Local institutions, external finance and investment decisions of small businesses in Vietnam

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ABSTRACT

This study investigates the impacts of local institutions, external finance, and their joint effects on firm investment in Vietnam. Investment decisions are classified into two categories: fixed asset investment and non-fixed asset investment. Analysing a set of 1.3 million firm-year observations of businesses in Vietnam (2006–2016), we find evidence that local institutions (both formal and informal) positively influence fixed asset investment but negatively affect non-fixed asset investment. Also, we find that informal loans are positively associated with both types of firm investment while bank loans are negatively associated with both types of firm investment. More importantly, we find that the quality of local institutions is able to moderate firms' external financing behaviour, leading to increased investment values.

1. Introduction

Institutions are important in determining small business behaviours. The literature has shown that both formal and informal institutions significantly influence firms' marketing activities (Dubova et al., 2017), cash balances and flows (Malinowska, 2019), as well as levels of innovativeness (Maksimov et al., 2017). In developing countries, where the formal institutional systems are underdeveloped and incomplete, informal institutions appear to be even more germane to shaping the 'rules of the game' (Steer and Sen, 2010). As such, recent studies have examined the relative importance of formal and informal national institutions for the performance of the entrepreneurial sector. However, a large body of the existing research assumes that institutions are homogenous within a country (Carbonara et al., 2016), with the result that most studies are conducted at the cross-country level. However, the local authorities in developing countries, due to the incompleteness of the formal institutions, may interpret and execute national legislation differently, leading to substantial heterogeneity in the quality of institutions across a country's regions (Nguyen et al., 2018). Unfortunately, the issues related to local institutions have not been adequately addressed in the extant literature.

Access to finance is also key to determining small business behaviour. Small firms, due to their liabilities of newness and smallness, may find it difficult to secure sufficient external finance for their venturing activities (Carreira and Silva, 2010). Financing constraints are even more severe in developing countries because of their immature financial systems and the lack of alternative equity markets such as crowdfunding, business angels, and venture capital. In this situation, bank loans appear to be the only feasible external source of financing for the majority of small businesses. However, the banking systems in developing countries are typically controlled by state-owned banks, whose primary operational objective is to support state-owned firms, often to the detriment of privately-owned firms (Du et al., 2015). Faced with this situation, small businesses are 'forced' to rely on informal finance to support their venturing activities (Beck et al., 2015). Even though the relative importance of informal finance over formal finance has been widely

investigated, the analysis is rarely conducted in conjunction with considering the role played by local institutions when explaining firm investment decisions.

Given these gaps in the literature, in this study we propose a framework that examines the roles of local institutions, external finance, and their joint effects on firm investment. The framework is novel in the following respects.

First, as well as examining fixed asset investments, we take into account non-fixed asset investments, such as obtaining additional working capital and repairing fixed asset investments (i.e., there is no increase in the number of fixed assets). Non-fixed asset investments are important to small businesses because small firms are typically not capital-intensive (Beck et al., 2013). As such, they must regularly invest in non-fixed asset projects to maintain their business operations. It is therefore important to take into account both the fixed asset investments and non-fixed asset investments of small businesses.

Second, we go beyond the national formal institutions (laws and regulations) by including the informal institutions (the local norms and practices of doing business) and the institutions of governance (the governance quality of local governments) in the model. The downgrade of the unit of analysis from national to local institutions is essential in the context of small businesses since their operations are mostly bounded by their local markets (Nguyen et al., 2018). Arguably, it is therefore reasonable to expect that the surrounding institutional factors are more relevant than the very broad and general national institutions to small business investment (Charron et al., 2014).

Third, on the finance side of the model, instead of following previous studies (Johnson et al., 2002) that employ bank loans as the sole representative of external finance, we also take into account informal credit (i.e., borrowing from relationship-based sources, such as friends and family). We expect that the inclusion of informal finance in the model will better explain small business investment decisions.

More importantly, our model also accounts for the potential interaction effects between local governance and external finance in determining firm investment. This consideration is based on recent literature showing that institutional and financial variables may not be independent of each other (Hasan et al., 2017). As such, we argue that the conventional comparison of the relative importance of institutions and external finance (Johnson et al., 2002) is unable to yield a meaningful conclusion. Rather, we suggest that the association between external finance and firm investment may change with the local institutional settings.

Analysing a set of 1.3 million firm-year observations of private small businesses in Vietnam (2006–2016), we find some evidence showing that local institutions (both formal and informal) are positively associated with firm fixed asset investment but negatively associated with non-fixed asset investment. In terms of external finance, informal loans are positively associated with firm investment, while bank loans are negatively associated with firm investment. This could be attributed to the underdeveloped banking systems in Vietnam. More importantly, our findings suggest that improved institutional quality (both formal and informal) positively influences the relationship between external finance and firm investment. Specifically, the negative effect of bank loans will become positive in regions with stronger institutional settings, while the positive effect of informal loans will be strengthened.

This study offers a set of important suggestions for policymakers who are concerned with boosting firm investment in developing countries where both the institutional settings and the financial systems are underdeveloped.

2. Related literature and hypotheses

2.1. Institutions

Institutions are human-made 'rules of the game' that shape the incentives and behaviours of economic agents (Williamson, 2000). The 'rules of the game' can be formal or informal. Formal institutions are written 'rules', such as constitutional frameworks, legislative systems, and regulations. The informal institutions are the implicit 'rules', such as norms, values, and customs. Both formal and informal institutions have been found to be essential to shaping entrepreneurship. Because institutions determine the structure of the game, they significantly shape the incentives and behaviours of entrepreneurs (Acemoglu and Johnson, 2005). The literature has confirmed that national institutions are one of the key determinants of the activeness of entrepreneurship (i.e., the number of newly-established firms) (Stenholm et al., 2013), their survival (Tran, 2019), performance (Du and Mickiewicz, 2016), and growth (Estrin et al., 2013). However, national institutions are broad and general and thus take some time to change (Nguyen et al., 2018).

Since small businesses, due to their age and size liabilities, typically operate within their local markets, it is arguably more appropriate to examine the effects of their surrounding institutional environments on their investment behaviour. Taking these issues into account, we propose investigating in this study the importance of (1) local business norms and (2) local governance quality on firm investment decisions.

The local business norms in this study are determined by the specific history of Vietnam. In particular, while the economic system in North Vietnam followed a pure socialist blueprint from the outset, South Vietnam was only transformed from capitalism to socialism in 1975 (Wheeler, 2015). This separation of economic systems gives rise to a significant difference in the creation and maintenance of informal institutions in the country, such as the norms of doing business. For example, while North Vietnam is a Guanxi (networking) based economy (due to the values and beliefs of socialism), entrepreneurs in the South are more likely to employ the arm's length principle of doing business (due to the sticky values and beliefs of capitalism) (Makino and Tsang, 2011). Moreover, these norms of doing business, akin to the case of East and West Germany (Fritsch and Wyrwich, 2014), are expected to linger despite the two states having unified four decades ago, when a common framework of formal institutions was established for the entire country. As such, in line with previous studies (Nguyen et al., 2018), we assume that the norms of doing business in South Vietnam (once exposed to capitalism) are more entrepreneurship-friendly than the norms of doing business in North Vietnam (pure socialism).

Meanwhile, local governance quality in this study is determined by the quality of the governance arrangements of local

governments. In other words, we are keen to see how the rules are 'played' at the local level, i.e., it is the efficiency of how the rules are implemented that is important rather than the rules themselves. The 'play of the game' is particularly important in our study because the formal institutional frameworks in Vietnam are underdeveloped and incomplete (Nguyen, 2019). In this situation, local authorities have substantial room to arbitrarily interpret and execute national laws, creating substantial heterogeneity among regions within a country that share identical formal institutions.

It is expected that improved institutional quality, whether formal or informal, will boost firm investment in fixed assets. It is noteworthy that the core effect of a set of well-structured institutions is a reduction in transaction costs and informational asymmetries (Williamson, 2000). As such, small firms may find more business opportunities in a conducive institutional environment, some of which may be realised in investment projects. Also, improved institutional quality enhances institutional trust – i.e., trust in the government (Efendic et al., 2015). When the fear of appropriation and corruption decreases, firms are more likely to make long-term investments; that is, they will invest in fixed assets.

In contrast, it is expected that firms located in regions with weak institutions (lower levels of pro-entrepreneurship norms or governance quality) will invest less in fixed assets due to the high transaction costs and unreliable local governance arrangements. However, it is noteworthy that, even in sub-optimal environments, firms must continue to invest if they are to maintain their competitiveness and survival (Nguyen, 2019). In this situation, we propose that firms may decide to invest in non-fixed assets, this being a strategy for adapting to the weak institutional environment. Specifically, short-term investments may include repairing fixed assets (instead of upgrading them), increasing working capital, and spending on other short-term items that do not increase the firm's fixed assets. This investment strategy requires less commitment from the entrepreneurs and is less likely to attract appropriation and corruption. It may therefore appear to be apposite to weak institutional conditions.

We therefore formally propose that:

Hypothesis H1. In Vietnam, the quality of (a) pro-entrepreneurship norms and (b) local governance arrangements is positively associated with firm fixed asset investment.

Hypothesis H2. In Vietnam, the quality of (a) pro-entrepreneurship norms and (b) local governance arrangements is negatively associated with firm non-fixed asset investment.

2.2. External finance

2.2.1. Bank loans

Bank loans are important to small business investment (Talavera et al., 2012) and the literature has documented that an increase in access to bank loans will lead to a corresponding increase in firm investment value (Guariglia, 2008; Hirth and Viswanatha, 2011). However, small firms that have yet to demonstrate a strong track record will find it difficult to gain access to bank loans. Also, given the significance of informational asymmetries, banks may reduce their potential risks by requiring higher interest rates of small-firm borrowers (Cull and Xu, 2005). Thus, small businesses typically fail to obtain sufficient external finance to fund their investment projects.

However, this line of argument does not take into account the role played by the injections of entrepreneurs' personal wealth into their ventures post-establishment. In this study, we investigate investments that include retained earnings, external loans, and additional personal wealth (equity), and we propose that it may be the case that entrepreneurs decide to reduce their profit re-investments and personal wealth supplements when their access to bank loans increases. Our reasoning is that Vietnam's institutional systems (and those of developing countries in general) are insufficiently strong to persuade entrepreneurs that their private properties are protected from appropriation and corruption (Efendic et al., 2015; Singh and Bhattacharya, 2017). Weak property rights protection thus reduces entrepreneurs' trust in governments, leading to some entrepreneurs ensuring that their investments incorporate as much external finance as possible while they redirect their earned profits to other, safer channels (Cull and Xu, 2005).

Specifically, Jiang and Zeng (2014) show that there is a negative relationship between the use of bank loans and the ratio of profit investment in China because of the risk of appropriation and the inefficient laws concerning property rights. Also, Zhou (2013) demonstrates that when entrepreneurs gain more confidence in the political system, they are willing to increase their investment rates rather than distributing a large proportion of their firms' profits.

In short, since the financial system in Vietnam remains underdeveloped and the formal institutional frameworks are incomplete (Su and Bui, 2017), entrepreneurs running small businesses may avoid using their own funds to invest in venturing activities as a means of protecting themselves against appropriation. However, when they have been able to obtain bank loans, entrepreneurs may correspondingly reduce their retained earnings investment and additional personal wealth investment rates, leading to lower overall investment values. Therefore, we suggest the following hypothesis:

Hypothesis H3. In Vietnam, formal finance (in terms of bank loans) is negatively associated with firm investment (both fixed asset investment and non-fixed asset investment).

2.2.2. Informal loans

Following the most recent literature (Karaivanov and Kessler, 2018), informal finance in this study is defined as borrowing from relationship-based financing sources (e.g., family and friends).[1] Informal finance may alleviate the funding gap created by financing constraints by providing small firms with a source of low-cost, relationship-based capital (Beck et al., 2008). Informal finance is therefore expected to have a positive association with firm investment values.

Informal loans are derived from relationships. The advantage of the attached 'relationship' in this type of transaction is that the borrowers (entrepreneurs) may enjoy several favourable conditions, such as lower (or even zero) interest rates and flexible payback schemes (Karaivanov and Kessler, 2018). However, the disadvantage of informal finance is the implicit burden of repayment or, in the terminology of Adomdza et al. (2016), an unlimited liability contract.

Specifically, informal loans are extracted from entrepreneurs' social networks, which are important resources for their venturing activities (Lee and Persson, 2016). Relationship-based borrowing is concerned with the entrepreneur's personal networks. To default on repaying loans obtained from family and friends may completely ruin these 'strong ties' relationships (Bertrand and Schoar, 2006). Also, entrepreneurs are inclined to perceive relationship-based borrowing as 'internal' funding (Gartner et al., 2012; Lee and Persson, 2016). Because of the relationship effects, entrepreneurs find that their personal responsibility is strongly attached to this type of loan. As such, entrepreneurs have an incentive to boost their investment values by increasing their retained earnings and calling on their personal wealth, instead of salting their profits away.

In addition, the costs of losing 'strong ties' financing sources are high. If a business fails, the entrepreneur may find it difficult to obtain further financial support from their family and friends in the future (Chua et al., 2011). Entrepreneurs thus feel significant pressure to repay the loan and are incentivised to commit to larger investment projects. Therefore, we suggest the following hypothesis:

Hypothesis H4.   In Vietnam, informal finance (in terms of relationship-based borrowing) is positively associated with firm investment (both fixed asset investment and non-fixed asset investment).

2.3. Institutions, external financing and investment

While institutions and external finance both have direct impacts on firm investment decisions, we suggest that there is also a joint effect, whereby institutional quality moderates the influence of external finance on firm investment. Specifically, it is expected that (1) the negative association between bank loans and investment will turn positive, and (2) the positive association between informal loans and investment will become stronger in regions that benefit from more developed institutions (both formal and informal).

First, in terms of informal institutions, regions with pro-entrepreneurship norms of doing business enjoy a lower level of transaction costs because entrepreneurs feel it is worth formalising transactions with legal contracts for the sake of the ensuing property rights protection (Nguyen et al., 2018; Williamson, 1985). Making deals at arm's length instead of using relationship-based principles remarkably reduces the costs of negotiating and monitoring lending transactions, thereby creating more effective banking systems where banks perceive fewer potential risks of agency costs and moral hazards (Allen et al., 2005). Banks are therefore more inclined to reduce the required rates of return and will probably offer more loans to small businesses (Johnson et al., 2002).

Also, a set of pro-entrepreneurship norms may facilitate informal loans by improving the overall level of trust in society. Social agents are keen to believe that others will play and respect the 'rules' as they do (Efendic et al., 2015). When informal creditors (family and friends) perceive that making unsecured loans (no collaterals attached) is less risky, they may reduce the required rate of return and lend more money to the borrowers (entrepreneurs); a decision that would not be as readily made in a low-trust environment.

Moreover, a set of pro-entrepreneurship norms such as innovativeness, proactiveness, and creativity is likely to push entrepreneurs to pursue ambitious goals of growth. These norms also lead to a higher level of demand for capital to make investments (Baron, 2007).

In terms of local governance arrangements, high-quality governance reduces transaction costs and facilitates the local supply of finance. When local governance quality improves, it strengthens institutional trust (trust in governments) (Helmke and Levitsky, 2004). Consequently, banks can become more confident about the effectiveness of government agents at solving potential disputes and will also feel that they can rely on the local law enforcement systems to protect their legal rights. Banks operating in regions with high-quality governance arrangements are therefore more bullish about serving small businesses.

Moreover, given the improvements in the efficiency and trustworthiness of the local governance systems, entrepreneurs may become more confident about retaining their earnings and using more of their personal wealth to make investments. A set of high-quality governance arrangements may also encourage firms to become more active in seeking out external finance. When local authorities provide subsidies and support, such as trade fairs and matchmaking events, firms may find opportunities to secure finance from external sources and may subsequently make higher levels of investment.

In general, we propose that firms in more developed institutional environments (both formal and informal) may obtain more external loans (both formal and informal). This allows them to make higher levels of investment. In formal terms, we have:

Hypothesis H5.   The negative association between bank loans and firm investment (proposed in H3) will become positive in regions with more developed (a) governance quality, (b) business norms.

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[1] Our definition of informal finance is more specific than the definition where informal finance includes all financing sources except for bank loans (Allen et al., 2005; Cull and Xu, 2005; McMillan and Woodruff, 2002).

Hypothesis H6. The positive association between informal finance and firm investment (proposed in H4) will become stronger in regions with more developed (a) governance quality, (b) business norms.

3. Data and methodology

3.1. Data

The empirical setting of this study is Vietnam. To test the proposed hypotheses, we employ the Annual Enterprise Survey dataset provided by Vietnam General Statistics Office (GSO). The survey was first conducted in 2000 and the dataset is updated annually. By regulation, all businesses with more than 10 employees are required to participate in the survey. For businesses with fewer than 10 employees, a sample is randomly selected to participate in the survey. The dataset provides comprehensive information about firm financial characteristics, employment, investment, and performance. The scope of the survey comprises both the manufacturing and service industries and all types of ownership. The panel data obtained from GSO contains information from 2000 to 2016.

While the panel data covers a period of 17 years, the period of analysis in this study is scaled down to 11 years, from 2006 to 2016. This is so that it matches with the second dataset: the Provincial Competitiveness Index (CPI), which is a joint product of the Vietnam Chamber of Commerce (VCCI) and the US Agency for International Development (USAID). This dataset is a panel of provincial governance quality. The quality is scored from 0 to 100; the higher the score, the better the governance quality. The PCI index is calculated based on a survey of more than 17,000 domestic firms and 1,700 foreign firms across provinces in Vietnam. The pilot study was conducted in 2005 on one-third of the total provinces of Vietnam (63 provinces in total). From 2006, the PCI index became available for all provinces and is updated annually.

We combine the firm-level GSO dataset with the provincial level PCI dataset to create a multi-level panel of 11 years from 2006 to 2016. While the PCI panel is strongly balanced, the GSO dataset is unbalanced. As such, we control the outliers by censoring the top and bottom 1% of observations in each variable. Details about the panel structure of our dataset are reported in Appendix A.

Our population of interest in this study is micro-firms and small- and medium-sized enterprises (SMEs). We are not interested in large corporations for two reasons. First, large firms are less sensitive to local government quality because, unlike small businesses, they are not bounded to any particular local market (Nguyen et al., 2018). Second, large corporations are less financially constrained and less likely to rely on informal loans (Carreira and Silva, 2010). We also exclude state-owned firms because their operations may not follow market principles and are, in any event, not allowed to take out informal loans (Zhou, 2017). Nor do we count foreign-owned firms because they enjoy several instances of special treatment from the central government that may distort their sensitivity to local governance quality (Nguyen and Dijk, 2012). The final sample in our study thus includes 1,335,157 observations of domestic private micro-firms and SMEs.[2]

3.2. Variables and summary statistics

The dependent variable of interest in this study is firm investment, which is the ratio of the value of firm investment to total capital. In the survey, there is an item in which investment value is self-reported by the owner of the firm: 'How much is the total amount of profits that your company reinvested plus the amount of external finance and additional personal wealth that you newly invested in your business?' Using this item, we create the *total investment* variable. Then, following the literature, we calculate the conventional *fixed asset investment* variable by taking the difference in fixed assets between two consecutive years (Guariglia, 2008). The gap between the self-reported total investment and the fixed asset investment is the *non-fixed asset investment* variable of interest. It is noteworthy that all investment variables are normalised by total capital.

To measure the effect of external financing, we employ two variables: bank loans and informal loans. Specifically, the *Bank loans* variable is the ratio of the value of bank loans that firms take out to make investment to total capital. Meanwhile, the *Informal loans* variable is the ratio of the value of borrowing from family and friends to make investment to total capital. Table 1 shows the definitions and summary statistics of the variables.

The average fixed asset investment is slightly more than 12 % of total capital, while the non-fixed asset investment accounts for 16 %. The average bank loan is 6% of total capital while the average informal loan is 2% of total capital (the remaining investment comes from the owners' self-raised capital). These statistics indicate that small businesses in Vietnam still largely rely on their owner-managers' personal wealth to make investments, despite the fact that the banking system has recently been reformed (Nguyen et al., 2016).

Apart from external financing, we are also interested in the effect of institutional environments on firm investment. We measure pro-entrepreneurship business norms using a dummy variable: *South*, which takes the value 1 if a firm is located in South Vietnam, and

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[2] According to the Vietnam Enterprise Law, there are four types of firm size. Micro-enterprises are firms operating with fewer than 10 employees. Small enterprises are firms with 10 to 200 employees and total registered capital of less than 20 billion VND (approximately 1 million USD). Medium enterprises are firms with 200−300 employees and total registered capital of less than 100 billion VND (approximately 5 million USD). Large enterprises are firms with more than 300 employees and 100 billion VND registered capital. Capital is the first criterion in categorisation.

Table 1
Variable Definitions and Summary Statistics.

Variable	Definition	Mean	SD	Min	Max
Fixed asset Investment	The ratio of firm fixed asset investment value to total capital	0.12	0.14	0.00	0.62
Non-fixed asset Investment	The ratio of firm non-fixed asset investment value to total capital	0.16	0.43	0.00	3.38
Governance quality	The PCI score, ranging from 0 to 100. The higher the score, the better the governance quality of local governments	60.05	4.76	36.39	77.20
Business norms (South dummy)	A dummy variable, taking value 1 for firms located in South Vietnam, and value 0 for firms located in North Vietnam	0.57	0.49	0	1
Bank loans	The ratio of the value of bank-financed investment to total capital	0.06	0.14	0	0.92
Informal loans	The ratio of the value of relationship-financed investment to total capital	0.02	0.07	0	0.47
Firm size	Natural log of the number of employees (reported here as the number of employees)	15.19	49.86	1	299
Firm age	Years of operation since establishment	5.61	4.37	1	68
Owner gender	A dummy variable, taking value 1 for male and value 0 for female	0.71	0.45	0	1
Owner age	Age of the owner of a business	41.97	9.86	24	69
Owner education	A categorical variable, taking value 1 for doctoral degrees, 2 for masters, 3 bachelors, 4 college degrees, 5 professional vocational degrees, 6 senior technical degrees, 7 junior technical degrees, and 8 no degree	5.50	1.71	1	8
Distance	Distance from a province to the closest municipal city, in km	90.16	123.21	1	499
Population density	The ratio of population over area by province per year, in person per km^2	1,539	1276	39	3,888
Consumption	The value of average consumption of a province in a year depreciated to 2010 value, in million VND per capita	31.06	21.58	1.11	89.12
Labour force	The number of working people over total population by province per year	0.56	0.04	0.45	0.79

Notes: The number of observations is 1,335,157 firm-years in Vietnam in the period 2006−2016. The sample includes only domestic private micro-, small-, and medium-sized enterprises. The governance quality variable is 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). The provincial-level variables are obtained from the Annual Statistics Books of Vietnam.

0 if a firm is located in North Vietnam.[3] This variable is able to gauge the differences between the two regions in the norms of doing business (Nguyen et al., 2018). Specifically, South Vietnam followed capitalism before the two states were unified into a single socialist country in 1975. South Vietnam was therefore exposed to a set of pro-entrepreneurship values that included arm's length principles (Makino and Tsang, 2011). North Vietnam, on the other hand, always followed the pure socialism blueprint, which emphasises the importance of relationship-based principles (Shultz et al., 2000).

Another institutional variable of interest in this study is *local governance quality*. To measure the governance quality of local governments, we use the PCI index. This index is a combination of the other nine sub-indices, each evaluating a dimension of local government. The dimensions include, for example, controls for corruption, levels of transparency in public services, and the leadership proactivity of local authorities. Details of the nine sub-indices are presented in Appendix B. The PCI score ranges from 0 to 100; the higher the score, the better the quality of governance.

Following the extant literature, we include a set of covariates that may influence firm investment. At the firm level, we control for firm size, firm age, and industry. These variables represent firm- and industry-specific characteristics, which significantly determine the rate, value, and frequency of investment (Zhou, 2017). At the entrepreneur level, we control for owner age, gender, and education. These individual-specific factors play an essential role in investment decisions because they indicate the knowledge and experience of entrepreneurs, which may considerably influence their ability to recognise and evaluate business opportunities (Nguyen, 2018). At the provincial level, we include the following variables: population density and consumption value per capita (to control for local market demand), labour force (to control for local labour supply), and distance from a province to the closest municipal city (business and political centres). These regional factors may shape local business environments, which subsequently determine local firm investment decisions. Finally, we also take into account the potential interaction between formal and informal institutions (Williamson, 2000). Hence, we include an interaction term of local governance quality and South dummy. The definition and summary statistics of these variables are presented in Table 1. The correlation coefficient matrix is presented in Appendix C.

3.3. Specification and estimation

Based on the conventional firm investment model, we propose an expanded reduced-form investment equation. This is our baseline specification:

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\begin{aligned}
Investment_{igt} = {} & \beta_0 + \beta_1\big(Firm\ controls_{igt}\big) + \beta_2\big(Owner\ controls_{igt}\big) + \beta_3\big(Province\ controls_{gt}\big) + \beta_4\big(Business\ norms_{gt}\big) \\
& + \beta_5\big(Local\ governance\ quality_{gt}\big) + \beta_6\big(Informal\ loans_{igt}\big) + \beta_7\big(Bank\ loans_{igt}\big) + v_j + v_t + v_i + \mu_{it}
\end{aligned}
\tag{1}
$$

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[3] The official division of the North and South states in the French Indochina War was determined by the 17th parallel. The boundary between these two states was established at the Ben Hai River, which enters the South China Sea at 17 degrees 0 minutes 54 seconds N latitude (Makino and Tsang, 2011).

where i denotes an individual firm, g is the province, and t a year. Therefore, $Investment_{igt}$ is the investment rate that firm i in province g makes in year t, which includes fixed asset investment and non-fixed asset investment. The term $Business\ norms_{gt}$ is the South dummy; the term $Local\ governance\ quality_{gt}$ is the PCI score; and $Bank\ loans_{igt}$ and $Informal\ loans_{igt}$ are the two external financing sources. Finally, we control for firm-level, owner-level, and province-level covariates in our equation.

To test the moderation effect of local institutions on external finance, we examine the interaction terms between the two. We expect the coefficients associated with the interaction terms to be positive because external financial markets are likely to function more efficiently in stronger institutional environments.

Also, the investment equation 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-specific factors that may influence firm investment. Finally, μ_{it} is the idiosyncratic error.

We employ the system general method of moments (GMM) to estimate the regression coefficients. The GMM approach could, to some extent, deal with potential endogeneity in our model. Specifically, the two institutional variables (business norms and local governance quality) may be endogenous because a boom in the number of small businesses may force local governments to improve governance quality, or even gradually alter the local norms of doing business (Nguyen et al., 2018). In addition, firm investment may prompt the local financial markets to upgrade and function more efficiently (Ayyagari et al., 2010). As such, we treat the four dependent variables: business norms; local governance quality; bank loans; and informal loans; together with firm size, as endogenous

Table 2
Fixed asset Investment.

	(1) Fixed assets	(2) Fixed assets	(3) Fixed assets	(4) Fixed assets
Governance quality	0.370	3.637***	3.856***	2.890***
	(0.692)	(0.318)	(0.808)	(1.093)
Business norms (South dummy)	362.6***	334.7***	165.0	195.1*
	(67.91)	(24.85)	(103.0)	(105.5)
Bank loans	−2,343***	−8.677	−275.8***	−286.6***
	(501.7)	(30.40)	(40.19)	(40.49)
Informal loans	437.6***	1,231***	1,759***	1,730***
	(111.9)	(60.09)	(100.3)	(101.7)
Governance quality × Bank loans	50.87***			
	(8.042)			
Business norms × Bank loans		81.44		
		(55.64)		
Governance quality × Informal loans			5.757**	
			(2.509)	
Business norms × Informal loans				579.0***
				(207.3)
Governance quality × Business norms	−5.870***	−4.137***	−2.498	−2.707
	(1.134)	(0.363)	(1.735)	(1.745)
Firm size	23.19***	30.30***	29.59***	30.61***
	(1.326)	(1.020)	(1.928)	(2.053)
Firm age	0.0802	−0.870***	−0.551***	−0.564***
	(0.0756)	(0.0709)	(0.155)	(0.156)
Owner gender	2.584***	3.550***	2.310***	2.125***
	(0.460)	(0.446)	(0.767)	(0.780)
Owner age	−0.0976***	−0.0294	−0.0196	−0.0338
	(0.0242)	(0.0208)	(0.0411)	(0.0427)
Distance	−6.290	−66.40***	96.86***	75.15***
	(10.90)	(12.32)	(15.71)	(20.90)
Population density	104.9***	65.94***	59.40***	68.70***
	(9.459)	(7.576)	(12.00)	(13.26)
Provincial consumption	−21.93**	−215.0***	−7.118	−31.36*
	(8.535)	(19.37)	(9.305)	(17.47)
Labour forces	50.38***	−273.5***	196.5***	168.3***
	(17.79)	(34.44)	(24.92)	(30.52)
Observations	1,335,157	1,335,157	1,335,157	1,335,157
AR(2)	0.372	0.258	0.366	0.412
Hansen (J)	0.032	0.024	0.028	0.044

Notes: All estimations include full sets of two-digit industry dummies, 11-year dummies, 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 two institutional variables, two external financing variables, and the firm size variable. The instruments for difference equation are the lagged 3- to 4-year level variables. The instruments for level equation are the lagged 2- to 3-year difference variables. AR(2) is the autocorrelation test under the null that there is no autocorrelation in the transformed equations. Hansen (J) is the over-identification test, under the null that the overidentifying restrictions are valid, the statistic is asymptotically distributed as a chi-square variable. For display purposes, the unit of investment is percentage times 100, the unit of population density is people/m2, the unit of distance is hundred km, and the unit of consumption is thousand VND/person. These units are different from the conventional units reported in Table 1.

variables.

GMM addresses endogeneity-related issues using the lagged terms of these endogenous variables as valid instrumental variables. Specifically, in the difference equations, we use the lagged 3- to 4-year terms to instrument the endogenous variables. The specification tests suggest that this length of lag is sufficiently deep to reduce the correlation between endogenous variables and the error terms while, at the same time, remaining relevant to the current terms of these endogenous variables (i.e., they remain valid instrumental variables). The system GMM, moreover, corrects any possible finite sample bias by omitting informative moment conditions, using differences as instruments for level equations. In level equations, we use the differences in endogenous variables lagged 2- to 3-years as valid instruments. Finally, we conduct two specification tests, namely (i) a second-order autocorrelation test of AR(2) in the transformed equations to examine whether the level equations are serially correlated at order 1, and (ii) the Hansen (J) test of over-identifying restrictions.

4. Results

4.1. Main results

Regression results are reported in Tables 2 and 3. The test statistics reveal that there are no serious problems with the model specification. Table 2 presents the results of fixed asset investment. In general, it is found that local governance quality and the

Table 3
Non-fixed asset Investment.

	(1) Non-fixed assets	(2) Non-fixed assets	(3) Non-fixed assets	(4) Non-fixed assets
Governance quality	−2.256***	−2.762***	−2.660***	−2.500***
	(0.542)	(0.363)	(0.540)	(0.371)
Business norms (South dummy)	−311.0***	−304.4***	−295.9***	−325.0***
	(53.42)	(53.41)	(53.02)	(55.41)
Bank loans	45.25	−394.0***	−369.7***	−375.4***
	(350.2)	(51.43)	(27.34)	(26.29)
Informal loans	323.8***	355.1***	556.9	142.6
	(62.22)	(65.67)	(689.2)	(93.99)
Governance quality × Bank loans	−6.676			
	(5.598)			
Business norms × Bank loans		30.63		
		(60.31)		
Governance quality × Informal loans			−3.758	
			(12.33)	
Business norms × Informal loans				547.0***
				(203.8)
Governance quality × Business norms	5.261***	5.118***	5.017***	5.233***
	(0.889)	(0.882)	(0.886)	(0.902)
Firm size	−21.39***	−21.44***	−21.57***	−21.96***
	(1.069)	(1.118)	(1.081)	(1.124)
Firm age	−0.417***	−0.448***	−0.435***	−0.416***
	(0.0634)	(0.0678)	(0.0632)	(0.0660)
Owner gender	−2.005***	−1.840***	−1.914***	−2.066***
	(0.387)	(0.420)	(0.386)	(0.407)
Owner age	0.0735***	0.0848***	0.0832***	0.0664***
	(0.0217)	(0.0216)	(0.0209)	(0.0223)
Distance	17.16**	20.08**	17.83*	26.30***
	(8.406)	(9.123)	(9.153)	(9.530)
Population density	−48.46***	−37.98***	−43.30***	−29.18***
	(8.124)	(10.11)	(7.059)	(7.272)
Provincial consumption	−35.26***	−44.38***	−41.49***	−41.12***
	(7.916)	(7.547)	(5.551)	(5.550)
Labour forces	−11.89	−13.44	−15.33	−5.961
	(15.14)	(15.59)	(15.18)	(16.26)
Observations	1,335,157	1,335,157	1,335,157	1,335,157
AR(2)	0.541	0.152	0.365	0.425
Hansen (J)	0.025	0.033	0.042	0.059

Notes: All estimations include full sets of two-digit industry dummies, 11-year dummies, 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 two institutional variables, two external financing variables, and the firm size variable. The instruments for difference equation are the lagged 3- to 4-year level-variables. The instruments for level equation are the lagged 2- to 3-year difference-variables. AR(2) is the autocorrelation test under the null that there is no autocorrelation in the transformed equations. Hansen (J) is the over-identification test, under the null that the overidentifying restrictions are valid, the statistic is asymptotically distributed as a chi-square variable. For display purposes, the unit of investment is percentage times 100, the unit of population density is people/m2, the unit of distance is hundred km, and the unit of consumption is thousand VND/person. These units are different from the conventional units reported in Table 1.

existence of the pro-entrepreneurship norms in the South of Vietnam are positively associated with firm investment in fixed assets. As such, hypothesis H1 is supported. It is noteworthy that the effect of pro-entrepreneurship norms (the South dummy) is much stronger than the effect of local governance quality. This finding thus confirms the overwhelming importance of informal institutions in determining entrepreneurial activities in the absence of effective formal institutions (Helmke and Levitsky, 2004; Tkachenko et al., 2017).

Table 3 presents the results of non-fixed asset investment. In general, it is found that local governance quality and the existence of the pro-entrepreneurship norms in the South of Vietnam are negatively associated with firm investment in non-fixed assets. This finding implies that when institutional quality improves, firms will reduce their low-commitment investments in non-fixed assets and switch instead to investing in long-term projects that lead to sustainable development. As such, hypothesis H2 is supported.

In terms of external finance, the coefficients associated with bank loans in Tables 2 and 3 are negative and mostly statistically significant. This finding indicates that there is a negative relationship between bank loans and firm investment. This counter-intuitive finding could be attributed to the fact that entrepreneurs may, as a means of protecting their personal wealth, reduce profit investment and additional equity investment when they gain more access to bank loans, leading to overall reduced investment values. Hypothesis H3 is thus supported.

Meanwhile, the coefficients associated with informal loans in Tables 2 and 3 are positive and statistically significant. This finding indicates that there is a positive relationship between bank loans and firm investment. Because of the 'strong-tie' effects of relationship-based borrowing, entrepreneurs are incentivised to make higher levels of investment to secure the repayments due to their family and friends. This finding thus supports hypothesis H4.

Regarding the moderating effects of institutions on the relationship between external finance and firm investment, the coefficients associated with the interaction terms between institutional variables and the external finance variables are positive and statistically significant in Table 2 (except for column 2). This finding indicates that improved local institutional quality enhances the effectiveness of local financial markets, allowing small businesses to access more external finance. As a result, they will make a higher level of investment in fixed assets. However, it is noteworthy that pro-entrepreneurship norms appear to exert no significant effect on the relationship between formal finance and firm investment in fixed assets (column 2). Turning to non-fixed asset investment in Table 3, the results reveal that the moderation effects are mostly insignificant (except column 4). Therefore, we conclude that local institutions are more relevant to the financing of fixed asset investment than to the financing of non-fixed asset investment.

To examine the moderating effects in more detail, we estimate the margins of each interaction term respectively. Given that the moderating effects are mostly insignificant in non-fixed asset specifications, we pay attention to the three significant effects in the fixed asset specifications. The margin graphs are presented in Figs. 1,2 and 3.

Fig. 1 shows the marginal effects of bank loans on fixed asset investment in different regimes of local governance quality. The relationship between bank loans and investment is negative on average. However, this negative relationship becomes positive in regions that have high-quality governance arrangements. This confirms the positive effects of local governance on the relationship between bank loans and fixed asset investment. Figs. 2 and 3 illustrate the marginal effects of informal loans on fixed asset investment in different regimes of local governance quality and informal business norms. The relationship between informal finance and investment is positive on average. As shown in the figures, this positive effect becomes even stronger in regions with high-quality governance arrangements and pro-entrepreneurship norms.

4.2. Robustness check

For the sake of robustness checking, we also control for regional GDP as a measure of local income levels, which may affect firm investment decisions. Due to the availability of regional GDP information, the timespan of this robustness check is reduced to 7 years (2010–2016). The regression results are reported in Appendix D and are consistent with the main findings.
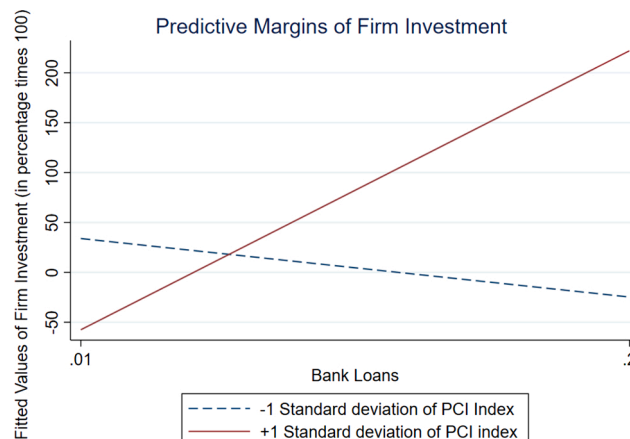

Fig. 1. The Moderating Effect of Local Governance on the Relationship between Bank Loans and Firm Investment.
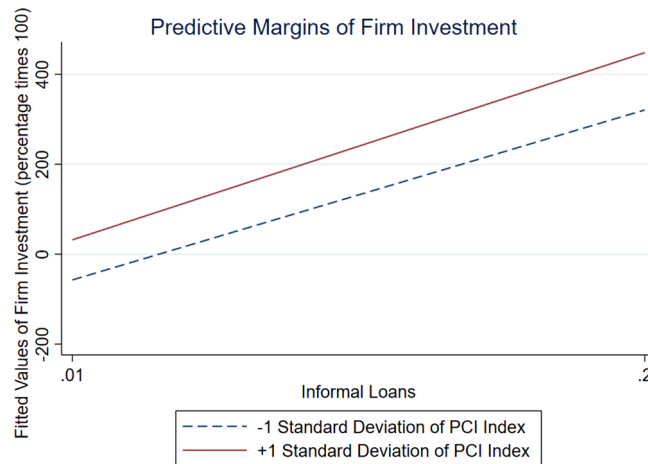
Fig. 2. The Moderating Effect of Local Governance on the Relationship between Informal Loans and Firm Investment.
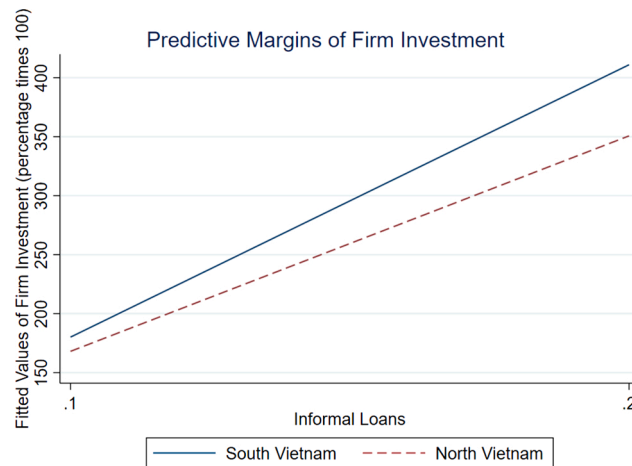

Fig. 3. The Moderating Effect of Informal Institutions on the Relationship between Informal Loans and Firm Investment.

Finally, we control for degrees of corruption, a sub-index of local governance quality. The inclusion of the corruption variable in the investment equation takes into account the possibility that firms may underreport their investment values in regions associated with a severely corrupt administration so as to remain under the appropriation radar. The regression results controlling for corruption are presented in Appendix E and are consistent with the main findings.

5. Discussion and conclusion

This study investigated the importance of local institutions, external finance, and their joint effects on the investment decisions of small businesses. The context of analysis is Vietnam, a developing country with incomplete institutional settings and underdeveloped financial systems. This study builds on the work of Johnson et al. (2002) and Cull and Xu (2005) about the relative importance of institutional environments and access to external finance on firm investment decisions. We expanded their frameworks in several ways. First, we examined both fixed asset investment and non-fixed asset investment. Second, we paid attention to the role played by the local formal and informal institutions rather than the very broad national constitutional settings. Third, we included both formal and informal finance in the investigation. In addition, we explored the potential interactions between local institutions and external finance in determining firm investment.

The findings in this study show that both institutional environments and access to external finance are crucial, but that it would be inappropriate to analyse their effects independently of each other. We argue that institutional forces and external finance are inter-twined and that the effect of external finance on firm investment may change significantly in different regimes of institutional settings.

This study makes several contributions to the small business management literature. First, it shows that fixed asset investment decisions are quite different from non-fixed asset investment decisions in terms of their response to the surrounding institutional environment. Specifically, when institutional quality improves, firms are keen to increase their investment values in fixed assets while

reducing their investment values in non-fixed assets. These changes in firm investment behaviour are a signal that entrepreneurs who are making long-term investments are more committed to their businesses. This finding thus supports a strand of literature arguing that firm reinvestment is positively associated with the quality of institutional arrangements (Nguyen, 2019; Zhou, 2017).

Second, it shows that 'where the money comes from' is important to investment decisions. In contrast to the neoclassical theory of the irrelevance of financing sources (Modigliani and Miller, 1958), we argue that each source of finance has a distinct nature and that each affects firm investment through different mechanisms. In particular, small firms in Vietnam are inclined to substitute profit investment and additional equity investment with bank-financed capital, but they tend to increase their investment values in pace with their relationship borrowing. This finding thus highlights the importance of informal finance in the context of developing countries, where property rights remain weak (Besley, 1995).

In addition, this study offers a novel angle to understanding the interlinkages between institutions and firm financing behaviour. Unlike previous studies that investigated firm financing decisions independently of the surrounding institutional environments (Beck et al., 2008), we suggest that it might be better to conceptualise the association of formal/informal finance and firm investment via the lens of institutional theory. Specifically, the relative importance of formal finance to informal finance on firm investment may change according to the surrounding institutional settings (Hartwell and Malinowska, 2018). The findings in this study evidently show that when institutional quality improves, small businesses will find it beneficial to increase the use of bank loans and informal loans to boost their investment values.

Also, this study contributes to a strand of literature examining entrepreneurship via the lens of institutional theory by showing that the 'play of the game' is significant to determining firm investment decisions. Specifically, we propose that the unit of institutional analysis should be downgraded from the very broad general constitutional institutions to the local institutional surrounding environments, including the local norms of doing business and local government quality (Nguyen et al., 2018). The reason for this is that small businesses typically operate in their local regions, which are strongly shaped by local institutions (Du and Mickiewicz, 2016).

We also found evidence that the conventional comparison of the relative importance of institutions (property rights) and external finance cannot yield a meaningful conclusion (Cull and Xu, 2005; Johnson et al., 2002). Apart from the direct effect, institutions also exert indirect effects on firm investment by influencing the financing decisions of small businesses. In particular, high-quality local governance may reverse the substitution effect of bank loans on firm investment. In other words, firms located in well-governed regions have a stronger incentive to invest (in both fixed assets and non-fixed assets) using bank loans combined with retained earnings and additional equity. This result is particularly meaningful because it demonstrates the overwhelming importance of institutional settings in determining entrepreneurial behaviour in developing countries (Johnson et al., 2002; Welter et al., 2018).

This study is useful for policymakers concerned with boosting entrepreneurship in developing countries. Given that small firms are highly sensitive to the surrounding institutional arrangements, local authorities should pay more attention to enhancing the quality of their execution of the 'rules'. Unless the legislative systems are 'played' properly at the local level, only improving institutional quality at the national level (such as constitutional configurations) may not boost entrepreneurship. Also, it should be noted that institutions may affect firm financing behaviours, which subsequently influence their investment decisions. Therefore, we suggest that it is insufficient to improve the efficiency of the financial markets and, in particular, the banking systems. The findings in this study show that entrepreneurs may simply substitute their retained earnings with bank loans if property rights protection is not improved.

Finally, this study is not without limitations that should be acknowledged, while also providing potential avenues for future research. First, the generalisability of this study may be limited because the sample is restricted to Vietnamese small businesses that are exposed to Vietnamese management styles (Liu, 2008). Future studies should therefore extend the proposed theoretical framework and re-test it in other contexts. Second, in this study the variable business norms are a dummy of North Vietnam and South Vietnam, which is not a perfect measurement of the informal institutional differences among regions. Future studies may design questionnaires that capture business norms in a more detailed manner, which would allow a deeper understanding of the impact of informal institutions on firm investment.

Appendix A. Details of Panel Structure

Year	Frequency	Percentage	Cumulative percentage
2006	82,231	6.16 %	6.16 %
2007	102,765	7.70%	13.86 %
2008	137,823	10.32%	24.18 %
2009	43,081	3.23%	27.41 %
2010	215,409	16.13%	43.54 %
2011	145,720	10.91%	54.45 %
2012	265,989	19.92%	74.37 %
2013	81,017	6.07%	80.44 %
2014	50,890	3.81%	84.25 %
2015	191,512	14.34%	98.60 %
2016	18,720	1.40%	100.00 %
Total	*1,335,157*	100 %	

Number of year per firm	Frequency	Percentage	Cumulative percentage
1	295,558	22.14 %	22.14 %

(*continued*)

Number of year per firm	Frequency	Percentage	Cumulative percentage
2	363,203	27.20%	49.34 %
3	250,299	18.75%	68.09 %
4	171,416	12.84%	80.93 %
5	132,605	9.93%	90.86 %
6	78,450	5.88%	96.73 %
7	32,242	2.41%	99.15 %
8	6,632	0.50%	99.64 %
9	1,152	0.09%	99.73 %
10	2,500	0.19%	99.92 %
11	1,100	0.08%	100.00 %
Total	*1,335,157*	100 %	

Appendix B. PCI Sub-indices

Variable	Definition	Mean	S.D.	Min.	Max.
Legal institutions	Measures the confidence in provincial legal institutions; whether firms regard provincial legal institutions as an effective vehicle for dispute resolution or as an avenue for lodging appeals against corrupt official behaviours. The indicator ranges from 1 to 10; the higher the score, the better the institutions.	4.58	1.05	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 ranges from 1 to 10; the higher the score, the lower the entry costs.	7.73	0.98	4.96	9.60
Land access	Combines two dimensions of the land problems confronting entrepreneurs: how easy it is to access land and the security of tenure once land is acquired. The variable ranges from 1 to 10; the higher the score, the better the access.	5.05	1.51	1.94	8.84
Time costs	Measures how much time firms waste on bureaucratic compliance, as well as how often and for how long firms must shut their operations down for inspections by local regulatory agencies. The indicator ranges from 1 to 10; the higher the score, the better the access.	5.84	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 ranges from 1 to 10; the higher the score, the better the support.	6.05	1.53	1.40	9.62
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 labours. The indicator ranges from 1 to 10; the higher the score, the better the training.	5.92	0.99	1.84	9.60
Informal Charge	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 results in expected results or "services," and whether provincial officials use compliance with local regulations to extract rents. The indicator ranges from 1 to 10; the higher the score, the lower the charges (corruption).	5.90	0.99	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 if new policies and laws are communicated to firms and predictably implemented. The indicator ranges from 1 to 10; the higher the score, the more transparent.	5.62	1.47	2.14	8.56
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 ranges from 1 to 10; the higher the score, the more proactive the province.	4.56	1.30	1.39	9.39

Note: The panel studied encompasses all 63 provinces and municipal cities in Vietnam during the period 2006–2016, obtained from the Provincial Competitiveness Index (PCI) dataset.

Appendix C. Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Fixed-Investment (1)														
Non-fixed Investment (2)	−0.80													
Governance quality (3)	−0.04	0.03												
Business norms (4)	−0.03	0.01	0.42											
Bank loans (5)	0.01	0.29	−0.01	−0.04										
Informal loans (6)	0.00	0.19	−0.08	−0.08	0.10									
Firm size (7)	0.13	−0.26	−0.07	−0.11	−0.12	−0.08								
Firm age (8)	0.01	−0.07	−0.04	−0.02	−0.04	−0.07	0.26							

(*continued*)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Owner gender (9)	0.02	−0.02	−0.04	−0.05	0.00	0.00	0.07	0.01						
Owner age (10)	0.02	−0.04	−0.06	−0.01	0.00	−0.03	0.20	0.40	0.03					
Distance (11)	0.02	−0.04	−0.03	−0.06	−0.03	0.00	0.14	0.10	0.00	0.04				
Distance (12)	0.03	−0.02	−0.37	−0.02	0.06	−0.01	0.07	0.09	0.04	0.14	0.01			
Consumption (13)	−0.07	−0.02	0.33	0.31	−0.12	−0.04	−0.24	−0.07	−0.05	−0.16	0.08	−0.66		
Labour force (14)	−0.13	−0.02	0.06	0.08	0.02	−0.04	−0.12	0.06	−0.01	−0.03	0.02	0.32	−0.78	

Note: All correlation coefficients are significant at 1%.

Appendix D. Control for Provincial GDP (2010–2016)

	(1) Fixed assets	(2) Fixed assets	(3) Fixed assets	(4) Fixed assets	(5) Non-fixed assets	(6) Non-fixed assets	(7) Non-fixed assets	(8) Non-fixed assets
Governance quality	3.815***	1.000	4.866***	4.701***	−2.843***	−3.337***	−3.130***	−2.830***
	(0.343)	(0.769)	(0.839)	(1.215)	(0.390)	(0.680)	(0.568)	(0.380)
Business norms (South dummy)	302.9***	429.9***	216.9**	211.9**	−355.7***	−334.6***	−342.7***	−344.6***
	(22.97)	(68.69)	(96.22)	(95.65)	(57.35)	(56.39)	(54.97)	(55.22)
Bank loans	−26.73	−1,853***	−274.6***	−280.8***	−444.9***	−700.6	−386.5***	−386.5***
	(31.66)	(561.9)	(39.15)	(39.31)	(58.48)	(445.1)	(28.19)	(26.93)
Informal loans	1,200***	379.9***	1,579***	1,566***	362.9***	347.3***	−29.38	238.4**
	(63.82)	(105.1)	(111.9)	(116.6)	(71.94)	(68.80)	(769.0)	(98.33)
Business norms × Bank loans	111.2*				83.91			
	(57.59)				(69.36)			
Governance quality × Bank loans		42.90***				5.067		
		(9.007)				(7.102)		
Governance quality × Informal loans			4.659*				6.386	
			(2.468)				(13.53)	
Business norms × Informal loans				334.2				307.7
				(240.3)				(233.7)
Governance quality × Business norms	−3.562***	−6.930***	−3.382**	−3.254**	5.874***	5.640***	5.777***	5.686***
	(0.337)	(1.149)	(1.628)	(1.648)	(0.942)	(0.941)	(0.920)	(0.917)
Firm size	30.22***	24.37***	31.03***	31.23***	−22.07***	−22.44***	−22.24***	−22.38***
	(1.015)	(1.348)	(1.783)	(1.869)	(1.154)	(1.153)	(1.124)	(1.123)
Firm age	−0.974***	−0.0266	−0.936***	−0.933***	−0.433***	−0.411***	−0.402***	−0.395***
	(0.0716)	(0.0777)	(0.141)	(0.142)	(0.0739)	(0.0703)	(0.0675)	(0.0668)
Owner gender	3.031***	2.534***	1.525**	1.504**	−1.805***	−1.950***	−2.014***	−2.084***
	(0.418)	(0.460)	(0.685)	(0.692)	(0.441)	(0.417)	(0.406)	(0.414)
Owner age	−0.0580***	−0.108***	−0.0704*	−0.0731*	0.0958***	0.0968***	0.0883***	0.0773***
	(0.0199)	(0.0251)	(0.0368)	(0.0379)	(0.0231)	(0.0247)	(0.0220)	(0.0238)
Distance	−126.4***	−35.20***	71.81***	71.07***	34.39***	32.57***	31.01***	30.28***
	(15.85)	(11.52)	(14.34)	(15.33)	(9.716)	(9.348)	(9.162)	(9.204)
Population density	43.60***	105.2***	48.93***	53.59***	−44.55***	−51.33***	−54.19***	−51.60***
	(7.676)	(10.02)	(11.20)	(19.81)	(11.54)	(9.503)	(7.510)	(7.090)
Provincial consumption	−197.5***	−22.45**	−9.326	−13.73	−42.77***	−40.46***	−36.62***	−34.46***
	(17.50)	(9.182)	(9.224)	(22.80)	(8.699)	(9.467)	(6.627)	(6.217)
Labour forces	−370.9***	43.56**	143.9***	142.7***	−17.29	−22.86	−22.42	−26.48
	(39.69)	(18.73)	(25.54)	(31.29)	(17.04)	(17.04)	(16.98)	(17.12)
Provincial GDP	**−0.511*****	**−0.0644*****	**−0.170*****	**−0.172*****	**0.0160**	**0.0212***	**0.0194**	**−0.0115**
	(0.0342)	(0.0133)	(0.0243)	(0.0254)	(0.0128)	(0.0118)	(0.0150)	(0.0292)
Observations	969,256	969,256	969,256	969,256	969,256	969,256	969,256	969,256
AR(2)	0.521	0.321	0.324	0.421	0.225	0.362	0.348	0.125
Hansen (J)	0.025	0.033	0.018	0.027	0.036	0.022	0.059	0.011

Notes: Due to the availability of the provincial dataset, the estimation period is reduced to 7 years (2010–2016). All estimations include full sets of two-digit industry dummies, 11-year dummies, 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 two institutional variables, two external financing variables, and the firm size variable. The instruments for difference equation are the lagged 3- to 4-year level-variables. The instruments for level equation are the lagged 2- to 3-year difference variables. AR(2) is the autocorrelation test under the null that there is no autocorrelation in the transformed equations. Hansen (J) is the over-identification test, under the null that the overidentifying restrictions are valid, the statistic is asymptotically distributed as a chi-square variable. For

display purposes, the unit of investment is percentage times 100, the unit of population density is people/m2, the unit of distance is hundred km, and the unit of consumption is thousand VND/person. These units are different from the conventional units reported in Table 1.

Appendix E. Control for Provincial GDP and Corruption Controls (2010–2016)

	(1) Fixed assets	(2) Fixed assets	(3) Fixed assets	(4) Fixed assets	(5) Non-fixed assets	(6) Non-fixed assets	(7) Non-fixed assets	(8) Non-fixed assets
Governance quality	2.632***	0.862	2.712***	1.008	−2.717***	−2.996***	−2.656***	−2.676***
	(0.585)	(0.881)	(0.873)	(1.039)	(0.494)	(0.749)	(0.739)	(0.488)
Business norms (South dummy)	48.00	449.6***	61.94	571.4***	−369.8***	−366.0***	−361.8***	−355.8***
	(53.68)	(43.34)	(124.0)	(68.86)	(37.00)	(36.51)	(40.30)	(36.39)
Bank loans	−8.937	−1,930***	−204.9***	−16.55**	−450.6***	−590.7	−395.4***	−393.9***
	(7.516)	(554.2)	(58.08)	(6.621)	(53.90)	(433.1)	(26.88)	(24.82)
Informal loans	1,895***	372.5***	2,557***	991.3***	361.7***	346.7***	435.9	235.9**
	(101.6)	(97.42)	(357.8)	(64.24)	(66.00)	(66.36)	(774.9)	(99.11)
Business norms × Bank loans	37.85				81.16			
	(46.77)				(70.90)			
Governance quality × Bank loans		44.30***				3.093		
		(8.806)				(6.849)		
Governance quality × Informal loans			−2.632				−1.737	
			(3.670)				(13.85)	
Business norms × Informal loans				229.5***				305.4
				(84.62)				(229.3)
Governance quality × Business norms	0.0346	−7.290***	−0.893	−9.104***	6.166***	6.248***	6.174***	5.929***
	(0.846)	(0.680)	(2.104)	(1.182)	(0.564)	(0.562)	(0.631)	(0.586)
Firm size	26.58***	24.52***	29.94***	28.45***	−22.26***	−22.67***	−22.57***	−22.57***
	(1.940)	(1.405)	(3.999)	(1.471)	(1.193)	(1.184)	(1.152)	(1.149)
Firm age	−0.482***	−0.0308	−0.849***	−1.180***	−0.432***	−0.405***	−0.397***	−0.396***
	(0.140)	(0.0792)	(0.202)	(0.0997)	(0.0744)	(0.0714)	(0.0684)	(0.0682)
Owner gender	2.733***	2.513***	0.639	−0.431	−1.789***	−1.928***	−1.956***	−2.062***
	(0.790)	(0.465)	(1.525)	(0.687)	(0.439)	(0.423)	(0.409)	(0.420)
Owner age	−0.0335	−0.109***	−0.117	−0.0393	0.100***	0.101***	0.0969***	0.0821***
	(0.0410)	(0.0258)	(0.0760)	(0.0365)	(0.0234)	(0.0256)	(0.0228)	(0.0250)
Distance	25.31	−35.63***	65.89***	−57.82***	32.70***	30.31***	28.79***	28.06***
	(21.19)	(10.71)	(17.81)	(13.82)	(10.33)	(10.11)	(9.924)	(9.697)
Population density	16.43	110.1***	68.57***	27.07***	−48.72***	−59.76***	−62.38***	−55.27***
	(19.16)	(7.695)	(23.58)	(9.354)	(12.56)	(6.985)	(5.775)	(6.678)
Provincial consumption	−22.08*	−23.19**	15.14	−5.015	−44.90***	−41.93***	−39.26***	−37.31***
	(13.33)	(9.454)	(17.36)	(9.242)	(9.720)	(10.65)	(8.241)	(8.420)
Labour forces	96.74***	29.60	102.4***	42.34*	0.0171	7.557	8.487	−8.941
	(29.20)	(18.39)	(29.95)	(24.21)	(17.85)	(16.74)	(17.27)	(20.55)
Provincial GDP	−0.212***	−0.0552***	−0.358***	0.00590	0.00261	−0.000233	0.00300	−0.0254
	(0.0460)	(0.0206)	(0.0764)	(0.0321)	(0.0175)	(0.0190)	(0.0189)	(0.0273)
Corruption controls	**−4.693**	**2.949**	**8.002**	**12.47***	**−4.511**	**−7.303**	**−7.276**	**−4.750**
	(9.271)	(5.525)	(5.257)	(4.258)	(5.788)	(5.387)	(5.341)	(5.502)
Observations	969,256	969,256	969,256	969,256	969,256	969,256	969,256	969,256
AR(2)	0.525	0.328	0.329	0.487	0.236	0.342	0.382	0.124
Hansen (J)	0.036	0.034	0.021	0.024	0.042	0.030	0.033	0.001

Notes: Due to the availability of the provincial dataset, the estimation period is reduced to 7 years (2010–2016). All estimations include full sets of two-digit industry dummies, 11-year dummies, 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 two institutional variables, two external financing variables, and the firm size variable. The instruments for difference equation are the lagged 3- to 4-year level-variables. The instruments for level equation are the lagged 2- to 3-year difference-variables. AR(2) is the autocorrelation test under the null that there is no autocorrelation in the transformed equations. Hansen (J) is the over-identification test, under the null that the overidentifying restrictions are valid, the statistic is asymptotically distributed as a chi-square variable. For display purposes, the unit of investment is percentage times 100, the unit of population density is people/m2, the unit of distance is hundred km, and the unit of consumption is thousand VND/person. These units are different from the conventional units reported in Table 1.

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