652	26.731	82,394
Ln(debt)	Logged debt	2.261	5.304	0	18.968	82,394
Ln(age)	Logged years since entry	1.687	0.723	0	2.833	82,394
Shareholders	Number of shareholders	1.743	1.011	1	6	82,394

c. Matched sample of Russian-owned entrepreneurial firms (5,247 unique firms)

Variable	Description	Mean	Std. Dev.	Min.	Max	N[a]
Agent	Dummy variable=1 for agent-managed firms, 0 otherwise	0.332	0.471	0	1	24,428
OROA	Operating profit (earnings before interest and taxes) / book value of assets	0.140	0.245	-0.981	1.393	24,428
Ln(assets)	Logged book value of assets	15.568	2.284	8.700	25.144	24,428
Ln(revenue)	Logged operating revenue	17.016	2.062	6.652	26.731	24,428
Ln(debt)	Logged debt	1.944	4.974	0	18.962	24,428
Ln(age)	Logged years since entry	1.403	0.703	0	2.833	24,428
Shareholders	Number of shareholders	1.647	0.952	1	6	24,428

Note: All monetary values are in nominal Russian rubles.

d. Industry-region characteristics

Variable	Description	Mean	Std. Dev.	Min.	Max	N[a]
High Competition	Dummy variable=1 when industry-region Herfindahl-Hirschman index of industry concentration is below 0.15; 0 otherwise.	0.062	0.241	0	1	11,050
Growth	Mean industry-region firm revenue growth, averaged over 5-year window	1.168	1.305	-0.400	17.882	3,830
Variability	Standard deviation of firm OROA over 5-year window, averaged across industry-region	0.152	0.119	0.000	1.686	8,305

Table 2. Correlation matrices for key variables

a) Foreign-owned entrepreneurial firms

	Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)	Agent	1.000								
(2)	OROA	-0.008	1.000							
(3)	Ln(assets)	0.184***	0.055***	1.000						
(4)	Ln(revenue)	0.144***	0.185***	0.749***	1.000					
(5)	Ln(debt)	0.090***	-0.049***	0.268***	0.126***	1.000				
(6)	Ln(age)	0.005	0.043***	0.289***	0.190***	0.102***	1.000			
(7)	Shareholders	0.056***	-0.022**	0.025**	0.005	0.019*	-0.036***	1.000		
(8)	High Comp.	-0.106***	-0.016	-0.014	0.051***	-0.048***	-0.012	-0.081***	1.000	
(9)	Growth	-0.031***	0.003	-0.080***	-0.058***	-0.009	-0.099***	0.028**	0.145***	1.000
(10)	Variability	-0.049***	-0.014	-0.130***	-0.093***	-0.018*	0.007	-0.023**	-0.167***	-0.050***

*, **, and *** denote significance at 10%, 5%, and 1% respectively.

b) Russian-owned entrepreneurial firms (matched sample)

	Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)	Agent	1.000								
(2)	OROA	-0.046***	1.000							
(3)	Ln(assets)	0.073***	-0.205***	1.000						
(4)	Ln(revenue)	0.067***	-0.009	0.785***	1.000					
(5)	Ln(debt)	0.044***	-0.068***	0.243***	0.165***	1.000				
(6)	Ln(age)	-0.069***	0.037***	0.263***	0.272***	0.114***	1.000			
(7)	Shareholders	-0.119***	0.034***	0.044***	0.020***	0.044***	0.122***	1.000		
(8)	High Comp.	0.003	-0.003	0.040***	0.072***	-0.023***	0.072***	0.000	1.000	
(9)	Growth	0.029***	-0.020***	-0.083***	-0.018**	-0.037***	-0.242***	-0.031***	0.145***	1.000
(10)	Variability	-0.034***	0.108***	-0.228***	-0.219***	-0.068***	-0.034***	0.036***	-0.097***	-0.077***

*, **, and *** denote significance at 10%, 5%, and 1% respectively.

Table 3a. Industry conditions and likelihood of agent-managed firms (foreign entrepreneurs)
Probit model estimated on cross-section of firms, with observation year = first year with nonzero revenues.

	(1)	(2)	(3)	(4)
	H1: Level of competition	H2: Revenue growth	H3: Variability of returns	Combined effects
Dependent var.	***Agent***	***Agent***	***Agent***	***Agent***
High Competition$_{t-1}$	**-0.182*** **			**-0.253** **
	(0.056)			**(0.079)**
Growth $_{t-1}$		**0.083** **		**0.091** **
		(0.041)		**(0.043)**
Variability$_{t-1}$			**-1.134** **	**-1.302**
			(0.449)	**(0.813)**
Ln(assets)	0.081***	0.078***	0.078***	0.077***
	(0.020)	(0.025)	(0.021)	(0.024)
Ln(revenue)	0.009	0.0008	0.003	0.003
	(0.015)	(0.020)	(0.018)	(0.019)
Ln(debt)	0.003	0.003	0.002	0.002
	(0.004)	(0.005)	(0.004)	(0.005)
Ln(age)	-0.144***	-0.174***	-0.133***	-0.185***
	(0.050)	(0.051)	(0.046)	(0.050)
Shareholders	0.058	0.135**	0.073	0.126*
	(0.053)	(0.068)	(0.057)	(0.072)
Constant	-0.785	-1.319***	-0.950***	-0.948***
	(0.814)	(0.313)	(0.308)	(0.365)
Year dummies	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes
Pseudo R^2	0.131	0.119	0.125	0.125
N (number of firms)	3,448	2,157	3,034	2,157

Values in parentheses are robust standard errors with clustering on industry-region
*, **, and *** denote significance at 10%, 5%, and 1% respectively.
Variation in sample size across specifications is due to differences in data availability for key variables of interest.

Table 3b. Industry conditions and likelihood of agent-managed firms (matched sample, domestic entrepreneurs)

Probit model estimated on cross-section of firms, with observation year = first year with nonzero revenues.

	(1)	(2)	(3)	(4)
	H1: Level of competition	H2: Revenue growth	H3: Variability of returns	Combined effects
Dependent var.	***Agent***	***Agent***	***Agent***	***Agent***
High Competition$_{-1}$	**0.100**			**0.006**
	(0.065)			**(0.123)**
Growth$_{t-1}$		**-0.046**		**-0.066**
		(0.077)		**(0.082)**
Variability$_{t-1}$			**-0.735**	**-1.176**
			(0.849)	**(1.390)**
Ln(assets)	0.052***	0.042**	0.044***	0.040**
	(0.010)	(0.017)	(0.011)	(0.017)
Ln(revenue)	0.016	0.020	0.027	0.021
	(0.011)	(0.018)	(0.012)	(0.018)
Ln(debt)	0.0003	0.0004	-0.004	0.0004
	(0.006)	(0.011)	(0.008)	(0.011)
Ln(age)	-0.040	0.073*	0.081**	0.076*
	(0.032)	(0.043)	(0.032)	(0.045)
Shareholders	-0.163***	-0.125**	-0.149***	-0.126***
	(0.020)	(0.062)	(0.032)	(0.062)
Constant	-1.404***	-1.280***	-1.386***	-1.087***
	(0.187)	(0.245)	(0.190)	(0.329)
Year dummies	Yes	Yes	Yes	Yes
Country dummies	N/A	N/A	N/A	N/A
Pseudo R^2	0.026	0.022	0.023	0.022
N (number of firms)	5,054	1,818	3,554	1,818

Values in parentheses are robust standard errors with clustering on industry-region
*, **, and *** denote significance at 10%, 5%, and 1% respectively.
Variation in sample size across specifications is due to differences in data availability for key variables of interest.

Table 4. Baseline estimates of relative performance of owner-managed versus agent-managed firms
OLS regression estimated on pooled cross-section of firms across entire sample period.

Model	(1)	(2)
	Foreign-owned entrepreneurial firms	Russian-owned entrepreneurial firms (matched sample)
Dependent variable	**OROA**	**OROA**
Agent	**-0.021****	**-0.013*****
	(0.010)	**(0.005)**
Ln(assets)	-0.028***	-0.055***
	(0.004)	(0.002)
Ln(revenue)	0.055***	0.049***
	(0.003)	(0.002)
Ln(debt)	-0.003***	-0.001**
	(0.001)	(0.000)
Ln(age)	-0.024*	0.023***
	(0.013)	(0.003)
Shareholders	0.007	0.007***
	(0.007)	(0.002)
Constant	-0.576**	-0.001
	(0.265)	(0.035)
Year dummies	Yes	Yes
Industry dummies	Yes	Yes
Country dummies	Yes	N/A
R^2	0.085	0.126
N	10,213	24,428
Number of firms	3,772	5,247

Values in parentheses are robust standard errors with clustering on firms
*, **, and *** denote significance at 10%, 5%, and 1% respectively.

Table 5a. Performance of owner-managed versus agent-managed firms as outside employment options change – Foreign-owned entrepreneurial firms

Panel regressions with firm fixed effects, estimated across entire sample period; see below for sample restrictions

Model	(1)	(2)	(3)	(4)
	Change in performance of owner-managed vs. agent-managed firms in affected versus unaffected regions	Change in performance of agent-managed firms in affected vs. unaffected regions	Change in performance of owner-managed firms in affected vs. unaffected regions	Change in performance of owner-managed vs. agent-managed firms in affected regions only
Dependent variable	**OROA**	**OROA**	**OROA**	**OROA**
Agent * affected * Year2008	**0.144** **(0.056)**			
Affected * Year2008	-0.073 (0.045)	**0.069**** **(0.034)**	**-0.074** **(0.045)**	
Agent * Year2008	0.007 (0.022)			**0.151***** **(0.052)**
Ln(assets)	-0.003 (0.008)	-0.012 (0.011)	0.004 (0.011)	0.022 (0.026)
Ln(revenue)	0.057*** (0.005)	0.065*** (0.007)	0.051*** (0.007)	0.046*** (0.018)
Ln(debt)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.002)	0.003 (0.003)
Constant	-0.626*** (0.091)	-1.017*** (0.206)	-0.977*** (0.190)	-1.083*** (0.324)
Year dummies	Yes	Yes	Yes	Yes
Firm f.e.	Yes	Yes	Yes	Yes
R^2 (within)	0.043	0.057	0.037	0.073
N	10,048	4,301	5,747	820
Number of firms	3,709	1,561	2,148	322

Values in parentheses are robust standard errors with clustering on firms
*, **, and *** denote significance at 10%, 5%, and 1% respectively.

Sample: Sample excludes firms from the car trading industry and 4 areas of the retail trade (see footnote 18); Models 2 and 3 are restricted to agent-managed and owner-managed firms respectively; Model 4 is limited to firms in regions affected by the policy change.

Table 5b. Performance of owner-managed versus agent-managed firms as outside employment options change – Russian-owned entrepreneurial firms (matched)
Panel regressions with firm fixed effects, estimated across entire sample period; see below for sample restrictions

Model	(1)	(2)	(3)	(4)
	Change in performance of owner-managed vs. agent-managed firms in affected versus unaffected regions	Change in performance of agent-managed firms in affected vs. unaffected regions	Change in performance of owner-managed firms in affected vs. unaffected regions	Change in performance of owner-managed vs. agent-managed firms in affected regions only
Dependent variable	**OROA**	**OROA**	**OROA**	**OROA**
Agent * affected * Year2008	**0.043**			
	(0.040)			
Affected * Year2008	-0.021	**0.024**	**-0.022**	
	(0.019)	**(0.035)**	**(0.019)**	
Agent * Year2008	-0.006			**0.036**
	(0.009)			**(0.039)**
Ln(assets)	-0.065***	-0.062***	-0.066***	-0.059***
	(0.003)	(0.004)	(0.003)	(0.012)
Ln(revenue)	0.067***	0.060***	0.070***	0.065***
	(0.002)	(0.004)	(0.003)	(0.011)
Ln(debt)	0.0003	0.0004	0.0002	0.004**
	(0.0003)	(0.001)	(0.0004)	(0.002)
Constant	0.119***	0.180***	0.082*	0.031
	(0.039)	(0.065)	(0.049)	(0.145)
Year dummies	Yes	Yes	Yes	Yes
Firm f.e.	Yes	Yes	Yes	Yes
R^2 (within)	0.106	0.106	0.107	0.093
N	23,969	7,950	16,019	1,482
Number of firms	5,144	1,827	3,318	374

Values in parentheses are robust standard errors with clustering on firms
*, **, and *** denote significance at 10%, 5%, and 1% respectively.

Sample: Sample includes only matched domestic firms and excludes firms from the car trading industry and 4 areas of the retail trade (see footnote 18); Models 2 and 3 are restricted to agent-managed and owner-managed firms respectively; Model 4 is limited to firms in regions affected by the policy change.