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RUSSIAN COMPETITIVENESS IN THE GLOBAL ECONOMY

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Abstract

Using data on Russia's competitiveness collected by our research team as part of the World Economic Forum's Global Competitiveness Report (GCR) , Michael Porter's theories on economic development and competitiveness, and benchmarking data from the global competitiveness project for other countries, this paper analyzes Russia's comparative strengths in its macro and micro-economic competitiveness. We investigate Russia's movement in ranks over a three year period, discussing Russia's strengths in its macroeconomic climate and the weaknesses of its institutions. We illustrate the effects of these on three key growth industries in Russia: oil, IT outsourcing, and the food sector.

Introduction

What does it mean for a country to be “competitive” and why is it important? The Organization for Economic Co-operation and Development (OECD) defines competitiveness as “the degree to which a country can, under free and fair market conditions, produce goods and services which meet the test of international markets, while simultaneously maintaining and expanding the real income of its people over the long term” (Prokopenko, 2000: 2.1). This is echoed by Michael Porter, a leading Harvard business professor who specializes in competitiveness. According to Porter (2004):, “A nation’s standard of living is determined by the productivity of its economy, which is measured by the value of goods and services produced per unit of the nation’s human capital and natural resources” (p. 31). Russia’s role in international trade and business is growing every year. However, it still remains small compared to the size of its economy and population. For Russia’s economy to continue to grow and for Russia to be successful in international business, Russia’s competitiveness needs to continue to increase. For this to happen it is essential that the goods and services produced in the country are internationally competitive. To achieve these more competitive products and services, Russian businesses and the business environment must both be competitive and organized to promote growth and innovation. Achieving this increased competitiveness will not only lead to increased wealth for businesses but, as the OECD and Porter identified, will contribute to improvements in living standards across the country.

Since Vladimir Putin became President of Russia in 2000, Russia’s economic and political situation has stabilized after the chaos of the Yeltsin era. Appendix A gives key economic data for Russia for 2000 to 2003. In this period inflation has been reduced by almost 7%, GDP per head has increased 26% and unemployment is below 9% (EIU, 2004). Russia is increasingly viewed as a safe country in which to do business, an opinion reflected by the three leading credit agencies which have all raised Russia’s rating to “investment grade” since 2003.

However, the business environment still has a bad international reputation for corruption, bureaucracy, and complexity. In addition, whenever it looks as though all is calm and positive in Russia, a high-profile issue/event seems to emerge which points towards Russia's instability and thus has a negative impact on business development (especially in terms of foreign investment into Russia). One such example is the government's pursuit of Mikhail Khodorkovsky, former CEO of the oil company Yukos. A recent report highlighted particular problems for small businesses, specifically: complex and high taxation, overly intrusive inspectors, overwhelming levels of bureaucracy, and inadequate loan facilities (FC Info: 2005a). The effects of these problems can be seen in the troubles facing Russia's small business development. Russia's one million small businesses contribute only 10-12% to GDP; in European countries, Japan, and the US there is a higher relative number of small businesses (given size and population), and they contribute approximately 50% to GDP (FC Info: 2005a). Further, the state still protects many unprofitable, strategically important companies. One survey estimated restructuring remains incomplete in 40% of unprofitable manufacturing companies, although they are allowed to continue operating (Ickes et al, 2003: 181)

Another factor which has slowed down reform and growth in Russia, compared with other former Soviet states, is the still semi-closed nature of the economy. Although the country is considerably more open than in Soviet times, foreign businesses face considerable difficulties in ownership, investment, training, taxation, licensing and regulations, corruption, and cultural differences, which have resulted in many foreign companies taking a cautious approach and maintaining a minimal presence (FT various, 2005). Thus Western knowledge regarding latest production techniques, technologies, customer service skills, management skills and know-how have not been introduced into Russia as quickly or widely as has been the case in neighbouring countries.

In this article we evaluate Russia's competitiveness using three years of data (from 2002 to 2004) on Russia's competitiveness, which the authors collected as part of the World Economic Forum's (WEF) annual Global Competitiveness Report (GCR). We begin by

describing competitiveness, specifically the distinction between macro and micro economic competitiveness and the different stages of economic development; we then describe the GCR; we look in detail at the WEF’s findings for Russia’s macro and microeconomic competitiveness, and contrast the results for Russia with those of five comparable countries: China, USA, Korea, Estonia and Hungary. We begin below with a further explanation of competitiveness.

Competitiveness

In the introduction we described how a country’s competitiveness is determined by its ability to produce internationally accepted and competitive products while maintaining and expanding the real income of its inhabitants; put simply, improving competitiveness stimulates growth. Competitiveness can be measured in the macro and microeconomic environment. Macroeconomic competitiveness is shown in a country’s institutions, technological development, and macroeconomic policies; microeconomic competitiveness is gauged by the sophistication of a country’s businesses and the quality of the business environment (definitions used by the WEF). Neither of these alone determines competitiveness. Rather, this competitiveness is the result of the interplay between the two. Figure 1, Porter’s Diamond (Porter, 1990), depicts this interplay.

Insert Figure 1 about here

The diamond shows the four inter-related aspects of the business environment in a country: “*Related and Supporting Industries*” (the presence (or absence) of internationally competitive suppliers and related industries in the nation); “*Demand Conditions*” (the quality of demand); “*Factor Conditions*” (the quality and quantity of factors of production); and “*Firm Strategy Structure and Rivalry*” (the conditions in the nation governing how companies are created, organized and managed, and the nature of domestic rivalry). To understand how

these factors interact and how this interaction in turn can lead to developments in a country's competitiveness, better we turn to Porter's theories on economic development.

Porter (2004) identified three stages of economic development: factor-driven economies (at the lowest stage), investment-driven economies, and finally innovation-driven economies. Porter argues that countries must continually develop their macro and microeconomic competitiveness in order to move to higher stages of economic development, as it is at higher levels that greater financial rewards are achieved. As Porter (2004: 34) writes, "Successful economic development is a process of successive upgrading in which the business environment in a nation evolves to support and encourage increasingly sophisticated and productive ways of competing." At each stage businesses should be supported and encouraged and at each stage fundamental differences must be made to the sources and nature of competitive advantage (Porter, 2003).

At the factor-driven economic stage, the comparative advantage of business is low input costs, such as cheap natural resources and labor. In such an economy products are relatively simple or are designed in more advanced countries; technology is gained from imports, foreign direct investment (FDI), and imitation (Porter, 2004). At the investment-driven stage, the dominant source of competitive advantage for firms is the efficient production of standard products and services; and technology is accessed through licensing, joint ventures, foreign direct investment, and imitation. The changes to the macroeconomic environment which support this increased competitive advantage are heavy investment in efficient infrastructure, a business-friendly government, strong incentives for investment, and access to capital (Porter, 2004). At the final innovation-driven stage, businesses have developed the ability to produce innovative products and services using the most technologically advanced methods and these innovative products and services become the primary source of competitive advantage (Porter, 2002: 28). An innovation-driven economy has a strong business environment, and clusters that drive innovation are present in the economy. Clusters are defined as "*geographically proximate groups of inter-connected*

companies, suppliers, service providers and associated institutions in a particular field, linked by commonalities and complementarities” (Porter, 2002: 26). Examples of clusters include: the car industry in Germany; fashion and furniture in Italy; mobile phones and electronic products in Korea; and the computer industry in the Silicon Valley, USA. Clusters are instrumental in developing innovation and competitiveness as they create more efficient access to specialized services, suppliers, information and training; increase the capacity for innovation and productivity growth (as opportunities for innovation become more apparent); and they stimulate and enable new business formation (Porter, 2004: 34).

Porter used regression analysis to identify the most important areas for business and governments to focus on how to most efficiently raise an economy to the next level of development (i.e. for a factor economy to move to the investment stage or for an investment-driven economy to move to the innovation stage etc). Factor-Driven, low-income countries need to upgrade their quality of infrastructure (electricity, communications, and schools) and open competition (through reduced trade barriers or encouraging local competition) (Porter, 2004) in order to facilitate transformation to the investment-driven economic stage. Factor-driven, middle-income countries should concentrate on improvements to public schools, telecoms, internet, university-research collaboration, judicial system, creation and improvement of consumer protection laws, and the development of clusters (Porter, 2004). The macro and micro levels of the economy support each other and therefore must develop in tandem. For example, investing in education and human capital will not pay off unless the micro-economy has jobs where those individuals can find work. Sound monetary and fiscal policies and the removal of distortions in exchange rates and other prices will eliminate impediments to productivity, but the microeconomic foundations must be in place if productivity is actually to increase (Porter, 2004: 26).

Exactly which goods and services a country produces (and can become internationally competitive in) are determined largely by a country's comparative advantages (a country's immutable natural endowments (e.g. cheap labour, scarce raw materials) and its competitive

advantages (traits and advantages which can be manipulated over time (e.g. educated workforce or competitive new technology sector). Research on competitiveness suggests that countries should focus their development on producing goods and services which they have existing strengths in. In the following section we look more closely at the WEF's Global Competitiveness Report and how it measures competitiveness in an economy, and we specifically consider Russia's competitiveness from it and our research results. We also take three industries in which Russia has advantages in producing, identify how these can be made more competitive, and suggests the existing barriers to this happening.

The Global Competitiveness Report

The WEF's annual Global Competitive Report (GCR) is the most comprehensive, comparative survey on competitiveness. The report is produced in collaboration with Harvard Business School and the assistance of a global network of schools. XXX, (the name of the school is withheld to preserve anonymity), where the authors of this paper work is a partner institute in the Global Competitiveness Project and collects data as part of this project in Russia. The global competitiveness project is based on an extensive twenty-seven page questionnaire that is completed by top managers at the most successful companies in the participating countries (one manager per company in a given country). Secondary statistical data is also use to supplement the survey. Through these resources the WEF report obtains a unique, measurable comparison of business environments around the world.

Competitiveness is summarized in the GCR using two indices: the Growth Competitiveness Index (GCI) and the Business Competitiveness Index (BCI). The GCI measures the future growth potential in an economy and has three sub-indices measuring the macroeconomic climate, public institutions and the technological development of a country (The GCI measures more developed countries' abilities to innovate and less developed countries' ability to transfer technology). The Business Competitiveness Index (BCI)

measures the current business environment. Its two sub-indices are quality of the national business environment” and “sophistication of company operations and strategy.”

In 2003-2004, one-hundred-and-two countries participated; from Russia (Moscow and St Petersburg) there were two- hundred-and- fifty individual respondents. In our analysis we wanted to show the differences in rank and scores of Russia over three years. Thus, we have used results from only the seventy-five countries that participated in the 2001-2002 report, excluding countries which joined later. Table 1 gives the full list of seventy-five countries and their 2003-2004 GCI and BCI ranks. Russia’s ranks are sixty-one and fifty-nine, respectively. We consider the results in more detail below.

Insert Table 1 about here

In this study we compare Russia’s results to those of five other countries: USA, Estonia, China, Korea and Hungary. We choose these countries for the following reasons. The USA is a developed economy of comparable size to Russia; China is also of a similar size and is also undergoing transition from a closed, centralized economy; Korea’s economy is dominated by big business and it has based its growth on its highly educated population and clusters; Estonia is a former Soviet republic which has also utilized clusters to develop specific industries; and Hungary was also a former centrally planned economy and one of the first to liberalize its economy.

Growth Competitiveness Index

The GCI and its indices and sub-indices reveal a country’s macroeconomic competitiveness and is a measurement of the future growth potential of a country. Russia’s scores for the three main indices (technology, public institutions, and macroeconomic environment), their sub-indices and key positive and negative features (denoted by a tick for positive and a minus-sign for negative) are given in Table 2.

Insert Table 2 here

Russia's rank in the technology sub-index has remained static from 2001 (63rd) to 2003 (62nd) and declined for both public institutions (61st to 64th) and Macroeconomic environment (57th to 62nd). The most notable problem for Russia is the public institutions' sub-index, where Russia has failed to rank above 64th (out of 75) for any item. We briefly consider the implications of each sub-index below.

The technology sub-index is important as without technological progress although countries may be able to achieve higher standards of living (e.g. through capital accumulation), they will not be able to achieve sustainable high growth. The ranks have increased for both innovation and information and communication technology (ICT) (28th to 27nd and 54th to 52nd respectively), although the actual scores for both have declined. Conversely, the technology transfer rank has declined although the score has increased. The idea of technology transfer is central to Porter's theories of development. A country's ability to absorb new technology and license foreign technology (and eventually imitate and develop new technology) is essential to the growth of competitiveness and it is fundamentally important in transitioning countries. The sub-sub indices which indicate a country's success at technological diffusion are "foreign technology licensing", "technology transfer", and "firm level innovation." In all of these factors Russia ranked in the bottom 10%. The positive points on the technology index are Russia's high education standards (particularly in mathematics and sciences) and the availability of scientists and engineers. Porter identified that "training people in science and engineering is unusually beneficial to an economy because it provided greatest spur to innovation" (Porter, 1998: 114).

Public institutions are important as private companies cannot operate efficiently in environments where contracts cannot be enforced or where the rule of law is weak or non-existent. In the two sub-sub-indices of "contracts and law" and "corruption," Russia ranked in

the lowest ten countries. Further, Russia has remained in the lowest 10% on questions relating to “burden of regulation”, “red-tape”, “property rights”, “intellectual property protection” and the “informal sector.” These problems hinder domestic businesses, stifle the creation of new business, and create an environment which deters foreign businesses investing while negating the benefits of foreign investment that does enter the country. Blanke explains, “Trade can act as an important catalyst for growth, but countries must have the right institutions in place and an overall business environment that allows countries to benefit from expanded business opportunities,” (Blanke et al, 2003: 207). The development of a clear legal framework for business, along with laws which are enforced, are the most critical areas for development for Russia’s businesses.

Russia’s ranks in the macroeconomic sub-index have positive results in the country’s credit rating, government expenditure, growth on GDP, and the government budget surplus (although these can be attributed to high world oil prices). Disadvantages include soundness of banks, sophistication of financial markets, and access to loans. Compared to the other five countries we are considering, Russia has not developed as successfully; this is demonstrated in Table 3.

Insert Table 3 here

The most striking example is Estonia, which in 2003 was ranked 10th in the technology index and has improved its scores in public institutions. Korea has a strong technology and innovation sector and its institutions are improving, although the macroeconomic environment has worsened; and China’s business leaders consider their country has both a more stable macroeconomic environment and institutions than Russia’s. We now take a more detailed look at the BCI scores for Russia and compare this to the other countries.

Business Competitiveness Index

The ranks for the Business Competitiveness Index and its sub-indices for Russia, Estonia, Hungary, China, USA, and Korea are given in Table 4 (comparative scores were not printed for other countries in the report and thus could not be given.)

Insert Table 4 about here

The two sub-indices, “company operations and strategy” and “quality of the business environment”, are linked as more developed companies require better information, more highly skilled people, better suppliers etc. Porter observes, “Wealth is created in the microeconomic level of an economy, rooted in the sophistication of company strategies as well as the microeconomic business environment. Unless there is improvement at the microeconomic level macroeconomic policies will not bear fruit” (Porter, 2003: 23). This is an area in which transitioning economies often fail. In the 2003-2004 GCR report the BCI accounted for 83% of the variation across countries for GDP per capita (Porter, 2004:30).

Table 4 shows three levels in the group of countries. At the highest level of sophistication is the US, which has ranked in the first two positions for three years. On the second level are the former CEE countries (Estonia and Hungary) and Korea. Although Hungary’s business environment has declined in this period, Estonia’s occupies a similar position that Korea did three years ago. China and Russia are both less competitive than this group, although China significantly improved the quality of its business environment between 2001 and 2002.

To understand the specific strengths and weaknesses in Russia’s microeconomic environment ,we look at individual questions from the BCI index (shown in Table 5).

Insert Table 5

Although there has been progress in Russia’s ranks on “improved production process sophistication,” “control over international distribution,” “extent of staff training,” and

“extent of regional sales,” all of these were previously at a very low level. Porter (2004) identified five company variables that have the strongest association with GDP, regardless of whether competitiveness was derived from cheap inputs or unique products and processes production process sophistication: willingness to delegate authority; extent of branding; capacity for innovation; and extent of staff training (these are highlighted in grey in Table 5). Between them these account for 68% of the variance in GDP per capita (Porter, 2004: 40). Russian respondents stated that only “extent of staff training” and “production process sophistication” have improved, though these were originally at a very low starting point (in 2003 these were placed 58th and 65th respectively out of a total of 75 countries). This contrasts with China which, although not consistently improving scores, continues to rate substantially above Russia. To illustrate this we take the five key variables and give Russia, then China’s, 2003 rank: - extent of staff training (44th, 30th); capacity for innovation (28th, 25th); production process sophistication (58th, 44th); extent of staff training (65th, 50th); and willingness to delegate authority (67th, 41st). In many cases the scores for Russia have improved, while the rank has remained either the same or declined, implying other countries are improving their business environments faster than Russia is.

Clusters are particularly good at achieving innovation, competitiveness, and growth in specific sectors where a country has a pre-existing advantage (e.g. strong technological sector, a particular area of competence in university education etc). To recap, *clusters* are geographically concentrated sub-sectors of industry, which often extend downstream to channels and customers, laterally to manufacturers of complementary products, and to companies in industries related by skills technologies or common inputs. They include government (and other) institutions, standards setting agencies, think tanks, trade associations etc that provide specialized training, education, information and research, and technical support to an industry. They work because firms grouped in an industry have a better chance of surviving than not, as in a group they attract more money and more firms are likely to enter the industry. Thus, success breeds success (Gronbjerg, 2000:5).

Both Estonia and Korea developed clusters in order to develop their economies: Estonia in the IT sector and Korea in electronics, cars etc. The results are shown in the 2003 technology index results in which Estonia is ranked 10th and Korea 6th. In South Korea, clusters were built on the electronics and technology industries with only minimal capital investment and almost no natural resources, through close government/business ties and highly educated labor. Estonia capitalized on its educated, technology literature population, and close proximity to high-wage cost countries such as Finland and Sweden.

The GCR report contains a sub-set of questions which measure the prevalence and development of clusters within countries. These results are presented for the six comparison countries in Table 6.

-----Insert Table 6 about here-----

The response to the “state of cluster development” question in Russia has fallen from a rank of 37th (2001) to 50th (2003). Again we contrast this to China’s results which have improved to a 2003 rank of 29th. The positive aspects of Russia’s score are 4.5 out of 7 for “specialized research establishments”; and “local availability of components and parts” and “local availability of machinery” were also positive. An OECD report notes that cluster creation is a particularly suitable method of business development in Eastern European countries (Ionescu, 2003) as the private sector is comprised of atomised sections which lack financial and social resources to develop the private sector in isolation. Clusters are a possible solution to this problem as they encourage the sharing of risks and solutions amongst actors (Ionescu, 2003). Obstacles to their creation are a poor legal and institutional framework, heritage of past industrial policy; lack of entrepreneurial spirit; lack of trust in institutions by entrepreneurs; and the lack of informal networks amongst entrepreneurs. These are all evident in Russia as we have shown (Ionescu, 2003).

In the following section we consider the specific areas that Russian business and government should focus on in order to become more competitive. We also consider three possible industries suitable for cluster development in Russia: the food, IT, and oil sectors.

We discuss the impact that the macro and micro economic deficiencies of the country have on their development.

Improving Russia's Competitiveness

We begin this section by reviewing the recommendations that Porter makes for an economy such as Russia's to improve its competitiveness. Earlier we discussed Porter's three stages of economic development: factor-driven, investment-driven, and innovation-driven economies. As part of the research, Porter used the GCR information to categorize low, middle, and high income countries (depending on their GDP per capita) and then identified the factors that would be most effective in improving the GDP and competitiveness of different countries at different stages of development. Russia's 2003 GDP per capita was \$7,926, which qualifies it as a middle-income country (denoted as having GDP between \$4,000 and \$17,000). However, as oil, natural gas, metals, and timber account for more than 80% of exports (CIA, 2005) and oil specifically contributes between 20-25% of GDP (Ahrend, 2004) we can state confidently that Russia is still a country at the factor-driven stage of economic development.

We previously described that for a middle-income, factor-driven economy to move to a middle-income, investment-driven economy the target areas to address are (in the macroeconomic sector) continued progress should be made in improving public schools, electricity supplies, telecommunication quality, and internet usage (particularly significant); improving university-industry research collaboration, the quality of research institutions, the quality of the judicial system, improving local demand conditions (e.g., through more stringent environmental or consumer protection laws), and improving all aspects of cluster development. Other measures include tariff and non-tariff barrier liberalization, improving anti-trust policy, and opening the market for corporate control. (Porter, 2004: 41). For businesses (microeconomic level) attention should be given to improving production process

sophistication, “which remains the single most important corporate priority” (Porter, 2004:41), brand building, expanding regional and international markets, creating the capacity for technology absorption and innovation, and increasing the professionalism of employees and management.

Table 2 provided specific information about the progress of Russia’s macroeconomic environment (GCI Index). We can see from the tables that quality of research institutions is high (ranked 25th), and although the university-industry research collaboration rank has slightly declined, the score given has increased. Although laws relating to ICT were still not considered positive (ranked 62nd) the overall ranks for the ICT and innovation sub-indices were 52nd and 27th respectively. A key failing of Russia is the judicial system: judicial independence was rated 67th (2003) and Russia had few positive features with regards to public institutions or the sub index relating to contracts and law.

For businesses and the immediate business environment, we return to Tables 5 and Table 6. These indicate tough “consumer laws and regulatory standards” have slipped in the three years we consider (from 42nd to 48th position); and “business improvement in production processes” has improved (moving from 63rd to 58th), although the actual score has declined. In the other key sectors Russia’s “extent of branding” suffered a large decline (dropping from 24th to 44th position) and expanding regional and international markets have both declined (51st and 58th position respectively), although the actual score for regional expansion improved. The capacity for technology absorption is also important. In the GCI report Russia was ranked 50th out of 75 countries, and the capacity for innovation was ranked 27th. Finally, items relating to increasing the professionalism of employees and management indicate that staff training has improved, although in 2003 Russia is still only ranked 65th. Russian managers remain reluctant to delegate authority (the rank fell from 59th to 67th place).

In order to consider how the business environment and macroeconomic sector of the economy affect business and cluster development, we briefly describe these in relation to

three industries where Russia has a comparative or competitive advantage. A tabular representation is given in Table 7.

Insert Table 7 About here

IT outsourcing is a rapidly developing industry which benefits from Russia’s strengths in mathematics, science, engineering and computer studies at universities to produce high quality, low cost programmers and technicians. In 2003, the industry was worth \$500mn and some analysts believe that it could grow to \$2bn in the next 2 years (Arvedlund, 2004). Russia’s international position as the second largest oil producer in the world is well-known, and we have already described the contribution oil makes to the Russian economy. Finally, the food sector has grown dramatically since the devaluation of the Rouble in 1998, with growth of 7% in 2004 (FC Info, 2005b). The sector is very attractive to investment, both foreign and domestic, as relatively little money is needed to update existing factories or set up new production facilities. This, coupled with increasing real disposable incomes, has resulted in the industry being one of the most competitive and dynamic in the country.

Table 7 shows the business environment in each industry. The oil industry is limited in the number of participating firms due to the strategic nature of the business (which results in government intervention in the sector and restricts foreign investment) and the amount of money and natural barriers to entering the market. Further, given recent events surrounding the trial of Mikhail Khodorkhovsky and taxation issues concerning the TNK-BP merger, it is a risky environment for oil companies without international or political clout to attempt to get involved in. The Russian oil sector is comprised of hundreds of companies though only fourteen western-structured holding companies. There is a need for know-how, upgrading of machinery and investment in much of the industry to efficiently supply the oil which is demanded and maximize revenue potential. However, with limited foreign investment it is likely it will take a long time to disseminate from major Russian oil players. Cluster

development in this sector is hampered by government policies, restrictions or lack of clarity with regards to ownership issues, and natural barriers to entry and exit within the industry.

The key factor condition for the IT industry in Russia is its source of low-cost, highly mathematically skilled and IT literate workforce. In 2003, 226,000 people graduated in IT education in Russia (the comparative figure for India was 165,000) (Kozhzhurharov, 2004). A typical Russian IT firm is privately held, owner-operated and entrepreneurial; (Aberdeen, 2003: 15). However, larger companies do exist, such as International Business Systems (IBS) and its off-shore programming subsidiary Luxsoft which is used by Motorola, Intel, Sun Microsystems, Nortel, Dell, and IBM. The Russian government spends approximately \$350mn/year supporting its IT industry. By contrast India's government spends approximately \$12bn annually (Kozhuharov, 2004). A recent report on Russia's outsourcing sector identified the problematic areas in the industry are overall lack of transparency, restrictive tax practices, customs and immigration law, and complex bureaucracy (Aberdeen, 2003). The best way to stimulate the industry is via improved industry-research collaboration, exposing students to latest technologies, increasing the business skills of programmers, and improving the telecommunications infrastructure in the country.

The food industry has expanded rapidly since 1998. In 2002 the food retail market was worth \$89bn in (Watson, 2003). The meat and fisheries sectors are flourishing. A naturally formed cluster occurs in the Russian food processing sector in the North-west region where many agricultural producers, historic food companies, good transport facilities and large conurbations are situated. The food sector in this region contributed 27.2% of industrial production in 2003 and nearly 10% of the total output of all foodstuff industry in Russia is produced there (Leningrad Province Bi-annual monitoring, 2004). As companies in this sector grow and develop, the greatest challenges are upgrading staff competences and finding competent management, developing strong brands, and expanding into the regions.

To summarize, the three industries are diverse. One industry is dominated by state influence and is comprised of large, powerful corporations; one comprises both new companies and those from the Soviet period operating in a highly dynamic environment with a large number of local competitors; and the third one is a technology-based industry with many competitors operating in a highly-competitive international market. Our results indicate that businesses in Russia are hampered in their development by complicated taxation and bureaucracy, unclear legal systems, restrictions on international businesses, and lack of supportive government policies towards businesses. The analysis of the three different industries implies that different government actions would be helpful in each. Industries with relatively simple entry and exit to the market (e.g. food processing) would benefit most from a liberalization of the import and export system and simplification of the customs procedures, taxation, and bureaucracy. Industries such as the IT industry, which need high quality resources and international demand for the products, but which are dependent on universities to produce experienced employees, would benefit from modernized university computer education, improved customs regulations, and decreased bureaucracy and trade barriers. Highly centralized industries such as oil and natural resources would benefit most from decreasing government restrictions on foreign investment to facilitate obtaining technology and know-how from Western companies.

Conclusion

This paper has used data which the authors collected as part of the Global Competitiveness Project for Russia and comparative data from the GCR to investigate the macro and micro economic competitiveness of Russia. We have shown that, despite some positive macro-economic results (specifically in terms of macroeconomic policies) and also with respect to technology, Russia has some potentially serious problems which it needs to work to overcome especially in the areas of institutions and enforcement of the law (or in the

laws' clarity). Our results show that businesses are hampered by these problems, as is evident from the relatively low levels of business development and contribution to GDP by small firms in Russia compared with European countries. It is encouraging to see that Russia's evaluation on many key indices by business leaders is increasing. However, Russia's world-wide rank is decreasing in most of these areas as other countries appear to be improving at an even faster rate. In other words, the world is becoming increasingly competitive and this, combined with Russia's wish to be more integrated into the world economy, clearly speaks for Russia needing to take additional steps to become increasingly competitive. This paper suggests some areas where Russia will most benefit from some attention. For example, we point out that it is important for Russia to focus on developing some industries where it can be a world leader and to decrease its dependence on oil and other natural resources. Long-term dependence on exporting natural resources is dangerous for Russia due to resources being limited and its being difficult to extract premium rents without engaging in activities that add significant value. In conclusion, our study shows that Russia has significant challenges, but also potential to address these challenges.

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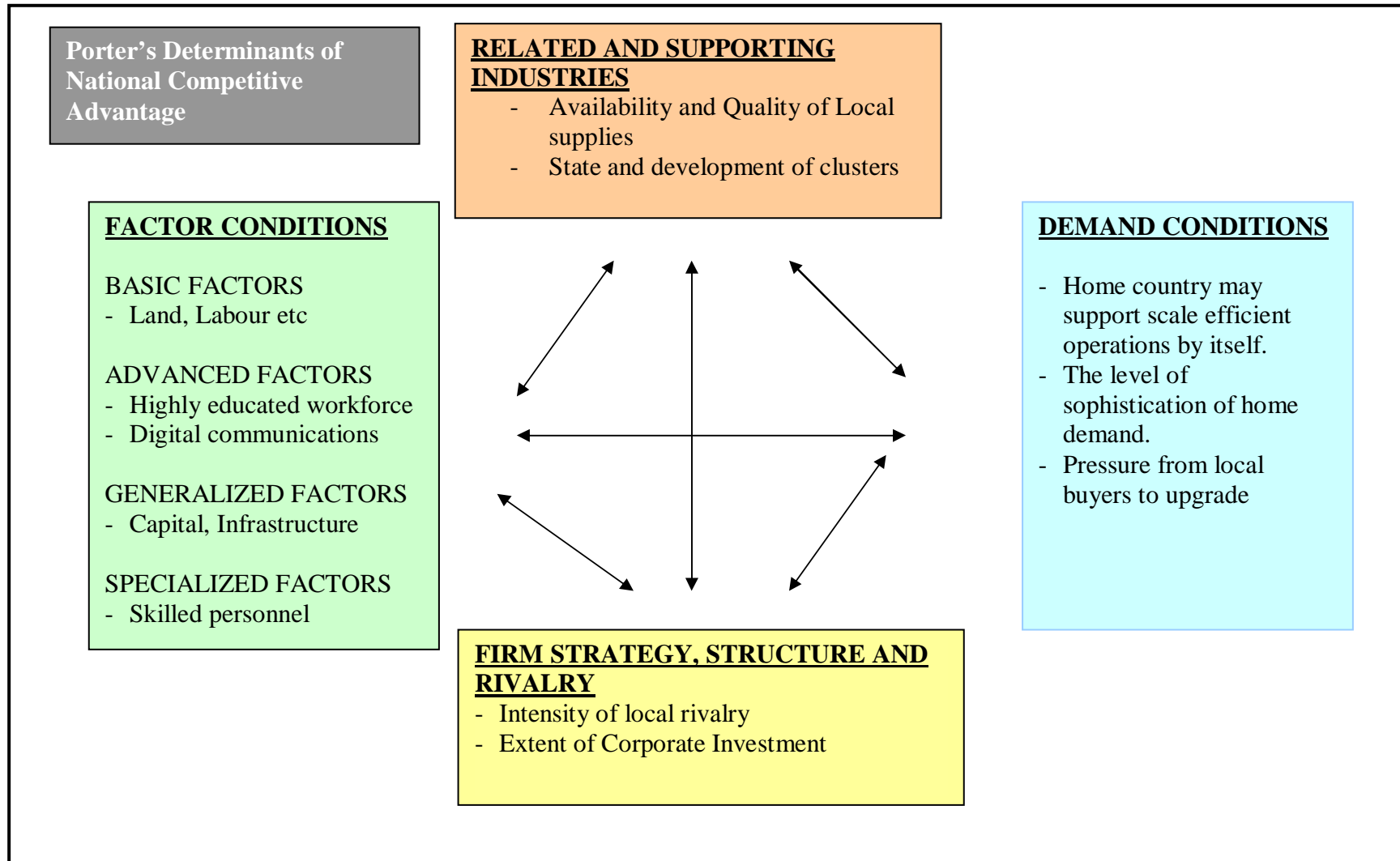
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Figure 1: Porter's Diamond



Source: Porter (1990)

Table 1: Complete list of 75 Countries Surveyed along with Growth Competitiveness and Business Competitiveness Ranking Results from GCI Index published 2004

| COUNTRY | BCI | GCI | COUNTRY | BCI | GCI | COUNTRY | BCI | GCI |
|--------------------|-----|-----|--------------------|-----|-----|---------------------|-----|-----|
| Argentina | 60 | 64 | Iceland | 14 | 8 | Singapore | 8 | 6 |
| Australia | 11 | 10 | India | 36 | 49 | Slovak Republic | 41 | 39 |
| Austria | 17 | 17 | Indonesia | 54 | 62 | Slovenia | 30 | 29 |
| Bangladesh | 70 | 74 | Ireland | 21 | 28 | South Africa | 27 | 38 |
| Belgium | 15 | 25 | Israel | 20 | 19 | Spain | 25 | 21 |
| Bolivia | 75 | 67 | Italy | 24 | 37 | Sri Lanka | 52 | 60 |
| Brazil | 33 | 48 | Jamaica | 51 | 58 | Sweden | 3 | 3 |
| Bulgaria | 64 | 55 | Japan | 13 | 11 | Switzerland | 7 | 7 |
| Canada | 12 | 16 | Jordan | 40 | 32 | Taiwan | 16 | 5 |
| Chile | 32 | 26 | Korea | 23 | 18 | Thailand | 31 | 30 |
| China | 44 | 42 | Latvia | 29 | 34 | Trinidad and Tobago | 50 | 45 |
| Columbia | 48 | 54 | Lithuania | 39 | 36 | Turkey | 49 | 56 |
| Costa Rica | 43 | 47 | Malaysia | 26 | 27 | Ukraine | 62 | 66 |
| Czech Rep. | 34 | 35 | Mauritius | 42 | 42 | UK | 6 | 15 |
| Denmark | 4 | 4 | Mexico | 46 | 43 | Uruguay | 61 | 46 |
| Dominican Republic | 55 | 53 | Netherlands | 9 | 12 | USA | 2 | 2 |
| Ecuador | 69 | 68 | New Zealand | 18 | 14 | Venezuela | 68 | 65 |
| Egypt | 58 | 58 | Nicaragua | 71 | 70 | Vietnam | 47 | 52 |
| El Salvador | 56 | 44 | Nigeria | 66 | 69 | Zimbabwe | 65 | 74 |
| Estonia | 28 | 20 | Norway | 22 | 9 | | | |
| Finland | 1 | 1 | Panama | 53 | 51 | | | |
| France | 10 | 24 | Paraguay | 74 | 72 | | | |
| Germany | 5 | 13 | Peru | 67 | 51 | | | |
| Greece | 38 | 33 | Philippines | 57 | 59 | | | |
| Guatemala | 69 | 70 | Poland | 45 | 41 | | | |
| Honduras | 73 | 71 | Portugal | 35 | 23 | | | |
| Hong Kong | 19 | 22 | Romania | 63 | 63 | | | |
| Hungary | 37 | 31 | Russian Federation | 59 | 61 | | | |
| | | | | | | | | |

Source: WEF (2004)

Table 2 Russia's GCI Index Results: By Rank and Score (2001-2003)

| <u>INDEX/ SUB-INDEX</u> | <u>Rank (out of 75 countries)</u> | | | <u>Score (out of 7)</u> | | |
|---|-----------------------------------|-------------|-------------|-------------------------|-------------|-------------|
| | <u>2001</u> | <u>2002</u> | <u>2003</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> |
| TECHNOLOGY INDEX | 63 | 62 | 62 | 3.78 | 3.23 | 3.78 |
| ✓ Innovation | 28 | 35 | 27 | 3.72 | 2.73 | 3.36 |
| ✓ ICT* | 54 | 56 | 52 | 4.16 | 3.07 | 3.66 |
| ✓ Technology Transfer | 49 | 47 | 50 | 3.30 | 3.62 | 3.62 |
| TECH SUB-SUB- INDICES | | | | | | |
| ✓ Quality of Maths and Science Education | 12 | 21 | 17 | | 5.1 | 5.4 |
| ✓ Tertiary enrolment | 19 | 33 | 8 | 42.80 | 40.65 | 64.09 |
| ✓ Availability of Scientists and Engineers | 31 | 27 | 25 | 5.5 | 5.3 | 5.4 |
| ✓ Quality of Scientific Research Institutions | 33 | 32 | 25 | 4.7 | | 4.7 |
| ✓ University-Research Collaboration | | 44 | 49 | | 3.3 | 3.1 |
| - Internet Users per 10,000 inhabitants | | 54 | 57 | | 293 | 409.32 |
| - FDI and Technology Transfer | 73 | 71 | 74 | 4.0 | 3.8 | 4.0 |
| - Firm level innovation | 70 | 73 | - | 4.5 | 4.5 | - |
| - Prevalence of foreign tech. licensing | - | 71 | 73 | - | 3.4 | 3.3 |
| - Technological sophistication | 56 | 61 | 55 | 3.2 | 3.0 | 3.3 |
| - Laws relating to ICT | 72 | 60 | 62 | 2.4 | 3.0 | 3.0 |
| - Quality of Competition | 65 | 62 | 65 | 3.6 | 3.6 | 3.5 |
| | | | | | | |
| PUBLIC INSTITUTIONS | 61 | 61 | 64 | 3.68 | 3.45 | 3.34 |
| - Contracts and Law | 66 | 66 | 67 | 2.97 | 2.69 | 2.74 |
| - Corruption | 53 | 57 | 64 | 4.38 | 4.22 | 3.94 |
| P.I. SUB-SUB INDICES | | | | | | |
| - Burden of Regulation | 27 | 43 | 74 | 3.4 | 2.5 | 1.9 |
| - Property Rights | 75 | 71 | 73 | 2.4 | 2.6 | 2.7 |
| - Efficiency of the tax system | - | 60 | 70 | - | 2.3 | 2.1 |
| - Judicial Independence | - | - | 67 | - | - | 2.5 |
| - Extent of Bureaucratic red-type | 64 | 67 | 71 | 3.0 | 3.5 | 3.4 |
| - Extent of the Informal Sector | 53 | 68 | 64 | 4.2 | 5.5 | 5.6 |
| | | | | | | |
| MACROECONOMIC ENVIRONMENT | 57 | 34 | 62 | 3.64 | 4.23 | 3.44 |
| ✓ Country Credit Rating | 68 | 59 | 52 | 1.82 | 2.49 | 3.19 |
| ✓ Stability | 30 | 48 | 47 | 4.52 | 4.03 | 4.04 |
| ✓ Government Expenditure | 44 | 3 | - | 3.69 | 6.36 | - |
| ✓ Government Waste Indices | - | - | 58 | - | - | 2.74 |
| M.E SUB-SUB-INDICES | | | | | | |
| ✓ Change in GDP c.f. USA | 53 | 28 | 73 | -1.08% | 0.04% | 1.79% |
| ✓ Gov Surplus/ Deficit | 6 | 3 | 11 | +3.1 | +2.93 | +0.60 |
| ✓ GDP per capita | 43 | 40 | 44 | \$8,123 | \$8,948 | \$7,926 |
| ✓ Recession Expectations | 40 | 45 | 23 | 4.6 | 4.2 | 4.1 |
| - Ease of Access to Loans | 65 | 68 | 65 | 2.0 | 2.1 | 2.4 |
| - Cost of importing foreign equipment | - | 72 | 68 | - | 2.1 | 2.4 |
| - Financial Market Sophistication | 69 | 70 | 70 | 2.4 | 2.5 | 2.6 |
| - Soundness of Banks | 58 | 68 | 67 | 3.7 | 3.5 | 3.8 |
| - Effectiveness of bankruptcy law | - | - | 67 | - | - | 3.2 |
| - Hidden Trade Barriers | | 67 | 63 | | 3.4 | 3.6 |

*Information Communication and Technology

Source: WEF 2002,2003 & 2004

Table 3a: Comparative Growth Competitive Index By Rank (2001-2003).

| | GCI Sub-indices | | | | | | | | | | | |
|-----------------|-----------------|------|------|----------------------------|------|------|------------|------|------|---------------------|------|------|
| | GCI | | | Macro Economic Environment | | | Technology | | | Public Institutions | | |
| | 2001 | 2002 | 2003 | 2001 | 2002 | 2003 | 2001 | 2002 | 2003 | 2001 | 2002 | 2003 |
| USA: | 2 | 1 | 2 | 7 | 2 | 13 | 1 | 1 | 1 | 12 | 16 | 16 |
| Korea: | 23 | 21 | 18 | 8 | 10 | 22 | 9 | 18 | 6 | 44 | 30 | 32 |
| Estonia: | 29 | 26 | 20 | 43 | 35 | 30 | 8 | 14 | 10 | 29 | 27 | 25 |
| Hungary: | 28 | 29 | 31 | 38 | 35 | 34 | 21 | 21 | 31 | 26 | 29 | 30 |
| China: | 39 | 33 | 40 | 6 | 8 | 24 | 53 | 59 | 59 | 50 | 36 | 45 |
| Russia: | 63 | 59 | 61 | 57 | 34 | 62 | 60 | 62 | 62 | 61 | 61 | 64 |

Table3b: Comparative Growth Competitive Index by Score (2001-2003).

| | GCI Sub-indices | | | | | | | | | | | |
|---------|-----------------|------|------|----------------------------|------|------|------------|------|------|---------------------|------|------|
| | GCI | | | Macro Economic Environment | | | Technology | | | Public Institutions | | |
| | 2001 | 2002 | 2003 | 2001 | 2002 | 2003 | 2001 | 2002 | 2003 | 2001 | 2002 | 2003 |
| USA | 5.95 | 5.93 | 5.81 | 4.97 | 5.26 | 4.94 | 6.42 | 6.36 | 6.30 | 6.01 | 5.76 | 5.71 |
| Korea | 5.13 | 4.89 | 5.07 | 4.94 | 4.86 | 4.67 | 5.66 | 4.87 | 5.28 | 4.25 | 4.96 | 5.03 |
| Estonia | 4.87 | 4.73 | 4.96 | 3.94 | 4.23 | 4.37 | 5.68 | 4.91 | 5.16 | 4.99 | 5.25 | 5.36 |
| Hungary | 4.87 | 4.63 | 4.61 | 4.04 | 4.23 | 4.09 | 5.39 | 4.77 | 4.57 | 5.20 | 5.15 | 5.18 |
| China | 4.40 | 4.37 | 4.19 | 5.04 | 4.98 | 4.56 | 4.05 | 3.45 | 3.67 | 4.10 | 4.68 | 4.33 |
| Russia | 3.70 | 3.64 | 3.46 | 3.64 | 4.23 | 3.44 | 3.78 | 3.23 | 3.61 | 3.68 | 3.45 | 3.34 |

Source: WEF 2002, 2003 and 2004

Table 4: Business Competitiveness Index - Comparative Rank 2001-2003

| Country | BCI | | | Company Ops & Strategy | | | Quality of Business Environment | | |
|----------------------|------|------|------|------------------------|------|------|---------------------------------|------|------|
| | 2001 | 2002 | 2003 | 2001 | 2002 | 2003 | 2001 | 2002 | 2003 |
| USA: Rank | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 2 | 1 |
| Korea: Rank | 28 | 23 | 23 | 26 | 21 | 19 | 30 | 23 | 25 |
| Estonia: Rank | 27 | 30 | 28 | 32 | 36 | 36 | 26 | 28 | 27 |
| Hungary: Rank | 26 | 28 | 37 | 33 | 29 | 44 | 25 | 29 | 36 |
| China: Rank | 47 | 37 | 44 | 39 | 37 | 41 | 47 | 37 | 42 |
| Russia: Rank | 58 | 54 | 59 | 54 | 58 | 60 | 56 | 52 | 57 |

Source: WEF 2002, 2003 & 2004.

Table 5: Comparative Results of the BCI Index, 2001-2003: Rank

| Company Operations and Strategy | Country | Rank (out of 75 countries) | | | Score (out of 7) | | | | |
|--|--|--|---------|------|------------------|------|------|-----|-----|
| | | 2001 | 2002 | 2003 | 2001 | 2002 | 2003 | | |
| Extent of Branding: Companies that sell internationally 1= sell commodities or market under foreign brands and 7=have developed their own international brands | USA | 5 | 4 | 6 | 6.2 | 6.1 | 6.2 | | |
| | Russia | 24 | 42 | 44 | 4.4 | 3.4 | 3.4 | | |
| | China | 25 | 24 | 30 | 4.3 | 4.1 | 3.8 | | |
| | Korea | 22 | 18 | 19 | 4.6 | 4.7 | 4.7 | | |
| | Hungary | 54 | 25 | 28 | 3.5 | 4.0 | 3.9 | | |
| | Estonia | 61 | 58 | 61 | 3.4 | 2.8 | 2.9 | | |
| | Capacity for Innovation: Companies obtain technology 1- exclusively from foreign companies 7= by pioneering their own new products or processes | USA | 2 | 6 | 7 | 5.9 | 5.7 | 5.7 | |
| | | Russia | 24 | 30 | 28 | 4.3 | 4.0 | 3.8 | |
| | | China | 20 | 22 | 25 | 4.5 | 4.3 | 4.0 | |
| | | Korea | 22 | 15 | 15 | 4.4 | 4.7 | 4.7 | |
| | | Hungary | 47 | 32 | 32 | 3.3 | 3.6 | 3.7 | |
| | | Estonia | 35 | 34 | 36 | 4.2 | 3.5 | 3.6 | |
| | | Production process sophistication : Production processes 1= generally use obsolete technology; 7=generally employ the world's best and efficient machinery | USA | 4 | 4 | 5 | 6.4 | 6.2 | 6.0 |
| | | | Russia | 63 | 51 | 58 | 3.6 | 3.2 | 3.3 |
| | | | China | 42 | 41 | 44 | 4.3 | 3.8 | 3.7 |
| | | | Korea | 29 | 22 | 24 | 4.8 | 5.0 | 4.9 |
| | | | Hungary | 28 | 31 | 38 | 4.8 | 4.1 | 3.8 |
| | | | Estonia | 34 | 26 | 28 | 4.6 | 4.5 | 4.3 |
| Extent of Staff Training: The general approach of companies in your country to human resources is 1=to invest little in training and employee development; 7=to invest heavily to attract, train and retain staff | | | USA | 4 | 3 | 5 | 5.9 | 5.8 | 5.9 |
| | | | Russia | 70 | 66 | 65 | 2.9 | 2.8 | 3.0 |
| | | | China | 53 | 46 | 50 | 3.6 | 3.6 | 3.6 |
| | | | Korea | 29 | 21 | 20 | 4.3 | 4.8 | 4.9 |
| | | | Hungary | 32 | 23 | 58 | 4.3 | 4.7 | 3.5 |
| | | | Estonia | 27 | 33 | 37 | 4.5 | 4.3 | 4.1 |
| | Willingness to Delegate Authority: Willingness to delegate authority to subordinates is 1- generally low; 7=generally high | | USA | 4 | 6 | 7 | 5.9 | 5.7 | 5.5 |
| | | | Russia | 59 | 63 | 67 | 3.3 | 2.9 | 2.9 |
| | | | China | 60 | 39 | 41 | 3.3 | 3.6 | 3.5 |
| | | | Korea | 35 | 24 | 24 | 3.9 | 4.1 | 4.2 |
| | | | Hungary | 27 | 28 | 57 | 4.1 | 4.1 | 3.2 |
| | | | Estonia | 22 | 27 | 29 | 4.5 | 4.0 | 3.9 |
| | | Nature of Competitive Advantage: Competitive advantage of your nation's companies in international markets is 1 – Due to low cost labour or natural resources 7= due to unique products and processes | USA | 3 | 3 | 10 | 6.2 | 6.0 | 5.6 |
| | | | Russia | 55 | 67 | 64 | 2.7 | 2.6 | 2.7 |
| | | | China | 40 | 42 | 48 | 3.2 | 3.2 | 3.0 |
| | | | Korea | 23 | 19 | 20 | 4.4 | 4.5 | 4.7 |
| | | | Hungary | 37 | 31 | 44 | 3.3 | 3.5 | 3.1 |
| | | | Estonia | 50 | 56 | 55 | 2.9 | 2.8 | 2.9 |
| Value Chain Presence: Exporting companies in your country are 1=primarily involved in production 7=conduct not only production but also product development, distribution and marketing | | | USA | 1 | 4 | 9 | 6.4 | 6.2 | 6.1 |
| | | | Russia | 24 | 63 | 65 | 4.4 | 2.6 | 2.6 |
| | | | China | 34 | 39 | 50 | 3.9 | 3.7 | 3.5 |
| | | | Korea | 23 | 20 | 20 | 4.5 | 5.1 | 5.1 |
| | | | Hungary | 50 | 28 | 35 | 3.4 | 4.3 | 4.0 |
| | | | Estonia | 35 | 41 | 47 | 3.9 | 3.6 | 3.6 |
| | Degree of Customer orientation: Customer orientation firms in your country generally 1= treat their customers badly 7=pay close attention to customer satisfaction | | USA | 1 | 1 | 3 | 6.2 | 6.1 | 6.0 |
| | | | Russia | 61 | 47 | 54 | 4.2 | 4.3 | 4.4 |
| | | | China | 58 | 3.5 | 49 | 4.2 | 4.7 | 4.5 |
| | | | Korea | 28 | 17 | 21 | 5.0 | 5.5 | 5.4 |
| | | | Hungary | 34 | 41 | 57 | 4.9 | 4.5 | 4.3 |
| | | | Estonia | 26 | 25 | 32 | 5.1 | 5.2 | 5.0 |
| | | Breadth of international marketing: Exporting companies from your country 1= sell primarily in a few foreign markets; 7=sell in virtually all international markets | USA | 7 | 4 | 6 | 6.2 | 6.3 | 6.2 |
| | | | Russia | 48 | 49 | 51 | 3.6 | 3.5 | 3.4 |
| | | | China | 33 | 39 | 33 | 4.2 | 3.9 | 4.3 |
| | | | Korea | 24 | 13 | 15 | 5.0 | 5.5 | 5.4 |
| | | | Hungary | 35 | 24 | 37 | 4.1 | 4.8 | 4.1 |
| | | | Estonia | 43 | 43 | 50 | 3.7 | 3.4 | 3.4 |
| Extent of Regional Sales: Exports to your country to surrounding regions are 1=limited; 7= substantial and growing | | | USA | 12 | 10 | 16 | 6.2 | 6.0 | 5.8 |
| | | | Russia | 70 | 60 | 58 | 3.8 | 3.8 | 4.1 |
| | | | China | 49 | 49 | 47 | 4.7 | 4.5 | 4.8 |
| | | | Korea | 36 | 19 | 23 | 5.3 | 5.7 | 5.6 |
| | | | Hungary | 46 | 31 | 51 | 4.9 | 5.3 | 4.5 |
| | | | Estonia | 43 | 34 | 37 | 5.1 | 5.1 | 5.1 |
| | Extent of incentive compensation: Extent of Management in your country is 1= based exclusively on salary; include substantial incentives in the form of bonuses and stock options | | USA | 1 | 1 | 1 | 6.4 | 6.3 | 6.1 |
| | | | Russia | 67 | 61 | 56 | 3.3 | 3.8 | 3.6 |
| | | | China | 65 | 48 | 48 | 3.5 | 3.7 | 3.9 |
| | | | Korea | 37 | 34 | 26 | 4.2 | 4.4 | 4.6 |
| | | | Hungary | 24 | 25 | 43 | 4.6 | 4.8 | 4.1 |
| | | | Estonia | 29 | 22 | 32 | 4.5 | 4.8 | 4.5 |
| | | Reliance on Professional management: Senior management positions in your country are 1-usually held by relatives, 7 = held by professional managers chosen based on superior qualifications. | USA | 4 | 4 | 7 | 6.3 | 6.4 | 6.3 |
| | | | Russia | 46 | 54 | 55 | 4.5 | 4.0 | 4.0 |
| | | | China | 41 | 29 | 45 | 4.6 | 5.2 | 4.6 |
| | | | Korea | 58 | 33 | 40 | 3.9 | 5.0 | 4.7 |
| | | | Hungary | 29 | 23 | 36 | 5.1 | 5.4 | 4.8 |
| | | | Estonia | 21 | 26 | 26 | 5.4 | 5.2 | 5.2 |

Source: WEF Reports 2002; 2003;2004

Table 6: Comparative Cluster Analysis: 2001-2003

| Question- | Country | 2001 | 2002 | 2003 | 2001 | 2002 | 2003 |
|---|---------|------|------|------|------|------|------|
| Buyer Sophistication: Buyers in your country are 1= unsophisticated and make choices based on lowest Price 7=knowledgeable and demanding based on Superior performance attributes | USA | 3 | 4 | 2 | 5,9 | 5,9 | 5,8 |
| | Russia | 51 | 49 | 62 | 3,7 | 3,6 | 3,4 |
| | China | 49 | 39 | 38 | 3,8 | 4,0 | 3,9 |
| | Korea | 26 | 24 | 23 | 4,8 | 5,0 | 4,9 |
| | Hungary | 48 | 48 | 53 | 3,8 | 3,7 | 3,5 |
| | Estonia | 34 | 29 | 27 | 4,4 | 4,4 | 4,5 |
| Local Supplier Quantity: Local suppliers in your and country are 1=largely non-existent; 7= numerous and include the most important materials, components Equipment and services | USA | 1 | 3 | 3 | 6,5 | 6,2 | 6,0 |
| | Russia | 49 | 48 | 47 | 4,8 | 4,5 | 4,7 |
| | China | 42 | 40 | 30 | 4,9 | 4,7 | 5,1 |
| | Korea | 36 | 20 | 19 | 5,1 | 5,4 | 5,4 |
| | Hungary | 30 | 55 | 41 | 5,2 | 4,3 | 4,8 |
| | Estonia | 56 | 51 | 46 | 4,6 | 4,4 | 4,7 |
| Local Supplier Quality: The quality of local suppliers in your country is 1=poor as they are inefficient and Have little technological 7=very good, internationally competitive and assist in new product development. | USA | 2 | 2 | 3 | 6,4 | 6,2 | 6,0 |
| | Russia | 61 | 60 | 62 | 3,9 | 3,7 | 3,7 |
| | China | 62 | 51 | 44 | 3,9 | 4,0 | 4,3 |
| | Korea | 30 | 20 | 24 | 4,8 | 5,3 | 4,3 |
| | Hungary | 28 | 34 | 54 | 4,9 | 4,7 | 4,2 |
| | Estonia | 34 | 39 | 32 | 4,7 | 4,5 | 4,8 |
| Presence of demanding regulatory standards: Standards For products./ services, energy and other regulations In your country 1-law; 7- among the world's most stringent | USA | 6 | 6 | 6 | 6,3 | 6,1 | 6,1 |
| | Russia | 42 | 45 | 48 | 4,3 | 4,0 | 4,0 |
| | China | 56 | 47 | 50 | 3,8 | 3,9 | 4,0 |
| | Korea | 33 | 25 | 27 | 4,8 | 5,1 | 5,1 |
| | Hungary | 24 | 32 | 29 | 5,3 | 4,7 | 5,0 |
| | Estonia | 36 | 36 | 35 | 4,7 | 4,6 | 4,8 |
| Decentralization of Corporate Activity: Corporate activity In your country is 1-dominated by a few business groups 7=spread among many firms | USA | 1 | 1 | 2 | 6,3 | 6,2 | 6,1 |
| | Russia | 58 | 57 | 62 | 3,2 | 3,1 | 3,1 |
| | China | 16 | 12 | 23 | 5,1 | 5,1 | 4,6 |
| | Korea | 45 | 28 | 35 | 3,8 | 4,1 | 4,1 |
| | Hungary | 23 | 22 | 34 | 4,8 | 4,5 | 4,1 |
| | Estonia | 36 | 34 | 36 | 4,1 | 3,9 | 4,0 |
| State of Cluster Development: How common are clusters In your country 1=limited and shallow; 7=common and deep | USA | 3 | 3 | 6 | 5,3 | 5,4 | 4,9 |
| | Russia | 37 | 39 | 50 | 3,4 | 3,2 | 3,0 |
| | China | 39 | 27 | 29 | 3,3 | 3,5 | 3,7 |
| | Korea | 11 | 8 | 8 | 4,5 | 4,6 | 4,8 |
| | Hungary | 65 | 38 | 60 | 2,6 | 3,2 | 2,7 |
| | Estonia | 63 | 69 | 61 | 2,7 | 2,5 | 2,7 |
| Extent of Collaboration among clusters: Collaboration in your clusters with suppliers and partners is 1= almost Non-existent; 7=extensive and involves suppliers, local Customers and local research institutes | USA | 2 | 3 | 3 | 5,5 | 5,4 | 5,5 |
| | Russia | 17 | 41 | 39 | 4,5 | 3,8 | 3,7 |
| | China | 29 | 16 | 14 | 4,2 | 4,6 | 4,5 |
| | Korea | 27 | 14 | 13 | 4,3 | 4,7 | 4,7 |
| | Hungary | 42 | 32 | 62 | 3,9 | 4,0 | 3,1 |
| | Estonia | 34 | 54 | 36 | 4,1 | 3,3 | 3,9 |
| Local Availability of components and parts: In your Industry, how are components and parts obtained 1= always Imported 7= almost always sourced locally | USA | 5 | 4 | 3 | 5,3 | 5,0 | 5,3 |
| | Russia | 14 | 16 | 18 | 4,7 | 4,4 | 4,2 |
| | China | 3 | 6 | 6 | 5,4 | 4,9 | 5,0 |
| | Korea | 28 | 12 | 8 | 4,0 | 4,6 | 4,5 |
| | Hungary | 23 | 40 | 44 | 4,1 | 3,6 | 3,3 |
| | Estonia | 52 | 54 | 55 | 3,3 | 3,1 | 3,0 |
| Local availability of process machinery: In your industry How is process machinery obtained 1- almost always Imported and 7= almost always available locally from world Class suppliers. | USA | 3 | 2 | 4 | 5,2 | 5,3 | 5,2 |
| | Russia | 9 | 16 | 18 | 4,2 | 4,1 | 3,9 |
| | China | 2 | 5 | 6 | 5,3 | 4,7 | 4,6 |
| | Korea | 20 | 10 | 8 | 3,8 | 4,4 | 4,5 |
| | Hungary | 49 | 41 | 39 | 2,5 | 4,4 | 3,0 |
| | Estonia | 58 | 53 | 57 | 2,3 | 2,4 | 2,4 |
| Local Availability of specialized research and training In your industry specialized research and training services are 1= not available in the country; 7= available From world class local institutions | USA | 1 | 2 | 1 | 6,5 | 6,2 | 6,4 |
| | Russia | 16 | 33 | 33 | 5,3 | 4,4 | 4,5 |
| | China | 45 | 40 | 38 | 4,2 | 4,2 | 4,3 |
| | Korea | 38 | 29 | 19 | 4,5 | 4,6 | 4,9 |
| | Hungary | 28 | 27 | 47 | 5,0 | 4,6 | 4,0 |
| | Estonia | 31 | 29 | 23 | 4,9 | 4,4 | 4,7 |
| Chapter 8 Intensity of Local Competition: Competition in the local market is 1= limited in most industries and price cutting is rare; 7 = intense in most industries as market leadership changes over time, | USA | 1 | 1 | 2 | 6,5 | 6,1 | 5,9 |
| | Russia | 67 | 62 | 69 | 4,2 | 4,4 | 4,0 |
| | China | 21 | 31 | 24 | 5,5 | 5,1 | 5,3 |
| | Korea | 56 | 15 | 22 | 4,9 | 5,4 | 5,3 |
| | Hungary | 28 | 21 | 43 | 5,3 | 5,3 | 4,9 |
| | Estonia | 16 | 45 | 27 | 5,6 | 4,8 | 5,3 |
| Extent of Locally Based Competitors: Competition in the local market 1- comes primarily from imports; 7= comes primarily from local firms or local subsidiaries of MNCs | USA | 1 | 2 | 5 | 5,8 | 5,6 | 5,5 |
| | Russia | 42 | 32 | 47 | 4,4 | 4,5 | 4,3 |
| | China | 12 | 13 | 7 | 5,2 | 5,1 | 5,4 |
| | Korea | 24 | 11 | 12 | 4,8 | 5,2 | 5,2 |
| | Hungary | 49 | 41 | 52 | 4,2 | 4,4 | 4,1 |
| | Estonia | 36 | 38 | 38 | 4,6 | 4,4 | 4,6 |

Source: WEF 2002; 2003; 2004

Table 7: Porter’s diamond in relation to Oil, IT Outsourcing and the Food Sector

| Industries | Factor Conditions: | Related and Supporting Industries | Demand Conditions: | Firm Strategy and Rivalry: |
|--|---|---|--|---|
| Oil | <ul style="list-style-type: none"> •Oil reserves are: 51.22 billion bbl (1 January 2002) (World Fact Book) | <ul style="list-style-type: none"> •Some attempts at integration within industry, not successful •Strong government influence including taxation, state controlled pipelines and quota on oil exports | <ul style="list-style-type: none"> •Not strong at home due to domestic prices being lower to world oil prices. •Increasingly strong Demand from Western Europe •Decreased demand from Former Soviet and East European countries | <ul style="list-style-type: none"> • Hundreds of small oil producing companies. • 14 companies that are fully integrated, refining, processing and selling oil. |
| IT OUTSOURCING* (source – Aberdeen, 2003 report and WEF report 2004) | <ul style="list-style-type: none"> •High quality of math & science graduates (rating of 5.4 out of 7 in WEF 2004) •High availability of scientists and engineers (rating of 5.4 out of 7 (WEF 2004) •Low, high skills labour cost labour, good language skills •Good business and language skills •ISO 9001 and SEICMM qualifications attained by some larger companies. | <ul style="list-style-type: none"> •Large geography of country means development outside main cities has been difficult •No government support •No strong links between universities and business IT sourcing. | <ul style="list-style-type: none"> •Demand primarily from foreign countries •68% of demand from USA firms •Dell, IBM, Motorola all use Russian outsourcing. | <ul style="list-style-type: none"> • Independent Software vendors make up half the vertical market •Niche based (voice recognition; bio-informatics) •Remainder are professional co's with go-to-market strats and experience, end –end delivery. •Typically privately owned •Of 150 co's surveyed 38.7% are less than 3 yrs, average of 31 employees; 16.1% 4-6 years old average, 96 employees |
| Food | <ul style="list-style-type: none"> •Farming areas are steadily increasing efficiency •Cheap labour •Low costs of setting up food production operations. | <ul style="list-style-type: none"> •Agricultural Output increased 22.5% in the past 4 years (BBC Monitoring, 2003) | <ul style="list-style-type: none"> •High due to increased disposable income | <ul style="list-style-type: none"> • Many small producers, • Retail sector extremely disparate over 2000 independent food outlets in Spb alone. |

Appendix A: Key Economic Indicators (2000-2003)

Table Of Macroeconomic Indicators for the 4 industries in the study

| | 2000 | 2001 | 2002 | 2003 |
|---|-------|-------|-------|-------|
| GDP per head (\$ ppp) | 6 626 | 7 169 | 7 664 | 8 350 |
| GDP % real change pa | 10,05 | 5,09 | 4,66 | 7,33 |
| Government Consumption(% of GDP) | 15,09 | 16,44 | 17,69 | 16,89 |
| Budget Balance (% of GDP) | 2,37 | 3,08 | 1,65 | 1,63 |
| Consumer prices (% change pa) | 20,81 | 21,60 | 15,96 | 13,63 |
| Public Debt (% of GDP) | 62,15 | 49,35 | 42,01 | 34,80 |
| Labour Costs per hour (USD) | 0,44 | 0,63 | 0,78 | 1,00 |
| Recorded Unemployment (%) | 10,49 | 9,03 | 8,00 | 8,47 |
| Current Account Balance/ GDP | 18,04 | 10,95 | 8,65 | 9,02 |
| Foreign Exchange Reserves | 24264 | 32542 | 44053 | 73174 |

EIU, 2004