# Objectives and constraints of entrepreneurs: evidence from small and medium-sized enterprises in Russia and Bulgaria

## by Francesca Pissarides, Miroslav Singer and Jan Svejnar

**Abstract**

We analyse the principal objectives and constraints of small and medium-sized enterprises (SMEs), using data from a survey of 437 owners and top managers (CEOs) of SMEs in Russia and Bulgaria. The CEOs display similar views and identify a small number of specific constraints as being the most important ones. The constraint on external financing is a particularly serious one and the SMEs use internal finance as a fall-back option. Our econometric analysis indicates that characteristics of the entrepreneur, firm and the firm's environment are important but varying determinants of which constraints are identified as the most important ones. Our results also suggest that the nature of disruption of production and of the financial constraints after the fall of central planning was more ubiquitous and all-encompassing in Russia than in Bulgaria.

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**Working paper No. 59**           **Prepared in November 2000**

# 1. INTRODUCTION

Entrepreneurs, start-up companies and small and medium-sized enterprises (SMEs) played a very limited part under central planning. Their relative absence reflected planners' difficulties in controlling a large number of small and independent agents, as well as their belief in the existence of economies of scale.[1] As the central controls were lifted, new entrepreneurs rapidly emerged and in a number of countries they became a principal driving force of economic development. In the Czech Republic, for example, manufacturing firms with fewer than 25 employees constituted 0.8 per cent of all firms and accounted for less than 0.1 per cent of total manufacturing output in 1989. By 1993, these firms constituted 89.9 per cent of all manufacturing firms and produced 10.6 per cent of manufacturing output (Zemplinerova and Stibal, 1995). Many of these small firms also grew rapidly in size. By 1994, many of them moved into the next size category of firms with 25-200 employees, accounting for the growth in its share of output from 0.1 per cent in 1989 to 11.3 per cent in 1993 and 14.2 per cent in 1994. Similarly, the EBRD (1993) estimated that over 1.5 million small businesses were in existence in Poland by the end of 1992 and Gomulka (1994) reported that the growth of output in Poland between 1992 and 1994 was accounted for primarily by the booming SME sector.

While SMEs thus constitute very dynamic firms, their behaviour is not yet well understood and limited evidence suggests that they often face economic, institutional and legal obstacles, including limited access to working capital and long-term credit, legal and regulatory restrictions, inadequate infrastructure, and limited managerial and technical expertise. The issue has received some attention from theorists but empirical evidence has been sketchy.

In the present study, we contribute to the understanding of the principal objectives of SMEs and of the various dimensions of constraints affecting their behaviour. Our work has been motivated by the premise that in order to formulate a coherent strategy *vis-à-vis* entrepreneurs and the SME sector, it is necessary to: (a) understand the objectives of these firms, (b) comprehend how different constraints affect SME formation and performance, and (c) be able to rank the relative severity of these constraints. In order to achieve this goal, we have designed a flexible survey instrument and administered it to owners and top managers of SMEs in Russia and Bulgaria. The survey allows us to: (a) identify the principal objectives of SMEs, (b) rate and rank the severity of different types of constraints faced by the SMEs without needing to resort to subjective interpretations, and (c) employ the instrument in a comparative setting across different economies. We carry out an econometric analysis of the information obtained from the questionnaire and draw conclusions about the behaviour of SMEs in transition economies.

Our results indicate that several constraints are almost uniformly viewed as greatly restricting SME operations, with the lack or high cost of external financing being ranked on the top of the list. We also find that firms reinvest profits while operating under the external financing constraint. We hence conclude that financial constraints hamper SME growth and development and that the use of internal finance by SMEs represents a fall-back option.

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[1] EBRD (1995) for instance reports that while SMEs accounted for over two-thirds of the labour force in Czechoslovakia and Hungary in the early 1930s, by 1989 this share fell to less than one-third. Moreover, while the average size of an enterprise in these two economies grew to 2,000 workers by 1989, the corresponding figure in the European Union was seven workers.

# 2. METHODOLOGY

## 2.1 THEORETICAL UNDERPINNINGS

There have been several strands of the theoretical literature dealing with the factors that affect the emergence and performance of firms. Broadly speaking, the factors can be divided into those dealing with the entrepreneur, the structure of the firm, and the environment in which the entrepreneurs and firms operate. The issue of what personal or group characteristics make good entrepreneurs is an old one. Among individual characteristics, education has for instance been given emphasis in the human capital literature, while factors such as ethnicity and social background have featured in the anthropological and sociological studies. Group characteristics of entrepreneurs have been analysed in the literatures dealing with owner-managed firms, separation of ownership and control, labour-managed or worker-owned firms, state-owned enterprises, and non-profit organisations (see e.g., Williamson, 1985, Hart and Moore, 1990, and Bonin, Jones and Putterman, 1993). The structure or internal organisation of firms has been studied primarily from the standpoints of bounded rationality, agency problems and strategic behaviour (see e.g., Hurwicz, 1973, Milgrom and Roberts, 1990, and Ben-Ner, Montias and Neuberger, 1993). Finally, the environmental factors usually refer to the existence and functioning of the financial and other markets, the extent of development of infrastructure, and the presence of a legal framework, regulation and institutions of enforcement. In the transition context, considerable emphasis has also been placed on the achievement of macroeconomic stability (see e.g., Fischer, Sahay and Vegh, 1996).

In the context of the environment faced by entrepreneurs and firms, a question has arisen about the effects on firms of financial constraints brought about by the underdevelopment of financial markets in the transition and other developing economies. A large theoretical literature, reviewed by Levine (1997), points to the importance of financial sector development for economic growth through better identification of investment projects, better availability and lower cost of external financing to firms, improved risk taking, technological innovation, and other factors. In this context, Rajan and Zingales (1998) present industry-level evidence from a large sample of countries showing that firms needing external finance tend to develop more slowly in countries with less-developed financial markets. Similarly, in their analysis of the population of Czech industrial firms with 25 or more workers, Lizal and Svejnar (2000) find that smaller firms (especially limited liability companies and cooperatives) have lower rates of investment and show signs of capital rationing in that their investment depends on the availability of internal funds. In contrast, Johnson, McMillan and Woodruff (1999) find in a survey of private manufacturing firms in Poland, Romania, Slovak Republic, Ukraine and Russia that the absence of external financing does not prevent firms from investing. They conclude that the financial constraint is not restrictive in that internal finance can substitute for external finance.

## 2.2 THE SURVEY

During the summer of 1995 we administered an extensive questionnaire to the owners and/or chief executive officers (hereafter CEOs) in a sample of 216 firms in the Krasnodar region of Russia (hereafter Russia) and 221 firms in Bulgaria. The goal of the interviews was to obtain information about the objectives of the firms and about the absolute and relative importance of the principal constraints faced by the firms. In order to assess the factors that lead managers to select particular constraints as being the most severe, we also collected information on the characteristics of the CEO, the firm, and the sector of the firm's operation.

In the main body of our questionnaire we focused on identifying the absolute and relative severity of the constraints faced by the SMEs in the areas of: 1) production, 2) technology, 3) procurement of non-labour inputs, 4) sales, 5) finance, 6) infrastructure, 7) regulation and taxation, 8) labour, and 9) business services. Within each of these nine areas, each CEO was asked to rate on a scale from 1 (unimportant) to 5 (very important) the severity of several specific constraints. Each CEO was then provided with a complete list of the specific constraints that he had rated as very important (5) and, for questions in which he had rated no constraint as very important, he was also presented with constraints that he had rated as important (4). The CEOs were then asked to examine this list of highly rated constraints from all the areas and to identify and rank the ten most important ones. In this way we have obtained (a) the absolute rating of the various specific constraints and information on the most important constraint (partial ranking) within each area, and (b) the relative ranking for the top ten highly rated specific constraints, irrespective of area.

In addition to tabulating the responses, we have used multinomial logit regressions to evaluate the extent to which CEO-specific, firm-specific and sectoral variables explain which constraints the CEOs identify as being the most important ones.

### 2.3 THE SAMPLES

The samples constitute regionally stratified random samples based on the best data that we could obtain on the population of SMEs in Bulgaria and Russia.[2] As has been done in other enterprise-level surveys, the lack of historical data has forced us to sample existing firms and to collect current and retrospective information about them. This approach has the advantage of being feasible and affordable. Its drawback is that it produces duration bias. The bias stems from the fact that some firms did not perform well and closed down before the date of our sampling, while others were very successful and outgrew the category of small and medium-sized firms. The usual sampling procedure thus excludes (truncates) the worst and best performing enterprises and oversamples firms that survive in a given category for relatively long periods of time. In order to minimise the duration bias, we set a relatively high upper limit on the number of workers (200 versus the usual 100) in the selection of SMEs.[3] The summary statistics related to the samples firms are reported in the Annex. As may be seen from the Annex, the SMEs in the two economies are primarily recently created and privately owned firms that are characterised by highly concentrated ownership.

After providing information about the objectives of their firms, the CEOs were asked a battery of questions about the obstacles and constraints they faced. As mentioned earlier, we formulated the questions in such a way as to obtain the best possible absolute and relative valuation of the severity of various constraints.

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[2] In Russia the firms are located within the Krasnodar region, while in Bulgaria the firms are mostly located in the greater Sofia region.

[3] We have also made considerable effort to trace some of the extinct firms but this effort eventually proved unsuccessful.

## 3. OBJECTIVES OF THE FIRMS

The CEOs were presented with a list of possible objectives and they were asked to rate each objective as well as to identify the "most important" one.[4] The results of this exercise are presented in Table 1. In each country there is virtually no difference between the objectives identified as important by the entire sample of firms and the sub-sample composed of private firms only. However, while both the Russian and Bulgarian SMEs tend to identify output and profit as "very important" as well as the "most important" objectives, in Russia the SMEs place somewhat more emphasis on profit, while in Bulgaria they place more emphasis on output. Indeed, while the same percentage (71 per cent) of Russian firms rate profit and output as "very important", 72 per cent of Bulgarian firms rate output but only 44 per cent rate profit as "very important". Moreover, while 49 per cent of the Russian firms identify profit and 38 per cent output as the "most important" objective, the respective percentages in the Bulgarian sample are 26 per cent and 52 per cent. Our retrospective questions indicate that the objectives appear to be stable over time and unrelated to company ownership.

Overall, the SMEs hence place emphasis on both profit and output maximisation. For small firms, the two goals may of course be mutually consistent as growth may lead to increased profitability and improved likelihood of survival.[5] Nevertheless, in future research it will be desirable to examine more systematically the almost universally accepted assumption that the newly created firms in the transition economies behave as profit maximisers.

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[4] The list consisted of the following objectives: achieve highest possible profit, output, employment, wages, and non-wage benefits; prepare for privatisation (if state owned); prevent social conflict; and other.

[5] The overwhelming majority of enterprise closures takes place in enterprises with fewer than 10 employees not just in transition countries but also in EU countries (Eurostat).

**Table 1:  Importance placed by the CEO on various objectives**

| | Russia – all firms | | | | Russia – private firms | | | | Bulgaria – all firms | | | | Bulgaria – private firms | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Very important [1] | | Most important [2] | | Very important [1] | | Most important [2] | | Very important [1] | | Most important [2] | | Very important [1] | | Most important [2] | |
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| Achieve highest possible output | 154 | 71 | 82 | 38 | 136 | 72 | 73 | 39 | 158 | 72 | 114 | 52 | 138 | 73 | 101 | 54 |
| Achieve highest possible profit | 153 | 71 | 106 | 49 | 134 | 71 | 93 | 49 | 96 | 44 | 56 | 26 | 84 | 45 | 50 | 27 |
| Achieve highest possible wages | 87 | 40 | 13 | 6 | 72 | 38 | 10 | 5 | 57 | 26 | 11 | 5 | 48 | 26 | 10 | 5 |
| Achieve highest possible employment | 47 | 22 | 3 | 1 | 42 | 22 | 3 | 2 | 21 | 10 | 3 | 1 | 19 | 10 | 2 | 1 |
| Achieve highest possible non-wage benefits | 33 | 15 | 2 | 1 | 26 | 14 | 2 | 1 | 30 | 14 | 1 | .5 | 20 | 11 | 1 | .5 |
| Prepare for privatisation (if SOE) | 9 | 4 | 0 | 0 | - | - | - | - | 5 | 2 | 5 | 2 | - | - | - | - |
| Prevent social conflict | 59 | 27 | 4 | 2 | 51 | 27 | 4 | 2 | 16 | 7 | 3 | 1 | 13 | 7 | 2 | 1 |
| Other objective | 15 | 7 | 4 | 2 | 13 | 7 | 3 | 2 | 36 | 16 | 20 | 10 | 27 | 14 | 17 | 9 |
| Not answered | 0 | | 2 | 1 | 0 | | 1 | | 0 | | 5 | 2 | 0 | | 5 | 3 |
| **Total** | **557** | | **216** | **100** | **474** | | **189** | **100** | **419** | | **219** | **100** | **349** | | **188** | **100** |

Notes:

[1] Gives the numbers and percentage of firms that considered (rated) a given objective as very important, where very important equals 5 on a scale from 1 (unimportant) to 5. More than one objective could be rated very important.

[2]  Gives the number and percentage of firms that ranked a given objective as the most important from all the objectives.

# 4. OBSTACLES AND CONSTRAINTS FACED BY THE ENTREPRENEURS

## 4.1 THE ANALYTICAL APPROACH

In evaluating CEOs' responses about constraints, we use both cross tabulations and multinomial logit regressions.[6] In the logits, we focus on explaining the determinants of the probability that the SME cites a given constraint as being the most important one. In accordance with the conceptual framework discussed in Section 2.1, the explanatory variables that we use reflect the characteristics of the entrepreneur, the firm, and the environment in which the firm operates:

*Characteristics of the entrepreneur:*

Education level of the CEO

*Characteristics of the firm:*

Number of years since the firm acquired its current legal status (age of the firm)

Percentage of the firm's capital owned by all private parties (ownership of the firm)

Number of employees (firm size)

Capital-labour ratio (relative factor intensity)

Sales per employee (labour productivity and ability to sell the products)

Percentage of the firm's capital leased to others

*Environment of the firm:*

Share of firm's output in manufacturing (sectoral location of the firm)

Share of firm's output in trade (sectoral location of the firm).

The estimation of the parameters of the linear multinomial logit models is based on the specification

$$\Pr ob[y_i = j] = \frac{\exp(\beta_j'x)}{\sum\limits_j \exp(\beta_j'x)}, \qquad j = 0, 1, \dots, J,$$

where $\Pr ob[y_i = j]$ is the probability that the CEO cites a given constraint as being the most important one, $x$ is a vector of the explanatory variables defined above and $\boldsymbol{b}_j$ is a vector of associated parameters. While the estimation of the multinomial logit model is based on a straightforward numerical optimisation (provided it is possible to identify the large number of parameters), the interpretation of the estimated coefficients is somewhat more complex. In contrast to the binomial models, the signs of the cofficients on individual variables do not necessarily correspond to the signs of their corresponding probability derivatives.[7] In particular, letting $p_j$ stand for $\Pr ob[Y = j]$ for all J, it is necessary to calculate the estimated asymptotic probability derivatives

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[6] The corresponding OLS and probit regressions yield similar results.

[7] For example, should the coefficient on age of firm in a linear model for the third constraint be positive, this does not mean that the probability of the third constraint being selected as most important increases with the firm's age.

$\partial p_j / \partial x$ and their asymptotic variance-covariance matrices $V(\partial p_j / \partial x)$. Given the large number of coefficients that we need to estimate in our system of logit equations, we have carried out this calculation by expressing the estimates of $\partial p_j / \partial x$ as

$$p_j(\boldsymbol{b}_j - \overline{\boldsymbol{b}})$$

where $\overline{\boldsymbol{b}} = \sum_j p_j \boldsymbol{b}_j$, and the estimate of $V(\partial p_j / \partial x)$ as

$$Asy.V\left(\partial p_j / \partial x\right) = \sum_l \sum_m V_{jl} Asy.Cov.[\boldsymbol{b}_l, \boldsymbol{b}_m'] V_{jm}', \ j = 1,\dots, J,$$

where $V_{jl} = p_j \left[1(j = l) - p_l\right] \ I + \left[1(j = l) - 2 p_l\right] \ \partial p_j / \partial x \, x'$,

with $1(j = l) = 1$ if $j = 1$ and 0 otherwise, and $I$ is a vector of 1s. The coefficients and standard errors reported in the tables of this paper are hence the asymptotic probability derivatives and their asymptotic standard errors.

Another point worth noting is that some of the explanatory variables, such as the number of employees, could be viewed as being endogenous. If one had additional data in the temporal or cross-sectional dimensions, it would be worthwhile to search for valid instrumental variables. In the present study, this additional information is not available and we treat all the explanatory variables as predetermined. As will be seen below, we have estimated some parsimonious specifications that rely less on the potentially endogenous regressors. Finally, in some runs we encountered problems of singularity of the likelihood function, which necessitated the exclusion of some regressors.

### 4.2 RANKING THE HIGHLY RATED CONSTRAINTS

In Table 2, we present the CEOs' relative rankings of the ten most highly rated constraints. The rows in Table 2 denote constraints, while the entries in the three columns show the number of firms that ranked the given constraint as being: (a) the most important one (No. 1), (b) among the three most important constraints (No. 1-3), and (c) among the ten most important constraints (No. 1-10), respectively.[8] The entries within each column give the five most-often-cited constraints. Since the number of sampled SOEs in Bulgaria is significant (22), we provide the Bulgarian results separately for private and state-owned firms. In Russia the number of sampled SOEs is small and we therefore provide the results for all firms together.

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[8] For example, in the row denoted "Production – Suppliers are often not willing to deliver", we observe that in Russia 12 firms identified this constraint as being the most important one and 29 firms cited it as being among the three most severe constraints.

**Table 2: Relative ranking of most highly rated constraints –**

**Number of firms ranking a given constraint as No. 1, No. 1-3 and No. 1-10**

**(Results based on five most-often-cited constraints)**

| | Russia (N=216) | | | Bulgaria private (N=190) | | | Bulgaria state (N=22) | | |
|---|---|---|---|---|---|---|---|---|---|
| | No. 1 | No. 1-3 | No. 1-10 | No. 1 | No. 1-3 | No. 1-10 | No. 1 | No. 1-3 | No. 1-10 |
| **Constraints:** | | | | | | | | | |
| **Production** | | | | | | | | | |
| - Suppliers are often not ready to deliver | 12 | 29 | | 11 | 27 | | 1 | | |
| | | | | | | | 1 | 4 | |
| - Equipment is too old or unreliable | 26 | 33 | | 22 | 29 | | 4 | 4 | |
| - Other | | | | | | | | | |
| **Expanding production** | | | | | | | | | |
| - Financing problems | 15 | 35 | 58 | 14 | 32 | 50 | | | 7 |
| - Taxes | | | | | | | | 3 | |
| - Bad access to foreign markets | | | | | | | | 3 | |
| **Financing** | | | | | | | | | |
| - Level of interest rates | 18 | 38 | 101 | 16 | 34 | 89 | | | 7 |
| **Infrastructure** | | | | | | | | | |
| - Getting land, office space, buildings | 11 | 25 | 79 | 11 | 24 | 75 | | | |
| - Other | | | | | | 58 | | | |
| **Local purchases** | | | | | | | | | |
| - Prices of local goods change in a frequent and unpredictable manner | | | 80 | | | 69 | | 3 | 8 |
| **Taxes** | | | | | | | | | |
| - Value added taxes | | | 66 | | | | | | |
| - Other | | | | | | | | | 7 |
| **Regulation** | | | | | | | | | |
| - Trade unions | | | | | | | 2 | | |
| **Imports** | | | | | | | | | |
| - Prices of imported goods are too high | | | | | | | 1 | | 6 |

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As may be seen from Table 2, when one considers all firms in both countries, there is a complete overlap across the countries in the five constraints that are most often cited by the CEOs as being: (a) the most important constraint (No. 1), or (b) among the three most important constraints (No. 1-3). The most important constraint and the three most important constraints are found most frequently in the areas of production and its expansion, financing and infrastructure. Within these areas, the specific most important constraints are: "Other production constraints", "suppliers are often not ready to deliver", "financing problems that hinder expanding production", "level of interest rates", and constraints on "getting land, office space and buildings". In both countries, production problems are most frequently cited as the most important constraint but financing problems are most widely cited among the three most important constraints.

When one considers the five constraints that are most often cited by the Russian and Bulgarian firms as being among the ten most important constraints, the two countries maintain an overlap on four constraints, and three of the original five constraints remain in the set. In particular, the "level of interest rates", "financing problems that hinder expanding production" and "getting land, office space and buildings" remain in the set, with the "level of interest rates" being cited most often (by almost one-half of the Russian as well as Bulgarian firms). The new constraint that is common to both countries is "frequent and unpredictable changes in prices of local goods", which is unsurprising given the fact that both countries went through hyperinflation in the early 1990s. This is also the second most frequently cited constraint in both countries. "Getting land, office space and buildings" becomes the third most cited constraint in both countries, reflecting the fact that no restitution had taken place in Russia and that legislation restricted the ability to sell restituted land and property in Bulgaria.[9] This is followed by "other infrastructure constraints" in Bulgaria and "value added taxes" in Russia. Finally, "financing problems that hinder expanding production" comes in fifth in terms of frequency of citations, being cited by slightly more than one-quarter of all Russian and Bulgarian firms.[10]

In view of the above rankings, in the rest of the paper we focus on the constraints in the following four areas: carrying out production, expanding production, financing and infrastructure.

## 4.3 CARRYING OUT PRODUCTION

In the area of production, the CEOs were asked to rate eight potential constraints and to identify the most important one among them.[11] The main constraints identified by the SMEs in the area of production are "suppliers are often not ready to deliver" (identified as the most important constraint by 33 per cent Bulgarian and 11 per cent Russian SMEs), "equipment is too old and/or unreliable" (identified as the most important constraint by 25 per cent of Russian and 8 per cent of Bulgarian managers), and "other". The first and third among these constraints also appear among the most highly ranked constraints in the overall ranking exercise (Table 2).

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[9] The inability to sell restituted property affects only private enterprises.

[10] The Bulgarian SOE data show a significant overlap with the private firm rankings when one considers the five constraints that are most often cited as being among the ten most important constraints.

[11] The eight potential constraints included in this area are: (1) suppliers are often not ready to deliver; (2) deliveries of raw materials are often delayed due to transport problems; (3) cannot find spare parts; (4) difficult to repair production equipment due to lack of know-how; (5) equipment is too old and/or unreliable; (6) lack of skilled manpower; (7) power shortages; and (8) other.

Since the CEOs were rating and ranking eight potential constraints, we have estimated a system of eight multinomial logit equations to determine which factors influence the probability that the CEOs select any given constraint as the most important one. In accordance with our conceptual framework, the explanatory variables are the ones listed in Section 4.1 and they reflect the characteristics of the entrepreneur, firm and firm's environment.

**Table 3: Determinants of the probability that the most important constraint in the area of production is "suppliers are not ready to deliver"**

**(Multinomial logit estimates of probability derivatives; values in parentheses are asymptotic standard errors)**

|  | Russia | Bulgaria |
|---|---|---|
| Constant | .092 | -.556** |
|  | (.145) | (.180) |
| University education | -.033 | -.076** |
|  | (.040) | (.026) |
| Age of firm | -.256 | -1.424** |
|  | (.286) | (.504) |
| (Age of firm)$^2$ | .575 | .022** |
|  | (.428) | (.008) |
| (Q/L)/1000 | .0004 | .064** |
|  | (.0004) | (.022) |
| (K/L)/1000 | .001 | -.199** |
|  | (.001) | (.068) |
| % Q in manufacturing | -.002* | .012** |
|  | (.001) | (.004) |
| % Q in trade | -.0005 | .014** |
|  | (.0019) | (.005) |
| % Private ownership | .0005 | -.0016** |
|  | (.0005) | (.0006) |
| No. of employees/1000 | 1.55** | .919** |
|  | (.71) | (.315) |
| P value | .000 | .048 |

Notes: P value for the Wald test that all parameters are jointly zero.
*  =  Significantly different from zero at 10% test level.
** =  Significantly different from zero at 5% test level.

The estimated derivatives from the logit dealing with the most important constraint, namely "suppliers are often not ready to deliver," are given in Table 3. As may be seen from the table, in Bulgaria one finds a strong relationship between all the explanatory variables and the probability that the constraint "suppliers are often not ready to deliver" is cited as the most important one. The selection of this constraint is negatively related to the (university) education of the manager, the capital intensity of the firm and the extent to which the firm is privately owned. It is positively related to the firm's labour productivity, the percentage of its output in manufacturing and trade, and its size as measured by the number of employees. The probability has a U-shaped relationship with respect to the number of years since the firm acquired its current legal status and the slope is declining within the relevant range

for most firms. In Russia, where only 23 firms identified this constraint as the most important one, the only significant coefficients are found with respect to the percentage of output in manufacturing (negative) and the number of employees, which is positive as in Bulgaria.

Hence, while larger firms in both countries appear to be more sensitive to delivery bottlenecks than smaller firms, the similarity ends there. The constraint is for instance more relevant to manufacturing firms in Bulgaria and non-manufacturing ones in Russia, reflecting in part the sectoral concentration of *de novo* firms in the two countries. As we discuss in the Annex, in Russia relatively more SMEs emerged as a result of unbundling of large manufacturing state-owned enterprises and the manufacturing sector enjoys pre-existing linkages with suppliers and/or parent companies. This makes delivery bottlenecks a less important obstacle for manufacturing SMEs than for those in the service sector, which is almost completely composed of *de novo* firms. In Bulgaria privatisation and restructuring had not progressed at the same pace as in Russia and most SMEs, regardless of sectors, are start-ups. Thus the manufacturing sector in Bulgaria does not enjoy the relative advantage that we have observed in Russia. Finally, while the manager's human and the firm's physical capital as well as the age (experience) and private ownership diminish the importance of the delivery constraint in Bulgaria, no systematic relationship with these variables is found in Russia, even in more parsimonious specifications. These differences suggest that the nature of disruption of deliveries after the fall of central planning, discussed by Blanchard and Kremer (1997) and Roland and Verdier (1999), was more ubiquitous and all-encompassing in Russia than in Bulgaria.

As might be expected, the estimated coefficients and calculated derivatives for the seven other constraints listed in the area of production were uniformly insignificant and only the frequently invoked "other" constraint model occasionally produced coefficients whose significance approached the traditional significance test levels.

## 4.4 EXPANDING PRODUCTION

In this area, the managers were asked to rate and identify the most important of 11 potential constraints to expanding production.[12] In interpreting the answers in this area, it is useful to keep in mind that the average Russian and Bulgarian SME reports to be operating at 57 per cent and 69 per cent of production capacity, respectively. In this context, the SME managers identified "financing problems" as constituting the most important constraint. 40 per cent (62 per cent) of Russian and 29 per cent (38 per cent) of Bulgarian managers ranked financing problems as most important (very important). The financing problems also figure prominently in the overall relative ranking of all the most highly rated constraints (Table 2).

Interestingly, when we ran the multinomial logits to assess if there are systematic determinants of the probability that "financing problems" is selected as the most important constraint, we did not obtain significant coefficients in any specification. Hence, the financing problems constraint is important both absolutely and in relative terms, and its effect is uniform in that the probability of its selection is not

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[12] The potential obstacles listed in the question are: (1) competition is high; (2) not enough qualified labour; (3) insufficient demand for output; (4) cannot ship production, bad transportation; (5) I am not interested in expansion; (6) administrative problems; (7) input procurement problems; (8) financing problems; (9) taxes; (10) bad access to foreign markets; and (11) other (specify).

systematically linked to observable characteristics of the entrepreneur, the firm, or the sector in which the firm operates.[13]

### 4.5 FINANCING

The SMEs report receiving virtually no open or hidden subsidies from the state. The debt/equity ratio of the average SME was 48 per cent in Bulgaria and 30 per cent in Russia, but the mean values have sizeable standard deviations. As is the case for SMEs elsewhere in the world, own or family capital played a very important part in the start-up of most of our SMEs. However, bank capital was somewhat important in Bulgaria, and obtaining capital from a spin-off or partners was somewhat important in Russia. This result is in line with the credit rationing literature that is based on the argument of incomplete or asymmetric information (e.g., Jaffee and Stiglitz, 1990), according to which younger firms suffer relatively more than older firms from credit rationing. The different pattern in the two countries is also probably brought about by the lack of financial discipline in the Bulgarian financial sector that culminated in the 1996 banking crisis, and by the privatisation pattern in Russia that generated an SME sector that contained relatively more spin-offs. In both countries, the CEOs attribute the willingness of others to lend them at the start of their venture to their personal reputation (cited as most important by 51 per cent of the CEOs in Russia and 20 per cent in Bulgaria),[14] the reputation of their product (20 per cent and 13 per cent, respectively), and the quality of their business plan (14 per cent in both countries).

The SMEs in our sample use the banking system in that virtually all (96 per cent in Bulgaria and 99 per cent in Russia) have a bank account. However, unlike Johnson, McMillan and Woodruff (1999), we find that the firms' integration into the formal credit system remains limited in both countries. In particular, while most firms in the Johnson, McMillan and Woodruff (1999) sample report receiving a loan, only 37 per cent of the Bulgarian and 29 per cent of the Russian firms in our sample report obtaining a loan from a financial institution in the past three years.[15] Moreover, only 56 (25 per cent) of our Bulgarian and 16 (7 per cent) of our Russian firms know about special financing programmes for SMEs and only eight Bulgarian and seven Russian firms benefited from them.

In this context it is interesting to note that our Russian SMEs on average reinvest 58 per cent of their profit, while our average Bulgarian SME reinvests 74 per cent of its profit. These averages are higher than the 30-50 per cent range reported by Johnson, McMillan and Woodruff (1999). Moreover, while the average firm in all countries of the Johnson, McMillan and Woodruff sample reports non-

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[13] The estimated coefficients of the logits that we ran for the ten other constraints in the area of expanding production were also statistically insignificant.

[14] In Bulgaria, 46% of managers did nor rank the most important reason in this question. The 20% of firms thus correspond to almost 40% of responding firms.

[15] The difference between Johnson, McMillan and Woodruff's and our results may be explained in part by the fact that their sample covers some of the most developed and wealthy areas of the countries that they investigated (e.g. Katowice in Poland), in part by the high average initial employment of start-ups in their sample (34.4 employees in Poland and 31.9 employees in Ukraine), and in part by their high upper employment limit for private small and medium-sized enterprises (270 vs. 200 employees). The 270 employee limit exceeds even the 250 limit used by the European Union in its official classification. Finally, the Johnson, McMillan and Woodruff surveys were run two-three years after those described in this paper and inevitably reflect a more advanced stage of transition than the one reflected in our survey.

reinvested profits that exceed its bank loans, in our sample this is the case for Russia but not for Bulgaria. Since in the Russian sample there are more SMEs that are spin-offs resulting from internal buy-outs, it is possible that managers of these firms are not as interested in investing and restructuring as are the owners of the Bulgarian (mostly private start-up) SMEs. This hypothesis that owners of start-up firms have a higher propensity to invest from retained earnings than managers of spin-offs should be explored in future research.

In the area of financing, we asked the managers to rate and identify the most important of eight potential constraints.[16] The "level of interest rates" was identified by the largest number of managers as both a "very important" and the "most important" constraint. Indeed, 83 per cent of the Russian and 78 per cent of the Bulgarian managers have rated this constraint as being "very important", and 67 per cent in each country selected it as the "most important" problem. The level of interest rate is also one of the most highly ranked constraints in the overall ranking of all the highly rated constraints in the questionnaire (Table 2).

When we ran multinomial logits to assess if there were systematic determinants of the probability that the high level of interest rates was selected as the most important constraint, we had to drop several regressors in the Russian equation in order to avoid singularity of the likelihood function and achieve identification. As may be seen from Table 4, in both countries the capital intensity of production has a positive effect on the probability that the level of interest rates is selected as the most important constraint, although in Bulgaria the estimated coefficient is not very significant. The positive coefficient on capital intensity is intuitively plausible as capital-intensive operations have a greater need for investment and suffer more from high interest rates. Unlike in Bulgaria, in Russia we find no other variables affecting significantly the probability that the level of interest rates is selected as the most important constraint by the CEOs. Hence as with the constraint on delivery in production, the interest rate constraint is found to be generally rather than selectively binding in Russia. In contrast, in Bulgaria the probability of selecting interest rates as the most important constraint is also negatively related to the (university) education of the CEO, labour productivity, and in the relevant range also to the age of the firm. It is positively related to the manufacturing orientation of the firm's production, the extent to which the firm is privately owned, and its size as measured by employment. These findings indicate that Bulgarian firms that have existed longer and have a more educated manager tend to feel less acutely the interest rate constraint, being probably better able to find a way around this constraint. In contrast, firms that are larger, more capital intensive, operate more in manufacturing (perhaps being perceived by banks as a riskier sector than services) and are more privately (less state-) owned, tend to rank the (high) level of interest rates as being the most important constraint to obtaining financing. These firms need more capital and may have harder time obtaining it from the traditional sources.[17]

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[16] The constraints listed are: collateral requirements; requirements to produce financial documents; level of interest rates; deposit/loan track record requirement; not having connections in banks or in financial institutions; access to non-bank investors/partners; permits and licences from institutions other than banks; other (specify).

[17] The SMEs not only seek credit but they also serve as creditors. In Russia, about 50% of the sampled SMEs were asked for credit by their customers in the last two years and about one-third of the firms provided such credit. The corresponding numbers in Bulgaria are 44-47% and 39-43%, respectively. Hence about one-third of the Russian and two-fifths of the Bulgarian firms serve as creditors to their customers. This finding is important because it contradicts some of the anecdotal evidence that

### 4.6 INFRASTRUCTURE

In the area of infrastructure, the CEOs were asked to rate 11 potential constraints and, as usual, to identify the most important one among them.[18] The answers indicate that "getting land, office space and buildings" is the main problem; 52 per cent of the Russian and 55 per cent of the Bulgarian managers rated this problem as "very important", while 51 per cent and 59 per cent, respectively, ranked it as the "most important" problem in this area. The problem is also identified as one of the most important constraints in the overall ranking across areas of all the highly rated constraints (Table 2).[19] The ranking is consistent with the fact that leasing land and office space is the dominant mode of operation, with the ratio of SMEs that lease their land and office space to those who own it being 1.7 in Russia and 2.3 in Bulgaria. The finding is intuitively acceptable, given the problems linked to restitution and lack of development of land registries in both countries. The average SME also expressed a strong desire to expand its existing buildings and machinery (by 90 per cent in Russia and 73 per cent in Bulgaria), and over two-thirds of the respondents in each country expect to face serious problems in this area.

asymmetric information and high default risk tend to generate a cash-in-advance economy in the transition.

In both countries, virtually all (90%) firms that provide customer credit personally check the creditworthiness of the buyers, rather than using a credit agency or another mechanism. In both countries they on average finance about one-third of the value of the sales. The average time length of the credit is two months in Russia and four months in Bulgaria. The average share of late payments in the total credit has over the last two years been 19-25% in Russia and 26-27% in Bulgaria. Defaults have on average accounted for 7-8% of total credit in Russia and 3-4% in Bulgaria. SOEs are on average viewed by SME managers to be about 30% more likely to default than private firms in Russia and more than twice as much likely in Bulgaria. In both countries, the SMEs negotiate with clients that do not pay and some SMEs tend to resort to court or private agency specialising in collection of debts. Very few firms (10 in Russia and 13 in Bulgaria) report writing off debts.

[18] The potential obstacles listed are: (1) getting land, office space, buildings; (2) power breakdowns; (3) voltage fluctuations; (4) telecommunications problems; (5) water supply; (6) waste water disposal; (7) garbage disposal; (8) quality of roads; (9) quality of railway transport; (10) quality of ports; and (11) other (specify).

[19] Power breakdowns was identified as the most important problem by 18% of managers in Russia, while telecommunications problems and road quality were each selected by 9% of the managers in Bulgaria.

**Table 4: Determinants of the probability that the most important constraint in the area of financing is the "level of interest rates"**

**(Multinomial logit estimates of probability derivatives; values in parentheses are asymptotic standard errors)**

|  | Russia | Bulgaria |
|---|---|---|
| Constant | .333** | .472** |
|  | (.092) | (.037) |
| University education | -.028 | -.027** |
|  | (.067) | (.002) |
| Age of firm | -.079 | -.747** |
|  | (.203) | (.059) |
| (Age of firm)$^2$ |  | .010** |
|  |  | (.001) |
| (Q/L)/1000 | .0002 | -.020** |
|  | (.0031) | (.002) |
| (K/L)/1000 | .006** | .134 |
|  | (.003) | (.010) |
| % Q in manufacturing/1000 |  | .131** |
|  |  | (.013) |
| % Private ownership |  | .001** |
|  |  | (.0001) |
| No. of employees |  | .003** |
|  |  | (.0003) |
| P value | .000 | 0.000 |

Notes:  P value for the Wald test that all parameters are jointly zero.
\*        =        Significantly different from zero at 10% test level.
\*\*       =        Significantly different from zero at 5% test level or better.

Table 5 contains the multinomial logit derivatives of the effects of explanatory variables on the probability that "getting land, office space and buildings" is selected as the most important constraint. As may be seen from the table, most of the coefficients are significant for Russia and all are significant for Bulgaria. (As in other estimations, some variables had to be omitted from the system to avoid singularity of likelihood and ensure identification of parameters.) In both countries the probability is negatively related to the age and size of the firm, but positively related to labour productivity. The age effect probably indicates that firms that have been longer in existence either inherited or found ways to secure relatively adequate premises. The size effect may have a similar interpretation, while high productivity could be the result of past growth that moved the firm against the infrastructure constraint. The two countries differ in the effect of CEO's education (positive in Bulgaria and negative in Russia), capital intensity (negative in Bulgaria and insignificant in Russia), percentage of output in manufacturing (positive in Russia but negative in Bulgaria), and the extent of private ownership (insignificant in Russia and positive in Bulgaria). The workings of the emerging real estate market hence appear to be somewhat different in the two countries.

**Table 5: Determinants of the probability that the most important problem in the area of infrastructure is "getting land, office space and buildings"**

**(Multinomial logit estimates of probability derivatives; values in parentheses are asymptotic standard errors)**

|  | Russia | Bulgaria |
|---|---|---|
| Constant | .395** | .038 |
|  | (.116) | (.025) |
| Apprenticeship education |  | .081** |
|  |  | (.014) |
| University education | -.097** | .254** |
|  | (.029) | (.031) |
| Age of firm | -.754** | -.375** |
|  | (.270) | (.096) |
| (Age of firm) | .431 | .011** |
|  | (.354) | (.002) |
| (Q/L)/1000 | .0012** | .018** |
|  | (.0005) | (.006) |
| (K/L)/1000 | .0008 | -.091** |
|  | (.0008) | (.015) |
| % Q in manufacturing/1000 | 1.865** | -.318** |
|  | (.846) | (.157) |
| % Q in trade | .0034** |  |
|  | (.0015) |  |
| % Private ownership | -.0006 | .003** |
|  | (.0005) | (.0004) |
| No. of employees | -.0027** | -.0015** |
|  | (.0005) | (.0002) |
| P value | 0.000 | 0.000 |

Notes:  P value for the Wald test that all parameters are jointly zero.
\*　　=　　Significantly different from zero at 10% test level.
\*\*　　=　　Significantly different from zero at 5% test level or better.


**4.7 OTHER ISSUES**

Since specific constraints in the areas of carrying out production and expanding production were identified as most important in Table 2, we have also examined the constraints in the area of sales. The average Russian SME in our sample sells 96 per cent of its products on the domestic market and reports having done so in the preceding year as well as in the first year of its operations. The average Bulgarian firm is a bit more export-oriented, selling 88 per cent of its products domestically. 34 per cent of the Bulgarian and 16 per cent of the Russian firms changed the markets for which they produced during the last five years. The most highly rated and ranked factor behind this switch was a decline in demand from state institutions, followed by increased opportunities to export to other countries (for Bulgaria) and decreased demand elsewhere in Russia (for the Russian SMEs).

What are the principal obstacles to increasing local sales? To answer this question, we asked the CEOs to rate a list of nine potential constraints and identify the most important one among them.[20] The "lack of credit finance" comes on top, being cited as the most important obstacle by 33 per cent of the Russian and 26 per cent of the Bulgarian firms. High cost of raw materials is cited by 17 per cent of the Russian and 25 per cent of the Bulgarian firms. The principal other constraints (lack of demand, competition from domestic companies, and technological problems) are selected as most important by fewer than 15 per cent of companies in either country.

In the early phases of the transition, the success of SMEs may depend crucially on their ability to do business with the state sector of the economy. We therefore asked the managers to rate the main obstacles to doing business with the SOEs and other government institutions and to identify the most important constraint. About 30 per cent of the managers in both countries identified as the most important constraint the fact that "SOEs/government pay late or less than the agreed amounts". 25 per cent of managers in both countries ranked as the most important constraint the fact that "contracts are only available to those with connections". These two constraints were also rated more frequently than others as being very important constraints in this area. The results suggest that the SOEs and government institutions discriminate or project the image that they discriminate against SMEs in allocating contracts, and also that delinquency in payments makes it difficult for SMEs to do business with the state sector. The findings are surprisingly uniform across the two countries and appear to be consistent with the more casual evidence from other transition economies.

In identifying obstacles to increasing exports, we asked the CEOs to rate a list of constraints and to identify the most important one among them.[21] The lack of finance was again cited as the most important constraint to starting or increasing exports. Indeed 41 per cent of the Russian and 18 per cent of Bulgarian firms identified this as the most important constraint, with the Bulgarian percentage constituting over 30 per cent of responses since 40 per cent of the Bulgarian SMEs did not identify the most important constraint in this area.

The multinomial logits that we ran show that few significant relationships exist with our explanatory variables in Bulgaria, but very definite patterns may be established for the lack of finance in Russia. In the Bulgarian data, one finds that firms with higher sales per employee are less likely to cite "a lack of finance" and more privately owned firms are less likely to identify "competition in new markets" as the most important constraint. In Russia the lack of finance is positively and significantly related to all the explanatory variables except for the size of the firm, where the relationship is negative and significant.

The two areas that SME managers did not identify as having severe constraints are government regulation and business services. In this context, it is interesting to note that the firms do not report

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[20] The list of potential constraints included: (1) lack of credit finance; (2) lack of demand for my products; (3) competition from local companies; (4) competition from foreign companies; (5) technical or technological problems; (6) difficulties with supplies; (7) high cost of raw materials; (8) lack of skilled labour; and (9) other (specify).

[21] The list of potential constraints includes: lack of finance; lack of knowledge of new markets; lack of new technology; competition in new markets; administrative costs (tariffs, licences) necessary for export; lack of skilled labour; other (specify).

being constrained by the difficulty of obtaining licences or facing security issues.[22] However, since licensing affects disproportionately nascent businesses, our finding of a lack of major constraint in this area probably underestimates the seriousness of the issue. In particular, our sample excludes those entrepreneurs who did not succeed in starting business due to the complexity and burden of government regulation. This may be a serious issue that we are unable to register in our data.

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[22] The average firm in our sample needed two licences in Russia and three in Bulgaria to start operations. It spent 208 hours in Russia and 164 hours in Bulgaria and waited 6.7 and 5 weeks, respectively, to obtain these licences. 10% of the Russian and 25% of the Bulgarian firms hired external agents to help them obtain start-up licences. Two-thirds of the Bulgarian but only 44% of the Russian firms employ a security company or individuals for protecting their premises. There is thus a much greater reliance by the Russian SMEs on in-house protection than is the case in Bulgaria.

# 5. CONCLUSIONS

Our study of stratified random samples of 216 Russian and 221 Bulgarian small and medium-sized enterprises (SMEs) shows a remarkable similarity of views of their owners/top managers (CEOs) with respect to objectives and constraints that they face. This finding suggests that the nature of issues confronting SMEs and the policies that may be formulated to assist them are similar across the transition economies. The CEO responses and data from their firms yield the following specific conclusions:

A.      The SMEs in the two economies are primarily recently created and privately owned firms that are characterised by highly concentrated ownership. The two most important objectives of their CEOs are achieving the highest possible profit and output growth. While for new and small firms these two objectives may represent the same goal, the emphasis on output growth may also signal the presence of obstacles to growth. In the future, researchers ought to examine in depth these two competing explanations. Resolving this issue is important from both the academic and policy standpoint.

B.      Most CEOs in both countries perceive to be hampered by a relatively small number of specific constraints. The five constraints that they cite most frequently as being most important in both countries are: (i) "suppliers are often not ready to deliver", (ii) the firm is facing "financing problems that hinder expanding production", (iii) the firm is facing high "level of interest rates", (iv) the firm is facing constraints on "getting land, office space and buildings", and (v) "other production constraints".

C.      Constraints on obtaining external financing and the high cost of this financing are hence two of the top five constraints cited by most CEOs. The lack of credit finance was also cited by the CEOs as being the most important obstacle to increasing local sales, and it also appeared as the most important constraint with respect to increasing exports. Moreover, the constraint appears to be binding across the board, since the probability of it being selected as the most important constraint to expanding production is unrelated to manager-, firm- or sector-specific variables. Finally, only about a third of the surveyed firms report receiving a loan from a financial institution over the past three years and an even smaller fraction have heard about special financing programmes for SMEs. Our principal finding is hence that the external financing constraint is a serious one. We also find that firms reinvest profits while operating under the external financing constraint. We hence conclude that financial constraints hamper SME growth and that the use of internal finance by SMEs represents a fall-back option. In this sense our study provides evidence that is contrary to the findings of Johnson, McMillan and Woodruff (1999). Our evidence is consistent, however, with the findings of Rajan and Zingales (1998), Winker (1999), and Lizal and Svejnar (2000).

D.      Our econometric analysis of the determinants of the most important constraints indicate that all three sets of factors (characteristics of the entrepreneur, of the firm and of the firm's environment) are important. However, their effect is not always uniform across countries and constraints. For example, more educated entrepreneurs are better able to ensure that suppliers deliver and in Bulgaria they are also better able to get around the problem of high interest rates. Firm-specific factors are found to be important: for instance larger firms suffer more from unreliable supplier deliveries, capital-intensive firms complain more about the problem of high interest rates, and more established (older) and larger firms are better able to cope with problems of getting land, office space and buildings. Environmental factors, which we capture by the sectoral location of the firm, are important but their effect often differs in the two economies. In Bulgaria, firms in manufacturing suffer more than

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other firms from supplier delivery problems, while the situation is reversed in Russia. Yet, in Russia manufacturing firms suffer more than others from the problem of getting land, office space and buildings, while the situation is just the opposite in Bulgaria. Finally, we find that the most important constraints in the areas of production and finance are all-encompassing in Russia in that they affect SMEs irrespective of the characteristics of the CEO, the firm or the sector of activity. In contrast, in Bulgaria the severity of the most important constraints in these two areas varies systematically with the CEO, firm and sectoral characteristics. These differences suggest that the nature of disruption of production and of the financial constraints after the fall of central planning was more ubiquitous and all-encompassing in Russia than in Bulgaria. Hence, our empirical evidence is consistent with the hypothesis that the disorganisation phenomenon modelled for instance by Blanchard and Kremer (1997) and Roland and Verdier (1999) was more prevalent in the former Soviet Union than in the satellite countries of central and eastern Europe.

E.      Finally, while SMEs would clearly benefit in their development if they had fair access to doing business with the state sector, our findings indicate that the state firms and other government institutions discriminate or project the image that they discriminate against SMEs in allocating contracts. Moreover, the state's delinquency in making payments for goods delivered and services rendered makes it difficult for the financially strapped SMEs to do business with the state sector.

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# ANNEX:  BASIC STATISTICS

The two samples are of similar size, comprising 216 companies in Russia and 221 in Bulgaria.[23] As may be seen from Table A1, they contain primarily private companies. In both Bulgaria and Russia, most private SMEs are individual or family owned, followed by local private ownership. Unsurprisingly, given the tendency of FDI to concentrate in larger firms, very few of the sampled SMEs have foreign owners. Moreover, in virtually all firms the principal owner has a majority ownership, with the average ownership being in excess of 90 per cent and having low standard deviation in most ownership categories.

Table A2 shows the relationship between the current and former ownership status of the firm. As may be seen from the table, an overwhelming majority of the sampled companies (73 per cent in Russia and 82 per cent in Bulgaria) started as a new company. The concentration of start-ups is even higher if the sample is restricted to private sector only (79 per cent of Russian SMEs and 92 per cent of the Bulgarian SMEs).[24] The fact that relatively more Bulgarian companies are new start-ups of course reflects the different privatisation pattern in the two countries. Whereas in the case of small-scale privatisation both countries had progressed more or less at the same pace, at the time Russia had advanced well with large-scale privatisation and unbundling of large state-owned companies relatively to Bulgaria, thus generating a greater proportion of spin-offs in its SME sector. Bulgaria instead experienced significant resistance to large-scale privatisation from both ministry officials and management of state enterprises and virtually no restructuring. Thus the impetus to private sector development in that country found its outlet in the creation of new companies. This is reflected in the sample, with full 18 per cent of the Russian companies but only 4 per cent of the Bulgarian SMEs report to have existed as part of a state-owned enterprise before.[25]

Since most of the surveyed SMEs started as a new company, it is not surprising to find that the companies are fairly young. The average Bulgarian SME started its operations in 1989 and obtained its current legal status in 1991. The average Russian SME started operating in 1986 and its current legal status dates to 1992. An examination of the data indicates that the number of years since obtaining the current legal form is more indicative of the experience of the firm and its current management than the founding date because some firms report the founding dates of companies from which they were spun off.

Virtually all the SMEs (96 per cent in Russia and 98 per cent in Bulgaria) are independent companies rather than subsidiaries. In terms of corporate structure, one can see from Table A3 that most Russian and Bulgarian SMEs are registered as limited liability companies or partnerships. In Bulgaria, over one-third are registered as unlimited liability companies, indicating lesser concern of the Russian

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[23] The response rate was high and most of our findings are based on responses from all or virtually all of the firms.

[24] As can be seen from Table A2, these percentages actually underestimate the numbers of private companies that started private. This is because some companies report to have always been private. When these "old" private companies are added to the "newly formed" private companies, the percentage of private firms that started as private is 95% in Bulgaria and 81% in Russia.

[25] This difference is not brought about by relatively more Russian non-private firms reporting that they were part of an SOE in the past. Rather, 14% of the Russian private firms but only 3% of the Bulgarian private firms report to have been part of an SOE.

SMEs about limiting their liability exposure. In Russia a bankruptcy law became effective in March 1993 and, despite its limited implementation, it had started to influence enterprise behaviour (EBRD, 1995). In Bulgaria the 1994 bankruptcy law started being implemented only in the second half of 1996 (EBRD, 1996), well after the administration of this survey.

The summary statistics of the main variables, reported in Table A4, indicate that the average private SME is roughly of a similar size in the two countries, having 27 employees in Bulgaria and 33 in Russia. The average private Bulgarian SME has a higher labour cost to sales ratio and a correspondingly lower profit to sales ratio than its Russian counterpart. The average figures for the state firms (especially in Russia) are not particularly useful because of a significant skewness in the distribution of the various values. Nevertheless, it is useful to note that in both countries the average SOE is much larger (in terms of employment) than the corresponding average private firm. While one might *a priori* expect the SMEs to engage in labour-intensive operations, in both samples the average ratio of labour cost to total cost is just under 20 per cent. With the average reported profit amounting to somewhat more than the labour cost in Russia and slightly less than the labour cost in Bulgaria, there is evidence that non-labour inputs are a crucial component of costs for these firms.

## Table A1: Ownership of SMEs

|  | Russia | | Bulgaria | |
|---|---|---|---|---|
|  | **Number** | **%** | **Number** | **%** |
| Private | 189 | 87.5 | 190 | 86 |
| State owned | 7 | 3.2 | 22 | 10 |
| Mixed form (joint venture) | 16 | 7.4 | 7 | 3.1 |
| Other | 4 | 1.9 | 2 | 0.9 |
| Total | 216 | 100 | 221 | 100 |

**Table A2: Evolution of ownership of SMEs**

| | Russia | | | | | Bulgaria | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | All firms | | Now private | | Now state | All firms | | Now private | | Now state | |
| | N | % | N | % | N | N | % | N | % | N | % |
| Formed as a new company | 158 | 73 | 150 | 79.4 | 2 | 181 | 81.9 | 175 | 92.1 | - | - |
| Was part of a SOE | 39 | 18 | 27 | 14.3 | 2 | 8 | 4.0 | 6 | 3.1 | 2 | 9.1 |
| Was part of a private company | 5 | 2.3 | 4 | 2.1 | - | 3 | 1.4 | 3 | 1.6 | - | - |
| Was part of a cooperative | 5 | 2.3 | 3 | 1.6 | - | - | - | - | - | - | - |
| Has always been a SOE | 4 | 1.9 | - | - | 2 | 22 | 10 | - | - | 20 | 90.9 |
| Has always been a private company | 3 | 1.4 | 3 | 1.6 | - | 6 | 2.7 | 6 | 3.2 | - | - |
| Other | 2 | 0.9 | 2 | 1.1 | - | - | - | - | - | - | - |
| **Total** | **216** | **100** | **189** | **100** | **6** | **221** | **100** | **190** | **100** | **22** | **100** |

Note: Percentages in columns will not add due to rounding.

**Table A3: Corporate structure of SMEs**

|  | Russia | | Bulgaria | |
|  | N | % | N | % |
|---|---|---|---|---|
| Limited liability | 34 | 15.7 | 86 | 38.9 |
| Unlimited liability | - | - | 81 | 36.7 |
| Limited partnership | 113 | 52.3 | 1 | 0.5 |
| General partnership | - | - | 40 | 18.1 |
| Joint stock | 27 | 12.5 | 8 | 3.6 |
| State enterprise | 3 | 1.4 | 4 | 1.8 |
| Producer cooperative | 4 | 1.9 | - | - |
| Municipal enterprise | 3 | 1.4 | - | - |
| Other | 32 | 14.8 | 1 | 0.5 |
| Total | 216 | 100 | 221 | 100 |

**Table A4: Mean values of statistics relating to enterprise structure and performance**

|  | Russia (1995) | | Bulgaria (1994) | |
|  | Private (N=187) | SOEs (N=7) | Private (N=180) | SOEs (N=20) |
|---|---|---|---|---|
| Sales | 760.7 | 628.6 | 14,872 | 14,872 |
| Total cost | 565.2 | 239.0 | 10,312 | 22,929 |
| Labour cost | 92.2 | 62.7 | 2,961 | 4,074 |
| Pretax profit | 114.3 | 35.4 | 1,204 | 2,343 |
| Fixed assets | 300.1 | 599.6 | 4,292 | 23,675 |
| Total employment | 33.0 | 52.6 | 27.3 | 74.5 |
| Full-time employment | 29.7 | 51.7 | 23.7 | 72.7 |
| Part-time employment | 1.4 | .9 | .74 | .1 |
| Casual employment | 1.8 | 0 | 2.8 | 1.7 |