

Nonfinancial Benefits and Entrepreneurs' Choice of Manager*

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Abstract

Top managers are believed to be critical players in their organizations, significantly affecting organizations' behavior and performance. Therefore, the choice of the top manager is considered to be one of the most important decisions that an organization makes and is being extensively studied by research scholars. However, the extant evidence is largely limited to mature organizations, whereas the choice of top manager in entrepreneurial ventures and family start-ups has received little attention. When starting a firm, an entrepreneur has to decide whether to manage it personally or hire a manager, yet we know very little of what motivates this choice. In particular, it is unclear if this choice is solely based on profit maximization or can be motivated by nonfinancial considerations. This paper examines the role of nonfinancial returns to management in an entrepreneur's choice of manager. We use a setting of foreign entrepreneurs who, in order to manage their firms abroad, need to relocate to a host country and thus experience the benefits and costs of relocation associated with personally managing the firm. We show that entrepreneurs with high benefits of relocation are more likely to manage their firms abroad personally and seem to substitute relocation benefits for some firm profit. These findings are consistent with the idea that entrepreneurs anticipating nonfinancial benefits from owner-management are more likely to manage their firms themselves and are willing to substitute nonfinancial benefits for monetary earnings.

Keywords: owner-manager, choice of manager, nonpecuniary benefits, foreign entrepreneurs, firm performance

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1 Introduction

Top managers are believed to be critical players in their organizations, significantly affecting organizations' behavior and performance (e.g., Bertrand, 2009; Bloom and Van Reenan, 2007; Chang, Dasgupta, and Hilary, 2010; Siwka, 2007). Therefore, the choice of the top manager is considered to be one of the most important decisions that an organization makes and is being extensively studied by research scholars (e.g., Bertrand, 2009; Chen and Hambrick, 2012; Wasserman, 2003; Wulf and Singh, 2011). However, the extant evidence is largely limited to mature organizations, whereas the choice of top manager in entrepreneurial ventures and family start-ups has received little attention (Boeker and Wiltbank, 2005), despite the fact that these organizations may have different strategic incentives and choice options compared to established firms (e.g., Zellweger et al., 2012; Chrisman et al., 2003).

In particular, an entrepreneur must decide whether to operate the business personally or hire a manager. Until recently, the organization literature has primarily assumed that an entrepreneur would always manage a firm personally (e.g., Berglann et al., 2011; Hamilton, 2000; Nanda and Sorensen, 2010) and the empirical entrepreneurship research has been largely limited to self-employed individuals and owner-managers of incorporated firms (Van Praag and Versloot, 2007).

Recent studies, however, have demonstrated that owner-management is not always the case, as a significant number of entrepreneurial ventures are operated by hired agents (e.g., Chen and Thompson, 2012; Kulchina, 2013b).¹ Nonetheless, we know very little of what motivates an entrepreneur to manage a firm personally or hire an agent. In particular, it is unclear whether the choice of manager is perfectly aligned with profit maximization, as is often the case in large corporations (e.g., Zellweger et al., 2012), or if this decision includes other, often nonfinancial, considerations.²

Entrepreneurs may experience a variety of nonfinancial costs and benefits associated with managing a firm personally. Such benefits may include independence, a greater sense of control over others, a prestigious position as a chief executive officer (CEO) in a local business community, an ability to pass the firm to heirs, or an opportunity to live in an attractive location. Nonfinancial costs may include a lack of leisure time, irregular work hours, or the stress from risk and uncertainty. We call these benefits and costs “nonfinancial returns,” defined as any benefits and costs other than direct monetary earnings from the firm (such as firm profit) incurred by an entrepreneur while personally managing a firm.

¹ Chen and Thompson (2012) show that 13 percent of Danish start-ups switch from owner-managers to hired managers in the first 6 years of firm operation. Kulchina (2013b) demonstrates that 37 percent of foreign entrepreneurial start-ups in Russia have hired managers.

² There are very few studies related to the manager choice in entrepreneurial firms. Lin and Hu (2007) have found that family-CEOs are more likely to be found in small firms and firms with low R&D intensity and large advertising budgets. Burkart et al. (2003) and Fraja (1996) have developed theoretical models that suggest that owner-managers should prevail during bad times and in environments with low protection of the minority shareholders.

We investigate whether nonfinancial returns to management can motivate an entrepreneur to manage a firm personally or hire an agent. We also examine the implications of having nonfinancial returns to management for firm profits. While it may seem logical that entrepreneurs would only manage their organizations when this choice maximizes firm profits, we have a reason to believe that this may not necessarily be the case. Entrepreneurs are famous for making strategic choices that are based on considerations other than financial returns. For example, Hamilton (2000) argues that nonfinancial benefits, such as autonomy, strongly affect an individual's decision to become an entrepreneur. Gomez-Mejia et al. (2007) demonstrate that owners of Spanish olive oil mills are willing to accept high business risk in return for nonfinancial benefits of family control. Dahl and Sorenson (2009) suggest that the nonpecuniary benefit of living next to family and friends is an important determinant of an entrepreneur's location choice.

While nonfinancial benefits seem to motivate entrepreneurs' strategic decisions, their impact on firm performance is less clear. On the one hand, entrepreneurs seem to give up personal income in return for nonfinancial benefits of entrepreneurship (e.g., Hamilton, 2000). On the other hand, this does not necessarily imply that entrepreneurs are willing to accept low firm profit. Even at its best possible performance, a start-up may provide less income to its founder than an alternative paid employment. However, entrepreneurs' ability to derive nonfinancial returns is contingent on firm existence. Therefore, the firm's well-being should be a priority for an entrepreneur. Thus, nonfinancial benefits may decrease an individual's income relative to an alternative paid employment, but they should not necessarily decrease firm profits. Prior studies, for example, have found that entrepreneurs motivated by intrinsic benefits of self-employment exhibit the same firm performance as their more financially motivated counterparts (e.g., Gimeno et al., 1997). In addition to the unclear predictions, it may be difficult to generalize prior findings to the choice of manager. Since self-employment studies examine a compound choice of firm ownership and owner-management, it is unclear if nonfinancial benefits play a role in both decisions or just in the ownership choice.

In this paper, we use a sample of foreign entrepreneurs in Russia to examine whether nonfinancial returns to management can affect the choice between "doing it yourself" and hiring a manager. Foreign entrepreneurs are individuals who found their firms abroad. Managing a firm abroad typically requires an entrepreneur to live in a host country. Therefore, significant nonfinancial returns to managing a firm in Russia come from the attractiveness of living in Russia. Several prior studies have considered location attractiveness as an important nonfinancial return to the employment choice (e.g., Agarwala and Ohyama, 2013; Dahl and Sorenson, 2010). In case of international relocation, such returns can include access to a different culture, climate, education, and legal system. We expect that entrepreneurs viewing Russia as an attractive place to live will be more willing to manage their firms in Russia and could substitute relocation

benefits for some firm profit. Conversely, entrepreneurs viewing Russia as a less attractive place to live will be more likely to hire managers and would require a large firm-performance premium for managing a firm personally. Entrepreneurs from some nations may experience higher benefits from relocation and may, therefore, be more willing to personally manage their firms in Russia. We proxy for the attractiveness of Russia for an entrepreneur from a given foreign country with the number of the entrepreneur's nationals working in Russia.³ To address endogeneity concerns, we use exogenous home-country policy shocks that presumably increase the relative returns to relocation to Russia.

We find that entrepreneurs with higher relocation benefits are more likely to become owner-managers despite getting lower financial returns to being managers. For example, an entrepreneur from China would be 25 percentage points more likely to manage a firm in Russia than an owner of an otherwise similar firm from the United States. However, due to the substitution effect of the relocation benefits, an entrepreneur-manager from China would have 7 percentage points lower operating return on assets (OROA) than an entrepreneur-manager of a similar firm from the United States. These findings are consistent with the notion that nonfinancial returns to management may significantly influence an entrepreneur's decision to manage a firm personally. Nonfinancial benefits seem to substitute for some financial returns in the form of firm profit. Specifically, firms founded in attractive locations are more likely to be operated by an entrepreneur, but they may exhibit lower or negative performance premium to owner-management.

Our findings make contributions to several areas of the organization literature. First, prior organization studies have focused on the choice of manager in large public firms, where financial returns are most important. In this study, we make one of the very first attempts to examine the determinants of the management choice in entrepreneurial ventures and small businesses, where financial returns may have a weaker motivating role. Our results suggest that nonfinancial returns play a significant role in the entrepreneur's decision to manage a firm personally and may substitute for some firm profit.

Second, this paper contributes to the small but rapidly growing literature on the role of nonfinancial returns in strategic decisions of entrepreneurial and family firms. So far, this literature has focused on the role of nonfinancial benefits in such entrepreneurial choices as firm founding, ownership stake, and location choice (Dahl and Sorenson, 2012; Ehrhardt and Nowak, 2003; Hamilton, 2000). Our findings broaden the set of choices where nonfinancial benefits may play an important role to include the choice of manager.

³ Russia does not have an open immigration system. The majority of foreigners come to Russia on work visas, and thus, the number of foreign nationals working in Russia should well reflect the general attractiveness of Russia to the foreign-country citizens.

Our findings also have implications for the literature examining the effect of nonfinancial motivations on career choices and earnings of individuals (e.g., Agarwal and Ohyama, 2013; Dahl and Sorenson, 2010; Hamilton, 2000; Stern, 2003). While this literature has often focused on scientists, Stern (2003) asks whether other professionals may be willing to pay a compensation differential for their occupations. Our results suggest that nonfinancial rewards associated with the top management positions may motivate an individual to become a manager and may substitute for some of the financial returns. More specifically, they suggest that job locations play an important role in the individual's employment choice. Individuals may be willing to accept a lower-paying job at a more attractive location and require monetary compensation for a job in a less attractive region.

2 Theoretical Background

It is believed that self-employment and owner-management can be associated with a variety of nonfinancial returns. Such returns may include a satisfaction from the ability to do an interesting job and be your own boss, a pleasure from running a family business and having an opportunity to pass it to heirs, an enjoyment of being a part of the local business elite and having influence in the community, and a satisfaction from the ability to choose a preferred employment location (Dahl and Sorenson, 2012; Ehrhardt and Nowak, 2003; Hamilton, 2000; Moskowitz and Vissing-Jorgensen, 2002).

Prior studies have consistently reported that these and other nonfinancial returns to entrepreneurship play an important positive role in an individual's decision to become self-employed (e.g., Hamilton, 2000; Moskowitz and Vissing-Jorgensen, 2002). Hamilton (2000) and Moskowitz and Vissing-Jorgensen (2002), for example, argue that nonfinancial benefits from self-employment are a major motivating factor for starting a business. Dahl and Sorenson (2012) suggest that individuals consider location attractiveness in their decisions to start a business. Moreover, these and other studies have documented that when choosing an occupation, individuals may be willing to forgo some financial earnings in favor of nonfinancial returns. Stern (2003) argues that individuals with a preference for science accept employment with lower pay in return for the ability to participate in science. Hamilton (2000) compares earnings of self-employed individuals and paid employees and finds that an average entrepreneur earns less and is presumably willing to sacrifice substantial monetary earnings in exchange for nonfinancial returns. Moskowitz and Vissing-Jorgensen (2002) demonstrate that, when adjusted for higher risks, entrepreneurship provides lower financial returns than regular employment, presumably because entrepreneurs are compensated with nonfinancial returns. The surveys conducted among Italian entrepreneurs provide evidence that personal motivations rank above profit expectations in the decision to start a business (Santarelli and Vivarelli, 2007). Benz and Frey (2008) and Blanchflower (1998)

demonstrate that self-employed individuals rank nonfinancial benefits above financial returns among preferred job characteristics.

Given that nonfinancial returns influence individuals' self-employment decisions and that owner-management is a significant part of self-employment, one may also expect nonfinancial returns to influence an entrepreneur's decision to manage a firm personally. Burkart and his colleagues (2003), for example, have developed a theoretical model that implies that in the presence of high private benefits of management, entrepreneurs would manage their firms personally. By analogy with the role of nonfinancial benefits in self-employment choice, we expect that entrepreneurs who decide to manage their firms personally may also be willing to forgo some firm profit when they gain nonfinancial benefits by managing their firms. Figures 1 and 2 provide additional insights to the firm-performance implications.

Insert Figure 1 about here

Insert Figure 2 about here

In Figures 1 and 2, we plot the utility from starting a firm (U) depending on the entrepreneur's managerial abilities (S). An entrepreneur can manage a firm personally and receive U_{OM} or hire a manager and receive U_{HM} . An entrepreneur will manage a firm personally when $U_{OM} \geq U_{HM}$. Based on the evidence from the prior literature presented above, we expect that an entrepreneur's utility of being an owner-manager is a function of both firm profit and nonfinancial returns associated with the top-management position: $U_{OM} = f(\pi_{OM}, NR)$.⁴ Assuming that the terms are linearly additive, $U_{OM} = \pi_{OM} + NR$.⁵ Entrepreneurs are sole beneficiaries of firm profit, π_{OM} , which is an increasing function of S .⁶ NR is net nonfinancial returns to owner-management relative to hiring an agent.⁷ An entrepreneur's utility from having a hired manager is $U_{HM} = \pi_{HM}$, where π_{HM} is a firm's profit under a hired manager, which is assumed to be independent of the entrepreneur's managerial abilities.⁸

⁴ The utility function may also include managerial salary and an entrepreneur's salary outside of the firm, but we omit them from the model for simplicity.

⁵ For summation, NR should be expressed in monetary terms.

⁶ Normally, it would also be a function of firm, environment, and entrepreneur characteristics, but for simplicity, we hold them constant and allow only entrepreneur's skills to vary.

⁷ Net nonfinancial returns to owner-management are equal to the difference between nonfinancial benefits and costs of owner-management, less the difference between nonfinancial benefits and costs of hiring a manager. Nonfinancial returns are independent of S .

⁸ In reality, U_{HM} may be slightly increasing if entrepreneurs with better managerial skills are also more able to select hired managers with better skills, but the slope of U_{HM} is still expected to be low than that of U_{OM} .

In Figure 1, we assume that the quality of the firm is constant. When $NR=0$, $U_{OM} = \pi_{OM1}$ and the choice of manager not only maximizes utility, but also maximizes firm's profit. If we add nonfinancial benefits, $NR>0$, utility increases to U_{OM2} , but corresponding profit remains the same. If entrepreneurs base their choice of manager on utility rather than just firm profit, some entrepreneurs ($S' \leq S < S^*$) decide to manage their firms personally even when it is not the optimal choice performance-wise. Assuming that $\pi(S)$ is a monotonic function, $E(\pi_{OM}|NR > 0) < E(\pi_{OM}|NR \leq 0)$.

In Figure 2, we no longer hold the quality of the firm constant and show that owner-managers with nonfinancial benefits may open lower-quality firms than owner-managers without such benefits and use nonfinancial benefits as a compensation for lower profits. We assume that entrepreneurs start firms when their $U \geq \pi_1^*$. Non-managing entrepreneurs and owner-managers without nonfinancial benefits do not receive nonfinancial compensations for low profits and would only start high-quality firms. But owner-managers with nonfinancial benefits can reach the utility threshold of $U \geq \pi_1^*$ even when starting low-quality firms with profits below π_1 . If we compare owner-managed firms with and without nonfinancial benefits, $E(\pi_{OM}|NR > 0) < E(\pi_{OM}|NR \leq 0)$.

Following the above discussion, we expect that entrepreneurs with nonfinancial benefits from management will be more likely to manage their firms personally and will have lower average firm performance than entrepreneurs without such benefits.

3 Foreign Entrepreneurs

To examine the relationships between nonfinancial returns, manager choice, and firm performance, we need to operationalize nonfinancial returns, which are quite difficult to observe directly and quantify reliably (Dyck and Zingales, 2004; Ehrhardt and Nowak, 2003). Prior studies have often operationalized nonfinancial benefits with some proxy variables. Dahl and Sorenson (2009, 2010), for example, use region tenure and distance to family as proxy variables for nonpecuniary benefits of employment choice and the choice of location for an entrepreneurial venture.⁹ To use a similar approach, we need a setting where we could find a proxy variable for some nonfinancial benefits associated with managing a firm. Our setting of choice is foreign entrepreneurs, because it provides such a proxy variable.

Foreign entrepreneurs are people who found their firms outside of their native countries, such as an American who opens a fashion-photography shop in Japan or a Vietnamese founder of a software firm in Canada. Thanks to advanced communication and transportation technologies, opening a firm abroad has become easier (Drori, Honig, and Wright, 2009) and no longer necessarily requires an entrepreneur to live

⁹ The first approach typically provides individual-level responses, but these responses are often subject to the post-factum adjustment bias and their numbers are limited. The second approach does not have these limitations, but it uses more general proxy variables that may capture additional influences beyond the nonfinancial benefits.

near the operating facilities. As a result, some foreign entrepreneurs may remain in their home countries, at a significant distance from their firms, or open firms at multiple international locations. Nevertheless, managing a firm and overseeing its everyday operations still typically requires an entrepreneur to relocate to a host country. Otherwise, management costs, which are believed to increase with distance, may become unreasonably high. Entrepreneurs who prefer to remain in their home countries typically hire professional managers to oversee operations of their firms abroad.

Since managing a firm abroad requires living in a host country, the attractiveness of the host country may become a significant nonfinancial determinant of the entrepreneur's decision to manage a firm personally or to hire an agent. Indeed, prior entrepreneurship and occupation studies consider an attractive location to be a significant nonfinancial benefit of the occupation choice (e.g., Agarwal and Ohyama, 2013; Dahl and Sorenson, 2010).

Immigration studies suggest that location attractiveness is determined by its cultural, social, and geographic characteristics. The benefits of location, for example, may include access to better education for kids, high-quality health services, low crime level, higher standards of living, and better climate (e.g., Graves, 1980; Ritchey, 1976; Scott, Coomes and Izyumov, 2005).¹⁰

For foreign entrepreneurs who expect high nonfinancial benefits from living in a host country, relocating there will be more desirable. Governments of many countries, including the United States, New Zealand, Canada, Australia, and the United Kingdom, seem to recognize the existence of relocation benefits when they provide capital-investment-based immigration visas for potential entrepreneurs: foreigners who found their firms in a host country with certain amount of capital investment can get long-term residence in this country and thus receive the benefits of relocation that are tied to starting a firm.

Since managing a firm abroad requires living abroad, the attractiveness of a host country will become a significant return to owner-management of a foreign firm. This return, which is not derived directly from the firm and its profits, may strongly influence an entrepreneur's decision to manage a firm personally. For example, Dahl and Sorenson (2009) demonstrate that entrepreneurs place more emphasis on the social attractiveness of the location than on those location characteristics that determine firm performance.

Measuring location attractiveness, however, is challenging. Prior immigration research has demonstrated that an individual's decision to relocate is largely based on the population-level reasons common for all country nationals, such as better education, higher living standards, lower crime, and

¹⁰ Individuals may also relocate in search for higher wages. However, this factor is more relevant for those in search of paid employment than for entrepreneurs. We also presumably capture any remaining wage differential with the combination of the home-country GDP and population. Individuals may also consider individual-level reasons, such as closeness to family and friends. While we are not able to measure these reasons, we expect that they will create deviations from the baseline national desire to relocate and cause noise in the independent variable.

better climate. In Hagelskamp et al. (2010), for example, all surveyed Chinese immigrants reported access to better education as a very important determinant of their immigration to the U.S. Since population-level benefits are relatively common to all nationals of a foreign country, the immigration research has used the number of nationals immigrating to a host country as a proxy variable for the host country's attractiveness (e.g., Scott, Coomes and Izyumov, 2005). The more nationals of country j immigrate to country i , the more attractive country i is to an individual from country j .

Similarly to the prior research, we expect that an entrepreneur's desire to live in a country where his or her firm is located is proportional to the number of the entrepreneur's nationals living in that country. Thus, an entrepreneur with more nationals living in a host country will find this country more attractive and will be more willing to relocate and manage a firm in this country personally.

Hypothesis 1: A foreign entrepreneur with more nationals living in the firm's host country, and presumably higher relocation benefits, will be more likely to manage his firm in the host country personally.

In the previous section, we have argued that entrepreneurs may forgo some financial earnings in exchange for the nonfinancial benefits, such as the benefits of relocation. Conversely, they may require a large firm-profit premium for managing a firm in an unattractive location, because they would incur high nonfinancial costs of relocation. Thus we expect that the benefits of relocation associated with managing a firm will substitute for some firm profits, whereas the disutility of relocation will require firm performance premium. Similarly, for example, managers in large corporations often receive higher compensation when sent to undesirable locations relative to comparable positions in their home countries. Thus, we expect that entrepreneurs who become owner-managers in a desirable location could substitute their relocation benefits for some firm profits.

Hypothesis 2: When becoming an owner-manager, a foreign entrepreneur will be willing to substitute the benefits of relocation to the host country for some firm profits.

4 Data and Main Variables

Setting: We examine the choice between an owner-manager and a hired manager in foreign entrepreneurial firms founded in Russia between 1997 and 2008. To test whether nonfinancial returns to owner-management in the form of relocation benefits can affect an entrepreneur's decision to manage a firm personally, we need a setting where relocation benefits would be strongly tied to owner-

management. Russia suits our purposes well for two reasons: First, foreign entrepreneurs in Russia should be sensitive to both the benefits and costs of relocation. The benefits of relocation more strongly apply to foreign entrepreneurs who start firms when living outside of a host country. Individuals living permanently in a host country are less sensitive to the benefits of relocation in their decisions to become firm managers. Their estimates would be based primarily on the disutility of living in a host country. Since Russia does not have an open immigration system, the share of foreign entrepreneurs who were permanently living in Russia at the time of firm founding should be small. Second, it would be harder to capture the effect of relocation benefits in countries allowing non-managing foreign entrepreneurs to immigrate with their firms. This effect may be less visible for entrepreneurs with relocation benefits, again forcing us to base our estimation primarily on the disutility of relocation. In Russia, however, firm ownership does not justify a residence visa. Residence permits are issued only to those foreign entrepreneurs who are employed by their firms; therefore, non-managing foreign entrepreneurs cannot easily relocate to Russia.¹¹ As a result, relocation benefits are strongly tied to firm management and provide a good example of the returns to owner-management that are not directly related to firm profits.

Data: Similar to prior studies by Aldrich and Waldinger (1990) and Saxenian et al. (2007), we define a **foreign entrepreneurial firm** as a firm owned by one or several non-Russian individuals.¹² We use foreign entrepreneurial firms that were founded in Russia between 1997 and 2008 and operated for at least one year.¹³ The data on foreign entrepreneurs in Russia come from the Ruslana subsample of the Amadeus database—a private database assembled by the Bureau van Dijk (BvD)¹⁴ from the annual reports that firms file to government agencies. BvD provides reliable firm data, which have been extensively used in the organization research (e.g., Belenzon, Berkovitz, and Rios, 2013; Bloom, Kretschmer, and Van Reenen, 2011; Kosova, 2010; Kulchina, 2013a). The database has several unique features essential for our analysis: First, it provides comprehensive coverage of private firms, allowing us to study entrepreneurial start-ups. Second, it is one of the few existing databases that report firm owners and top managers, allowing us to identify firms with owner-managers and hired managers.

Owner-manager is a dummy variable that equals 1 when a firm owner serves as a firm CEO. Based on the ownership threshold most commonly used in the prior literature (e.g., Villalonga and Amit,

¹¹ This does not apply to short-term visits on a visitor's visa.

¹² By this definition, we exclude domestic entrepreneurs and Russian subsidiaries of multinational corporations.

¹³ We exclude business entities that initiated the registration process but never operated in Russia, i.e., never filed a financial return. (All organizations located in Russia are required to file annually.) The information on firm activity was also confirmed through the Russian Federal Tax Agency (<http://egrul.nalog.ru>) and Statistical Services (<http://www.okpo.ru>) databases.

¹⁴ Bureau van Dijk also provides a popular Orbis database.

2006), we define a shareholder as an owner if he or she owns at least 20 percent of the firm.¹⁵ Appendix 1 provides additional details on the procedure used to construct this variable.

Firm performance: Similarly to the prior research (e.g., Anderson and Reeb, 2003), we measure firm performance as the ratio of operating profit (earnings before interest and taxes) to the book value of assets (*OROA*).¹⁶

Sample: To test Hypothesis 1, we use a cross-sectional dataset of firms at the time of entry. To test Hypothesis 2, we use two samples: a pooled cross-sectional dataset where each firm may be observed for up to 11 years and a cross-section of firms at the age of one year. The estimation sample consists of 4,475 firms: 53 percent of these firms operate in the trade sector (retail and wholesale), 25 percent in services, 10 percent in manufacturing, 8 percent in construction, and 4 percent in other industries. The most common home countries are China (28% of firms), Belarus (12%), Turkey (10%), India (5%), and Ukraine (4%). Entrepreneurs manage 64 percent of the firms. The remaining 36 percent are operated by hired managers. The complete distribution of firms by country and management type appears in Appendix 2.

Desire to live and work in Russia: Similar to the prior immigration studies (e.g., Scott, Coomes, and Izyumov, 2005), we use the number of the entrepreneur's nationals working in Russia in year t , $\ln(\text{foreign workers})$, to proxy for the entrepreneur's relocation benefits that determine their desire to live and work in Russia.¹⁷ The data on foreign workers come from the Russian Statistical Labor Yearbooks and are provided for 19 countries between 1998 and 2008, which means that the data are available for 2,372 firms from our sample. Countries with missing data have slightly larger GDP and lower population and provide firms that are a little larger and less likely to operate in construction and extraction industries. Since Russian Statistical Services omit countries with small work migration to Russia, it is natural that firms with missing migration data come from wealthier countries, which nationals are less likely to seek employment in Russia and where entrepreneurs may have larger start-up resources. The complete

¹⁵ Empirically, 20 percent is also the smallest share owned by any firm CEO in the dataset. Unlike large public firms, entrepreneurs rarely grant equity shares to hired managers. The findings are also robust to the higher thresholds of 51 percent and 100 percent.

¹⁶ All monetary values are in nominal Russian rubles. Inflation effect is captured by the year dummy variables in regression models. We removed outliers: the top and bottom 1 percent of observations on *OROA*. For example, for operational return on assets (*OROA*), this removes observations with *OROA* approximately above 150 percent and below -300 percent.

¹⁷ We use the number of foreign workers rather than the number of immigrants for several reasons. First of all, Russia does not provide reliable data on the number of immigrants in the studied period. Second, Russia does not have an open immigration system and the number of people coming to Russia as immigrants is limited and would not reflect the desire of foreign nationals to live in Russia. Work visas are issued in much greater numbers than permanent residence permits, can be obtained from outside of Russia, and require much shorter processing time. Foreign workers are also more flexible than permanent residents and can easily leave Russia if it is no longer an attractive location. Finally, since foreign owner-managers come to work in Russia, foreign workers are the most comparable group in their relocation goals. Immigrants may include refugees and the elderly with different criteria for relocation.

comparison is reported in Appendix 3. The distribution of the 2,372 firms from the final sample by country, manager type, and the average number of nationals working in Russia is shown in Appendix 4. The number of foreign workers reflects the demand for relocation, but it may also capture the effect of population size, such as a bounding effect to migration. We account for this by using a natural logarithm of the foreign country population as a control variable.¹⁸

In line with the prior studies (e.g., Lin and Hu, 2007; Wasserman, 2003), we also include a range of control variable comprising firm and home-country characteristics that may influence the number of foreign workers, manager choice, and firm performance. We include the number of shareholders and the natural logarithms of assets and long debt. We also control for gross domestic product (GDP) in nominal U.S. dollars. Finally, we use a dummy control variable for the firms that come from non-CIS countries, where CIS stands for the Commonwealth of Independent States and Tajikistan, which include the majority of the former Soviet Union republics. Also, in the appropriate models, we control for the firm’s year of entry, age, nationality, and the year of observation.

Table 1 reports variable definitions and key statistics, and Table 2 provides a matrix of correlation coefficients.

 Insert Table 1 about here

 Insert Table 2 about here

5 Empirical Strategy

5.1 Choice of Manager

Hypothesis 1 predicts a positive relationship between the relocation benefits and the probability that the firm will have an owner-manager. To estimate this relationship, we start with a probit model controlling for observed firm and home-country characteristics:

$$P(OM_i = 1) = \beta_0 + \beta_1 \ln(\text{foreign workers}_j) + \sum_{k=1}^n \beta_k Z_{ki} + \sum_{p=1}^m \beta_p G_{pj} + D_i + \varepsilon_i, \quad (1)$$

¹⁸ An alternative way to normalize by the population size is to use the number of foreign workers per capita. We use it as a dependent variable in the robustness check and find similar results. We refrain from using it in the main specification for several reasons: First, the total population has a bounding effect, but it is not clear how it affects emigration in the numbers below the boundary. When X people are leaving a large country, it does not necessarily mean that they reflect lower desire to emigrate than when X people leave a small country. Second, the effect of population is likely to be non-linear. Finally, the effect of the number of workers is also likely to be non-constant, but decreasing, so the log-transformation is appropriate.

where i is the firm, j is the firm's country of origin, OM_i is the owner-manager dummy variable, Z_{ki} are firm-level control variables, G_{pj} are country-level control variables, D_i are dummy variables indicating the year when the firm was founded in Russia (date dummy variables), and ε_i is an error term. All time-variant variables are measured in the year of the firm's entry.¹⁹ Standard errors are robust and clustered on the country of origin.

Even after the inclusion of control variables, causal interpretation of the observed relationship may be problematic due to the endogeneity concerns. For example, some unobserved home-country characteristics may simultaneously affect the relocation benefits and the probability that a foreign entrepreneur will become an owner-manager. To address these endogeneity concerns, we need a shock to the entrepreneur's home country that would increase the relative attractiveness of emigration, but would not affect entrepreneurs' managerial skills and resources. As such a shock, we use **color revolutions** (primarily non-violent movements against government regimes that resulted in government change) and similar civil movements that were aimed at overthrowing government leaders but did not succeed. Examples of color revolutions are Serbia's Bulldozer Revolution in 2000, Georgia's Rose Revolution in 2003, Ukraine's Orange Revolution in 2004, and Lebanon's Cedar Revolution in 2005. Examples of the protest civil movements similar to color revolutions but not followed by the change of government leaders are movements in Belarus and Azerbaijan in 2005. Color revolutions and similar movements took place in 10 countries between 2000 and 2007 (see Appendix 5 for the complete list of countries). Henceforth, we refer to both types of events as color revolutions.

These revolutions had a dual effect: First, they created relatively large groups of people who were dissatisfied with the outcome of the movement, even if they had not actively participated in it. Second, many of these events created political turbulence in the country that often negatively affected the sense of security for the general public. Thus, people would view emigration slightly more favorably after a color revolution and would be more willing to relocate to other countries, including Russia. Indeed, we have found a significant increase in the number of immigrants from the countries with color revolutions to the OECD countries in the three years following a revolution (see Appendix 6 for details).

We expect that color revolutions increased the attractiveness of relocation to manage a firm in Russia relative to staying at home. As a result, foreign entrepreneurs from the affected countries founding their firms in Russia after color revolutions would be more likely to become owner-managers than their nationals who founded firms in Russia earlier. It is important to note that color revolutions did not lead to the redistribution of wealth or immediate change of any country characteristics that could affect

¹⁹ We do not use country fixed effects because for the majority of countries, there is little within-country variation in the relocation benefits during our 12-year observation period. For comparison, the results with country fixed effects are presented in Appendix 7.

entrepreneurship, such as entrepreneurs' skills, experience, or wealth.²⁰ Since establishing a firm abroad may take several years, we investigate the effect of color revolutions on the probability of owner-management in the three consecutive years starting with the revolution year. A difference-in-differences model is presented below:

$$P(OM_i = 1) = \beta_0 + \beta_1 \text{color revolution}_j + \sum_{k=1}^n \beta_k Z_{ki} + \sum_{p=1}^m \beta_p G_{pj} + D_i + C_j + \varepsilon_i, \quad (2)$$

where *color revolution* is a dummy variable that equals 1 for the country where the revolution took place for three consecutive years starting with the year of the revolution. The effects of a *Post* dummy variable and the home country are captured by the year of founding D_i and the country of origin C_j dummy variables. The treated group is firms from the countries that experienced color revolutions. The control group is firms from other countries.²¹ The model is estimated by Probit.²² Standard errors are clustered on country.

5.2 Performance Implications

Hypothesis 2 predicts that owner-managers with more nationals working in Russia, and presumably higher benefits of relocation, will be more willing to accept lower firm profit than owner-managers with fewer nationals in Russia. The former are compensated for the lower firm profits with the benefits of relocation. Therefore, if we compare firms with owner-managers, the performance of firms from countries with high work migration to Russia should be lower than the performance of other similar firms (See Equation 3 for the model).

$$OROA = \beta_0 + \beta_1 OM_i + \beta_2 \text{Ln}(\text{foreign workers})_j + \beta_3 OM_i \times \text{Ln}(\text{foreign workers})_j + \text{Controls} + \varepsilon_{ii}, \quad (3)$$

where *Controls* includes firm-level and country-level control variables²³ and the date of entry and the year of observation dummy variables. We use a pooled cross-sectional dataset of firms. Standard errors are clustered on firm.²⁴

To address the endogeneity concerns, we examine how color revolutions affect the performance of firms with owner-managers. We expect that for the owner-managers who entered after a color revolution, private benefits of relocation should be higher than for those owner-managers who entered

²⁰ See some of the results in Appendix 6. Another concern would be the change in the exchange rates, which may significantly devalue savings, but we did not observe significant national currency depreciation or appreciation following color revolutions.

²¹ The two groups are similar on the observed characteristics, such as assets, debt, and the number of employees and have similar pre-treatment trends.

²² OLS estimation of diff-in-diffs also produces a positive and significant coefficient for color revolution, 0.132.

²³ Assets and debt are measured in the year of observation rather than the year of entry.

²⁴ Clustering on country or using a cross-section of firms one year after starting operations does not change the results.

before. Therefore, firms with owner-managers that entered after a color revolution²⁵ should demonstrate a lower OROA than owner-managed firms that entered before. Conversely, firms with hired managers should not experience any decrease in OROA. The difference-in-differences model, where we compare performance of firms at the age of one year, is presented in Equation 4.²⁶ Standard errors are clustered on country.

$$OROA = \beta_0 + \beta_1 color\ revolution_j + \sum_{k=1}^n \beta_k Z_{ki} + \sum_{p=1}^m \beta_p G_{pj} + D_i + C_j + \varepsilon_i \quad (4)$$

6. Results

Table 3 compares entrepreneurial start-ups from countries with high and low work migration to Russia, which presumably correspond with high and low benefits of relocation to Russia.²⁷ As expected, entrepreneurs from countries with high relocation benefits seem to be more likely to become owner-managers. As also expected, an average performance of firms with owner-managers receiving high relocation benefits is lower than that of owner-managers with low benefits. This implies that entrepreneurs who consider Russia an attractive place to live are more likely to manage their firms in Russia personally, but such owner-managers have lower firm performance compared to other owner-managers. While suggestive, however, this comparison does not account for the differences between firms, so we proceed with further tests to account for these and other endogeneity concerns.

 Insert Table 3 about here

6.1 Choice of Manager

Table 4 demonstrates a positive relationship between the benefits of relocation to Russia and an entrepreneur's choice to be an owner-manager. Model 1 shows that foreign entrepreneurs with more nationals working in Russia, and presumably higher benefits from living in Russia, are more willing to manage their firms in Russia personally. Coefficients for the control variables suggest that smaller firms with lower debt and fewer shareholders, coming from countries with low GDP and large populations, are also more likely to have owner-managers.

²⁵ In the three consecutive years starting with the year of the revolution.

²⁶ We refrain from using multiple years per firm in order not to inflate the diff-in-diffs results. One year after founding was chosen as the year when all founded firms are still present in the data. In later years, some unsuccessful firms may cease operations and only relatively successful firms will be left, which may bias the results of the difference-in-differences model.

²⁷ Work migration is defined as high when an average migration from country j to Russia across the observation period is above the mean migration for all countries for which migration is observed.

Insert Table 4 about here

To give an idea of the size of the observed association, Figure 3 pictures predicted probabilities of owner-management depending on the number of the entrepreneur's nationals working in Russia. For example, for a firm with average characteristics, the probability of having an owner-manager is 71 percent if the owner has 229,000 nationals working in Russia (as for China) and 46 percent if an entrepreneur has 5,000 nationals working in Russia (as for the U.S.).

Insert Figure 3 about here

The difference-in-differences probit model in column 2 of Table 4 suggests that entrepreneurs who founded firms in Russia after a color revolution were significantly more likely to manage their firms personally. An increase in the probability of owner-management for a firm founded after a color revolution is 15 percentage points, compared to a similar firm that had been founded before. A difference-in-differences model estimated by OLS also confirms these findings (see column 3).

6.2 Performance Implications

Table 5 demonstrates support for Hypothesis 2. The results are consistent with the idea that when becoming owner-managers, entrepreneurs are willing to substitute relocation benefits for some firm profit. Model 1 shows that owner-managers from countries with high work migration to Russia have lower firm performance than other owner-managers. The results imply that for the 10 percent increase of the number of foreign workers in Russia from country j , the OROA of firms with owner-managers from country j will decrease by 0.18 percentage points. Figure 4 demonstrates that this effect would account for a difference of negative 7 percentage points between a firm with an owner-manager from China (229,000 workers in Russia) and a similar firm with an owner-managed from the U.S. (5,000 workers in Russia).

Insert Table 5 about here

Insert Figure 4 about here

The difference-in-differences models with color revolutions in columns 2 and 3 also support the notion that owner-managers with high relocation benefits would have lower firm performance. Specifically, they show that owner-managers who founded firms in Russia after a color revolution have a firm OROA 9 percentage points lower than owner-managers who founded firms in Russia earlier. Firms

with hired managers, however, do not demonstrate any significant difference in performance. Note that owner-managed firms founded in Russia before a revolution are also unaffected (see column 4).

6.3 Performance Mechanisms

In the theoretical background section, we expected that owner-managers with positive nonfinancial returns may have lower firm profits for two potential reasons: First, some entrepreneurs with nonfinancial benefits may manage their firms personally even when they could achieve higher firm profit by hiring a manager (misaligned-manager-choice mechanism). Second, entrepreneurs with nonfinancial benefits may open and manage lower-quality firms compared to other entrepreneurs (firm-type mechanism). While the data limitations do not allow us to precisely distinguish between the two mechanisms, in this section we search for the evidence that would be consistent with one or the other.

We start with comparing owner-managed firms that were founded in Russia before and after a color revolution. If the differences in performance between these firms were due to the lower quality of firms founded by owner-managers with higher relocation benefits, i.e., post-revolution firms, then some observed characteristics of the post-revolution firms would signal lower quality. For example, such firms would be smaller and with larger debt at the time of founding. However, owner-managed firms founded after a revolution do not obviously look like low-quality firms (see Table 6). They are not significantly different from the pre-revolution firms and have similar assets, debt, shareholders, and employees. This observation appears to be unsupportive of the firm-type mechanism.

Insert Table 6 about here

Next, we expect that in some industries an entrepreneur's managerial abilities are more important for firm performance than in others. A restaurant or a hotel typically has more complex operations than a mom-and-pop grocery shop. We expect that in more complex industries, requiring higher managerial abilities, such as services²⁸ and construction, owner-managers with lower managerial abilities will have a larger negative effect on firm performance than in less complex industries, such as trade. We exclude extraction and manufacturing because managerial abilities required there strongly depend on the type of business; for example, manufacturing complex machinery versus shoemaking.

Column 5 of Table 5 demonstrates that an owner-manager with high relocation benefits has a stronger negative effect on the performance of firms in service and construction industries than in trade. We consider this observation to be in favor of the misaligned-manager-choice mechanism, since we doubt that the effect of the quality of the firm would vary significantly with the industry type.

²⁸ This group also includes hotels and restaurants.

In our results, we find more evidence of the misaligned-manager-choice mechanism than of the firm-type mechanism. While this observation does not eliminate the presence of the firm-type mechanism, it suggests that the lower profit of firms with owner-managers with high relocation benefits is at least partially driven by the misaligned choice between an owner-manager and a hired manager.

7 Alternative Explanations and Robustness Checks

In this section, we address potential concerns and alternative explanations for the observed relationships between the relocation benefits, the probability of owner-management, and firm performance. One concern may be that our proxy variable for the attractiveness of living in Russia, work migration, might be too general and fail to effectively reflect the relocation benefits and costs. So in this section we explore the impacts of two variables that more directly reflect the benefits and costs of relocation: the distance and the difference in average January temperatures between a home country and a firm's location in Russia. Since Russia is a large country with a variety of climate zones, it provides sufficient variation of both indicators. Prior literature suggests that individuals prefer to live closer to their family and friends and in regions with familiar climate (e.g., Dahl and Sorenson, 2010; Graves, 1980), so we expect that the larger differences in distance and temperatures would decrease the attractiveness of relocation and the probability of owner-management. In Table 7, we present the results of probit models for distance and weather with country-of-origin and region-of-location fixed effects. These models suggest that a longer distance and a greater difference in weather indeed reduce the probability of owner-management.

Insert Table 6 about here

One might also wonder if our proxy variable might capture some additional influences besides the desire to relocate. In considering these potentials alternative impacts, one should first note that the majority of the influential potential factors, such as higher ethnic demand, ethnic networks, or more abundant supply of cheap ethnic labor, should increase the performance of owner-managed firms, rather than have the negative impact observed in our main findings (e.g., Kalnins and Chung, 2006). To be conservative, however, we also conduct a test to make sure that our results are not driven by some unobserved alternative impacts of ethnic community on firm performance. We use an exogenous negative shock to the size of the local ethnic community and examine if it has the same effect on firm performance as we would expect from the diminished relocation benefits. Our shock is a work-visa policy change that decreased the number of foreign workers in Russia. In 2007, Russia introduced a binding quota for the

number of foreign workers from CIS countries (or the former Soviet Union republics).²⁹ This quota exogenously limited the number of foreign workers from CIS, but it did not significantly decrease the desire of CIS entrepreneurs to relocate.

Using a difference-in-differences model in Equation 5, we test whether this negative policy shock had a positive effect on the performance of owner-managed firms founded after the shock.

$$OROA_i = \beta_0 + \beta_1 CIS_j \times post2006 + \sum_{k=1}^n \beta_k Z_{ki} + \sum_{p=1}^m \beta_p G_{pj} + D_i + C_j + \varepsilon_i \quad (5)$$

We limit the sample to owner-managed firms that entered between 2003 and 2008³⁰ and examine the performance of firms at the age of one year.³¹ The treated group is firms from CIS countries; the control group is firms from non-CIS countries. *Post2006* indicates that the firm entered after the policy change.³²

If the effect of the size of the local ethnic community is directly driving our results, we would expect a positive effect of the policy change on the performance of owner-managed firms. However, the effect of the policy change in column 3 is negative and non-significant, which does not support this alternative explanation. There is also no evidence of a negative effect of the policy change on the probability of owner-management (see column 4). These results suggest that what we capture in our main findings should not be the direct effect of the size of the local ethnic community. The results also imply that it is unlikely that foreign workers could be a direct source of foreign owner-managers. Otherwise, the probability of owner-management would have decreased after the policy change.

 Insert Table 7 about here

Another potential concern with the findings is that we do not explicitly account for an entrepreneur's alternative wage. While we have no information on the entrepreneurs' alternative wages, we try to account for them by controlling for the home-country GDP and GDP per capita, which are typically highly correlated with the home-country wages. Also in the models with color revolutions, alternative wages are less of a concern: these models control for the country of origin, and we do not expect these civil movements are unlikely to affect entrepreneurs' alternative wages at home or in Russia.

²⁹ The quota was binding. In 2008, 10 Russian regions had exhausted their quotas by May (<http://www.fms.ru>). The quota system affected both the flow and the stock of foreign workers in Russia because the quota also applied to foreign workers in Russia who had to renew their work permits.

³⁰ We start our sample from 2003 because it is the year when the quota system was introduced for non-CIS firms, to keep the control group shock-free. The sample is also limited to countries with the migration data for comparability with the main analysis, but the results hold for the complete sample.

³¹ We use age=1 in order to not oversample in the diff-in-diffs model, but the results are robust to using the complete sample instead.

³² The main effect of *post2006* is captured by the year of entry dummy variables, D_i ; the main effect of CIS country group is captured by the country of origin dummy variables, C_j .

Also, owner-managers may potentially lower firm performance if they take higher wages than hired managers when, for example, they prefer to get financial returns from firm ownership through wages rather than dividends. To make sure that this is not the case, we limited our sample to larger firms, with more than 50 employees, where the effect of the manager's salary should be the least influential, and still found the negative effect of the relocation benefits on the performance of owner-managed firm (see column 5).

In further analysis, we also confirmed that our findings held when we used survival as a dependent variable. When a foreign owner-manager of a firm has high relocation benefits, such a firm has significantly lower chances to survive for five years or longer than a similar firm managed by an entrepreneur with low relocation benefits (see column 6).³³ These findings suggest that what we capture in our analysis is not a result of a financial misrepresentation or the ability of some owner-managers to hide profit.

One might wonder if entrepreneurs who found firms in Russia after color revolutions may be different from pre-revolution founders. We address this concern in two ways: First, in Table 6, we compared observed characteristics of the owner-managed firms founded before and after a color revolution and did not find any significant differences. Second, we check if the effect of a successful revolution is different from an unsuccessful one. We expect that entrepreneurs who leave after an unsuccessful revolution should be most similar to the pre-revolution founders.³⁴ Thus, we run our analysis excluding countries with successful revolutions and find the magnitude of the coefficient to be very similar to the main results (see column 7 of Table 7).

Finally, we make sure that our results are robust to the sample and model modifications. In particular, the results hold when we control for the 2-digit level industries, modify the independent variable (use the number of foreign workers per capita), limit our sample for the performance analysis to firms observed at the age of 1 year, and remove firms from China—the largest supplier of the foreign entrepreneurs to Russia—or any other influential country.³⁵

³³ We use probit model, where the dependent variable equals 1 if a firm has survived for 5 years or longer.

³⁴ We expect that individuals dissatisfied with a current political regime are more likely to start and manage their businesses abroad. Potentially this dissatisfaction may be correlated with some unobserved human characteristics that may affect firm performance. Entrepreneurs who immigrate before the revolution and after an unsuccessful revolution should be most similar because they are dissatisfied with the same political regime. Individuals who leave a country after a successful revolution may be different from pre-revolutions entrants because they are dissatisfied with a different regime.

³⁵ The results with excluded influential countries are available on request.

8 Discussion and Conclusion

Organizations literature has paid significant attention to the choice of top managers in mature organizations (e.g., Bertrand, 2009; Chen and Hambrick, 2012; Wasserman, 2003; Wulf and Singh, 2011), but it has yet little to say about the determinants of this choice in entrepreneurial ventures and family start-ups (Boeker and Wiltbank, 2005; Van Praag and Versloot, 2007). We know very little about what factors motivate an entrepreneur to manage a firm personally or hire an agent. In particular, it is unclear whether this choice is based primarily on profit maximization, as is often the case in established public firms, or if it can be affected by other considerations.

In this paper, we have proposed that nonfinancial returns to owner-management, such as an attractive location, may motivate an entrepreneur to manage a firm personally and to deviate from the profit-maximizing behavior. We have found that entrepreneurs starting their firms in attractive regions, which provide high relocation benefits, are more likely to manage their firms personally and seem to be willing to substitute the relocation benefits for some firm profits.

These findings are consistent with the notion that nonfinancial benefits to management increase the likelihood that entrepreneurs will personally manage their firms. They also suggest that owner-managers would be willing to accept lower financial earning in exchange for nonfinancial benefits. This means that an entrepreneur who expects high nonfinancial benefits from being a manager will open a firm and become an owner-manager even when this choice yields lower financial return to owner-management than for an entrepreneur with low nonfinancial benefits. Conversely, an entrepreneur who expects nonfinancial disutility from being a manager, for example the disutility from leaving relatives and friends or relocating to an unattractive host country, will be less likely to manage the firm personally and will require high profit premium for doing so.

Our specific findings on the location attractiveness also provide evidence of the importance of location for an individual's occupation choice. Several prior studies have considered an attractive location to be an important determinant of the employment choice and of the decision to start a firm (e.g., Agarwal and Ohyama, 2013; Dahl and Sorenson, 2010). Our findings suggest that location features not only define where an entrepreneur will start a new business but also strongly predict whether an entrepreneur will manage this business personally or hire a professional manager.

While considering how this effect would play in other personal and institutional setting, one should take into consideration an entrepreneur's host-country status and immigration policies, which may influence the magnitude of the observed effect. While our findings should be particularly relevant to the entrepreneurs who decide to found a firm while outside of a host country, they would also apply to permanent residents and domestic entrepreneurs, though for them, the effects might be smaller than for non-immigrants. For example, domestic entrepreneurs from unattractive locations may hire a manager

and relocate to more attractive regions. This behavior is becoming quite evident: North American and European entrepreneurs hire managers to oversee their firms' operations and relocate to places with better climates, such as Spain, East Asia, and the Caribbean. These findings are also relevant to domestic entrepreneurs who found firms outside of their home regions, suggesting that such entrepreneurs may require a higher performance premium for managing their firms than entrepreneurs who start their firms at home and do not experience social disutility of relocating away from family and friends. Dahl and Sorenson (2012), for example, suggest that entrepreneurs may be less likely to start their firms away from home for social reasons. Our findings suggest that if entrepreneurs start firms in unattractive regions, they are less likely to manage these firms themselves. This may hurt performance of firms for which owner-management would be beneficial.

Our findings also point to the importance of investigating how other nonfinancial benefits of management, such as independence, ability to take control, or a pleasure from occupying an important position in a firm, may affect an entrepreneur's management choice. Prior studies suggest that nonfinancial motives may vary in their influences (e.g., Sauermann and Cohen, 2010). While our results suggest that these nonfinancial benefits may also be important, the strength of their influence may vary, and entrepreneurs may vary in their sensitivity to the nonfinancial benefits. In future research, it would be useful to further explore these variations.

Another avenue for the future research would be finding individual-level variations in relocation benefits and individuals' sensitivity to them. One of the limitations of this paper is that relocation benefits are measured at the home-country level rather than at the individual level. While this measure reflects a general willingness of entrepreneurs of a given nationality to relocate, it does not account for the individual deviations from the baseline. Finding a setting with individual-level measures of nonfinancial benefits and exogenous sources of their variation may be another potential avenue for future work.

In summary, this paper makes several important contributions to the organization literature. While prior organization studies have primarily focused on the top-management choice in established firms, this is one of the very first studies of the top management choice in a start-up. This paper relaxes a common assumption that start-up founders manage their firms themselves and examines the antecedents and consequences of their choice between owner-management and hiring an agent. While established organizations are believed to be primarily motivated by the factors that influence firm performance (Zellweger et al., 2012; Chrisman et al., 2003), our results suggest that start-up owners put significant emphasis on nonfinancial considerations. Thereby, our findings also speak to the new and growing literature examining the role of nonfinancial benefits in entrepreneurs' strategic choices. So far, this literature has focused on self-employment, equity ownership, and location choices (e.g., Dahl and Sorenson, 2012; Ehrhardt and Nowak, 2003; Hamilton, 2000). Our results add the choice between an

owner-manager and a hired manager to the list of decisions affected by the entrepreneur's nonfinancial benefits.

The paper also contributes to the literature on control in family firms (Ehrhardt and Nowak, 2003; Wasserman, 2006). Prior studies have focused primarily on the role of nonfinancial benefits in equity control. Our results suggest that nonfinancial benefits may motivate an entrepreneur to keep control of the firm not only through the majority ownership but also through management.

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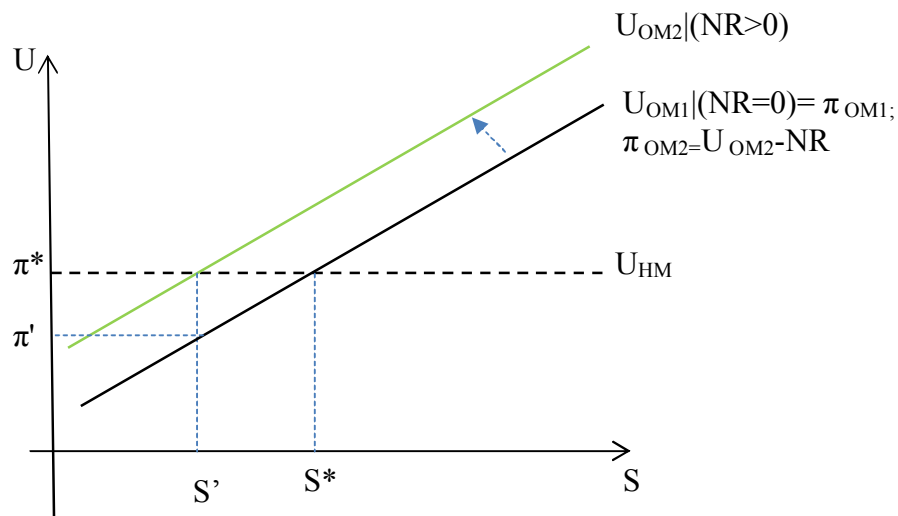


Figure 1. Some entrepreneurs with nonfinancial benefits from owner-management manage their firms personally even when these firms would perform better under a hired manager.

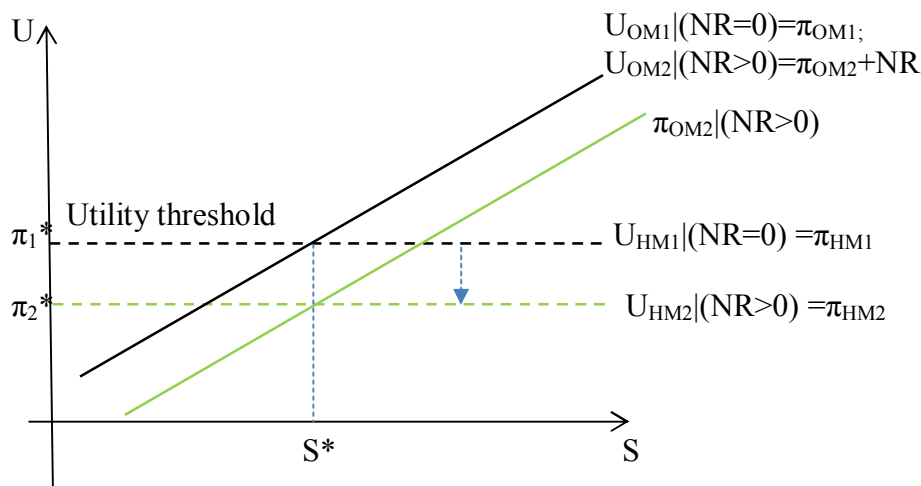
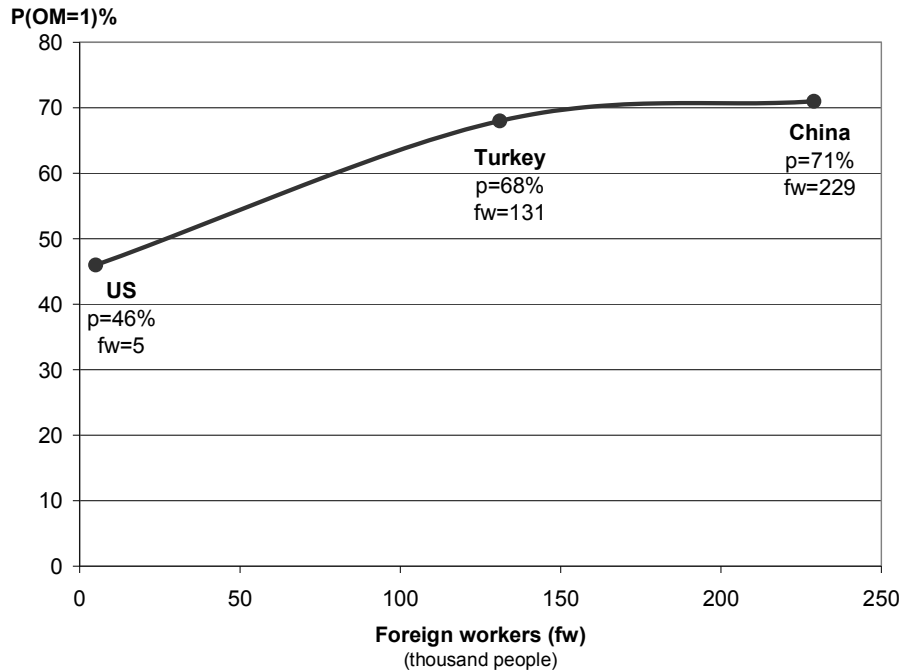


Figure 2. Some entrepreneurs with nonfinancial benefits from owner-management open and manage low-quality firms.



Note: Continuous variables are at their means (the means are taken from the sample used to estimate probit regression); date=2007; non-CIS=0; the numbers of foreign workers (thousand people) are the actual numbers of foreigners from the U.S., Turkey, and China working in Russia in 2007.

Figure 3. Predicted probability that a firm will have an owner-manager

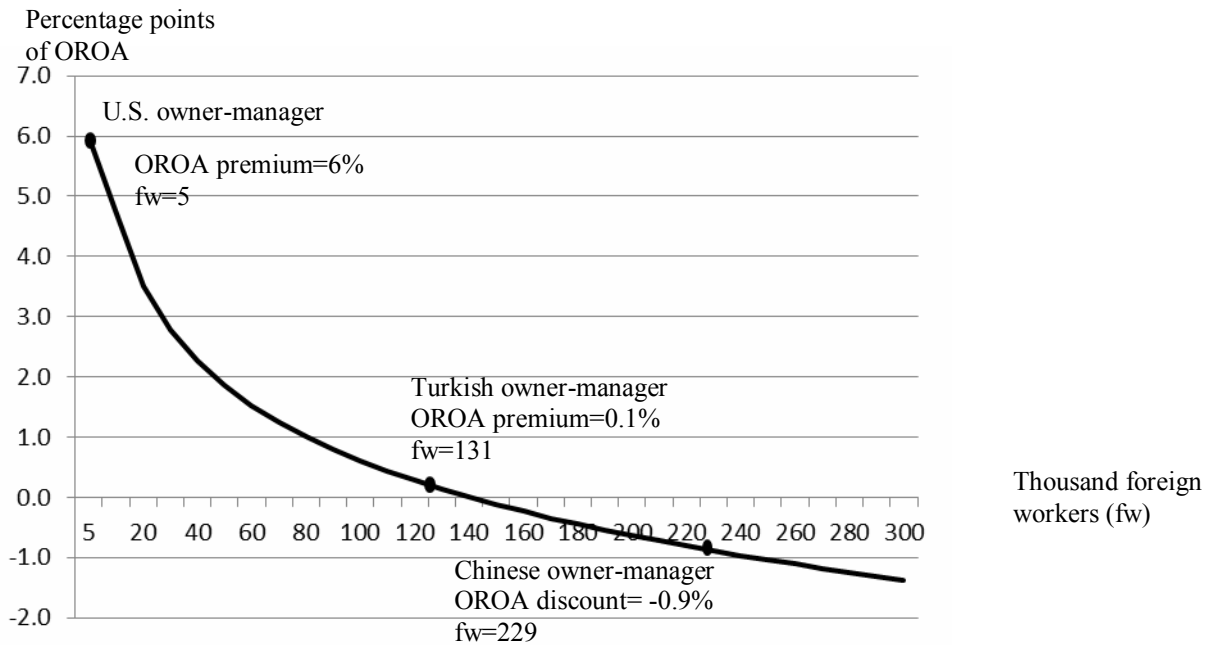


Figure 4. Predicted effect of an owner-manager on OROA relative to a hired manager, in percentage points

Table 1 Main variables^a

| Variable | Description | Mean | Std.dev. | Min. | Max | N obs. |
|---------------------|---|--------|----------|---------|--------|--------|
| OROA | Ratio of operating profit (earnings before interest and taxes) to the book value of assets | 0.004 | 0.320 | -2.738 | 1.36 | 7,889 |
| Owner-manager | Equals 1 if one of the firm owners is the firm CEO and zero otherwise. | 0.643 | 0.479 | 0 | 1 | 4,475 |
| Ln(assets) | Natural log of the book value of assets in Russian rubles | 11.896 | 2.858 | 8.335 | 22.778 | 4,475 |
| Ln(long debt) | Natural log of 1+long debt (in Russian rubles) | 1.129 | 3.669 | 0 | 19.930 | 4,475 |
| Shareholders | The number of shareholders | 1.078 | 0.355 | 1 | 8 | 4,475 |
| Number of employees | The number of employees | 12.860 | 32.765 | 1 | 383 | 1,461 |
| Ln(foreign workers) | Natural log of the number of foreign workers from the firm's country of origin in Russia | 3.838 | 1.153 | 0.182 | 5.842 | 2,372 |
| Ln(GDP) | Natural log of the GDP of the firm's country of origin, measured in the U.S. dollars | 5.712 | 2.037 | -2.040 | 9.567 | 4,232 |
| Ln(population) | Natural log of the population of the firm's country of origin | 4.459 | 2.224 | -2.659 | 7.186 | 4,277 |
| Color revolution | Equals 1 for 3 years after the color revolution, starting with the year when the revolution took place in the firm's country of origin. | 0.110 | 0.313 | 0 | 1 | 4,475 |
| Ln(distance) | Natural log of the distance in km from the entrepreneur's country of origin to the firm's location in Russia | 7.618 | 0.889 | 5.119 | 9.394 | 4,041 |
| Jan. t° difference | Difference in January temperatures between a home country and a firm's location in Russia | 10.936 | 7.902 | -11.800 | 38.800 | 4,417 |
| Non-CIS | Equals 1 if entrepreneur's country of origin is outside of the Commonwealth of Independent States (CIS) and Tajikistan | 0.800 | 0.400 | 0 | 1 | 4,475 |

a) The statistics for OROA is measured in the pooled cross-sectional dataset. For other variables, the statistics is measured in the cross-sectional sample, where firms are observed in the year of entry. The number of employees is available starting from 2002.

Table 2 Main correlations

| variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|-----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 1 OROA | 1.000 | | | | | | | | | | |
| 2 Owner-manager | 0.013 | | | | | | | | | | |
| 3 Ln(assets) | 0.121 | -0.294 | | | | | | | | | |
| 4 Ln(long debt) | -0.016 | -0.144 | 0.305 | | | | | | | | |
| 5 Shareholders | -0.010 | -0.037 | 0.084 | 0.073 | | | | | | | |
| 6 Ln(foreign workers) | -0.018 | 0.093 | 0.029 | -0.037 | 0.037 | | | | | | |
| 7 Ln(GDP) | -0.032 | 0.044 | -0.163 | 0.030 | -0.066 | 0.129 | | | | | |
| 8 Ln(population) | -0.034 | 0.197 | -0.318 | -0.042 | -0.097 | 0.260 | 0.857 | | | | |
| 9 Non-CIS | -0.067 | -0.002 | -0.045 | 0.061 | 0.003 | -0.202 | 0.686 | 0.612 | | | |
| 10 Color revolution | 0.038 | 0.034 | -0.024 | -0.052 | 0.018 | 0.262 | -0.292 | -0.281 | -0.492 | | |
| 11 Ln(distance) | -0.035 | 0.093 | -0.248 | -0.020 | -0.124 | -0.158 | 0.579 | 0.667 | 0.532 | -0.345 | |
| 12 Jan. t° difference | -0.012 | -0.140 | 0.116 | 0.057 | 0.006 | 0.098 | 0.016 | -0.005 | 0.236 | -0.106 | 0.076 |

Table 3 Management type and performance of firms from countries with high and low work migration to Russia.^a

| Country type | (1) Owner-manager | (2) Hired manager | (3) Difference (1)–(2) |
|---|----------------------|----------------------|------------------------------|
| Shares of firms with owner-managers and hired managers | | | |
| High migration (High relocation benefits) | 76% | 24% | 52% |
| Low migration (Low relocation benefits) | 46% | 54% | -8% |
| Difference High-Low | 30% | -30% | |
| Mean OROA in % | | | |
| High migration (High relocation benefits) | 0.1% | 0.7% | -0.6% |
| Low migration (Low relocation benefits) | 7.1% | -1.1 | 8.2%*** |
| Difference High-Low | -7%*** | 1.9% | |

a) For OROA, *** denotes significance at 1%

Table 4 The effect of the relocation benefits on the owner-manager choice^a

| | (1) | (2) | (3) |
|--|----------------------------------|-----------------------------------|-----------------------------------|
| Dependent variable | Owner-manager | | |
| Variables | Probit | Diff-in-Diffs, Probit | Diff-in-Diffs OLS |
| Ln(foreign workers) | 0.166** (0.078) | | |
| Color revolution | | 0.399*** (0.327) | 0.132*** (0.034) |
| Ln(GDP) | -0.208** (0.091) | -0.452 (0.327) | -0.157 (0.106) |
| Ln(population) | 0.160** (0.076) | -1.778 (1.920) | -0.454 (0.592) |
| Ln(assets) | -0.092*** (0.012) | -0.083*** (0.012) | -0.027*** (0.003) |
| Ln(long debt) | -0.015 (0.010) | -0.002 (0.006) | -0.001 (0.002) |
| Shareholders | -0.080 (0.115) | -0.121* (0.110) | -0.045* (0.025) |
| Non-CIS | 0.413 (0.254) | | |
| Constant | 0.890*** (0.302) | -0.877 (1.618) | 3.912 (3.259) |
| Date dummies | yes | yes | yes |
| Country dummies | | yes | yes |
| R ² / Pseudo R ² | 0.148 | 0.170 | 0.217 |
| N | 2,372 | 4,475 | 4,475 |

a) Robust standard errors clustered on country are in parentheses. *, **, and *** denote significance at 10%, 5%, and 1% respectively.

Samples: Model 1 includes foreign entrepreneurial firms that have country of origin migration data. Models 2 and 3 include all firms. Firms are observed at the time of entry. Samples are cross-sectional.

Table 5 The effect of the relocation benefits on firm performance^a

| Dependent variable | (1) | (2) | (3) | (4) | (5) |
|---|-----------------------------|---------------------------------|---------------------------------|---|--|
| Variables | OLS | Diff-in-Diffs, Owner-manager | Diff-in-Diffs, Hired manager | Diff-in-Diffs, Pre-revolution firms with owner- managers | Trade versus services and construction |
| Owner-manager | 0.089** (0.036) | | | | 0.245*** (0.065) |
| Owner-manager* Ln(foreign workers) | -0.018** (0.009) | | | | -0.058*** (0.017) |
| Ln(foreign workers) | -0.009 (0.009) | | | | 0.013 (0.014) |
| Color revolution | | -0.093** (0.041) | 0.019 (0.031) | -0.013 (0.018) | |
| Owner-manager* Ln(foreign workers)*Trade | | | | | 0.049** (0.020) |
| Ln(foreign workers)*Trade | | | | | -0.029* (0.015) |
| Owner-manager* Trade | | | | | -0.202** (0.078) |
| Ln(GDP) | -0.009 (0.007) | 0.165 (0.161) | -0.006 (0.096) | | -0.011 (0.008) |
| Ln(population) | 0.020** (0.008) | -0.152 (0.382) | 0.030 (0.784) | | 0.023*** (0.009) |
| Ln(assets) | 0.013*** (0.002) | 0.012** (0.006) | 0.018*** (0.006) | 0.023*** (0.004) | 0.013*** (0.002) |
| Ln(age) | 0.024 (0.019) | | | -0.011 (0.007) | 0.005 (0.020) |
| Ln(long debt) | -0.004*** (0.001) | -0.005* (0.003) | -0.005*** (0.006) | -0.004** (0.002) | -0.005*** (0.001) |
| Shareholders | -0.112*** (0.027) | -0.069** (0.027) | -0.003 (0.027) | | -0.120*** (0.032) |
| Non-CIS | -0.060*** (0.020) | | | | -0.060*** (0.022) |
| Trade | | | | | 0.109* (0.058) |
| Constant | 0.447 (0.086) | -0.003 (1.729) | -0.142 (4.361) | -0.241*** (0.041) | 0.316*** (0.102) |
| Date dummies | yes | yes | yes | | yes |
| Country dummies | | yes | yes | | |
| Year dummies | yes | | | yes | yes |
| R ² | 0.032 | 0.118 | 0.070 | 0.011 | 0.037 |
| N | 7,889 | 2,061 | 1,143 | 9,824 | 6,921 |

a) Robust standard errors are in parentheses, clustered on firm in Models 1 and 4 (clustering on country does not change the results) and clustered on country in Models 2 and 3. *, **, and *** denote significance at 10%, 5%, and 1% respectively.

Samples: Model 1 includes foreign entrepreneurial firms that have country of origin migration data. Models 2 and 3 include all firms. In models 1 and 5, firms are observed for several years; sample is pooled cross-sectional. In Models 2 and 3, firms are observed at the age of 1 year; samples are cross-sectional. In model 4, firms are observed for several years, firm fixed effects are used. Model 5 includes firms from the trade, service and construction industries.

Table 6 Comparison of firms with owner-managers founded before and after a color revolution^a

| Variable | (1) Pre-color revolution firms | (2) Post-color revolution firms | (3) Difference (2)-(1) |
|----------------|---|--|------------------------------|
| Log(assets) | 12.35 | 12.45 | 0.10 (0.22) |
| Log(long debt) | 1.00 | 0.70 | -0.29 (0.26) |
| Shareholders | 1.18 | 1.13 | -0.05 (0.04) |
| Employees | 12.02 | 9.40 | -2.62 (2.60) |
| N | 243 | 344 | |

a) The table includes only firms from countries that experienced a color revolution. Firms are observed in the year of founding. *, **, and *** denote significance at 10%, 5%, and 1% respectively.

Table 7 Robustness checks^a

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
|--|---|------------------------------------|---------------------------------|--------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|----------------------------------|----------------------------------|-----------------------------------|--|
| Dependent variable | Owner-manager | Owner-manager | OROA | Owner-manager | OROA | Survived for 5 years | OROA | Owner-manager | OROA | OROA | Owner-manager |
| Variables | Distance | Climate | Quota system for CIS firms | | Larger firms | Survival | Failed revolutions | With industry dummies | | Firms at age=1 | Alternative independ. var. |
| Model | Probit | Probit | OLS 'DD' | Probit 'DD' | OLS | Probit | OLS 'DD' | Probit | OLS | OLS | Probit |
| Ln(distance) | -0.195** (0.094) | | | | | | | | | | |
| Jan. t° difference | | -0.054*** (0.017) | | | | | | | | | |
| Ln(foreign workers) | | | | | -0.027 (0.018) | 0.242** (0.107) | | 0.173** (0.074) | -0.015 (0.009) | 0.022 (0.018) | |
| Color revolution | | | | | | | -0.118** (0.051) | | | | |
| Foreign workers per capita | | | | | | | | | | | 0.218* (0.130) |
| CIS*post2006 | | | -0.044 (0.229) | 0.367 (0.336) | | | | | | | |
| Owner-manager | | | | | 0.233** (0.104) | 0.807* (0.432) | | | 0.071* (0.036) | 0.132** (0.057) | |
| OM* ln(foreign workers) | | | | | -0.065** (0.027) | -0.306** (0.126) | | | -0.015* (0.009) | -0.033** (0.014) | |
| Firm-level controls | Ln(assets), ln(long debt), shareholders, ln(age) in pooled cross-sectional models | | | | | | | | | | |
| Home-country controls | Ln(GDP), ln(population), non-CIS (in models w/o country dummies) | | | | | | | | | | |
| Constant | 10.236 (9.700) | 13.776 (9.408) | -0.319 (1.109) | 8.480 (14.879) | 0.668** (0.304) | -1.992*** (0.631) | 0.617 (1.922) | 0.409 (0.434) | 0.343*** (0.116) | 0.233** (0.103) | GDP per capita, population, non-CIS 0.745** (0.334) |
| Dummies | date, country, industry, region | | date, country | date, country | date, year | date, year | date, country | date, industry | date, year, ind. | date | date |
| R ² / Pseudo R ² | 0.227 | 0.213 | 0.059 | 0.104 | 0.039 | 0.406 | 0.125 | 0.183 | 0.046 | 0.053 | 0.137 |
| N | 4,041 | 4,417 | 617 | 1,426 | 201 | 1,129 | 1,949 | 2,372 | 7,889 | 1,770 | 2,372 |

a) Robust standard errors are clustered on country, except models 5 and 9, where standard errors are clustered on firm. *, **, and *** denote significance at 10%, 5%, and 1% respectively. 'DD' stands for Difference-in-Differences.

Samples: All models, except model 7, include firms from countries with reported work migration. Models 1 and 2 include firms for which the distance and temperature differences could be calculated. Models 3 and 4 include firms founded after 2002. Model 3 includes firms with owner-managers only; firms are observed at the age of 1 year. Model 5 includes firms with more than 50 employees. Model 6 includes firms founded before 2004. Model 7 includes firms at the age of 1 year, excluding firms from countries that changed government after the color revolution. Models 8, 9, and 11 include firms with migration data. Model 10 includes firm with migration data observed at age=1.

Appendix 1

To determine whether a firm has an owner-manager, we looked for a match between the names of the firm owners (with at least 20% share) and the name of the top manager in 2,001 firms that report their owners' and managers' names. The remaining firms report only managers' names and owners' nationalities but not the owners' names.³⁶ However, we have observed that in the firms with complete information, 99.2 percent of hired managers have typical Russian names, whereas 99.0 percent of owner-managers have non-Russian names. Thus, it appears that a hired manager is almost always Russian.

To determine management status of firms with missing owners' names, we checked whether a firm manager had a Russian name or a foreign name typical of the nationality of its owner. If a firm manager had a typical Russian name, we concluded that the firm had a hired manager. If the firm manager had a foreign name typical of the nationality of the firm's owner, we concluded that the firm had an owner-manager. We validated this procedure on the subsample of firms with complete ownership and management information. The management status determined under this procedure matched the actual status in 87 percent of cases.³⁷

We used the above procedure to determine management status for 2,474 firms in our sample. To be conservative, we dropped firms from the former Soviet Union republics with missing owners' names because their owners could have typical Russian names.

To make sure that this sample construction procedure does not bias our findings, we used it to estimate the probability of having an owner-manager on a subsample that excluded firms with missing owners' names and compared them to the main findings. The findings remained very similar to the main sample (See Table A1 below).

BvD provides up to 10 years of financial data, but only current ownership and management information. Fortunately, we were able to download ownership and management information from all existing historic version of the Ruslana database, resulting in up to 5 years of ownership and management data for each firm. For the years when ownership and management data were not yet available, we used the closest available management status.³⁸ We believe that this procedure should not introduce any significant bias in our results: When we limit our sample to the 2008 observations year, where we have an actual management status for all firms, the results are similar to our main findings (see Table A2).

³⁶ On average, firms with missing owners' names are a little smaller and older but, after controlling for observed firm characteristics, have the same profitability as firms with complete information.

³⁷ Among the false cases, half were wrongfully identified as owner-managers, and half were wrongfully identified as hired managers.

³⁸ As a result, 55 percent of the firm-year observations have the actual management status; for 15 percent of observations the management status is lagged by 1 year; for 30 percent of observations the status is lagged by 2 years or longer.

Table A1. Excluding firms with missing owners' names

| | (1) | (2) |
|----------------------------|---|----------------------------------|
| Dependent variable | Owner- manager | Owner- manager |
| Variables | Excluding firms with missing owners' names | |
| Model | Probit | Probit Diff-in-Diffs |
| Ln(foreign workers) | 0.083** (0.040) | |
| Color revolution | | 0.232** (0.094) |
| Ln(GDP) | -0.143*** (0.053) | -0.057 (0.255) |
| Ln(population) | 0.079 (0.058) | 0.258 (2,674) |
| Ln(assets) | -0.061*** (0.017) | -0.076*** (0.014) |
| Ln(long debt) | -0.018 (0.012) | -0.006 (0.007) |
| Shareholders | -0.174 (0.123) | -0.122 (0.075) |
| Non-CIS | 0.324** (0.151) | |
| Constant | 1.130*** (0.286) | 1.660 (2.147) |
| Dummies | date | date and country |
| Pseudo R ² | 0.033 | 0.120 |
| N | 937 | 1,900 |

a) Robust standard errors are clustered on country. *, **, and *** denote significance at 10%, 5%, and 1% respectively.

Sample: Sample is limited to firms with complete ownership and management information, from countries with work migration data.

Table A2. Year 2008 only

| Dependent variable | (1) | (2) |
|---|-----------------------------------|-----------------------------------|
| | Owner- manager | OROA |
| Variables | Probit | OLS |
| Ln(foreign workers) | 0.439*** (0.067) | -0.001 (0.018) |
| Owner-manager | | 0.190** (0.096) |
| Owner-manager* Ln(foreign workers) | | -0.054** (0.022) |
| Ln(GDP) | 0.341*** (0.067) | -0.002 (0.016) |
| Ln(population) | -0.876*** (0.128) | 0.003 (0.019) |
| Ln(assets) | -0.037 (0.106) | 0.015*** (0.004) |
| Ln(age) | | -0.012 (0.031) |
| Ln(long debt) | -0.053 (0.071) | -0.007*** (0.002) |
| Shareholders | | -0.019 (0.025) |
| Non-CIS | | -0.031 (0.041) |
| Constant | 1.235 (1.177) | -0.039 (0.117) |
| Date dummies | yes | yes |
| Year dummies | | yes |
| R ² / Pseudo R ² | 0.205 | 0.057 |
| N | 40 | 686 |

a) Robust standard errors are in parentheses, clustered on country. *, **, and *** denote significance at 10%, 5%, and 1% respectively.

Samples: Model 1 includes firms that entered in 2008. Model 2 includes firms observed in 2008.

Appendix 2

Table A2 Distribution of firms by management type and the country of origin.

| country | owner-manager | | Total |
|-----------------------|---------------|-------|-------|
| | 0 | 1 | |
| AFGHANISTAN | 4 | 51 | 55 |
| ALGERIA | 2 | 2 | 4 |
| ANGUILLA | 1 | 0 | 1 |
| ARGENTINA | 1 | 0 | 1 |
| ARMENIA | 8 | 17 | 25 |
| AUSTRALIA | 2 | 3 | 5 |
| AUSTRIA | 16 | 7 | 23 |
| AZERBAIJAN | 10 | 24 | 34 |
| ANDORRA | 1 | 0 | 1 |
| BANGLADESH | 1 | 17 | 18 |
| BELARUS | 160 | 359 | 519 |
| BELGIUM | 8 | 3 | 11 |
| BOSNIA AND HERZEGOVIN | 4 | 12 | 16 |
| BRAZIL | 1 | 0 | 1 |
| BULGARIA | 28 | 27 | 55 |
| BURKINA FASO | 0 | 1 | 1 |
| CAMBODIA | 2 | 0 | 2 |
| CANADA | 16 | 8 | 24 |
| CAPE VERDE | 3 | 2 | 5 |
| CENTRAL AFRICAN REPUB | 0 | 1 | 1 |
| CHILE | 1 | 1 | 2 |
| CHINA | 219 | 1,051 | 1,270 |
| COLOMBIA | 3 | 1 | 4 |
| CROATIA | 2 | 7 | 9 |
| CUBA | 1 | 1 | 2 |
| CYPRUS | 2 | 1 | 3 |
| CZECH REPUBLIC | 16 | 9 | 25 |
| DENMARK | 7 | 3 | 10 |
| DOMINICA | 1 | 0 | 1 |
| ECUADOR | 2 | 1 | 3 |
| EGYPT | 1 | 0 | 1 |
| EQUATORIAL GUINEA | 0 | 1 | 1 |
| ESTONIA | 31 | 12 | 43 |
| FINLAND | 31 | 22 | 53 |
| FRANCE | 30 | 17 | 47 |
| GEORGIA | 4 | 10 | 14 |
| GERMANY | 98 | 48 | 146 |
| GREECE | 17 | 10 | 27 |
| GUATEMALA | 0 | 1 | 1 |
| HUNGARY | 5 | 9 | 14 |
| INDIA | 62 | 147 | 209 |
| INDONESIA | 6 | 1 | 7 |
| IRAN | 11 | 76 | 87 |
| IRAQ | 1 | 1 | 2 |
| IRELAND | 1 | 2 | 3 |
| ISRAEL | 47 | 12 | 59 |
| ITALY | 59 | 40 | 99 |

Appendix 2 continued

| country | owner-manager | | Total |
|-----------------------|---------------|-------|-------|
| | 0 | 1 | |
| JAPAN | 8 | 5 | 13 |
| JORDAN | 0 | 1 | 1 |
| KAZAKHSTAN | 18 | 19 | 37 |
| KIRIBATI | 3 | 0 | 3 |
| KOREA, DEMOCRATIC PEO | 30 | 26 | 56 |
| KOREA, REPUBLIC OF | 25 | 33 | 58 |
| KYRGYZSTAN | 2 | 9 | 11 |
| LATVIA | 48 | 16 | 64 |
| LEBANON | 6 | 3 | 9 |
| LIBYAN ARAB JAMAHIRIY | 1 | 0 | 1 |
| LITHUANIA | 26 | 14 | 40 |
| LUXEMBOURG | 7 | 2 | 9 |
| MACEDONIA | 3 | 27 | 30 |
| MOLDOVA | 10 | 25 | 35 |
| MONACO | 1 | 0 | 1 |
| MONGOLIA | 1 | 7 | 8 |
| MOROCCO | 1 | 0 | 1 |
| NEPAL | 3 | 3 | 6 |
| NETHERLANDS | 8 | 7 | 15 |
| NIGERIA | 0 | 2 | 2 |
| NORWAY | 0 | 2 | 2 |
| PAKISTAN | 1 | 19 | 20 |
| PANAMA | 2 | 0 | 2 |
| PHILIPPINES | 0 | 1 | 1 |
| POLAND | 39 | 27 | 66 |
| PORTUGAL | 0 | 1 | 1 |
| ROMANIA | 2 | 0 | 2 |
| SERBIA | 10 | 39 | 49 |
| SAN MARINO | 1 | 0 | 1 |
| SEYCHELLES | 0 | 2 | 2 |
| SINGAPORE | 0 | 1 | 1 |
| SLOVAKIA | 5 | 4 | 9 |
| SLOVENIA | 4 | 4 | 8 |
| SOUTH AFRICA | 1 | 0 | 1 |
| SPAIN | 6 | 6 | 12 |
| SRI LANKA | 2 | 2 | 4 |
| SWEDEN | 15 | 6 | 21 |
| SWITZERLAND | 12 | 21 | 33 |
| SYRIAN ARAB REPUBLIC | 3 | 3 | 6 |
| TAIWAN | 1 | 4 | 5 |
| TAJIKISTAN | 8 | 13 | 21 |
| TURKEY | 128 | 302 | 430 |
| UK | 19 | 11 | 30 |
| UKRAINE | 79 | 92 | 171 |
| UNITED ARAB EMIRATES | 1 | 0 | 1 |
| UNITED STATES | 84 | 21 | 105 |
| UZBEKISTAN | 16 | 24 | 40 |
| VIET NAM | 30 | 53 | 83 |
| VIRGIN ISLANDS | 3 | 1 | 4 |
| Total | 1,599 | 2,876 | 4,475 |

Appendix 3

Table A3 Comparison of firm with and without missing work migration data^a

| | (1) |
|--------------------|----------------------|
| Dependent variable | Missing data=1 |
| Variables | |
| Model | Logit |
| Ln(GDP) | -0.439*** (0.034) |
| Ln(population) | 1.007*** (0.045) |
| Ln(assets) | -0.039** (0.016) |
| Ln(long debt) | -0.016 (0.011) |
| Shareholders | -0.150 (0.093) |
| Production | 0.457 (0.450) |
| Trade | 0.252 (0.442) |
| Services | 0.508 (0.442) |
| Construction | 0.772* (0.451) |
| Extraction | 0.823* (0.451) |
| Date dummies | yes |
| N | 4,202 |

a) Robust standard errors are in parentheses. *, **, and *** denote significance at 10%, 5%, and 1% respectively.

Appendix 4

Table A4 Distribution of firms by manager type, average annual number of foreign workers in Russia (thousand people) and the country of origin.^a

| country | owner-manager | | Total | Average foreign workers |
|------------|---------------|-------|-------|-------------------------|
| | 0 | 1 | | |
| ARMENIA | 8 | 17 | 25 | 27.8 |
| AZERBAIJAN | 10 | 24 | 34 | 20.4 |
| BELARUS | 5 | 11 | 16 | 15.1 |
| CHINA | 219 | 1,050 | 1,269 | 109.1 |
| ESTONIA | 4 | 3 | 7 | 1.5 |
| GEORGIA | 4 | 10 | 14 | 4.9 |
| KYRGYZSTAN | 2 | 9 | 11 | 33.4 |
| KOREA (N) | 30 | 26 | 56 | 17.6 |
| KAZAKHSTAN | 18 | 19 | 37 | 4.8 |
| LITHUANIA | 5 | 2 | 7 | 2.6 |
| MOLDOVA | 10 | 25 | 35 | 38.8 |
| POLAND | 7 | 5 | 12 | 3.3 |
| SERBIA | 1 | 5 | 6 | 10.6 |
| TAJIKISTAN | 8 | 13 | 21 | 79.1 |
| TURKEY | 128 | 301 | 429 | 58.1 |
| UKRAINE | 79 | 92 | 171 | 121.1 |
| US | 84 | 21 | 105 | 2.7 |
| UZBEKISTAN | 16 | 23 | 39 | 110.8 |
| VIET NAM | 30 | 48 | 78 | 48.5 |
| Total | 668 | 1,704 | 2,372 | |

a) There is a small discrepancy in the numbers in Tables A4 and A2 because some countries are missing work migration data for some observation years, which results in the drop of firms founded in the years with missing work migration data.

Appendix 5

Table A5 Countries with color revolutions and similar civil movements

| Country | Color revolution year |
|------------|-----------------------|
| Serbia | 2000 |
| Georgia | 2003 |
| Ukraine | 2004 |
| Kyrgyzstan | 2005 |
| Lebanon | 2005 |
| Mongolia | 2005 |
| Moldova | 2005 |
| Belarus | 2005 |
| Azerbaijan | 2005 |
| Pakistan | 2007 |

Appendix 6

Table A6 The effects of a color revolution on immigration, GDP and unemployment.^a

| | (1) | (2) | (3) | (4) |
|-------------------------|---------------------------------|-----------------------------------|---------------------------------|--------------------------------|
| Dependent variable | Ln(immigration to OECD) | Ln(immigration to Canada) | Ln(unemployment) | Ln(GDP) |
| Variables | | | | |
| Color revolution | 0.182* (0.104) | 0.581*** (0.190) | -0.006 (0.103) | 0.110 (0.107) |
| Ln(GDP) | -0.086 (0.141) | -0.091 (0.185) | 0.042 (0.186) | |
| Ln(population) | 0.616 (0.681) | 1.955** (0.771) | 1.982** (0.850) | -0.552 (0.343) |
| Constant | 0.762 (1.704) | -5.373** (2.344) | 0.391 (2.865) | 4.484*** (0.782) |
| Year dummies | Yes | Yes | Yes | Yes |
| Country fixed effect | Yes | Yes | Yes | Yes |
| Within R ² | 0.341 | 0.165 | 0.098 | 0.715 |
| N | 849 | 1,053 | 786 | 1,539 |

a) Level of observation is country-year. Difference-in-Differences models are estimated by xtreg with country and year fixed effects. Robust standard errors clustered on country are in parentheses. *, **, and *** denote significance at 10%, 5%, and 1% respectively.

Appendix 7

Table A7 Results with country fixed effects^a

| Dependent variable | (1) | (2) |
|---|--------------------------------|-----------------------------------|
| | Owner- manager | OROA |
| Variables | Probit | OLS |
| Ln(foreign workers) | 0.110 (0.185) | -0.003 (0.020) |
| Owner-manager | | 0.099*** (0.037) |
| Owner-manager* Ln(foreign workers) | | -0.021** (0.009) |
| Ln(population) | 1.125 (2.531) | 0.238 (0.251) |
| Ln(GDP) | -0.008 (0.373) | 0.012 (0.041) |
| Ln(assets) | -0.061*** (0.016) | 0.015*** (0.002) |
| Ln(age) | | 0.033* (0.019) |
| Ln(long debt) | -0.016 (0.012) | -0.004*** (0.001) |
| Shareholders | -0.356 (0.082) | -0.107*** (0.028) |
| Constant | -4.500 (11.572) | -1.153 (1.167) |
| Date dummies | yes | yes |
| Country dummies | yes | yes |
| Industry dummies | yes | yes |
| Year dummies | no | Yes |
| R ² / Pseudo R ² | 0.216 | 0.020 |
| N | 2,372 | 7,889 |

a) Robust standard errors clustered on country are in parentheses. *, **, and *** denote significance at 10%, 5%, and 1% respectively.

Samples: Models 1 and 2 include foreign entrepreneurial firms that have country of origin migration data. In Model 1, firms are observed at the time of founding. In model 2, firms are observed for all available years.