

**Entrepreneurial activity in Russia in cross-national comparison:
Global Entrepreneurship Monitor data for 2006-2007**

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The participation of a Russian team in the GEM project since 2006 enabled to collect some empirical data for Russia to interpret the level of development and the structure of entrepreneurial activity of Russians that are comparable to analogous indicators in other countries participating in the GEM. (In 2006 and in 2007 the GEM was based on analysis of survey results from 42 countries, with a total sample of more than 170,600 people.)

Entrepreneurship is defined in GEM as any attempt to create a new enterprise or business, including self-employment, the creation of a new entrepreneurial structure or the expansion of a pre-existing business, undertaken by an individual, a group of individuals or an existing business structure.

The most important indicator of the so-called early entrepreneurial activity of population is the Total entrepreneurial activity (TEA) index, showing the share of those who would try to start (potential entrepreneurs), or are already undertaking any serious attempt to do it (nascent), or are owner of manager of a firm younger than 42 months (owners of new business), at the total adult population.

International comparisons conducted during this study (see Table 1) show that while the average TEA Index value remained stable at around 9%, the country-level indicators – which were only moderately varied in 2006 – demonstrated a significant level of variation in 2007 (with a variation coefficient of more than 70%).

Table 1. Main Indicators of Entrepreneurial Activity among Some Participating Countries

Country	Early-stage			Established			Early-stage		Failed
	Total	Men	Women	Total	Men	Women	Necessary	Opportunistic	
2006									
Russia	4,86	7,33	2,57	1,19	1,83	0,61	1,44	3,39	1,27
Hungary	6,04	8,09	4,05	6,72	9,03	4,48	1,33	4,64	1,13
Latvia	6,57	9,41	3,92	5,69	8,12	3,41	1,04	5,05	1,98
Serbia	-	-	-	-	-	-	-	-	-
Croatia	8,58	12,35	4,87	4,12	5,8	2,46	3,81	4,41	1,81
Slovenia	4,63	6,93	2,29	4,44	6,42	2,44	0,47	4,05	1,02
Romania	-	-	-	-	-	-	-	-	-
China	16,19	18,46	13,79	8,98	11,56	6,26	6,27	9,59	6,18
India	10,42	11,6	9,16	5,6	7,26	3,84	2,86	6,71	15,02
Brazil	11,65	13,74	9,61	12,09	14,77	9,45	5,55	5,99	4,55
Chile	9,19	11,38	7,02	6,79	9,2	4,4	2,59	6,57	3,03
Colombia	22,48	27,97	17,3	10,41	14,19	6,85	8,74	13,68	10,52
Venezuela									
UAE	3,74	5,87	0,29	1,39	2,19	0,1	0,32	2,95	4,71
2007									
Russia	2,67	3,79	1,64	1,68	1,63	1,73	0,51	1,92	1,09
Hungary	6,86	9,29	4,52	4,83	5,88	3,81	1,6	5,01	1,56
Latvia	4,46	7,7	1,41	3,41	4,9	2,02	0,67	3,67	0,74
Serbia	8,56	12,11	5,06	5,27	7,74	2,83	3,94	4,02	2,75
Croatia	7,27	9,44	5,13	4,22	5,79	2,67	2,9	4,16	2,95
Slovenia	4,78	6,84	2,68	4,59	6,84	2,31	0,46	4,24	1,56
Romania	4,02	4,95	3,09	2,51	3,34	1,7	0,56	2,68	2,52
China	16,43	19,27	13,43	8,39	9,66	7,04	6,21	9,84	10,34
India	8,53	9,51	7,49	5,53	8,69	2,18	1,67	5,51	15,13
Brazil	12,72	12,73	12,71	9,94	12,7	7,24	5,29	7,23	6,44
Chile	13,43	16,45	10,43	8,73	11,89	5,59	3,2	9,79	4,92
Colombia	22,72	26,91	18,77	11,56	15,49	7,84	9,28	12,57	8,86
Venezuela	20,16	23,5	16,81	5,39	5,87	4,9	6,46	13,33	3,77
UAE	8,55	10,62	5,27	3,42	4,76	1,32	1,47	6,69	8,44

Of Russia's early-stage entrepreneurs, 54% can be characterized as opportunity entrepreneurs (including 60% of nascent entrepreneurs and a bit more than a third of new business owners): their economic activity is driven by the search for advantages that are provided by opening their own business.

Opportunity entrepreneurship is most often pursued by people younger than 44 years of age, with higher or professional education.

Otherwise, for more than 40% of new business owners and 25% of nascent entrepreneurs, going into business for themselves was necessitated either by lack of any or any suitable alternatives for employment, entrepreneurial activity was necessity based.

Necessity based entrepreneurship is relatively widespread: almost 50% of early-stage entrepreneurs with secondary education and 40% of those with professional education, as well as for 54% of respondents older than 45 years of age belonged to this group.

Thus, higher levels of education attainment are positively correlated with opportunity based motivation for entrepreneurship, while the role of necessity grows after a person reaches 45 years of age. Women are more likely to be necessity driven entrepreneurs. Among new business owners, a bit more than a third of men and women can be characterized as opportunistic entrepreneurs, driven by the search for new opportunities and towards the realization of their own values.

K-means cluster analysis identified various clusters on the TEA index in 2006. In conducting international comparisons of GEM data, the number of groups for the first phase of cluster analysis was determined using Sturgis's criteria. The composition of the resulting groups was then optimized through an iterative process of determining that k value, which would yield a step-like increase in the maximum inter-group dispersion of the σ^2_{mrp} value, going from minimum to maximum values (on aggregate). The result was the identification of a stable 6-cluster structure (see table 2).

Table2. Cluster Membership (by TEA06 Index)

Case Number	COUNTRY OF ORIGIN	Cluster	Distance	Case Number	COUNTRY OF ORIGIN	Cluster	Distance
1	United States	4	,629	21	Japan	5	,000
2	Russia	6	,070	22	China	4	1,686
3	Greece	6	,505	23	Turkey	4	2,559
4	Netherlands	4	1,508	24	India	3	,576
5	Belgium	6	,631	25	Ireland	3	,576
6	Spain	6	2,060	26	Iceland	6	,056
7	Hungary	6	,395	27	Finland	2	,495
8	Italy	4	2,133	28	Latvia	6	1,887
9	Romania	6	1,247	29	Serbia	2	,495
10	Switzerland	6	1,319	30	Croatia	6	1,281
11	Austria	6	,976	31	Slovenia	4	1,018
12	United Kingdom	6	,526	32	Venezuela	4	2,280
13	Denmark	6	1,344	33	Uruguay	4	2,052
14	Sweden	4	,264	34	Kazakhstan	4	1,858
15	Peru	6	,576	35	Puerto Rico	6	,202
16	Argentina	1	,000	36	Hong Kong	6	1,785
17	Brazil	6	,468	37	United Arab Emirates	4	,822
18	Chile	4	,832	38	Israel	6	,163
19	Colombia	4	2,249	39	Dominican Republic	4	1,558
20	Thailand	4	,213	Valid – 39, missing - 0			

The results of cluster analysis placed Russia practically in the center (at a distance of 0.07 from the center) of the cluster of the 18 most typical countries by TEA value, with below-average levels of early-stage entrepreneurial activity, while Russia's TEA Index value was half of the average for all participating countries.

Other countries in this cluster included countries with similar TEA values, from Singapore (SG) to Norway (NO), and including Croatia (HR), Latvia (LV), Hungary (HU), the Czech Republic (CZ), and Greece (GR). Thus, Russia is joined in its TEA-value cluster by several Central and Eastern European countries, as well as a number of countries with highly developed market economies.

Among countries seen as potential leaders of the global economy by the middle of the 21st century – the so-called BRIC group – Brazil and Russia have below-average levels of early-stage entrepreneurial activity, while China is in the middle group and India is in the more distant group of countries with high TEA Index values (compare Tables 2 and 3).

Table 3. Distances between Final Cluster Centers (TEA06)

Cluster	1	2	3	4	5	6
1	0	24,454	20,289	30,745	17,672	35,359
2	24,454	0	4,166	6,291	6,782	10,905
3	20,289	4,166	0	10,457	2,616	15,071
4	30,745	6,291	10,457	0	13,073	4,614
5	17,672	6,782	2,616	13,073	0	17,687
6	35,359	10,905	15,071	4,614	17,687	0
Final Cluster Centers						
	1	2	3	4	5	6
TEA06	40,15	15,69	19,86	9,40	22,48	4,79

Thus, first of all, Russia, based on levels of development of early-stage entrepreneurial activity, belongs to the most typical group of countries. Secondly, this group includes countries that have experienced more successful market-economic development (Central and Eastern Europe), as well as one of the most highly developed economies in the world, Norway. This, at first glance, suggests that there is no direct relationship between levels of overall economic development and levels of early-stage entrepreneurial activity.

However, more detailed analysis finds support for *a statistically significant relationship between the level of entrepreneurial activity and levels of socio-economic development*. This concerns primarily the quality of entrepreneurial activity, specifically the proportion of opportunity vs. necessity based entrepreneurship.

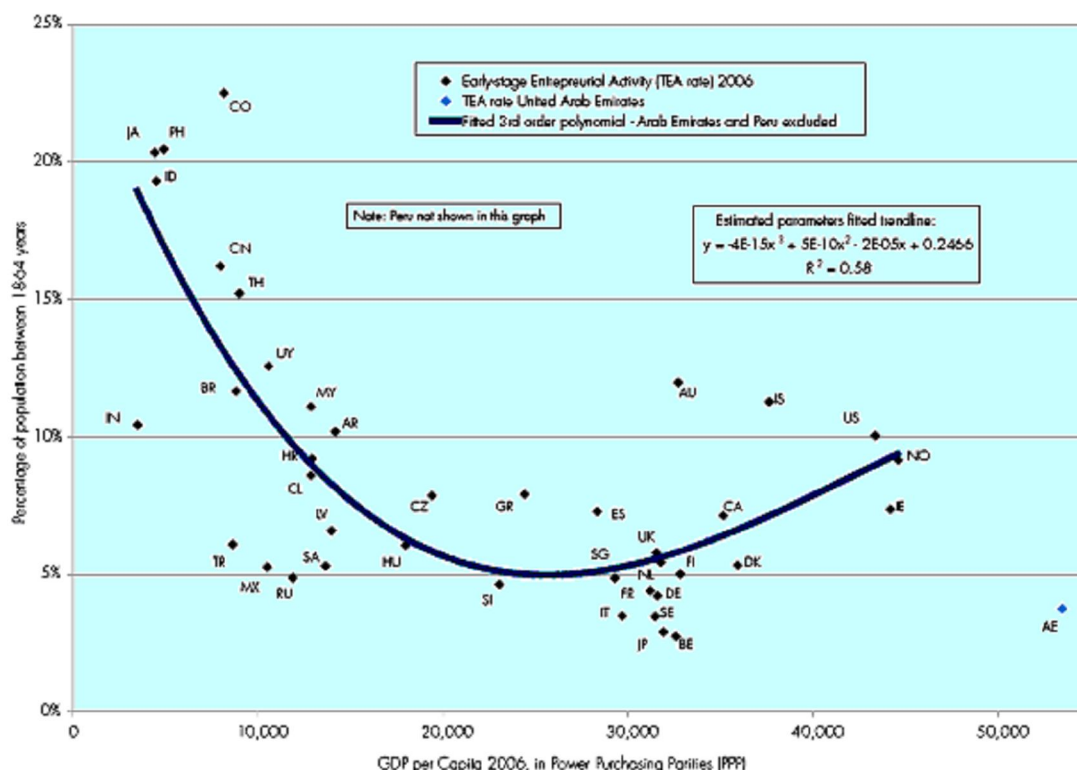
In countries with high levels of necessity entrepreneurship, entrepreneurial activity does not yield high labor productivity or high-quality macroeconomic dynamics. To the contrary, in countries with high levels of economic development (as measured by per capita GDP) entrepreneurial activity is built on a qualitatively different foundation: it is dominated by opportunity based entrepreneurship, with higher levels of creativity and making a greater contribution to economic growth.

Statistical analysis of data on levels of early-stage entrepreneurial activity gathered during the study, when put together with data on per capita GDP, support a non-linear relationship (the regression parameters are significant at a confidence level of 0.95; see Fig. 1). Moreover, the statistical criteria demonstrate that highly developed countries form a tight cluster, while countries with developing or transition economies show significant entropy.

This is most clearly seen concerning established businesses, since these are already well formed and thus the advantages enjoyed by countries whose entrepreneurial potential is developed more intensively (and dominated by voluntary entrepreneurship) are clearly visible.

Figure 1. Index of early-stage entrepreneurial activity and per capita GDP in GEM countries in 2006¹

¹ Data on per capita GDP are drawn from the IMF's World Economic Outlook Database (October, 2006).



Thus, cluster analysis on the Established Business (EB) Index using the k-means method places Russia on its 2006 results outside the typical group, falling instead into the cluster with low EB Index values, together with the six other countries shown below (see table 4).

Table 4. Which Country Belongs to What Cluster? (by EB06 Index)

Case Number	COUNTRY OF ORIGIN	Cluster	Distance	Case Number	COUNTRY OF ORIGIN	Cluster	Distance
1	United States	1	1,254	21	Japan	3	1,689
2	Russia	2	,456	22	China	4	,452
3	Greece	2	,212	23	Turkey	4	,456
4	Netherlands	6	,945	24	India	5	,340
5	Belgium	1	,563	25	Ireland	5	,695
6	Spain	2	,207	26	Iceland	1	,773
7	Hungary	2	1,891	27	Finland	5	,650
8	Italy	6	,460	28	Latvia	1	,622
9	Romania	6	,358	29	Serbia	3	1,476
10	Switzerland	2	1,069	30	Croatia	4	,908
11	Austria	6	1,385	31	Slovenia	6	,163
12	United Kingdom	1	,167	32	Venezuela	1	1,004
13	Denmark	1	1,069	33	Uruguay	6	1,085
14	Sweden	6	,997	34	Kazakhstan	6	,498
15	Peru	2	,983	35	Puerto Rico	6	1,317
16	Argentina	5	,296	36	Hong Kong	1	,468
17	Brazil	2	,289	37	United Arab Emirates	1	,597
18	Chile	6	1,021	38	Israel	1	,552
19	Colombia	3	,213	39	Dominican Republic	1	,157
20	Thailand	6	,805	Valid – 39, missing - 0			

A large number of Russia's neighbors in Central and Eastern Europe (including the Czech Republic, Latvia, Croatia and Slovenia) are concentrated by EB values in the neighboring priority group with below-average values (with a distance from the center of 3.5). This large group also includes such countries as the USA, the Netherlands, Great Britain and Japan (see table 5).

Table 5. Distances between Final Cluster Centers (EB06)

Cluster	1	2	3	4	5	6
1	0	3,464	13,743	5,609	20,101	2,870
2	3,464	0	17,206	9,072	23,565	6,334
3	13,743	17,206	0	8,134	6,358	10,872
4	5,609	9,072	8,134	0	14,493	2,738
5	20,101	23,565	6,358	14,493	0	17,231
6	2,870	6,334	10,872	2,738	17,231	0
Final Cluster Centers						
Clusters	1	2	3	4	5	6
EB06	6,64	3,18	20,38	12,25	26,74	9,51

The group with average levels of established entrepreneurship is likewise varied on levels of economic development, but is more homogenous by classification. This group includes, for example, Argentina and Greece, Chile and Israel, Malaysia and Australia. These countries are in the dominant group, with a distance from the center of the lower cluster of 5.43.

The center of the cluster with above-average EB values – which includes Brazil, China, Colombia, Peru and others – is significantly removed from the center of Russia's cluster (at a distance of 9.162).

The stability of the small and medium-sized enterprise sector depends particularly on the owners of new business 'feeding' into the category of established businesses. These are formed by the 'maturing' of nascent entrepreneurs, whose number must in turn be sufficiently high to support the expanding reproduction of the entrepreneurial class.

In Russia, however, the pace of development of early-stage entrepreneurial activity was found to be negative. Russia's TEA Index value in 2007 was 3.5 times below average, and the indicator fell by 45% over the year. That is the largest drop found in any country. Other sharp drops were seen in Peru (35%), Latvia (32%) and Greece (27%).

The largest increase in the indicator was seen in the UAE, which witnessed growth of almost 130%. A jump in early-stage entrepreneurial activity was also seen in Thailand (almost doubling), and Japan, Chile and Italy also saw notable growth (50%, 46% and 44%, respectively).

In the comparable group of countries, the TEA Index growth coefficients are moderately varied, with a level of differentiation of relative variation in early-stage entrepreneurial activity, as measured by a decimal coefficient, of 2.2.

And yet the aggregate EB Index in the past year saw significant changes. The reference groups by growth coefficient for the EB Index are likewise highly heterogeneous (with variation coefficients of more than 120%), while the relative value of the gap between countries with high levels and low levels of established entrepreneurship increased by almost 2.5 times. A Spearman's-rank correlation criteria supports significant variation between key indicators in 2006 and 2007 (see table 6).

Table 6. Correlations (Spearman's rho)

		TEA07 % 18-64 pop TEA involvement: setting up firm or owner of young firm (SU or BB)	EB07 % 18-64 pop ESTABL BUS OWNER (EB): owns-manages business with income>3.5 years	TEA06	EB06
TEA07 % 18-64 pop TEA involvement: setting up firm or owner of young firm (SU or BB)	Correlation Coefficient	1,000	,658(**)	,257	,139
	Sig. (2-tailed)	.	,000	,114	,399
	N	39	39	39	39
EB07 % 18-64 pop ESTABL BUS OWNER (EB): owns-manages business with income>3.5 years	Correlation Coefficient	,658(**)	1,000	,255	,189
	Sig. (2-tailed)	,000	.	,116	,249
	N	39	39	39	39
TEA06	Correlation Coefficient	,257	,255	1,000	,879(**)
	Sig. (2-tailed)	,114	,116	.	,000
	N	39	39	39	39
EB06	Correlation Coefficient	,139	,189	,879(**)	1,000
	Sig. (2-tailed)	,399	,249	,000	.
	N	39	39	39	39

** Correlation is significant at the 0.01 level (2-tailed).

As a result, countries participating in the GEM demonstrated different trajectories on the indexes of the various stages of entrepreneurial development (see Figures 2 and 3).

Thus, a moderate drop in the weighted average level of **early-stage entrepreneurial activity**, from 9.47% to 9.35%, was accompanied by growth of variation on the TEA Index (from 68% to 75%). Russia, as in 2006, remains in the priority group, but this has become the lower group, and Russia is almost in last place.

Russia is joined in the lower cluster primarily by countries with developed industrial economies, primarily countries of 'Old Europe' (including, for example, Austria, Belgium, Great Britain, Denmark and Sweden, but also Japan). The group also includes three new EU member states (Romania, Latvia and Slovenia), as well as Puerto Rico.

On levels of **established business**, meanwhile, GEM participants became more homogeneous (an absolute drop in the average EB Index value of 25% was accompanied by a drop in the variation coefficient for the EB Index on aggregate).

Figure 2. Level of early-stage entrepreneurship in GEM countries in 2007 (TEA07)

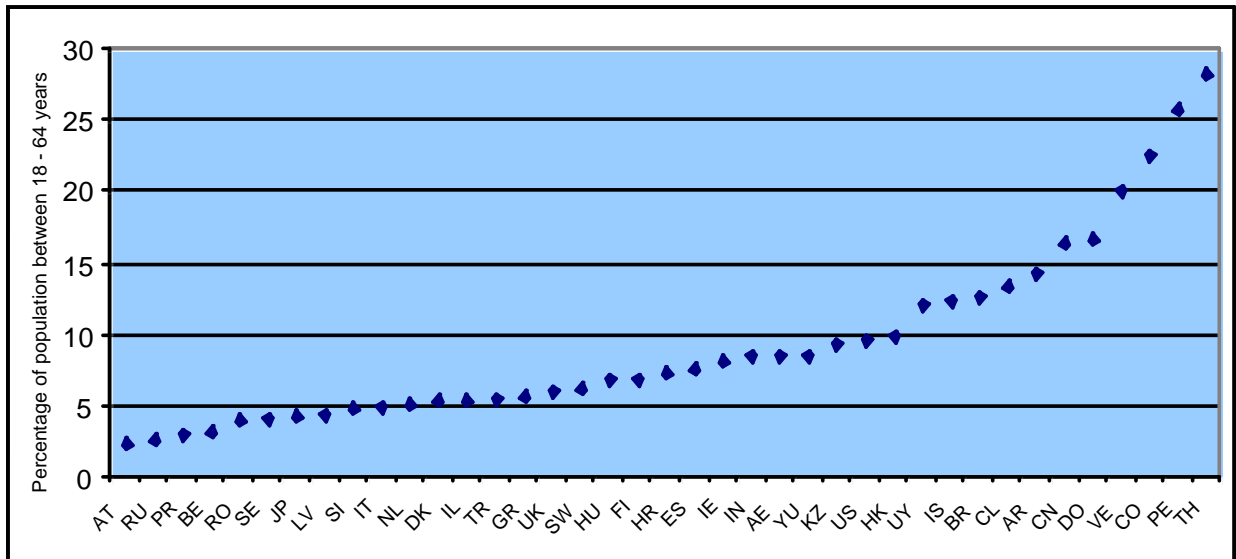
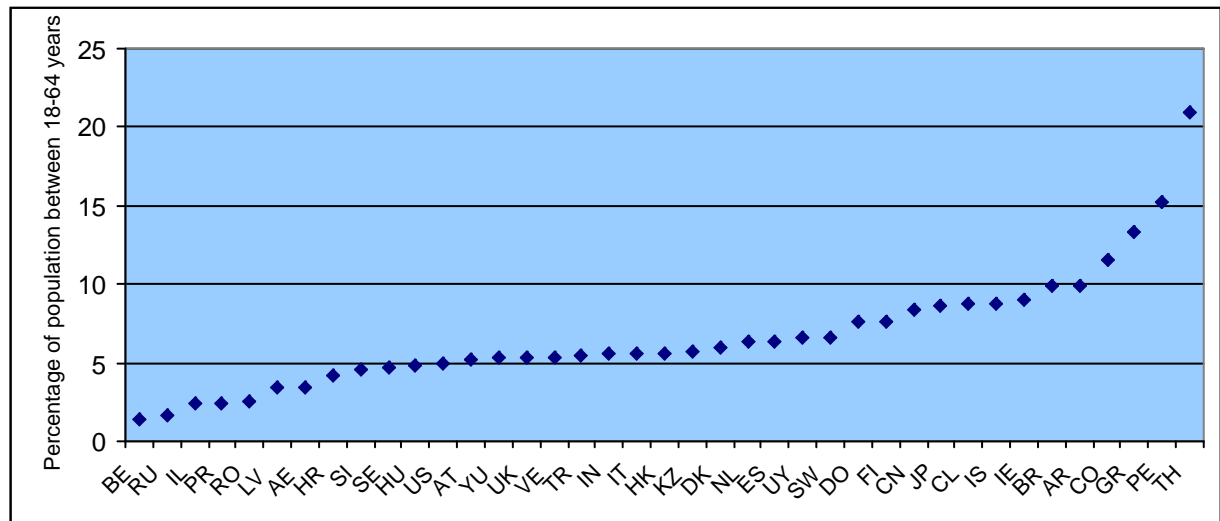


Figure 3. Level of established entrepreneurship in GEM countries in 2007 (EB07)



Hence, the development of various categories of entrepreneurial potential is not synchronized, and the various entrepreneurial strata yielded clusters that were characterized by varying levels of socio-economic development and types state policy vis-a-vis entrepreneurship.

No support was found for the dependence of established entrepreneurship on per capita GDP as an aggregate indicator of socio-economic conditions.

It sounds reasonable to imply that it *not* the aggregate indicator of early-stage entrepreneurial activity (including, beyond established businesses, nascent entrepreneurship), but rather the *structure* important: the higher the proportion of opportunity entrepreneurship within already realized entrepreneurial potential (new and established entrepreneurship), the higher – *ceteris paribus* – the likelihood of falling into the cluster with high levels of economic development. The closeness of the relationship between entrepreneurial activity and levels of economic development is also found to be higher.

A finding of parabolic correlation between the EB Index and per capita GDP would explain the heterogeneous composition of the clusters. However, a finding of non-linear dependence of levels of established entrepreneurship on per capita GDP was not supported (with an R^2 of 0.114, the null hypothesis was not rejected to a significance level of 5%). It is possible that the issue is not only in the *level*, but also in the *pace of development* of entrepreneurial activity, given the dominance of voluntary entrepreneurship among the owners of established businesses.

Clarification of this question could be made possible by data collection in further rounds of the study.

It is understood that early-stage entrepreneurial activity includes two categories of people: nascent entrepreneurs and the owners of new businesses. For each of these categories, expected relationships were evaluated on the basis of non-parametric statistics, due to the impossibility as yet of formulating well grounded hypothesis about the form of potential causal relationships. Independent variables included per capita GDP growth rates in constant prices, consumer price indices, and GDP deflators. Dependent variables included indices of entrepreneurial activity on all indicators developed by the GEM methodology, tested consecutively.

The only statistically significant positive correlation found for all categories of early-stage entrepreneurs (nascent and new, opportunity and necessity, male and female) was found with the GDP deflator. Moreover, the closeness of the relationship is somewhat higher for almost all entrepreneurial strata if the factor and result variables are lagged by one year. Thus, for early-stage entrepreneurs as a whole, the Spearman coefficient was 0.613 and 0.626, respectively, significant at 5%, while the result for early-stage non-voluntary entrepreneurs was 0.697 and 0.714, respectively, significant at 1%. Nascent entrepreneurs were an exception, with a closer relationship between entrepreneurial activity levels and the GDP deflator when measured in the same year: the activity of nascent entrepreneurs is most directly connected with macroeconomic conditions in their country, while for those entrepreneurial groups who have already created their business, improvement or deterioration of macroeconomic conditions (i.e., increased prices on oil and other raw materials, or food, or currency rates) is an important but not determining factor in deciding whether to continue to develop an enterprise or to close it immediately.

It becomes clear why the relationship with macroeconomic factors is statistically insignificant for established entrepreneurs and for the level of business exit. In general, *the only statistically significant relationship to intensive business exit is found with the activity levels of entrepreneurial strata.* For the category of established entrepreneurs, the only statistically significant relationship is with the entrepreneurial activity of various categories of early-stage entrepreneurs.

The consumer price index as an independent variable has a statistically significant relationship at a confidence level of 5% with only one of the 69 indicators of entrepreneurial activity: early-stage entrepreneurs using in their business new technologies (developed in the past one to five years). The relationship is negative, with a Spearman coefficient of -0.615.

The results of this study are until now rather ambivalent, showing both positive and negative trends in the development of entrepreneurial potential in Russian society. On the one hand, the macroeconomic conditions for entrepreneurial startups are gradually improving. To this end we note, that qualitative characteristics of entrepreneurship in Russia are comparable with those of middle-level countries and CEE (for ex., innovative or motivational structure)

On the other hand, the falling TEA, EB and expansion coefficient (it fell by more than half, such that the number of nascent businesses exceeds the number of discontinued businessmen only by one third) suggest that the conditions for 'entry' into entrepreneurship are evidently becoming more difficult. This is due in part to growing competition for market share.