Growth Expectations of Business Owners

Impact of Human Capital, Firm Characteristics and Environmental Transition

Ruta Aidis and Tomasz Mickiewicz

Working Paper No. 50

Ruta Aidis[*]
SSEES, University College London
and University of Amsterdam

Tomasz Mickiewicz[**]
SSEES, University College London

[*] SSEES, University College London, Senate House, Malet St., London WC1E 7HU, U.K.
E-mail: *R.Aidis@ssees.ucl.ac.uk*, Tel. 0 20 7862 8611, Fax : 0 20 7862 8641
[**] SSEES, University College London, Senate House, Malet St., London WC1E 7HU, U.K.
E-mail: *T. Mickiewicz@ssees.ucl.ac.uk*, Tel. 0 20 7862 8606, Fax : 0 20 7862 8641

Growth Expectations of Business Owners
Impact of Human Capital, Firm Characteristics and Environmental Transition

Abstract

This paper presents an empirical study based on a survey of 399 owners of small and medium size companies in Lithuania. Applying bivariate and ordered probit estimators, we investigate why some business owners expect their firms to expand, while others do not. Our main findings provide evidence that SME owner's generic and specific human capital matter. Those with higher education and 'learning by doing' attributes, either through previous job experience or additional entrepreneurial experience, expect their businesses to expand. The expectations of growth are positively related to exporting and non-monotonically to enterprise size. In addition, we analyse the link between the perceptions of constraints to business activities and growth expectations and find that the factors, which are perceived as main business barriers, are not necessary those which are associated with reduced growth expectations. In particular, perceptions of both corruption and of inadequate tax systems seem to affect growth expectations the most.

Keywords: Corruption, Employment, Human Capital, SME, Taxes.

1. Introduction

In this paper, we focus on the factors affecting growth expectations of the small and medium sized enterprise (SME) owners in the transition country context. Our research incorporates literature from a number of different fields including business and management, industrial organisation and economics. In addition, our study takes into account SME development within an institutional context which has been undergoing dramatic systemic change from a command to the market oriented economy. The unfinished nature of this process underpins the relevance of our analysis.

As of 2005, the process of economic transition has been well underway for fifteen years in most countries in Central and Eastern Europe. In May 2004, eight of these countries joined the European Union. Three more are likely to join within the next few years. On the surface, the private sector that has emerged seems similar in terms of size and economic importance as can be found in advanced Western economies. However, a closer look reveals

important differences. Whereas in transition countries most of the large firms in the private sector emerged due to a shift of resources from state to private hands (through privatisation), in advanced western countries, the large firms in the private sector emerged through the growth of privately-owned enterprises (Pissarides, 2004). As the privatisation process does not necessary result in modified organisational routines and capacities and improved performance, the emergence and growth of a small and medium-sized enterprise sector (SME) is of special importance - not only for its wealth and job generation possibilities, but also for the ability to foster innovation, experimentation and adaptation in the new business environment.

We use a data sample based on a survey of 399 SME owners in Lithuania. Lithuania provides a good example of a transition country that has successfully transformed its status from a centrally planned Soviet republic to a fast-growing, sovereign, market-oriented and democratic EU member state.

We are specifically interested in the factors affecting two types of growth expectations: the increase in the number of employees and the increase in the business turnover. The focus on expectations is novel, and emerges mid way between industrial organisation literature, which typically rely on historical data, and management studies, which focus on the entrepreneur's motivations, intentions for the business and perceptions of optimum business size (Bird, 1988; Davidsson, 1991; Kolvereid, 1992; Cooper, 1993; Herron and Robinson, 1993; Cliff, 1998; Wiklund et al., 2003). While not without problems, our method of asking entrepreneurs about their expectations avoid the Scylla of endogeneity (when growth indicators are explained by some contemporary characteristics of firms) and Charybdis of sample selection bias (with studies, where the researchers come back to some companies after a period of time, which typically decimates the sample). Our analysis demonstrates that the innovative approach produces coherent results, consistent with the

existing literature. Specifically, in our analysis, we incorporate a standard set of explanatory variables including human capital measures, firm level attributes, sectoral affiliation and export behaviour. In addition, we include perceptions of the main external barriers present in the business environment of SMEs, which we link to the broader issue of economic transition.

Our study provides the following five contributions: Firstly, by focusing on growth expectations we offer a novel way of tackling the issue of SME growth. The industrial economics literature is typically focused on historical accounting data. In contrast, the literature on organisational psychology and management makes use of growth aspirations (see Wiklund and Shepherd (2003) for a recent application of the planned behaviour theory). Our survey instrument addresses growth expectations in a novel way. Instead of asking respondent's about growth aspirations based on their business's optimal size (Wiklund and Sheperd 2003), we ask the respondent's about their expectations for business growth in terms of both employment and turnover. As evidenced in a study by Mickiewicz and Isachenkova (2004) the distinction between the two though subtle may lead to different results. Typically, when asked about optimal size respondents will be less restrained in their responses then when they are asked the broader termed question on growth expectations. For this reason, growth expectations can be seen as a relatively better indicator of the predicted future expansion of a business.

Secondly, our data is unusually rich in its representation of both micro enterprises and self-employed entrepreneurs. This allows us to compare the effect of firm size on growth expectations for all SME size categories more accurately. In the industrial economics approach, empirical tests are focused on the rejection of a positive link between size and growth (Gibrat's Law). We found similar (and non-linear) effects using our survey instrument of expectations. Our results indicate that while small (middle range) firms expect to grow, both the smallest (i.e. micro firms) and the largest (medium size firms) do not.

Thirdly, we are able to test the effect of the business barriers on growth aspirations. Here we find that both the high level of taxes and corruption are identified as negatively related to growth expectations. In general, there is a difference between the set of barriers perceived by entrepreneurs as most important for the business operations, and those which are associated with lower growth expectations. The discrepancy may be interpreted in the light of the process of institutional change.

Fourthly, the characteristics of the owner's human capital matter. Those with higher education and 'learning by doing' attributes, acquired either through previous job experience or additional entrepreneurial experience, are more likely to expand their businesses.

Fifthly, exporting was found to be the business strategy positively associated with growth expectations.

This paper is organised as follows. Section 2 examines the business environment in Lithuania and places it in the context of economic transition. Section 3 extends the discussion to the theoretical settings and presents some empirical results by other authors. Section 4 describes the survey and resulting sample of entrepreneurs. Section 5 presents the variables used in our estimation model and Section 6 presents our results. Section 7 concludes.

2. The business environment in Lithuania in a comparative perspective

In Lithuania, as in other transition countries, private enterprise mushroomed during the initial transition period in the early 1990's. From 1993 – 1995 there was a steadily increasing trend in the number of enterprises in Lithuania in all size categories of registered businesses. However, the trend was reversed in the mid 1990's.[i] In particular, the period from 1999 – 2000 has seen a significant decrease in registered SMEs. At the beginning of 1999 there were 81,600 registered[ii] SMEs but by the end of 2000 there were only 52,000 registered SMEs (SMEDA[iii] 2004). The pattern is consistent with stylised facts on firms entry, where the

entry rate peaks early in the life of a market (here: following initial liberalisation in 1990-1991), but survival rate of most entrants is low (Geroski 1995). However, other factors influencing this decrease seem to be both internal changes and external economic shocks. Internal changes included increased labour costs (for hiring employees), additional taxation, additional bureaucratic barriers, increased competition from large chain stores (especially for trade related businesses) and low consumer demand. The latter factor may be linked to external shocks, which included both the Russian rouble crisis (August 1998) and an increasingly unfavourable Litas-Euro exchange rate implied by the fixed exchange regime combined with comparative nominal trends in Lithuania and the Euro area at that time[iv]. The Lithuanian Human Development Report (UNDP 1999) noted that the Russian crisis was hardest on small businesses that were involved in trade with Russia. In addition, a simplification of the regulations for de-registering inactive businesses in 2000 resulted in de-registration of many inactive businesses which may have influenced the apparently large decline in private businesses from 1999 to 2000.

2.1 Obstacles to doing business

Data collected jointly by the EBRD and World Bank in 1999 and 2002 rating obstacles to doing business in 26 transition countries highlights a number of key problems as perceived by business owners. The two survey results are presented in Table I below, for a relatively coherent group of eight new EU member states and three likely future members[v].

Central and Eastern European (CEE) countries show visible improvements achieved in most areas, especially for infrastructure. However, regulation remains an exception, with very little progress on average. For the Lithuanian case, business owners seem to be marginally more concerned about the financial barriers than most other transition countries. However, tax issues score highest as business barriers for the Lithuanian business owners, which is

consistent with the results for other transition economies (in fact, the Lithuanian scores are slightly below the mean in this respect). While on average the business owners in CEE find taxes the most difficult area, the opposite is true for infrastructure. One may also note that corruption is a dimension where the standard deviation across this group of countries remains high in both 1999 and 2002. On corruption, Lithuania improved its relative scores between 1999 and 2002, going down from marginally above the cross-country average to being marginally below in the latter year.

INSERT TABLE I ABOUT HERE
----

3. Literature on determinants of SME growth

We now turn to a brief literature review. Drawing on the results of existing studies, we argue that business growth in general and employment growth in particular are key performance indicators for SMEs. In addition, we review the findings in existing studies on the determinants of growth.

3.1 Business performance measures

Even though no consensus regarding the definition of small business performance exists, venture profitability and increase in employees are two ways in which business performance is typically measured (Chandler and Hanks 1993; Robinson 1999; Vesper 1996; Watkins et al. 2003). However, the profitability indicator is problematic in the context of SMEs for three reasons. Firstly, SMEs frequently rely on simplified accounting where the measures of profit are not clear-cut. Secondly, it is typical for many new firms to follow a period of losses or low profitability in the initial phase of their existence. Thirdly, as indicated in section 2 above, underreporting is commonplace. Thus, actual growth and growth expectations may be a better measure of performance. This seems especially true in a

transition country context. As argued by Johnson *et al.* (2000): 'Employment growth is perhaps the most important measure of performance from a welfare perspective. A private sector is successful in a post-communist country only to the extent it manages to create jobs'. (p. 13). Similar conclusions are supported by others. For instance, Klapper *et al.* (2002) stress that the SME sector is the most dynamic part of transition economies. As argued above in section 1, the new firms are more likely to adjust to the new market conditions, contribute to innovation and growth, than the old privatised companies, which may be characterised by organisational inertia and reliance on inadequate routines and capabilities. One may also note, that the importance of employment creation by the SME sector is also crucial in high income economies, as documented by Lopez-Garcia (2002) who confirm the role of SMEs as absorbing employment released from both industry and agriculture, by creating jobs in the service sector. And finally, while we focus on employment, the issue of growth can also be captured by the investment dimension, as in Fries *et al.* (2003).

Growth is typically measured by backward looking accounting and employment data. As the data is typically generated by surveys, there is a serious risk of substantial measurement error if data for several past years is collected. Moreover, in cases of new recent start-ups there is not much past history to rely on, which leads to the sample selection bias. Correspondingly, some studies have indicated that perceptions of performance may be more insightful indicators than objective measures because perceptions draws on the insider knowledge of firm's goals, strategy, structure and processes (Osborn et al. 1980; Watson et al. 2003). There is also an increasing focus on intentions to grow a business and perceptions of optimum business size (Davidsson 1991; Wiklund et al. 2003; Wiklund and Shepherd 2003).[vi] Building on this, we focus on growth expectations of entrepreneurs. Our main research question is to assess if the use of this forward-looking survey instrument produces the results

consistent with studies based on backward-looking employment and accounting measures of growth.

3.2 Determinants of growth

The results of a number of studies indicate that both business and business owner characteristics can influence business growth. Existing studies have shown that human capital as measured by work experience, education and other proxies for skills are not only important characteristics of entrepreneurial capacity (Sexton and Upton 1985) but have a positive influence on both firm survival, growth (Cooper et al. 1994) and entrepreneurial performance (Cooper and Gimeno-Gascon 1992; Chandler and Hanks 1998). Education seems to provide the knowledge base and analytical and problem-solving skills to more effectively deal with the demands of entrepreneurship. Watkins et al. (2003) find a significant and positive relationship between perceived venture growth and higher levels of education and work experience. They also found that younger business owners with fewer employees were significantly more likely to grow their ventures than the sample as a whole. However other studies have indicated that middle aged entrepreneurs are more likely to grow their businesses than other age groups (Burns 2001). Business sector may have an influence on these results with younger entrepreneurs growing their firms faster in IT sectors (Burns 2001). As a result, the relationship between business owner's age and business growth is still not completely understood.

Work experience can further supplement an entrepreneur's education with more practically based skills for venture performance. However perhaps even more importantly, previous entrepreneurial experience i.e. in having started up another private business may increase the likelihood for growth in the current business. This is a result of 'learning by doing' in which the entrepreneur improves their skills and chances for business success by

building up their entrepreneurial experience. The different roles, which are played by the technically related work experience and by the entrepreneurial experience, may be linked to the recent empirical work based on the distinction between the two alternative views of entrepreneurship (Lazear 2004). The first is based on the belief 'that entrepreneurs are technical specialist who base their new companies on innovation' (*Ibid.*, p. 208). If correct, both previous sector-relevant job experience and specialist education may be critical factors determining entrepreneurial success. An alternative view however is that entrepreneurs are 'generalist' or 'jacks of all trade', as their main role is in co-ordinating a range of activities, about which they need some sufficient amount of knowledge. In this case, previous entrepreneurial experience and more broad type of education may be more conducive to entrepreneurial success.[vii]

On a related theme, in a review of literature on the antecedents to business start-up and growth, Storey (1994) found reasonable evidence indicating a negative relationship between being unemployed before starting a business and subsequent business growth. Though unemployed individuals experience a strong push into self-employment, they may not have the skills needed to grow the business and may have lower growth aspirations.

Studies in Western countries have indicated that gender affects business development. More specifically, female businesses tend to be smaller and are less likely to grow than male-owned businesses (Cooper et al. 1994). A study by Cliff (1998) indicates that female business owners tend to have lower growth thresholds for their businesses than men, which can partially explain the tendency for women to have smaller businesses with lower turnovers. However, the same may not necessary hold for the transition economies such as Lithuania, where equal aspirations of women and high female entrepreneurship rates have been the norm (Aidis 2003).

A study by Faggio and Konings (2003) on five transition countries shows a negative relationship between firm size and firm growth indicating that smaller firms are likely to grow faster than larger firms. However, they do not account for possible non-linear effects, and as stressed by the authors, small firms are heavily underrepresented in their sample. Similarly, Becchetti and Trovato (2002) found a negative link between size and growth (and positive with age of business), controlling for a wide range of factors, albeit again their sample contains firms with more then ten employees only. Bartlett (2003) uses a more representative dataset 92-250 employees) for three transition economies and obtains significant negative linear effect of size on growth. On the other hand, the results reported by Fries *et al.* (2003) are both based on a large cross-country sample from transition economies including micro firms and allow for non-linear specifications. The results indicate a positive relationship between growth (as measured by both revenues and assets) and size in the relevant range.[viii] Non-linear effects are also reported by Batra *et al.* (2003), using the WBES survey.[ix]

In addition, firm size seems to be a dimension related to a business's years in operation. If enterprises tend to converge to some optimum size and the process takes time, we should expect the time since establishment to have negative impact on growth. However, for new start-ups longer period in existence may also be a direct indicator of success associated with overall performance. For which reason, the link between the company age and growth may be positive (see Geroski 1995).

Another important determinant of growth relates to the international versus domestic orientation of sales. As confirmed by Beck *et al.* (2002), utilizing a large cross-country survey, for which 80 percent of firms are small and medium sized, exporting is a highly significant factor affecting firm growth. Similar results based on the same sample are reported by Batra *et al.* (2003). In addition, Becchetti and Trovato (2002), found a positive, albeit marginally insignificant effect of exporting on growth for their sample of Italian firms.

Four studies, which focus directly on the link between business barriers and growth, are Johnson *et al.* (2000), Bartlett (2003), Beck *et al.* (2002) and Batra *et al.* (2003). The latter two are both based on the WBES survey conducted by World Bank in 80 countries between mid 1998 and 2000. The findings of the studies vary, and they are not fully compatible, as the survey instruments are different and the size distribution of firms in the samples differ. The first study (Johnson *et al.* 2000) does not cover firms with less than ten employees. Perception of barriers is captured by assessment of the extent of 'extralegal payments' in the business sector in which the company operates, and by assessment of the credibility of courts in enforcing contracts. On both measures, no significant effects on firm growth was found (Johnson *et al.* 2000). Other studies rely on a more extensive range of indicators. Bartlett (2003) found country specific effects (for three South East European economies), with the magnitude and type of financial constraints varying between different countries. Beck *et al.* (2002) utilise a sample with large cross-country variation. They consider three dimensions: quality of financing, quality of the legal system, and corruption, all three are based on 7-11 detailed questions with answers based on a 6 point Likert scale. If a single dimension is included in the specification separately, all three turn out to have highly significant negative effect on firm growth. The effect of corruption becomes insignificant, when the three are included jointly, possibly due to multicollinearity. Similarly, using the same sample but different specifications, Batra *et al.* (2003) find that financing, high taxes and corruption are significantly and negatively associated with business sales growth.

In addition to the factors discussed above, we introduce two further attributes into our model: business type and location. The distinction between business type such as incorporated firms and private partnerships and sole proprietorships (the latter two treated as one category) is based on our intuition that incorporation of company may be associated with growth orientation, as this legal form is more convenient for larger firms. Capital city location

is included in order to control for the effects of rapid economic growth concentrated in the capital city as compared to the rest of the country. This specific capital city development as compared to underdeveloped smaller cities characterizes many transition countries.

Figure 1 summarises the determinants of SME growth as found in the literature and according to our predictions. The relevant factors are grouped as owner attributes, firm level attributes and business environment characteristics.

INSERT FIGURE 1 ABOUT HERE
----

4. Survey and sample characteristics[x]

Our analysis is based on data collected by one of the authors in Lithuania. From September - December 2000, Lithuanian language questionnaires were sent out to private business owners throughout Lithuania. Due to the inability to obtain accurate lists of operating private businesses in Lithuania[xi], the survey was not based on a random sample and most addresses were obtained through the membership lists of various entrepreneurship organizations[xii]. This may have resulted in a bias for businesses that are older and have higher turnovers than the average private business in Lithuania. The response rate was high, at fifty percent. Of the 505 respondents, 399 were business owners, our empirical equivalent of entrepreneurship[xiii].

Table II compares distribution of firms in our sample with that reported by the Lithuanian Department of Statistics (LDS). While the smallest companies are still underrepresented in our sample, we may note the bias is still smaller than in many other studies, where it is not unusual to exclude all firms below ten employees or similar size.

INSERT TABLE II ABOUT HERE

4.1 Growth

Our analysis of growth expectations is based on responses to the following question from the survey:

In the next five years, do you think that your business will:
(please mark all relevant responses):
(a) increase the number of employees
(b) increase turnover
(c) decrease the number of employees
(d) decrease turnover
(e) stay the same
(f) I don't know

The question is asked in a depersonalised, objective mode, i.e. about expectations, not intentions or strategies of the owner, to decrease the possible bias. The respondents would typically assume that growth is something positive and might be inclined to present themselves in a better light, if asked about their intentions. The wording applied here suggests that it is not only the entrepreneur, who is responsible for the enterprise development.

The analysis was greatly facilitated by the fact that all respondents who declared expected increase in employment, also declared expected increase in turnover, but not vice versa. These results lead to the following ranking, presented in Table III.

INSERT TABLE III ABOUT HERE

As the number of responses in the lowest category (1) is relatively small, combining it with the one above (2) may be reasonable, as illustrated by an alternative categorisation (b), above. We estimated alternative models, using both specifications (see below). In addition, to check for robustness, we used alternative models where all 'don't know' answers are treated as missing values.

We applied the ordinal probit estimator, where, for a sequence of cut points: $k_0, ..., k_i$ $, ..., k_n$ (with k_0 corresponding to $-\infty$ and k_n to $+\infty$), the probability of observing an outcome i is given by:

$$P(outcome = i) = P(k_{i-1} < X\gamma + u < k_i) = \Phi(k_i - X\gamma) - \Phi(k_{i-1} - X\gamma) \qquad (1)$$

where $X\gamma$ is a matrix of explanatory variables with a corresponding (column) vector of coefficients and $\Phi(.)$ refers to the standard normal cumulative distribution function.

In addition to this model, we also applied a simpler binary probit model, with the dependent variable distinguishing between the entrepreneurs predicting employment growth and all other outcomes:

$$P(outcome = 1) = \Phi(X\gamma) = \int_{-\infty}^{X\gamma} \phi(t)dt \qquad (2)$$

5. Variables defined

In deriving the set of explanatory variables, we draw from the literature discussed in section 3. Of specific interest is the link between perceptions of business barriers and growth expectations. The difference in explanatory power of barriers may not correspond to their direct ranking. To give an example, demand and financial constraints, typical for hard-budget market economy are commonly perceived as a major nuisance, as confirmed by the survey results. Yet it does not imply these have the most impeding impact on growth. Assessment of the importance of given obstacles may indicate problems in everyday business, which the entrepreneurs may nevertheless be able to overcome. Quite a different set of factors may influence the probability of business expansion.

The questionnaire instrument related to perception of barriers had two parts. In the first part, the respondents were asked to assess the importance of nineteen business barriers,

each separately. In the second part, the task was to identify the three most important barriers. The problem with the separate assessment of barriers is that it is based on 5 point Likert scale and the respondent is unable to differentiate between the most serious barriers, which are all given the highest scores. In this respect, the second question (enumerating the three most important barriers) has an advantage and this is the one we used for the subsequent analysis. For all of the barriers included in the questionnaire, Figure 2 below illustrates the frequency of responses identifying a given barrier as one of the three most important ones.

FIGURE 2 ABOUT HERE

Our estimation strategy was to include dummy variables for seven barriers, which were most frequently identified. However, there is multicollinearity between the tax dimensions, which makes the coefficients sensitive to small changes in specification and data, i.e. not robust and problematic to rely on. There is no single straightforward solution to this problem. Our response was to restrict ourselves to one instead of three tax indicators, namely 'taxes are too high' and exclude 'frequent changes to tax policies' and 'ambiguity of taxes'. However, interpreting the results, one should bear in mind that the retained tax indicator should not be narrowly related to the level of taxes, but interpreted as a proxy for a broader cluster of problems with tax system.

In addition, we are interested in examining if human capital variables such as sector-relevant job experience, entrepreneurial experience, education, age, starting from employment or non-employment, and gender are related to growth intentions. In particular, the first one (sector-specific experience) may be perceived as a proxy for the 'specialist' human capital. Entrepreneurial experience, education and age may all proxy for 'generalist' human capital, as defined by Lazear (2004).

We also include firm level variables Firstly, we have size, as measured by employment. To account for non-linear effects, we also introduce quadratic term. Second we have 'years in operation'. However, 18 out of 399 companies were created before 1990 (year when Lithuania regained its independence and market reforms were introduced). For those observations, we truncated the time in operation treating them as if established in 1990. Our motivation was that experience under market economy is far more relevant predictor for performance. Next we have several variables discussed in Section 3, such as export orientation, location, an indicator for incorporation, and sectoral affiliation in our estimations. Export orientation provides us with a proxy for the influence of internationalized business operations on business growth. Capital city location is included since rapid economic growth tends to be overly concentrated in the capital city as compared to the rest of the country in the transition context. Incorporation indicator distinguishes between the sole proprietorships and partnerships (159 companies), and all other (240 companies: 228 incorporated and 12 other legal forms including co-operatives). Finally controlling for sector effects is a standard for these types of estimations. Appendix 1 provides a detailed description of the variables used in our estimation models.

The results of six specifications are reported below. Our dependent variable relates to expected growth categorised into four ranks, as described above, where the highest rank is the expected positive growth of both employment and turnover. In the first specification, we use a dependent variable with four categories and include indicators for human capital, exporting, location, employment size, incorporation indicator, sectoral controls and perceptions of barriers, as described above. In the specification two, we use three categories of expected growth (instead of four) as the dependent variable and in the third specification we compress the dimensions further, by using expected employment growth as a binary variable, to see if

the results are robust to the modification. Finally, specifications four to six replicate the three previous ones but this time the 'don't know' responses are treated as missing values.

6. Estimation results

All the estimation results are presented in Tables IV and V. Age and gender are not significant as predictors of growth expectations. While insignificant, the sign of the gender coefficient is positive is all specifications, indicating that the impact of gender may be very different from that observed in high income countries; if anything women entrepreneurs have higher growth aspirations than their male counterparts in a transition setting. Non-employment prior to starting a business also has the expected negative sign. It is significant in the second set of specifications (equations 4-6) and marginally insignificant in the first set (1-3).

The other human capital measures are either significant or marginally insignificant depending on the specification. In particular, we found no evidence that the 'specialist' experience is more relevant than 'generalist' or vice versa. Both seem to matter, as documented by coefficients on experience in the same sector of activity, on entrepreneurial experience and on higher education indicator. Thus 'learning by doing' through previous job experience and entrepreneurial experience do have a positive effect. We found a clear general positive effect of higher education.

On the firm level, we can see a clear positive effect of exporting. While the result is consistent with literature, in our case it should be treated with caution, as export levels in the two years preceding the survey were depressed (see Section 2 above), therefore association between exporting and expected growth may indicate the adjustment to previous level, not some longer-term superior performance of the exporting companies. The impact of business being located in the capital city is positive (as expected) albeit insignificant. Years in business

(under market economy) has positive effect on expected growth, but the result is mostly insignificant apart from one specification. Incorporation is also positively associated with growth expectations, albeit the coefficients are insignificant. Sectoral affiliation is mostly insignificant, apart from some negative effect on growth expectations of 'services activities other than trade'.

As the coefficient indicates, size effects are clearly important and non-linear. Estimated coefficients may be used to calculate the turning points. For specifications 1-3, the most significant result (specification 3) indicates that for companies below the size of 74 employees, growth expectations increase with size, above the size of 74 employees, growth expectations decline with size. For specifications 4-6, specification 6 (most significant in this group) indicates the turning point at 64 employees. We may reasonably expect the mean turning point based on our specifications to be around 70 employees. Beyond that size, growth expectations start to decline. Thus, small - medium size companies expect to grow, while the micro companies and self-employed express little interest in developing their business. On the other hand, the owners of the largest companies do not expect to grow either.[xiv] Here, our results may also be interpreted as providing support for the arguments presented by Earle and Sakova (2001) theorizing that in transition countries, own account workers (business without employees) a more likely a form of hidden unemployment than a form of entrepreneurship. This is clearly a point of concern for policy makers. Furthermore, when employment is replaced by turnover as a size measure (not reported), the most robust result is that the entrepreneurs that express an interest to grow are those whose annual turnover is about 300,000 Euro or more (two highest categories in terms of revenue, between which there is little difference in coefficients in all specifications). Thus, the micro enterprises and self-employed again seem to be stagnant.

Taxes and corruption have a negative effect on growth expectations throughout. The result is consistent with the literature discussed above. In the case of corruption it also indicates that this barrier, while not named as very important by the majority of entrepreneurs (see Figure 3), has a detrimental effect on growth where encountered. Interestingly, neither access to finance nor demand barriers (as proxied by low purchasing power and delays in payments by clients) seem to significantly matter for growth. Demand and finance may represent standard constraints under market economy. While troublesome for entrepreneurs, they may be overcome by appropriate business strategies (increasing credibility for the external providers of finance and addressing the demand better), and are not perceived as serious obstacles to growth.

In general, our result demonstrate that use of our survey instrument (growth expectations) instead of recorded historical growth data as dependent variable produces results, which are consistent with literature and provide additional insights as to the relationship between growth 'expectations' and business attributes, business owner attributes and the business environment.

INSERT TABLES IV and V AROUND HERE
----

7. Conclusions

Our study focused on factors affecting the growth expectations of new firms owners. Following recent trends in the literature, we use business owner perceptions, and focus on expectations of future growth as a methodologically attractive way of measuring growth potential for SMEs. We experiment with alternative variables based on this measure and found the results robust.

In particular, we discover that growth expectations differ according to firm size, with small and medium size enterprises expecting growth and both (i) micro firms and self-

employed and (ii) largest medium size firms being more stagnant. Arguably, we are able to calibrate these effects better, due to a broad coverage of size dimension by our sample. Analysis of the results in the available literature shows that the link between size and growth is sensitive to sample coverage.

We also analyse the link between the perceptions of barriers by business owners and their growth expectations. Both taxation and corruption were found to be significant barriers to the growth aspirations of SMEs in our sample while finance and demand were not found to be significant.

An interesting but not entirely surprising result was the significant influence of private business experience on intention to grow in the current business. This effect may be more important in the transition context than in advanced western countries since 'entrepreneurial' skills were never taught (directly or indirectly) in the centrally planned system. Our results seem to indicate that 'learning by doing' has proved to be an important form of human capital in the transition context.

Finally, we are able to confirm two further results, consistent with the literature. Firstly, export orientation is an important factor facilitating growth of small firms (a caveat: this result may be sensitive to the timing of our survey). Secondly, human capital matters: higher education of entrepreneurs is correlated with higher growth expectations. Further research in this area would be useful in order to model the interactions between the characteristics of entrepreneurs, perceptions of barriers and growth expectations in more detail.

Our study also provides some insights for business growth in the transition country context. Though our data is from Lithuania, EBRD indicators show that Lithuania scores in an average way as compared to other transition countries in Central and Eastern Europe and in that respect can be seen as a typical transition country example. Our results indicate that even

as formal institutions are established, informal practices such as corruption continue to form major obstacles to private business development and growth. The policy implications of these results support the development of strategies to reduce the possibility for corruption to occur so as through depersonalized contact with governmental officials. Though it can be argued that successful entrepreneurs have developed strategies that minimize the detrimental effects of negative informal institutional influences through for example networking (Ledeneva 1998), one must consider that these adaptations come at a cost. In the short term they reduce with business efficiency and interfere with economically effective entrepreneurial development. In the longer term, a 'lock in' effect can be created wherein influential business leaders as well as government officials have a stake in perpetuating the existing structures leading ineffectual formal institution building as well as reducing the possibilities for new entrepreneurial initiatives to emerge.

The main limitation of our study was the lack of follow up data comparing growth expectations to actual growth. Further research in this area could provide additional insights into the relationship between business barriers and business growth by incorporating a follow up survey measuring actual growth.

References

Aidis, R. (2003). *By law and by custom: Factors affecting small- and medium-sized enterprises during the transition in Lithuania*. Amsterdam: Thela Thesis.

Aidis, R. and Mickiewicz, T. (2004). 'Which entrepreneurs expect to expand their businesses? Evidence from survey data in Lithuania'. *William Davidson Institute Working Paper* 723. University of Michigan Business School.

Bartlett, W. (2003). 'Barriers to SME Development in Bosnia and Herzegovina, Macedonia and Slovenia: A Comparative Analysis' in Franievic, V. and Kimura, H. (eds.). *Globalisation, Democratisation and Development.* Zagreb: Masmedia. 363-376.

Batra, G., Kaufmann, D. and Stone, A. (2003). *Investment Climate Around the World: Voices of the Firms from the World Business Environment Survey*. Washington DC: The World Bank.

Becchetti, L. and Trovato, G. (2002). 'The Determinants of Growth for Small and Medium Sized Firms. The Role and Availability of External Finance'. *Small Business Economics*, **19**, 291-306.

Beck, T., Demirgűc-Kunt, A., and Maksimovic, V. (2002). 'Financial and Legal Constraints to Firm Growth. Does Size Matter?' Washington DC: The World Bank. *mimeo.*

Bird, B. and Jelinek. M. (1988). 'The operation of entrepreneurial intentions'. *Entrepreneurship Theory and Practice*, **13**, 21–29.

Burns, P. (2001). *Entrepreneurship and Small Business*. London: Palgrave Macmillan.

Chandler, G. and Hanks, S. (1993). 'Measuring the performance of emerging businesses: A validation study'. *Journal of Business Venturing*, **8**, 391–408.

Chandler, G. and Hanks, S. (1998). 'An examination of the substitutability of founders' human and financial capital in emerging business ventures', *Journal of Business Venturing*, **13**, 353–369.

Cliff, J. (1998). 'Does one size fit all? Exploring the relationship between attitudes towards growth, gender and business size'. *Journal of Business Venturing*, **13**, 523–542.

Colombo, M., Delmastro, M. and Grilli, L. (2004). 'Entrepreneurs' human capital and the start up size of new technology-based firms'. *International Journal of Industrial Organisation*, **22**, 1183-1211.

Cooper, A. and Gimeno-Gascon, F. (1992). 'Entrepreneurs, processes of founding and new firm performance' in Sexton, D. and Kasarda, J. (eds) *The state of the art of Entrepreneurship*, Boston, MA : PWS-Kent, 301–340.

Cooper, A. (1993). 'Challenges in predicting new firm performance'. *Journal of Business Venturing*, **8**, 241 - 253.

Cooper, A., Gimeno-Gascon, J. and Woo, C.Y. (1994). 'Initial human and financial capital as predictors of new venture performance', *Journal of Business Venturing*, **9**, 371-395.

Davidsson, P. (1991). 'Continued Entrepreneurship: Ability, need and opportunity as determinants of small firm growth'. *Journal of Business Venturing*, **6**, 405–429.

Earle, J. and Sakova, Z. (2000). 'Business start-ups or disguised unemployment? Evidence on the character of self-employment from transition economies'. *Labour Economics*, **7**, 575–601.

European Bank for Reconstruction and Development. (2002). *Transition Report: Agriculture and Rural Transition*. London: EBRD.

European Bank for Reconstruction and Development. (2003). *Transition Report: Integration and Regional Cooperation*. London: EBRD.

Faggio, G. and Konings, J. (2003). 'Job creation, job destruction and employment growth in transition countries in the 90s', *Economic Systems*, **27**, 129 – 154.

Fries, S., Lysenko, T. and Polanec, S. (2003). 'The 2002 Business Environment and Enterprise Performance Survey: Results from a Survey of 6,100 Firms'. *EBRD Working Paper*, 84.

Geroski, P. (1995). 'What Do We Know About Entry?'. *International Journal of Industrial Organisation*, **13**, 421-440.

Herron, L. and Robinson, R. (1993). 'A structural model of the effects of entrepreneurial characteristics on venture performance'. *Journal of Business Venturing*, **8,** 281–294.

Isachenkova, N. and Mickiewicz, T. (2004). 'Ownership Characteristics and Access to Finance: Evidence from a Survey of Large Privatised Companies in Hungary and Poland', *William Davidson Institute Working Paper*, 666. University of Michigan Business School.

Johnson, S., McMillan, J. and Woodruff, C. (2000), 'Entrepreneurs and the ordering of institutional reform. Poland, Slovakia, Romania, Russia and Ukraine compared', *Economics of Transition*, **8**, 1-36.

Klapper, L., V. Sarria-Allende and V. Sulla. (2002). 'Small and Medium-Size Enterprise Financing in Eastern Europe'. *World Bank Research Policy Working Paper*, 2933.

Kolvereid, L. (1992). 'Growth Aspirations among Norwegian entrepreneurs'. *Journal of Business Venturing*, **7**, 209-222.

Kontovorich, V. (1999). 'Has new business creation in Russia come to a halt?'. *Journal of Business Venturing*, **14**, 451-60.

Lazear, E. (2004). 'Balanced Skills and Entrepreneurship'. *American Economic Review*, **94**, 208-211.

Ledeneva, A. (1998). *Russia's economy of favours: Blat, networking and informal exchange*. Cambridge: Cambridge University Press.

Lithuanian Department of Statistics. (1997). *Neapskaitoma Ekonomika: Sampratos, Tyrimai, Problemos*. Vilnius.

Lithuanian Department of Statistics. (2001). *Statistical Yearbook of Lithuania 2000*. Vilnius.

Lithuanian Development Agency for Small and Medium-sized Enterprises. (2004). *Survey of Lithuanian SMEs*, Vilnius: SMEDA, http://www.svv.lt.

Lopez-Garcia, P. (2002). 'Labour market performance and start-up costs: OECD evidence'. *Centre for Economic Performance Discussion Paper*, 565.

Pissarides, F. (2004). 'Financial structures and private sector development in the new Europe' in Masciandoro, D. (ed). *Financial Intermediation in the New Europe: Banks, Markets and Regulation in the Accession Countries*, Northhampton, MA: Edward Elgar. Chapter 3. Forthcoming.

Robinson, K. (1999). 'An examination of the influence of industry structure on eight alternative measures of new venture performance for high potential independent new ventures', *Journal of Business Venturing*, **14**, 165–187.

Sexton, D. and Upton, N. (1985). 'The entrepreneur: A capable executive and more', *Journal*

of Business Venturing, **1**, 129–140.

Storey, D. (1994). *Understanding the Small Business Sector*. London: International Thomson

Business Press.

Vesper, K. (1996). *New Venture Experience*, Seattle WA: Vector Books.

Watson, W., Stewart Jr., W. and BarNir, A. (2003). 'The effects of human capital,

organizational demography and interpersonal processes on venture partner perceptions of

firm profit and growth', *Journal of Business Venturing*, **18**, 145–164.

Wiklund, J and Shepherd, D. (2003). 'Aspiring form and achieving growth: the moderating role of

resources and opportunities', *Journal of Management Studies*, **40**, 1919-1941.

Wiklund, J., Davidsson, P. and Delmar, F. (2003). 'What do they think and feel about growth?

An expectancy-value approach to small business manager's attitudes toward growth',

Entrepreneurship, Theory and Practice, Spring 2003, 247–270.

World Bank. (1998). *Lithuania: An Opportunity for Economic Success*. Washington DC.

United National Development Program. (2000). *Lithuanian Human Development*

Report. Vilnius, Lithuania: UNDP.

Appendix 1: Variables defined

Independent Variables	Characteristic	N	Mean	SD
Human capital				
Higher education	One if the respondent has a university education, zero otherwise.	393	0.72	0.45
Job experience in same sector	One if the respondent has previous employment experience in the sector where they started their own business, zero otherwise.	389	0.48	0.50
Experience with other business	One if the respondent had started a private business besides their current business, zero otherwise.	395	0.02	0.14
Unemployed prior to starting	One if the respondent had not been in employment prior to starting their private business, zero otherwise.	395	0.73	0.26
Business owner's age	Continuous variable measuring business owner age.	390	42.76	8.77
Age squared	Age variable squared	390	1905.2	787.9
Female	One if the respondent is female, zero otherwise.	396	0.25	0.43
Firm level attributes				
Exporting	One if the business is exporting, zero otherwise.	396	0.48	0.50
Location: Vilnius	One if the business is located in Vilnius, zero otherwise.	394	0.26	0.44
Incorporated	One if the business is incorporated, a co-operative or other legal form different than sole proprietorship and partnership	399	0.60	0.49
Employment	Number of paid employees at time of the survey	399	28	43.7
Employment squared	Employment variable squared	399	2687	9646
Years of market experience	Age of company since establishment (with starting dates for 18 companies established before 1990 set as 1990)	393	6.2	2.7
Barriers				
Taxes	One if 'taxes are too high' is considered one of the tree most important business barrier, zero otherwise.	368	0.63	0.48
Corruption	One if 'corruption at the national level' is considered one of the three most important business barrier, zero otherwise.	368	0.16	0.37
Low purchasing power	One if 'low purchasing power of customers' is considered one of the three most important business barrier, zero otherwise.	368	0.40	0.49
Lack of funds	One if 'lack of funds for investment' is considered one of the three most important business barrier, zero otherwise.	368	0.30	0.46
Late payments	One if 'late payments by clients' is considered one of the three most important business barrier, zero otherwise.	368	0.18	0.39
Sectors (benchmark category: manufacturing)				
Construction	One if the business is engaged in construction, zero otherwise.	396	0.04	0.19
Retail trade	One if the business is engaged in retail trade, zero otherwise.	396	0.25	0.43
Wholesale trade	One if the business is engaged in wholesale trade, zero otherwise.	396	0.15	0.36
Busin. services.	One if the business is engaged in business services, zero otherwise.	396	0.14	0.35
Other services	One if the business is engaged in other service activities besides business services, zero otherwise.	396	0.17	0.38
Dependent Variables	**Characteristic**	**N**	**Mean**	**SD**
Growth expectations (using four ranks)	Ordinal variable indicating the respondent's growth aspirations in the next five years. Four categories: (1) decrease turnover or employment; (2) the same or don't know; (3) increase turnover, but not employment; (4) increase employment and turnover.	393	3.08	0.98
Growth expectations (using three ranks)	Ordinal variable indicating the respondent's growth aspirations in the next five years. Modified to three categories: (1) the same or don't know or decrease turnover or employment; (2) increase turnover, but not employment; (3) increase employment and turnover.	393	2.81	1.32
Growth expectations (positive employment growth as binary outcome)	One if the respondent plans to increase employment in the next five years, zero otherwise.	399	0.46	0.50

N = total number of observations; SD = standard deviation.

Table I: Average rating of obstacles to doing business in 1999 and 2002: New EU member states plus three likely future members.

year	Financial		Infra-structure		Tax issues		Regulation		Judicial		Crime		Corruption	
	'99	'02	'99	'02	'99	'02	'99	'02	'99	'02	'99	'02	'99	'02
Bulgaria	2.9	2.9	2.3	1.2	3.0	2.4	2.2	1.7	2.3	2.0	2.7	2.1	3.1	2.2
Croatia	3.1	2.5	1.9	0.9	3.3	2.2	1.4	1.7	2.5	2.4	2.1	1.5	2.8	2.0
Czech R.	2.4	2.5	2.5	1.0	3.3	2.4	1.8	1.7	2.2	1.7	1.9	1.7	2.2	1.6
Estonia	2.4	2.1	1.6	1.4	2.7	2.0	1.1	1.8	1.8	1.7	1.6	1.7	1.7	1.6
Hungary	3.0	2.4	1.6	0.9	3.1	2.4	2.4	1.6	2.0	1.3	2.1	1.3	2.5	1.6
Latvia	2.6	2.0	2.1	1.7	3.2	3.0	1.8	2.1	2.4	2.0	2.1	1.8	2.6	2.2
Lithuania	**2.5**	**1.9**	**1.8**	**1.6**	**3.3**	**2.8**	**1.6**	**1.7**	**2.3**	**2.3**	**2.2**	**1.9**	**2.3**	**2.1**
Poland	3.0	3.0	1.7	0.7	3.2	2.9	2.3	2.0	2.4	1.9	2.5	1.9	2.7	1.9
Romania	3.0	2.7	2.5	1.6	3.3	3.0	1.4	2.0	2.3	2.5	2.0	1.9	2.2	2.7
Slovak R.	3.3	2.6	1.9	1.0	2.9	2.3	1.9	1.9	2.2	2.2	2.5	1.8	2.8	2.1
Slovenia	2.9	2.1	1.8	0.7	2.9	1.7	2.2	1.4	2.4	1.6	1.8	1.1	2.2	1.3
Mean	*2.8*	*2.4*	*2.0*	*1.2*	*3.1*	*2.5*	*1.8*	*1.8*	*2.3*	*2.0*	*2.1*	*1.7*	*2.5*	*1.9*
St.dev.	*0.3*	*0.4*	*0.3*	*0.4*	*0.2*	*0.4*	*0.4*	*0.2*	*0.2*	*0.4*	*0.3*	*0.3*	*0.4*	*0.4*
Mean'02-Mean'99		*-0.4*		*-0.8*		*-0.6*		*0.0*		*-0.3*		*-0.4*		*-0.5*
Lith.indic. – mean	*0.3*	*0.5*	*0.2*	*-0.4*	*-0.2*	*-0.3*	*0.2*	*0.1*	*0.0*	*-0.3*	*-0.1*	*-0.2*	*0.2*	*-0.2*

Scale: 1 = no obstacle to 4 = major obstacle.
Source: Adapted from Pissarides (2004) based on EBRD data with additional computations in the last four rows.

Table II: Enterprise type as percentage of total private enterprises in Lithuania

Enterprise type (number of employees)	LDS 2000	Our Survey 2000
Self-employed (0)	79.4[a]	11.0
Micro (1 – 9)		34.0
Small (10 – 49)	16.2	38.3
Medium (50 – 250)	3.8	16.0
Large (250+)	0.5	0.8[b]

[a] combined percentage for self-employed and micro-enterprises; [b] This represents three observations, which were subsequently not used in estimations.

Table III: Categorization of answers for the question on growth expectations

a. variable 'future' (four categories)	frequency of answers:	b. variable 'future_3c' (three categories)	frequency of answers:
(4) increase employment and turnover	182		
(3) increase turnover, but not employment	83	(3) increase employment and turnover	182
(2) the same or don't know	106	(2) increase turnover, but not employment	83
(1) decrease turnover or employment	22	(1) the same or don't know & decrease turnover or employment	128
(missing)	6	(missing)	6
Total	399	Total	399

Table IV: Estimation Results

	(1)	(2)	(3)
Dependent variable	growth expectations (ordered using four ranks)	growth expectations (ordered using three ranks)	growth expectations (positive employment growth as binary outcome)
Independent variables:			
Human capital:			
higher education	0.37* (0.15)	0.35* (0.16)	0.27 (0.18)
job experience in same sector	0.28* (0.14)	0.34* (0.14)	0.37* (0.16)
entrepreneurial experience	0.31* (0.13)	0.36* (0.14)	0.24 (0.16)
not in employment prior to starting	-0.34 (0.26)	-0.27 (0.28)	-0.45 (0.32)
business owner's age	-0.07 (0.06)	-0.08 (0.07)	-0.09 (0.07)
age squared	0.0007 (0.0007)	0.0009 (0.0007)	-0.0009 (0.0008)
female	0.20 (0.16)	0.26 (0.17)	0.25 (0.19)
Firm level attributes:			
company is exporting	0.34* (0.14)	0.33* (0.15)	0.22 (0.16)
location: Vilnius	0.16 (0.15)	0.21 (0.16)	0.06 (0.17)
incorporated company	0.18 (0.15)	0.17 (0.16)	0.20 (0.18)
years in business after 1990	0.04 (0.03)	0.04 (0.03)	0.05 (0.03)
employment size	0.01* (0.00)	0.01** (0.00)	0.02** (0.01)
employment size squared	-0.00007** (0.00)	-0.00008** (.00)	-0.00010*** (0.00)
Barriers			
taxes	-0.23† (0.14)	-0.26† (0.15)	-0.29† (0.16)
corruption	-0.35* (0.17)	-0.27 (0.19)	-0.20 (0.21)
low purchasing power of customers	-0.04 (0.14)	-0.03 (0.14)	-0.03 (0.16)
lack of funds for investment	-0.08 (0.15)	-0.09 (0.15)	-0.10 (0.17)
late payments by clients	-0.04 (0.18)	-0.07 (0.18)	0.00 (0.20)
Sectors (reference category: manufacturing)			
construction	-0.13 (0.36)	-0.13 (0.38)	-0.05 (0.40)
retail trade	0.00 (0.19)	0.05 (0.20)	0.12 (0.22)
wholesale trade	-0.06 (0.21)	-0.05 (0.22)	0.09 (0.24)
business services	-0.29 (0.22)	-0.28 (0.24)	-0.31 (0.26)
services other than trade and busin.	-0.45* (0.21)	-0.66** (0.23)	-0.45** (0.26)
Log likelihood	-374	-319	-204
LR χ^2	61***	66***	49**
Pseudo R^2	0.08	0.09	0.11
No of observations	332	332	333

Notes

(i) estimator: ordered probit for specifications 1- 2; binary probit for specification 3,
(ii) exact joint significance of linear and quadratic terms in employment: p = 0.02, 0.01, 0.01 for equation 1, 2 and 3 correspondingly
(iii) three companies with employment above 250 excluded from estimation,
(iv) standard errors in parentheses,
(v) significant at: †0.10 *0.05 **0.01 ***0.001,
(vi) ancillary parameters (and constant in specification 3) not reported, and available on request.

Table V: Estimation Results

	(4)	(5)	(6)
Dependent variable ('don't know' answers treated as missing values) Independent variables:	growth expectations (ordered using four ranks)	growth expectations (ordered using three ranks)	growth expectations (positive employment growth as binary outcome)
Human capital:			
higher education	0.42* (0.18)	0.41* (0.19)	0.27 (0.20)
job experience in same sector	0.16 (0.16)	0.16 (0.16)	0.21 (0.17)
entrepreneurial experience	0.26 (0.16)	0.28† (0.16)	0.17 (0.17)
not in employment prior to starting	-0.60* (0.29)	-0.55† (0.30)	-0.64† (0.34)
business owner's age	-0.08 (0.07)	-0.09 (0.08)	-0.09 (0.08)
Age squared	0.0008 (0.0008)	0.0008 (0.0009)	0.0009 (0.0009)
female	0.14 (0.19)	0.15 (0.19)	0.13 (0.21)
Firm level attributes:			
company is exporting	0.38* (0.16)	0.38* (0.17)	0.22 (0.18)
location: Vilnius	0.09 (0.17)	0.12 (0.17)	-0.02 (0.19)
incorporated company	0.16 (0.18)	0.14 (0.19)	0.16 (0.20)
years in business after 1990	0.05† (0.03)	0.05 (0.03)	0.06 (0.03)
employment size	0.005 (0.005)	0.005 (0.005)	0.010 (0.006)
employment size squared	-0.00004 (0.00003)	-0.00004 (0.00002)	-0.00007* (0.00004)
Barriers			
taxes	-0.25 (0.16)	-0.26 (0.17)	-0.26 (0.18)
corruption	-0.46* (0.20)	-0.46* (0.20)	-0.32 (0.22)
low purchasing power of customers	0.02 (0.16)	0.03 (0.16)	-0.01 (0.18)
lack of funds for investment	-0.12 (0.17)	-0.14 (0.17)	-0.11 (0.19)
Late payments by clients	-0.07 (0.20)	-0.13 (0.21)	-0.04 (0.22)
Sectors (reference category: manufacturing)			
construction	-0.20 (0.39)	-0.23 (0.40)	-0.10 (0.42)
retail trade	-0.16 (0.22)	-0.17 (0.22)	-0.04 (0.24)
wholesale trade	-0.23 (0.24)	-0.25 (0.25)	-0.03 (0.26)
business services	-0.39 (0.26)	-0.40 (0.27)	-0.37 (0.29)
other services	-0.39 (0.27)	-0.50† (0.28)	-0.28 (0.30)
Log likelihood	-278	-245	-170
LR χ^2	42***	41***	29*
Pseudo R^2	0.07	0.08	0.08
No of observations	267	267	268

Notes:
(i) estimator: ordered probit for specifications 4 and 5; binary probit for specification 6
(ii) exact joint significance of linear and quadratic terms in employment: $p = 0.18$, 0.18, 0.10 for equation 4, 5 and 6 correspondingly
(iii) three companies with employment above 250 excluded from estimation
(iv) standard errors in parentheses,
(v) significant at: †0.10 *0.05 **0.01 ***0.001
(vi) ancillary parameters for cut-off points available on request.

Figure 1: Influences on Business Growth

Human capital	Firm level attributes	Business environment

Education   (+)
Age   (+)
Male   (+)
Prior unemployment
                (-)
'Learning by doing'
                (+)
	Size/Turnover (+/-)
	Years in business (-)
	Incorporated company
	                 (+)
	Exporting (+)
		Barriers:
		Taxes (-)
		Corruption (-)
		Access to finance (-)
		
		Capital city location (+)

Expected business growth
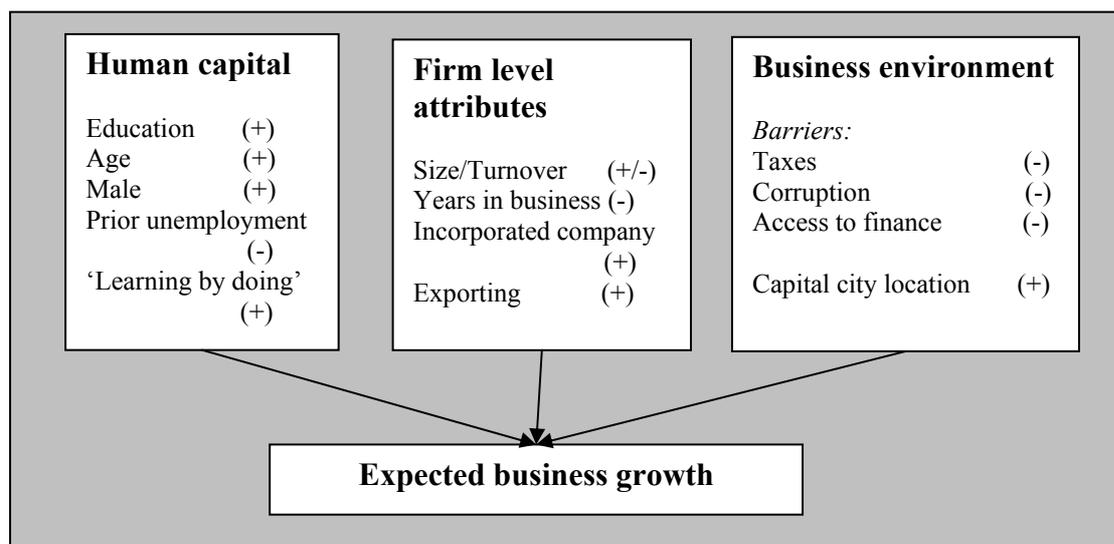
Figure 2: Percentage of entrepreneurs identifying a given dimension as one of the three most important business barriers
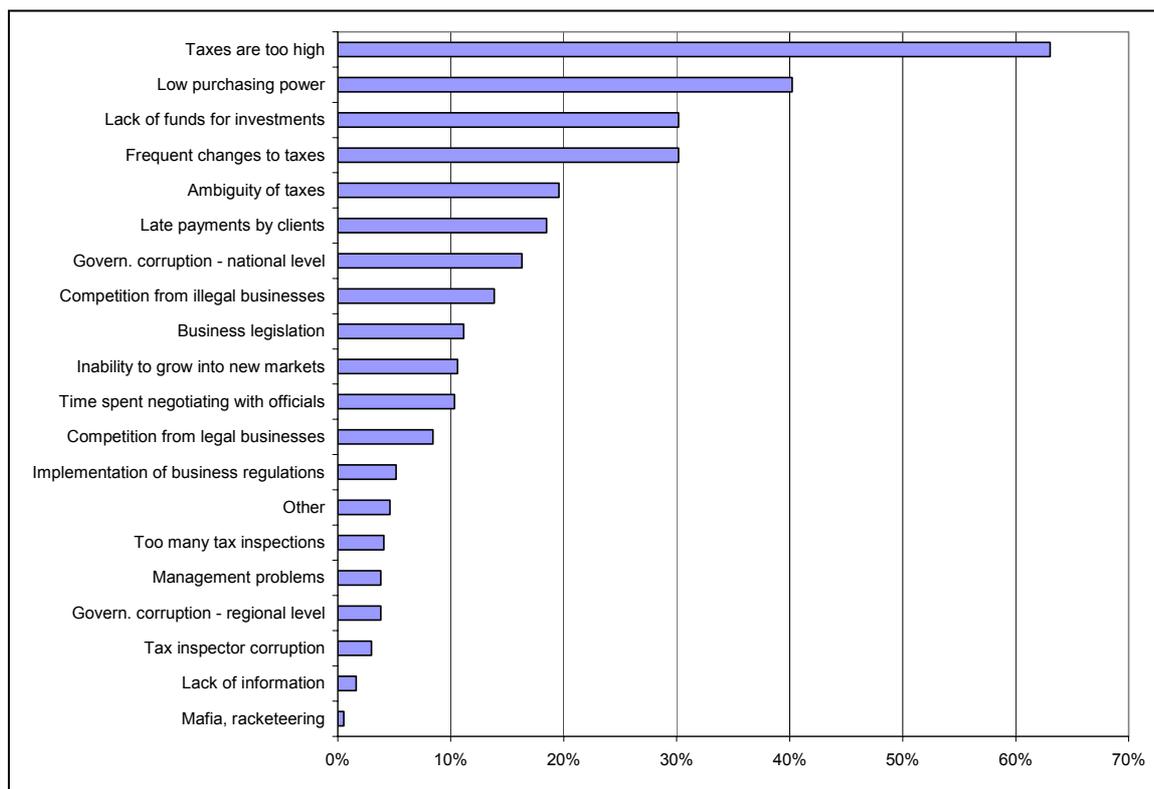
Notes

---

[i] We focus our study here on legally registered private enterprises though in doing so, we are probably underestimating the true size of Lithuania's private sector. A study 'Preliminary Estimation of Monetary flows in Lithuania' carried out by the Economic Research Center of Lithuania estimates that the 'underground' or informal economy could account for as much as 36 percent of GDP in 1994 and 41 percent of GDP in 1995 (World Bank 1998). Another study carried out by the Lithuanian Department of Statistics presents more conservative estimates; accordingly, in 1995 the informal economy accounted for 23.4 percent of GDP (Lithuanian Department of Statistics 1997). However, the distortion is likely to more greatly affect the size and profitability of reported businesses then their actual number. That results from the fact that the preferred strategy of informal activity may be to register a business but hide part of earnings and employment (as argued by Kontorovich (1999) in relation to Russia).

[ii] The number of registered SMEs is likely to include a significant percentage of inactive SMEs, thus a change in the register is only a crude indicator of the number of SMEs, which are active. Estimating the total number of active SMEs in Lithuania is difficult. For further discussion see Aidis 2003: 69.

[iii] Lithuanian Development Agency for Small and Medium-sized Enterprises.

[iv] Until February 2, 2002, the Litas has been tied to US Dollar. Subsequently, the latter was replaced by Euro.

[v] In addition to Bulgaria and Romania, we include Croatia, which opens formal EU membership negotiations in 2005.

[vi] In addition, recent work by Wiklund *et al.* (2003) indicate that small business manager's feelings about whether the growth of their businesses is good or bad can be explained based on the consequences that they expect from growth.

vii Colombo et al. (2004) discuss another stream of literature based on distinction between general and business-specific components of human capital. Both affect the performance of start-ups via their impact on initial wealth available to entrepreneur. However, the effect of the specific human capital is stronger, as there is also additional direct impact on business-relevant capacities.

viii As can be calculated from Table D.2 in their paper, the turning point where the relationship between size and growth turns from positive to negative is somewhere above 900 employees (as measured by real growth in fixed assets; see Fries *et al.* 2003, p.46).

ix See also section 4 below. Faggio and Konings (2003) utilize Amadeus Database, a popular source of firm level data, with the smallest firms truncated. WBES World Bank survey and EBRD surveys are better in this respect, albeit the samples are still skewed; see: Beck *et al.* (2002), Batra *et al.* (2003), Fries *et al.* (2003). All those authors notice the problem.

x An extensive description of the survey and sample characteristics can be found in Aidis (2003).

xi As in many other transition countries, an accurate list of legal enterprises in Lithuania does not exist. Previous surveys attempted using the official list of registered businesses from the Lithuanian Department of Statistics indicated that the official register was rife with non-existent businesses or inaccurate addresses. See Aidis (2003) for further discussion.

xii The address lists of members from the five branches of the 'private' Lithuanian Chambers of Commerce (Vilnius, Kaunas, Panevezys, Siauliai, and Klaipeda), the Lithuanian Business Employer's Confederation (LVDK) and the Kaunas Regional Association of SMEs were used. The Lithuanian Chamber of Commerce and the LVDK are two of the largest entrepreneurship organizations in Lithuania.

xiii A business owner 'entrepreneur' met the following criteria: they had their own business and were actively involved in its day to day operations, the business was still in operation and their main business activities were not in the agriculture sector.

xiv Similar results were obtained when estimated when using size categories, see Aidis and Mickiewicz (2004). The turning points were calculated by taking the linear and quadratic coefficients on size from estimated equations $ax + bx^2$, and solving for x from: $a + 2bx = 0$.