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Enterprise Growth and Survival in Vietnam: Does Government Support Matter?

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ABSTRACT *This paper analyses whether direct government assistance during start-up and other forms of interaction with the state sector have influenced the long-run performance of small and medium-sized manufacturing enterprises (SMEs) in Vietnam. Using three partly overlapping surveys during the period 1990–2000, we find strong effects on firm dynamics from interaction with state institutions. Enterprises which have the state sector as their main customer perform better. This is so for both survival and growth. Moreover, temporary tax exemptions during firm start-up had a separate and positive influence on long-run growth for non-household enterprises and initial credit support seems to benefit rural firms.*

I. Introduction

The launching of the *doi moi* reforms in 1986 was a turning point in the modern economic history of Vietnam. The government introduced legal innovations in the early 1990s, permitting establishment and development of private enterprise, and defined more clearly household businesses with respect to legal status, organisation and operation (CIEM, 2003). The Vietnamese enterprise community has grown rapidly ever since, but the number of officially registered enterprises remains relatively low.[1]

The increasing economic significance of the enterprise sector stands in marked contrast to the existing lack of detailed understanding of the factors behind the dynamics of the enterprise sector and its component parts. Therefore, we investigate in this paper what can be learnt from three partly overlapping sets of enterprise survey data from 1990/1991, 1995/1996 and 2000/2001. The surveys cover both registered and not formally registered small and medium size enterprises (SMEs).

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The latter are household firms that are not officially registered by central authorities under the different enterprise laws but are listed by local officials.

There is little empirical literature on the effect of government support on firm performance in developing countries. Fajnzylber et al. (2009) address aspects of the impact of forms of government support on microenterprises in Mexico, using various techniques to identify treatment effects of credit, training and tax payments (as a measure of formality, hence a proxy for potential access to public services) on firm profits, growth and survival likelihood. They find that although access to these forms of support does not appear to significantly influence profits, 'formality' and access to credit improve the likelihood of survival. A special issue of *Small Business Economics* suggested that various government policy interventions have played a significant role in the explanation of SME successes in the Asian region.[2] We focus on direct government support to Vietnamese SMEs and test if such support has improved non-state firm performance as compared to firms that received no support.

Over the years, promotion of SMEs has been a central tenet in policy statements by the Vietnamese government.[3] The 1990s saw major reforms to streamline regulatory barriers to SME development and to improve the general business environment.[4] Our data mirrors this, as 59 per cent of the enterprises in the sample received some sort of direct government assistance during start-up in the 1990s. MPI (2005) documents that generally SMEs received government assistance on a somewhat ad hoc basis. However, the review of past SME support programmes confirms the widespread coverage and availability of assistance, provided through a combination of national, local and donor funded channels.

The government assistance offered to SMEs during the 1990s can basically be divided into two sub-groups: (i) financial assistance and (ii) technical assistance. The former includes various forms of investment incentives and soft policy loans and the latter consists of basically three types of assistance: human resource training; export promotion initiatives; and quality and technology programmes. The latter two initiatives started rather late in the government support process of SMEs and are therefore not considered in this paper.

Starting with investment incentive, assistance to SMEs was mainly in the form of different types of temporary tax exemptions/reductions. Firms, for example, could be entitled to tax breaks for costs related to research and development (R&D), labour training, and trade promotion activities. Unfortunately, we only have information about whether the firm received a tax exemption during start-up. Therefore, we cannot divide this into the types of exemption. Nevertheless, our data shows that 23 per cent of the firms considered received some type of tax break during the initial stages of development.

In addition to tax breaks, Vietnam has from the outset used soft/favourable loans as a tool to support SMEs, and the instrument became formally institutionalised in 2002 with the establishment of the Vietnam Bank for Social Policy (VBSP) and later the Vietnam Development Bank (VDB). However, as documented in several government resolutions and decrees (see Note 4), the Vietnamese government credit support initiatives dates back to the early 1990s. Our data shows that some 7 per cent of the firms received financial support from the government during start-up.

Technical assistance in the form of human resource training was primarily carried out in order to provide knowledge about business start-up to entrepreneurs and

assist SMEs with a sustainable business plan.[5] In order to capture these aspects of government assistance we collected data on whether entrepreneurs received assistance when selecting line of business (business strategy assistance) and whether firms got assistance in obtaining licenses and permits (legal knowledge assistance). The data shows that no less than 38 per cent of the sample received 'legal knowledge assistance', whereas 7 per cent were assisted in developing their initial business strategy.

A priori, it is not clear what the overall impact of this direct government support has been for the enterprises involved. On the one hand, effective government assistance may help individual firms overcome institutional and other barriers in an uneven playing field. On the other hand, misguided government support may affect incentives and distort the effective working of market forces, including keeping inefficient low-performers in business.

The survey data allow us to analyse and compare the performance of receivers of initial government assistance with firms receiving no assistance. We use standard parametric regression methods for estimating the average effect of the assistance and we try to find the 'overall' average effect by simply estimating the average effect of any kind of direct government support. Further, we look more closely at the average effects of specific support programmes to certain sub-groups of the SME's, such as rural versus urban enterprises and household versus non-household enterprises. In the analysis of the overall impact, we look both at firm survival and revenue growth. We find that government support during start-up had no significant impact on enterprise survival, while there was a positive impact on the long-run revenue growth rate. When looking at the different kinds of government support in more detail we find significant differences between receivers and non-receivers of direct credit assistance among rural enterprises and that non-household enterprises receiving temporary tax exemptions have, on average, grown faster compared to their non-receiving counterparts, conditional on other growth determinants.

The remainder of the paper is organised as follows: section II outlines the three surveys, our sampling methodology and the data. Descriptive statistics on firm dynamics and, in particular, on the various government support programmes are also provided in this section. Section III presents regression results for the overall average impact of government support, while section IV focuses on a more detailed analysis of the impact of government support programmes. Conclusions follow in section V.

II. Data

The data used in this paper were generated through three enterprise surveys conducted in 1992, 1997 and 2002 covering 1990/1991, 1995/1996 and 2000/2001, respectively.[6] The 1990/1991 survey included some 450 non-state enterprises in three major cities, Ho Chi Minh City, Ha Noi and Hai Phong. In 1995/1996, a repeat survey of the same enterprises and a parallel survey of another 500 enterprises not previously studied were carried out. They covered five provinces by adding Long An and Ha Tay to the previous areas sampled.

The first half of the 1990s was characterised by a move from market fragmentation towards market integration and gradually increasing competition. In this way, the first two surveys brought to light a highly dynamic and often dramatic process of

change, not captured by more aggregate analyses (Ronnås and Ramamurthy, 2001). The approval of the new Enterprise Law in 2000 provided further impetus to the development of the non-state enterprise sector, and a firmer legal basis for SME operations was created.[7] The 2000/2001 survey covering over 1600 enterprises in seven provinces (Quang Nam and Phu Tho, in addition to the previous areas analysed) was therefore conducted to analyse the effects of the changes in the economic environment surrounding the enterprise sector.[8]

In all the areas and years covered by the surveys, the samples were stratified by ownership form to ensure that all types of non-state enterprises, including both officially registered and non-official household, private, cooperative and limited liability firms, were represented. For reasons of implementation, the surveys were confined to specific areas in each province/city. Subsequently, samples were drawn from a consolidated ILSSA list of officially registered and non-official enterprises, where the stratified sampling procedure was used.

The three surveys may not be nationally representative because the samples were not drawn proportional to the provincial number and different types of enterprises in the country. Therefore, we have constructed weights by province and legal ownership form based on the census of officially registered non-household enterprises (GSO, 2005), and the Establishment Census covering registered and non-registered household enterprises (GSO, 2004).[9] Furthermore, due to the partial sampling nature of the panel data set, and because the sampling was based on pre-existing samples from 1990/1991 and 1995/1996, young, newly established enterprises may be under-sampled. Unfortunately, we have no sources that can be used to correct this potential problem. Finally, while the stratification was adjusted over time to accommodate the rapidly changing business environment in Vietnam, other aspects, including the questionnaires, were maintained virtually identically among the three surveys.[10]

The three cohorts differ in composition. The 1990/1991 cohort is not a true entry cohort. It includes firms in operation in 1990/1991 regardless of their entry date. The 1995/1996 cohort includes repeat enterprises from the 1990/1991 survey and enterprises not previously surveyed. Among the newly surveyed enterprises, some were established before 1990/1991. They are excluded from our analysis. We also exclude new entries in 2000/2001. They are of no relevance to our analysis focusing on firm survival and growth.

Descriptive Statistics

Table 1 presents a breakdown of our sample by ownership category and firm size for each survey year. Some 49 per cent of the firms are micro enterprises with 1–9 employees, and their share is higher in 2000/2001 (52%) as compared to 1990/1991 (44%). Small and medium size enterprises represent approximately 44 per cent and 7 per cent of the total sample, respectively. As already mentioned, the sample composition changes over time with respect to legal ownership form.

Enterprise survival is clearly of interest in relation to government support programmes. Therefore, we provide details on the number of survivors from one survey to the next in Table 2. Our sample is an unbalanced panel of 807 enterprises with 1,266 observations. Of the 447 1990/1991 enterprises only 159 (36%) survived to 1995/1996, while 93 survived until 2000/2001. Of the 360 1995/1996 enterprises

Table 1. Sample breakdown by legal status and firm size

Year	Ownership form	Micro	Small	Medium	Missing	Total
1990/1991	Household	100	7	0		107 (25)
1995/1996		182	30	0		212 (42)
2000/2001		136	33	2		171 (57)
1990/1991	Private	54	68	2		124 (29)
1995/1996		39	71	8		118 (23)
2000/2001		9	23	9		41 (14)
1990/1991	Cooperatives	36	153	14		203 (47)
1995/1996		23	50	11		84 (16)
2000/2001		5	23	4		32 (11)
1990/1991	Limited	0	1	0		1 (0)
1995/1996		12	57	24		93 (18)
2000/2001		7	33	16		56 (19)
1990/1991	Total	190 (43)	229 (51)	16 (4)	12 (3)	447 (100)
1995/1996		256 (49)	208 (40)	43 (8)	12 (2)	519 (100)
2000/2001		157 (52)	112 (37)	31 (10)	0 (0)	300 (100)

Note: Figures in parentheses are percentage shares of the total number of firms surveyed in respective years. Errors due to rounding.

Table 2. Survivors and confirmed exits

		1990/1991	1995/1996	2000/2001
1990/1991	Survivors	447*	159	93
	Confirmed exits		61	45
1995/1996	Survivors		360*	207
	Confirmed exits			94
Total	Observations	447	519	300

Notes: The 2000/2001 survey included both surviving and not previously surveyed enterprises. In this paper we use only the data for surviving firms in the last period. * indicates enterprises not previously surveyed.

not previously surveyed, 207 (58%) survived until 2000/2001. The overall picture suggests that the business environment, in terms of survival, underwent significant change during our period of study.

In the surveys, an exit questionnaire was implemented to investigate whether sample attrition is due to confirmed closure of enterprises rather than being firms lost to the sample due to, for example, firm mobility.[11] From Table 2 it is clear that we were not particularly successful in tracking down owners of non-surviving firms during the period 1990/1991 to 1995/1996, to investigate whether they had in fact stopped operations. Of the non-survivors, that is firms no longer in the sample, only 21 per cent were confirmed as having exited for sure. However, from 1995/1996 to 2000/2001 we were able to identify 63 per cent of the firms lost to the sample as confirmed exits (see Appendix).[12]

One reason for the difficulties in confirming whether firms had closed down in the first half of the 1990s can be attributed to the reforms during the period. They made firms more likely to change location and/or formal legal status (CIEM, 2003).

To illustrate the high mobility of Vietnamese SMEs, Table 3 shows changes in legal ownership form from 1990/1991 to 1995/1996 for the surviving firms. Many of the firms registered as sole proprietorships/private enterprises or cooperatives changed to household enterprises. These changes in legal status were often accompanied by moving the main production facility. This illustrates the difficulties in tracking down exit firms in the 1990s. In our regressions in sections III and IV we adjust explicitly for attrition and report results both including and excluding non-confirmed exit firms. Without attrition adjustment, the exit rate will be overstated. With adjustment, we will (most likely) omit some true exit firms thereby understating exit rates. The 'true' exit rates therefore lie in between the outcome of these two approaches.

The Allocation of Government Support

The three surveys contain detailed information about the kind of government support enterprises received during start-up and whether they received more than one type of start-up assistance. It is unlikely that all of these government measures were equally available to all new potential firms in all possible locations. It is, nevertheless, clear from our survey that start up services were widely available throughout the provinces and to the different enterprise types included in our sample. As seen from Table 4, some 512 firms received government support during start-up, while 359 firms received no assistance. Among the recipients, there is a bias towards urban and larger size firms and this is in accordance with Tybout (2000). He documents that larger, incumbent firms get a relatively big share of government services directed to the enterprise sector in developing countries. Tenev et al. (2003) confirm this and point to a certain degree of unevenness in the allocation of government services with respect to firm size among Vietnamese enterprises. One reason for this observation could be that larger companies see greater benefits from specific types of government support and therefore use more resources when preparing to apply for government support and fulfill associated administrative and other requirements.

Table 3. Changes in ownership from 1990/1991 to 1995/1996

	Survivors 1995/1996				
Initially surveyed 1990/1991	Household	Private	Cooperatives	Limited	Total
Household	37	1	2	2	42
	(88)	(2)	(5)	(5)	(100)
Private	19	20	4	7	50
	(38)	(40)	(8)	(14)	(100)
Cooperatives	12	6	40	8	66
	(18)	(9)	(61)	(12)	(100)
Limited	0	1	0	0	1
	(0)	(100)	(0)	(0)	(100)
Total	68	28	46	17	159
	(43)	(18)	(29)	(11)	(100)

Note: Figures in parentheses are percentage shares of row totals.

Table 4. Sample averages vs. receivers of government assistance

	Received assistance	No assistance	Total (Share of total)
Total sample	512	359	871
	(58.8)	(41.2)	
Urban	451	291	742
	(60.8)	(39.2)	
	[88.1]	[81.1]	[85.2]
Rural	61	68	129
	(47.3)	(52.7)	
	[11.9]	[18.9]	[14.8]
Young	259	179	438
	(59.1)	(40.9)	
	[50.6]	[49.9]	[50.3]
Incumbent	253	180	433
	(58.4)	(41.6)	
	[49.4]	[50.1]	[49.7]
Micro	203	204	407
	(49.9)	(50.1)	
	[40.0]	[56.8]	[46.9]
Small	266	143	409
	(65.0)	(35.0)	
	[52.4]	[39.8]	[47.2]
Medium	39	12	51
	(76.5)	(23.5)	
	[7.7]	[3.3]	[5.9]

Notes: Number of firms (row percentages in parentheses and column percentages in brackets). Young firms are 1–5 years old. Four observations missing on the number of full-time workers.

In Table 5, we give an overview of the various forms of start-up assistance, focusing on the four most frequent types of government support (columns (1) to (4)). Moreover, we document the number of firms that received more than one type of government support (column (5)). Of the 512 recipient firms, only 28 per cent received one kind of support, while 72 per cent received two or more types of initial assistance. Assistance in obtaining licenses and permits was given to 65 per cent of the receivers of government assistance, while temporary tax exemptions ranked second with 39 per cent. Notably, nearly 71 per cent of rural firms got temporary tax exemptions or reductions, compared to only 35 per cent for urban firms. Moreover, a larger share of young firms received this type of government assistance. The most frequent type of government support to urban firms was 'help with license application and registration' with nearly 70 per cent receivers as compared to only 35 per cent in rural areas. Based on Tables 4 and 5, it is clear that assistance was allocated to a quite broad segment of the business sector; and that younger, smaller and/or rural firms had access to both one and several types of assistance.

III. Econometric Analysis of Firm Growth and Survival

Most of the enterprise literature on developing countries focusses on the relationship between firm dynamics/turnover and productivity and efficiency, see for example van

Table 5. Initial government assistance – overview

	Recommendation on line of business	Help with license application and registration	Direct credit assistance	Temporary tax exemption or reduction	Firms receiving more than one type of assistance
Total	62	333	62	199	370
	(12.1)	(65.0)	(12.1)	(38.9)	(72.3)
Urban	56	312	43	156	342
	(12.4)	(69.2)	(9.5)	(34.6)	(75.8)
Rural	6	21	19	43	28
	(9.8)	(34.4)	(31.1)	(70.5)	(45.9)
Young	35	173	39	119	204
	(13.5)	(66.8)	(15.1)	(45.9)	(78.8)
Incumbent	27	160	23	80	166
	(10.7)	(63.2)	(9.1)	(31.6)	(65.6)
Micro	15	114	9	91	124
	(7.4)	(56.2)	(4.4)	(44.8)	(61.1)
Small	36	192	39	88	205
	(13.5)	(72.2)	(14.7)	(33.1)	(77.1)
Medium	11	25	14	17	37
	(28.2)	(64.1)	(35.9)	(43.6)	(94.8)

Notes: Number of firms (percentages in parentheses). Four observations missing on the number of full-time workers.

Biesebroeck (2005), Frazer (2005) and Söderbom et al. (2006). We are more concerned with examining the dynamics of the Vietnamese business environment and especially with the potential effects of government involvement. Two questions are central in our econometric analysis. First, we investigate the determinants of Vietnamese SME growth and survival. Second, given the government emphasis on promoting the private sector during the 1990s, we are interested in analysing whether interaction with state owned enterprises (SOEs), government institutions and government agencies affected firm performance.

Determinants of Firm Growth and Survival

The literature on firm dynamics has identified a series of potential determinants for survival and growth of SMEs, see Sutton (1997), Caves (1998) and, Audretsch and Klepper (2000). Descriptive statistics of the determinants used in this paper are listed in Table 6.

The first group of determinants includes the three standard variables: firm age, firm size and innovative capacity. Empirically, it is well established that small and young firms tend to have lower likelihood of survival and that firm size and age are negatively related to growth.[13] This relationship is also in accordance with theoretical models by Jovanovic (1982) and Ericson and Pakes (1995).

The summary statistics in Table 6 shows that the average firm age is almost constant in the 1990/1991 and 1995/1996 surveys, whereas average firm age for the 2000/2001 enterprises is higher by construction. Regarding firm size, average real

Table 6. Descriptive statistics

	1990/1991		1995/1996		2000/2001	
Variable	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
Firm size (log revenue)	6.948	1.537	7.879	1.679	7.969	1.834
Firm size (total employment)	15.310	14.806	18.863	27.628	20.603	33.856
Firm share 1–9 employees	0.449	0.498	0.487	0.500	0.526	0.500
Firm share 10–49 employees	0.521	0.500	0.429	0.496	0.373	0.484
Firm share over 50 employees	0.030	0.171	0.083	0.277	0.101	0.302
Firm age	7.351	7.105	7.251	6.292	12.225	6.572
Firm share 1–5 years old ('Young')	0.526	0.500	0.483	0.500	0.000	0.000
Firm share 6–10 years old	0.253	0.435	0.333	0.472	0.481	0.501
Firm share over 10 years old	0.221	0.415	0.184	0.388	0.519	0.501
Innovation (New/improved product = 1)	0.216	0.412	0.216	0.412	0.303	0.460
Legal structure (HH firm = 1)	0.256	0.437	0.406	0.492	0.571	0.496
Location (Urban = 1)	1.000	0.000	0.724	0.447	0.631	0.483
Owner education (Years)	9.456	3.251	10.147	3.415	9.510	3.191
Gender (Male = 1)	0.777	0.417	0.774	0.419	0.791	0.407
Spin-off (Previous exp. = 1)	0.313	0.464	0.311	0.464	0.306	0.462
Customer (State as customer = 1)	0.553	0.498	0.332	0.471	0.353	0.479
Initial government assistance (ass.) (Received ass. = 1)	0.392	0.489	0.429	0.496	0.436	0.497
Total observations	403		468		287	

Notes: Revenue measured in VND100,000. One million VND corresponded in 2002 to approximately USD67. In the 1990/1991 survey the available observations for owner education and the state customer variable is 289 and 360, respectively. Similarly in 1995/1996 the numbers are 415 and 446. Moreover, the spin-off variable has only 437 observations in 1995/1996. We only report 2000/2001 summary statistics for surviving firms. In 2000/2001 the available number of observations for the state customer variable and spin-off is 238 and 255, respectively.

revenue increased from VND 104 million to around VND 264 million in 1995/1996 and to VND 289 million in 2000/2001 (in 1994-prices).[14] Similarly, the average number of employees increased from 15.3 in 1990/1991 to 20.6 in 2000/2001. The fraction of micro enterprises (1–9 employees) increased from 1990/1991 to 2000/2001, accompanied by a decrease in the fraction of small enterprises (10–49 employees).

The summary paper by World Bank (2006) lays out the reasoning why the innovative capacity of firms may be a decisive factor for firm survival in Vietnam. Innovative firms are simply better equipped to adapt to changing market and policy conditions. We define a firm as being innovative if it has made significant improvements of existing products or has started production of a new product (new ISIC 4 digit product) during the past two years. In our sample, the share of innovative enterprises increased from 22 per cent in 1990/1991 to 30 per cent in 2000/2001. As the 2000/2001 survey only includes surviving firms, this increase may be driven by incumbent firms having a relatively higher innovative capacity.[15]

The second group of determinants in Table 6 includes a set of firm specific characteristics related to location and legal ownership structure.[16] Most noticeable is

that the share of household enterprises increased from 26 per cent in 1990/1991 to 41 and 57 per cent in 1995/1996 and 2000/2001, respectively. One reason for this development is that legal definitions of enterprise types changed during the survey periods. Some enterprises listed as private, cooperatives or limited liability companies in 1990/91 were classified as household enterprises in 1995/1996 and 2000/2001.

A third group of determinants covers different characteristics of the owner, affecting managerial capacity of the firm. First, enterprises are primarily owned by men, with a share of around 80 per cent in all surveys. Second, the formal education of enterprise owners varies between 0–20 years, with an average of 9–10 years and a median of 10 years in all survey years, confirming the relatively high educational level of Vietnamese entrepreneurs. It is common for employees to leave incumbent firms to establish new firms in the same line of business, a characteristic referred to as spin-offs (Klepper and Thompson, 2005). These firms have been found to perform relatively well in terms of both growth and survival. Accordingly, the third owner characteristic considered here is whether the owner had any experience as a wage-worker in the same line of business prior to establishing a firm. Some 30 per cent of firm owners in our sample had such experience.

Finally, we have the government interaction and government support variables. We consider two indicators capturing (i) if the firm has the state sector or a state owned enterprise as main customer, and (ii) if the firm received any form of government assistance during start-up. Table 6 shows that fewer firms had the state sector as main customer in 1995/1996 and 2000/2001 compared to the early 1990s. This is as expected. The state sector was gradually, albeit slowly, reduced during the 1990s, including the privatisation of SOEs. On the other hand, the share of firms that received assistance during start-up increased from 39 per cent in 1990/1991 to around 44 per cent in 2000/2001, in line with the focus of the Vietnamese government on promoting private sector development.

Regression Results for Survival and Growth

Table 7 presents regression results for both survival and revenue growth. As seen from the bottom part of Table 7, there is empirical support for analysing firm survival and growth separately. The first two columns of Table 7 report results for standard Probit and OLS regressions, whereas columns (3) and (4) give the results of weighted regressions in which we only include confirmed exit firms.[17] The regressions which are not adjusted for unconfirmed exits include 871 enterprises while the attrition-adjusted regressions include 597 firms. In both cases, 428 survivors are left. When including additional controls for human capital and having the state sector as main customer, the sample is reduced to 623 observations (466 in the attrition-adjusted case), with 360 survivors.

Table 7 shows that there is a statistically significant indication of firm size being negatively related to firm growth. This corresponds with the results obtained in most of the theoretical and empirical literature on firm dynamics. Moreover, diminishing returns to size modelled by including size squared is a common finding in growth equations, and this result is well-determined in two of our specifications. In the survival equation, size has the expected positive sign, although the effect is not well determined.

Table 7. Determinants of firm survival and growth

Variable	(1)		(2)		(3)		(4)	
	Probit survival	OLS growth	Probit survival	OLS growth	Probit survival	OLS growth	Probit survival	OLS growth
Firm size (log)	0.106	−0.839***	0.084	−1.120***	0.109	−0.878**	0.110	−1.733***
	(1.52)	(3.13)	(0.91)	(3.58)	(1.30)	(2.54)	(0.97)	(4.31)
Firm size squared	−0.007	0.027	−0.004	0.042**	−0.007	0.033	−0.006	0.081***
	(1.50)	(1.55)	(0.73)	(2.08)	(1.37)	(1.45)	(0.88)	(3.10)
Firm age	−0.093	−0.445	−0.109	−0.344	−0.091	−0.505	−0.158	−0.260
	(1.26)	(1.59)	(1.22)	(1.25)	(0.96)	(1.42)	(1.61)	(0.79)
Firm age squared	0.033	0.098	0.025	0.086	0.028	0.147	0.045	0.105
	(1.56)	(1.34)	(0.99)	(1.21)	(1.06)	(1.54)	(1.64)	(1.20)
Innovation	0.072*	−0.106	0.068	−0.237	0.179***	−0.054	0.144***	−0.202
	(1.65)	(0.72)	(1.33)	(1.39)	(4.10)	(0.33)	(2.94)	(1.02)
Household firm	0.077*	−0.487***	0.002	−0.424**	−0.075	−0.164	−0.106*	−0.163
	(1.72)	(3.27)	(0.05)	(2.53)	(1.45)	(0.90)	(1.90)	(0.85)
Urban	−0.336***	0.276*	−0.276***	0.321	−0.289***	0.223	−0.238***	0.733***
	(5.64)	(1.65)	(4.12)	(1.60)	(5.15)	(1.03)	(4.02)	(3.04)
Initial government assistance	0.006	0.189	−0.006	0.231*	0.014	0.240	−0.000	0.298*
	(0.17)	(1.56)	(0.14)	(1.67)	(0.33)	(1.63)	(0.00)	(1.80)
State customer			0.113**	0.441***			0.061	0.439**
			(2.38)	(2.66)			(1.12)	(2.31)
Owner education			−0.009	0.016			−0.002	0.006
			(1.38)	(0.72)			(0.35)	(0.22)
Gender			−0.002	0.084			0.032	0.143
			(0.03)	(0.49)			(0.62)	(0.80)
Spin-off			0.066	0.287*			0.071	0.237
			(1.44)	(1.99)			(1.50)	(1.41)

(*continued*)

Table 7. (*Continued*)

Variable	(1)		(2)		(3)		(4)	
	Probit survival	OLS growth	Probit survival	OLS growth	Probit survival	OLS growth	Probit survival	OLS growth
Attrition adjusted	No		No		Yes		Yes	
Weights used	No		No		Yes		Yes	
Number of observations	871	428	623	360	597	428	466	360
R-squared	0.10	0.27	0.08	0.29	0.14	0.25	0.16	0.32
Wald test joint significance	113.27		105.41		95.34		101.31	
Wald test ind. equations	0.15		0.04		0.27		0.45	

Notes: Probit results reported as marginal effects. All regressions include sector dummies (2-digit SITC), time dummies and a constant term. *t*-values (reported in parentheses) are heteroscedasticity robust. *, **, *** indicate significance at a 10 per cent, 5 per cent and 1 per cent level, respectively.

Innovative firms have a significantly higher probability of survival. Given that our proxy for innovative capacity reflects the flexibility of firms to respond to market changes, this is not surprising. In a rapidly changing business environment, such as the Vietnamese manufacturing sector during the 1990s, firms able to modify their line of production to accommodate changes in demand and policy interventions could be expected to have a better survival probability.

Looking at firm characteristics, we find location to be significant in determining firm survival. The probability of survival in rural areas is higher than in urban areas. Competition in urban areas is far more pronounced in Vietnam and from the survey, it is clear that enterprises see fierce competition as the largest constraint to enterprise growth. This result is also in line with the observation that there are substantial and widely recognised administrative and structural barriers to entry in rural areas where local governments are protective of existing firms. Moreover, we find that urban firms tend to grow faster than their rural counterparts confirming the findings in Malesky (2004).

Finally, ownership legal structure seems to be an important determinant of firm growth in Vietnam, although not well determined in all specifications. Household enterprises have lower revenue growth rates than larger sole proprietorships, cooperatives and limited liability companies.

Turning to the variable of interest – the effect of receiving government assistance during firm start-up – we find that initial government assistance is clearly insignificant for survival, while there may be a positive impact on revenue growth performance. The latter result is in contrast to Brown et al. (2005) who find that technical assistance from the Romanian government had negligible effects on firm growth. One reason for the difference in results may be that Brown et al. (2005) use information on assistance obtained in each observed period, while we restrict our analysis to focusing on initial direct government support, to avoid self-selection problems. However, although we try to take account of self-selection, we cannot exclude a priori that initial government assistance could act as a proxy for underlying government connection and relationship variables. Therefore, we control for human capital (education), for being well connected (owner gender) and for having the state sector as a customer in columns (2) and (4) of Table 7. When these controls are included, the impact of initial government assistance on growth is positive and fairly well determined in both regressions.

Having the state sector as a customer also has a positive and well-determined effect on firm performance. There are a couple of possible explanations for this result. First, preferential treatment of SOEs was common in Vietnam during the 1990s. This is likely to have spilled over on those private companies that had these SOEs as customers. Second, in Vietnam, it clearly pays to have good connections with the state and foster ties with the government as much as possible.

In sum, there seems to be a positive impact on firm growth of interaction with the government. The most robust impact on growth follows from having the state as customer. Receiving direct assistance also seems to have a positive impact, although it is not well determined in all specifications. Therefore, the paper turns to analyzing, in greater depth, the importance of initial government assistance.

IV. The Impact of Specific Government Programmes

The impact of government assistance is assessed in more detail by looking at the effect of different kinds of support and, further, on the impact on sub-samples determined by size, ownership and location. Given the size of some of the sub-samples, we stress from the outset that our results in the following should not be overstated.

Table 7 reveals that government support had no direct impact on firm survival. Hence, in the detailed impact analysis we focus on the growth equation. In all comparisons, we seek to estimate the average effect of the four main forms of support described in section II (Table 5). In all regressions, the control group consists of the surviving firms that did not receive any kind of government support during start-up. Compared to the results in Table 7, we generalise the regression formulation slightly by formulating a complete switching regression model

$$g = \mu + d\alpha + x\beta + dx\gamma + \varepsilon, \tag{1}$$

where g is the firm growth rate, x are the control variables described in Section 3, d is the dummy variable indicating the specific kind of government assistance and ε is the noise.[18] By using this regression formulation, we ensure that the estimated parameters for the control group, $\hat{\mu}, \hat{\beta}$, are unchanged when we test the impact of the different support programmes. The average effect of government support is estimated by

$$\text{Average impact} = \hat{\alpha} + \bar{x}\hat{\gamma}, \tag{2}$$

where $\bar{x}$ is the sample average of the control variables.

Table 8 reports the estimated average impact for each of the four main types of government support where all results are based on weighted regressions. A robustness check is carried out in Table 9, where significant results corresponding to all four regression specifications in Table 7 are reported.

Looking first at the most widespread support programme ('Help with license application and registration'), we generally find no significant difference in the growth rates between the receivers of this kind of support (144 observations) and the control group (326 observations). However, conditioning on the state relationship variables (column (4) in Table 9), we record a positive effect for both small and medium enterprises and non-household firms. It should be noted that this kind of support may be seen as the government supporting firms in dealing with red tape and the self-selection into treatment may be a particular problem with this specific type of support.

The second largest support programme ('Temporary tax exemption/reduction') shows a similar pattern. In general, we find no significant effects of initial government support in the form of temporary tax exemptions (only significant for non-household establishments). This may not be surprising since the firms considered are fairly experienced and one expects temporary tax exemptions to be most efficient for younger firms (firms aged 1–5 years old). However, the average effect in the group of young firms remains poorly determined. Table 9 shows that the sample split into ownership forms results in a positive and significant effect in three out of the four specifications for non-household enterprises.

Table 8. Effects of government assistance

	Type of support			
	Recommendation on line of business	Help with license application and registration	Direct credit assistance	Temporary tax exemption or reduction
All enterprises (full sample)	0.340	0.120	0.577**	0.196
t-value	(1.34)	(0.75)	(2.14)	(1.37)
Receivers, observations	[35–217]	[144–326]	[38–220]	[105–287]
Micro firms only	0.666***	0.118	0.526	0.089
t-value	(3.32)	(0.49)	(1.56)	(0.45)
Receivers, observations	[8–112]	[50–154]	[6–110]	[50–154]
Small and medium firms only	0.384	0.091	−0.324	0.154
t-value	(1.15)	(0.41)	(0.94)	(0.62)
Receivers, observations	[27–105]	[94–172]	[32–110]	[55–133]
Young firms only	0.936***	−0.125	−0.230	0.296
t-value	(3.59)	(0.57)	(0.65)	(0.84)
Receivers, observations	[19–103]	[77–161]	[24–108]	[60–144]
Incumbent firms only	0.357	0.251	1.218***	0.209
t-value	(0.47)	(1.13)	(5.51)	(0.76)
Receivers, observations	[16–114]	[67–165]	[14–112]	[45–143]
Non household enterprises only	0.542*	0.129	0.173	0.476**
t-value	(1.72)	(0.70)	(0.69)	(2.43)
Receivers, observations	[26–121]	[107–202]	[33–128]	[62–157]
Household firms only	0.344	−0.116	0.626***	−0.127
t-value	(1.12)	(0.49)	(3.07)	(0.54)
Receivers, observations	[9–96]	[37–124]	[5–92]	[43–130]
Urban enterprises only	0.293	0.093	−0.301	0.084
t-value	(0.83)	(0.52)	(0.84)	(0.48)
Receivers, observations	[29–155]	[127–253]	[23–149]	[68–194]
Rural enterprises only	1.344***	−0.114	1.755***	0.188
t-value	(2.83)	(0.29)	(3.34)	(0.72)
Receivers, observations	[6–62]	[17–73]	[15–71]	[37–93]

Notes: Impact estimates corresponding to the specification in Table 5, column 3 (attrition adjusted and weighted). *t*-values (reported in parentheses) are heteroskedasticity robust. *, **, *** indicate significance at a 10 per cent, 5 per cent and 1 per cent level, respectively. The number of support receivers (Receivers) and the total number of observations in each sub-sample is reported in square brackets.

The third and fourth support programmes are smaller in terms of coverage of firms receiving support. For 'Recommendation on line of business', we find an insignificant impact in the full sample while there is a sizable (significant) impact on growth in micro, young and rural enterprises. This result is only partially supported by the robustness check in Table 9. Finally, 'Direct credit assistance' appears to have a positive and significant effect in the full sample. For micro, young as well as

Table 9. Effects of government assistance, robustness

Sub-sample	Type of assistance	Type of support			
		1	2	3	4
All enterprises	Recommendation on line of business				
	Help with license application and registration				
	Direct credit assistance	+		+	
	Temporary tax exemption or reduction				
Micro firms only	Recommendation on line of business	+		+	
	Help with license application and registration				
	Direct credit assistance	+			+
	Temporary tax exemption or reduction				
Small and medium firms only	Recommendation on line of business		+		+
	Help with license application and registration				+
	Direct credit assistance				
	Temporary tax exemption or reduction				
Young firms only	Recommendation on line of business	+		+	+
	Help with license application and registration				
	Direct credit assistance		+		+
	Temporary tax exemption or reduction				
Incumbent firms only	Recommendation on line of business				
	Help with license application and registration				
	Direct credit assistance	+		+	
	Temporary tax exemption or reduction				
Non-household enterprises only	Recommendation on line of business	+		+	
	Help with license application and registration				+
	Direct credit assistance				
	Temporary tax exemption or reduction		+	+	+
Household firms only	Recommendation on line of business	+	+		
	Help with license application and registration				
	Direct credit assistance	+		+	
	Temporary tax exemption or reduction				
Urban enterprises only	Recommendation on line of business				
	Help with license application and registration				
	Direct credit assistance		+		
	Temporary tax exemption or reduction				
Rural enterprises only	Recommendation on line of business	+	+	+	
	Help with license application and registration				
	Direct credit assistance	+	+	+	+
	Temporary tax exemption or reduction				

Notes: Impact estimates corresponding to the four specification in Table 7. The results in column 3 correspond to the results reported in Table 8. + indicate significance at the 10 per cent level of significance.

incumbents and household firms we record significant effects in half of the specifications considered, whereas the impact is positive and significant in all specifications when considering rural firms only.

The overall picture emerging from this impact analysis is that specific types of government support during start-up appear to have a growth impact on well-targeted enterprises, while other types have no impact. In general, we find no significant differences between receivers and non-receivers of 'help with license

applications and registration' and urban enterprises appear to do equally well with and without government support. In contrast, receivers of temporary tax exemption in the group of non-household enterprises have, on average, grown faster compared to their non-receiving counterparts, conditional on other growth determinants. Similarly, rural firms receiving direct credit support seem to benefit significantly.

V. Conclusion

The literature on enterprise growth and survival in developing countries has seen a significant expansion in recent years. Much has been learned, but the implications of government intervention and support for the performance of individual firms remain to be explored. Brown et al. (2005) is one exception, while Fajnzylber et al. (2009) argue that facilitating access to credit and business development services and promoting formalisation, which in our context can be interpreted as government support for firms, are all likely to increase firm growth. Few countries have seen a growth performance comparable to that of Vietnam, and it is widely agreed that firm dynamics are central to this achievement. Vietnam is also one of the developing countries in transition that have experienced extensive government intervention, especially in the business environment. Arguably, insights from the Vietnamese case are of relevance to both academics and policy makers interested in understanding how government support may affect the dynamics of individual firms.

In this paper, we began by analysing the association between the characteristics of Vietnamese small and medium sized enterprises and their growth potential and probability of survival. We made use of a partly overlapping set of survey data conducted in 1992, 1997 and 2002. Using real gross revenue growth rates, we found support for the standard life cycle theories. Smaller firms tend to grow more rapidly than bigger firms do. Moreover, we also find that innovative firms have a significantly higher probability of survival. For other general variables, we find that firm location and ownership form are significant determinants of firm dynamics. In addition to the traditional indicators explaining firm dynamics, we showed that firms having the government as a main customer perform better both in terms of survival and in terms of growth. This result is not entirely surprising given the economic importance of the state in Vietnam; but we also consider this proxy as a measure of underlying preferential relationships/networks between the government and the enterprises. Moreover, the result complements those studies of the effect of state connections for the performance of Chinese township and village enterprises (TVEs), where state involvement was key to firm development in rural China's early transition period (Jin and Qian, 1998).

Our analysis also demonstrated that initial government support to enterprises has been a statistically significant determinant of firm growth, and this is so even when controlling for relations with the state. Taking a closer look at this result, we found that specific types of government support during start-up appear to have a growth impact on well-targeted enterprises. Receivers of temporary tax exemptions in the group of non-household enterprises have grown faster compared to their non-receiving counterparts. Finally, direct credit support seems to have benefited rural firms in particular.

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Notes

1. In 1990, only 100 private enterprises existed and some 850,000 household enterprises were operating. In 2002, this number increased to around 100,000 private official firms and more than 2.4 million household establishments. In 2002, the private sector (private enterprises and household business) accounted for 42 per cent of official GDP, some 3 percentage points more than the state/public sector share of GDP. In terms of job creation, 89 per cent were employed in a private establishment in 2002 (source: official General Statistics Office (GSO) publications available at www.gso.gov.vn; and information from www.sme.com.vn).
2. *Small Business Economics*, no. 18. See Iqbal and Urata (2002) for an overview.
3. See Ronnås (1992) for an early overview and references.
4. Decree No. 90/2001/ND-CP, 23 November 2001, on 'Support for development of small and medium-sized enterprises' provides an overview in which guidelines promulgated from the early 1990s are put together. They include, for example, Resolution No. 16/NQTW on 'Small scale and private sector activities', 15 July 1988; Decree 66 from 1992 on 'Incentives and promotion of enterprise development'; Decree 120 from 1993 on 'Small credit for employment generation' and the 'Strategy for socio-economic stabilization and development up to the year 2000' adopted at the 7th Congress in mid-1991.
5. See the Ministry of Planning and Investment (MPI) business portal for additional information on human resource training programmes (www.business.gov.vn).
6. The surveys were carried out in collaboration between the Vietnamese Institute of Labor Science and Social Affairs (ILSSA) in the Ministry of Labor, Invalids and Social Affairs (MOLISA), on the one hand, and the Stockholm School of Economics and the University of Copenhagen, on the other.
7. The World Bank SME department currently operates with three groups of small and medium-sized enterprises: micro-, small-, and medium-scale firms. Micro-enterprises have up to 10 employees, small-scale enterprises up to 50 employees, and medium-sized enterprises up to 300 employees. These definitions are broadly accepted by the Vietnamese Government (see Government decree no. 90/2001/CP-ND on 'Supporting for development of small and medium enterprises'). In the following, we apply these definitions.
8. While a few state SMEs were surveyed, they have been excluded in the present analysis, which focuses on non-state SMEs, mostly in manufacturing. The distribution of the SMEs in terms of line of production as defined at the 2-digit SITC level is as follows: some 17.3 per cent of the sample are in food processing or combine primary product production with food processing activities; around 5.5 per cent are in the service sector; while the remaining 78.2 per cent are in non-food processing manufacturing. The main non-food processing sectors are (i) plastics in non-primary forms; (ii) paper; (iii) non-metallic mineral products; (iv) iron and steel; (v) machinery specialised for particular industries; (vi) electrical machinery, apparatus and appliances, n.e.s.; (vii) prefabricated buildings; (viii) furniture and parts thereof; and (ix) articles of apparel and clothing accessories.
9. Census data for 1991 is not available. There exists a 1998 Industrial Census, however the total number of non-household private manufacturing covered by the Census seems understated, given that the number of observations in each category in the 1995/1996 survey in several cases exceeds the number documented in the 1998 Census. While we acknowledge that the shift towards private sector productive activity may have changed the proportions of enterprises in the various categories, we base our weighted estimates on the most recent Census information.

10. Additional details on the surveys and sampling procedures can be found in Ronnås and Ramamurthy (2001), Rand et al. (2004).
11. Firm owners were asked if the firm was actually closed down even though still registered as operating. If so, the firm is treated as an exit firm. Moreover, our sample includes well-established non-registered household firms, which registered at a later stage. Therefore we address two of the key problems raised by Freeman et al. (2005).
12. Appendix Table A provides summary statistics based on the exit questionnaire.
13. In a survey of Indonesian medium- and large-scale manufacturing enterprises Behrman and Deolalikar (1989) found that older and larger firms have a higher probability of survival. In a recent special issue of *Small Business Economics*, a collection of papers examined the evolution of SMEs in Japan, Korea, Taiwan, China, Indonesia and Thailand. The general conclusion is that the first group of determinants of firm dynamics holds up in the Asian context. Finally, to our knowledge there is only one prior study on firm dynamics in Vietnam. Using the 1992/1993 and 1997/1998 Vietnamese Household Living Standard Measurement Survey (VLSS), Vijverberg and Haughton (2004) show that non-farm household enterprises have a higher probability of survival the larger and older the enterprise is.
14. Gross revenue is deflated by a regional GDP deflator obtained from the GSO (2001) SNA publication and Kinh te Viet Nam 1955–2000 (GSO, 2000), pp. 296–298. WDI (2004) was used to supplement the Vietnamese sources at the aggregate level.
15. Newman et al. (2007) show that firms that change product line are forced to do so due to lower efficiency levels than other competing incumbents. However, many of these firms have the capability of surviving by changing product line (defined at the very aggregate 2-digit level), as these product switchers are able to carry out production significantly more efficient than entrants in the new sector thereby moving up in the sector-specific efficiency distribution.
16. Location is simply split into a rural and an urban area. The 1990/1991 survey covered only the urban areas of Ho Chi Minh City, Ha Noi and Hai Phong while the two rural provinces, Ha Tay and Long An, were included in 1995/1996.
17. In Appendix Table B, we report results for the attrition adjusted and weighted regressions separately.
18. The generalisation is simply the inclusion of the interaction term between the government assistance dummy and the control variables. Hence, using the notation of Equation (1), the regression results for firm growth in Table 7 are estimated under the restriction $\gamma = 0$.

References

Audretsch, D.B. and Klepper, S. (2000) *Innovation, Evolution of Industry and Economic Growth* (Cheltenham, UK and Northampton, MA: Elgar Reference Collection. International Library of Critical Writings in Economics).

Behrman, J.R. and Deolalikar, A.B. (1989) ... of the fittest? Duration of survival of manufacturing establishments in a developing country. *Journal of Industrial Economics*, 38(2), pp. 215–226.

Brown, J.D., Earle, J.S. and Lup, D. (2005) What makes small firms grow? Finance, human capital, technical assistance, and the business environment in Romania. *Economic Development and Cultural Change*, 54(1), pp. 33–70.

Caves, R.E. (1998) Industrial organization and new findings on the turnover and mobility of firms. *Journal of Economic Literature*, 36(4), pp. 1947–1982.

Central Institute of Economic Management (2003) Developing the socialist-oriented market economy in Vietnam, in: Dinh Van An (ed.) (Ha Noi: The Statistical Publisher).

CIEM. *See* Central Institute of Economic Management.

Ericson, R. and Pakes, A. (1995) Markov-perfect industry dynamics: a framework for empirical work. *Review of Economic Studies*, 62(1), pp. 53–82.

Fajnzylber, P., Maloney, W.F. and Montes-Rojas, G.V. (2009) Releasing constraints to growth or pushing on a string? Policies and performance of Mexican micro-firms. *Journal of Development Studies*, 45(7), pp. 1027–1047.

Frazer, G. (2005) Which firms die? A look at manufacturing firm exit in Ghana. *Economic Development and Cultural Change*, 53(3), pp. 585–617.

Freeman, N., Lan, N.V. and Nam, H.N. (2005) Beyond the headline numbers: business registration and start-up in Vietnam. MPDF Private Sector Discussions No. 20, Ha Noi.

GSO (2000) *Kinh te Viet Nam 1955–2000* (Ha Noi: Statistical Publishing House).
GSO (2001) *Kinh te Viet Nam – The System of National Accounts 1990–2000* (Ha Noi: Statistical Publishing House).
GSO (2004) *Results of Establishment Census of Vietnam 2002* (Ha Noi: Statistical Publishing House).
GSO (2005). *The Real Situation of Enterprises through the Results of Surveys Conducted in 2002, 2003, 2004* (Ha Noi: Statistical Publishing House).
Iqbal, F. and Urata, S. (2002) Small firm dynamics in East Asia: an introductory overview. *Small Business Economics*, 18(1), pp. 1–12.
Jin, H. and Qian, Y. (1998) Public versus private ownership of firms: evidence from rural China. *Quarterly Journal of Economics*, 113(3), pp. 773–808.
Jovanovic, B. (1982) Selection and the evolution of industry. *Econometrica*, 50(3), pp. 649–670.
Klepper, S. and Thompson, P. (2005) Spin-off entry in high-tech industries: motives and consequences. Working Paper 0503, Department of Economics, Florida International University.
Malesky, E. (2004) Entrepreneurs on the periphery: a study of private sector development beyond the high performing cities and provinces in Vietnam. MPDF Private Sector Discussions No. 18, Ha Noi.
Ministry of Planning and Investment (2005) SME development plan 2006–2010 and action plan for its implementation. Mimeo, Ministry of Planning and Investment, Agency for SME Development, Hanoi.
MPI. *See* Ministry of Planning and Investment.
Newman, C., Rand, J. and Tarp, F. (2007) Sector switching: an unexplored dimension of firm dynamics in developing countries. Mimeo, accessed at: www.econ.ku.dk/rand
Rand, J., Tarp, F., Dzung, N.H. and Vinh, D.Q. (2004) Documentation of the small and medium scale enterprise (SME) survey in Vietnam for the year 2002, accessed at: www.econ.ku.dk/rand/images/VNDodumentation02.pdf
Ronnås, P. (1992) Employment generation through private entrepreneurship in Vietnam (Geneva: ILO).
Ronnås, P. and Ramamurthy, B. (2001) *Entrepreneurship in Vietnam: Transformation and Dynamics* (Copenhagen: NIAS Publishing).
Söderbom, M., Teal, F. and Harding, A. (2006) The determinants of survival among African manufaturing firms. *Economic Development and Cultural Change*, 54(3), pp. 533–555.
Sutton, J. (1997) Gibrat's legacy. *Journal of Economic Literature*, 35(1), pp. 40–59.
Tenev, S., Carlier, A., Chaudry, O. and Nguyen, Q.T. (2003) *Informality and the Playing Field in Vietnam's Business Sector* (Washington DC: International Financial Corporation).
Tybout, J.R. (2000) Manufacturing firms in developing countries: how well do they do, and why? *Journal of Economic Literature*, 38(1), pp. 11–44.
van Biesebroeck, J. (2005) Firm size matters: growth and productivity growth in African manufacturing. *Economic Development and Cultural Change*, 53(3), pp. 545–583.
Vijverberg, W.P.M. and Haughton, J. (2004) Household enterprises in Vietnam: survival, growth, and living standards, in: P. Glewwe, N. Agraawal and D. Dollar (eds) *Economic Growth, Poverty, and Household Welfare in Vietnam*, World Bank regional and sectoral studies (Washington DC: World Bank), chap. 4, pp. 95–132.
WDI. *See* World Development Indicators.
World Development Indicators (2004) World Development Indicators CD-Rom 2004 (Washington DC: World Bank).
World Bank (2006) *Vietnam Development Report 2006: Business* (Ha Noi: World Bank).

Appendix Table A. Details on Confirmed Exits

	Exit 1997 (%)	Exit 2002 (%)
Location		
Ha Noi	19.7	13.0
HCMC	27.9	28.8
Hai Phong	52.5	32.4
Ha Tay	0.0	7.9
Long An	0.0	18.0
Reason for closure		
Could not sell at a profit	50.8	62.6
Continued lack of raw material supply	1.6	0.0
Lack of payment from customers	3.3	2.2
Interference from government authorities	0.0	3.6
Personal reasons	19.7	20.1
Other	24.6	11.5
Why no profit		
Too much competition	29.0	34.5
Low product quality	19.4	27.6
Poor distribution/Lack of marketing channels	16.1	18.4
Production costs too high	29.0	16.1
Other	6.5	3.5
Present occupation		
Agriculture	0.0	1.4
Wage employee	8.6	6.5
Self-employed, same line of business	5.2	17.3
Self-employed, different line of business	32.8	30.2
Unemployed	12.1	10.8
Retired	27.6	20.1
Other	13.8	13.7
Household income change		
More than 50 per cent decrease	3.3	13.7
No more than 50 per cent decrease	39.3	31.7
No change	6.6	14.4
No more than 50 per cent increase	23.0	13.7
More than 50 per cent increase	4.9	1.4
Don't know	23.0	25.2
Number of observations	61	139

Appendix Table B. Determinants of Firm Survival and Growth

	(1)		(2)	
	Probit	OLS	Probit	OLS
Variable	Survival	Growth	Survival	Growth
Firm size (log)	0.392	−0.590**	0.046	−0.878**
	(1.64)	(1.96)	(0.59)	(2.54)
Firm size squared	−0.023	0.012	−0.003	0.033
	(1.49)	(1.55)	(0.62)	(1.45)
Firm age	−0.243	−0.537	−0.049	−0.505
	(0.99)	(1.59)	(0.54)	(1.42)
Firm age squared	0.069	0.121	0.026	0.147
	(1.02)	(1.34)	(1.04)	(1.54)
Innovation	0.299**	0.071	0.151***	−0.054
	(2.12)	(0.72)	(3.02)	(0.33)
Household firm	0.098	−0.450	0.041	−0.164
	(0.66)	(3.27)	(0.79)	(0.90)
Urban	−0.917***	−0.211*	−0.475***	0.223
	(4.78)	(1.65)	(6.35)	(1.03)
Initial government ass.	−0.141	−0.230*	−0.019	−0.240
	(1.19)	(1.73)	(0.43)	(1.63)
Attrition adjusted	Yes		No	
Weights used	No		Yes	
Number of obs.	597	428	871	428
R-squared	0.07	0.27	0.17	0.32
Wald test joint significance	106.74		103.97	
Wald test ind. equations	0.00		0.61	

Note: All regressions included sector dummies (2-digit SITC), time dummies and a constant term. *t*-values (reported in parentheses) heteroscedasticity robust. *, **, *** significant at a 10, 5 and 1 per cent level, respectively.