Sub-National Institutions and Firm Survival in Vietnam

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Abstract:

By combining two sets of survey data - provincial competitiveness index (PCI) from VNCI-VCCI and USAID and annual enterprise census from Vietnam General Statistics Office (GSO) for the period between 2005 and 2011, we estimate the effects of sub-national institutions measured by Provincial Competitiveness Index on firm survival in Vietnam. Our results show that sub-national institutions have a positive effect on firm's survival in both short-run and long-run. The effect, however, diminishes over time, indicating that newly entered firms are more likely to survive.

Keywords: Firm survival, Vietnam, Manufacturing, Provincial Competitiveness Index

JEL: L1, D02, O17

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1. Introduction

Achievement of economic growth in Vietnam in recent years has been remarkable. Average economic growth rate between 2000 and 2007 was 7%. In recent years, the average growth rate slowed down and reached only 5.8% from 2008 to 2012. Neverthless, it was still higher than many other developing countries. The slow downed growth was mainly due to the impact of external factors such as the global financial crisis and the debt crisis in Europe. It was partly caused by the weakness of Vietnam's economic governance. Some economists propose that Vietnam should restructure the economy in which the most important task is to reform the institutions. Institutional quality is important for economic growth. Indeed, there is a plethora of studies show that economic institutions lay the foundation for economic development (Acemoglu et al., 2005; Aron, 2000; North, 1990).

In Vietnam, decentralization or empowering local autonomy at the provincial level has been accelerated recently. As a result, increasing competition among provinces improves business environment (Anderson et al., 2009). There are several studies on sub-national institutions in Vietnam that evaluate effects of the provincial competitiveness index (PCI), which is composed of several component indexes and reported annually from 2005, on various macro indicators. Tran et al. (2009) and Nguyen et al. (2013) show that the PCI index is statistically significant in explaining the difference among provinces in terms of firm performance of small and medium enterprises (SMEs). More specifically, component indexes such as improvement in the provision of market information, support of labor training programs, and land-use rights have positive influence on firm performance. In contrast, weakness in governance such as weak judicial system and administrative reforms impedes the growth of private firms (Tran et al., 2009). According to Meyer and Nguyen (2005), when FDI enterprises invest in Vietnam, location factors affect entry modes. They point out that sub-national institutions are important factors affecting the location of foreign direct investment firm (FDI) decisions and institutional pressures arising from incumbent state-owned enterprises (SOEs). In other aspects, when studying effects of corruption in private and public sectors in

Vietnam, Nguyen and Van Dijk (2012) find that corruption negatively impacts the growth of private sectors but hardly hamper that of public sector. They regress corruption on independent variables of provincial competitive index (PCI) and component indexes. The result indicates that improving quality of local governance can help reduce corruption and stimulate economic growth. By reviewing those studies, we conclude that sub-national institution in Vietnam has a positive influence on firm performance.

Up to now, only two studies by Hansen et al. (2009) and Newman et al. (2013) analyze firm survival in Vietnam. Among them, Hansen et al. (2009) refer to the relationship between government support and firm growth and survival. They use three surveys of about 500 non-state SMEs conducted in 1992, 1997 and 2002. The first survey was conducted in three big cities: Hanoi, HCM and Hai Phong. Two later surveys add Long An and Ha Tay provinces. About the interaction with state institution, the more customers working in the public sector a firm has, the more effectively they can operate in terms of growth and survival. Government initial support, especially temporary tax exemption in the establishment period has a positive effect on long-run growth of household enterprises and initial credit support is beneficial for companies in rural areas. The research has certain limitation in scope as it does not include all provinces in Vietnam and it does not separate the formal and informal sector. Meanwhile, Newman et al. (2013) use general enterprise investigation data from GSO from 2001-2008. They investigate firms' switchers, which is the degree that the firms can shift from one industry to another (switch out) and the same industry (switch in). They find that switchers tend to shift to labor-intensive industry and seek for competitive opportunities in that industry. Finally, productivity growth has a significant effect to switchers.

By reviewing the past studies, we find that there has been no rigorous research that analyzes the effects of sub-national institutions on firm survival in both Vietnam and other developing countries.

The structure of the paper is organized as follows: section 2 presents the relationship between institutions at the national level and firm survival; section 3 provides data description, introduces factors that determine firm survival. Section 4 presents and

analyzes estimation results. The last part gives a summary and proposes policy implication.

2. Institutions and firm survival

Economic institutions are supportive and binding determinants to economic factors (Acemoglu et al., 2005). If a country has a high corruption and bureaucracy level and lacks democracy and government intervention, especially those that are located outside the top quartile of income distribution, it will have a higher cost of entry. For those countries, the higher corruption level and unofficial economy prevent enterprises from entering into the market (Djankov et al., 2002).

On the micro aspects, especially on the impact of institution to firm survival, there are just a few studies and they are conducted in emerging and transitional countries. Aidis et al. (2008) observe the establishment of start-ups in Russia and conclude that Russia's institutional environment is very important in explaining the number of start - ups and the existence of business owners. In addition, Estrin and Prevezer (2010) studied the impact of new institutions to firm entry in the BRIC countries (Brazil , Russia , India , and China) and they find institutional and regulations are the key factors to determine the rate of entry and the prospect of new firms' survival course and growth. However, different institutions have significant impact in different contexts such as informal institutions can, weaken or replace formal institutions. For example, in China and India, they replace a significant level compared with Russia and Brazil. Furthermore, informal institutions contributed to the rapid economic growth of China (Chan et al., 2014). Obviously in this emerging market, the development of informal sector and corruption practices will impede new firms' entry and their impact depends on the interaction between formal and informal institutions with respects to property rights , regulations and finance (Estrin and Prevezer, 2010).

3. Data and measurement

We rely on two sources of data. First of all, since 2005, VCCI have collaborated with VNCI-USAID to develop a Provincial Competitiveness Index (PCI) and this index is useful to measure and improve the competitive environment for the provinces in

Vietnam. Provinces realize their weaknesses and needs for improvement. It is beneficial for the bureaucracy in the provinces. We take data from 2006 to 2012 and put a lag year to fit it with our second data from GSO, enterprises census. Each PCI index is calculated from 9 or 10 depending on the number of sub-index each year. PCI index can only reflect the current or short-run results but in the long-run, firms can look into the growth or improve the provincial index or location of a new firm can have important impacts on performance outcomes (Stearns et al., 1995).Thus, we proxy it with PCI growth.

The panel data set is extracted from census data from GSO for the period from 2005 and 2011. We decided to keep only enterprises in manufacturing sectors. According to GSO (2006), all state enterprises, FDI enterprises and non-state enterprises with 10 employees or more will be conducted entirely. In this study, firms exit when they die or they employ less than 10 workers in the next year. In other words, an exit firm is defined when it exited in year t and does not appear in year t+1 for some reasons such as closing down or facing reduction in employment with less than 10 workers employed. A new firm is defined when it appears in the data in year t but not at any time before year t. According to Audretsch et al. (2000), Wagner (1994), and Audretsch and Mahmood (1995) it is essential to observe enterprises through different cohorts to analyze its chance to survive. For example, Audretsch et al. (2000) observe manufacturing enterprises in the Netherland from four different cohorts, starting from 1979, 1980, 1981 and 1982. After that, each enterprise will be observed in ten years. However, due to data limitations, PCI data can only from 2005 onwards so our interpretation is a bit different from theirs. If an firm survives in any 2-years or above, we define it as dummy survival2, for 3 years or more, we define as survival3 to survival7, respectively, as indicated in Table 1. In general, it is clear that the survival rate of each industry according to cohort decreases gradually and only tobacco industry has the slowest exit rate or highest survival rate. It is because the industry only includes state-owned enterprises and joint stock company form state entity. Average production of each cohort decreases 10 percent.

Table 1: Percentage of survivals by sector and age of cohort

Sector	Survival2	Survival3	Survival4	Survival5	Survival6	Survival7
15 Food products and beverages	0.87	0.75	0.67	0.57	0.47	0.34
16 Tobacco	0.94	0.94	0.94	0.91	0.91	0.89
17 Textiles	0.87	0.75	0.67	0.55	0.43	0.34
18 Wearing apparel	0.82	0.67	0.58	0.47	0.37	0.29
19 Tanning/dressing leather	0.86	0.73	0.65	0.55	0.46	0.37
20 Wood and wood products	0.83	0.68	0.59	0.44	0.32	0.23
21Paper and paper products	0.87	0.75	0.67	0.57	0.47	0.37
22 Publishing, printing	0.80	0.65	0.56	0.47	0.37	0.27
23 Coke and refined petroleum products	0.73	0.56	0.45	0.41	0.35	0.25
24 Chemicals and chemical products	0.88	0.77	0.69	0.59	0.49	0.39
25 Rubber and plastics	0.87	0.74	0.67	0.56	0.45	0.34
26 Other nonmetallic mineral	0.87	0.75	0.68	0.56	0.46	0.35
27 Basic metals	0.89	0.78	0.70	0.58	0.47	0.35
28 Fabricated metals	0.82	0.68	0.59	0.47	0.36	0.26
29 Machinery and equipment	0.84	0.72	0.64	0.54	0.43	0.33
30 Official machinery and Computer	0.77	0.63	0.54	0.46	0.25	0.24
31 Electrical machinery	0.88	0.76	0.69	0.57	0.47	0.39
32 Radio, television	0.84	0.70	0.64	0.50	0.40	0.29
33 Medical, precision, and optical	0.84	0.74	0.69	0.55	0.43	0.36
34 Motor vehicles, transport	0.87	0.77	0.70	0.57	0.46	0.38
35 Other transport equipment	0.89	0.78	0.71	0.58	0.46	0.37
36 Furniture	0.85	0.72	0.64	0.53	0.43	0.33
37 Recycle	0.80	0.68	0.56	0.42	0.33	0.27
Entire manufacturing	0.85	0.72	0.64	0.53	0.42	0.32

Source: Authors' calculation

Studies on firm survival often investigate the characteristics of the firm at both firm and industry level (Audretsch et al., 2000, Geroski, 1995). First, the link between firm size (lnEmp) and its probability of survival is very important. With only a few corporate employees will operate below the minimum level of output that efficient scale, generous size of our firm's number of employees. We expect it to impact positively on the likelihood of survival. This also confirms the theory in the developed countries like UK (Holmes et al., 2010), Portugal (Mata et al., 1995), Netherlands (Audretsch et al., 2000), and US (Audretsch and Mahmood, 1995).

Second, capital - intensity (lnK/L) of the firm as measured by total share capital for labor. It can increase profits over time and as such it can reduce the likelihood of exit (Newman et al., 2013). But the quantity at industry level (lnK/L_in) will hinder the entry of the firm or as a quantity to determine the competitiveness of an industry.

Third, Herfindahl index represents the sector's competitiveness and if high index disincentive to move out of a certain area and the barriers to the entry of the firm (Newman et al., 2013, Roberts and Thompson, 2003).

Fourth, the new entry market firms have to compete with existing firms and therefore have a higher survival rate when the industry has fewer entering activities (Mata et al., 1995, Audretsch et al., 2000), the entry rate is calculated by dividing the number of new firms in total industry. We expect to have a negative impact on the likelihood of new firm survival.

Fifth, new firms hindered by its industry growth (growth_in). If a firm has lower growth rate than that of the industry, they is less likely to survive. Industry growth rate measures as the annual growth rate of total sales[2] in the sector from 2005 to 2011.

Sixth, we found that ownership structure is very important to the survival of the business. SOEs variables give a guarantee of the state. Thus, the businesses of this type are difficult to exit, or they can equitize, we expect this variable has higher survival chance than non-state enterprises (Non-SOEs). But Roberts and Thompson (2003) found that in a reverse conversion economies like Poland, they found that the SOEs will have a higher exit rate than non-SOEs. Similarly, with FDI variable, we expect that its ability to survive is higher than non-SOEs. According to Kosova (2010) crowding -out effect of FDI is only in the short term, which means that the rate foreign entry increases exit rates of domestic enterprises in Czech. Finally, in all estimations, we also include year and industry dummy variables.

4. Regression results

Results in Table 2 show that PCI and PCI growth variables are significant in all columns or both in the short-term and in the long-term. The point is that, its coefficient in

[2] All variables related to price are adjusted for GDP deflator in 1994

the short-term is higher than in the long-term. This implies that the survival of the business in the short term depends on which province or policies to improve the provincial environment, including those which help the firms grow healthy. We find that the higher the coefficient PCI, the greater its impact to the viability of the business in the long-term and are now looking at the improvement of the business environment. The investors want to head provincial and PCI variables and we see that growth and found that it was a positive influence and a strong decrease in short-term and long-run. We also estimated results for each variable separately PCI and PCI growth and found that the results did not change much (see Table A1 and Table A2).

Leaving all our results are consistent with organizational theory industry. In both short -term and long -term, small firms tend to have lower survival rates than large firms and the higher capital-intensive of the firms is also more likely to survive. This evidence also coincides with Newman et al. (2013) in Vietnam. Nevertheless, capital-intensive only need to pay for the survival of the firm in the short term but we see no evidence in the long term. Our evidence is contrary to the findings of Audretsch et al. (2000) in the Netherlands. They said that in the short term, it does not affect the existence of the enterprise, but in the long term, the effect was statistically significant.

Industry concentration is a proxy as Herfindahl index and we find no strong evidence of its negatively effect on the survival of the business. This review of literature has yet to agree as Konings and Xavier (2002) and Bojnec and Xavier (2004) found no significant concentration of industry affect the survival of businesses in transition countries Slovenia. Furthermore, Wagner (1994) also found similar mean it in Germany. Meanwhile, Roberts and Thompson (2003) finds significant impediment to its statistics with the entry rate and exit rate in Poland.

The rate of entry into higher public sector negatively affect the survival of firm in that sector (Audretsch et al., 2000, Kosova, 2010). We also concur with them about the sign and its meaning, but this ratio strongly influenced in the short term than in Vietnam

and vice versa with Audretsch et al. (2000). Next, the growth of the industry is a barrier to the firm survival and we see that it dropped over time. Thus, the firm will operate a long gradual growth higher than industry growth and survival will be higher.

Finally, ownership structure is an important variable in developing economies such as Vietnam, where SOEs, which is sponsored by state governments, obviously have its survival probability higher than Non-SOES. Our results also confirm this fact. Next, according to Bernard and Jensen (2007), the multinational companies in general and multinational companies of the United States will be more likely to survive. In Vietnam, we also find that firms with foreign capital have better survival than Non-SOEs.

Table 2: Logit regression result for firm survival, both PCI and PCI growth

	(1) survival2	(2) survival3	(3) survival4	(4) survival5	(5) survival6	(6) survival7
main						
pci	0.0075***	0.0070***	0.0044***	0.0057***	0.0053***	0.0026**
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
pciGrowth	1.5771***	0.7112***	0.5282***	0.5933***	0.1804*	-0.0637
	(0.152)	(0.120)	(0.111)	(0.107)	(0.109)	(0.116)
lnEmp	0.6817***	0.6397***	0.6720***	0.6233***	0.6161***	0.6518***
	(0.010)	(0.007)	(0.007)	(0.006)	(0.006)	(0.006)
lnK/L	0.0569***	0.0682***	0.0614***	0.0687***	0.0615***	0.0716***
	(0.007)	(0.006)	(0.005)	(0.005)	(0.005)	(0.005)
lnK/L_in	-0.2170***	-0.0981*	-0.0376	0.0311	0.0397	0.0849
	(0.065)	(0.055)	(0.053)	(0.052)	(0.053)	(0.057)
Herfindahl	-0.0827	-0.1213	-0.6576*	-0.1707	-0.1131	-0.0818
	(0.449)	(0.386)	(0.377)	(0.364)	(0.370)	(0.389)
entryRate	-4.7738***	-2.6111***	-2.0031***	-1.8468***	-1.5839***	-1.4363***
	(0.342)	(0.287)	(0.270)	(0.264)	(0.273)	(0.293)
growth_in	-0.0885	-0.1005*	-0.1064**	-0.1176***	-0.0671	-0.0599
	(0.065)	(0.052)	(0.048)	(0.046)	(0.046)	(0.049)
SOEs	0.4854***	0.4526***	0.5648***	0.6663***	0.6168***	0.5262***
	(0.088)	(0.061)	(0.055)	(0.047)	(0.042)	(0.038)
FDI	0.7726***	0.6125***	0.6787***	0.5500***	0.4367***	0.3370***
	(0.033)	(0.024)	(0.021)	(0.019)	(0.018)	(0.019)
_cons	0.1526	-1.0108***	-1.5126***	-1.7608***	-2.0379***	-2.7564***
	(0.121)	(0.095)	(0.088)	(0.084)	(0.084)	(0.089)
N	151331	151331	151331	151331	151331	151331
Dummy year	Yes	Yes	Yes	Yes	Yes	Yes
Dummy sector	Yes	Yes	Yes	Yes	Yes	Yes
pseudo R^2	0.153	0.155	0.151	0.143	0.141	0.143

Source: Authors' calculation; Robust standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

5. Conclusion

For a developing country like Vietnam, a model still has the direction from the center to the local. Nevertheless, when VNCI-VCCI built competitiveness index, it creates provincial competition to attract investment and improve business environment. Thus, it is a positive impact to the operation of the enterprises in the provinces. And our results to estimate this index shows a strong evidence that exists in a country at sub-national institutions, including the environment in a positive image to the viability of firms in sub -National institutions that have good business environment both in the short and long term. It is this influence more apparent in the short term. Therefore, our results are unique and it has added to the theory of industrial organization.

Furthermore, we find that the results are consistent with our theory of industrial organization, as small firms will be lower viability of businesses large and the higher capital – intensive of the firms will be the higher the probability of survival. These two variables we measure the likelihood of firm survival. However, the factors in the industry, we find it no different medium than previous studies. Only one small thing we want to add is that the probability of survival of SOEs is higher than the Non - SOEs now, this is different from the case of Poland (Roberts and Thompson, 2003). While FDI has higher survivability Non-SOEs now this one just as much studies have confirmed.

References

ACEMOGLU, D., JOHNSON, S. & ROBINSON, J. A. 2005. Institutions as a fundamental cause of long-run growth. *Handbook of economic growth,* 1**,** 385-472.

AIDIS, R., ESTRIN, S. & MICKIEWICZ, T. 2008. Institutions and entrepreneurship development in Russia: A comparative perspective. *Journal of Business Venturing,* 23**,** 656-672.

ANDERSON, J. H., GARRIDO, A., DELFINA, M. & PHUNG, T. T. 2009. Vietnam development report 2010 : modern institutions. *Washington D.C. - The Worldbank*.

ARON, J. 2000. Growth and institutions: a review of the evidence. *The World Bank Research Observer,* 15**,** 99-135.

AUDRETSCH, D. B., HOUWELING, P. & THURIK, A. R. 2000. Firm survival in the Netherlands. *Review of Industrial Organization,* 16**,** 1-11.

AUDRETSCH, D. B. & MAHMOOD, T. 1995. New firm survival: new results using a hazard function. *The Review of Economics and Statistics,* 77**,** 97-103.

BERNARD, A. B. & JENSEN, J. B. 2007. Firm structure, multinationals, and manufacturing plant deaths. *The Review of Economics and Statistics,* 89**,** 193-204.

BOJNEC, Š. & XAVIER, A. 2004. Entry and exit in transition economies: the Slovenian manufacturing sector. *Post-Communist Economies,* 16**,** 191-214.

CHAN, K. S., XU, X. & GAO, Y. 2014. The China Growth Miracle: The Role of the Formal and the Informal Institutions. *The World Economy***,** n/a-n/a.

DJANKOV, S., LA PORTA, R., LOPEZ-DE-SILANES, F. & SHLEIFER, A. 2002. The regulation of entry. *The Quarterly Journal of Economics,* 117**,** 1-37.

ESTRIN, S. & PREVEZER, M. 2010. A survey on institutions and new firm entry: How and why do entry rates differ in emerging markets? *Economic systems,* 34**,** 289-308.

GEROSKI, P. A. 1995. What do we know about entry? *International Journal of Industrial Organization,* 13**,** 421-440.

GSO 2006. *Survey Manual Handbook*, Statistical Publishing House.

HANSEN, H., RAND, J. & TARP, F. 2009. Enterprise growth and survival in Vietnam: does government support matter? *The Journal of Development Studies,* 45**,** 1048-1069.

HOLMES, P., HUNT, A. & STONE, I. 2010. An analysis of new firm survival using a hazard function. *Applied Economics,* 42**,** 185-195.

KONINGS, J. & XAVIER, A. 2002. Firm growth and survival in a transition country: Micro evidence from Slovenia. LICOS Discussion Paper, No. 114.

KOSOVA, R. 2010. Do foreign firms crowd out domestic firms? Evidence from the Czech Republic. *The Review of Economics and Statistics,* 92**,** 861-881.

MATA, J., PORTUGAL, P. & GUIMARAES, P. 1995. The survival of new plants: Start-up conditions and post-entry evolution. *International Journal of Industrial Organization,* 13**,** 459-481.

MEYER, K. E. & NGUYEN, H. V. 2005. Foreign Investment Strategies and Sub-national Institutions in Emerging Markets: Evidence from Vietnam*. *Journal of Management Studies,* 42**,** 63-93.

NEWMAN, C., RAND, J. & TARP, F. 2013. Industry switching in developing countries. *The World Bank Economic Review,* 27**,** 357-388.

NGUYEN, T. T. & VAN DIJK, M. A. 2012. Corruption, growth, and governance: Private vs. state-owned firms in Vietnam. *Journal of Banking & Finance,* 36**,** 2935-2948.

NGUYEN, T. V., LE, N. T. & BRYANT, S. E. 2013. Sub-national institutions, firm strategies, and firm performance: A multilevel study of private manufacturing firms in Vietnam. *Journal of World Business,* 48**,** 68-76.

NORTH, D. C. 1990. *Institutions, institutional change and economic performance*, Cambridge university press.

ROBERTS, B. M. & THOMPSON, S. 2003. Entry and exit in a transition economy: the case of Poland. *Review of Industrial Organization,* 22**,** 225-243.

STEARNS, T. M., CARTER, N. M., REYNOLDS, P. D. & WILLIAMS, M. L. 1995. New firm survival: industry, strategy, and location. *Journal of Business Venturing,* 10**,** 23-42.

TRAN, T. B., GRAFTON, R. Q. & KOMPAS, T. 2009. Institutions matter: The case of Vietnam. *The Journal of Socio-Economics,* 38**,** 1-12.

VCCI 2013. Annual Report Vietnam business 2012.

WAGNER, J. 1994. The post-entry performance of new small firms in German manufacturing industries. *The Journal of Industrial Economics***,** 141-154.

Appendix

Table A1: Logit regression result for firm survival, only PCI

	(1) survival2	(2) survival3	(3) survival4	(4) survival5	(5) survival6	(6) survival7
main						
pci	0.0071***	0.0111***	0.0074***	0.0065***	0.0069***	0.0055***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
lnEmp	0.6683***	0.6251***	0.6517***	0.6138***	0.6142***	0.6502***
	(0.009)	(0.007)	(0.006)	(0.006)	(0.005)	(0.005)
lnK/L	0.0580***	0.0690***	0.0633***	0.0729***	0.0701***	0.0826***
	(0.007)	(0.006)	(0.005)	(0.005)	(0.005)	(0.005)
lnK/L_in	-0.2189***	-0.1002*	-0.0614	0.0078	0.0321	0.0903*
	(0.061)	(0.051)	(0.050)	(0.049)	(0.050)	(0.054)
Herfindahl	-0.3368	-0.2741	-0.6190*	-0.2432	-0.1619	-0.0182
	(0.424)	(0.365)	(0.355)	(0.343)	(0.348)	(0.363)
entryRate	-5.0132***	-2.8502***	-2.2275***	-2.0361***	-1.8319***	-1.6918***
	(0.314)	(0.266)	(0.252)	(0.248)	(0.256)	(0.274)
growth_in	-0.0465	-0.0940*	-0.1065**	-0.1182***	-0.0791*	-0.0881*
	(0.063)	(0.050)	(0.046)	(0.044)	(0.044)	(0.047)
SOEs	0.4580***	0.4365***	0.5361***	0.6371***	0.5834***	0.4949***
	(0.078)	(0.054)	(0.049)	(0.043)	(0.038)	(0.035)
FDI	0.7339***	0.6097***	0.6865***	0.5744***	0.4707***	0.3908***
	(0.031)	(0.022)	(0.020)	(0.018)	(0.017)	(0.017)
_cons	-0.8123***	-1.6937***	-1.9821***	-2.0378***	-2.3275***	-2.7924***
	(0.103)	(0.084)	(0.078)	(0.075)	(0.075)	(0.078)
N	168671	168671	168671	168671	168671	168671
Dummy year	Yes	Yes	Yes	Yes	Yes	Yes
Dummy sector	Yes	Yes	Yes	Yes	Yes	Yes
pseudo R^2	0.145	0.148	0.145	0.141	0.143	0.149

Source: Authors' calculation; Robust standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A1: Logit regression result for firm survival, only PCI

	(1) survival2	(2) survival3	(3) survival4	(4) survival5	(5) survival6	(6) survival7
main						
pciGrowth	1.6664***	0.7621***	0.5494***	0.6057***	0.1853*	-0.0637
	(0.153)	(0.121)	(0.112)	(0.108)	(0.109)	(0.116)
lnEmp	0.6826***	0.6405***	0.6725***	0.6239***	0.6166***	0.6521***
	(0.010)	(0.007)	(0.007)	(0.006)	(0.006)	(0.006)
lnK/L	0.0573***	0.0689***	0.0620***	0.0696***	0.0625***	0.0722***
	(0.007)	(0.006)	(0.005)	(0.005)	(0.005)	(0.005)
lnK/L_in	-0.2169***	-0.0970*	-0.0367	0.0323	0.0412	0.0858
	(0.065)	(0.055)	(0.053)	(0.052)	(0.053)	(0.057)
Herfindahl	-0.0762	-0.1224	-0.6592*	-0.1747	-0.1182	-0.0854
	(0.449)	(0.385)	(0.377)	(0.364)	(0.370)	(0.389)
entryRate	-4.7796***	-2.6169***	-2.0081***	-1.8538***	-1.5917***	-1.4413***
	(0.342)	(0.287)	(0.270)	(0.264)	(0.273)	(0.294)
growth_in	-0.0856	-0.0976*	-0.1047**	-0.1155**	-0.0652	-0.0588
	(0.065)	(0.052)	(0.048)	(0.046)	(0.046)	(0.049)
SOEs	0.4780***	0.4449***	0.5596***	0.6592***	0.6099***	0.5225***
	(0.088)	(0.061)	(0.056)	(0.047)	(0.042)	(0.038)
FDI	0.7866***	0.6258***	0.6876***	0.5620***	0.4484***	0.3429***
	(0.033)	(0.023)	(0.021)	(0.019)	(0.018)	(0.018)
_cons	0.6039***	-0.5901***	-1.2482***	-1.4164***	-1.7139***	-2.5959***
	(0.071)	(0.055)	(0.052)	(0.050)	(0.051)	(0.054)
N	151331	151331	151331	151331	151331	151331
Dummy year	Yes	Yes	Yes	Yes	Yes	Yes
Dummy sector	Yes	Yes	Yes	Yes	Yes	Yes
pseudo R^2	0.153	0.155	0.151	0.143	0.141	0.143

Source: Authors' calculation; Robust standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$