# An Investigation on The Impact of Institutional Environment on Firm Growth in Vietnam

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**Abstract**

*This paper investigates the impact of the institutional environment on firm growth in Vietnam. Using a firm-level dataset, the study obtains balanced panel data for 37,788 registered enterprises from a unique data set. It analyzes the effects of institutional factors on firm growth using system GMM analysis. The study finds that in line with recent theoretical literature, institutional factors such as business support service, land access, time costs, and informal charges promote firm growth in terms of both employment and capital. This research also finds that the impact of institutional factors on firms' capital growth is more significant.*

## 1. Introduction

When countries try to develop a market economy, entrepreneurship is a core element, hence many studies have focused on entrepreneurship in developed and transitional countries (Burke et al., 2000; Honjo and Harada, 2006; Dunne et al., 1989; Dunne and Hughes, 1994; Liu et al., 1999; Praag, 2006; Park et al., 2010; Reichstein and Dahl, 2004; Tomczyk et al., 2013; Yusada, 2005). However, concerning developing countries and countries at an early stage of development we still do not know much about entrepreneurship. It remains unclear what fosters firms and firm growth in these developing market economies. In particular, when looking at the highly imperfect conditions in these less developed economies it seems necessary to relate existing theories on firm growth more to the institutional environment (Sleuwaegen and Goedhuys, 2002). It is also unclear whether entrepreneurial characteristics interact with institutional conditions in a similar way as they do in advanced economies. In underdeveloped and low income economies, which are imperfect markets with much higher information and transaction costs and different, rather often less effective institutions, there may be a greater requirement for other entrepreneurial success factors than those found in advanced countries (Gries and Naude, 2011). If more is known about the institutional environment and if it is possible to identify the necessary entrepreneurial characteristics and policies that promote market development and firm success, then that would foster the development of a well-performing, well-functioning market economy that can be designed more accurately.

This paper examines the effects of institutional quality on firm success in a low-income, infant market economy like that of Vietnam. With rich firm-level data from a yearly census covering over 233,000 enterprises in 2009 the study obtains a balanced set of panel data from 2006 to 2009 for 37,788 registered enterprises, giving us a unique data set which has not been explored before.

This paper finds that the institutional environment significantly affects firm performance. A surprising finding is that the institutional factors more significantly affect a firm's capital growth than a firm's employment growth.

The paper is structured as follows. Section 2 derives the research hypothesis and relates it to the literature. Section 3 describes the methodology. Section 4 analyzes the estimation results and section 5 provides conclusion.

## 2. Literature review

Firm dynamics originate from Gibrat's Law of Proportionate Effect (LPE), which states that firm growth follows a random process. According to the LPE, firm growth is independent of a firm's size. The size distribution of firms increases over time and firms share the same growth opportunities across size (Bigsten and Söderbom, 2006). However, in accordance with recent studies in developed and transitional economies, empirical research in developing economies shows that Gibrat's Law often does not hold. McPherson and Liedhorm (1996) investigates micro and small firms in southern Africa and finds a negative relationship between firm growth and both firm size and firm age. Apart from size and age, other determinants of firm growth such as sector, location, human capital, and socio-economic variables are important factors to consider. Firms in the

construction and service sector have higher growth. Firms in urban and commercial areas grow more rapidly than those in rural. Gender effects too, are found to be relevant as firms headed by male entrepreneurs experience relatively higher growth rates. Mead and Liedholm (1998) examine the determinants of growth of micro and small firms in Dominica and five African countries (Botswana, Kenya, Malawi, Swaziland, and Zimbabwe) and find that enterprises in these countries grow faster if they are smaller, younger, and headed by males. The sectorial variable affects firm growth across countries in different ways. However, Biesebroeck (2005) finds evidence of superior performance of large firms. The study investigates the impact of firm size on the growth and productivity of manufacturing enterprises in nine sub-Saharan African countries using a panel data set from 1992 to 1996 with approximately 200 firms per country, and finds that the largest manufacturing firms have the highest growth rate. Firms with 100 employees and above are more productive and more likely to survive. Large firms are found to grow faster and to increase productivity faster. Aggregate productivity growth is largely dependent on the performance of large firms. The contribution of micro and small firms to aggregate productivity growth is not remarkable.

Apart from enterprise characteristics, institutional factors such as the quality and quantity of infrastructure, the nature and the level of enforcement of business regulations, property rights, and the openness of public resources are considered important determinants of firm growth (Aterido et al., 2011). Sleuwaegen and Goedhuys (2002) use data of manufacturing firms in Côte d'Ivoire to investigate the influence of institutional elements on firm growth. A sample of 185 manufacturing firms from 1995 was selected. The quantitative results indicate that the legitimation of firms has positive impacts on firm growth and that there is a negative relationship between firm growth and both firm size and firm age. The results show that obstacles to firm growth, including regulatory barriers, market constraints, infrastructure, and financial constraints differ systematically across firm size. Large and micro firms have less frequently reported constraints compared to small and medium firms. Fisman and Svensson (2007) use firm data from Uganda to study the impacts of bribes and taxes on firm growth. These two factors are found to have a negative impact on firm growth, with the negative influence of corruption emerging as a greater problem for firm performance than that of taxation. Corruption is also considered an obstacle to firm growth in the work of Honorati and Mengistae (2007). They examine the growth of small-scale manufacturing firms in India using a relatively small sample size. Four institutional factors – corruption, labor regulation, access to finance, and the quality of the power supply – are found to obstruct business operation and growth. Hallward-Driemeier et al. (2006) use a large sample of 1,500 firms to emphasize the importance of the investment climate on firm performance in China. Technical infrastructure, government regulation, and corruption matter greatly, while labor market flexibility and access to finance are found to have a weaker impact on firm growth. In another study using a large number of firms, Dollar et al. (2005) investigate the investment climate and its im-

pacts on firm growth in four developing countries, namely China, Bangladesh, India, and Pakistan. They find a significant variation in investment climate within the countries, and also find that the role of local government is important. Power outages and customs delays are the most severe obstacles for firm productivity and profitability. The availability of financial services strongly relates to firm growth. However, the study finds no evidence that general governance and corruption issues matter across countries and locations. The influence of corruption is considered in detail in the research of Wang and You (2012), whose results indicate that corruption likely fosters firm growth in China. They also show that the disparity of financial development across regions affects firm growth. Because of the imperfect Chinese financial market, higher probability to access external finance is supposed to enhance firm growth.

There is little literature on firm growth in Vietnam, possibly resulting from the unavailability of firm-level data, which requires many resources. Hansen et al. (2009) use data from three overlapping surveys during the period 1990 to 2001 (including three points of time – 1990/1991, 1995/1996, and 2000/2001) to investigate the impacts of government assistance and other forms of state intervention on the long-term performance of small and medium-size manufacturing enterprises in Vietnam. Starting with a total of 447 firms in 1990, the data set is reduced to 300 incumbent firms in 2001 due to the combination of three different datasets. The determinants of SME growth are indicated. Firm size relates negatively to firm growth, while urban firms grow faster than their rural counterparts. Sole proprietorship, cooperatives, and limited liability firms also grow faster than household firms. Initial government assistance seems to have a positive impact on firm growth. Firms with public sector customers grow faster than those without. Another study covering 337 manufacturing SMEs in 2005 by Tuan and Yoshi (2009) employs the normal OLS for multiple estimators. The results reveal that SMEs with new products grow faster than those without. Firm size, firm age, and competition intensity negatively relate to firm growth, while higher private shares promotes the growth of firms. Nguyen and Dijk (2012) use data covering 874 enterprises from a survey in 2005 to analyze the relationship between corruption and growth of private and state-owned enterprises in Vietnam. They use three different perceived measures for corruption and find that corruption is harmful to the growth of private firms but not to that of state-owned firms. They also find that the quality of provincial public governance such as land access, private sector development policy, and the cost of launching a new business leads to significant differences in the level of corruption across provinces in Vietnam.

The literature on the influence of the institutional environment on firm growth and performance in developing economies is rather limited. Most previous studies use either firm-level subjective or count measures for the institutional environment. Firm-level subjective measures represent a firm's attitude towards the business environment, with the data obtained using questions such as: "Do business associations play an important role in advising and countering policy?" Few studies investigate

the impacts of the Provincial Competitiveness Index (PCI) on different issues such as firm formalization (Malesky and Taussig, 2009) or firm survival (Doan et al., 2013) or firm performance (Phan, 2013). No prior study has focused on the impacts of PCI sub-indicators on firm growth. In addition, this study is the first to use the system GMM model to investigate these effects. Hence the objective of this paper is to investigate the effects of the institutional environment on firm growth in Vietnam, which can be considered a representative for developing "infant market" economies. Departing from the theoretical frame introduced by Gries and Naude (2011) the study suggests that entrepreneurial activities are more likely to be successful if the market environment and the institutional framework allows for an efficient match between entrepreneurial ideas and opportunities. Hence the following hypothesis is proposed with additional modifications:

*The quality of market-related institutions and infrastructure is positively related to firm growth.*

This hypothesis implies that firms domiciled in provinces that rank higher on the institutional quality scale are associated with higher growth rates. In other words, the business environment created by the local authorities is considered to be an important determinant of firm performance. The quality of local economic governance is expected to affect firm growth in the same direction.

## 3. Methodology

The study investigates the impacts of institutional factors on firm growth in such economies. The study uses a firm-level dataset within the country's boundaries to explore the impacts of the institutional environment on firm growth in Vietnam.

Making use of the panel dataset, the study employs a dynamic setting to estimate the impacts of the institutional environment on firm growth by means of the following general specification:

$$\Delta Y_{it} = \beta \Delta Y_{it-1} + \alpha I_{it} + \gamma X_{it} + \mu_i + u_{it} \qquad (1)$$

where $\Delta Y_{it}$ represents firm growth, ($I_{it}$) the institutional variables, $X_i$ the control variables, $\mu_i$ unobserved and time-invariant effects, and $u_{it}$ the pure error term. As the control variables $X_{it}$ are composed of the firm-specific covariates ($Z_{it}$) and the province-specific covariates ($S_{it}$), the equation (1) can be modified as follows:

$$\Delta Y_{it} = \beta \Delta Y_{it-1} + \alpha I_{it} + \theta Z_{it} + \rho S_{it} + \delta_i + \nu_i + u_{it} \quad (2)$$

where $\delta_i$ are unobserved and firm-specific time-invariant effects and $\nu_i$ are unobserved and province-specific time-invariant effects.

The system GMM which was proposed by Blundell and Bond (1998) is used to eliminate the problem of endogeneity and serial correlation. In the system GMM model, lagged differences of endogenous variables are additionally counted as instruments in different additional moments. The province-level variables are more likely to be exogenous to the firm since a given firm only has a minor impact on the provincial average. In addition, the existence of province-level variables and sector differentiation in estimations may help to control for macro factors that can affect institutional variables and firm growth.

### 3.1. Dependent variable: firm growth

As in the studies of Dollar et al. (2005), Hallward-Driemeier et al. (2006), Aterido et al. (2011), and Aterido and Hallward-Driemeier

(2007), the study considers firm growth in the dimensions of employment growth and capital growth. Following Allen et al. (2012) and Nguyen and Dijk (2012), employment growth is defined as the rate of difference in the number of employees between $year_t$ and $year_{t-1}$ relative to the number of employees in $year_{t-1}$. Firm-level capital growth is similarly calculated using the position of total firm assets. The study considers the real growth rate of firm capital since the value of total assets in the latter year ($Y_t$) is adjusted by the GDP deflator to the previous year ($Y_{t-1}$).

### 3.2. Institutional variables

This study examines the impact of the institutional environment on the growth of firms. The investigation is based on a set of nine institutional indicators measuring the business and institutional environment in Vietnam. These nine indicators comprise both firm-level subjective and objective measures for the business environment that assess economic governance on the provincial level. The aggregate measurement PCI, an overall measurement of provincial governance, is a weighted combination of these nine indicators. These institutional indicators were developed in 2005 by the VCCI and the U.S. Agency for International Development (USAID) (PCI, 2013). They are standardized to a ten-scale point (or ten-scale score) and are: (i) ENTRYCOST: time cost to register and obtain licenses/perceived degree of difficulty to obtain all necessary licenses; (ii) LANDACCESS: ease of access to land and security of tenure; (iii) TRANSPARENCY: transparency and access to information and legal documents; (iv) TIMECOST: time waste on bureaucratic compliance and inspections; (v)

INFORCHARGE: informal charges; (vi) PROACTIVITY: creativity and cleverness in implementing the central policies of provincial officials; (vii) SUPPORTSERVICE: availability of business support; (viii) LABORTRAIN: efforts by provincial authorities to provide training and skill development; and (ix) LEGAL: private sector confidence in provincial legal institutions. A high score means (*a*) lower costs and charges with regard to the indicators (i), (iv), and (v), and (*b*): good governance with regard to the indicators (ii), (iii), (vi), (vii), (viii), and (ix).

### 3.3. Control variables

The control variables consist of two groups: firm specifics and provincial characteristics. Firm-specific covariates include ownership, location, age, size, and capital structure. Firm ownership is divided into public, private, and foreign firms. Ownership is classified according to the identity of the majority shareholder; i.e., public enterprises are where over 50% of total shares are held by the public sector. Two dummy variables (PUBLIC and PRIVATE) are used for the firm ownership covariate. Second, the location of the firm's headquarters is considered the firm's location. The location of firms is assigned to one of three main regions: northern, central, and southern Vietnam. Two location dummies (SOUTH and NORTH) are used.

Firm age (AGE) is included in the model to test whether Gibrat's LPE holds or not. Firm age is a numeric variable and is measured in years. AGE is expected to have negative impacts on firm growth. The study also includes firm size (SIZE) in the model, which is measured by the firm's total assets. It is expected to have a neg-

ative effect on firm growth since large firms tend to grow more slowly than smaller ones. The capital structure of firms (STRUCTURE), which is measured by the ratio of total liabilities to total assets at the beginning of the financial year, is included. It is a proxy for internal finance and is used to test whether firm growth is financially constrained.

Provincial characteristics are also expected to have an impact on firm growth. To capture the provincial impacts, the study concentrates on four main categories: urbanization, population growth, public investment, and average human capital. First, the rate of people living in urban areas within one province (URBAN) is used to measure the urbanization rate. Enterprises in regions with relatively high urbanization may experience higher growth rates than those operating in rural areas since the former have better access to input and output markets. Highly urbanized areas in Vietnam are often big cities that can provide large quantities and have highly differentiated production factors such as capital and labor. Largely urbanized areas represent a large market for a firm's products, at least if their outputs are consumed domestically. Most major ports are located in large cities; firms that are located close by have lower transportation costs for the products they export. As a pure population indicator that may correlate with the urbanization variable, the population growth rate (POPULATION) is used instead. Firms may grow due to the attractiveness of the region's economic environment and the presence of a good public infrastructure. In order to capture these potentially favorable conditions, I use annual public investment per capita (INVESTMENT) as an indicator on the provincial

level to account for investment in the economic environment. This study does not use total annual public investment since provinces with a large population and economic scale often receive more investment from the central government, and the average capital can eliminate the difference in provincial size. The quality of the labor force is the final important provincial factor the study considers. The average number of students as a share of the total provincial population (STUDENT) is used as a proxy for labor force quality.

## 4. Empirical results

### 4.1. Data source and description

The data was retrieved from four main sources. Firstly, the firm data is extracted from the annual enterprise census conducted by the General Statistics Office of Vietnam (GSO, 2013). All enterprises in the survey are formally registered. The number of enterprises increased from 42,307 in 2000 to 233,236 in 2009. The second source is the GSO website which provides data on the different provinces. This dataset is collected on a yearly basis and subsequently published in the Statistical Yearbook of Vietnam. The third source is the Vietnamese Chamber of Commerce and Industry (VCCI), which provides data on the various indicators of the institutional environment for entrepreneurship in Vietnam. These are considered highly important and constitute the only institutional environment measure that is compiled by official institutions in Vietnam (VCCI and USAID, 2013). The fourth and last data source is the World Bank website which supplies the GDP deflator for Vietnam for the period under review. The GDP deflator is used to calculate the real growth rate of firm capital.

**Table 1: Variable descriptions and statistics**

| Variable | Description | Mean | S.D. |
|---|---|---|---|
| **Dependent variable** | | | |
| Emp_growth | Employment growth | .100 | .672 |
| Cap_growth | Capital growth | .200 | 1.110 |
| **Firm characteristics** | | | |
| STRUCTURE | Ratio of total liability to total assets at the beginning of the year | .478 | 1.421 |
| PUBLIC | Public sector holds more than 50% (yes = 1) | .063 | .244 |
| PRIVATE | Private sector holds more than 50% (yes = 1) | .866 | .341 |
| FOREIGN | Foreign sector holds more than 50% (yes = 1) | .071 | .257 |
| AGE | Age of firm | 8.330 | 6.868 |
| SIZE | Total firm's assets | .052 | .717 |
| NORTH | Firm's headquarters located in the north (yes = 1) | .337 | .473 |
| CENTER | Firm's headquarters located in the center (yes = 1) | .257 | .440 |
| SOUTH | Firm's headquarters located in the south (yes = 1) | .406 | .491 |
| **Provincial characteristics** | | | |
| URBAN | Urbanization rate | .377 | .263 |
| POPULATION | Population growth | 1.444 | 4.178 |
| STUDENT | Number of students per capita | 39.277 | 45.520 |
| INVESTMENT | Public investment per capita | 82.708 | 93.016 |

In order to verify the main focus, the study compiles the dataset, which combines enterprise information from 2006 to 2009 with provincial data from the same period. The dataset is a balanced panel containing a total of 37,788 firms in three main categories: agriculture, industry, and services.

Table 1 reports the descriptive statistics of variables used in the study. Most firms are privately owned while public and foreign firms represent a small share of total firms with 6% and 7%, respectively. The ratio of debt to total assets is 0.48. However, the high standard deviation shows that this rate differs more extremely among firms in Vietnam than those in Japan (Honjo and Harada, 2006). A large number of firms are located in the south (41%). Twenty-six per cent of the firms are located in central Vietnam and 34% are located in the north.

### 4.2. Estimated results

This section presents the results of the impacts of institutional environment on firm growth. It is expected that higher scores on the institutional indicator scale, which represent a more favorable institutional environment for a firm's operations, are associated with higher growth rates of firms.

Table 2 reports the estimations using the system GMM to identify the effects of the institutional environment on firm growth in terms of employment and capital. The first three columns represent the employment growth of

firms in the agriculture, industry, and service sectors. Firm-level capital growth for each of the three sectors is presented in the last three columns.

Within the process of conducting the system GMM estimations, the study first runs and compares various specifications based on different sets of instruments. These include all exogenous variables plus different lags of endogenous variables such as first lags, second lags, and third lags with and without earlier lags. Within these sets, the number of exogenous variables is fixed whereas the number of lagged endogenous instruments varies according to different estimations. On the basis of the Sargan and Hansen test of over identification, the set of instruments including exogenous variables and earlier lags of endogenous variables passes the over identification restrictions. Thus, Table 1 presents the system GMM estimations with exogenous variables as well as earlier lags of endogenous variables as instruments, which can provide consistent and reasonable estimates of interests. Since there is evidence of an unequal variance of the error term, which causes heteroscedasticity, it computes all estimations with robust standard errors.

### Entry costs and firm growth

Entry costs seem to have no effect on the growth rate of firms, except for the negative impacts on firm capital growth in the industry sector. This is because the major concerns in respect to entry costs relate to starting up a business, including the time to register and to acquire licenses as well as the number of licenses needed. The setup of new branch offices, which is part of the growth process of a firm, also involves having to meet these administrative requirements. However, established firms may already be familiar with the necessary procedures, meaning that this factor has no impacts. Another reason may be that there is little difference in entry costs across provinces, i.e., the time it takes to obtain all necessary licenses, and the number of required licenses, is the same nationwide, regardless of firm location.

### Land access and security of tenure

The issue of land access and security of land tenure seems to be important for firm growth. Easier access to land and more secure land tenure once land has been acquired results in higher growth rates of firms. Land and land tenures are always connected with agricultural enterprises, yet this study does not find any significant evidence that land access and land tenure influence these firms' performance. One reason may be that land quality is more important than land quantity for agricultural firms, with the growth of firms depending on the investment they make in, e.g., soil fertility or new techniques to increase soil productivity. Industrial firms are largely affected by this factor in the areas of both employment and capital growth. These outcomes may result from investment in assets such as buildings and machinery, which absorb much of a firm's resources. Ease of access to land and secure land tenure give industrial firms the assurance they need for long-term production. Land access and tenure are also found to have an effect on the capital growth of service firms.

### Transparency and access to information

The results indicate that a higher level of transparency is associated with lower growth rates. This relationship is significant in respect

**Table 2: Estimated impact of the institutional environment on firm growth using the system GMM**

| VARIABLES | Employment growth | | | Capital growth | | |
|---|---|---|---|---|---|---|
| | Agriculture | Industry | Service | Agriculture | Industry | Service |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Constant | 1.449 | 0.371 | -0.011 | -0.943 | 0.920** | 4.456*** |
| | (2.143) | (0.327) | (0.179) | (0.651) | (0.395) | (1.514) |
| Emp_growth$_{-1}$ | -1.337*** | -0.907 | -0.016 | | | |
| | (0.510) | (0.720) | (0.273) | | | |
| Cap_growth$_{-1}$ | | | | -1.233*** | -1.198*** | -1.105*** |
| | | | | (0.256) | (0.134) | (0.123) |
| ENTRYCOST | 0.010 | 0.008 | 0.006 | 0.023 | -0.023* | 0.001 |
| | (0.027) | (0.017) | (0.007) | (0.025) | (0.013) | (0.013) |
| LANDACCESS | 0.017 | 0.032** | 0.011 | 0.016 | 0.080*** | 0.036*** |
| | (0.036) | (0.014) | (0.007) | (0.025) | (0.016) | (0.012) |
| TRANSPARENCY | -0.047 | -0.030* | -0.012 | -0.047* | -0.026** | -0.019 |
| | (0.040) | (0.017) | (0.011) | (0.026) | (0.012) | (0.012) |
| TIMECOST | -0.010 | -0.014 | 0.002 | 0.016 | 0.008 | 0.031*** |
| | (0.015) | (0.010) | (0.004) | (0.020) | (0.009) | (0.007) |
| INFORMALCHARGE | 0.100*** | 0.020 | -0.017* | 0.092** | 0.038** | 0.026* |
| | (0.036) | (0.024) | (0.009) | (0.040) | (0.016) | (0.015) |
| PROACTIVITY | -0.009 | -0.008 | 0.014* | -0.001 | -0.034*** | -0.009 |
| | (0.013) | (0.010) | (0.008) | (0.017) | (0.011) | (0.008) |
| SUPPORTSERVICE | 0.039* | 0.038** | 0.010** | 0.050** | 0.045*** | 0.017** |
| | (0.023) | (0.017) | (0.004) | (0.022) | (0.009) | (0.008) |
| LABORTRAIN | -0.022 | -0.023* | -0.014** | -0.030 | -0.030*** | -0.000 |
| | (0.025) | (0.013) | (0.006) | (0.027) | (0.011) | (0.013) |
| LEGAL | -0.022 | -0.011 | -0.002 | -0.012 | -0.027** | -0.029*** |
| | (0.020) | (0.015) | (0.005) | (0.020) | (0.012) | (0.010) |

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| STRUCTURE | -0.067 | 0.252* | 0.049 | 0.916* | -0.205 | 0.322 |
| | (0.342) | (0.143) | (0.043) | (0.476) | (0.171) | (0.244) |
| PUBLIC | -3.123 | 0.120 | 0.266 | -0.047 | -0.441 | -3.615** |
| | (2.801) | (0.485) | (0.257) | (0.666) | (0.664) | (1.674) |
| PRIVATE | -1.526 | -0.288 | 0.076 | 0.324 | -0.577 | -4.373*** |
| | (1.983) | (0.370) | (0.173) | (0.672) | (0.459) | (1.522) |
| SIZE | -0.015 | -0.080** | 0.002 | 0.000 | -0.121*** | -0.024* |
| | (0.034) | (0.039) | (0.002) | (0.013) | (0.045) | (0.014) |
| AGE | 0.024 | -0.017*** | -0.006** | -0.004 | -0.017*** | -0.035*** |
| | (0.017) | (0.005) | (0.003) | (0.005) | (0.004) | (0.006) |
| NORTH | -0.083 | -0.006 | 0.075*** | 0.054 | 0.084*** | 0.085*** |
| | (0.078) | (0.022) | (0.019) | (0.087) | (0.028) | (0.027) |
| SOUTH | -0.267 | -0.052 | 0.019** | 0.146 | -0.107 | 0.015 |
| | (0.206) | (0.062) | (0.008) | (0.098) | (0.069) | (0.031) |
| URBAN | -0.039 | 0.077 | 0.120*** | -0.565** | 0.069 | -0.212* |
| | (0.421) | (0.086) | (0.035) | (0.221) | (0.070) | (0.117) |
| POPULATION | -0.004** | 0.000 | 0.000 | -0.004* | -0.000 | -0.002 |
| | (0.002) | (0.001) | (0.001) | (0.003) | (0.001) | (0.002) |
| STUDENT | -0.001 | 0.000 | -0.000** | 0.002* | 0.002*** | 0.002*** |
| | (0.001) | (0.000) | (0.000) | (0.001) | (0.001) | (0.000) |
| INVESTMENT | 0.000 | -0.000 | -0.000*** | 0.000 | -0.001** | -0.001** |
| | (0.001) | (0.000) | (0.000) | (0.001) | (0.000) | (0.000) |
| Diagnostic tests | | | | | | |
| Sargan overidentification | 8.09 [.15] | 8.23 [.08] | 2.73 [.74] | 14.96 [.13] | 2.27 [.52] | 8.54 [.38] |
| Hansen overidentification | 8.09 [.15] | 7.69 [.10] | 7.95 [.16] | 15.88 [.10] | 2.18 [.54] | 12.04 [.15] |
| Instruments | 27 | 26 | 27 | 32 | 25 | 30 |
| Observations | 3,988 | 45,314 | 58,349 | 3,988 | 45,314 | 58,241 |
| Number of enterprises | 1,472 | 15,639 | 20,677 | 1,472 | 15,639 | 20,674 |

*Notes: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1*

to the employment growth of industrial firms and the capital growth of industrial as well as agricultural firms. This indicator seems to have no significant impact on the growth rate of firms in the service sector. The negative impacts may be because in active provinces firms are not well informed about new laws and regulations. These markets attract a large number of firms which may overwhelm the local authorities' ability to communicate well with every individual firm in that province. Insufficient communication between the local authorities and firms may result in a lower score for this indicator.

### Time costs of regulatory compliance

A relatively high score on this index indicates reduced time spent on bureaucratic compliance and local inspections. The variable has a significant influence on capital growth for service enterprises but does not impact firms in other sectors. The insignificance of this indicator for agricultural and industrial firms implies that bureaucratic compliance processes are very similar across provinces. In addition, the frequency of inspections by local regulatory authorities is regulated at the national level, thus the number of inspections may be comparable across all firms and all sectors.

### Informal charges

Lower informal charges generally lead to higher growth rates of firms. This indicator fully supports our Hypothesis regarding capital growth of firms since the study finds positive and significant impacts across all types of firms. The results imply that lower extra fees promote firm growth. The findings are similar to those found in prior studies (Aidis, 2005; Krasniki, 2007; Capelleras and Hoxha, 2010; Nguyen

and Dijk, 2012). However, when it comes to the effect of informal charges on employment growth, a positive relationship is found.

### Proactivity of provincial leadership

The influence of proactivity on firm growth is rather moderate. The study finds that the employment growth of service firms is positively related to proactivity, whereas proactivity impacts negatively on the capital growth of industrial firms. The reason may be that most provincial leaders strictly follow the instructions from the central government, so there exists a very small difference among firms across provinces.

### Business support services

Support services seem to be the most important institutional factor promoting the growth of enterprises in Vietnam. This study finds that higher levels of business support such as trade promotion, information provision, business partner matchmaking and technical services, as well as the quality of these services, foster firm growth. In other words, these kinds of support services can be considered growth incentives. The results confirm those of Hansen et al. (2009), who also find that initial government assistance has positive impacts on firm growth. This finding is relatively close to the matching theory of Gries and Naude (2011): a match between support services offered by local government and an enterprise's business plan, ability, or vision of enterprises appears and this match is absorbed by the firms leading to growth or expansion.

### Labor and training

The results indicate that provincial efforts to promote vocational training and skills development among local industries relate negative-

ly to the growth rates of industrial firms. This variable also affects the employment growth of service firms, although there is no evidence of any influence on agricultural firms. The negative impacts on industrial firms may have two reasons. Firstly, local authorities make more effort in provinces where labor skills are relatively weak and firms in these provinces hence grow slower than those in other provinces. The second reason may be that although some provincial governments organize vocational training programs, this alone is not sufficient to improve the quality of regional labor. The lack of skilled labor can thus result in lower growth rates of firms in these provinces compared to those in other provinces.

*Legal institutions*

This subjective factor negatively affects the capital growth of industrial and service firms. The study finds that firms experiencing higher growth rates have less faith in the stability of provincial legal institutions and in the ability of local institutions to solve disputes. The firms' negative attitude towards local institutions is understandable because of the instability of legislation in most developing economies. In these economies, the application and enforcement of laws and regulations may vary across provinces since local authorities can use their power to (i) issue new sub-regulations that directly influence business performance, (ii) intervene in dispute resolution, or (iii) defend themselves against the appeal of an investigation of corrupt behavior. Entrepreneurs who undergo experiences of this kind or are skeptical of the local administration and its intentions may forecast eventual adverse impacts in the future. Therefore, they may already put in place precautions

against any negative effects resulting from the behavior of and sanctions imposed by legal institutions, and their resulting losses may be less severe in the case of adverse selections.

Turning to control variables, in most specifications, firm age coefficients receive negative values and are statistically significant in the industrial and service sectors. This means that Gibrat's LPE does not hold in the case of industrial and service firms in terms of both employment growth and capital growth. We find that older enterprises grow more slowly than younger ones if they are in the industry or service sector. This finding is supported by previous literature, e.g., Sleuwaegen and Goedhuys (2002), Honjo and Harada (2006), Tuan and Yoshi (2009), Coad and Tamada (2012), and Wang and You (2012). Except for the study of Honjo and Harada (2006), which concerns Japanese data, these studies all looked at developing economies such as Cote d'Ivoire, India, or China. Most studies that rejected Gibrat's LPE and therefore found positive relationships between firm age and firm growth used data from developed and transitional economies. This may indicate how different the economic environment is in developing economies compared to that in more advanced economies. An economic boom in developing economies may create more growth opportunities for firms that are relatively new. The study finds no statistical evidence of an age effect on firm growth in agricultural enterprises. Firm size is found to have a negative impact on the growth of industrial firms. This corresponds to most of the theoretical and empirical literature on firm dynamics (Sleuwaegen and Goedhuys, 2002; Honjo and Harada, 2006; Capelleras and Hoxha, 2010;

Mateev and Anastasov, 2010; Park et al., 2010; Coad and Tamada, 2012; etc.) since mature firms tend to grow more slowly than smaller ones. This indicates the diminishing returns of size to firm growth. However, the impact of size on growth of agricultural and service firms is not clear and statistically insignificant.

Looking at firm characteristics, the coefficients of capital structure are positive and statistically significant in terms of employment growth of industrial firms and capital growth of agricultural firms. This is consistent with the study of Honjo and Harada (2006), who find that capital structure has an impact on firm growth that varies across dependent variables. Other specifications propose that the debt to total assets ratio negatively enters the growth equations or equals zero. These findings are the same as those in the empirical study of Honorati and Mengistae (2007) as they used the same system GMM estimation for firm growth and generally found very little evidence that capital structure may impact on firm growth. The results lead us to the same conclusion, namely that firm growth is not financially constrained.

The influence of firm ownership on firm growth is not clear, except for the capital growth rate of service firms. In this case, the study finds that public and private ownership influences firm growth negatively, meaning that firms whose majority shareholding is in the public or private sector grow at a lower rate compared to firms with majority foreign shareholders. Legal ownership structure has no significant influence on firm growth in other specifications. The results partially contradict those of Hansen et al. (2009) who find that household firms' experience lowers revenue growth compared to larger sole-proprietorship firms, cooperatives, and limited liability firms. This may be due to differences in sample classification and size. While the study classifies all firms on the basis of ownership, Hansen et al. (2009) base their classification on the formal registration of a given firm, and they also exclude foreign firms from the sample. The second reason for the difference in results may be that Hansen et al. (2009) use a much smaller sample than ours. The effect of a firm's location on growth is statistically significant for service firms. The findings confirm the expectation that firms in the north and the south, home to the two largest economic centers, Hanoi and Ho Chi Minh city, experience higher growth rates than those in central Vietnam.

Regarding the provincial characteristics, the urbanization rate coefficient is significant for service firms, which accordingly experience higher employment growth but lower capital growth. Agriculture firms are found to be negatively affected by a high rate of urbanization, while urbanization is not found to influence other specifications. The negative impact of urbanization on the growth of agriculture firms may be the result of the industrialization and urbanization process that began with the implementation of economic reforms in 1986. Since that time, the government has concentrated on the industry and service sector. The reform marked the changeover from a centrally planned economy to a market-oriented economy. The reform pushed the economy forward, and also resulted in a rise in the urban population. Some of these newly arising townsmen lost their cultivated shields to industrial enterprises.

Population growth seems to have no impact on firm growth. Its coefficients are mostly statistically insignificant in all specifications. The

variable for public investment has significant and negative signs for industrial and service firms, implying that firms grow faster in provinces with lower average public investment. In Vietnam, the government often appeals to the private and foreign sectors to invest in all areas, including infrastructure (e.g., new roads and bridges under build-operate-transfer schemes). Public investment is often found in areas with a lack of private and foreign investment such as schools, hospitals, and infrastructure in remote areas. Therefore, areas where private and foreign investment find less economic opportunity, which leads to slower firm growth, may experience more public investment per capita to compensate for the lack of private and foreign investment. The proxy for the quality of human capital, number of students per capita, has strong impacts on capital growth and a weaker influence on the employment growth of firms. This indicates that a higher quality of labor in a given area is associated with higher firm capital growth. The influence of labor quality on employment growth is not strong and is only found to impact service firms.

In sum, the empirical results show that institutional factors can be divided into two groups. The first group statistically supports the statement about the role of the institutional environment on firm growth, which states that higher scores on the institutional environment scale are associated with higher growth rates of firms. Factors in this group are business support service, land access, time costs, and informal charges. The second group contains entry costs, transparency, proactivity, labor and training, and legal institutions. These factors do not provide significant evidence in support of the above idea. The results also indicate that

the most significant effects these factors have relate to firms' capital growth rather than employment growth.

## 5. Conclusion

In this paper the study empirically investigates two sets of reasons by which firms succeed in developing economies: quality of institutions and abilities of entrepreneurs. According to *the hypothesis,* higher institutional quality leads to firm growth in both the employment and the capital dimension. The study uses a balanced panel dataset consisting of a sample of 37,788 enterprises, applying system GMM estimators. The data comes from the yearly censuses conducted by the GSO. In order to create a balanced panel dataset including all required variables, the period of investigation spans 2006 to 2009. To obtain a detailed picture of the economy, the study assigns the enterprises to one of three sectors: agriculture, industry, or service. Firm growth is considered in two dimensions: employment growth and capital growth. The results show that institutional factors such as business support service, land access, time costs, and informal charges empirically confirm the *hypothesis*, meaning that higher institutional environment scores are associated with higher firm growth. However, the study finds that the results on impacts of some institutional factors such as entry costs, transparency, proactivity, labor and training, and legal institutions do not support this hypothesis. The study finds an interesting result, namely that the impact of institutional factors is not the same when it comes to employment growth and capital growth. More robust results are found when it comes to the capital growth of firms.

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