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Entrepreneurship in Post-Socialist Economies

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Following the disintegration of the Soviet Union in December 1991, the former Soviet republics and many other Eastern European nations were free to move from socialism to capitalism. This transition process required not only changes in the economic systems of these countries, but also changes in personal attitudes and behaviors toward private enterprise. Private sector entrepreneurship, an activity that had been illegal for decades, not only became legal but it also became essential for the creation of wealth and economic progress in these countries. As is pointed out by Havrylyshyn (2001), over the past decade these post-socialist transition economies have followed somewhat different courses, based on different institutional reforms, and the degree of success has varied widely across these countries.[1] While there are many ways in which one could assess the success of the transitional countries, this paper focuses on exploring and explaining the differences in their ability to generate and foster continuing private-sector entrepreneurship.

The basis for our focus on entrepreneurship, rather than other measures of transitional success, is that entrepreneurship is increasingly becoming recognized as a key factor contributing to economic growth.

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[1]For additional evidence on the varied degree of success among these countries, see Campos and Coricelli (2002). See Leleux and Surlemont (2003) for an example of the type of work that has been done on venture capital and entrepreneurship in traditional European countries.

Minniti (1999) argues that entrepreneurs are the catalysts for economic growth because they create a networking externality that promotes the creation of new ideas and new market formations. Baumol (1968) states that the central question faced by every market economy is how to encourage entrepreneurial activity. Schumpeter (1934, 1942) states that the key to the success of markets lies in the spirits of entrepreneurs who persist in developing new products and technologies, and succeed at ultimately reducing production costs. Kirzner (1997) argues that the entrepreneurial discovery process is vital to the effectiveness of markets. Whether entrepreneurs are "catalysts for economic growth," "the key to the success of markets," or are simply "vital to the effectiveness of markets," the point is clear–entrepreneurship is important for a healthy, well-functioning market economy.

Acs (2003) explains the importance of entrepreneurial start-ups for economic development. As he notes, the static view of industrial organization has traditionally argued that small firms are sub-optimal in terms of economic efficiency since they by their nature are unable to reap the full benefits of scale economies. Accordingly, this would at first sight seem to result in welfare outcomes inferior to that from larger firms that, thanks to their size, can produce goods and services at lower unit costs. However, this is not correct, for two reasons. First, small firms also act as a countervailing power in the markets, forcing the larger business units to act more competitively. Second, the potential to create new enterprises can alleviate the problems associated with unclear property rights in larger companies. Generally, when an employee of a large company comes up with an innovation, the copyright of that innovation becomes the property of the company. In this case, the inventor may not be appropriately rewarded for his accomplishment. In fact, the shareholders of the company would be the main beneficiaries of the invention. Then, this incentive set-up may stifle the rate of innovation in larger companies. But by creating his own company the innovator can by-pass this problem of free riders and collect the benefits of his own invention to a larger extent. Not surprisingly then,

entrepreneurial start-ups are often characterized by a high rate of new knowledge formation.

Empirically, the finding that increased entrepreneurial activity leads to greater economic growth has been well founded at both the national and local levels. For example, Reynolds, Hay, and Camp (1999) show that one-third of the differences in national economic growth rates can be attributed to different rates of entrepreneurship. Supporting these findings, Zacharakis, Bygrave, and Sheperd (2000) study sixteen developed economies and find that entrepreneurial activity explains approximately one-half of the differences in GDP growth between countries. More recently, Henderson (2002) argues that entrepreneurs significantly affect economic activity at a more local level through fostering localized job creation, increasing wealth and local incomes, and connecting local economies to the larger, global economy. Berkowitz & DeJong (2001) find that entrepreneurial activity is an important factor in fostering economic growth and job creation. Specifically focusing on Russia, they find that regional economic growth within Russia is closely tied to the prevalence of entrepreneurial activity.

Undoubtedly, entrepreneurial risk taking leads to new and improved products, wealth creation, and ultimately helps societies to improve their allocation of scarce resources. As is stated by McMillan & Woodruff (2002), this is particularly relevant in the context of post-socialist economies where entrepreneurs can facilitate these economies' transition. This paper examines the rates of entrepreneurial activity in these post-socialist economies, and attempts to uncover the policies and institutions that appear to be the most highly correlated with a country's success (or failure) in promoting this activity.[2] The sample consists of ten Baltic and Central European economies that

[2]OECD (1998), Chapter 13, contains a detailed account of the difficulties of and barriers to fostering entrepreneurial activity in post-socialist economies. Pfirrmann and Walter (2002) contains a set of articles discussing specific issues with regard to entrepreneurial activity in some of the transition economies.

generally started their transition process around 1990.[3]

Transitional Success and Entrepreneurship

There are many ways to assess the degree of 'success' in the transitional post-socialist economies, with each measure having its own distinct advantages and disadvantages. Table 1 presents data for several key economic indicators that might be used to measure the degree to which these economies have obtained success in fostering economic growth and progress. The period beginning in 1995 is chosen for two reasons. First, the period before this (during the first few years of transition) was characterized by a huge degree of uncertainty in these economies leading to rather large year-to-year variations in all economic measures. Second, the amount and reliability of the data available for these economies are vastly improved beginning in the mid '90s.

The measures presented in Table 1 are: GDP per capita (both the 2000 level and the average annual growth rate from 1995-2000), the private sector as a share of GDP in 2000, the number of active private enterprises per 1,000 population in 1995, and the average annual growth rates of both private enterprises and patent and trademark applications per capita for 1995-2000. As measured by GDP per capita, the countries that achieved the highest living standards for their citizens by 2000 were Slovenia, the Czech Republic, Hungary, the Slovak Republic, and Estonia. The countries with the lowest living standards were Bulgaria, Romania, Latvia, and Lithuania. The difference between the two groupings is substantial, in most cases at least a factor of two.

As a share of the economy, the private sectors of the Czech Republic, Hungary, and the Slovak Republic are the largest, all around

[3]Estonia, Latvia, Lithuania, Poland, Czech Republic, Slovak Republic, Hungary, Romania, Bulgaria and Slovenia.

Table 1. Selected Economic & Entrepreneurship Data for the Transition Economies

	Start of Transition	GDP per capita		Private Sector Share of GDP in 2000	Active Enterprises per 1,000 People in 1995	Avg. Annual Number of New Enterprises per 1,000 People 1995-2000	Avg. Annual Patent and Trademark Applications per 1,000 People 1995-2000
		PPP dollars in 2000	Avg. Annual Percent Growth 1995-2000				
Bulgaria	Jan 1990	$5,710	0.1%	70%	40.6	7.9	0.37
Czech Rep.	Dec 1989	13,991	1.9	80	69.0	9.3	0.76
Estonia	Dec 1991	10,066	6.4	75	20.0	3.6	0.48
Hungary	Sep 1989	12,416	4.0	80	54.7	5.9	0.42

Latvia	Sep 1991	7,045	5.0	65	10.9	2.0	0.46
Lithuania	Sep 1991	7,106	3.5	70	18.7	2.7	0.50
Poland	Jul 1989	9,051	5.4	70	36.6	5.8	0.35
Romania	Dec 1989	6,423	0.1	60	17.1	2.7	0.22
Slovak Rep.	Dec 1989	11,243	4.4	80	42.5	5.5	0.37
Slovenia	Jun 1991	17,367	4.3	65	35.6	3.6	0.56
Average		10,042	3.5	72	34.6	4.9	0.45

Sources: Eurostat 2002, World Development Indicators 2002, WIPO, Transition Report 1999, 2002

Notes: The surveys on which the above enterprise estimates are based covered registrations of non-agricultural enterprises on the business registers of each country during the corresponding time periods. Public administration and private non-profit enterprises were excluded. True creation excludes agricultural, public administration and private non-profit enterprises as well as enterprises that were reregistered because of privatization or co-operative split.

80 percent of GDP, while Romania, Latvia, and Slovenia have the smallest private sectors, all around 60 to 65 percent of GDP. On average, these transition economies tend to have private sectors averaging 72 percent of GDP, approximately the same as most developed Western nations. The countries with the highest initial level of active private enterprises per capita in 1995 were the Czech Republic, Hungary, the Slovak Republic, and Bulgaria, while Latvia, Romania, and Lithuania lagged far behind.

The final two columns show the two best measures of entrepreneurial activity available for these economies, the number of new enterprises and the number of new patent and trademark applications. While both measure entrepreneurial activity, they are clearly different. Furthermore, they are not highly correlated in the sample economies. While it is true that the Czech Republic tops both lists, and that Romania is near the bottom of both lists, the data for the other countries are not so clearly related. Bulgaria, for example, has a very respectable rate of new enterprise creation, but has one of the lowest rates of patent and trademark applications. This difference is reflected in the relatively low 0.37 simple correlation coefficient between these two measures of entrepreneurial activity. The data presented in this section shows that there is a great deal of variation in the success of these transitional economies in fostering private-sector entrepreneurial activity. The next section develops a model used to uncover the factors most highly correlated with the degree of entrepreneurial activity in these countries.

The Model and Empirical Results

What are the determinants of entrepreneurial activity?[4]

[4]Earle & Sakova (1999) explore the factors associated with individual decisions to be self-employed in post-communist Eastern Europe. Here we explore the factors associated with different levels of overall rates of entrepreneurial activity in these

According to Leibenstein (1968), the critical element for the existence or absence of entrepreneurial activity is whether proper motivations–promise of profits–are in place. Previous literature, as summarized by the OECD (1998) and Havrylyshyn (2001), suggests several factors including the availability of credit and venture capital, solid and unbiased laws, well-defined private property rights, and 'good' political and economic institutions, that lead to greater entrepreneurial activity.

This section examines the determinants of entrepreneurial activity in these countries for the period 1995-2000 using a panel random effects model with both group and period effects.[5] The dependent variables used to measure entrepreneurial activity are presented in Table 1 (both new enterprise creation and patent and trademark applications). Explanatory variables include variables reflecting many of the factors listed above. GDP per capita is included to control for the impact of initial wealth on entrepreneurial activity. However, because of the possibility of endogeneity (higher entrepreneurial activity creating a larger GDP per capita), regressions are also shown with this variable excluded. If anything, this variable is expected to be positively correlated with entrepreneurial activity. In addition, an index that measures of the quality of government-provided infrastructure (including telecommunications, electric power, railways, roads, water, and waste) is included. If government investment in infrastructure is important in fostering entrepreneurial activity, this variable should have a positive coefficient. Another measure in regressions, domestic loan availability (loans as a percent of GDP),

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countries.

[5]The data employed are annual data. The descriptions and sources for the data are available from the authors.

should have a positive coefficient if loan availability is a significant factor affecting entrepreneurial activity. Non-performing loans (as a percent of total loans) are included to measure the degree to which firms can count on receiving payment for the goods and services they provide. As a measure of contract enforcement, this variable is predicted to have a negative coefficient. Also, it is possible that this variable reflects business failures, and the correspondingly higher rate of interest that banks must charge on all loans. Again, this effect would tend to show up as a negative coefficient.

The next two variables reflect the soundness of governmental institutions and policies in these countries. The Transparency International's index of government corruption is included, and is expected to be negatively correlated with entrepreneurial activity. The Heritage Foundation & the Wall Street Journal index of economic freedom is an index that incorporates variables measuring such factors as sound legal institutions, secure property rights, low taxes, and low regulations.[6] This variable is expected to have a positive coefficient. Three additional variables are included in most specifications of the regression models. The first of these is net foreign direct investment as a share of GDP, which is also a measure of financial capital availability, and is expected to have a positive coefficient. Import tariffs as a percent of GDP are included to see whether domestic protectionist policies tend to foster entrepreneurial activity in a country. While this is inconsistent with standard economic theory suggesting that tariffs are generally harmful to an economy, many of these economies have employed high tariffs as an attempt to foster domestic industry. Finally, the inflation rate is incorporated to reflect the soundness of monetary policy in the country. It is expected, if anything, to be negatively related to entrepreneurial activity. Tables 2 and 3 present the results of our

[6]While the Gwartney, Lawson, et al (2002) Economic Freedom Index is more frequently used, we employ the Heritage/WSJ index because the Gwartney, Lawson, et al index is only available at five-year intervals.

Table 2. Estimates of the 1995-2000 New Enterprise Creation Equations

Dependent Variable: New Enterprises per 1,000 Inhabitants

Sample	All Firms	Small Firms	Large Firms	All Firms	All Firms	All Firms	All Firms	All Firms
Constant	9.87*	9.70*	0.18*	11.63*	7.56*	6.10	9.97***	2.84
	(1.66)	(1.65)	(1.65)	(1.90)	(1.35)	(1.20)	(3.26)	(0.50)
GDP per capita	-0.21	-0.21	0.49	—	-0.25	-0.27	-0.18	-0.36
(in constant $)	(0.73)	(1.06)	(0.10)		(0.91)	(1.19)	(0.65)	(0.10)
Infrastructure Reform	-0.55	-0.55	-0.31	-0.65	-0.69	-0.53	-0.88	0.53
Index	(0.77)	(0.78)	(0.24)	(0.90)	(0.94)	(0.76)	(1.32)	(0.07)
Credit Availability	0.84**	0.85**	-0.10	0.71**	0.10***	0.11***	0.90***	0.84**
(% of loans of GDP)	(2.41)	(2.47)	(1.59)	(2.05)	(3.35)	(3.93)	(3.39)	(2.56)
Non-performing	-0.41	-0.41	-0.11	-0.44	-0.38*	-0.38*	-0.37*	-0.28
Loans (% of total)	(1.45)	(1.46)	(0.21)	(1.47)	(1.88)	(1.94)	(1.86)	(1.30)
Government	-1.19***	-1.18***	-0.15*	-1.20***	-1.25***	-1.21***	-1.17***	—

Table 2 (con't.)

Sample	All Firms	Small Firms	Large Firms	All Firms	All Firms	All Firms	All Firms	All Firms
Corruption	(2.61)	(2.60)	(1.73)	(2.64)	(2.79)	(2.87)	(2.79)	
Index of Economic	0.19	0.17	0.16	0.79	-0.70	-0.98	-0.16	
Freedom	(0.12)	(0.11)	(0.53)	(0.46)	(0.58)	(0.87)	(0.12)	
Net Foreign Direct	-0.24	-0.24	-0.96	-0.20	-0.11	—	—	
Investment (% of GDP)	(0.32)	(0.31)	(0.67)	(0.25)	(0.15)			
Import Tariffs	0.11	0.11	-0.14	0.88	----	----	----	
(% pf GDP)	(0.61)	(0.63)	(0.42)	(0.50)				
Inflation Rate	-0.22*	-0.22*	-.017	-0.23*	—	—	—	
	(1.66)	(1.73)	(0.68)	(1.80)				
Observations	52	52	52	52	54	54	54	54

Notes: White heteroscedasticity corrected estimates. Random effects model with group and period effects. Absolute t-statistics in parenthesis. ***, **, * denotes significance at the 1%, 5%, and 10% levels respectively. Small [large] firm refers to newly created enterprises with 49 or less [50 or more] employees.

Table 3. Estimates of the 1995-2000 Patent and Trademark Applications Equations

Dependent variable: Patent and Trademark Applications per 1,000 Inhabitants

Equation	1	2	3	4	5	6	7	8	9	10
Constant	0.76*	0.76*	0.61*	0.83***	0.96***	0.89*	0.75**	0.68**	0.75	**0.57*
	(1.80)	(1.83)	(1.85)	(2.60)	(2.99)	(1.91)	(2.26)	(2.38)	(2.32)	(1.83)
GDP per capita	0.31*	0.31*	0.2688	0.27*	0.35**	—	0.31*	0.27*	0.27	0.52*
(in constant $)	(1.74)	(1.76)	(2.16)	(1.65)	(2.07)		(1.76)	(2.07)	(1.55)	(1.68)
Infrastsructure	-0.19	-0.17	-0.49	-0.23	-0.32	0.22	—	—	—	—
Reform Index	(0.04)	(0.03)	(0.11)	(0.60)	(0.80)	(0.97)				
Credit Availability	0.13	0.13	0.22	0.19	—	0.28	0.13	0.16	0.19	0.13
(% of loans of GDP)	(0.50)	(0.21)	(1.09)	(0.25)		(1.04)	(0.50)	(0.73)	(0.76)	(0.54)
Non-performing	0.43	0.44	-0.26	-0.36	—	0.47	0.45	0.90	-0.87	—
Loans (% of total)	(0.20)	(0.21)	(0.19)	(0.25)		(0.00)	(0.21)	(0.05)	(.04)	
Government	0.38	0.38	0.44	—	—	0.24	0.39	0.49	—	—
Corruption	(1.07)	(1.09)	(1.41)			(0.62)	(1.18)	(1.60)		
Index of Economic	0.23*	0.23**	0.17**	0.18**	0.21**	0.23*	0.23*	0.21**	0.18*	0.13*
Freedom	(1.91)	(1.97)	(2.30)	(2.19)	(2.36)	(1.72)	(1.96)	(2.09)	(1.67)	(1.67)

Table 3 (con't).

Equation	1	2	3	4	5	6	7	8	9	10
Net Foreign Direct Investment (% of GDP)	0.14** (2.27)	0.13** (2.31)	0.14*** (2.72)	0.13** (2.47)	0.99** (2.06)	0.13** (2.02)	0.13** (2.29)	0.14** (2.53)	0.12** (2.11)	0.11** (2.27)
Import Tariffs (% of GDP)	0.91 (0.68)	0.93 (0.74)	—	—	0.85 (0.11)	0.10 (0.72)	0.92 (0.70)	0.73 (0.62)	0.64 (0.53)	—
Inflation Rate	0.25	—	—	—	0.22	-0.14	0.20	—	—	—
Observations	52	52	54	54	55	52	52	52	52	56

Notes: White heteroscedasticity corrected estimates. Random effects model with group and period effects. Absolute t-statistics in parenthesis. ***, **, * denotes significance at the 1$, 5%, and 10% levels respectively.

regression analysis for these two different measures of entrepreneurial activity.

The first thing that is clear looking at the two tables is that the results are very robust to the addition or subtraction of other variables from the regression (with a few exceptions that will be discussed).[7] This is true for both tables. The second thing that is immediately apparent is that the set of variables that tends to be the most significant in explaining new enterprise creation in Table 2 is generally not the same as the set of variables that tends to be most significant in explaining patent and trademark activity in Table 3. Most likely this is because these two measures actually capture two distinct aspects of entrepreneurial activity. New enterprise creation tends to measure the start-up of all new businesses (including small retail shops), while patent and trademark activity is more reflective of high-tech entrepreneurial innovation that is generally undertaken by larger, existing firms. From Table 2, the factors most significant in explaining new enterprise creation are credit availability, non-performing loans, government corruption, and inflation rates. The first column uses data reflecting the creation of all new firms. The following two columns show how these results change when the sample is restricted to small firms and to larger firms respectively. The remaining columns show the robustness of the coefficient estimates to the inclusion and exclusion of some of the variables. Credit availability, while significant in almost all of the regressions, appears to be much more significant in affecting the

[7]Slovenia with its market socialist background was clearly different from the other countries in the sample. Whereas the other countries had had little exposure to the workings of the markets in the decades before transition, Slovenia's economic system was based on markets. Interestingly, though, the regression results were unchanged even if Slovenia was omitted from the sample. Thus, a head start on using markets does not necessarily seem to make a country markedly different from late-starters in terms of innovation rate.

creation of small firms than large ones. This variable is insignificant in the regression that isolates only the determinants of large enterprise creation. Non-performing loans becomes significant only in the regressions that exclude inflation. It is worth noting that in a survey reported in Eurostat (2002), entrepreneurs cited limited access to credit and non- or late-paying customers as two of the factors causing them the most difficulties. The results support these reported claims.

The index of government corruption is highly significant, and negative, in all specifications. It is clear that a sound political process fosters new enterprise creation. Government corruption is more significant in hampering the creation rate of smaller firms than of larger ones. Larger firms are more likely to be able to use the political process to their advantage, so it is reasonable to expect that small firm creation is harmed to a greater extent by the presence of government corruption.

Finally, the inflation rate is significant and negative in most of the regressions, except for the one restricted to large firms.

Turning our attention to Table 3, an entirely different set of important explanatory variables emerges. GDP per capita is significant and positive in explaining the level of patent and trademark activity. Because this type of high-tech entrepreneurship requires a substantially greater degree of resources to undertake, this result sounds reasonable. However, even with this variable omitted, the same two additional variables are significant in the regression. The first of these is the index of economic freedom. This measure of sound government policy coupled with low taxes and regulations is highly significant and positively related to the level of patent and trademark activity. This result is consistent with similar empirical studies of entrepreneurship, such as Kreft and Sobel (2003) who find that economic freedom is significant in explaining differences across U.S. states in the level of entrepreneurial activity. This finding is also consistent with the interpretation of what these two different measures of entrepreneurial activity reflect because it is fair to assume that higher tax rates and regulations (which are reflected in the economic freedom index) would

have a larger impact on the willingness of individuals and companies to invest large sums of money in risky new technological innovations.[8] The final significant variable is net foreign direct investment, and it is also positive in the regression. It appears that firms can, to a certain extent, import this type of high-tech innovation from other countries through foreign direct investment.

Despite the fact that two different subsets of variables are significant when comparing the results from Tables 2 and 3, one of the most interesting findings is that two variables, government-provided infrastructure and import tariffs, are insignificant in both tables. It seems that protectionist tariffs can not, and do not, accomplish higher rates of domestic entrepreneurial activity. In addition, government-provided infrastructure is not nearly as important as the other policies of government reflected in things such as less government corruption and higher levels of economic freedom (low taxes, low regulations, and secure private property rights). From a policy perspective, this clearly points to where government policy priorities should focus in these transitional economies.

Despite the differences in these two measures, it is clear from a reexamination of the initial data presented in Table 1 that very successful transition countries such as Estonia tend to have all of the ingredients that are significant in both sets of regression results (low levels of government corruption, high economic freedom, high rates of foreign direct investment, high credit availability, low inflation, and good initial wealth). On the other hand, those countries on the lower

[8]In addition, regressions were also run that included the private sector share in the economy. Private sector share was insignificant when added as an extra variable to the main regression as well as when substituted for the index of economic freedom. This would seem to imply that the size of government alone is not necessarily decisive for innovation rate. The correlation coefficient between the private sector share and the index of economic freedom was 0.60.

end of the spectrum, such as Romania, tend to have few, if any, of these ingredients. Having policies consistent with fostering both types of entrepreneurial activity measured is highly correlated with economic success in these post-socialist transition economies.

Conclusion

The results clearly point to several key factors associated with high rates of entrepreneurial activity in post-socialist transition economies. These include credit availability, contract enforcement, low government corruption, sound monetary policy, high foreign direct investment, and policies (such as low regulations and taxes) that are consistent with giving citizens a high degree of economic freedom. Credit availability and government corruption tend to be more important factors affecting the creation rate of new smaller firms than for the creation rate of new larger firms.

Most importantly we find that no single set of variables is most important in explaining our two different measures of entrepreneurial activity. In fact, different factors tend to be important in explaining new firm creation rates than the ones that are important in explaining patent and trademark activity. Factors such as a high rate of foreign direct investment, for example, are important in explaining patent and trademark activity but appear not to have much influence on new firm creation rates. On the other hand, credit availability, government corruption, and sound monetary policy are important in explaining new firm creation rates but appear not to have much influence on patent and trademark activity. Furthermore, some of these variables (such as government corruption) do not seem to hamper the new firm creation rate for large firms, only smaller ones. In addition, high domestic import tariffs and government-provided infrastructure do not seem to have a significant positive effect on either type of entrepreneurial activity.

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