



HUMAN CAPITAL AS A DETERMINANT OF SMALL FIRMS' GROWTH IN ROMANIA: A QUANTILE APPROACH

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Abstract

The paper examines the impact that human capital components have upon the employment growth of small firms in Romania. To attain this objective we carry out a quantile regression analysis using a robust Romanian data set for 2006. The main contribution of the paper indicates that human capital matters for explaining small firms' employment growth, where previous labour experience, the presence of entrepreneurial teams and family members appear as determinant components. In addition, our empirical findings indicate that an active involvement of the entrepreneur in managerial tasks reduces agency costs and increases the intensity in the implementation of the entrepreneur's human capital, leading to higher employment growth rates. We also find that those firms that exhibited higher employment growth rates are more sensitive to human capital and organisational factors.

JEL classification: G3, J24, L1, M13

Key words: Entrepreneurship, firm growth, human capital, ownership structure

1. INTRODUCTION

Small and medium sized enterprises (SMEs) dominate the business scenario around the world accounting for more than 95% of the total number of firms (Hofer and Sandberg, 1987, OECD, 1997 and European Commission, 2003). Moreover, academic research highlights the importance of SMEs for employment creation and economic development (Drucker, 1985; Birch, 1987 and Storey, 1994a). In addition, SMEs increase market competition and competitiveness, leading to price reductions, improvements in product quality (Vesper, 1984), as well as favouring the implementation of new technologies at the firm level (Mc Dougal, et al., 1992).

Given the resource constraints faced by small firms and their vulnerability with respect to environmental changes and uncertainty, a better understanding of the factors and mechanisms that explain small firms' growth stands as a key issue for business owners and the economy (Wolff and Pett, 2006). Hence, there is an increasing interest in identifying the main characteristics that differentiate firms that grow from those that do not grow or disappear. On the one hand, it is important to know more about the growing and development processes experienced by firms, and on the other hand, increasing our knowledge about those factors that make firms grow is a relevant issue to the appropriate design and application of more selective support policies (Turok, 1991).

During the last decades an extensive body of literature has been developed in order to explain growth in small and medium sized firms. However, most empirical studies on this issue are mainly focused on developed economies (Sandberg and Hofer, 1987; Eisenhardt and Schoonhoven, 1990; Davidsson, 1991; Hart and Oulton, 1996; Wiklund, 1998; Fariñas and Moreno, 2000; Mata and Portugal, 2004 and Yasuda, 2005). These studies commonly identify many internal and external factors that exert influence upon firm growth.

As a consequence of the liberalisation process and institutional reforms experienced by Eastern European countries, a research trend has recently emerged aiming to determine those factors that facilitate small and medium sized firms' success in transition economies, as well as their contribution to job creation and output growth (Konings, et al, 1996 and Pissarides, 1998). Moreover, empirical evidence concerning the

determinants of firm growth in developing economies mainly examines the impact that increased competition and institutional reforms (such as the development of the financial sector, for instance) have on firm growth. In this sense, academic research indicates that credit constraints and legal problems are the most pervasive problems faced by small and medium sized firms in transition economies. Liedholm and Mead (1999) for Africa, Liedholm (2002) for Africa and Latin America, and Pissarides, et al. (2003) for Russia and Bulgaria, report that the lack of external sources of finance prevents firm growth. Conversely, Johnson, et al. (2000), who examine sales and employment growth in five transition economies from 1994 to 1996, conclude that access to bank finance is not a constraint for business growth. More recently, Brown, et al. (2005) study the impact that access to finance and human capital have upon Romanian small firms' growth. The authors conclude that access to external sources of finance is an important constraint for firm growth. In addition, they find weak evidence about the impact that human capital has upon business growth rates.

Nevertheless, in spite of the increased attention devoted to the study of firm performance in transition economies, academic research that attempts to jointly examine the impact of human capital upon firm's growth is still scarce. Furthermore, it is important to remark that the relationship between human capital and business growth is especially relevant in transition economies, since the human capital creation process under the communist system may have become less efficient in the market economy. This is because the political system in these countries constrained the accumulation of business experiences, and the education systems in the former communist countries was biased towards hard sciences and engineering, neglecting social sciences, law, business and public policy (Kovacs and Virag, 1995).

In the light of these arguments, the main objective of this paper is to evaluate the impact that human capital components have upon employment growth in Romania. The main contribution of the paper indicates that human capital is an important determinant of small firm's growth. Furthermore, our empirical findings strongly support that the impact of these variables upon employment growth differs at different points of the conditional distribution of employment growth, and in this case firms showing high employment growth rates are more sensitive to the presence of these factors.

The remainder of the paper is organised as follows. Section two presents our theoretical framework. Section three describes the data and methodology. Empirical results are offered in section four, and final conclusions are displayed in section five.

2. THEORETICAL FRAMEWORK

2.1 Human Capital

A growing number of academics are demonstrating that a theoretical framework based on the Human Capital Theory (Becker, 1975) may be more appropriate for the study of the impact that the entrepreneur's knowledge and capabilities have upon firm growth. Moreover, a human capital approach to business growth is especially important for the purpose of this paper because in Romania, as in the rest of Eastern European countries, restructuring processes were undertaken on a basis of a relatively well-developed education system, but at the same time the political and economic context in former communist countries hindered the accumulation of business experience and entrepreneurial activities (Kovacs and Virag, 1995 and Brown, et al., 2005).

Human capital comprises individual's attributes as formal education, previous labour experience, the presence of partners who might provide additional expertise, and a family tradition of business ownership. This type of capital is considered unique since knowledge cannot be taken away from the individual as tangible assets and financial capital can. Becker (1975) remarks that the presence of high levels of human capital impacts the quality of business behaviour. Consequently, human capital (knowledge, abilities and capabilities) provided by the entrepreneur(s) constitutes a key determinant to ensure business success (Chandler and Jansen, 1992; Cooper et al., 1994; Honig, 2001 and Peña, 2004).

In addition, Cooper and Bruno (1977: 21) indicate that, for new high-tech firms, the most important assets are those related to the founder's knowledge and abilities. Entrepreneurs are an important resource, since they can develop dynamic capabilities that might create new resources within the firm. Thus, entrepreneurs constitute a unique resource embedded in their human capital (Álvarez and Busenitz, 2001 and Bowman and Swart, 2007). Therefore, and especially for small and medium sized firms, the role played by the entrepreneur is critical for the business strategic design (Birley and

Westhead, 1990). Deakins and Freel (1998) suggest that entrepreneur's learning capacity is a determinant factor explaining firm growth. Finally, Chandler and Hanks (1998) formalise the argument first proposed by Penrose (1959), by indicating that there exist a substitutability effect between human and financial capital. Firms managed by entrepreneurs who have higher levels of human capital will be able to attain superior performance, even when these firms lack financial capital.

Empirical evidence suggesting the positive impact that human capital has upon firm growth can be found in Storey (1994a, b), Cooper et al. (1994), Westhead and Cowling (1995), Mc Pherson (1996), Roper (1999), Wasilczuk (2000) and Bager and Schott (2002).

Regarding human capital components, it is widely recognised that formal education positively impacts entrepreneur's decision making process increasing firm's growth opportunities (Dunkelberg and Cooper, 1982; Kinsella et al., 1993; Cooper et al., 1994; Gimeno et al., 1997 and Peña, 1994). These results could indicate that more educated entrepreneurs have the necessary skills, discipline, motivation, information and self-confidence to attain higher growth rates in their businesses, hence, they are more likely to perceive and exploit business opportunities (Cooper et al., 1994 and Ucbasaran et al., 2007). In addition, education provides knowledge that may help in overcoming financial constraints (Evans and Leighton, 1989) and foster business growth (Honjo, 2004). Moreover, Westhead and Cowling (1995) and Almus (2002) conclude that those firms that show higher employment growth rates are statistically linked to founders with university studies. This leads to the formulation of our first hypothesis:

H1: Those firms managed by entrepreneurs with university studies are more likely to exhibit higher employment growth rates.

According to Ducesneau and Gartner (1990), Schutjens and Wever (2000) and Bosma et al. (2004), previous labour experience is another relevant dimension of human capital that may have an impact on firm's growth. In this case we argue that labour experience gives to the entrepreneur the specific knowledge and managerial capabilities which can help him/her to develop more successful strategies leading to higher growth rates. Nevertheless, empirical evidence on this issue remains unclear. Feeser and Willard

(1990), Dyke et al. (1992), Westhead and Birley (1995), Schutjens and Wever (2000), Friar and Meyer (2003) and Bosma et al. (2004) report a positive relationship between entrepreneur's previous labour experience and firm growth, whereas Dunkelberg and Cooper (1982), Dunkelberg et al. (1987), Westhead and Cowling (1995) and Brüderl and Preisendörfer (2000) find that previous labour experience and growth are negatively correlated. Thus, the second hypothesis emerges:

H2: There is a positive relationship between entrepreneur's previous labour experience and firm's employment growth.

In addition, we consider the individual's motivations to become an entrepreneur as a determinant of firm growth. A growing number of literature highlights the presence of pull motivations (business opportunities) towards entrepreneurship (Blanchflower and Oswald, 1988; Taylor, 1996 and Lin et al., 2000), whereas Storey (1991), Audretsch (1993) and Ritsilä and Tervo (2002) emphasize the negative relationship between push motivations (necessity) and firm growth. In this paper we focus on the impact that push motivations have upon firm growth. We argue that for individuals who decide to rush the business creation process to become an employee, the business exit probability increases, since this new entrepreneur will start his/her business without the appropriate information and planning, and he/she could also lack the skills and experience to face this venture. Also, Storey (1994a) remarks that entrepreneurship motivated by push factors is mainly undertaken by individuals with lower business expectations. In this sense, empirical evidence supporting the negative relationship between unemployment as motivation for entrepreneurship and firm growth can be found in Wynarczyk et al. (1993), Storey, (1994a,b), and Reid and Smith (2000). This leads us to formulate our third hypothesis:

H3: Those firms started by entrepreneurs motivated by unemployment reasons show lower employment growth rates.

Another relevant issue deals with the effect of team size (number of founders) on firm growth. Entrepreneurial teams equal the sum of the resources and capabilities of their members (Westhead and Cowling, 1995: 122) and this could increase firm credibility (Cooper et al., 1991: 69). Furthermore, those firms created by entrepreneurial teams

would benefit from more efficient decision making processes, increasing their growth probabilities (Storey, 1994a; Almus and Nerlinger, 1999; Schutjens and Wever, 2000; Bager and Schott, 2002 and Friar and Meyer, 2003). Consequently, and according to Dunkelberg et al. (1987), Kinsella et al. (1993), Cooper, et al. (1994), Ensley, et al. (2002) and Ruef, et al. (2003), those firms managed by a top manager team are more likely to exhibit higher growth rates. From this argument comes our fourth hypothesis:

H4: There is a positive relationship between entrepreneurial teams and firm's employment growth.

Furthermore, we evaluate the impact that the presence of family members in the business may have on business growth. This factor is especially relevant in the Romanian context since family firms are considered an important vehicle for economic development. According to Gersick, et al. (1997), businesses owned and managed by families are the predominant form of private enterprise around the world (including developed and developing economies), and they are mainly small and medium sized firms. In addition, Anderson and Reeb (2003) remark that the family firm appears as an organisational solution to the agency problem in the labour market for managers, since this form of enterprise reduces agency costs through the alignment of interest between managers and shareholders (Jensen and Meckling, 1976).

Nevertheless, the existing empirical evidence about the performance of family and non-family controlled businesses present mixed results. On the one hand, reliance on family management may have adverse consequences for the efficiency and growth of the firm. This is partly due to the underlying tradeoffs between the benefits of retaining control within the family and the costs of delegating management to outsiders, who usually possess superior skills than family managers (Burkart et al., 2003). In this sense, Barth, et al. (2005) examine a sample of Norwegian firm and they conclude that those family firms operating under an unified owner-management structure exhibit lower performance levels, whereas no performance differences are found when the family business is managed by a manager hired from outside the firm. In addition, the family firm is subject to other forces that may undermine performance as the inability to raise outside capital and cope with advancing technologies (Neubauer and Lank, 1998).

Empirical evidence supporting the negative relationship between family business and performance can be found in Wall (1998) and Lauterbach and Vaninsky (1999).

On the other hand, the advantages of family governance are well documented and arise from factors such as the ability of the family to provide long-term incentives to its members, to effectively monitor their performance, altruism, loyalty, and idiosyncratic knowledge of the business among family members (Pollack, 1985 and Coleman, 1990). In addition, Gorriz and Salas (1996), Mc Conaughy, et al. (1998) and Anderson and Reeb (2003) conclude that family firms perform better than non-family controlled firms. This leads us to formulate our fifth hypothesis:

H5: There is a positive relationship between the number of family members involved in the venture and firm's employment growth.

2.2 Control rights and the intensity of human capital implementation

To a large extent firm growth, as any other firm objective, entails great commitment from both employees and managers. Academic research usually assumes that the entrepreneur can freely use his/her human capital in order to improve firm performance. This is the case of those firms where the manager also controls the firm (owner-manager). Here, the entrepreneur can exert his/her control rights to implement any decision within the firm.

Nevertheless, we are aware that small firms can also experience problems derived from the separation of ownership and control, and this could be detrimental to business growth since the lack of control and monitoring mechanisms may lead managers to use their control rights to pursue their own agenda. Small firms may also have shareholders who are not part of the entrepreneurial team but serving in the management team. This implies the presence of individuals who may show asymmetry across human capital factors, a fact that could lead to a discretionary behaviour that can affect entrepreneur's actions as well as the decision making process.

Therefore, the potential benefits that firms can obtain from human capital are conditioned by the capacity of the entrepreneur to transfer his/her knowledge and capabilities into the decision making process. Consequently, we argue that despite the

key role played by human capital for business growth, it is important to consider the potential constraints faced by the entrepreneur when using his/her human capital and its repercussions on firm growth.

The most commonly accepted ways to address the problem described above rely on assigning more power to investors through increase protection of minority rights from expropriation and ownership concentration (Shleifer and Vishny, 1997). Consequently, and based on the above argument, we include in the analysis the ownership and management structure of the firm.

In this paper, as in Burkart, et al. (1997), we argue that high ownership concentration increases the entrepreneur's monitoring role, a fact that promotes employees to behave efficiently, i.e., reducing their discretionary behaviour. It is important to remark that empirical evidence on the ownership structure – performance relationship presents mixed results. On the one hand, Demsetz and Lehn (1985) and Mc Connell and Servaes (1990) find no significant effect of ownership concentration upon firm performance. On the other hand, Wruck (1989), Mork, et al. (1988), Zwiebel (1995) and Earle, et al. (2005) report a positive relationship between ownership concentration and firm performance, but these authors also report a non-monotonic relationship between ownership structure and performance. A possible explanation emerges when considering the fact that ownership concentration creates costs within the firm that outweigh its benefits over some intervals of the distribution.

Moreover, in small firms the costs of monitoring the agents (managers) can be reduced by increasing the level of ownership in management. The incorporation of the owner (in this case, the entrepreneur) in the management team (as general manager) increases his/her monitoring role in the firm and reinforces the alignment of interest between shareholders and managers, and this reduction of monitoring costs could lead to performance (growth) improvements.

Nevertheless, owner-managers have a strong preference for control, and this could lead to an inefficient concentration of decision rights that may prevent managers to adopt management policies that aim to improve firm performance (Gulbrandsen, 2005). In addition, empirical evidence by Falk and Kosfeld (2004) and Graziano and Luporini

(2005) indicate that excessive control over employees may have a negative implication since it can reduce their willingness to act attaining the principal's objectives. Moreover, the fact that the owner and general manager positions are vested in one person may negatively affect the quality of management. In this situation the entrepreneur may lack skills and knowledge (human capital) that are necessary for the decision making processes limiting the growth potential of the firm; as compared to that case where a professional manager is hired from the market.

Conversely, small firms may obtain important benefits from a management structure where the entrepreneur (owner) also holds the control and decision rights in the firm (manager), as compared to larger (more complex) companies. For small companies, the role of the manager is crucial since these firms have smaller management teams as compared to large firms. Hence, the owner-manager structure can be considered as optimal for small companies since it makes possible both a definition of a clearer set of directions for the firm and a better communication between the owner-manager and employees. Also, this structure facilitates a more active involvement of the entrepreneur in decision making processes, increasing the intensity in the implementation of actions that entail the entrepreneur's human capital. From this argument comes our last hypothesis:

- H6: (a) There is a positive relationship between ownership concentration and employment growth*
- (b) Those firms where the entrepreneur has the control rights exhibit higher employment growth rates.*

3. DATA AND METHOD

3.1 Data

The data used to carry out this study comes from the Romanian Centre for Entrepreneurship and Business Research (CEBR) for the year 2006. The CEBR is an organisation that promotes and develops research in the fields of entrepreneurship and business economics in Romania. The database provided by the CEBR was collected between January and March 2007, and it was designed to provide information about selected performance and organisational characteristics of Romanian small and medium

sized enterprises, as well as of their corresponding entrepreneurs. Data collection by the CEBR was achieved through self-administrated, structured questionnaires where the entrepreneur was asked to answer essentially close questions. The questionnaire was also subject to a pre-test in order to correct potentially misleading or confusing questions¹.

The original database used to reach the aim of this research contained information for 895 Romanian small and medium sized firms, including 166 (18.55%) and 729 (81.45%) from Bucharest and the rest of Romania, respectively. However, in the interest of following a rigorous methodology, only small firms for which a complete dataset of the independent variables can be constructed are included. As it can be seen in Table 1, data availability limits the sample to 492 observations. In addition, from Table 1 we observe that our sample has information for small firms from all the Romanian regions, where nearly 19% of the firms operate in Bucharest, and there is also a significant representation of firms operating in the south-east (16.87%), the north-east (15.65%) and the centre area (13.82%).

Table 1. Geographical composition of the sample

Regions	Number of firms	% of firms
Bucharest	93	18.90%
Centre	68	13.82%
West	39	7.93%
North West	44	8.94%
North East	77	15.65%
South	49	9.96%
South West	39	7.93%
South East	83	16.87%

Regional distribution: Bucharest is the capital. Centre includes Alba, Brazov, Covasna, Harghita, Mures and Sibiu. West includes Arad, Caras-Severin, Hunedoara and Timis. North west includes Bihor, Bistrita-Nasaud, Cluj, Maramures, Satu-Mare and Salaj. North east includes Bacau, Botosani, Iasi, Neamt, Suceava and Vaslui. South includes Arges, Calarasi, Dambovita, Giurgiu, Ialomita, Prahova, Teleorman. South west includes Dolj, Gorj, Mehedinti, Oltenia and Valcea. South east includes Braila, Buzau, Constanta, Galati, Tulcea and Vrancea.

Furthermore, the regional configuration of our sample is similar to that reported in the Romanian Statistical Yearbook (National Institute of Statistics, 2005), where it is indicated that, for 2004, nearly 22% of firms operate in Bucharest, whereas in the south-

¹ Further detail about the questionnaire and the sample used in this research is available from the author on request.

east and north-east regions this proportion stands at 12.27% and 11.22%, respectively. Finally, similar results are obtained for those regions that show the lowest proportion of small firms (west and south-west). In our sample 7.93% of small firms operate in these regions, whereas for 2004 the values reported by the Romanian Statistical Yearbook are 9.34% and 7.32% for the west and south-west Romania.

3.2 Variable definition

Growth of small firms can be measured in several ways, including sales, assets or employment (Davidsson, et al., 2005 offer an extensive survey on this issue). However, Davidsson, et al. (2006: 8) conclude that growth measures based on employment show the highest correlation with alternative growth indicators (sales and assets).

In this paper, and following Hall (1987) and Evans (1987a), we focus on employment growth. Our growth measure is defined as the annual logarithmic change as $Growth_{n,t} = \left[\ln(Employment_{n,t}) - \ln(Employment_{n,t-k}) \right] / [t - k]$ where t corresponds to the time of the survey (2006) and k is the year the enterprise started. From Table 2 we observe that the annual employment growth rate in our sample is nearly 31%. In addition, it is important to remark that firms operating in the South exhibit the highest annual employment growth rate (35.79%), whereas firm from the West show the poorest employment growth (23.03%).

To determine human capital we use a set of independent variables commonly found in models trying to explain enterprise growth. First, we consider the entrepreneur's formal education. This variable takes the value of one if the entrepreneur has university studies, and zero otherwise. From Table 2 it can be noticed that 79.07% of the respondents have university studies. Previous labour experience is expressed in years, and from Table 2 we observe that mean labour experience is 11.28 years, but for those firms that showed the highest employment growth the entrepreneur's labour experience stands at 8.86 years (Table 3).

Table 2. Descriptive statistics for the selected variables

	Mean	Standard deviation	Minimum	Maximum	Observations
<i>Annual employment growth</i>	0.3099	0.6203	-2.7081	3.6889	492
<i>Entrepreneur</i>					
Gender (male)	0.6931	0.4617	0	1	492
Age (years)	37.6931	8.4464	21	60	492
<i>Human Capital</i>					
University studies	0.7907	0.4073	0	1	492
Labour experience (years)	11.2785	8.4433	1	38	492
Single founder	0.4675	0.4994	0	1	492
Family members	0.6362	1.3493	0	25	492
Unemployment as motivation	0.0650	0.2468	0	1	492
<i>Organisation</i>					
Initial size (employees)	3.3455	4.9055	1	50	492
Firm age (years)	6.3069	5.1358	2	18	492
Savings as main source of finance	0.7053	0.4564	0	1	492
Export intensity (t_0)	0.1146	0.2734	0	1	492
Entrepreneur / Manager	0.8496	0.3578	0	1	492
Shares held by the entrepreneur (t_0)	0.7280	0.2837	0.0900	1	492

Data availability permits us to introduce a dummy variable that takes the value of one if the entrepreneur started the firm alone, and zero otherwise, i.e., the firm was launched by an entrepreneurial team. Table 2 indicates that 46.75% of entrepreneurs started their businesses alone, and this proportion remains practically unchanged along the different quantiles of the distribution of employment growth (Table 3). To account for the presence of a family controlled enterprise, we include a variable that indicates the number of family members in the firm. Table 2 shows a low presence family members in our sample (0.6362). Nevertheless, from Table 3 we observe that the average number of family members decreases when comparing the results for the first (0.7692) and the fourth (0.4672) quartiles of the distribution of employment growth.

Table 3. Descriptive statistics for the selected variables at different quartiles

	<i>Bottom quartile</i>		<i>Middle quartiles</i>		<i>Top quartile</i>	
	Mean (Std. Dev.)	Obs.	Mean (Std. Dev.)	Obs.	Mean (Std. Dev.)	Obs.
<i>Annual employment growth</i>	-0.1071 (0.3670)	169	0.1610 (0.1052)	201	1.1332 (0.6268)	122
<i>Entrepreneur</i>						
Gender (male)	0.6746 (0.4699)	169	0.7363 (0.4417)	201	0.6475 (0.4797)	122
Age (years)	37.4438 (8.4430)	169	40.0100 (7.9624)	201	34.2213 (8.0356)	122
<i>Human Capital</i>						
University studies	0.7811 (0.4148)	169	0.8109 (0.3925)	201	0.7705 (0.4223)	122
Labour experience (years)	11.1479 (8.2956)	169	12.8508 (8.5579)	201	8.8689 (7.9179)	122
Single founder	0.4675 (0.5004)	169	0.4677 (0.5002)	201	0.4672 (0.5010)	122
Family members	0.7692 (2.0529)	169	0.6269 (0.7779)	201	0.4672 (0.6945)	122
Unemployment as motivation	0.0296 (0.1699)	169	0.0896 (0.2863)	201	0.0738 (0.2625)	122
<i>Organisation</i>						
Initial size (employees)	4.2959 (6.1117)	169	3.2239 (4.7943)	201	2.2295 (2.2919)	122
Firm age (years)	6.0533 (5.0181)	169	9.3930 (4.4553)	201	2.5738 (0.8712)	122
Savings as main source of finance	0.6982 (0.4604)	169	0.6965 (0.4609)	201	0.7295 (0.4460)	122
Export intensity (t_0)	0.1344 (0.2953)	169	0.0918 (0.2420)	201	0.1246 (0.2896)	122
Entrepreneur / Manager	0.8402 (0.3675)	169	0.8209 (0.3844)	201	0.9098 (0.2876)	122
Shares held by the entrepreneur (t_0)	0.7389 (0.2709)	169	0.7234 (0.3008)	201	0.7203 (0.2737)	122

We have introduced a dummy variable that takes the value of one if unemployment is the individual's motivation to become an entrepreneur, and zero otherwise. Table 2 indicates that 6.50% of individuals state that unemployment was the main driver to become an entrepreneur. For firms showing poor employment growth, this proportion is nearly 3%, whereas for firms operating in the top quartile the percentage of entrepreneurs with unemployment motivation stands at 7.38% (Table 3). This result

should be interpreted with caution given the sample properties, since it only indicates that this variable is unevenly distributed along the different quantiles of the distribution of employment growth. Additional descriptive statistics, not presented here due to lack of space and available from the author on request, indicate that for the middle-quartiles the annual employment growth rate for firms created by individuals with no employment motivations ranges from 1.60% to 46%, but for firms created by unemployed entrepreneurs this rate varies from 4.5% to 41%. A similar picture emerges when comparing the results for those firms in the top-quartile of the distribution of employment growth. Hence, for firms created by entrepreneurs with no employment motivations this rate ranges from 46% to 369%, whereas this variable varies from 67% to 161% for firms created by their unemployed counterparts.

Also, we include in the analysis a dummy variable that takes the value of one if the entrepreneur is also the manager of the firm. In order to consider the potential benefits that ownership concentration may create, we introduce a variable that measures the stake held by the entrepreneur when the firm started. From the descriptive statistics it can be noticed that for nearly 85% of the sample firms the entrepreneur also serves as general manager. Also, entrepreneur's ownership in our sample is high (72.80%).

In addition, a set of control variables associated with the firm and the entrepreneur has been added. Concerning business characteristics, we have included in the analysis firm's initial size, measured as the initial number of employees, and firm age, expressed in years. An extensive body of literature has been developed aiming to examine the Gilbrat's Law (1931) of proportionate growth (Hart and Prais, 1956; Simon and Bonini, 1958; Hymer and Pashigian, 1962; Evans, 1987a; Hall, 1987; Dunne, et al., 1989; Dunne and Hughes, 1994; Mata, 1994; Hart and Oulton, 1996; Fariñas and Moreno, 2000 and Yasuda, 2005). As a result, firm size and age are commonly used as independent variables in order to explain the growth of the business. According to this law, the rate of firm growth is independent from its initial size, and the probability of a given growth rate is the same for any firm (within one industrial sector and during a certain interval of time) as $Size_{n,t} = (1 + \varepsilon_t) Size_{n,t-1}$, where $(1 + \varepsilon_t)$ is the proportional effect for firm n in period t and ε_t is assumed to be identically and independently distributed. Thus, firm growth is characterized as a stochastic phenomenon.

Although many researchers confirm these basic assumptions (Hart and Prais, 1956; Simon and Bonini, 1958; Hymer and Pashigian, 1962), other scholars found a statistically significant relationship between the rate of growth and size. Furthermore, the reviewed studies suggest that the bigger the size of the firms the smaller the effects of firm size and age on firm growth (Evans, 1987, Hall, 1987, Dunne and Hughes, 1994 and Yang and Huang, 2005). Even though many studies found a significant effect of size on firm expansion, the sign varies, probably as a result of the specific dependent variable used by the researchers (Davidsson et al., 2005) and/or depending on contextual factors such as place and time (Majumdar, 2004).

Empirical evidence suggests that Gilbrat's law holds either when only large companies are considered, or when only those firms exploiting scale economies are included in the sample. This weak form of Gibrat's Law is supported by Simon and Bonini (1958), Sutton (2001) and Yang and Huang (2005). Nevertheless, when small and "*surviving*" firms are included, growth rates are negatively related with the size and the age of the firms (Evans, 1987a, 1987b; Hall, 1987; Dunne et al., 1988, 1989; Dunne and Hughes, 1994; Mata, 1994 and Hart and Oulton, 1996). From the economic point of view, this could indicate that smaller firms grow faster in order to ensure their survival (Audretsch, 1991 and Correa Rodriguez et al., 2003).

In addition, Jovanovic (1982) remarks that young firms show higher growth rates because they have to learn about their efficiency as they operate in the market. Consequently, this learning process also drives young firms to experience a higher variability in their results leading to a higher exit probability.

From Table 2 we observe that, on average, firms in our sample started with 3.35 employees, but those firms showing the highest employment growth are the smallest (2.23 employees) (Table 3). In addition, mean firm age is 6.31 years, and it also can be observed that firms that exhibited the highest employment growth rates are the youngest (2.57 years) (Table 3).

Besides business size and firm age, it is widely accepted that other organisational variables may have an impact upon firm growth. Hence, we first consider the

participation in international markets. An increasing body of research has evaluated the impact that competing in foreign markets has upon firm performance (Bernard and Jensen, 1999, Clerides et al., 1998, Liu et al., 1999 and Aw et al., 2000). The core idea of this research is that selling in the international markets improves performance either through allowing firms to exploit economies of scale associated with a combined domestic and international market, or by providing firms with enhanced learning capabilities derived from an enlarged technology set. Although small firms face high barriers to entry in overseas markets, Acs, et al. (1997) remark that these firms are more likely to obtain important gains from internationalisation, since higher competitive pressure and the pro-competitive effect of exporting leads to important changes in firms behaviour (strategy and product innovation), leading to the development of a stronger competitive advantage. To account for the impact that selling in international markets may have on employment growth, we introduce a variable that represents the degree of internationalisation of the firm in its first year of operation. This variable, export intensity, is measured as the ratio of export sales to total sales. Descriptive statistics reveal that, in our sample, firms exported 11.46% of their total sales in their first year (Table 2).

We also considered the initial capital availability. Access to external sources of finance may increase growth possibilities since it facilitates the development and improvement of firm's products and services or hire new employees. In transition economies, as the case of Romania, the development process that financial markets experience may create barriers linked to the access to finance. Hence, academic research considers financial constraints as an important obstacle for entrepreneurship and firm growth. Empirical evidence supporting the importance of access to external finance for business growth can be found in Pissarides, et al. (2003) who study manager's perceptions in Russia and Bulgaria, and by Brown, et al. (2005) who examine firm growth determinants in Romania. Conversely, Johnson, et al. (2000) evaluate institutional reforms in five Eastern European countries (including Romania), and they conclude that access to bank finance does not prevent business growth. Access to finance is introduced as a dummy variable that takes the value of one if the entrepreneur states that personal savings was the most important source of finance. Descriptive statistics show that nearly 71% of firms in our sample used personal savings as main source of finance (Table 2), and this

percentage does not change along the different quantiles of the distribution of employment growth (Table 3).

We have included two variables related to the entrepreneur's profile: gender and age. Women start and manage firms in different ways and for different motivations than do men (Brush, 1992 and Watson, 2001). Also, women often have access to "fewer resources, less knowledge and have in many countries a lower societal position than men" (OECD, 2004: 30). Thus, women are usually relegated to low growth potential activities (Carter and Rosa, 1998; Chell and Baines, 1998; Fasci and Valdez, 1998 and Carter et al., 2001). Nevertheless, empirical evidence on this issue show mixed results. On the one hand, McPherson (1996), Brüderl and Preisendörfer (1998), Bager and Schott (2002) and Bosma et al. (2004) conclude that firms managed by men show higher growth rates. On the other hand, research developed by Fischer, et al. (1993), Cooper et al. (1994), Du Reitz and Henrekson (2000) and Johnsen and Mc Mahon (2005) suggest that female-owned firms do not under perform their male counterparts with regard to profitability or employment. From Table 2 it can be observed that in our sample 69.31% of entrepreneurs are male (Table 2). A similar proportion of men is reported for those firms showing the poorest and the highest employment growth rates (67.46% and 64.75%, respectively).

According to Davidsson (1991), Brüderl and Preisendörfer (1998, 2000) and Bager and Schott (2002), entrepreneur's age is negatively correlated to firm growth and although younger entrepreneurs face higher constraints in what concerns credibility, experience and access to finance they show more ambitions (Storey, 1994b: 134). In this sense, Davidsson (1991: 408) remarks that the older the entrepreneur, the higher the probability that the firm does not grow, since he/she has probably reached his/her personal ambitions. Moreover, Mata (1996) and Brüderl and Preisendörfer (1998) indicate that older entrepreneurs are more risk averse, and consequently, their firms show lower growth rates but these firms are also more likely to survive. Descriptive statistics show that, in our sample, entrepreneur's mean age is 37.69 years and, as in the case of the gender variable, entrepreneur's mean age is similar for firms operating in the first (37.44 years) and the fourth (34.22 years) quantiles of the distribution of employment growth (Table 3). Finally, we include a set of regional dummies in all our specifications to control for geographical differences in employment growth patterns.

3.3 Econometric framework

The hypotheses we seek to test in this paper can be formulated in the following general model:

$$y_i = x_i' \beta + \varepsilon_i \quad [1]$$

where y_i and x_i are the observed vectors for the dependent and independent variables, respectively, β is an unknown vector of parameter estimates and ε_i is the normally distributed random disturbance term accounting for stochastic variation of the i th firm and missing variables. Equation [1] can be estimated through OLS, however, some considerations have to be made. In our theoretical framework we argue that employment growth differ amongst firms due to the presence of different levels of human capital. Nevertheless, firms' employment growth may also vary for reasons that are not directly observable (specific tangible assets, technology implementation and product innovation, for instance). Also, employment growth is not normally distributed² and this will further produce non-Gaussian residuals. This feature prevents us from estimating equation [1] using OLS since as remarked by Koenker and Bassett (1982: 48), the presence of not identically distributed data leads to find significant differences in the slope parameters at different quantiles. In order to overcome these problems and obtain more accurate results we decide to apply the quantile regression technique.

The quantile regression model, first introduced by Koenker and Bassett (1978), is an extension of the least squares estimation of the conditional mean to a collection of models for different conditional quantile functions. This location model (as defined by Koenker and Bassett, 1978: 38) minimizes the weighted sum of absolute errors to estimate the conditional median (quantile) function, where the weights are functions of the quantile of interest. Consequently, quantile regression is robust to the presence of outliers³. The general quantile regression model is:

$$y_i = x_i' \beta_\theta + \varepsilon_{\theta i}, \quad \text{Quant}_\theta(y_i | x_i) = x_i' \beta_\theta \quad [2]$$

² The results emerging from the skewness, kurtosis and Shapiro-Francia tests for normality indicate that employment growth is not normally distributed.

³ Koenker and Hallock (2001) offer an extensive survey on quantile regression estimation.

where β_θ is an unknown vector of parameter estimates associated with the θ^{th} percentile ($0 < \theta < 1$), $Quant_\theta(y_i | x_i) = x_i' \beta_\theta$ denotes the conditional quantile of y_i given the known vector of regressors x_i , and $\varepsilon_{\theta i}$ is the unknown error term⁴. The quantile regression estimator can be found solving the following minimization problem (Koenker and Bassett, 1978: 38):

$$\hat{\beta}_\theta = \min_{\beta} \left(\sum_{i: y_i > x_i' \beta} \theta |y_i - x_i' \beta| + \sum_{i: y_i < x_i' \beta} (1 - \theta) |y_i - x_i' \beta| \right) \quad [3]$$

Expression [3] implies the minimization of the weighted sum of the absolute errors obtained by bootstrapping, where the weights are symmetric for the median regression ($\theta = 0.50$) and asymmetric otherwise.

Consequently, instead of concentrating on a single central tendency measure, through the quantile regression it is possible to obtain a broader view of the differential impact that human capital and firm characteristics have upon the whole conditional distribution of firm employment growth, since parameter heterogeneity is allowed by estimating β_θ using different values of θ .

4. EMPIRICAL FINDINGS

This section presents the empirical findings. The first set of three columns in Table 4 presents the results of estimating the conditional mean by OLS. Specification one only considers those independent variables related to human capital, whereas model two takes into consideration the organisational variables. Finally, specification three includes all the independent variables in the analysis. Furthermore, we run the Jarque - Bera test of normality for the errors derived from the three OLS regressions. The results for the three OLS regressions indicate that the errors are not normally distributed (The statistic for regression 1, 2 and 3 is 1728, 821.1 and 847.1, respectively).

⁴ Concerning the error term, $\varepsilon_{\theta i}$, the only necessary assumption is that the conditional θ^{th} quantile of the error term is equal to zero, i.e., $Quant_\theta(\varepsilon_{\theta i} | x_i) = 0$ (Koenker and Bassett, 1982).

Table 4 also presents, for the full model, the quantile regression estimates for five different quantiles of the employment growth distribution. It is important to remark that the location estimates are the point estimates of the conditional mean and quantiles, evaluated at the covariates sample means. Consequently, from the parameter estimates we can observe the skewness in the data. As it can be seen in Table 4, the range between the lower quartile and the median is smaller than the one between the median and the upper quartile, but the estimate of the conditional mean is larger than that of the median (except for the gender variable). These features confirm that the distribution of employment growth is highly skewed.

To evaluate whether or not the independent variables exert a different impact on employment growth at different points of the conditional distribution, we test for the equality of coefficients across the different quantiles under analysis. The results of these tests (F - statistic) are presented in Table 5, and they indicate that there exist statistically significant differences in the parameters amongst the quantile regression estimates for six independent variables.

Concerning the entrepreneur's profile, our findings indicate that female controlled business do not under perform their male controlled counterparts with regard to employment growth. This result is in accordance with Du Reitz and Henrekson (2000) and Johnsen and Mc Mahon (2005), and it is consistent across the different quantiles of the distribution of employment growth. From Table 4 we find support to the negative relationship between entrepreneur's age and employment growth. Also, results from Table 5 indicate that the parameter estimate of the entrepreneur's age varies significantly from the upper quantile (-0.0110) to the lower quantile (-0.0010) of the employment growth conditional distribution. This indicates that those firms showing the highest employment growth rates are managed by younger entrepreneurs.

Table 4. Regression results: Impact of human capital and organisational variables on employment growth

	OLS estimates			Quantile regression estimates				
	(1)	(2)	(3)	0.10	0.25	0.50	0.75	0.90
Entrepreneur								
Gender (male)	-0.0372 (0.0668)	-0.0145 (0.0614)	0.0134 (0.0620)	0.0129 (0.0220)	0.0055 (0.0123)	0.0364 (0.0335)	0.0169 (0.0442)	0.0200 (0.0898)
Age	-0.0124 (0.0048)**	-0.0029 (0.0043)	0.0005 (0.0049)	-0.0010 (0.0012)	-0.0005 (0.0010)	-0.0024 (0.0022)	-0.0036 (0.0048)	-0.0110 (0.0065)*
Human Capital								
University studies	0.0388 (0.0646)		0.0607 (0.0618)	0.0036 (0.0128)	0.0091 (0.0102)	0.0137 (0.0266)	0.0622 (0.0601)	-0.0175 (0.1049)
Labour experience	0.0035 (0.0040)		0.0036 (0.0036)	0.0011 (0.0014)	0.0006 (0.0012)	0.0020 (0.0021)	0.0030 (0.0027)	0.0079 (0.0040)**
Single founder	-0.0271 (0.0550)		-0.0259 (0.0619)	0.0162 (0.0182)	0.0049 (0.0107)	-0.0064 (0.0278)	-0.1009 (0.0483)**	-0.1841 (0.0704)**
Family members	-0.0304 (0.0207)		-0.0316 (0.0133)**	-0.0003 (0.0085)	-0.0008 (0.0026)	-0.0141 (0.0072)**	-0.0286 (0.0165)*	-0.0637 (0.0336)*
Unemployment as motivation	0.1308 (0.0903)		0.0847 (0.0852)	0.0528 (0.0308)*	0.0683 (0.0329)**	0.0119 (0.0375)	0.0470 (0.1490)	-0.0862 (0.1307)
Organisation								
Initial size		-0.0229 (0.0083)***	-0.0232 (0.0083)***	-0.0364 (0.0303)	-0.0069 (0.0031)**	-0.0111 (0.0041)***	-0.0074 (0.0041)*	-0.0102 (0.0047)**
Firm age		-0.0456 (0.0062)***	-0.0452 (0.0062)***	0.0028 (0.0016)*	0.0010 (0.0013)	-0.0274 (0.0067)***	-0.0590 (0.0075)***	-0.0814 (0.0079)***
Savings as main source of finance		0.0847 (0.0573)	0.0906 (0.0588)	0.0260 (0.0186)	0.0090 (0.0129)	0.0168 (0.0325)	-0.0026 (0.0551)	0.1634 (0.1091)
Export intensity (t_0)		-0.0470 (0.0994)	-0.0387 (0.1022)	0.0194 (0.2182)	-0.0085 (0.0139)	-0.0067 (0.0708)	-0.0106 (0.1495)	0.0513 (0.2288)
Entrepreneur / Manager		0.1429 (0.0662)**	0.1459 (0.0674)**	-0.0204 (0.0226)	0.0017 (0.0059)	0.0579 (0.0289)**	0.0585 (0.0620)	0.1480 (0.0892)*
Shares held by the entrepreneur (t_0)		-0.0854 (0.0856)	-0.0862 (0.0995)	-0.0253 (0.0363)	-0.0191 (0.0204)	-0.0618 (0.0666)	0.0285 (0.0989)	-0.0572 (0.1668)
Regional dummies	YES	YES	YES	YES	YES	YES	YES	YES
Intercept	0.7725 (0.1992)***	0.4822 (0.1774)***	0.4984 (0.1840)***	0.0567 (0.0551)	0.0227 (0.0288)	0.5560 (0.1031)***	1.0142 (0.1965)***	1.6384 (0.3439)***
Adjusted R2	0.0315	0.1597	0.1588					
F – test	1.10	6.71***	5.53***					
RMSE	0.6193	0.5686	0.5689					
Pseudo R2				0.0534	0.0093	0.0793	0.2550	0.3047
Observations	492	492	492	492	492	492	492	492

In the case of the OLS regression robust standard errors adjusted by heteroskedasticity are presented in brackets. For the quantile regression bootstrapped standard errors are presented in brackets. *, **, *** indicates significance at the 0.10, 0.05 and 0.01, respectively.

Table 5: Test of equality between parameter estimates at different quantiles

	0.10 – 0.25	0.25 – 0.50	0.50 – 0.75	0.75 – 0.90	Joint
<i>Entrepreneur</i>					
Gender (male)	0.16	1.04	0.13	0.00	0.00
Age	0.24	0.93	0.10	0.97	2.63 [*]
<i>Human Capital</i>					
University studies	0.22	0.03	0.73	0.59	0.04
Labour experience	0.19	0.66	0.19	3.55 [*]	3.44 [*]
Single founder	0.28	0.14	6.75 ^{***}	1.30	6.90 ^{***}
Family members	0.00	4.38 ^{**}	1.31	1.42	3.42 [*]
Unemployment as motivation	0.19	2.05	0.07	1.67	1.24
<i>Organisation</i>					
Initial size	1.05	1.39	0.66	0.22	0.73
Firm age	1.52	22.15 ^{***}	59.52 ^{***}	8.52 ^{***}	119.07 ^{***}
Savings as main source of finance	1.15	0.06	0.17	3.66 [*]	1.72
Export intensity (t_0)	0.02	0.00	0.00	0.16	0.01
Entrepreneur / Manager	0.89	3.57 [*]	0.00	1.43	2.64 [*]
Shares held by the entrepreneur (t_0)	0.02	0.42	0.90	0.33	0.04

Values refer to the F-test results from the equality tests between quantile estimates. *, **, *** indicates significance at the 0.10, 0.05 and 0.01, respectively.

When examining the results for the human capital components, we observe that education is not a factor that explains variation in employment. This finding does not support those reported by Westhead and Cowling (1995) and Almus (2002), leading to reject **H1**. However, this result should be read with some caution, because the lack of significance could be consequence of the high proportion of individuals who reported university studies in our sample. To the contrary, the included variable for labour experience exerts a statistically significant positive effect upon those firms with the highest employment growth (upper quantile) (Table 4). Therefore, we confirm our second hypothesis (**H2**). Also, this finding is in accordance with that reported by Feeser and Willard (1990), Dyke et al. (1992), Westhead and Birley (1995), Schutjens and Wever (2000), Friar and Meyer (2003) and Bosma et al. (2004), and it could indicate that firms showing the highest employment growth rates are more sensitive to entrepreneur's previous labour experience (Tables 4 and 5).

An interesting result emerges when analysing the variable that reflects the motivations for entrepreneurship. Our empirical findings show that unemployment as reason to start

a business is an important constraining factor for employment growth. This result confirms our third hypothesis (**H3**), and it could corroborate that entrepreneurs who started their firms because of employment reasons may have low business expectations, leading to lower growth rates (Wynarczyk et al., 1993; Reid and Smith, 2000 and Ritsilä and Tervo, 2002).

Furthermore, from Table 4 it can be noticed that sole proprietorship and the presence of family members in the firm are negatively correlated to employment growth. In the case of the former, the parameter estimate for sole proprietorship becomes increasingly important as we move up in the conditional distribution of employment growth, revealing that firms showing high employment growth rates respond more intensively to the presence of entrepreneurial teams. This empirical finding is consistent with our fourth hypothesis (**H4**), and it strongly supports those results reported by Dunkelberg et al. (1987), Kinsella et al. (1993), Cooper, et al. (1994), Almus and Nerlinger (1999), Schutjens and Wever (2000), Ensley, et al. (2002) and Ruef, et al. (2003), indicating that the presence of entrepreneurial teams increases firm's resources and capabilities, a fact that could improve internal decision making processes leading to higher growth rates. For the latter, it can be seen that the presence of family members within the firm exerts a statistically significant negative effect upon firm growth, especially when moving from the centre of the conditional distribution of employment growth (0.50) to the upper quantile (0.90) (Tables 4 and 5). Consequently, hypothesis five (**H5**) is confirmed. We can interpret these results as evidence that family-controlled-firms are either more sensitive to the costs of delegating managerial tasks to outsider managers (Burkart et al., 2003 and Barth, et al, 2005) or more affected by the lack of outside capital, leading to lower employment growth rates (Neubauer and Lank, 1998; Wall, 1998 and Lauterbach and Vaninsky, 1999).

As for the findings for the ownership and management structure, results from Table 4 indicate that, in our sample, ownership concentration is not a control mechanism that increases employment growth. This leads us to reject **H6 (a)**. It is important to remark that we also estimated alternative specifications considering the entrepreneur's stake for the year 2006. Results are not shown due to lack of space but they remain unchanged and they are available on request. More interestingly, the parameter estimates for the owner-management variable is statistically significant only for the middle and the upper

quantiles the coefficient for this variable varies significantly from -0.0204 to 0.1480 as we move from the lower quartile (0.10) to the upper quartile (0.90) of the employment growth conditional distribution, indicating that the presence of an owner-manager matters for employment growth. This result confirms that small firms obtain important gains from a management structure where the owner also serves as manager, since monitoring costs are reduced when the entrepreneur increases his/her involvement in the firm, leading to higher employment growth rates. This evidence also indicates that firms with high employment growth rates are more sensitive to the entrepreneur's human capital. This gives support to our argument that under this type of management structure the entrepreneur exerts his/her control rights to increase his/her involvement in the decision making process, increasing the intensity in the implementation of the entrepreneur's human capital. Therefore, **H6 (b)** is confirmed.

Concerning the organisational variables, we observe that the coefficient for initial size is negative and statistically significant, indicating that smaller firms experience larger growth rates. This finding is in accordance with previous research provided by Evans (1987a), Hall (1987) and Audretsch, et al (1999). In what concerns firm age, results in Table 4 show that the response of employment growth to firm age changes at different points of the conditional distribution of employment growth. The parameter estimate for this variable experience a highly significant change from 0.0028 (bottom quantile) to -0.0814 (upper quantile), indicating that older firms exhibit lower employment growth rates, whereas younger firms grow faster (Table 4). This finding is in accordance with that reported by Evans (1987a), Hall (1987) and Hart and Oulton (1998). In addition, from Table 5 we observe that, except for the comparison between the 10 and 25 quantiles, the magnitudes of the coefficients of firm age decrease monotonically from the lowest to the highest quantile at highly significant levels, thus revealing that firm age covariates are particularly meaningful to explain employment growth.

Finally, the coefficients related to internal sources of finance and export intensity at the start-up year show as not significant across all the quantiles evaluated. Similar to the case of the ownership concentration variable, we estimated an additional specification that considers export intensity for the year 2006. Results also remain unchanged and they are available on request.

5. CONCLUDING REMARKS

Albeit the importance of small and medium sized firms for economic growth and the upward trend researching firm performance in transition economies, little literature has attempted to evaluate the role of human capital in explaining firm performance and growth in these economies. Using a robust data set for the year 2006 of 492 Romanian firms, we examine the impact that human capital and organisational factors have on small firms' employment growth using a quantile regression framework. This approach enables the evaluation of the determinants of employment growth at different points of the growth distribution.

This paper increases the literature dealing with the determinants of small firms' growth in transition economies. The main contribution emerging from our empirical results indicates that human capital matters when explaining employment growth in small firms, and these components affect differently employment growth. Also, our findings reveal that in our sample small new firm exhibit higher employment growth rates. Moreover, our results reflect that, when analysing data sets characterised by high degrees of heterogeneity, important informational gains may be achieved through the analysis of the conditional distribution, rather than relying on central tendency measures.

This brings about important implications of the findings of this paper for policy makers. The conclusions of the study leads to recommend that small firms' support policies must encourage human capital formation. Thus, governments or local administrations could introduce specific policies to improve the individual's skills through the entrepreneurial process. These policies should target the educational system, training as well as technical assistance programs. A more active involvement of universities is necessary to increase the knowledge related to entrepreneurship and business, as well as the skills and motivations of individuals. Training and technical assistance programs should stimulate the interaction between established enterprises and individuals in order to provide potential entrepreneurs with experience which can be critical for the development of more successful new ventures.

Furthermore, it is recommended to introduce policies that promote the formation of entrepreneurial teams. These actions should foster the communication between

entrepreneurs and individuals either interested or involved in entrepreneurial activities, and they could include specific programs that require individuals to work in teams or meeting places where to make contacts or find partners.

As with any cross-sectional study, the main limitation of the paper lies in both absence of a longitudinal analysis that could have given a greater perspective to the study, and the potential presence of selection and hindsight biases (Davidsson, et al., 2005: 2). We are also aware that our paper evaluates employment growth for surviving firms. This is especially relevant, since the presence of attrition bias might affect the results of the size-growth relationship because the initial size of those firms that exit the market is not taken into consideration. In addition, we did not explore the lack of growth ambitions as a determinant factor of employment growth (Davidsson, 1991 and Storey, 1994a). Finally, as in most empirical research, a large part of the variance of growth is not explained (Woo, et al., 1994: 507 and Curran and Blackburn, 2000: 44), however, our empirical findings suggest that our approach to employment growth is appropriate.

Future research should not only attempt to further explore the observed differences in the impact of human capital components on small firms' growth using longitudinal data in transition economies, but should also attempt to include a greater number of factors related to the entrepreneur, human capital and the organisation in order to enrich our analysis as well as its longitudinal perspective.

REFERENCES

- Acs, Z. J., Morck, R., Shaver, J. M. and Yeung, B. (1997) 'The internationalisation of small and medium-sized enterprises: a policy perspective', *Small Business Economics* 9: 7 – 20.
- Almus, M. (2002) 'What characterizes a fast-growing firm', *Applied Economics* 34: 1497 – 1508.
- Almus, M., and Nerlinger, E. (1999) 'Growth of new technology-based firms: Which factors matter?', *Small Business Economics* 13: 141 – 154.
- Alvarez, S. and Busenitz, L. (2001) 'The Entrepreneurship of Resource-Based Theory', *Journal of Management* 27: 755 – 775.

- Anderson, R.C. and Reeb, D.M. (2003) 'Founding family ownership and performance. Evidence from the S&P 500', *Journal of Finance* 58: 1301 – 1327.
- Audretsch, D. (1991) 'New-Firm Survival and the Technological Regime', *Review of Economics and Statistics* 73: 441 – 450.
- Audretsch, D. (1993) 'New Firm Formation Activity in US Manufacturing', in Charlie Karlsson (eds), *Small Business Dynamics: International, National and Regional Perspectives*, London and New York: Routledge, pp. 40 – 56.
- Audretsch, D., Santarelli, E. and Vivarelli, M. (1999) 'Start-up size and industrial dynamics: some evidence from Italian manufacturing, International', *Journal of Industrial Organization* 17: 965 – 983.
- Aw, B.-Y., Chung, S. and Roberts, M. (2000) 'Productivity and turnover in the export market: micro-level evidence from the Republic of Korea and Taiwan (China)', *World Bank Economic Review* 14: 65 – 90.
- Bager, T. and Schott, T. (2002) 'Growth of Young Firms – Determinants revealed by analysis of registries in Denmark', LOK Research Conference, December 2 – 3, Koldind, Denmark.
- Barth, E., Gulbrandsen, T. and Schone, P. (2005) 'Family ownership and productivity: the role of owner-management', *Journal of Corporate Finance* 11: 107 – 127.
- Becker, G. (1975) *Human Capital*. Chicago: University of Chicago Press.
- Bernard, A. and Jensen, J. (1999) 'Exceptional exporter performance: cause, effect or both?', *Journal of International Economics* 47: 1 – 25.
- Birch, D. (1987) *Job creation in America: How our smallest companies put the most people to work*. New York: Free.
- Birley, S. and Westhead, P. (1990) 'Growth and Performance Contrast between types of Small Firms', *Strategic Management Journal* 11: 535 – 557.
- Blanchflower, D. and Oswald, A. (1998) 'What makes an entrepreneur', *Journal of Labor Economics* 16: 26 – 60.
- Bosma, N., van Praag, M., Thurik, R. and de Wit, G. (2004) 'The Value of Human and Social Capital Investments for the Business Performance of Startups', *Small Business Economics* 23: 227 – 236.
- Bowman, C. and Swart, J. (2007) 'Whose Human Capital? The Challenge of Value Capture When Capital is Embedded', *Journal of Management Studies* 44: 488 – 505.

- Brown, J., Earle, J. 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* 53: 33 – 70.
- Brüderl, J. and Preisendörfer, P. (1998) 'Network Support and Success of Newly Founded Businesses', *Small Business Economics* 10: 213 – 225.
- Brüderl, J. and Preisendörfer, P. (2000) 'Fast growing businesses: Empirical evidence from a German study', *International Journal of Sociology* 30 (3): 45 – 70.
- Brush, C. (1992) 'Research on women business owners: past trends, a new perspective and future directions', *Entrepreneurship Theory and Practice* 16: 5 – 30.
- Burkart, M., Gromb, D., Panunzi, F. (1997) 'Large Shareholders, Monitoring and the Value of the Firm', *Quarterly Journal of Economics* 112: 693 – 728.
- Burkart, M., Panunzi, F. and Shleifer, A. (2003) 'Family firms', *Journal of Finance* 58: 2173 – 2201.
- Carter and Rosa (1998) 'The Financing of male- and female- owned businesses', *Entrepreneurship and Regional Development* 10: 225 – 241.
- Carter, S., Anderson, S., Shaw, E. (2001) 'Women's Business Ownership: A Review of the Academic, Popular and Internet Literature', *Report to the Small Business Service*, RR 002/01 Available at: <http://business.king.ac.uk/research/kbssbs/womsbus.pdf>.
- 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.
- Chandler, G. and Jansen, S. (1992) 'The founder's self-assessed competence and venture performance', *Journal of Business Venturing* 7: 223 – 236.
- Chell, E. and Baines, S. (1998) 'Does gender affect business performance? A study of microbusinesses in business services in the UK', *Entrepreneurship and Regional Development* 10: 117 – 135.
- Clerides, S. K., Lach, S. and Tybout, J. R. (1998) 'Is learning by exporting important? Micro-dynamic evidence from Colombia, Mexico and Morocco', *Quarterly Journal of Economics* 113: 903 – 948.
- Coleman, J. S. (1990). *Foundations of social theory*. Cambridge, MA: Belknap Press of Harvard University Press.
- Cooper, A. and Bruno, A. (1977) 'Success Among High Technology Firms', *Business Horizons* 2: 16 – 22.

- Cooper, A., Gimeno-Gascon, F. J. and Woo, C. (1991) 'A Resource-Based Prediction of New Venture Survival and Growth', in J. L. Wall, L. R. Jauch, D. Roberts, R. Ross and C. Kelly (eds.), *Proceedings of the Annual Meeting of the Academy of Management, Madison, Wisconsin*: Omnipress, pp. 68–72.
- Cooper, A., Gimeno-Gascon, F. J. and Woo, C. (1994) 'Initial human and financial capital as predictors of new venture performance', *Journal of Business Venturing* 9: 371 – 396.
- Correa Rodríguez, A., Acosta Molina, M. and González Pérez, A. (2003) 'Size, Age and Activity Sector on the Growth of the Small and Medium Firm Size', *Small Business Economics* 21: 289 – 307.
- Curran, J. and Blackburn, R. (2000) *Researching the Small Enterprise*. London: Sage.
- Davidsson, P. (1991) 'Continued Entrepreneurship: Ability, need, and opportunity as determinants of Small Firm Growth', *Journal of Business Venturing* 6: 405 – 429.
- Davidsson, P., Achtenhagen, L., and Naldi, L. (2005) 'Research on small firm growth: A review', paper presented at the 35th EISB Conference, Barcelona, Spain.
- Davidsson, P., Delmar, F. and Wiklund, J. (2006) *Entrepreneurship and the Growth of Firms*. Cheltenham, UK: Elgar.
- Deakins, D. and Freel, M. (1998) 'Entrepreneurial Learning and the Growth Process of SMEs', *The Learning Organization* 5: 144 – 155.
- Demsetz, H. and K. Lehn (1985) 'The Structure of Corporate Ownership: Causes and Consequences', *Journal of Political Economy* 93 (6): 1155 – 1177.
- Drucker, P. (1985) *Entrepreneurs and Innovation*. New York: Harper and Row Publishers.
- Du Rietz, A., and Henrekson, M. (2000) 'Testing the female underperformance hypothesis', *Small Business Economics* 14: 1 – 10.
- Duchesneau, D. and Gartner, W. (1990) 'A Profile of New Venture Success and Failure in an Emerging Industry', *Journal of Business Venturing* 5: 297 – 312.
- Dunkelberg, W. and Cooper, A. (1982) 'Patterns of Small Business Growth', *Academy of Management Proceedings*, pp 409 – 413.
- Dunkelberg, W. Cooper, A., Woo, C. and Dennis, W. (1987) 'New Firm Growth and Performance', in N.C. Churchill, J.A. Hornaday, B.A. Kirchhoff, C.J. Krasner and K.H. Vesper (eds), *Frontiers of Entrepreneurship Research*, Boston, Mass: Babson College.

- Dunne, P, Roberts, M. and Samuelson, L. (1988) 'Patterns of Firm Entry and Exit in the US Manufacturing Industries', *Rand Journal of Economics* 19: 495 – 515.
- Dunne, P, Roberts, M. and Samuelson, L. (1989) 'Plant Turnover and Gross Employment Flows in the US Manufacturing Sector', *Journal of Labor Economics* 7: 48 – 71.
- Dunne, P., and Hughes, A. (1994) 'Age, size growth and survival: UK companies in the 1980s', *Journal of Industrial Economics* 42: 115 – 140.
- Dyke, L., Fischer, E. and Reuber, R. (1992) 'An inter-industry examination of the impact of experience on entrepreneurial performance', *Journal of Small Business Management* 30 (4): 72 – 87.
- Earle, J., C. Kucsera and A. Telegdy (2005) 'Ownership Concentration and Corporate Performance on the Budapest Stock Exchange: do too many cooks spoil the goulash?', *Corporate Governance* 13 (2): 254 – 264.
- Eisenhardt, K. and Schonhoven, C. (1990) 'Organizational Growth: Linking Founding Team Strategy, Environment, and Growth among U.S. Semiconductor Ventures, 1978-1988', *Administrative Science Quarterly* 35: 504 – 529.
- Ensley, M. D., Pearson, A. W. and Amason, A. S. (2002) 'Understanding the dynamics of new venture top management teams: Cohesion, conflict and new venture performance', *Journal of Business Venturing* 17 (4): 365 – 386.
- European Commission (2003) *Green Paper: Entrepreneurship in Europe*, Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, COM (03) 27.
- Evans, D. (1987a) 'Tests of alternative theories of firm growth', *Journal of Political Economics* 95 (4): 658 – 674.
- Evans, D. (1987b) 'The Relationship between Firm Growth, Size and Age: Estimates for 100 Manufacturing Industries', *Journal of Industrial Economics* 35: 567 – 581.
- Evans, D., Leighton, L. (1989) 'Some empirical aspects of entrepreneurship', *American Economic Review* 79: 519 – 535.
- Falk, A., Kosfeld, M. (2004) 'Distrust- The Hidden Cost of Control', CEPR Discussion paper N. 4512, August.
- Fariñas, J. and Moreno, L (2000) 'Firm's Growth, Size and Age: A Nonparametric Approach', *Review of Industrial Organization* 17: 249 – 265.

- Fasci, M. and Valdez, J. (1998) 'A Performance Contrast of Male- and Female-Owned Small Accounting Practices', *Journal of Small Business Management* 36: 1 – 7.
- Feeser, H. and Willard, G. (1990) 'Founding strategy and performance: A comparison of high- and low-growth high-tech firms', *Strategic Management Journal* 11: 87 – 98.
- Friar, J. and Meyer, M. (2003) 'Entrepreneurship and Start-ups in the Boston Region: Factors Differentiating High-Growth Ventures from Micro Ventures', *Small Business Economics* 21: 145 – 152.
- Gersick, K., Davis, J., Hampton, M. and Lansberg, I. (1997) *Generation to Generation: Life Cycles of the Family Business*. Boston, Mass.: Harvard Business School Press.
- Gibrat, R. (1931) *Les inégalités économiques*. Paris: Librairie du Recueil Sirey.
- Gimeno, J., Folta, T., Cooper, A., and Woo, C. (1997) 'Survival of the fittest? Entrepreneurial human capital and the persistence of underperforming forms', *Administrative Science Quarterly* 42: 750 – 783.
- Gorritz, C. and Salas, V. (1996) 'Ownership structure and firm performance: some empirical evidence from Spain', *Managerial and Decision Economics* 17: 575 – 586.
- Graziano, C. Luporini, A. (2005) 'Ownership Concentration, Monitoring and Optimal Board Structure', Fondazione Eni Enrico Mattei Working Paper 14-2005.
- Gulbrandsen, T. (2005) 'Flexibility in Norwegian family-owned enterprises', *Family Business Review* 18: 57 – 76.
- Hall, B. (1987) 'The relationship between firm size and firm growth in the US manufacturing sector', *Journal of Industrial Economics* 35: 583 – 606.
- Hart, P. (2000) 'Theories of firms' growth and the generation of job', *Review of Industrial Organization* 17: 229 – 248.
- Hart, P. and Oulton, N. (1996) 'Grow and size of the firms', *Economic Journal* 106: 1242 – 1252.
- Hart, P. and Prais, S. (1956) 'The analysis of business concentration: A statistical approach', *Journal of the Royal Statistical Society* 119: 150 – 191.
- Honig, B. (2001) 'Human Capital and Structural Upheaval: A Study of Manufacturing Firms in the West Bank', *Journal of Business Venturing* 16: 575 – 594.
- Honjo, Y. (2004) 'Growth of new start-up firms: evidence from the Japanese manufacturing industry', *Applied Economics* 36: 343 – 355.

- Hymer, S. and Pashigian, P (1962) 'Firm Size and rate of Growth', *Journal of Political Economy* 70: 556 – 569.
- Jensen, M.C. and Meckling, W.H. (1976) 'Theory of the firm: managerial behavior, agency costs and ownership structure', *Journal of Financial Economics* 3: 305 – 360.
- Johnsen, G. and Mc Mahon, R. (2005) 'Owner-manager Gender, Financial Performance and Business Growth amongst SMEs from Australia's Business Longitudinal Survey', *International Small Business Journal* 23: 115 – 140.
- Johnson, S., Mc Millan, J. and Woodruff, C. (2000) 'Entrepreneurs and the Ordering of Institutional Reform', *Economics of Transition* 8 (1): 1 – 36.
- Jovanovic, B. (1982) 'Selection and the evolution of industry', *Econometrica* 50: 649 – 670.
- Kinsella, R., Clarke, W., Coyne, D., Mulvenna, D. and Storey, D. (1993) 'Fast Growth Firms and Selectivity', Irish Management Institute, Dublin.
- Koenker, R. and Bassett, G. (1978) 'Regression Quantiles', *Econometrica*, 46: 33 – 50.
- Koenker, R. and Bassett, G. (1982) 'Robust Tests for Heteroscedasticity Based on Regression Quantiles', *Econometrica* 50: 43 – 61.
- Koenker, R. and Hallock, K. (2001) 'Quantile Regression', *Journal of Economic Perspectives* 15: 143 – 156.
- Konings, J., Lehmann, H. and Schaffer, M. (1996) 'Job Creation and Job Destruction in a Transition Economy: Ownership, Firm Size, and Gross Flows in Polish Manufacturing 1988-91', *Labour Economics* 3: 299 – 317.
- Kovacs, J. and Virag, I. (1995) 'The Social-Economic Role of Education Today', in J. Kovacs (ed) *Technological Lag and Intellectual Background: Problems of Transition in East Central Europe*, Dartmouth Publishing Company, pp. 199 – 217.
- Lauterbach, B. and Vaninsky, A. (1999) 'Ownership structure and firm performance: evidence from Israel', *Journal of Management and Governance* 3: 189 – 201.
- Liedholm, C. (2002) 'Small Firm Dynamics: Evidence from Africa and Latin America', *Small Business Economics* 18: 227 – 242.
- Liedholm, C. and Mead, D.C. (1999) *Small Enterprises and Economic Development: The Dynamics of Micro and Small Enterprises*. London: Routledge.
- Lin, Z., Picot, G and Compton, J. (2000) 'The entry and exit dynamics of self-employment in Canada', *Small Business Economics* 15: 105 – 125.

- Liu, J. T., Tsou M. and Hammitt, J. K. (1999) 'Do Small Plants Grow Faster? Evidence from Taiwan Electronics Industry', *Economics Letters* 65: 121 – 129.
- Majundar, S. (2004) 'The hidden hand and the license raj to an evaluation of the relationship between age and the growth of firms in India', *Journal of Business Venturing* 19: 107 – 125.
- Mata, J. (1994) 'Firm growth during infancy', *Small Business Economics* 6: 7 – 39.
- Mata, J. and Portugal, P. (2004) 'Patterns of Entry, Post-Entry Growth and Survival', *Small Business Economics* 22: 283 – 298.
- Mc Conaughy, D., Walker, M., Henderson, G. and Mishra, C. (1998) 'Founding family controlled firms: efficiency and value', *Review of Financial Economics* 7: 1 – 19.
- Mc Dougal, P., Deane, R. and D'Souza, D. (1992) 'Manufacturing Strategy and Business Origin of New Venture Firms in the Computer and Communication Equipment Industries', *Production and Operations Management* 1: 53 – 70.
- Mc Pherson, M. (1996) 'Growth of Micro and Small Enterprises in South Africa', *Journal of Development Economics* 48: 253 – 257.
- McConnell, J. and H. Servaes (1990) 'Additional Evidence on Equity Ownership and Corporate Value', *Journal of Financial Economics* 27: 595 – 612.
- Morck, R., A. Shleifer and R. Vishny (1988) 'Management Ownership and Market Valuation: An Empirical Analysis', *Journal of Financial Economics* 20 (1/2): 293 – 315.
- National Institute of Statistics (2005) *Enterprise Activity*. In Romanian Statistical Yearbook. Bucharest.
- Neubauer, F. and Lank, A. (1998) *The Family Business*. New York: Routledge.
- OECD (1997) *Small Businesses, Job Creation and Growth: Facts, Obstacles and Best Practices*. Paris: OECD.
- OECD (2004) *Women's entrepreneurship: Issues and policies*. By Delmar, F., Holmquist, C. for the 2nd OECD conference of ministers responsible for SMEs, Promoting Entrepreneurship and Innovative SMEs in a Global Economy. Istanbul, 3-5 June.
- Peña, I. (2004) 'Business incubation centers and new firm growth in the Basque Country', *Small Business Economics* 22: 223 – 236.
- Penrose, E. (1959) *The theory of the growth of the firm*. Oxford: Oxford University Press.

- Pissarides, F. (1998) 'Is Lack of Funds the Main Obstacle to Growth?', European Bank for Reconstruction and Development (EBRD) Working Paper 33. London.
- Pissarides, F., Singer, M. and Svejnar, J. (2003) 'Objectives and Constraints of Entrepreneurs: Evidence from Small and Medium-Sized Enterprises in Russia and Bulgaria', *Journal of Comparative Economics* 31 (3): 503 – 531.
- Pollack, R., (1985) 'A transaction cost approach to families and households', *Journal of Economic Literature* 23: 581 – 608.
- Reid, G. and Smith, J. (2000) 'What makes a New Business Start-up Successful?', *Small Business Economics* 14: 165 – 182.
- Ristilä, J. and Tervo, H. (2002) 'Effects of unemployment on new firm formation: micro level panel data evidence from Finland', *Small Business Economics* 19: 31 – 40.
- Roper, S. (1999) 'Modelling small business growth and profitability', *Small Business Economics* 13: 235 – 252.
- Ruef, M., Aldrich, H. E. and Carter, N. M. (2003) 'The structure of organizational founding teams: Homophily, strong ties, and isolation among U.S. entrepreneurs', *American Sociological Review* 68 (2): 195 – 222.
- Sandberg, W. and Hofer, C. (1987) 'Improving New Venture Performance: The Role of strategy, industry, structure and the entrepreneur', *Journal of Business Venturing* 2: 5 – 28.
- Schutjens, V. and Wever, E. (2000) 'Determinants of new firm success', *Papers in Regional Science* 79: 135 – 159.
- Shleifer, A. and R. Vishny. (1997) 'A Survey of Corporate Governance', *Journal of Finance* 52: 737 – 783.
- Simon, H. and Bonini, C. (1958) 'The size distribution of the business firms', *American Economic Review* 48: 607 – 617.
- Storey, D. (1991) 'The birth of new firms: Does unemployment matter? A review of evidence', *Small Business Economics* 3: 167 – 178.
- Storey, D. (1994a) *Understanding the Small Business Sector*. London: Routledge.
- Storey, D. (1994b) 'The Role of Legal Status in Influencing Bank Financing and New Firm Growth' *Applied Economics* 26: 129 – 136.
- Sutton, J. (2001) 'The Variance of Firm Growth Rates: The "Scaling" Puzzle' Discussion paper EI/27. London School of Economics and Political Science.
- Taylor, M. (1996) 'Earning, Independence or Unemployment: Why Become Self-employed?', *Oxford Bulletin of Economics and Statistics* 58: 253 – 265.

- Turok (1991) 'Which small firms grow?', in L.G. Davies and A.A. Gibb (eds), *Recent Research in Entrepreneurship*, Avebury, Aldershot, England, pp. 29 – 44.
- Ucbasaran, D., Westhead, P. and Wright, M. (2007) 'Opportunity Identification and Pursuit: Does an Entrepreneur's Human Capital Matter?', *Small Business Economics* forthcoming.
- Van Biesebeek, J. (2005) 'Firm Size Matters: Growth and Productivity Growth in African Manufacturing', *Economic Development and Cultural Change* 53: 545 – 583.
- Vesper (1984) *Entrepreneurship and National Policy*. Chicago: Heller Institute.
- Wall, R.A. (1998) 'An empirical investigation of the production function of the family firm', *Journal of Small Business Management* 6: 24 – 32.
- Wasilczuk, J. (2000) 'Advantageous competence of owner/managers to grow the firm in Poland: Empirical evidence', *Journal of Small Business Management* 38: 88 – 94.
- Watson, J. (2001) 'Examining the Impact on Performance of Demographic Differences Between Male and Female controlled SMEs', *Small Enterprise Research* 9: 55 – 70.
- Westhead, P. and Birley, S. (1995) 'Employment growth in new independent owner-managed firms in Great Britain', *International Small Business Journal* 13 (3): 11 – 34.
- Westhead, P. and Cowling, M. (1995) 'Employment Change in Independent Owner-Managed High-Technology Firms in Great Britain', *Small Business Economics* 7: 111 – 140.
- Wiklund, J. (1998) 'Small firm growth and performance: Entrepreneurship and beyond', PhD thesis, International Business School. Jönköping, Sweden.
- Wolff, J. and Pett T. (2006) 'Small Firm Performance: Modelling the Role of Product and Process Improvements', *Journal of Small Business Management* 44: 268 – 284.
- Woo, C., Daellenbach, U. and Nicholls-Nixon, C. (1994) 'Theory building in the Presence of Randomness: The Case of Venture Creation and Performance', *Journal of Management Studies* 31: 507 – 524.
- Wruck, K. (1989) 'Equity Ownership Concentration and Firm Value: Evidence from Private Equity Financings', *Journal of Financial Economics* 23: 3 – 28.
- Wynarczyk, P., Watson, R., Storey, D., Short, H. and Keasey, K. (1993) *The Managerial Labour Market in Small and Medium Sized Enterprises*. London: Routledge.

- Yang, Ch and Huang, Ch (2005) 'R&D, Size and Firm Growth in Taiwan's Electronics Industry', *Small Business Economics* 25: 477 – 487.
- Yasuda, T. (2005) 'Firm Growth, Size, Age and Behavior in Japanese Manufacturing', *Small Business Economics* 24: 1 – 15.
- Zwiebel, J. (1995) 'Block Investment and Partial Benefits of Corporate Control', *Review of Economic Studies* 62: 161 – 185.