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# Entrepreneurs and the ordering of institutional reform: Poland, Romania, Russia, the Slovak Republic and Ukraine compared

by **Simon Johnson, John McMillan, and Christopher Woodruff**

## **Abstract**

We use survey data to examine new firms in Poland, Romania, Russia, the Slovak Republic and Ukraine. By measures of job growth, security of property and market development, our countries fall into two groups: an advanced group of Poland, Romania and the Slovak Republic, with the Slovak Republic falling somewhat behind the other two; and a backward group of Russia and Ukraine. Macroeconomic stability is not sufficient for private sector growth. A lack of bank finance does not seem to prevent private sector growth. More inhibiting than inadequate finance are insecure property rights.

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| <p>The working paper series has been produced to stimulate debate on the economic transformation of central and eastern Europe and the CIS. Views presented are those of the authors and not necessarily of the EBRD.</p> |
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# 1. INTRODUCTION

Institutional reform is difficult. Changing the rules that govern the relationships between government and the private sector, and between firms and individuals, always meets a great deal of resistance. Even when resistance can be overcome, establishing reasonable norms and laws to protect investors and to give appropriate incentives to entrepreneurs usually takes a long time (La Porta, Lopez-de-Silanes, Shleifer and Vishny, 1999). Institutional reform may cause considerable short-term disruption (Blanchard and Kremer, 1997) and prove hard to sustain (Dewatripont and Roland, 1995). Few countries have achieved quick success with institutional reform.

Poland has been more successful than most reforming countries. The Solidarity-backed government formed in September 1989 quickly stabilised the macroeconomy using anti-inflation measures combined with liberalisation of trade and most prices. Over the next couple of years, the government steadily simplified regulations and sought to eliminate corruption. Serious steps were also taken to reform the banking system and by 1993-94 these had resulted in an improvement of bank balance sheets and the involvement of foreign strategic investors. These institutional reforms have been continued and strengthened over subsequent years. The result has been sustained growth, primarily due to a dynamic new private sector (Johnson and Loveman, 1995).

What was the relative importance of these reforms? In this paper we look at Poland and four other post-communist countries that exhibited considerable variation in the timing of institutional reform. Of the five countries, only Poland had institutional reform in three dimensions: macroeconomic stability, control of corruption, and banking-system clean-up. Russia and Ukraine achieved temporary macroeconomic stability in 1995-98 and did have external finance available to start-ups in the early 1990s, but never brought corruption under control. The Slovak Republic and Romania have had both reasonable macroeconomic stability and control over corruption similar to Poland's, but have not reformed their banking systems. Looking at the differences in outcomes for these five countries therefore reveals the impact of different combinations of reforms.<sup>1</sup>

We use data from a survey of private manufacturing firms, undertaken in May and June of 1997 for Russia and Ukraine, and from September to December of 1997 in Poland, the Slovak Republic and Romania. The survey was designed to find similar firms in similar cities in all five countries (and is described in more detail in the Annex). Our sample includes about 300 manufacturing firms with between 7 and 370 employees in each country, so the total sample size for most variables is about 1,400 observations. Some of the firms were started from scratch and others were spin-offs from state enterprises, and our data allow us to distinguish between these two different types of firms.<sup>2</sup>

In this paper we consider two effects of institutional reform.<sup>3</sup> First we measure the development of market infrastructure in terms of the amount the firms are able to sell outside their immediate locality,

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<sup>1</sup> We cannot evaluate the effects of macroeconomic stability alone, because we do not have a country in our sample that had sustained hyper-inflation. There were no such countries in the post-communist countries, a fact which confirms the general belief that high and unstable inflation is very bad for economic performance (Aslund, Boone and Johnson, 1996).

<sup>2</sup> All of the firms were going concerns at the time of the survey, and hence the sample has the usual bias of omitting failed firms.

<sup>3</sup> In separate papers we have examined the determinants of trade credit (Johnson, McMillan and Woodruff, 1999a), hidden activity (Johnson, Kaufmann, McMillan and Woodruff, 1999), and the reinvestment of profits (Johnson, McMillan and Woodruff, 1999b).

the extent to which the private firms still depend on state-owned enterprises as suppliers or customers, and the importance of wholesale traders. We also measure the number of customers, degree of competitiveness in output markets, extent of customer-specific production, and the use of trade credit. All of these measures indicate a higher degree of market development in Poland, Romania and the Slovak Republic, and less development in Ukraine and Russia.

Second, we look at job and sales growth in these new private manufacturing firms. We find some dynamism in all five countries, but there is significant variation in firm performance. Measured in terms of average employment growth, our survey reveals a dynamic private sector in Poland and Romania, somewhat less private sector dynamism in the Slovak Republic, and much less in Russia and Ukraine.

Our evidence indicates that the control of corruption is an essential institutional reform if entrepreneurship is to develop. This confirms the view advanced by Shleifer (1997), Kaufmann (1997), and Frye and Shleifer (1997) that it is a weak legal system and ultimately capricious action by government officials that holds back the private sector. Unless there is reasonable security for investments, private business will not grow and market-supporting infrastructure will not develop.

Variation in the availability of external finance does seem to explain the cross-country variations in private sector development. The reason is probably that insecure property rights discouraged entrepreneurs in those countries from investing at that time. As we argue in Johnson, McMillan and Woodruff (1999b), external finance matters only after property rights provide some minimum acceptable level of security (and assuming that there is basic macroeconomic stability). The availability of external finance to new firms in Russia and Ukraine in the early 1990s does not seem to have promoted sustained growth. In contrast, it appears Poland, the Slovak Republic and Romania had reasonably secure property rights by 1996-97, so the availability of external finance began to affect investment and growth.

Section 2 reviews the evidence that all five countries had macroeconomic stability by the time of our survey. Section 3 describes how property rights vary across countries. Section 4 looks at how firms are financed. Section 5 analyses employment and sales-growth data. Section 6 concludes. An Annex provides more detail on the survey.

## 2. MACROECONOMIC REFORM

### MACROECONOMIC STABILISATION

Progress with stabilisation is most usually measured in terms of the inflation rate. The five countries in our sample had markedly different inflation experiences during the 1990s. Since 1990, inflation in Poland and the Slovak Republic has not been over 60 per cent and has fallen fairly steadily. In comparison, inflation in Romania peaked at nearly 300 per cent in 1993 and the government has struggled to bring it under control. Both Russia and Ukraine experienced near hyper-inflation experiences, with peaks in average annual inflation of 2,500 per cent in 1992 for Russia and over 10,000 per cent in 1993 for Ukraine. In terms of cumulative inflation from 1990 or 1991 to 1997, the five countries therefore differ dramatically.<sup>4</sup> However, by 1996 inflation in all five countries was under control: 19 per cent in Poland, 57 per cent in Romania, 5 per cent in the Slovak Republic, 22 per cent in Russia, and 40 per cent in Ukraine (EBRD 1997, p.118). On this dimension policy and outcomes had definitely converged in the five countries.

The convergence of inflation in these countries was not due to the use of price controls. In fact, the EBRD's index (EBRD 1997, p.14) indicates that by 1996 all five countries had the same level of price liberalisation.<sup>5</sup> The EBRD's index of "trade and foreign exchange system" reform, which measures the liberalisation of current account transactions, shows Poland at the highest level (4+), but followed closely by Russia, Romania and the Slovak Republic together (at 4) and Ukraine behind on 3 (EBRD 1997, p.15).<sup>6</sup> Given that a score of 4 represents almost complete liberalisation, all the countries, apart from Ukraine, can be considered to have achieved a high level of liberalisation.

### OUTPUT RESULTS

Despite the similarity in terms of macroeconomic policies, the performance of real GDP over the reform period has differed markedly across countries. Using an index with GDP in 1989 equal to 100, in 1996 Poland was equal to 104, Romania was equal to 88, the Slovak Republic was at 90, Russia was at 57 and Ukraine was at 39 (EBRD 1997, p.115).<sup>7</sup> Poland returned to growth in 1992, Romania began to grow in 1993, the Slovak Republic began to grow in 1994 and, according to these numbers, Russia and Ukraine had yet to show any growth through 1996. In 1996 Poland grew

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<sup>4</sup> Aslund, Boone and Johnson (1996) argue that cumulative inflation is highly correlated with rent seeking. This would suggest that the extent of corruption and other forms of preying on private business should be highest in Ukraine and Russia, followed by Romania. Our test for the importance of property rights (hypothesis 3) can be interpreted as a test also of their view.

<sup>5</sup> All five countries scored 3 on this index, which denotes "substantial progress on price liberalisation: state procurement at non-market prices largely phased out."

<sup>6</sup> A 4+ denotes "standards and performance norms of advanced industrial economies: removal of most tariff barriers; membership in WTO." A 4 denotes "removal of all quantitative and administrative import and export restrictions (apart from agriculture) and all significant export tariffs; insignificant direct involvement in exports and imports by ministries and state-owned trading companies; no major non-uniformity of customs duties for non-agricultural goods and services; full current account convertibility." A 3 denotes "removal of almost all quantitative and administrative import and export restrictions; almost full current account convertibility."

<sup>7</sup> These numbers should be treated with care. If we use reasonable estimates of the unofficial economy, including those suggested by the survey results reported in this paper, the difference in GDP level would be much smaller.

by 6 per cent, Romania grew by 4.1 per cent, the Slovak Republic grew by 6.9 per cent, Russia contracted by 5 per cent and Ukraine contracted by 10.1 per cent (EBRD 1997, p.115).

According to these data, the biggest difference in performance is between eastern Europe and the former Soviet Union. Poland, Romania and the Slovak Republic, despite their problems, were growing by 1996-97. In comparison, Russia and Ukraine had yet to show a significant recovery in officially measured GDP.

There is also a major difference in the estimated share of the unofficial economy across the five countries (Johnson, Kaufmann and Shleifer, 1997). In 1995, the most recent year for which data are available, this share is estimated to have been 12.6 per cent in Poland, 19.1 per cent in Romania and only 5.8 per cent in the Slovak Republic. However, it was 48.9 per cent in Ukraine and 41.6 per cent in Russia. Countries diverged in terms of total GDP, but by less than they did in terms of official GDP. Using an index with 1989 equal to 100, total GDP was 94.9 in Poland, 74.7 in Romania and 82.9 in the Slovak Republic. Total GDP was 67 in Ukraine and 74 in Russia.<sup>8</sup>

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<sup>8</sup> In a separate paper (Johnson, Kaufmann, McMillan and Woodruff, 1999), we have shown that our survey evidence both confirm these aggregate numbers and indicate that firms hide their activities in order to reduce the effective extortion of bureaucrats and tax inspectors.

### 3. SECURITY OF RETURNS

#### MEASURES OF LEGAL REFORM

Three organisations offer measures of these countries' legal environments for business. The EBRD's (1997, p.17) measure of the legal system's "effectiveness" attempts to capture how commercial laws are being "enforced and administered." The data is obtained from a survey of lawyers in the region. According to this index there was significant difference between the countries: Poland scored 4+, the Slovak Republic, Romania and Russia scored 3, and Ukraine scored 2.<sup>9</sup>

The Wall Street Journal's panel of investment professionals rates the countries according to "their attractiveness as a place to do business over the coming year" on a scale of 1 to 10, with 10 being the best (*Central European Economic Review*, 1998).<sup>10</sup> At the end of 1997, their overall ratings placed Poland in the lead with 7.8, followed by Russia at 6.0, the Slovak Republic at 5.8, Romania at 5.7 and Ukraine at 3.9. Two sub-indices particularly address the legal environment – "rule of law" and "corruption". On the rule of law measure, Poland scored 9.0, Romania scored 6.4, the Slovak Republic scored 6.2, Russia scored 5.4, and Ukraine scored 3.9. In terms of corruption, Poland scored 8.2, the Slovak Republic scored 5.7, Romania scored 5.4, Russia scored 3.7 and Ukraine scored 2.1.

The Heritage Foundation's Index of Economic Freedom is also the result of evaluation by outside experts (Johnson, Holmes and Kirkpatrick, 1998). A lower score on this measure means "more free," or a more favorable environment for private business.<sup>11</sup> The 1998 index basically measures the environment in 1997. In the overall index, the Slovak Republic did best with a score of 3.05, Poland scored 3.15, Romania scored 3.3, Russia scored 3.45, and Ukraine was last again with 3.8. In the taxation index, Poland and Russia scored 3.5, the Slovak Republic scored 4.5, Ukraine scored 4 and Romania scored 5.<sup>12</sup> In terms of property rights, Poland was ahead with a score of 2, the Slovak Republic and Russia scored 3, Romania and Ukraine scored 4.<sup>13</sup> Finally, in terms of regulation, Poland and the Slovak Republic scored 3, while Russia, Romania and Ukraine all scored 4.<sup>14</sup>

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<sup>9</sup> The EBRD's explanations for these scores are rather long and should be consulted by the reader (EBRD 1997, p.19). In summary: 4+ denotes clear commercial laws that are supported by an effective court system; 3 indicates that the commercial laws are clear but not fully supported by the court system; and 2 denotes "commercial legal rules are generally unclear and sometimes contradictory."

<sup>10</sup> See the discussion in Johnson, Kaufmann and Shleifer (1997) for details of how this panel operates and its results in previous years. It appears to give consistent and reasonable results over time.

<sup>11</sup> The overall index is a simple average of a country's scores on 10 dimensions: trade, taxation, government intervention, monetary policy, foreign investment, banking, wages and prices, property rights, regulation, and the black market. See Johnson, Holmes and Kirkpatrick (1998) pp.35-51 for a detailed description of each measure.

<sup>12</sup> The taxation index is an average of a country's score on separate income tax and corporate tax grading scales. In both scales, a 3 denotes moderate taxes, a 4 denotes high taxes, and a 5 denotes very high taxes (Johnson, Holmes and Kirkpatrick, 1998, pp.40-41)

<sup>13</sup> This index measures the protection of private property by the government and judicial system. A 2 denotes "very high" protection, a 3 denotes "high" protection, a 4 denotes low protection, and a 5 denotes very low protection (Johnson, Holmes and Kirkpatrick, 1998, pp.47).

<sup>14</sup> This index measures "how easy or difficult it is to open and operate a business" (Johnson, Holmes and Kirkpatrick, 1998, pp.49). A 3 denotes a moderate level of regulation and a 4 denotes a high level of regulation.

The picture from these measures of legal and regulatory environment is therefore fairly consistent. Poland is usually the best, followed closely by the Slovak Republic. Ukraine consistently scores the lowest. Russia and Romania occupy intermediate positions, with Romania having a slight advantage in terms of corruption and rule of law.<sup>15</sup>

## **SURVEY RESULTS**

The returns of an entrepreneur are affected first by the efficiency with which commercial disputes are resolved, and second by the portion of earnings captured by bureaucrats, in either an official or unofficial manner. Table 1 shows that by either of these two categories of security of property, the five countries fall into two distinct groups. Courts are less often used and outcomes are less often favourable in commercial disputes in Russia and Ukraine. Interactions with the government are more costly in these countries as well.<sup>16</sup>

The legal system works, according to our respondents. In all of the countries, a majority of the firms said that courts could be used to enforce an agreement with a customer or supplier. The percentage of firms answering affirmatively to this question ranged from 87 per cent in Romania to 55 per cent in Ukraine (see the first row of Table 1). Spin-offs were more likely than start-ups to say courts could be useful in the Slovak Republic, Russia and Ukraine. There was no difference in the response to this question among spin-offs and start-up firms in Poland and Romania.

Firms were then asked whether they actually used the courts in the most recent dispute with a customer or supplier. Only in Poland did more than a third of the firms say they actually had used the court in their most recent dispute (see the second set of rows in Table 1). Use of the courts is lowest in Russia (10.3 per cent) and Ukraine (16.4 per cent), and highest in Poland (48.4 per cent). Spin-offs were more likely to use courts in all five countries. Across countries, the use of courts corresponds to greater success in recovering money owed after a dispute with a customer. Recovery of debt owed by trading partners is lowest in Russia and Ukraine, middling in the Slovak Republic and Poland, and highest in Romania.<sup>17</sup> This is a good measure of the efficiency of the courts and other property-protecting institutions.

We also asked the top manager to estimate the fraction of his or her time devoted to various activities. The averaged responses to time spent on “matters related to all levels of government/regulatory activity (including taxes, licences, labour and trade regulations)” are shown on Table 1 (with very high response rates). Managers in Russia and Ukraine say they spend, respectively, a fifth and a quarter of their time dealing with the government, much more than their counterparts in the other three countries. Managers of start-ups spend more time dealing with the government than do managers of spin-offs in Russia, Ukraine and the Slovak Republic.

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<sup>15</sup> The more detailed analysis in Johnson, Kaufmann and Shleifer (1997) shows basically the same relative rankings across all the available measures of legal reform. The largest difference is consistently between eastern Europe and the former Soviet Union.

<sup>16</sup> See Frye and Shleifer (1997) for further evidence that Poland’s regulatory environment is more supportive of business activity than Russia’s.

<sup>17</sup> Due to a slight difference in the questionnaires, the data on Russia and Ukraine are for any trading partner while for the three east European countries they are for disagreements with customers only.

**Table 1: Security of property**

|   | Poland | Slovak Republic | Romania | Russia | Ukraine |
|---|--------|-----------------|---------|--------|---------|
| <b>Use of courts</b>  |        |                 |         |        |         |
| <i>Percent saying courts can be used to enforce an agreement</i>    | 72.9%  | 67.9%           | 86.9%   | 58.4%  | 54.7%   |
| Spin-offs   | 72.7%  | 75.7%           | 80.0%   | 62.9%  | 62.1%   |
| Start-ups   | 73.0%  | 65.6%           | 87.9%   | 53.4%  | 36.6%   |
| Number of observations  | 303    | 308             | 321     | 269    | 269     |
| <i>Percentage who used the court in most recent payment dispute</i> | 48.4%  | 33.5%           | 28.1%   | 10.3%  | 16.4%   |
| Spin-offs   | 54.0%  | 48.4%           | 42.1%   | 12.2%  | 18.0%   |
| Start-ups   | 46.8%  | 28.6%           | 25.8%   | 8.6%   | 12.5%   |
| Number of observations  | 221    | 251             | 267     | 234    | 238     |
| <i>In last dispute with customer*</i>                               |        |                 |         |        |         |
| % who recovered debt in full  | 30.7%  | 28.2%           | 45.8%   | 9.3%   | 6.2%    |
| % who neg. partial settlement                                       | 46.5%  | 59.2%           | 39.9%   | 30.2%  | 69.2%   |
| % who wrote off debt  | 22.8%  | 12.6%           | 14.3%   | 60.5%  | 24.6%   |
| Number of observations  | 215    | 238             | 238     | 43     | 65      |
| <b>Burden of government</b>   |        |                 |         |        |         |
| <i>% of managers time spent on government/regulatory matters</i>    |        |                 |         |        |         |
| Total   | 10.3%  | 11.8%           | 8.0%    | 18.7%  | 25.4%   |
| Spin-offs   | 12.9%  | 11.3%           | 10.9%   | 18.1%  | 24.7%   |
| Start-ups   | 9.5%   | 12.0%           | 7.6%    | 19.5%  | 27.3%   |
| Number of observations  | 302    | 306             | 320     | 200    | 199     |
| <i>Taxes as a % of sales</i>  | 15.5%  | 16.4%           | 17.2%   | 23.9%  | 24.2%   |
| Spin-offs   | 14.5%  | 15.8%           | 12.9%   | 23.0%  | 22.8%   |
| Start-ups   | 15.8%  | 16.6%           | 17.8%   | 25.0%  | 27.6%   |
| <i>Other payments to government as percentage of sales</i>          | 3.9%   | 3.8%            | 4.8%    | 6.0%   | 7.2%    |
| Spin-offs   | 4.3%   | 2.3%            | 6.0%    | 6.2%   | 7.1%    |
| Start-ups   | 3.8%   | 4.3%            | 4.6%    | 5.8%   | 7.3%    |
| Number of observations  | 277    | 278             | 321     | 74     | 65      |
| <i>Percentage who think firms make extra-legal payments</i>         | 20%    | 38%             | 20%     | 91%    | 87%     |
| Number of observations  | 298    | 306             | 315     | 122    | 84      |
| <b>Under-reporting</b>  |        |                 |         |        |         |
| <i>% of sales not reported</i>                                      | 5.4%   | 7.4%            | 5.7%    | 28.9%  | 41.2%   |
| Spin-offs   | 3.8%   | 6.2%            | 3.9%    | 36.2%  | 45.7%   |
| Start-ups   | 5.9%   | 7.7%            | 5.9%    | 18.7%  | 31.7%   |
| Number of observations  | 259    | 200             | 204     | 132    | 150     |
| <i>% of salaries not reported</i>                                   | 8.6%   | 7.6%            | 7.6%    | 26.1%  | 37.9%   |
| Spin-offs   | 6.2%   | 5.5%            | 4.5%    | 35.8%  | 41.8%   |
| Start-ups   | 9.3%   | 8.1%            | 8.0%    | 12.8%  | 29.7%   |
| Number of observations  | 257    | 200             | 199     | 116    | 148     |

\* Data on disagreements in Russia and Ukraine are for all trading partner (customers and suppliers).

Firms are understandably reluctant to reveal the level of their payments to the government, even when the payments are official. We therefore phrased questions about these payments in terms of payments made by “firms in your industry.” However, managers presumably most often respond based on their own experiences, and with caution we believe the responses can be interpreted as indicating the firms’ own payments. (See the Annex for comments along these lines from one manager.)

Table 1 shows taxes and “other payments” to the government as a percentage of sales.<sup>18</sup> Other payments can be significant, but official taxes are usually larger. Taxes are substantially higher in Russia and Ukraine than in the other three countries; they are lowest in Poland. Managers of start-ups report higher tax rates than managers of spin-offs in all the countries.<sup>19</sup> Other payments to the government are also higher in Russia and Ukraine than in other countries. The lower response rates in Russia and Ukraine probably indicate that some firms making extra-legal payments declined to answer this question.

Where tax rates and other payments to the government are high, we might expect firms to under-report sales, wages and other data. Our respondents were asked, “It is thought that many firms in your industry, in order to survive and grow, may need to misreport their operational and financial results. Please estimate the degree of under-reporting by firms in your area of activity.” Table 1 shows that the under-reporting of sales is highest in Ukraine (41.2 per cent), then Russia (28.9 per cent), then the Slovak Republic (7.4 per cent), then Romania (5.7 per cent) and then Poland (5.4 per cent). In Russia and Ukraine, managers of spin-offs said that firms under-report sales to a greater extent than managers of start-ups do, while the opposite was true in the other three countries. The results for under-reporting of salaries are quite similar (see Table 1).

There are other significant costs of doing business. Our respondents were asked the total cost, official plus unofficial charges, in US dollars of various services. (Again, in an attempt to elicit honest answers, they were asked not what they themselves pay but what typical charges are for firms in their industry.) For a telephone line, Table 2 shows the charge was around US\$ 200 in Poland, the Slovak Republic and Romania, and around three times as much in Russia and Ukraine. For the initial licence to start manufacturing their product, the cost was highest in the Slovak Republic, at US\$ 947; next came Ukraine (US\$ 788), Russia (US\$ 542), and Poland (US\$ 303), with Romania lowest at US\$ 136 (see the second set of rows in Table 2). The cost of the initial licence was greater for spin-offs than for start-ups in Poland, Romania and the Slovak Republic, and greater for start-ups than spin-offs in Russia and Ukraine.<sup>20</sup> The cost of a continuing business license was US\$ 171 in Ukraine and in the US\$ 60–80 ranges in the other four countries.<sup>21</sup> Fire and sanitary inspections cost US\$ 124 in Ukraine and between US\$ 20 and US\$ 66 elsewhere. These charges, then, are highest in Ukraine and Russia, and in some cases the Slovak Republic, and lower in Poland and Romania.

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<sup>18</sup> We asked managers to report taxes and other payments as a percentage of total sales. However, it is possible that these numbers are only a percentage of actual sales. This would imply a lower effective tax burden in Russia and Ukraine, although it would confirm the stronger incentive in those countries for firms not to register all their activities.

<sup>19</sup> Given that taxes are levied on corporate income, this result is consistent with the fact that start-ups are more profitable.

<sup>20</sup> The costs of the other reported services are generally slightly higher for spin-offs, but the differences are not as great as those are for the initial licences.

<sup>21</sup> In all five countries firms may have to pay for both their initial registration and for the right to remain registered.

**Table 2: Official, unofficial and total cost of doing business, by item**

|  | Poland | Slovak Republic | Romania | Russia | Ukraine |
|--|--------|-----------------|---------|--------|---------|
| <b>Phone line</b>  |        |                 |         |        |         |
| Official payment (US\$)  | 177    | 160             | 162     | 240    | 159     |
| Unofficial payment (US\$)  | 34     | 25              | 25      | 426    | 464     |
| Total payment (US\$)   | 211    | 185             | 187     | 666    | 623     |
| Unofficial as % of total   | 16.1%  | 13.5%           | 13.4%   | 64.0%  | 74.5%   |
| Percentage of firms for which total is larger than official (i.e., make some unofficial payment) | 11.4%  | 26.7%           | 38.9%   | 94.7%  | 94.5%   |
| <b>Initial enterprise registration</b>   |        |                 |         |        |         |
| Official (US\$)  | 296    | 928             | 120     | 194    | 262     |
| Unofficial (US\$)  | 7      | 19              | 16      | 348    | 526     |
| Total (US\$)   | 303    | 947             | 136     | 542    | 788     |
| Unofficial as % of total   | 2.3%   | 2.0%            | 11.8%   | 64.2%  | 66.8%   |
| Percentage of firms for which total is larger than official (i.e., make some unofficial payment) | 1.4%   | 9.6%            | 25.4%   | 86.1%  | 90.6%   |
| <b>Continuing registration</b>   |        |                 |         |        |         |
| Official (US\$)  | 61     | 60              | 70      | 26     | 51      |
| Unofficial (US\$)  | 2      | 3               | 13      | 50     | 120     |
| Total (US\$)   | 63     | 63              | 83      | 76     | 171     |
| Unofficial as % of total   | 3.2%   | 4.8%            | 15.7%   | 65.8%  | 70.2%   |
| Percentage of firms for which total is larger than official (i.e., make some unofficial payment) | 0.4%   | 3.0%            | 19.1%   | 74.1%  | 72.7%   |
| <b>Fire/sanitary inspector</b>   |        |                 |         |        |         |
| Official (US\$)  | 52     | 50              | 15      | 2      | 38      |
| Unofficial (US\$)  | 3      | 17              | 5       | 31     | 86      |
| Total (US\$)   | 55     | 67              | 20      | 33     | 124     |
| Unofficial as % of total   | 5.5%   | 25.4%           | 25.0%   | 93.9%  | 69.4%   |
| Percentage of firms for which total is larger than official (i.e., make some unofficial payment) | 2.8%   | 12.1%           | 21.8%   | 64.9%  | 88.0%   |
| <b>Tax inspector</b>   |        |                 |         |        |         |
| Official (US\$)  | 3      | 53              | 7       | 0      | 81      |
| Unofficial (US\$)  | 14     | 10              | 9       | 133    | 236     |
| Total (US\$)   | 17     | 63              | 16      | 133    | 317     |
| Unofficial as % of total   | 82.4%  | 15.9%           | 56.3%   | 100.0% | 74.4%   |
| Percentage of firms for which total is larger than official (i.e., make some unofficial payment) | 1%     | 2%              | 17%     | 70%    | 67%     |

Note: "Unofficial" payments are calculated as the difference between what firms report as the official and total cost for an item.

Table 2 also shows a detailed breakdown of official, unofficial and total payments for government-related services. The unofficial payment is uniformly a low part of total cost in Poland, the Slovak Republic and Romania. The highest share of unofficial payments is for initial enterprise registration in Romania, where it stands at just over 25 per cent. There is also a significant share of unofficial payment in the cost of a fire or sanitary inspector's visit in Romania and the Slovak Republic (around 25 per cent of the total cost), but the total cost is still low.

In contrast, in Russia and Ukraine the unofficial payment ranges from 64 per cent (for a telephone line in Russia) to 100 per cent (for a tax inspector's visit in Russia.) For all five items in Table 2, the unofficial payment is larger than the official payment. These unofficial payments are also large in absolute terms. For example, in Ukraine the official payment is US\$ 464 for a telephone line, US\$ 526 for initial enterprise registration and US\$ 236 for a visit from the tax inspector. The absolute level of payments in Russia is slightly lower than in Ukraine, but still far above the level of eastern Europe.

Table 2 also shows the percentage of firms that made some form of unofficial payment, i.e., a bribe, for each type of service. For example, less than 2 per cent of firms in Poland but more than 90 per cent of firms in Ukraine made some unofficial payment connected with their initial enterprise registration. Very few firms pay bribes in Poland, with the highest number being 11.4 per cent of firms that report an unofficial payment in connection with obtaining a telephone line.<sup>22</sup> In stark contrast, in Russia and Ukraine most firms pay bribes for most items.

The Slovak Republic has higher costs of doing business, particularly for start-ups, compared with Poland and Romania. The biggest single item accounting for this difference is initial registration, which costs US\$ 880 on average in the Slovak Republic but only US\$ 154 in Poland and US\$ 131 in Romania. The continuing costs of doing business in the Slovak Republic, however, are much more reasonable and payments to tax inspectors are only twice the level of Poland and Romania, while payments to fire/sanitary inspectors are about the same as in Poland.

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<sup>22</sup> This further confirms the need to privatise and reform Polish telecommunications. However, even in this worse case for Poland, the proportion of firms paying bribes is less than half that of the next-best country (the Slovak Republic, where 26.7% of firms paid a bribe).

## 4. FINANCIAL CONSTRAINTS

The EBRD has two measures of financial system reform: “banking reform and interest rate liberalisation,” and “securities markets and non-bank financial institutions.” In terms of banking system reform, Poland scores a 3, Romania and the Slovak Republic both score 3-, Russia scores 2+, and Ukraine scores 2.<sup>23</sup> On the securities markets index, Poland scores 3+, Russia scores 3, the Slovak Republic scores 2+, and Romania and Ukraine both score 2.<sup>24</sup>

The top half of Table 3 shows sources of initial capital, first for all firms and then for spin-offs and start-up firms. The bottom half of the table reports data for ongoing loans. Evidently finance is not a binding constraint on firms’ growth. Despite the fact that it is the Romanian and Polish firms that are growing faster, loans are a more important source of initial capital for firms in Ukraine and Russia, and least important for firms in Romania. And while Polish firms were most likely to say they obtained a loan in 1996, the evidence on current credit availability is otherwise mixed.

We asked firms for the percentage of their initial capital coming from each of seven categories – own savings, family savings, other private firms or individuals, SOEs, loans, stock issuing and other sources.<sup>25</sup> The data reported in Table 3 have been weighted by the number of employees in the first year of operation. Since small firms are most likely to use own and family finance for initial capital, unweighted averages will overstate the importance of these sources, and understate the role of external sources.<sup>26</sup> Ideally, we would use the initial capital investment level to weight the data, but firms in Russia and Ukraine were reluctant to answer questions about initial capital investments and hence data are not available. While the employment-weighted data should provide a reasonable estimate of cross-country variation in the importance of sources of capital, it is likely that some over-estimation of internal sources remains, since more capital intensive firms are more likely to use external financing.

Response rates for the question about initial financing were near 100 per cent in Poland, Romania and the Slovak Republic, but only around 30 per cent for Russia and Ukraine. This may result in some bias in these data. For example, larger firms rely less on savings and more on external sources for initial capital, and larger firms were slightly more likely than smaller firms to respond to the question in Russia and Ukraine. Table 3 shows the average initial employment of responding firms and all firms in the sample. While the responding firms are larger than average in Russia and Ukraine, the differences are small and initial employment in Russia is still lower than in any of the other four countries.

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<sup>23</sup> A 3 denotes “substantial progress in establishment of bank solvency and of a framework for prudential supervision and regulation; full interest rate liberalisation with little preferential access to cheap refinancing; significant lending to private enterprises and significant presence of private banks.” A 2 denotes “significant liberalisation of interest rates and credit allocation; limited use of directed credit of interest rate ceilings.”

<sup>24</sup> A 3 denotes “substantial issuance of securities by private enterprises; establishment of independent share registries, secure clearance and settlement procedures, and some protection of minority shareholders; emergence of non-bank financial institutions (e.g., investment funds, private insurance and pension funds, leasing companies) and associated regulatory framework.” A 2 denotes “formation of securities exchanges, market-makers and brokers; some trading in government paper and/or securities; rudimentary legal and regulatory framework for the issuance and trading of securities.”

<sup>25</sup> The surveys in Poland, Romania and the Slovak Republic give somewhat more detail on the “other” category than those in Russia and Ukraine. The most common source of other finance is workers.

<sup>26</sup> See Annex Table 3 for the unweighted data on sources of initial finance.

**Table 3: Initial finance in spin-off and start-up firms**

|   | Poland    |           | Slovak Republic |           | Romania   |           | Russia    |           | Ukraine   |           |
|---|-----------|-----------|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|   | Spin-offs | Start-ups | Spin-offs       | Start-ups | Spin-offs | Start-ups | Spin-offs | Start-ups | Spin-offs | Start-ups |
| <b>Sources of initial finance (unweighted)</b>  |           |           |                 |           |           |           |           |           |           |           |
| Own savings   | 23.4%     | 52.5%     | 12.0%           | 48.3%     | 20.7%     | 41.2%     | 3.1%      | 5.3%      | 2.6%      | 12.0%     |
| Family savings  | 8.5%      | 18.0%     | 5.1%            | 15.5%     | 2.5%      | 36.4%     | 3.4%      | 4.9%      | 1.5%      | 12.0%     |
| Other private firms/individ.  | 16.1%     | 11.8%     | 13.8%           | 8.3%      | 2.5%      | 8.2%      | 18.6%     | 39.7%     | 8.5%      | 34.9%     |
| State enterprises   | 14.6%     | 1.6%      | 13.6%           | 0.4%      | 13.8%     | 0.7%      | 32.6%     | 9.0%      | 22.8%     | 3.0%      |
| A loan  | 10.1%     | 8.3%      | 37.5%           | 19.9%     | 5.6%      | 8.8%      | 14.6%     | 23.8%     | 26.3%     | 33.9%     |
| Issuing shares  | 0.0%      | 0.6%      | 6.2%            | 3.2%      | 32.2%     | 2.9%      | 9.8%      | 10.3%     | 5.9%      | 0.0%      |
| Other private   | 27.3%     | 7.3%      | 11.7%           | 4.4%      | 22.8%     | 1.8%      | 18.0%     | 7.1%      | 32.4%     | 4.3%      |
| <b>Source of initial loan</b>   |           |           |                 |           |           |           |           |           |           |           |
| State bank  | 11.0%     | 44.0%     | 79.0%           | 54.0%     | 67.0%     | 70.0%     | 48.0%     | 36.0%     | 40.0%     | 14.0%     |
| Private bank  | 0.0%      | 8.0%      | 21.0%           | 14.0%     | 33.0%     | 8.0%      | 36.0%     | 40.0%     | 29.0%     | 36.0%     |
| Friend  | 11.0%     | 8.0%      | 0.0%            | 11.0%     | 0.0%      | 24.0%     | 0.0%      | 4.0%      | 5.0%      | 36.0%     |
| Family member   | 22.0%     | 11.0%     | 0.0%            | 8.0%      | 0.0%      | 3.0%      | 0.0%      | 0.0%      | 0.0%      | 0.0%      |
| Domestic private firm   | 22.0%     | 0.0%      | 3.0%            | 3.0%      | 0.0%      | 0.0%      | 4.0%      | 8.0%      | 5.0%      | 7.0%      |
| Domestic state company  | 44.0%     | 3.0%      | 0.0%            | 0.0%      | 0.0%      | 0.0%      | 12.0%     | 4.0%      | 3.0%      | 0.0%      |
| Foreign firm  | 0.0%      | 11.0%     | 0.0%            | 4.0%      | 0.0%      | 0.0%      | 0.0%      | 4.0%      | 3.0%      | 0.0%      |
| Other   | 11.0%     | 26.0%     | 0.0%            | 14.0%     | 0.0%      | 3.0%      | 0.0%      | 4.0%      | 16.0%     | 7.0%      |
| Number of observations  | 9         | 36        | 34              | 73        | 3         | 37        | 25        | 25        | 38        | 14        |
| <b>Trade credit</b>   |           |           |                 |           |           |           |           |           |           |           |
| Received trade credit in first 3 months of operation  | 15.4%     | 9.4%      | 26.1%           | 6.5%      | 7.5%      | 9.6%      | 64.4%     | 55.7%     | 40.4%     | 51.3%     |
| Number of observations  | 65        | 234       | 69              | 232       | 40        | 280       | 132       | 122       | 183       | 80        |
| <b>Expectation and realisation of returns on investment</b>   |           |           |                 |           |           |           |           |           |           |           |
| When you started the business, how long did you expect it would take to earn back the costs of your initial investment? |           |           |                 |           |           |           |           |           |           |           |
| 3 months  | 4.7%      | 10.3%     | 4.4%            | 4.7%      | 0.0%      | 8.2%      | 0.0%      | 0.0%      | 0.6%      | 0.0%      |
| 6 months  | 1.6%      | 8.9%      | 4.4%            | 8.9%      | 0.0%      | 14.3%     | 21.2%     | 24.4%     | 4.4%      | 6.1%      |
| 1 year  | 28.1%     | 33.0%     | 11.8%           | 25.1%     | 33.3%     | 32.1%     | 46.2%     | 55.3%     | 39.3%     | 556.1%    |
| 2 years   | 15.6%     | 19.2%     | 13.2%           | 23.4%     | 16.7%     | 19.6%     | 26.5%     | 17.1%     | 33.3%     | 29.3%     |
| 3 years   | 21.9%     | 11.2%     | 11.8%           | 11.5%     | 0.0%      | 12.5%     | 5.3%      | 3.3%      | 15.9%     | 8.5%      |
| 4 years   | 4.7%      | 4.9%      | 13.2%           | 7.2%      | 3.8%      | 2.5%      | 0.8%      | 0.0%      | 4.9%      | 0.0%      |
| 5 years   | 10.9%     | 7.1%      | 13.2%           | 8.9%      | 16.7%     | 4.6%      | 0.0%      | 0.0%      | 0.0%      | 0.0%      |
| Over 5 years  | 12.5%     | 5.4%      | 27.9%           | 10.2%     | 30.6%     | 6.1%      | 0.0%      | 0.0%      | 1.6%      | 0.0%      |
| Number of observations  | 64        | 224       | 68              | 235       | 36        | 280       | 132       | 123       | 183       | 82        |
| How long did it actually take to earn back the costs of your initial investment?  |           |           |                 |           |           |           |           |           |           |           |
| 3 months  | 6.3%      | 12.3%     | 3.0%            | 6.4%      | 2.8%      | 11.8%     | 0.0%      | 0.0%      | 0.6%      | 0.0%      |
| 6 months  | 6.3%      | 12.3%     | 6.0%            | 9.0%      | 8.3%      | 17.9%     | 0.8%      | 1.6%      | 0.6%      | 0.0%      |
| 1 year  | 15.6%     | 26.4%     | 13.4%           | 21.4%     | 22.2%     | 31.8%     | 48.9%     | 56.1%     | 14.5%     | 34.6%     |
| 2 years   | 21.9%     | 20.5%     | 9.0%            | 18.4%     | 11.1%     | 13.6%     | 22.1%     | 19.5%     | 36.9%     | 35.9%     |
| 3 years   | 10.9%     | 8.6%      | 17.9%           | 8.1%      | 5.6%      | 6.4%      | 25.2%     | 21.1%     | 34.1%     | 23.1%     |
| 4 years   | 4.7%      | 1.8%      | 4.5%            | 3.4%      | 5.6%      | 1.8%      | 3.1%      | 1.6%      | 10.6%     | 6.4%      |
| 5 years   | 3.1%      | 6.4%      | 4.5%            | 5.6%      | 13.9%     | 2.5%      | 0.0%      | 0.0%      | 0.0%      | 0.0%      |
| Not earned yet  | 31.3%     | 11.8%     | 41.8%           | 27.8%     | 30.6%     | 14.3%     | 0.0%      | 0.0%      | 2.8%      | 0.0%      |
| Number of observations  | 64        | 220       | 67              | 234       | 36        | 280       | 131       | 123       | 179       | 78        |

**Table 3 continued**

|   | Poland | Slovak Republic | Romania | Russia | Ukraine |
|---|--------|-----------------|---------|--------|---------|
| <b>Sources of start-up finance (weighted by initial employment)</b> |        |                 |         |        |         |
| Own savings   | 19.9%  | 18.0%           | 21.8%   | 2.6%   | 2.3%    |
| Family savings  | 7.7%   | 6.1%            | 11.9%   | 3.4%   | 2.0%    |
| Other private firms/individ.  | 16.7%  | 9.4%            | 4.6%    | 16.7%  | 9.3%    |
| From state enterprise   | 22.1%  | 14.5%           | 17.8%   | 26.9%  | 14.5%   |
| A loan  | 4.8%   | 25.3%           | 7.5%    | 15.7%  | 23.5%   |
| Issuing shares  | 0.1%   | 14.5%           | 15.0%   | 15.2%  | 7.2%    |
| Other   | 28.7%  | 12.3%           | 21.4%   | 19.4%  | 41.0%   |
| <b>Average number of workers in first year</b>                      | 44.2   | 41.6            | 54.3    | 34.4   | 59.9    |
| Average number, firms answering question about source of finance    | 44.2   | 41.6            | 54.3    | 39.3   | 64.8    |
| <b>Spin-offs (weighted by initial employment)</b>                   |        |                 |         |        |         |
| Own/family savings  | 15.1   | 8.6             | 14.3    | 4.7    | 1.8     |
| SOE finance   | 29.7   | 22.7            | 26.5    | 32.1   | 16.1    |
| Loan  | 6.3    | 28.3            | 9.2     | 13.6   | 22.5    |
| <b>Start-ups (weighted by initial employment)</b>                   |        |                 |         |        |         |
| Own/family savings  | 36.2   | 51.6            | 61.5    | 11     | 24.6    |
| SOE finance   | 16.8   | 0               | 5.3     | 9.4    | 1.8     |
| Loan  | 3.7    | 20.1            | 5       | 23.6   | 31.3    |
| <b>Ongoing loans (unweighted)</b>                                   |        |                 |         |        |         |
| Received credit 1996  | 48.8   | 27.6            | 24.1    | 20.3   | 13.8    |
| Average credit as % monthly sales (for firms receiving credit)      | 57.2   | 126.7           | 88      | 285.7  | 161     |
| <b>Conditions of loans</b>  |        |                 |         |        |         |
| Collateral as % of loan (unweighted)                                | 150.2  | 140.7           | 155.7   | 100    | 63.5    |
| Maturity of loan > 1 year   | 43.8   | 62.2            | 50      | 8.7    | 20      |
| <b>Spin-offs (unweighted numbers)</b>                               |        |                 |         |        |         |
| Received credit 1996  | 42.4   | 44.3            | 47.5    | 24.8   | 14.7    |
| Average credit, % of sales  | 42.6   | 146             | 57.8    | 269.3  | 124.1   |
| <b>Start-ups (unweighted numbers)</b>                               |        |                 |         |        |         |
| Received credit 1996  | 50.6   | 22.7            | 20.8    | 13.5   | 11.1    |
| Average credit, % of sales  | 60.7   | 117.9           | 97.7    | 285.7  | 220     |

The employment-weighted data show that own and family financing is most important in Romania, where internal sources account for about one-third of initial capital, and in Poland and the Slovak Republic, where about one-quarter of initial capital comes from these sources. Savings are relatively unimportant in Russia and Ukraine, representing only about 5 per cent of initial capital. Loans and SOE finance are the most important sources of start-up capital in the Slovak Republic, Russia and Ukraine. Not surprisingly, SOE finance is more important for spin-offs than for start-ups and savings is more important for start-ups than spin-offs.

Access to ongoing finance is most widely spread in Poland, where almost half of the firms reported obtaining a loan in 1996. About a quarter of firms in the Slovak Republic and Romania received credit in 1996, and a fifth or less had loans in Russia and Ukraine. The average loan size, reported as a percentage of the firm's monthly sales, is highest in Russia, Ukraine and the Slovak Republic, suggesting that the total liquidity is higher in these countries than is indicated by the percentage of borrowers. Except in Poland, spin-offs were more likely to get a loan in 1996 than were start-ups.

There is no apparent correlation across the countries between access to external finance at the time of the initial investment and firm performance. In general, a larger share of initial capital comes from external sources for spin-offs than for start-up firms, yet the latter have greater employment growth in all five countries and are more profitable in every country except Russia. Start-ups have the greatest access to external finance in Russia and Ukraine, where they grow most slowly, and the least access in Romania, where they grow most rapidly.

A reason that inadequate financial markets do not inhibit the growth of private firms, as we argue in Johnson, McMillan, and Woodruff (1999b), is that the firms have an alternative to external finance, namely reinvesting their own profits. Firms in Romania and Poland reinvest substantially more of their profits than firms in the other three countries. Moreover, more profitable firms invest a greater share of profits than less profitable firms. If the economic environment both allows firms to earn reasonable profits and gives them assurances about the future, then entrepreneurs will reinvest at a rate that generates fast growth of employment and output.

## 5. DEVELOPMENT OF MARKET INFRASTRUCTURE

In our sample we can assess the development of market infrastructure in terms of the ability to sell outside a local area, the activity of wholesalers, the way in which prices are set, the extent of specificity between suppliers and customers, and the size of trade credit. By a series of measures, shown in Table 4, market infrastructure appears to be most developed in Poland. Some of these measures suggest the market is better developed in the Slovak Republic than in Romania. The three east European countries are clearly ahead of Russia and Ukraine.

The ability to sell to customers in distant locations is a measure of market sophistication, for it requires functioning transportation infrastructure, sources of market information that can identify potential trading partners, and the means to assure bills are paid in arms-length transactions. By this measure Poland, the Slovak Republic and Romania are relatively advanced, with respectively 65 per cent, 68 per cent and 54 per cent of their sales going to customers in different cities or different countries (see the first three rows of Table 4).<sup>27</sup> In Russia and Ukraine trade is more localised: just 23 per cent and 30 per cent of transactions are outside the home city.

Breaking away from dependence on the old state-owned enterprises (SOEs) is another measure of market development. Again, Poland, the Slovak Republic and Romania show progress, with averages of only 23 per cent, 14 per cent and 22 per cent of sales going to state firms. In Russia and Ukraine, the state still looms large as a customer for private firms, accounting for 52 per cent and 48 per cent of sales. Spin-offs make a larger percentage of their sales to SOEs in all five countries.

The existence of market intermediaries also measures the sophistication of the market. The fraction of the firms' sales going through a wholesaler is highest in Poland (26 per cent), then the Slovak Republic (19 per cent), Romania (7 per cent), Russia (5 per cent) and Ukraine (4 per cent). Another notable difference across countries is in the number of firms' customers. In Poland, Romania and the Slovak Republic, firms say they have about 100 customers on average; in Russia and Ukraine they have only about 10.<sup>28</sup>

Setting prices competitively is a further measure of market development. If the absence of market institutions means that information does not flow freely, then firms will be little islands of monopoly and prices will be set by bargaining or with a view to the relationship with the particular customer; whereas if markets have developed enough that transaction costs are low, most prices will be set competitively, that is by reference to the prices of inputs and competitors' prices. We asked firms: "What are the two most important factors in determining the price you charge for your products."<sup>29</sup> Most firms in Poland, the Slovak Republic and Romania say their prices reflect input prices and competitors' prices (respectively 61 per cent, 59 per cent and 63 per cent of the firms). Far fewer firms in Russia and Ukraine say they price competitively (16 per cent and 9 per cent).

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<sup>27</sup> The relatively high level of exports in the Slovak Republic is probably due to trade with Czech firms with which there were contacts before the two countries split.

<sup>28</sup> Annex Table 1 shows that firms are smaller on average in Russia than in the other countries. The difference in size, however, is not enough to account for this large difference in the number of customers.

<sup>29</sup> The allowed answers were: "cost of inputs, relationship with the customer, competitors' prices, bargaining power of buyer, and other (please specify)."

**Table 4: Development of market infrastructure**

|   | Poland | Slovak Republic | Romania | Russia | Ukraine |
|---|--------|-----------------|---------|--------|---------|
| <b>Destination of sales</b>                             |        |                 |         |        |         |
| <i>Percent of sales</i>                                 |        |                 |         |        |         |
| Within home city  | 35.3   | 32.4            | 46.2    | 76.7   | 69.5    |
| Domestic, outside of home city                          | 55.7   | 50.7            | 49.2    | 21.3   | 26.7    |
| Foreign destination                                     | 9      | 16.9            | 4.6     | 2      | 3.8     |
| <i>Percentage of sales</i>                              |        |                 |         |        |         |
| To SOEs   | 23.1   | 13.6            | 21.5    | 52     | 47.5    |
| To spin-offs  | 15.6   | 30.9            | 10.8    | 9.9    | 16.1    |
| To other private/foreign firms                          | 61.3   | 55.5            | 67.7    | 38.1   | 36.3    |
| <i>For spin-offs</i>                                    |        |                 |         |        |         |
| Sales within home city                                  | 43.7   | 31.9            | 41.2    | 77.9   | 67.9    |
| Sales to SOEs   | 39.6   | 17.3            | 34.5    | 55     | 51.9    |
| <i>For start-ups</i>                                    |        |                 |         |        |         |
| Sales within city                                       | 32.9   | 32.5            | 46.9    | 75.4   | 73.4    |
| Sales to SOEs   | 18.7   | 12.4            | 19.6    | 50     | 38.2    |
| <b>Importance of intermediaries</b>                     |        |                 |         |        |         |
| % of sales through wholesaler                           | 25.7   | 18.6            | 6.6     | 5.3    | 4.2     |
| <b>Number of customers</b>                              |        |                 |         |        |         |
| Number of customers                                     | 99.7   | 86              | 107.1   | 9.6    | 12.1    |
| Number of new customers                                 | 17.8   | 15.1            | 19.4    | 2.5    | 2.6     |
| <b>Determination of prices</b>                          |        |                 |         |        |         |
| Prices set by "inputs/competitors:"                     | 62.5   | 59.3            | 63.1    | 21.1   | 9.9     |
| Prices set by "bargaining/relationships with customers" | 31.1   | 31.9            | 25.6    | 64.1   | 66.8    |
| <b>Production of customer-specific goods</b>            |        |                 |         |        |         |
| % producing goods unique to oldest continuous customer  | 18.8   | 29.9            | 27.2    | 3.8    | 8.6     |
| % producing goods unique to newest customer             | 25.1   | 36.4            | 26.2    | 5.9    | 12.4    |
| <b>Provision of trade credit</b>                        |        |                 |         |        |         |
| % of bill paid by customer >8 days after delivery       | 74.6   | 58.4            | 31.2    | 7.4    | 21.7    |

The simplest transactions in markets involve the sale of (standardised) goods made for inventory and sold for cash. As markets develop, producers make more goods that are specific to given customers. The survey contains information about relationships with each firm's oldest continuous customer and most recently added customer. In all five countries, specialised goods are more likely to be produced for more recently added customers. Across countries, firms in Russia and Ukraine produce substantially fewer specialised goods than do firms in the other three countries.

Trade credit will be offered only if there is some assurance that the debt will be paid, so the use of trade credit is a sign that either formal legal institutions or informal arrangements such as inter-firm networks have evolved. Trade credit is used most extensively in Poland (on average 75 per cent of a bill is paid by a surveyed firm's customer eight or more days after delivery of the goods), then the Slovak Republic (58 per cent), Romania (31 per cent), Ukraine (22 per cent) and Russia (7 per cent).

Poland, the Slovak Republic and Romania clearly look better than Russia and Ukraine by all these measures of market development. However, in an absolute sense eastern Europe's numbers are not yet at the level we would expect for a developed market economy. About 40 per cent of firms do not price competitively, more than 30 per cent of their sales are local, and about 20 per cent of their sales continue to go to state firms. There is still some way to go before they become low transaction-cost economies.

## 6. FIRM GROWTH EFFECTS

### AVERAGE FIRM GROWTH

Employment growth is perhaps the most important measure of performance from a welfare perspective. A private sector is successful in a post-communist country only to the extent that it manages to create jobs.<sup>30</sup> We begin by comparing employment growth as a measure of private sector performance across the five countries.

We measure employment growth as the ratio of total employment at the end of 1996 to total employment at the end of 1994, for all firms that began operating in 1994 or earlier. An alternative would be to average the employment growth rate for each firm.<sup>31</sup> For reasons discussed below, we believe the first measure provides a better picture of employment growth in the five countries.

Employment growth between 1994 and 1996 is taken to represent the most recent measurable growth dynamics of these firms, while not including the most recent firms (which probably have higher growth rates because they start from such low levels). Employment growth is higher in eastern Europe (Poland, Romania and the Slovak Republic) than in the former Soviet Union (Russia and Ukraine). Average employment in our sample grew 13 per cent in Poland, 7 per cent in Romania, 5 per cent in Ukraine, 3 per cent in the Slovak Republic and 2 per cent in Russia (see the section marked “growth in average employment” in Table 5).<sup>32</sup>

Performance differs markedly between firms that started from scratch and those that were spun off from state-owned enterprises (referred to as “spin-offs” in our tables). Only in Poland, Ukraine and Russia did spin-offs contribute to net employment growth; in the other countries they shed labour. In contrast, start-up firms created jobs in all five countries. The fastest job growth occurred in Romania, with a 34 per cent increase in jobs over the two years. Moderate job growth occurred in Poland (17 per cent) and the Slovak Republic (24 per cent), somewhat slower in Ukraine (13 per cent), and slow but still positive growth in Russia (4 per cent). (All these figures are reported fully in Table 5.)

Not surprisingly, employment growth among newly started firms is much more rapid.<sup>33</sup> In firms started in 1993 or 1994, employment growth from 1994 to 1996 was very rapid in Poland, the Slovak Republic and Romania (respectively 52 per cent, 59 per cent and 64 per cent). However, in Russia and Ukraine even the newest firms showed little job growth (4 per cent and 8 per cent), suggesting that new entrants still face severe constraints there. It appears that the greatest relative advantage of eastern Europe is with very small firms.

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<sup>30</sup> For example, in the theoretical model of Blanchard (1997), Chapter 4, a key determinant of the unemployment rate and therefore success in post-communist transition is the rate at which the private sector can grow.

<sup>31</sup> This measure captures firm-level growth rates better, but, as an unweighted average, it is biased upwards by firms that have relatively low employment. For example, if one country has smaller firms with faster growth rates (e.g., all growing from 1 to 2 people), it would score better in terms of this measure than a country with larger firms that have larger absolute growth but lower percentage growth (e.g., employment grows from 20 to 30 people in all firms).

<sup>32</sup> The firms are quite comparable in terms of average employment (see Annex Table 1 for detail). Average employment in start-ups ranged from 21 in Russia to 47 in Poland in 1994. Average employment in spin-offs ranged from 47 in Russia to 189 in Romania.

<sup>33</sup> Our sample includes a significant number of start-ups that began operations in 1993 or 1994 for all five countries: 37 in Poland, 57 in the Slovak Republic, 90 in Romania, 49 in Russia and 32 in Ukraine.

**Table 5: Employment growth**

|   | Poland | Slovak Republic | Romania | Russia | Ukraine |
|---|--------|-----------------|---------|--------|---------|
| <b>Number of firms:</b>   |        |                 |         |        |         |
| Spin-offs   | 66     | 70              | 40      | 132    | 183     |
| Start-ups   | 237    | 238             | 281     | 123    | 82      |
| Total *   | 303    | 308             | 321     | 269    | 270     |
| <b>Employment in 1996 divided by employment in 1994</b>                     |        |                 |         |        |         |
| <i>Growth in average employment</i>   | 1.13   | 1.03            | 1.07    | 1.02   | 1.05    |
| Spin-offs   | 1.05   | 0.86            | 0.79    | 1.01   | 1.03    |
| Start-ups   | 1.17   | 1.24            | 1.34    | 1.04   | 1.13    |
| Start-ups begun 1993 or 1994  | 1.52   | 1.59            | 1.64    | 1.04   | 1.08    |
| Firms with over 20 employees in 1994  | 1.02   | 0.70            | 0.82    | 0.93   | 0.94    |
| Firms with between 10 and 270 employees in 1994                             | 1.16   | 1.15            | 1.12    | 1.02   | 1.08    |
| <b>Firms with change in employment</b>                                      |        |                 |         |        |         |
| <i>Proportion of firms increasing employment from 1994 to 1996</i>          | 70%    | 72%             | 75%     | 17%    | 48%     |
| Spin-offs   | 56%    | 52%             | 13%     | 16%    | 49%     |
| Start-ups   | 74%    | 79%             | 86%     | 20%    | 50%     |
| Start-ups begun 1993 or 1994  | 89%    | 81%             | 91%     | 20%    | 47%     |
| Firms with over 20 employees in 1994  | 58%    | 60%             | 62%     | 17%    | 48%     |
| <i>Proportion of firms decreasing employment from 1994 to 1996</i>          | 20%    | 19%             | 21%     | 2%     | 15%     |
| Spin-offs   | 35%    | 36%             | 74%     | 3%     | 14%     |
| Start-ups   | 16%    | 13%             | 12%     | 2%     | 15%     |
| Start-ups begun 1993 or 1994  | 8%     | 12%             | 7%      | 2%     | 22%     |
| Firms with over 20 employees in 1994  | 32%    | 33%             | 34%     | 2%     | 18%     |
| Proportion of firms decreasing sales between 1995 and 1997                  | 14%    | 23%             | 20%     | Na     | Na      |
| Proportion of firms increasing sales by 1% to 30% between 1995 and 1997     | 54%    | 56%             | 49%     | Na     | Na      |
| Proportion of firms increasing sales by more than 30% between 1995 and 1997 | 33%    | 21%             | 32%     | Na     | Na      |

\* "Spin-offs" and "start-ups" do not always sum to "Total" because a few firms did not answer the question about whether they were formerly part of a state enterprise.

Table 5 also shows that the proportion of firms that increased employment is much larger in eastern Europe: 70 per cent in Poland, 70 per cent in the Slovak Republic, 75 per cent in Romania, 49 per cent in Ukraine but only 17 per cent in Russia. A similar disparity is evident if we examine only firms with over 20 employees in 1994, or start-ups begun in 1993 or 1994, or spin-offs (Table 5).

However, more firms also decreased employment in eastern Europe. In Poland, 20 per cent of firms decreased employment between 1994 and 1996. The proportions were almost identical in the Slovak Republic and Romania (although in Romania many more spin-offs reduced jobs.) The fractions in Ukraine were significantly lower than in eastern Europe. In contrast, in Russia very few firms reduced employment.

These employment growth data should be interpreted with some caution for the following reason. One of our sampling criteria was the number of employees in 1997, at the time of the survey. The sample excluded firms with fewer than 10 or more than 270 employees.<sup>34</sup> But there was no restriction on size at the end of 1994. In fact, 13 per cent of the sample had fewer than 10 employees at the end of 1994. All of these firms grew between 1994 and mid 1997. The smallest of them – those with one employee at the end of 1994 – grew by at least 1,000 per cent during this period. On the other hand, the sample excludes similarly sized firms that did not grow. Hence, among small firms, our sample is biased toward rapid growers. Among large firms, the opposite holds. About 4 per cent of the firms had more than 200 employees at the end of 1994. Our sample is biased toward slow growers among these firms.

The problem created by the sample selection criteria can be reduced by calculating the average employment growth rates for firms with between 10 and 270 employees at the end of 1994. With this restriction, the difference between eastern Europe and the former Soviet Union is even clearer. Growth in the three east European countries was between 12 per cent and 16 per cent, compared with 2 per cent in Russia and 8 per cent in Ukraine.<sup>35</sup>

Finally, the survey contains data on the rate of sales growth of each firm over the two-year period leading up to the survey. We look at these data for comparison. Unfortunately, these data appear to be reliable only for the three east European countries.<sup>36</sup> Sales growth data were provided as categorical responses to the question “Over the past two years, how have sales in value term (after adjusting for inflation) changed?” The five categories were: 1) decreased or stayed the same; 2) increased 10 per cent; 3) increased 10 to 30 per cent; 4) increased 30 to 50 per cent; or 5) increased more than 50 per cent. The sales growth data are consistent with the employment growth data, with the distribution of the responses in each of the countries centered around double-digit growth rates. Perhaps reflecting the extent of restructuring, many firms say their sales grew even though their employment was constant or falling. 85 of the 134 firms in the sample reporting constant

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<sup>34</sup> Seven firms in Russia and one in Ukraine had less than 10 employees at the time of the survey.

<sup>35</sup> Similar results are obtained if the sample is limited further to firms with between 20 and 150 workers at the end of 1994. This restriction means that firms at both ends of the range could have grown by 80% or shrunk by 50% between 1994 and 1996.

<sup>36</sup> When asked about sales growth, managers in Poland, the Slovak Republic and Romania were shown a table indicating inflation rates over the period, so that they would focus on deflated sales increase levels. Such tables were not provided in Russia and Ukraine, and as a result, we suspect the data in these countries are not properly adjusted for inflation. None of the firms in Russia said sales increased by less than 10%, and 60% of Russian managers said sales increased by more than 30%. There is a positive correlation between sales and employment growth in Poland, the Slovak Republic and Romania, but a strong negative correlation between sales and employment growth in Russia and Ukraine. Consequently, we run growth regressions using data only from Poland, the Slovak Republic and Romania.

or falling employment say their sales increased over the preceding two years. In 57 (43 per cent) of the cases, sales grew by more than 10 per cent.

Overall, firms in the three east European countries demonstrated much more dynamism, both in terms of growth and in terms of contraction. This is true both for the whole sample and for the main subcategories of firms. In Ukraine and even more so in Russia, both start-ups and spin-offs look relatively stagnant, with less growth but also with a smaller proportion of firms reducing employment: 190 firms in Russia and 57 firms in Ukraine report no change of employment between 1994 and 1996. The evidence therefore strongly indicates stagnation or slow development of the private sector in Russia and Ukraine, with much more dynamism shown in all three east European countries. Poland has the best overall performance measured by growth in employment in the sample. Though our sampling criteria make interpreting the data somewhat problematic, we believe these results indicate real differences between the countries.

### **GROWTH REGRESSIONS**

Ordinary least squares regressions using the percentage growth in employment from year-end 1994 to year-end 1996 are presented in the first two columns of Table 6. We are interested in how internal finance, external finance and security of property rights affect growth. We find some evidence that reinvestment of profit is positively associated with employment growth, but no evidence that either external finance or property rights affect growth. Firms indicating that they normally reinvest a larger proportion of profits have faster employment growth, an effect significant at the .10 level.<sup>37</sup>

Property rights are measured with three different variables. The first is an index taking integer values between 0 and 3. A value of 0 indicates that the manager believes firms in his industry make extra-legal payment for government services and for licences, and make payments for “protection” as well. A value of 1 represents a positive response to two of these three payments, and so on. This index does not have the expected sign, but is not significant. The second measure indicates whether the manager believes that courts can be used to enforce contracts with customers and suppliers. An affirmative response to this question is positively associated with growth, but the effect is not significant. Finally, we asked managers whether they would be willing to invest US\$ 100 today to receive US\$ 200 two years from now. This provides a summary measure of the willingness of managers to make investments, combining security of property and the opportunity cost of capital. The variable, included in the regression reported in Column 2, has the wrong sign and is not significant.<sup>38</sup>

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<sup>37</sup> In a companion paper, we find that reinvestment rates are affected by security of property rights (Johnson, McMillan and Woodruff, 1999b).

<sup>38</sup> Development of “market infrastructure” and the security of property are also related. More certain property rights allow firms to develop trading relationships more quickly. For example, in all five countries there is a positive correlation between the amount of credit given to customers and the belief that courts can be used to enforce contracts with customers and suppliers. The correlation is significant at the .05 level in Poland and the .01 level in the Slovak Republic.

**Table 6: Employment and sales growth regressions for Poland, the Slovak Republic and Romania**

|  | OLS regressions – Employment growth |                        |                      |                      | Ordered probits – Sales growth |                        |                        |                        |
|--|-------------------------------------|------------------------|----------------------|----------------------|--------------------------------|------------------------|------------------------|------------------------|
|  | (1)                                 | (2)                    | (3)                  | (4)                  | (5)                            | (6)                    | (7)                    | (8)                    |
|  | Start-ups<br>>10, <270              | Start-ups<br>>10, <270 | All firms            | All firms            | Start-ups<br>>10, <270         | All firms<br>>10, <270 | Start-ups<br>>10, <270 | Start-ups<br>>10, <270 |
| Percentage of profit normally reinvested               | 0.24<br>(-1.65)                     | 0.25<br>(-1.72)        | 0.47<br>(-3.72)      | 0.47<br>(-3.67)      | 0.45<br>(-3.11)                | 0.38<br>(-2.42)        | 0.26<br>(-1.36)        | 0.22<br>(-1.17)        |
| Firm's profit as a % of sales in 1st year of operation | 0.15<br>(-0.39)                     | 0.15<br>(-0.38)        | 0.94<br>(-2.62)      | 0.87<br>(-2.44)      | 0.92<br>(-2.42)                | 0.82<br>(-1.86)        | 0.95<br>(-1.94)        | 0.95<br>(-1.94)        |
| Firm had loan before 1996                              | 0.65<br>(0.07)                      | 0.96<br>(0.11)         | -7.56<br>(0.93)      | -7.81<br>(0.96)      | -1.01<br>(0.11)                | -2.53<br>(0.26)        | 3.23<br>(0.29)         | 4.32<br>(0.70)         |
| Security of property rights index                      | -1.87<br>(-0.36)                    |                        | 8.19<br>(-1.72)      |                      | 8.72<br>(-1.68)                | 1.22<br>(-0.21)        | 3.82<br>(-0.59)        |                        |
| Courts can be used to enforce contracts                | 16.52<br>(-1.55)                    |                        | 20.38<br>(-2.19)     |                      | 9.30<br>(-0.88)                | 19.36<br>(-1.67)       | 6.72<br>(-0.49)        |                        |
| Would invest US\$ 100 to earn US\$ 200 in 2 years      |                                     | -8.29<br>(-0.74)       |                      | 19.06<br>(-1.97)     |                                |                        |                        | 37.29<br>(-2.62)       |
| Log age+1 (years)                                      | -23.09<br>(-1.98)                   | -24.30<br>(-2.08)      | -16.63<br>(-1.79)    | -16.97<br>(-1.82)    | -22.40<br>(-2.10)              | -4.18<br>(-0.33)       | -14.08<br>(-0.93)      | -16.76<br>(-1.10)      |
| Employment, end of 1994                                | -1.04<br>(-3.54)                    | -1.00<br>(-3.40)       |                      |                      |                                | -0.41<br>(-1.44)       | -0.30<br>(-0.79)       | -0.27<br>(-0.72)       |
| Employment, end of 1994, squared                       | 0.003<br>(2.11)                     | 0.003<br>(1.99)        |                      |                      |                                | 0.001<br>(0.78)        | 0.0001<br>(0.09)       | 2.90E-05<br>(0.02)     |
| Start-up   |                                     |                        | 27.77<br>(2.65)      | 26.40<br>(2.52)      |                                | 14.25<br>(1.07)        |                        |                        |
| Controls   | Industry/<br>country                | Industry/<br>country   | Industry/<br>country | Industry/<br>country | Industry/<br>country           | Industry/<br>country   | Industry/<br>country   | Industry/<br>Country   |
| Manager characteristics                                | Yes                                 | Yes                    | Yes                  | Yes                  | Yes                            | Yes                    | Yes                    | Yes                    |
| # Obs  | 424                                 | 424                    | 789                  | 789                  | 639                            | 537                    | 412                    | 412                    |
| F or Chi-Square  | 2.3                                 | 2.3                    | 107.4                | 103.4                | 77.5                           | 83.5                   | 60.8                   | 67.1                   |
| Prob   | <0.001                              | <0.001                 | <0.001               | <0.001               | <0.001                         | <0.001                 | 0.004                  | 0.001                  |

Note: t-stats in parentheses

Access to external finance is indicated by the firm having received a bank loan some time before 1996. Again, the variable does not have the expected sign, and is not significant. The regressions also control for firm age, firm size at the beginning of the period, manager characteristics and industry/country effects. We find the usual pattern of smaller and younger firms having more rapid growth rates.<sup>39</sup>

Ordered probits for sales growth are reported in Columns 3-8 of Table 6. Sales growth data are also affected by the problems discussed above, but to a lesser extent. While we believe the sales growth regressions provide more information than the employment growth regressions, they should nevertheless be interpreted with some caution given the sample problems.

We begin with a sample that includes both start-ups and spin-offs. Both profit reinvestment and property rights are positively associated with faster rates of sales growth. Firms that reinvest a greater percentage of their profits and firms that have more profits to invest (indicated by profit rates during their first year of operation) have faster rates of growth. Firms with higher values on our property rights index (i.e., those indicating that bribes and protection payments are not common) have faster sales growth, as do those whose managers say that courts can enforce contracts with customers and suppliers. Both effects are significant at the .10 level. The regression in Column 4 replaces these two measures with the willingness to invest US\$ 100 to receive US\$ 200 in two years. Firms with managers willing to make such investments grow faster.

The significance of the property rights variables depends on the sample used in the regression. When the sample is limited to start-up firms (Column 5), the effect of “courts” loses significance. The index of property rights remains significant. This change is reversed (courts are significant and the index is not) when a sample of all firms with between 10 and 270 employees at the end of 1994. Finally, when the sample is limited to start-ups that employed between 10 and 270 workers at the end of 1994, both the property rights index and the effectiveness of courts have insignificant associations with growth. However, a willingness to invest US\$ 100 is still significantly associated with growth.<sup>40</sup>

The indicators of internally financed investment generally retain their significance when the sample is changed, though the firm’s normal investment rate becomes insignificant when the limited sample is used (Columns 7 and 8). The findings on external finance are also robust, in that the effect is not significant in any of the regressions. Among the other controls, we find that older firms grow more slowly and start-ups grow more quickly. We find no significant association between employment at the end of 1994 and sales growth.

Because the regressions are limited to the three east European countries, we have probably underestimated the effect of property rights on growth. The biggest differences in both growth rates and security of property are between Poland, the Slovak Republic and Romania on the one hand and Russia and Ukraine on the other. For example, almost all firms in Poland, Romania and the Slovak Republic would invest US\$ 100 to earn US\$ 200 in two years, but almost none would in Russia and Ukraine. This is consistent with evidence that entrepreneurs in Russia and Ukraine face much higher risks of doing business, particularly through ex-post confiscation of profits by government or government employees (see also Johnson, McMillan and Woodruff, 1999b). Russian and Ukrainian entrepreneurs demand much higher returns in order to justify the risks of any business

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<sup>39</sup> An alternative instrument for current finance is whether the firm reports that they have collateral to offer banks.

<sup>40</sup> The willingness to invest US\$ 100 also is significant when all start-ups are used, as in Column 5 ( $\beta=37.29$ ,  $t=2.62$ ). This result is not shown on the table.

investment. Even though they make high profits, these entrepreneurs in the former Soviet Union prefer not to reinvest as much as entrepreneurs in eastern Europe; as a result their firms grow more slowly.

In sum, we find evidence of an association between sales growth on the one hand and internally financed investment and security of property rights on the other hand. The internal investment results are fairly robust, the property rights results somewhat less so. On the other hand, we can uncover no evidence that access to external finance is associated with faster growth.<sup>41</sup>

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<sup>41</sup> Even having a loan in 1996 is not associated with faster growth in the whole sample, though it is significantly associated with faster growth in Poland. We have no way of knowing the direction of causation of this effect, however.

## 7. CONCLUSION

Entry is a source of economic dynamism in all five of these transition economies. Our survey shows that new firms are creating jobs and generating investment. Market institutions are more developed in eastern Europe than in the former Soviet Union. The rate of growth of employment in start-ups through 1996 also varies, being slower in Ukraine and Russia, moderate in Poland and the Slovak Republic, and faster in Romania.

By measures of firm performance, security of property and market development, our countries fall into two groups: an advanced group of Poland, Romania and the Slovak Republic, with the Slovak Republic falling somewhat behind the other two; and a backward group of Russia and Ukraine. The standard policies of stabilisation, liberalisation, and privatisation have all been implemented in Russia (and largely in Ukraine), but these do not appear to be sufficient to ensure rapid growth of the private sector. Even more worrying, we do not find any evidence that Russia and Ukraine are catching up with growth rates in the east European private sector. In fact, if the current level of market infrastructure is important for future private sector growth, we should expect to see Poland, the Slovak Republic and Romania pull even further ahead of the former Soviet Union.

A lack of formal bank finance also does not seem to be the binding constraint that inhibits private sector growth. Financial constraints have been less pressing in those countries with the slowest private sector growth. More important than inadequate finance are insecure property rights. As we argue in Johnson, McMillan and Woodruff (1999b), if entrepreneurs are subject to discretionary expropriation, they will be reluctant to invest even if finance is offered. Securing property rights and lowering transaction costs are therefore more urgent concerns than facilitating finance. Our evidence therefore supports the argument of Johnson, Kaufmann and Shleifer (1997) that eastern Europe and the former Soviet Union (except the Baltic states) are diverging largely because of differences in the protection of property rights.

It follows that policies aimed at easing financial constraints will have little effect in countries such as Russia, Ukraine and the Slovak Republic unless at the same time efforts are made to stabilise the country's regulatory environment and to develop market-supporting infrastructure. This is not to say that financial arrangements are unimportant. Access to finance is obviously necessary for firms to grow and to generate employment. A policy implication of our findings is that financial aid and policies to build financial markets should come as part of a package that also includes policies to improve the security of property and to help build market institutions. In the lending programmes of the EBRD and the World Bank, conditionality should be imposed not only at a macro level but also at a micro level. Promises should be exacted from the borrowing government that taxes and charges for publicly provided services be set at reasonable levels, that property rights be assured, that corruption be controlled, that policies impeding the setting up of new firms be removed, and that the country's regulatory regime be made transparent and predictable. Government performance along these dimensions could and should be monitored regularly by independent organisations, and governments that fail to meet these micro targets should have further funding withheld.

## **ANNEX: THE SAMPLE AND THE SURVEY**

The data reported here are from surveys undertaken in Russia and Ukraine in May and June 1997, and in Poland, Romania and the Slovak Republic in September-December 1997. Pilot surveys were undertaken in Russia and Ukraine in January-February 1997, in Poland and the Slovak Republic in March 1997, and in Romania in August 1997. The sample of about 300 firms in each country was drawn from a list provided by the country's Statistical Institute. In order to increase the cross-country comparability of the sample, the initial selection was limited to one medium-sized city in each country: Katowice (Poland), Brasov (Romania), Bratislava (the Slovak Republic), Volgograd (Russia) and Dnepopetrovsk (Ukraine). Only in the Slovak Republic did we have trouble identifying a large enough sample of firms meeting the established size criteria that were willing to participate. In the final sample, about one-quarter of the Slovak firms are located in Bratislava, one-quarter in Kosice, and the remaining half are spread across seven other cities. Participation rates were high among the firms contacted – in excess of 70 per cent in Poland and Romania, and 68 per cent in the Slovak Republic. We believe the resulting sample is reasonably representative of small and medium-sized manufacturing firms in each country, though it is not a census.

Annex Table 1 provides a summary of the characteristics of firms in the sample. The majority of firms in each of the countries were started in 1990 or after. Poland is the only country in which a significant share of the firms was started before 1988. A significant share in each country started operation within three years of the survey. The majority of firms in Russia and Ukraine were “privatised”, or spun off from state-owned enterprises (SOEs); the majority in the other three countries started from scratch, with none of their equipment coming from SOEs. Of course, even the start-ups may have close connections with SOEs.

More than 85 per cent of the managers in each of the countries report that they have previous experience working in an SOE. Previous work experience in the private sector is much more common for start-up firms than spin-offs. More than 29 per cent of start-up managers have prior private sector experience in every country except Romania. In all five countries the educational background of managers is similar; the average amount of schooling is 15-16 years everywhere.

Measured by employment, in all five countries spin-offs were much larger in their first year of operation than the start-ups. The start-ups were smallest at birth in the Slovak Republic and largest in Poland, though there is not a large difference among the countries in the average size of start-ups in their first year.

In Poland, Romania and the Slovak Republic, the sample was drawn so that one-quarter of the firms were from the same industry, metal parts and products. Nearly a fifth of the Ukrainian firms and one-eighth of the Russian firms also produce metal products. The remaining firms are spread across manufacturing sectors, as shown in Annex Table 1.

The survey was administered face-to-face by interviewers contracted in each country, with responses provided by the general manager or deputy general manager of each firm. The largest part of the survey is a series of questions related to the longest running and newest customer and supplier relationships. There are also sections on the resolution of contract disputes with customers and suppliers, access to formal bank finance, hidden and unofficial payments, and a set of general questions regarding the size and profitability of the firms.

**Annex Table 1: Basic characteristics of spin-off and start-up firms**

|   | <b>Poland</b> |           | <b>Slovak Republic</b> |           | <b>Romania</b> |           | <b>Russia</b> |           | <b>Ukraine</b> |           |
|---|---------------|-----------|------------------------|-----------|----------------|-----------|---------------|-----------|----------------|-----------|
|   | Spin-offs     | Start-ups | Spin-offs              | Start-ups | Spin-offs      | Start-ups | Spin-offs     | Start-ups | Spin-offs      | Start-ups |
| <b>Number of firms</b>                    | 66            | 237       | 70                     | 238       | 40             | 281       | 132           | 123       | 183            | 82        |
| <b>Year founded</b>                       |               |           |                        |           |                |           |               |           |                |           |
| Before 1990                               | 13.6%         | 40.9%     | 7.1%                   | 6.3%      | 0.0%           | 1.1%      | 6.8%          | 5.7%      | 17.5%          | 6.1%      |
| 1990                                      | 4.5%          | 12.2%     | 1.4%                   | 10.5%     | 25.0%          | 5.3%      | 12.9%         | 11.4%     | 18.8%          | 12.3%     |
| 1991                                      | 18.2%         | 8.4%      | 17.1%                  | 14.7%     | 37.5%          | 16.7%     | 21.2%         | 18.7%     | 13.7%          | 12.2%     |
| 1992                                      | 19.7%         | 12.7%     | 44.3%                  | 21.0%     | 17.5%          | 24.9%     | 15.2%         | 13.8%     | 8.7%           | 14.6%     |
| 1993                                      | 18.2%         | 8.0%      | 8.6%                   | 16.4%     | 2.5%           | 13.9%     | 15.2%         | 30.1%     | 17.5%          | 23.2%     |
| 1994                                      | 9.1%          | 8.0%      | 4.3%                   | 9.2%      | 12.5%          | 18.5%     | 17.4%         | 9.8%      | 16.9%          | 19.5%     |
| 1995                                      | 12.1%         | 5.1%      | 5.7%                   | 10.5%     | 2.5%           | 16.0%     | 6.8%          | 7.3%      | 5.5%           | 8.5%      |
| 1996                                      | 0.0%          | 3.0%      | 10.0%                  | 9.2%      | 2.5%           | 3.6%      | 3.0%          | 1.6%      | 3.6%           | 2.4%      |
| <b>Manager's previous work experience</b> |               |           |                        |           |                |           |               |           |                |           |
| Private sector                            | 21.2%         | 39.2%     | 22.9%                  | 29.8%     | 0.0%           | 9.6%      | 11.4%         | 31.7%     | 1.1%           | 36.6%     |
| Public sector                             |               |           |                        |           |                |           |               |           |                |           |
| as a manager                              | 44.3%         | 32.0%     | 36.4%                  | 22.4%     | 47.5%          | 26.8%     | 65.9%         | 43.0%     | 68.7%          | 36.7%     |
| as an engineer                            | 41.0%         | 31.7%     | 36.4%                  | 39.7%     | 50.0%          | 52.0%     | 29.4%         | 53.1%     | 29.1%          | 61.2%     |
| as a worker                               | 23.0%         | 42.5%     | 27.3%                  | 36.8%     | 2.5%           | 20.1%     | 5.6%          | 5.1%      | 2.2%           | 2.0%      |
| Years of schooling                        | 16.3          | 15.6      | 16.6                   | 16.1      | 16.7           | 16.0      | 15.5          | 15.1      | 15.4           | 14.8      |
| <b>Number of employees</b>                |               |           |                        |           |                |           |               |           |                |           |
| First year                                | 83            | 33.4      | 119.3                  | 19.3      | 257.1          | 25.4      | 47.1          | 21.7      | 72.6           | 31.9      |
| 1994                                      | 87.6          | 47.1      | 137.4                  | 36.8      | 188.8          | 34        | 47.7          | 21.1      | 76.4           | 32.0      |
| 1996                                      | 92.4          | 55.1      | 118.0                  | 45.8      | 148.8          | 45.5      | 48.2          | 22.0      | 78.5           | 36.2      |
| <b>Sector</b>                             |               |           |                        |           |                |           |               |           |                |           |
| Metal parts                               | 34.9%         | 25.7%     | 22.9%                  | 26.9%     | 25.0%          | 28.1%     | 12.2%         | 11.4%     | 20.3%          | 14.6%     |
| Wood products                             | 3.0%          | 6.8%      | 8.6%                   | 9.7%      | 15.0%          | 11.0%     | 2.3%          | 2.4%      | 6.0%           | 2.4%      |
| Food products                             | 4.6%          | 13.9%     | 24.3%                  | 6.7%      | 17.5%          | 19.9%     | 8.4%          | 12.2%     | 6.6%           | 6.1%      |
| Footwear/clothing                         | 6.1%          | 19.4%     | 4.3%                   | 15.1%     | 12.5%          | 15.0%     | 15.3%         | 16.3%     | 2.8%           | 7.3%      |
| Const. Materials                          | 18.2%         | 6.8%      | 15.7%                  | 8.8%      | 22.5%          | 10.0%     | 15.3%         | 16.3%     | 18.7%          | 8.5%      |
| Chemicals                                 | 12.1%         | 9.3%      | 4.3%                   | 9.2%      | 2.5%           | 8.5%      | 8.4%          | 3.3%      | 11.5%          | 4.9%      |
| Paper and pack.                           | 1.5%          | 1.7%      | 5.7%                   | 3.8%      | 2.5%           | 2.5%      | 6.9%          | 8.1%      | 1.7%           | 2.4%      |
| Handicrafts                               | 1.5%          | 1.3%      | 0.0%                   | 0.8%      | 0.0%           | 1.8%      | 1.5%          | 0.8%      | 0.6%           | 4.9%      |
| Elec. Machinery                           | 12.1%         | 7.2%      | 7.1%                   | 8.8%      | 0.0%           | 0.7%      | 15.3%         | 8.9%      | 11.5%          | 11.0%     |
| Other                                     | 6.1%          | 8.0%      | 7.1%                   | 10.1%     | 2.5%           | 2.5%      | 14.5%         | 20.3%     | 20.3%          | 37.8%     |

Managers were given categories of responses for all profit rate and profit reinvestment questions. The response rates on these questions were generally quite high – in excess of 95 per cent. One exception to this was the current (1996) profit and reinvestment rates in Russia and the Ukraine, where response levels were 90 per cent and 85 per cent, respectively. For questions related to hidden payments and costs of licences and services, managers were asked “what do typical firms in your industry pay...”. The report from the company implementing the survey in Poland, Romania and the Slovak Republic noted:

“One respondent doubted if managers knew what other firms in their sector were up to. He commented that the questionnaire was trying to disguise the fact that it was after information about his own firm. Having re-assured the respondent about the confidentiality of the survey he was happy to answer all questions (referring to his own firm, of course!)”.

Response rates for these questions varied across countries and questions. In general they were much lower for Russia and Ukraine. For some questions, the level of hidden sales or wages, for example, the response rate ranged from 85 per cent in Poland to less than 50 per cent in Russia. The Russian and Ukrainian firms were also reluctant to divulge the size and level of collateral or loans, with less than 50 per cent of firms reporting that they received loans identifying the level. The greater reluctance to respond to these questions in Russia and Ukraine is perhaps itself an indication of the more difficult business climate in those countries.

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