Entrepreneurial Reinvestment: Local Governance, Ownership, and Financing Matter – Evidence from Vietnam

Introduction

Reinvestment is an important management task for small businesses (Zhou, 2017). An owner-manager of a small firm, in deciding how much profit to keep in the business and how much profit to withdraw from it, is influenced by several factors. The neo-classical theory suggests that the decision of reinvestment is a process of learning (Jovanovic, 1982). Specifically, entrepreneurs enter an industry with no certainty about their ability to manage a new-firm start-up. They only discover their true ability through their post-entry performance once the businesses are established. As such, reinvestment/divestment of a venture is a process of adjustment, where the owner-manager rescales the venture's size to match his or her true managerial competence (Audretsch & Thurik, 2003).

However, more recent studies on the strategic decisions of entrepreneurs reveal that entrepreneurs are not autonomous agents seeking to maximise economic opportunities, but are rather embedded within a social web of norms and practices that constrain and shape their managerial choices (Raynard & Greenwood, 2002). This gives rise to research on the institutional settings of entrepreneurial activities. Examinations of formal institutions (laws and regulations) are particularly evident in the extant literature, for example, property rights (Acemoglu & Johnson, 2005) and constitutional configurations (Carbonara, Santarelli, & Tran, 2016). In this study, we argue that formal institutions are an essential but insufficient measure of the institutional settings that influence firm behaviours, especially small firms whose activities are strongly influenced by the surrounding environment. We propose that local governance quality, which is the third level of Williamson (2000) four-level institutional framework, is more relevant.[1] It is noteworthy that most

[1] In Williamson's four levels of institutional framework –informal institutions are at the highest level and include customs, traditions, and religious norms (Williamson, 2000). These are the deepest rooted and slowest to change. The second level is formal institutions; they are the "rules of the game" and constitute explicit regulations, laws, and constitutional frameworks. The third level of institution is governance, which shapes the way that individuals interact, or the "play of the game"; and the last level is resource allocation, which includes occupational choices such as entrepreneurship.

firms in developing countries are small and medium-sized enterprises (SMEs) (Beck, DemirgÜÇ-Kunt, & Maksimovic, 2005). Because of their age and size liabilities, the operations of these firms are typically bounded in local markets that are strongly shaped by the governance quality of their local authorities. We adopt the viewpoints of Nguyen, Mickiewicz, and Du (2018), and Du and Mickiewicz (2016), to propose that if one wishes to understand entrepreneurial activities, it is more appropriate to analyse the "play of the game" (the execution of regulations) rather than the "rules of the game" (the formal rules of law). In this study we therefore focus on examining the impact of a set of local governance arrangements on firm reinvestment decisions rather than on the more general institutional configurations.

Besides the institutional settings, availability of external finance is also an essential determinant of reinvestment decisions (Johnson, McMillan, & Woodruff, 2002). Entrepreneurs need to decide whether to substitute their profit reinvestments by external finance, or to reinvest their profits and use external credit as a source of complementary financing for other investment projects. This issue has been in debate for a long time since empirical studies have mixed findings. For example, while Johnson et al. (2002) suggest that access to bank loans has no influence on the reinvestments of small businesses in Eastern European countries, McMillan and Woodruff (2002) find that there is a positive association between the two variables in four developing countries: Russia, China, Poland, and Vietnam.

In this study, we broaden this strand of literature by examining the importance of a set of external financing sources, including government loans, bank loans, and informal finance (relationship-based borrowing). We argue that these financing sources come with vastly differing requirements as to their levels of commitment and repayment conditions (Du & Girma, 2012). As a result, they may influence reinvestment decisions via different mechanisms.

In short, we examine the relative importance of a set of local governance settings, and a set of external financing sources, on small businesses' reinvestment decisions. Moreover, we supplement our general analysis with a more nuanced investigation that separates firms into the ownership categories of state-owned, foreign-owned, and private firms. Each ownership sector, due to its specific competitive advantages

or disadvantages, may respond differently to local governance arrangements and external funding environments (O'Toole, Morgenroth, & Ha, 2016). In addition, we provide a comparative analysis for small and medium-sized enterprises (SMEs) and micro-firms (with fewer than 10 employees). Literature suggests that micro-firms may be very different from SMEs in terms of their operational philosophies, objectives, and management styles (Baumann & Kritikos, 2016; Jaouen & Lasch, 2015). As such, their sensitivity to local governance arrangements and external financing sources may follow another unexplored path.

To test the influence of local governance and external finance on small businesses' reinvestments, we employ a panel of 312,845 firm-year observations in Vietnam, in conjunction with a set of province-level governance quality data from 2006 to 2015. To reduce estimation biases and endogeneity related issues, we include a set of multi-level control variables, and use the general method of moment (GMM) approach to estimate regression coefficients.

The findings in this study make several important contributions to the extant literature. First, we show that local governance quality is an important determinant of entrepreneurial reinvestments. There are nine different dimensions of local governance examined in this study that range from corruption, administration transparency, leadership proactivity, and law enforcement, to other factors such as authority supports for the local private sector, the ease of access to land for doing business, etc.[2]

Second, we show that entrepreneurs consider government loans and bank loans to be substitutes for their profit reinvestments. In other words, entrepreneurs will reduce their reinvestment rates when they gain sufficient access to arms-length-based external funds (i.e., bank loans and government loans). This is probably because insecure property rights and poor governance quality compel entrepreneurs to divert their earned profits to more secure opportunities elsewhere. Only informal finance (relationship-based borrowing) is associated with higher reinvestment rates. The receipt of informal funds may impose implicit obligations

[2] Appendix 1 shows all nine governance variables examined in this study. Four of them are investigated in the main text in accordance with the model proposed by Nguyen et al. (2018); the other five are analysed in the extension section.

on entrepreneurs, requiring higher entrepreneurial commitment to their ventures since they do not want to ruin their relationships by defaulting. Thus, implicit obligations lead to higher reinvestment rates.

Another notable contribution of this study concerns our detailed investigations into ownership sectors and micro-firms. We examine how each type of firm responds to local governance arrangements and external finance opportunities and find that there are remarkably dissimilar patterns. We show that in certain cases local governance improvements may even exert a (temporarily) adverse effect on reinvestments.

By examining the relative importance of governance and external finance on small businesses' reinvestments, the findings in this study provide several insightful implications for policymakers in developing countries.

Related Literature and Hypothesis Development

The Effect of Governance Quality on Firm Reinvestment

Local governance is an unexplored institutional factor (Nguyen et al., 2018). In general, institutions are humanly devised constraints that shape human behaviours and decisions (North 1990). They include explicit rules (e.g., laws, regulations, contracts) and implicit customs, values, and beliefs that either prohibit or encourage certain activities. As such, institutions define the choice set of economic actors and thereby determine the transaction costs and feasibility of engaging in economic activity, including reinvestment decisions (Zhou, 2014).[3]

Du and Mickiewicz (2016) investigate the contemporary Chinese entrepreneurial sector[4], and propose that "while a strong institutional environment implies the same treatment for all economic actors, a weak one

[3] Institutional factors under the extant entrepreneurship literature are expanded far beyond Acemoglu and Johnson (2005) two-group model of property rights (including the risk of expropriation by the government, and the ease and reliability of contract enforcement) employed by JMW and CX. Empirical studies now also utilise Scott (1995) three pillars framework of regulatory, cognitive, and normative institutional arrangements (see Stenholm, Acs, and Wuebker, 2013), as well as Williamson (2000) four levels of institutions (adapted from North (1990) two-level framework) that identifies informal institutions, formal institutions, governance, and resource allocation (see Estrin, Korosteleva, and Mickiewicz, 2013).

[4] According to Du and Mickiewicz (2016), the entrepreneurial sector consists of young, private, and small companies.

does not, […therefore] to understand the impact of a weak institutional environment, one needs to analyse the institutional patterns at a sub-national level". Nguyen et al. (2018) expand this proposition by examining the role of local governance quality and confirming its positive effects on local firm performance in Vietnam. When local authorities have room to interpret and execute central laws arbitrarily, which is particularly the case in the weak institutional settings found in developing countries, institutional arrangements are domestically heterogeneous among regions (Malesky, 2015). It can therefore be expected that it is local governance rather than the very broad general institutional configurations that will directly influence local firm activities, including reinvestment decisions. Moreover, the subjects of interest in this study are small businesses and micro-firms whose operations are bounded mainly in the local markets that are regulated more by local governance arrangements than by central constitutions (Nguyen et al., 2018).

Our principal argument, in accordance with the institutional theory, is that a favourable local governance environment is associated with more entrepreneurial reinvestments. However, since local governance is multi-dimensional, it is important to investigate in detail the nature of each governance force and its potential effects.

Initially proposed by Nguyen et al. (2018), the four essential pillars of local governance arrangements are local administration transparency, controls for public service corruption, entrepreneurial-proactive leadership, and effective law enforcement. Transparency typically concerns the even distribution of resources (e.g. information, capital) to economic actors (e.g., small businesses) that are not dissimilar (Du & Mickiewicz, 2016). Corruption is the abuse or misuse of public authority by government officials and politicians to serve their private interests by taking advantage of social benefits (Jain, 2001). Meanwhile, leadership proactivity concerns local authorities' creativity and cleverness in implementing central policy, assisting local private firms by working within sometimes unclear national regulatory frameworks and interpreting them in the firms' favour (Malesky, 2015). Finally, law enforcement is the effectiveness and reliability of the local courts in solving disputes.

Our general proposition is that an improvement in any of the abovementioned governance forces is associated with a reduction in local business transaction and production costs. Moreover, provinces that have a higher-quality governance system can improve their local entrepreneurs' institutional trust (i.e., trust in governments) (Efendic, Mickiewicz, & Rebmann, 2015). These favourable effects are directly linked to profitability and the feasibility of engaging in economic activities (North, 1990; Williamson, 2000), both of which may be expected to facilitate higher entrepreneurial reinvestment rates.

The following hypothesis summarises our key arguments:

H1: Improvements in local governance quality (regarding corruption controls, administration transparency, leadership proactivity, and law enforcement) are positively associated with entrepreneurial reinvestments.

In the robustness checking section, we further examine the importance of other governance forces that were not investigated in the model of Nguyen et al. (2018).

The Effect of External Finance on Firm Reinvestment

Besides governance quality, we also investigate the impact of external finance on reinvestment. Examining the relative importance of institutional arrangements and access to external finance is essential to an understanding of the dynamics of entrepreneurial investments along the economic transition of developing countries. In previous studies, external finance usually takes the sole form of bank loans (Ayyagari, Demirgüç-Kunt, & Maksimovic, 2010) and there are two strands of association between bank loans and reinvestment. The first strand suggests a positive relationship for the following reasons: first, small businesses may require lump-sum investments to grow, which necessitates access to both internal and external funds (Cull & Xu, 2005); and second, small businesses must use internal funds to demonstrate their commitment and to reduce agency costs when asking for bank loans (Brau, 2002). From this perspective, reinvestment rate is positively associated with bank loans.

However, the second strand finds that reinvestment may be negatively associated with bank loans for the following reasons. First, the pecking-order hypothesis might not hold in developing countries where the

financial system is centralised and interest rates are artificially fixed (Anwar & Nguyen, 2011). In these circumstances entrepreneurs may find it beneficial to make investments using loans instead of internally generated funds. Second, insecure banking systems and unstable institutions may compel entrepreneurs to increase their financial leverage and divert their wealth to more secure properties. In these cases, we expect to see a negative relationship between profit reinvestment and bank loans.

Given that the banking systems in developing countries are underbuilt, banks are keen to make lending decisions based on relationship-based principles (Reynolds, 2011). This allows some firms with well-established political networks to obtain bank loans at lower than the market price (i.e., the interest rate applied to firms with no back-door relationships) (Nguyen, Le, & Freeman, 2006). More importantly, weak institutional environments may discourage entrepreneurs from using their private wealth to make investments. Therefore, we expect that entrepreneurs may treat bank loans as a substitute financing source for profit reinvestments.

Using bank loans as the measure of external finance is appropriate but insufficient if we wish to manifest the full picture of external finance in developing countries so we also investigate two other crucial external funds, namely loans from the government and informal finance.

Government loans are different from other external financing sources in several respects. Such loans do not follow market-based principles in terms of the required collateral, the value of the loans, the interest rates, and turnover time; instead, these conditions are imposed quite arbitrarily and are loosely monitored (Girma, Gong, & Görg, 2009; Nguyen & Dijk, 2012). Further, in weak institutional environments, governments are able to subsidise firms in a non-transparent way, such as by an uneven distribution of loans among companies that are not dissimilar (Haley, 2013). Du and Mickiewicz (2016) argue that government loans in opaque institutional environments impose a negative effect on firm performance, primarily because accessing them requires entrepreneurs to build political connections. This compels firms to allocate efforts to unproductive activities. Further, firms that successfully obtain government loans may find that this financing source is easily manipulated in the sense that the funds come unencumbered by firm commitments

or heavy pressure to make the repayments. Thus, firms can use the funds to invest in riskier projects or non-core businesses. Given these benefits, entrepreneurs may consider government loans to be a good substitute for their profit reinvestments, suggesting a negative relationship between government loans and reinvestment rate.

Informal finance is defined as small, unsecured, short-term loans from family/friends or other relationship-based credit providers, whose services cannot substitute the formal financial system because of their limited monitoring and enforcement mechanisms (Beck, Demirgüç-Kunt, & Maksimovic, 2008). Thus, informal finance is an important but usually overlooked subject in the picture of external finance (Ayyagari et al., 2010). The literature has recognised the role of the informal financial system in developing countries but conventional wisdom has it that informal finance, with its key function being to serve low-end borrowers (small businesses and micro-firms), is complementary to the formal financial system (Beck, Lu, & Yang, 2014).

It is noteworthy that relationships play an essential role in this type of borrowing. Unlike arms-length-based credit arrangements, entrepreneurs using informal finance are subject to implicit obligations. They understand that if they fail to make the repayments, the relationship may be ruined and they may lose a cheap financing source (Lee & Persson, 2016). As such, their commitment may be even stronger than if the obligation came from an arms-length transaction. Moreover, strong commitments may also come from their perception of personal responsibility. Specifically, entrepreneurs tend to treat relationship-based borrowing with the same respect they accord to their personal private wealth (Bertrand & Schoar, 2006). By this line of argument, the correlation between relationships and commitments may lead to a positive association between informal finance and profit reinvestment.

We summarise the abovementioned arguments in the following hypotheses:

H2a: Bank loans and government loans are negatively associated with entrepreneurial reinvestments.

H2b: Informal finance is positively associated with entrepreneurial reinvestments.

The Role of Ownership

In this section, we deliberately examine the relative importance of local governance and external finance in three different ownership sectors: state-owned, foreign-owned, and private SMEs. Specifically, state-owned enterprises (SOEs) may be less sensitive to local governance arrangements because they can more easily establish a strong political connection with local authorities (Du & Mickiewicz, 2016). Meanwhile, foreign-owned enterprises (FOEs) are also largely exempted from the bureaucracy and harassment of corruption; they may even enjoy privileges derived from preferential policies that favour foreign investments (Anwar & Nguyen, 2010). In contrast, small private firms, which are inferior in terms of managerial skills, financial capital, and the degree of networking with local authorities, operate in the glare of the local governance quality, and an improvement in the quality of the environment will be reflected in these firms' reinvestment decisions.

The following hypotheses summarise the expected association between firm reinvestment and local governance quality among the three ownership sectors:

H3a: Reinvestment rate of state-owned firms is not associated with local governance quality.

H3b: Reinvestment rate of foreign-owned firms is not associated with local governance quality.

H3c: Reinvestment rate of domestic private firms is positively associated with local governance quality.

Also, the three ownership sectors can be expected to have different combinations of external financing sources. Specifically, in developing countries with incomplete institutional settings, state-owned firms are likely to abuse government loans and commercial loans from state-owned banks to make (over-)investments while using internal funds for other purposes, e.g., to pay abnormal compensations for the management board, or to purchase business-irrelevant properties (O'Toole et al., 2016). In this way, SOEs' reinvestment rate is expected to be negatively associated with government loans and bank loans. Regarding private firms, we expect their reinvestment decisions to follow the general hypotheses H2a and H2b, i.e., they are keen to substitute profit reinvestments by bank loans and government loans, but regard informal loans as a

complementary financing source. For foreign-owned firms, we hold a neutral expectation on their financing decisions, the reason being that FOEs follow a distinct financing strategy that involves access to financing sources in both the home and host countries (Anwar & Nguyen, 2010).

The following hypotheses summarise the expected association between firm reinvestment and external financing sources by ownership sector:

H4a: Reinvestment rate of state-owned firms is negatively associated with government loans and bank loans.

H4b:Reinvestment rate of domestic private firms is positively associated with informal loans, but negatively associated with government loans and bank loans.

In general, hypotheses concerning the relative importance of local governance and external finance by ownership sectors (H3 and H4) could be summarised as follows:

Table 1: The expected association between reinvestment and local governance/external finance

	Private firms	**SOEs**	**FOEs**
Local governance quality	+	Insignificant	Insignificant
Government loans	-	-	NA[5]
Bank loans	-	-	+/-
Informal finance	+	NA[6]	+/-

Vietnam As a Context

The empirical setting of this study is Vietnam. Vietnam is an interesting context for the study of entrepreneurship due to its post-socialist political ideology and on-going economic transition (Minh & Hjortsø, 2015). Because of the socialist ideology, the financial system in Vietnam is biased against the private sector; therefore, a lack of formal financing is a significant problem for the entrepreneurial sector (Leung, 2009). This country-specific factor, together with the asymmetric information and agency costs

[5] Government loans are available to domestic firms only
[6] State-owned firms are not allowed to use privately-raised credit

typical of developing economies, strongly restricts domestic SMEs from obtaining sufficient bank loans (Anwar & Nguyen, 2011).

Despite these difficulties, the private sector (with 95% young and small businesses) has contributed considerably to the economic growth of Vietnam over the last few decades (Nguyen & Dijk, 2012; Nguyen, Le, & Bryant, 2013; Tran & Santarelli, 2014). As at 2015, the sector accounts for 91% total registered capital, 65% national revenue, 97% total registered businesses, and 64% total labour force in the economy.[7] Unfortunately, these exemplary contributions are not accompanied by a corresponding transition in the national banking system. The extant literature suggests that young and small firms in Vietnam remain severely financially constrained (Anwar & Nguyen, 2011; Tran & Santarelli, 2014).

In addition to the weak financial system, weak institutions and poor governance quality are directly relevant to Vietnamese SMEs (Nguyen & Dijk, 2012).[8] Local authorities in Vietnam enjoy an extraordinary degree of soft power, defined as the freedom to impose their will on the interpretation and execution of central policies (Minh & Hjortsø, 2015). Moreover, the quality of local governance across parts of Vietnam varies significantly due to the extensive decentralisation program during the *Doimoi* (economic renovation) process (Lan Phi & Anwar, 2011). The foundation of this program was the promulgation of the 1996 State Budget Law (revised in 1998), which grants local government sufficient autonomy in their fiscal strategies. As such, local authorities are increasingly independent of central government in their revenue and expenditure decisions. This means they have substantial freedom to determine their own local governance and regulatory arrangements (Lan Phi & Anwar, 2011).

Given the weak banking system and the diversified, poor-quality, local governance arrangements, entrepreneurs in Vietnam lack motivation for reinvesting their earned profits in new projects, or for seeking improvements in productivity (Nguyen, Nghiem, Roca, & Sharma, 2016). These micro-level decisions

[7] Source: https://www.gso.gov.vn/Default_en.aspx?tabid=515

[8] According to Williamson (2000), the institutions of governance is the third level of the new institutional economics theory. This level emphasises the governance of contractual relations – so the play of the game, rather than the rules of the game (formal and informal institutions).

eventually result in a slow-down of the GDP growth rate for the entire economy. Since the entrepreneurship sector in Vietnam is very young it may be susceptible to the incentivization structures shaped by the local financial systems and local governance arrangements (Cooke & Lin, 2012). As such, Vietnam is a relevant and interesting context to examine the impact of local governance and external financing on entrepreneurial reinvestment.

Data and Specification

Data Sources and Observations

In this study, we employ two datasets to test the proposed hypotheses. The first is the Enterprise Annual Survey (EAS) of the Vietnam General Statistics Office (GSO). It is a sixteen-year panel from 2000 to 2015, including several aspects of firm-level information for the manufacturing and service sectors. However, the study period in this paper is reduced to ten years, from 2006 to 2015, to match the availability of the second dataset, the Provincial Competitiveness Index (PCI)[9]. This dataset was first available for a sample of regions in 2005 and then for all of 63 Vietnamese provinces from 2006. PCI is a product of the collaboration between the Vietnam Chamber of Commerce (VCCI) and the U.S Agency for International Development (USAID). Specifically, PCI is an overall provincial governance index, a weighted average of nine sub-indices that each measures a dimension of local governance quality. The definition and summary statistics of the indices are presented in Appendix 1.

The data provided by Vietnam GSO have been widely employed in previous studies. The most popular dataset is the Vietnam Household Living Standard Survey (VHLSS) (Fukase, 2014). In comparison to the VHLSS, the EAS dataset employed in this study is largely unexplored. One of the advantages of GSO data is that they are comprehensive and representative. Specifically, the sample size is large and involves different types of observations. However, because the surveys are modified annually, it is difficult to match

[9] PCI is based on a rigorous survey of the perceptions of more than 10,000 domestic firms and 1,600 foreign invested enterprises about local economic governance and the business environment across Vietnam. From 2013, there is an additional sub-index, Policy Bias. For details of the items measured in each indicator, the methodology used, and data collection information please visit www.eng.pcivietnam.org.

between years. Moreover, the available data are usually impure and require substantial cleaning before conducting rigorous analysis. To clean the data, we dropped all firms with negative assets and negative or zero employees, and did the same for firms whose fixed assets are greater than their total assets. The outliers are controlled by censoring the top and bottom 1% of observations in each variable. This study then selects only small and medium-sized companies, according to the Vietnam Enterprises Law, as the target observations.[10] The final sample in regression constitutes 312,845 firm-year observations. Also, in the extension section, we examine the same model, but with regard to micro-firms.

Variables and Summary Statistics

The dependent variable in this study is firm reinvestment. However, unlike previous studies (Cull & Xu, 2005; Johnson et al., 2002) that estimate reinvestment rate using CEOs' subjective assessments of the percentage of reinvested profits, our reinvestment variable is slightly different and arguably better captures entrepreneurs' commitment than does the conventional measure.

Specifically, our reinvestment variable is constituted of two components. The first is the value of reinvested profits reported in company financial statements. This measurement is free from CEO's subjective assessments. In addition, the EAS requires entrepreneurs to report, as well as the profit reinvestments, their additional self-financed capital newly invested in their businesses.[11] This private wealth could be entrepreneur's dividends from other businesses or their savings. As such, the *Reinvestment* variable is measured by the sum of firm reinvested profits and (if any) the value of additional private wealth that entrepreneurs decided to invest in their businesses, normalised by total capital.[12] From the theoretical

[10] According to the Vietnam Enterprise Law, there are 4 types of firms in terms of sizes. Microenterprises are firms operating with fewer than 10 employees. Small enterprises are firms having 10 to 200 employees and total registered capital of less than 20 billion VND (approximately 1 million USD). Medium enterprises are firms having 200-300 employees and total registered capital less than 100 billion VND (approximately 5 million USD). Large enterprises are firms operating with more than 300 employees and 100 billion VND registered capital. Capital is the first criterion in categorization.

[11] Entrepreneurs' private wealth investment is excluded from any informal borrowing from family, friends, relationship-borrowing and other semi-formal credit providers.

[12] In the survey, entrepreneurs only report the sum of profit reinvestment and additional equity investment. Therefore, we cannot calculate the net profit reinvestments. However, this does not affect the arguments of the study.

perspective, this reinvestment variable could better measure the commitments of entrepreneurs to their ventures. Unless entrepreneurs trust in governments, they will not reinvest profits and certainly will not use their additional private wealth to make investments (Estrin et al., 2013).

Following Nguyen et al. (2018), we investigate local governance quality using four variables: corruption, transparency, leadership proactivity, and law enforcement. *Corruption* variable is the value of Informal charge index, which is a measure of how much firms pay in informal charges (bribes), how much of an obstacle those extra fees pose for their business operations, whether payment of those extra fees garners the expected results or "services," and whether local officials use compliance with local regulations to extract rents. *Transparency* variable is the value of Transparency index, a measure of whether firms have access to the proper planning and legal documents necessary to run their businesses, whether those documents are equitably available, whether new policies and laws are communicated to firms and predictably implemented, and the business utility of the provincial webpage.

To measure the proactivity of local leadership, we construct *Proactivity* variable, which is the value of the Leadership proactivity index – a measure of the creativity and cleverness of local authorities in implementing central policy, designing their own initiatives for private sector development, and working within sometimes unclear national regulatory frameworks to assist and interpret in favour of local private firms. Finally, *Law enforcement* variable is a proxy of local effectiveness in executing regulations, using the value of Legal institutions index. It is a measure of the private sector's confidence in provincial legal institutions; whether firms regard provincial legal institutions as an efficient vehicle for dispute resolution, or as an avenue for lodging appeals against corrupt official behaviour.[13]

We examine firm access to external finance using three dummy variables: *Government loan* takes value 1 if the firm receives loans from local or central governments, and 0 otherwise; *Bank loan* takes value 1 if the firm receives loans from commercial banks (whether they be state-owned, foreign-owned or private), and

[13] Details of the PCI methodology are available at: http://eng.pcivietnam.org/phuong-phap-c9.html

0 otherwise; *Informal finance* takes value 1 if firm receives loans from family, friends, or other relationship-based credit providers, and 0 otherwise.

The effects on reinvestment of the three financing sources in relation to the four local governance variables are tested with an appropriate control for a set of other influential factors. At the entrepreneur-individual level, we include entrepreneurs' age, gender, and education variables (Nguyen et al., 2018); at the firm level, we take into account firm age, firm labour size, and firm ownership characteristics (Zhou, 2017). At the regional level, we control for population density, labour supply, average consumption power, and the distance from a province to the closest municipality (business and political centres). Definition and summary statistics of variables are described in Table 2. The pairwise correlation matrix of variables is reported in Appendix 2.

Table 2: Variable definition and summary statistics

On average, small firms in Vietnam reinvest a value equivalent to 15% of total capital per year over the study period (2000-2015). This number reflects the fast growth of the entrepreneurial sector in Vietnam during the past few decades. Some firms even invest more than 100% of total capital, indicating the significance of entrepreneurs' self-finance. It is noteworthy that local governance indices vary remarkably, for example, from as low as 1.39 points to as high as 9.39 points in the leadership proactivity index. This variation indicates that local governance quality differs significantly among country's regions. Appendix 3 shows the detailed fluctuation of the four governance variables (as well as the other five PCI governance indices) by year. From the mean statistics of the three external financing sources, we see that only 1% of small businesses gain access to government loans, 31% use bank loans, and 17% use informal financing sources. Taken together, these statistics indicate that less than half of the total small businesses in Vietnam obtain access to external finance, which is relatively low compared to developed countries (Ayyagari et al., 2010).

Empirical Specification and Estimation

To formally test the relative importance of local governance and external finance on reinvestment decisions, following Johnson et al. (2002) and Cull and Xu (2005), we propose the following reduced-form equation:

$$(\mathbf{1})\ Reinvestment_{igt} = \beta_0 + \beta_1\left(Firm\ controls_{igt}\right) + \beta_2\left(Owner\ controls_{igt}\right) + \beta_3\left(Province\ controls_{gt}\right) + \beta_4\left(Governance\ indicators_{gt}\right) + \beta_5\left(External\ finance_{igt}\right) + v_j + v_t + v_i + \mu_{it}$$

where i denotes an individual firm, g is the province, and t a year. As such, ($Reinvestment_{igt}$) is the reinvestment rate of a small enterprise i in province g in year t. The term $\left(Firm\ controls_{igt}\right)$ is a column vector of variables that includes firm age, firm size, and firm ownership dummies. The term $\left(Owner\ controls_{igt}\right)$ is a column that includes owner age variable, owner gender, and owner education dummies. $\left(Province\ controls_{gt}\right)$ constitutes province consumption value per capita, population density, the number of labour over population, and the distance from a province to the closest municipality. Turning to the Governance variable, $\left(Governance\ indicators_{gt}\right)$ represents the four dimensions of local governance: corruption; transparency; leadership proactivity; and law enforcement. Finally, $\left(External\ finance_{igt}\right)$ is a column vector of three external funding sources: government loans; bank loans; and informal finance. The reinvestment function also includes an industry-specific component v_j, and a time-specific component v_t, which are controlled by corresponding dummies. The term v_i represents all time-invariant, firm-level fixed effects that may influence reinvestment rate. Finally, μ_{it} is the idiosyncratic error.

We are interested in the coefficients β_4 and β_5 because they indicate the relative importance of local governance and external finance. Since governance quality is determined endogenously, perhaps influenced by the level of entrepreneurship (Carbonara et al., 2016), our model may encounter potential endogeneity issues. Specifically, regions that enjoy a pro-entrepreneurial culture may have a stronger reinvestment rate, and vice versa. This is particularly the case in Vietnam since although North Vietnam has followed a pure communist blueprint from the very beginning, South Vietnam was a capitalist economy until 1975 (Dana,

1994). Even though the two states have been unified for more than three decades, institutional theory holds that the local informal institutions (that is the norms and practices of doing business) remain sticky in each particular region. Specifically, South Vietnamese entrepreneurs, who were once exposed to capitalism, are likely to adhere to arms-length principles and performance-based orientations, and are less risk-averse (Dana, 1994). Meanwhile, entrepreneurs in North Vietnam appear to be more conservative and favour relationship-based principles (Nguyen et al., 2018). Consequently, these differences in entrepreneurial values and beliefs may influence the governance quality of the local authorities.

More importantly, when a region is characterised by a high-level entrepreneurial capital, it is more likely to develop institutions that favour entrepreneurship (Carbonara et al., 2016). In the context of Vietnam, Nguyen et al. (2013) show that the performance of the local entrepreneurial sector exerts a non-trivial effect on sub-national institutions, including the quality of local governments. This follows on from previous studies that aim to unbundle institutions (Acemoglu & Johnson, 2005) by employing a set of instrumental variables (IVs) to exploit the exogenous variation of institutional variables, in an attempt to establish a causal effect from institutions to entrepreneurial activities (see Carbonara et al. (2016) for a summary).

In this study, we address the endogeneity issue using the system general method of moment (SGMM) estimator proposed by Blundell and Bond (1998). We have employed this method because of the lack of valid and reliable exogenous variables to instrument the endogenous variables in the context of Vietnam. We use the lagged values of the endogenous variables as their IVs. The lagged values of an endogenous variable are not directly related to the error term of the current equation. However, we expect that the lagged values of the endogenous variables are correlated with their current values, to serve as valid and relevant IVs. Technically, the method uses moment conditions that state that the regressors are orthogonal to the errors, and the SGMM estimations are consistent if the coefficients meet these moments. Moreover, to correct any possible finite sample bias by omitting informative moment conditions, the method further employs differences as valid instruments for level equations.

Specifically, in the difference equation, our specification tests suggest the use of (level) endogenous variables lagged from 2 to 3 years as instruments to eliminate the correlation between endogenous variables and the error terms. In the level equation, we use the difference of exogenous variables, lagged from 1 to 3 periods, as instruments. The validity of SGMM hinges on two specification tests: a second-order autocorrelation test of AR(2) in the transformed equations to examine whether the level equations are serially correlated at the order 1; and the Hansen (J) test of the over-identifying restrictions of the specification. Following suggestions from the literature, we treat all governance variables, external financing variables, and firm size, as endogenous variables in all specifications.

Empirical Results

Table 3 presents the regression results. The autocorrelation and over-identification tests indicate no severe specification problems with the model settings. Columns 1 and 2 include local governance variables and external financing variables separately. Column 3 includes all independent variables, and columns 4 to 6 show the results for state-owned, foreign-owned and private firms, respectively.

Table 3: Regression results

In general, local governance variables are positively associated with reinvestment rate. Leadership proactivity has the strongest effect: firms will reinvest a value equivalent to 0.46% of total capital for each point of proactivity improvement. Transparency comes second with 0.39% increase in reinvestment rate for each transparency improvement point. Law enforcement and corruption are statistically significant but have slightly smaller economic effects (– 0.27% and 0.21%, respectively). These findings indicate that local governance quality is an essential determinant of reinvestment decisions. As such, hypothesis H1 is fully supported.

Regarding external funding, the coefficients associated with the three financing sources are all statistically significant. Interestingly, firms that use government loans and bank loans reinvest remarkably less than firms that do not use these financing sources (by 50% and 35%, respectively). This finding shows that

entrepreneurs treat formal loans as a source of finance supplemental to profit reinvestments. On the other hand, we find that firms that use informal finance reinvest 35% higher than firms that do not. This positive association between reinvestment rate and informal loans indicates that entrepreneurs are more committed to their investments when they use relationship-based borrowings. Therefore, hypotheses H2a and H2b are fully supported.

Regarding the role of ownership, we find that state-owned and foreign-owned firms react negatively to an increase in leadership proactivity. For each proactivity improvement, these firms reduce their reinvestment rates by 0.25% and 0.7% respectively. This finding indicates that state-owned and foreign-owned firms may lose their competitive advantages when local authorities proactively assist local private sector development. Moreover, except for leadership proactivity, no other governance factors appear to be statistically meaningful to foreign-owned firms, while state-owned firms are only sensitive to one other factor – law enforcement. This finding shows that the irritations that hamper private firms, such as corruption and an opaque governance system, seem to exert no significant influence on non-private firm reinvestment decisions. We thus conclude that non-private ownership could serve as a shield to protect firms from local bureaucracy and corrupt harassment (Zhou, 2017).

It is also noteworthy that law enforcement is positively associated with state-owned firm reinvestments but it is statistically meaningless to private firms. This finding is consistent with Nguyen et al. (2018), who assert that under Vietnam's opaque legal system and administrative centralisation, the incentives for adjudicators may emphasise punishment instead of the enforcement of justice. This bias of the legal system may bring benefits to state-owned firms since they can rely on a legal system that has been specifically designed for them, while private firms may become increasingly ignorant of the legal systems and distrust the ineffective law enforcements.

Finally, we find that informal finance has an adverse effect on foreign firm reinvestments, while being positively associated with domestic private firm reinvestments. This finding indicates that foreign entrepreneurs treat informal loans as supplementary to profit reinvestments. One explanation for this could

be that foreign entrepreneurs employ arms-length principles (instead of relationship-based principles) and this exempts them from the implicit commitments generally expected from receiving informal loans. This finding may suggest a difference in the micro-borrowing customs between Vietnamese and foreign entrepreneurs.

Robustness Check and Extension

Robustness Testing

Other Governance Forces. In the base specification, following Nguyen et al. (2018), we examine four out of nine governance indices in the PCI dataset. However, the other governance dimensions (namely entry costs, land access, time costs, business support, and labour training[14]) may also have a meaningful impact on local SMEs' reinvestment decisions. *Entry costs* are a measure of the financial and time costs of establishing a new firm (for example, length of business registration in days). *Land access* is a measure of how easy it is to gain access to land for doing business, and the security of tenure once the land is acquired. *Time costs* measure how much time firms waste on bureaucratic compliance, as well as how often and for how long firms must shut down their operations for inspections by local regulatory agencies. *Business support* indicates services for trade promotion, the provision of regulatory information to firms, business partner matchmaking, industrial zones, and industrial clusters. Finally, *labour training* is an item quantifying the efforts of local authorities to promote vocational training and skills development, and to assist in the placement of local labour.

Because these variables are highly correlated, we run a regression for each separately.[15] Tables 4 and 5 present the results. It is noteworthy that the coefficient associated with the Labour training variable is negative in the lump-sum specification (column 10). Nonetheless, it is positive in its individual specification (column 8), indicating the presence of multicollinearity. As Labour training is highly correlated with Business support (correlation coefficient $\sigma = 0.63$), Land access ($\sigma = 0.46$), and Corruption ($\sigma = 0.43$),

[14] Refer to the Appendix 1 for the list of local governance forces.
[15] Appendix 4 shows the correlation matrix of 9 local governance variables.

in addition to the fact that the VIF test of the lump-sum model is 3.14, higher than the VIF of the individual model, which is 2.08, the result of the individual specification appears more reliable. In general, this robustness check is consistent with the key findings. It indicates that local governance quality is strongly associated with reinvestment decisions.[16]

Table 4: Regression results for all governance indices (1)

Table 5: Regression results for all governance indices (2)

Continuous External Finance Variables. In the baseline specification, following Johnson et al. (2002) and Cull and Xu (2005), we test the effects of external finance using dummy variables. However, a more interesting question to ask is how do firms change their reinvestment rate when they obtain additional external funds? As such, instead of using dummy variables, we re-run the regressions using continuous external financing variables. Each variable is the value of its corresponding financing source, normalised by total capital. Table 6 shows the regression results. Columns 1-3 include each variable separately, columns 4 and 5 are the lump-sum specifications. In general, the performance of the three external financing variables is consistent with the corresponding dummies in the baseline specification. Specifically, firms reduce their reinvestment rate by 2.75% when they obtain 1% additional government loans, the corresponding reduction in value for bank loans is 1.12%. However, for 1% increase in informal finance, firms increase their reinvestment rate by almost 3%.

Table 6: Regression results for continuous external financing variables

Extension

In this section, we further extend the context of this study to micro-firms – that is, firms with fewer than 10 employees. Micro-firms constitute the majority of the registered business population in Vietnam (60% according to GSO data). The reinvestment decisions made by micro-firms may play a different role to the

[16] This conclusion remains robust when we add the three external financing variables into the regression equation.

reinvestment decisions made by SMEs (Hiemstra, van der Kooy, & Frese, 2006). Micro-firms are very small businesses, operated by family members, with the primary purpose of earning a living (Jaouen & Lasch, 2015). Because micro-firms are first-time investors, they often avoid risky investments and are more sensitive to local governance arrangements (Antonio, Rafael, & Juan, 2014). As such, it is interesting to explore the relative importance of local governance and external finance on their reinvestment decisions. Table 7 presents the regression results. Column 1 is the baseline specification; columns 2 to 4 are for different ownership sectors.

Table 7: Regression results for micro-firms

Some interesting findings are revealed from these regression results. First, an improvement in corruption controls (less corruptive harassment) exerts a negative effect on private micro-firms' reinvestment rate. This counterintuitive finding is however consistent with Gjalt, Tu, and Hans (2012) who, also in the context of Vietnam, find a U-shaped relationship between bribery controls and firm performance. They argue that corruption helps to lubricate the bureaucratic administration system and allows firms to obtain information and resources quickly. Without bribery rewards, officials will reduce their input efforts to serve private firms. This adverse effect is felt more strongly by micro-firms because of their inferiority in the network of political connections. However, the negative impact of corruption controls gradually reduces as more effective policies are executed. We also run a regression with a squared term of the corruption variable; the regression result confirms the U-shaped effect.

Further, while foreign-owned micro-firms are not sensitive to local governance, state-owned micro-firms react negatively to administration transparency. A possible explanation is that a transparent governance system may reduce state-owned firm privileges (e.g., being the first to know information), and will therefore downgrade their competitive advantages, leading to a lower investment rate.

Discussion and Conclusion

This study extends the works of Johnson et al. (2002) and Cull and Xu (2005) concerning the relative importance of institutions and access to external finance on small firms' reinvestment decisions in the context of a developing country. By extending the research question to the context of small businesses, we make three significant contributions to the entrepreneurship literature. First, we find that not only property rights but also local governance arrangements can influence small firm reinvestment decisions. We argue that it is the local governance environment, rather than the broad general institutional configurations, that is more critical to small businesses.

Second, this study shows that external financing sources exert different impacts on firms' reinvestment rate. A source of financing may, depending on its accompanied commitments, substitute or complement profit reinvestments.

Third, this study takes a close look at the role of ownership in reinvestment decisions, and reveals heterogeneity among state-owned, foreign-owned, and private firms. Each ownership sector, influenced by their competitive advantages, behaves differently in their responses to local governance arrangements and external financing opportunities.

Also, this study provides a comparative analysis between SMEs and micro-firms. It shows that micro-firms may respond differently to local governance and external finance that will SMEs. While governance quality improvements always bring about a positive effect for SMEs' reinvestments, some governance forces exert a negative influence on micro-firms' reinvestments. This adverse effect, moreover, is conditional on firm ownership characteristics.

Besides the contributions to the literature, our study also provides several insightful implications for policymakers. In line with Nguyen et al. (2018), we suggest that authorities should pay more attention to local governance arrangements – the "play of the game" – since this level of institution is easily modified and improved in the short and medium-terms. It is more difficult to adjust the higher levels of institutions and it takes a longer time to do so (Williamson, 2000). In addition, since our findings reveal that

entrepreneurs tend to substitute profit reinvestments by formal finance, we believe that property rights in Vietnam remain insufficiently reliable and secure. Unless authorities improve entrepreneurs' trust in the government, entrepreneurs will not actively increase their reinvestment rate. Finally, this study poses a caveat for governments in emerging countries, as we show that there is significant heterogeneity among ownership sectors, as well as between SMEs and micro-firms. As such, it should be noted that there is no policy that favours all economic players.

Tables and Figures:

Table 2: Variable Definition and Summary Statistics

Variable	Definition	Mean	Std.	Min	Max
Reinvestment	The ratio of profit reinvestment and additional entrepreneurs' self-finance to total capital	0.15	0.23	0	1.03
Transparency	Value of the transparency index. The indicator ranges from 1 to 10; the higher the score, the more transparent	5.83	1.21	2.14	8.85
Corruption	Value of the informal charge index. The indicator ranges from 1 to 10; the higher the score, the *lower* the corruption	6.01	1.00	4.13	8.94
Proactivity	Value of the Leadership proactivity index. The indicator ranges from 1 to 10; the higher the score, the more proactive the local leadership.	4.70	1.39	1.39	9.39
Law enforcement	Value of the Legal institution index. The indicator ranges from 1 to 10; the higher the score, the more effective the law enforcement	4.78	1.09	2.00	7.91
Government loans	Take value 1 if a firm uses government loans, 0 otherwise	0.01	0.08	0	1
Bank loans	Take value 1 if a firm uses commercial bank loans, 0 otherwise	0.31	0.46	0	1
Informal finance	Take value 1 if a firm uses informal finance (relationship-based borrowing), 0 otherwise	0.19	0.39	0	1
Firm size	Natural log of the number of employees (reported the number of employees)	34.12	41.08	10	300
Firm age	Years of operation since establishment	6.88	5.79	1	68
State-owned	Take value 1 for state-owned firms, 0 otherwise	0.07	0.26	0	1
Private	Take value 1 for private firms, 0 otherwise	0.90	0.31	0	1
Foreign-owned	Take value 1 for foreign-owned firms, 0 otherwise	0.03	0.17	0	1
Owner gender	Code 1 male, code 0 female	0.77	0.42	0	1
Owner age	Age of the business owners	44.49	9.75	26	70
Owner education	Take value 1 for doctoral level, 2 for masters, 3 bachelors, 4 college degrees, 5 professional vocational degrees, 6 senior technical degrees, 7 junior technical degrees, and 8 no degrees	5.57	1.77	1	8
Distance	Distance from a province to the closest economic centre, in km	90.16	123.21	1	499
Density	The ratio of population over area, by province per year, in person per km^2	1,539	1276	39	3,888
Consumption	The average consumption of a province in a year depreciated to the 2010 value, in million VND per capita	31.06	21.58	1.11	89.12
Labour	The number of working population over total population by province per year	0.56	0.04	0.45	0.79

Note: The number of observations is 312,845 firm-year in Vietnam in the period 2006-2015. The provincial level variables are obtained from the Provincial Competitiveness Index (PCI) dataset. The firm-level variables are obtained from the Annual Enterprise Survey dataset of Vietnam General Statistics Office (GSO).

Table 3: Regression Results on Baseline Specification and Ownership Sectors

	(1)	(2)	(3)	(4)	(5)	(6)
	Total sample	*Total sample*	*Total sample*	*State-owned*	*Foreign-owned*	*Private*
Transparency	0.00427***		0.00394***	0.000547	0.00966	0.00377***
	(0.000865)		(0.00127)	(0.00226)	(0.00651)	(0.00141)
Corruption	0.00171**		0.00211*	0.000179	0.00289	0.00187
	(0.000718)		(0.00109)	(0.00223)	(0.00534)	(0.00124)
Proactivity	0.000423		0.00455***	-0.00252*	-0.00695*	0.00631***
	(0.000422)		(0.00102)	(0.00130)	(0.00390)	(0.00114)
Law enforcement	0.00364***		0.00269***	0.00501***	0.0102	0.00185
	(0.000626)		(0.000982)	(0.00192)	(0.00655)	(0.00121)
Government loans		-0.359***	-0.353***	-0.115***	-3.187	-0.133
		(0.0915)	(0.0986)	(0.0320)	(2.307)	(0.249)
Bank loans		-0.440***	-0.497***	-0.0856***	-0.128	-0.516***
		(0.0287)	(0.0325)	(0.0301)	(0.0818)	(0.0345)
Informal finance		0.275***	0.350***	-0.00920	-0.257*	0.377***
		(0.0311)	(0.0362)	(0.0327)	(0.137)	(0.0383)
Firm size	-0.0368***	-0.0538***	-0.0488***	-0.0150	-0.0925***	-0.0497***
	(0.00145)	(0.00484)	(0.00538)	(0.0153)	(0.0175)	(0.00587)
Firm age	-0.00724***	-0.00673***	-0.00678***	-0.00178***	-0.0101***	-0.00852***
	(0.000130)	(0.000197)	(0.000211)	(0.000266)	(0.00119)	(0.000256)
Owner gender	0.00294***	0.00461***	0.00518***	-0.00888*	-0.00306	0.00483***
	(0.00105)	(0.00138)	(0.00148)	(0.00510)	(0.00902)	(0.00156)
Owner age	-0.00137***	-0.00142***	-0.00142***	-0.00116***	-0.000954***	-0.00116***
	(5.28e-05)	(7.05e-05)	(7.57e-05)	(0.000241)	(0.000316)	(8.20e-05)
Distance	-4.89e-05***	4.78e-06	3.95e-05***	-2.06e-05	5.38e-05	6.21e-05***
	(5.07e-06)	(1.05e-05)	(1.32e-05)	(1.93e-05)	(6.85e-05)	(1.49e-05)
Density	-1.51e-05***	-2.11e-05***	-1.92e-05***	-1.52e-05***	-2.75e-05***	-1.92e-05***
	(8.41e-07)	(1.09e-06)	(1.17e-06)	(3.15e-06)	(6.99e-06)	(1.27e-06)
Consumption	0.000171**	-0.000285**	-0.000659***	0.000582***	-0.000971	-0.000562***
	(6.88e-05)	(0.000113)	(0.000145)	(0.000226)	(0.000718)	(0.000160)
Labour	0.0103	0.0346	0.00317	0.121**	-0.336**	0.0554*
	(0.0180)	(0.0252)	(0.0270)	(0.0589)	(0.150)	(0.0315)
AR2 (p value)	0.21	0.66	0.70	0.56	0.77	0.94
Hansen(J) (p value)	0.06	0.08	0.19	0.17	0.35	0.41

Observations	312,845	312,845	312,845	16,938	13,293	282,614

Note: The dependent variable in all specifications is reinvestment rate. All estimations include a full set of 2-digit industry dummies, 10-year dummies, 3 ownership dummies (except for specifications 4, 5, and 6), and 8 dummies for owner education. Standard errors and test statistics are asymptotically robust to heteroskedasticity. The estimator is SGMM (*xabond2* in Stata). Endogenous variables include the 4 governance variables, 3 external financing variables, and firm size variable. The instruments for difference equation are lagged 2- to 3-year level variables. The instruments for the level equation are the difference of variables 1 to 2-year lagged. AR(2) is autocorrelation test under the null that there is no autocorrelation in the transformed equations. Hansen (J) is over-identification test for the validity of the instruments, under the null that the instruments are valid and there are no misspecifications.

Table 4: Regression Results on All Governance Indices (1)

	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Transparency	0.00561***				
	(0.000747)				
Corruption		0.00354***			
		(0.000654)			
Proactivity			0.00212***		
			(0.000338)		
Law enforcement				0.00447***	
				(0.000587)	
Entry costs					0.00161**
					(0.000816)
Firm size	-0.0275***	-0.0272***	-0.0291***	-0.0272***	-0.0274***
	(0.00264)	(0.00264)	(0.00264)	(0.00264)	(0.00264)
Firm age	-0.00772***	-0.00774***	-0.00768***	-0.00774***	-0.00773***
	(0.000148)	(0.000148)	(0.000148)	(0.000148)	(0.000148)
Owner gender	0.00291***	0.00275***	0.00284***	0.00277***	0.00258**
	(0.00105)	(0.00105)	(0.00105)	(0.00105)	(0.00105)
Owner age	-0.00147***	-0.00147***	-0.00146***	-0.00148***	-0.00147***
	(5.45e-05)	(5.45e-05)	(5.45e-05)	(5.46e-05)	(5.45e-05)
Distance	-5.11e-05***	-5.64e-05***	-5.42e-05***	-5.61e-05***	-5.81e-05***
	(5.13e-06)	(5.11e-06)	(5.07e-06)	(5.09e-06)	(5.11e-06)
Density	-1.76e-05***	-1.69e-05***	-1.66e-05***	-1.59e-05***	-1.69e-05***

	(8.36e-07)	(8.41e-07)	(8.42e-07)	(8.35e-07)	(8.78e-07)
Consumption	0.000369***	0.000351***	0.000337***	0.000260***	0.000366***
	(6.76e-05)	(6.85e-05)	(6.84e-05)	(6.88e-05)	(6.91e-05)
Labour	0.0192	-0.00574	-0.00333	0.00795	0.0145
	(0.0170)	(0.0177)	(0.0175)	(0.0171)	(0.0170)
AR2 (p value)	0.32	0.31	0.30	0.31	0.68
Hansen(J) (p value)	0.04	0.05	0.11	0.03	0.22
Observations	312,845	312,845	312,845	312,845	312,845

Note: The dependent variable in all specifications is reinvestment rate. All estimations include a full set of 2-digit industry dummies, 10-year dummies, 3 ownership dummies (except for specifications 4, 5, and 6), and 8 dummies for owner education. Standard errors and test statistics are asymptotically robust to heteroskedasticity. The estimator is SGMM (*xabond2* in Stata). Endogenous variables include the 4 governance variables, 3 external financing variables, and firm size variable. The instruments for difference equation are lagged 2- to 3-year level variables. The instruments for the level equation are the difference of variables 1 to 2-year lagged. AR(2) is autocorrelation test under the null that there is no autocorrelation in the transformed equations. Hansen (J) is over-identification test for the validity of the instruments, under the null that the instruments are valid and there are no misspecifications.

Table 5: Regression Results on All Governance Indices (2)

	(6)	**(7)**	**(8)**	**(9)**	**(10)**
Transparency					0.00292***
					(0.000896)
Corruption					0.00389***
					(0.000826)
Proactivity					-0.000680
					(0.000490)
Law enforcement					0.00238***
					(0.000642)
Entry costs					0.00108
					(0.000842)
Land access	0.00336***				0.00189***
	(0.000474)				(0.000649)
Time costs		0.00123**			-0.000610

		(0.000543)			(0.000635)
Business supports			0.00595***		0.00678***
			(0.000500)		(0.000558)
Labour training				0.00256***	-0.00188**
				(0.000697)	(0.000784)
Firm size	-0.0279***	-0.0275***	-0.0285***	-0.0270***	-0.0296***
	(0.00264)	(0.00264)	(0.00264)	(0.00264)	(0.00264)
Firm age	-0.00771***	-0.00773***	-0.00770***	-0.00774***	-0.00766***
	(0.000148)	(0.000148)	(0.000147)	(0.000148)	(0.000148)
Owner gender	0.00279***	0.00262**	0.00278***	0.00269**	0.00321***
	(0.00105)	(0.00105)	(0.00105)	(0.00105)	(0.00105)
Owner age	-0.00147***	-0.00147***	-0.00145***	-0.00147***	-0.00146***
	(5.45e-05)	(5.45e-05)	(5.45e-05)	(5.46e-05)	(5.45e-05)
Distance	-6.53e-05***	-5.68e-05***	-4.91e-05***	-5.10e-05***	-5.27e-05***
	(5.31e-06)	(5.10e-06)	(5.09e-06)	(5.37e-06)	(5.63e-06)
Density	-1.69e-05***	-1.71e-05***	-2.06e-05***	-1.76e-05***	-2.00e-05***
	(8.39e-07)	(8.42e-07)	(9.03e-07)	(8.34e-07)	(9.49e-07)
Consumption	0.000366***	0.000380***	0.000310***	0.000390***	0.000197***
	(6.79e-05)	(6.79e-05)	(6.69e-05)	(6.76e-05)	(6.99e-05)
Labour	-0.0154	0.0125	0.0504***	0.0257	0.0142
	(0.0179)	(0.0172)	(0.0173)	(0.0172)	(0.0184)
AR2 (p value)	0.32	0.31	0.35	0.32	0.33
Hansen(J) (p value)	0.03	0.04	0.03	0.03	0.10
Observations	312,845	312,845	312,845	312,845	312,845

Note: The dependent variable in all specifications is reinvestment rate. All estimations include a full set of 2-digit industry dummies, 10-year dummies, 3 ownership dummies (except for specifications 4, 5, and 6), and 8 dummies for owner education. Standard errors and test statistics are asymptotically robust to heteroskedasticity. The estimator is SGMM (*xabond2* in Stata). Endogenous variables include the 4 governance variables, 3 external financing variables, and firm size variable. The instruments for difference equation are lagged 2- to 3-year level variables. The instruments for the level equation are the difference of variables 1 to 2-year lagged. AR(2) is autocorrelation test under the null that there is no autocorrelation in the transformed equations. Hansen (J) is over-identification test for the validity of the instruments, under the null that the instruments are valid and there are no misspecifications.

Table 6: Regression Results on Continuous External Financing Variables

	(1)	(2)	(3)	(4)	(5)	(6)
Transparency					0.00533***	0.00404***
					(0.00134)	(0.00128)
Corruption					0.00141	0.000443
					(0.00104)	(0.00116)
Proactivity					0.00408***	0.00218***
					(0.000805)	(0.000797)
Law enforcement					0.00560***	0.00383***
					(0.000966)	(0.000918)
Entry costs						0.00292**
						(0.00121)
Land access						0.00660***
						(0.00101)
Time costs						-0.00322***
						(0.000945)
Business supports						0.00285***
						(0.000871)
Labour training						0.00391***
						(0.00120)
Government loans over capital	-2.747***			-3.730***	-3.703***	-3.600***
	(0.758)			(0.983)	(1.004)	(0.947)
Bank loans over capital		-1.117***		-1.042***	-0.943***	-0.708***
		(0.122)		(0.156)	(0.167)	(0.152)
Informal finance over capital			2.998***	2.685***	3.203***	2.864***
			(0.345)	(0.320)	(0.338)	(0.315)
Firm size	-0.0270***	-0.0226***	-0.0216***	-0.0175***	-0.0177***	-0.0207***
	(0.00266)	(0.00315)	(0.00362)	(0.00386)	(0.00405)	(0.00375)
Firm age	-0.00766***	-0.00869***	-0.00685***	-0.00771***	-0.00745***	-0.00730***
	(0.000149)	(0.000198)	(0.000191)	(0.000236)	(0.000247)	(0.000231)

Owner gender	0.00288***	0.00306***	0.000462	0.00152	0.00222	0.00249*
	(0.00106)	(0.00116)	(0.00135)	(0.00139)	(0.00144)	(0.00135)
Owner age	-0.00147***	-0.00158***	-0.00142***	-0.00153***	-0.00153***	-0.00150***
	(5.49e-05)	(6.10e-05)	(6.82e-05)	(7.17e-05)	(7.49e-05)	(7.07e-05)
Distance	-5.39e-05***	-4.51e-05***	5.00e-06	1.58e-05	4.21e-05***	2.32e-05**
	(5.26e-06)	(5.77e-06)	(9.73e-06)	(9.87e-06)	(1.12e-05)	(1.05e-05)
Density	-1.76e-05***	-2.79e-05***	-2.05e-06	-1.40e-05***	-7.25e-06***	-9.06e-06***
	(8.45e-07)	(1.47e-06)	(2.05e-06)	(2.43e-06)	(2.74e-06)	(2.50e-06)
Consumption	0.000391***	0.000171**	0.000285***	9.18e-05	-0.000204*	-0.000124
	(6.80e-05)	(7.79e-05)	(8.63e-05)	(9.38e-05)	(0.000104)	(9.70e-05)
Labour	0.0140	0.00790	0.142***	0.119***	0.0906***	0.0836***
	(0.0172)	(0.0192)	(0.0257)	(0.0261)	(0.0268)	(0.0252)
AR2 (p value)	0.70	0.56	0.37	0.41	0.42	0.44
Hansen(J) (p value)	0.20	0.12	0.09	0.06	0.05	0.09
Observations	312,845	312,845	312,845	312,845	312,845	312,845

Note: The dependent variable in all specifications is reinvestment rate. All estimations include a full set of 2-digit industry dummies, 10-year dummies, 3 ownership dummies (except for specifications 4, 5, and 6), and 8 dummies for owner education. Standard errors and test statistics are asymptotically robust to heteroskedasticity. The estimator is SGMM (*xabond2* in Stata). Endogenous variables include the 4 governance variables, 3 external financing variables, and firm size variable. The instruments for difference equation are lagged 2- to 3-year level variables. The instruments for the level equation are the difference of variables 1 to 2-year lagged. AR(2) is autocorrelation test under the null that there is no autocorrelation in the transformed equations. Hansen (J) is over-identification test for the validity of the instruments, under the null that the instruments are valid and there are no misspecifications.

Table 7: Regression Results on Micro-Firms

	(1)	**(2)**	**(3)**	**(4)**
	Total sample	*State-owned*	*Foreign-owned*	*Private*
Transparency	0.0136***	-0.0395***	0.0282	0.0145***
	(0.00282)	(0.0100)	(0.0883)	(0.00282)
Corruption	-0.0280***	0.000744	-0.0141	-0.0287***
	(0.00229)	(0.00796)	(0.0325)	(0.00230)
Proactivity	0.0178***	0.00259	-0.0412	0.0145***
	(0.00220)	(0.00606)	(0.0393)	(0.00213)
Law enforcement	0.00615***	-0.000509	0.0479	0.00431*

	(0.00231)	(0.00638)	(0.0550)	(0.00224)
Government loans	0.448**	-0.121	4.785	0.148
	(0.202)	(0.108)	(14.07)	(0.272)
Bank loans	-0.846***	-0.0204	-0.391	-0.769***
	(0.0657)	(0.0955)	(0.284)	(0.0636)
Informal finance	0.712***	0.111	0.339	0.614***
	(0.0707)	(0.0911)	(0.349)	(0.0676)
Firm size	-0.425***	-0.355**	-0.274	-0.424***
	(0.0126)	(0.143)	(0.184)	(0.0122)
Firm age	-0.0159***	-0.00338***	-0.0225**	-0.0169***
	(0.000355)	(0.00110)	(0.00936)	(0.000340)
Owner gender	0.000224	0.00251	-0.0252	-0.000822
	(0.00224)	(0.0162)	(0.0479)	(0.00215)
Owner age	-0.000531***	0.00173**	-0.00337	-0.000527***
	(0.000130)	(0.000740)	(0.00210)	(0.000126)
Distance	-0.000151***	-0.000136	-0.000148	-0.000186***
	(3.30e-05)	(9.13e-05)	(0.000369)	(3.28e-05)
Density	-1.72e-05***	-2.16e-06	-4.56e-05	-1.90e-05***
	(2.28e-06)	(1.99e-05)	(4.83e-05)	(2.26e-06)
Consumption	-0.00285***	0.00372***	0.00303	-0.00276***
	(0.000219)	(0.00134)	(0.00852)	(0.000205)
Labour	-0.0682	0.265	1.377	-0.160**
	(0.0809)	(0.238)	(2.387)	(0.0796)
AR2 (p value)	0.12	0.77	0.89	0.91
Hansen(J) (p value)	0.04	0.23	0.02	0.12
Observations	395,870	7,362	2,424	386,084

Note: The dependent variable in all specifications is reinvestment rate. All estimations include a full set of 2-digit industry dummies, 10-year dummies, 3 ownership dummies (except for specifications 4, 5, and 6), and 8 dummies for owner education. Standard errors and test statistics are asymptotically robust to heteroskedasticity. The estimator is SGMM (*xabond2* in Stata). Endogenous variables include the 4 governance variables, 3 external financing variables, and firm size variable. The instruments for difference equation are lagged 2- to 3-year level variables. The instruments for the level equation are the difference of variables 1 to 2-year lagged. AR(2) is autocorrelation test under the null that there is no autocorrelation in the transformed equations. Hansen (J) is over-identification test for the validity of the instruments, under the null that the instruments are valid and there are no misspecifications.

Appendix:

Appendix 1:

Table: Governance Index Definition and Summary Statistics

Variable	Definition	Mean	S.D.	Min.	Max.
Legal institutions	Measures the confidence in provincial legal institutions; whether firms regard the provincial legal institutions as an effective vehicle for dispute resolution, or as an avenue for lodging appeals against corrupt official behaviours. The indicator is two-digit value, ranging from 1 to 10; the higher the score, the better the legal enforcements.	4.78	1.09	2.00	7.91
Entry costs	Measures the differences in entry costs for new firms across provinces (for example, length of business registration in days, etc.). The indicator is two-digit value, ranging from 1 to 10; the higher the score, the lower the entry costs.	5.16	1.49	1.94	8.84
Land access	Combines two dimensions of the land problems confronting entrepreneurs: how easy it is to access land and the security of tenure once a land is acquired. The variable is two-digit value, ranging from 1 to 10; the higher the score, the better the access.	5.67	1.44	2.14	8.56
Time costs	Measures how much time firms waste on bureaucratic compliance, as well as how often and for how long firms must shut down their operations for inspections by local regulatory agencies. The indicator is two-digit value, ranging from 1 to 10; the higher the score, the better the access.	5.96	0.81	2.64	8.93
Business supports	Measures provincial services for trade promotion, provision of regulatory information to firms, business partner matchmaking, provision of industrial zones or industrial clusters, and technological services for firms. The indicator is two-digit value, ranging from 1 to 10; the higher the score, the better the support.	5.84	1.06	4.13	8.94
Labour training	Measures the efforts by provincial authorities to promote vocational training and skills development for local industries, and to assist in the placement of local labour. The indicator is two-digit value, ranging from 1 to 10; the higher the score, the better the training.	4.54	1.25	1.39	9.39

Informal Charge (Corruption)	Measures how much firms pay in informal charges, how much of an obstacle those extra fees pose for their business operations, whether payment of those extra fees garner the expected results or "services," and whether provincial officials use compliance with local regulations to extract rents. The indicator is two-digit value, ranging from 1 to 10; the higher the score, the lower the charges (corruption).	6.01	1.00	4.13	8.94
Transparency	Measures whether firms have access to the proper planning and legal documents necessary to run their businesses, whether those documents are equitably available, and whether new policies and laws are communicated to firms and predictably implemented. The indicator is two-digit value, ranging from 1 to 10; the higher the score, the more transparent.	5.83	1.21	2.14	8.85
Leadership proactivity	Measures the creativity and cleverness of provinces in implementing central policy, designing their own initiatives for private sector development, and working within sometimes unclear national regulatory frameworks to assist and interpret in favour of local private firms. The indicator is two-digit value, ranging from 1 to 10; the higher the score, the more proactive.	4.70	1.39	1.39	9.39

Note: The study panel encompasses all 63 provinces and municipal cities in Vietnam in the period 2006-2015, obtained from the Provincial Competitiveness Index (PCI) dataset.

Appendix 2:

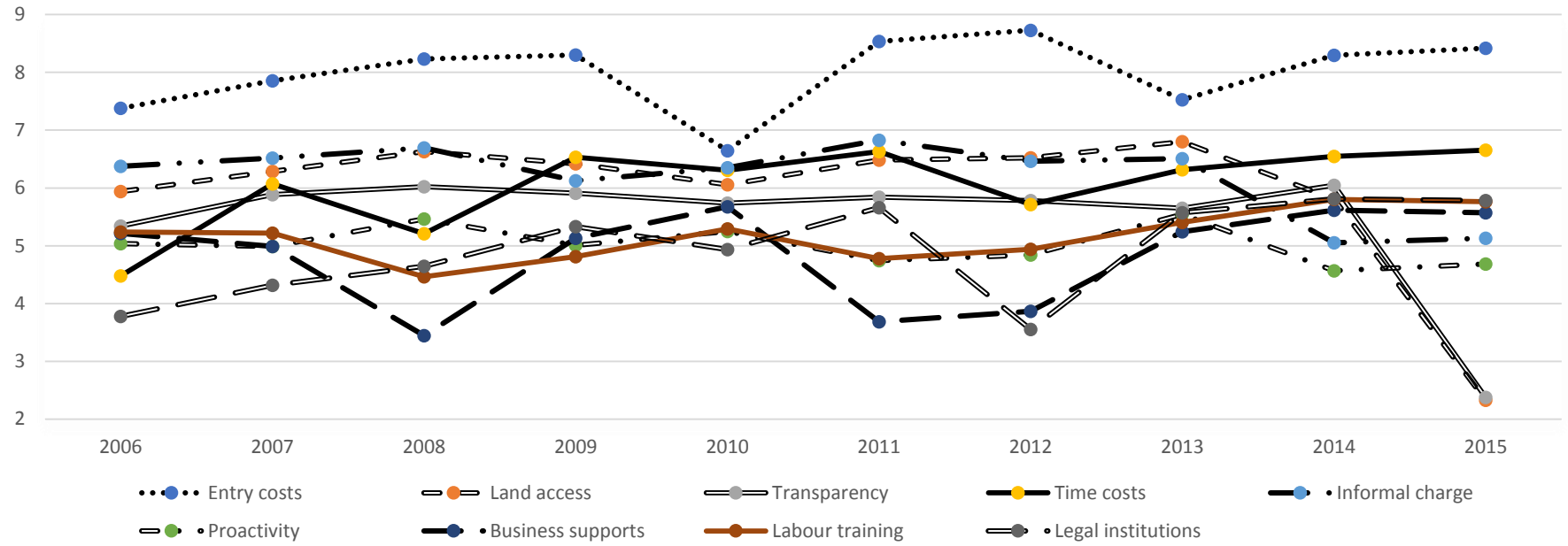
Table: Pairwise Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Reinvestment (1)															
Transparency (2)	0.09														
Corruption (3)	0.00	0.41													
Proactivity (4)	0.02	0.22	0.45												
Law enforcement (5)	-0.02	-0.08	0.16	0.18											
Government loans (6)	0.02	0.01	0.02	0.01	-0.04										
Bank loans (7)	-0.05	-0.12	-0.01	-0.02	-0.24	0.07									
Informal finance (8)	0.00[a]	0.06	0.01	-0.05	-0.33	0.09	0.59								
Firm size (9)	-0.30	0.14	0.14	0.09	-0.06	0.03	0.08	0.09							
Firm age (10)	-0.14	-0.04	-0.02	0.03	0.05	0.03	-0.09	-0.10	0.03						
Owner gender (11)	0.00	-0.04	-0.02	-0.02	-0.01	0.02	0.02	0.01	0.03	-0.03					
Owner age (12)	-0.09	-0.06	0.04	0.06	0.01	0.02	-0.06	-0.09	0.04	0.39	0.01				
Distance (13)	-0.05	-0.34	0.08	0.04	-0.02	0.02	-0.14	-0.21	0.04	0.11	0.02	0.17			
Density (14)	0.00	0.00	-0.34	-0.27	-0.04	-0.05	0.04	0.11	-0.20	-0.07	-0.04	-0.14	-0.68		
Consumption (15)	-0.05	-0.25	-0.43	-0.36	0.08	-0.06	0.01	-0.02	-0.30	-0.01	-0.03	-0.10	-0.53	0.81	
Labour (16)	-0.03	0.01	0.36	0.25	0.10	0.01	-0.03	-0.14	0.07	0.08	0.04	0.12	0.35	-0.59	-0.52

Note: All correlation coefficients are significant a 1%, except for those with [a] mark are significant at 5%.

Appendix 3:

Graph: Governance Indices by Year



Appendix 4: Pairwise Correlation Matrix of All PCI Governance Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Entry costs (1)								
Land access (2)	0.24							
Transparency (3)	0.00[b]	0.52						
Time costs (4)	0.16	0.25	0.02					
Informal charge (5)	0.26	0.66	0.34	0.30				
Leadership proactivity (6)	0.08	0.45	0.29	0.38	0.47			
Business supports (7)	-0.42	-0.45	0.12	-0.04	-0.40	-0.06		
Labour training (8)	-0.23	-0.46	-0.05	-0.03	-0.43	-0.03	0.63	
Legal institutions (9)	0.05	0.10	-0.05	0.49	0.16	0.21	0.14	0.07

Note: All correlation coefficients are significant at 1%, except for those with [b] mark that are not significant at 10%.

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