TECHNOLOGY AND INNOVATION COMPETITIVENESS
In The Eastern and Southeastern Europe

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About NAUTAR:

NAUTAR is a management consultancy company focused on knowledge and innovation driven business strategies. NAUTAR was established in 2002 and registered under number **080409355** (MBS) at the Company Registration Court in Zagreb, Croatia. Corporate and tax identification number **1603299** (MB) is assigned by Croatian State Bureau of Statistics. The main activity of the company is listed under 74.14.0 NACE code. Ownership structure is private.

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I. INTRODUCTION

In the last two decades nowhere in Europe social development and economic growth have been as impressive and durable as in the countries of Eastern Europe. They have gone through an extraordinary turnaround from state-controlled economies and political dictatorships to social-market economies and pluralistic democracies. They have also created an attractive market of some 500 million consumers and became the engine of exceptional dynamism, mobility and flexibility. As result, 12 of them acceded to the European Union and gave greater heft to Europe's economic and political ambitions in the world. However, a continuation of the good economic performance and rise in prosperity in Central and Eastern Europe should not be taken for granted. The current global financial crisis and economic downturn, adverse demographic developments and under-utilization of human capital, as well as a persistent brain-drain and inadequate investment in education and skills, represent threats to the innovation capacity and competitiveness of the region, especially to the long term prospects and sustainability of those countries that are left out of the European Union.

The economy has gone through a number of profound changes in recent decades. The decrease in the costs of diffusing and using information, the shortening of product cycles, driven both by an accelerating pace of technological change and rapidly shifting consumer patterns, the progressing internationalization and liberalization of exchanges and interactions (commercial, financial, cultural, etc.) are some of the developments that are transforming the determinants of competitiveness and wealth creation. These ongoing structural changes are reshaping societies, summed up in terms such as *information society* and *knowledge economy*. In the last few years, and even more strengthened by the recent crisis, the concept of innovation driving economic growth and competitiveness has gained increased importance. Here, innovation is not meant just about creating high-tech products or companies. Nor is it just about research which leads to the creation of new products. Innovation refers to new processes and ways of doing things, as much as it does to new products. Furthermore, the generation of new knowledge and ideas does not necessarily lead to a successful innovation. The productive interaction between and among companies, academia and the government is critical for transforming new knowledge and ideas into commercially viable products, economic growth and improved wellbeing. These interactions are captured in the concepts of *triple helix and innovation systems*. Finally, innovation is not limited to science but has to be extended to students, entrepreneurs, companies, and even the public sector.

The growing importance and the ability of companies, institutions and countries to innovate, have far-reaching implications for their strategy, both in the private and public sector. The critical questions is what policymakers, business leaders, scholars, and entrepreneurs can do, either separately or acting together, to catalyze innovation (and hence grow and increase their competitiveness) and improve *innovation capacity of* their economies. Without continued foreign direct investments and support, the countries of the Eastern Europe region are all facing challenges to their current and long-term economic growth and competitiveness. But EE countries like Albania, Bosnia and Herzegovina, Kosovo, Macedonia, Moldova, Montenegro, Serbia and Ukraine, still not members of the European Union, as well as Armenia, Azerbaijan and Georgia in the Caucasus, are confronted with a number of issues which pose serious potential threats to their stability and long-term social and economic development. They are in the

various phases of transitioning from the factor and efficiency driven towards innovation driven economies. They are also in the different policy reforms momentum, specifically in regard to the transition from the planned to market economies, restructuring of public and financial systems, educational and institutional structures, and information and communication infrastructure. Where available, WEF competitiveness ranking show fairly uneven and very spotty indicators of their micro and macroeconomic environment, quality of institutions and social tissue. While these countries were generally experiencing high economic growth and rapid convergence to EU levels in the recent past, there is concern over the sustainability of the reforms undertaken so far.

The same applies to the major indicators of their innovation capacity, technology readiness and human capital. All of those countries are looking to innovation and information technology policies as pivotal for tackling the structural challenges facing their economies as they are striving for sustainable development. Most of them are small, open economies (with the exception of Ukraine which have a large domestic market) vulnerable and exposed to the global trends, including the most recent investment decline and economic downturn. Traditionally, they had close commercial ties with each other across the EE sub-regions but they have failed so far to develop cross-regional complementarities and synergy potentials of their individual economic strengths. They tend to have well-educated labor forces but with significant high-tech inclusion gaps and modern skills far below the requirements of modern process and manufacturing technologies. They had significant capacity for R&D but traditional state owned vertical institutions and weak networking connections with and low contribution of the private sector. Countries' individual ability to develop, nurture and utilize their human capital through productivity and demographic dynamics therefore remains under question. In light of these indicators and given the asynchronous regional development within Europe, countries of Eastern Europe still have an opportunity to continue with economically strong, highly integrated and dynamic regional specialization processes, cross-border clusters and public-private partnerships that will attract large foreign direct investment flows.

The purpose of this paper is to introduce (i) the concept of technology and innovation competitiveness; (ii) the current technology readiness and innovation capacity competitiveness performance indicators for the subset of the Eastern European countries; and (iii) the potential for strengthening technology and innovation competitiveness through sub-regional cooperation. The paper is prepared for the audience of the **4th Annual Regional Conference on Competitiveness and Economic Growth** organized by USAID in Kyiv, Ukraine, June 16-18, 2009. The paper is structured as indicated in the table of contents. After explaining innovation and competitiveness in general and the importance of innovation capacity and technology readiness for the sustainable development, we present a brief overview of technology and innovation competitiveness indicators for the specific subset of countries from the Eastern Europe. We then identify some of the opportunities for strengthening technology and innovation competitiveness on the country basis.

II. TECHNOLOGY AND INNOVATION COMPETITIVENESS

IMPORTANCE OF TECHNOLOGY

Throughout the history, **technology** has been the single most important economic factor of labor productivity and therefore a major contributor to creation of human wealth. Ability of an economy or nation to adopt existing technologies to enhance its productivity became the critical differentiator and an essential element of their capacity to compete and prosper. In today's world, information and communication technologies (ICT) are those that have evolved into the technology of "general purpose". Given its rapid and effective spillovers to all economic sectors, and its role as an efficient infrastructure for commercial global transactions, ICT itself became one of most prosperous industries of modern times. Equally importantly, ICT has proven to be instrumental for enabling developing and other economies in transition to leapfrog to higher stages of development by fostering economic and social transformation.

Technology has also an important impact on development of **innovation capacity** of societies and economies. This occurs in three main stages. In the first stage new technology *substitutes* the old one. The second stage of impact occurs when the new technology is *adopted* across society. In the *third* stage new lifestyles and businesses emerge because the new technology is *diffused* widely in society. This is the current stage of transformation that society and economy undergo today with the new Internet-based information and communication technologies. ICT increasingly affects and transforms a wide range of organizational and business innovation activities, from internal research, development and education up to design and marketing of products and services. There is also growing evidence that ICT is boosting innovation by allowing creative thinking and responsive problem-solving thus becoming an important learning enabler for societies and companies and providing opportunities for all. However, the use of technology in a country has to be distinguished from its own ability to innovate and expand the frontiers of nation's knowledge.

Access to the global resources and markets through the networked economy became an important success factor of the world's most **competitive** economies and societies. For particular country competitiveness it is less important whether high technologies have been developed within its national borders. The more important is for individuals, companies and institutions operating in the country to have an easy access to advanced technology inventions and the ability to use them. That's why many evangelized modern governments have promoted their *e-strategies*, projects and initiatives intending to overcome widening internal and international *digital divide*, especially in the smaller and emerging countries. Business leaders believe that by investing in ICT their companies will be able to achieve strong growth and penetrate new markets with new business models and processes. Nevertheless ICT has also attracted and created lot of expectations, sometimes improbable and naïve as in the dot-com frenzy in mid 1990s. The consecutive Internet investment crash has only proven that the same basic business rules apply to ICT as to any other economic factor.

IMPORTANCE OF INNOVATION

Innovation in general refers to new way of doing something, a novel solution to a new problem or to the successful exploitation of new ideas. In economy, an innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations (*OECD, 2005*). To become an innovation it must be replicable at an economical cost and must satisfy a specific need. Innovation involves deliberate application of information, imagination, and initiative in deriving greater or different value from resources. In business, innovation results often from the application of a scientific or technical idea in decreasing the gap between the needs or expectations of the customers and the performance of a firm's products. Although many innovations are created from *inventions*, it is possible to innovate without inventing, and to invent without innovating. In a social context, innovation is equally important in devising new collaborative methods or structures that lead to positive change and amplified creativity, improved learning and ultimately to the increased wealth.

Innovation is the single most **important** engine of long-term competitiveness. More than half the total growth in output of the developed world results from innovation and the proportion is increasing as the economy becomes ever more knowledge-intensive. The capacity to apply new knowledge in order to improve productivity relies not only on scientific inventiveness and entrepreneurial flair of a nation but on the market conditions which restrict or permit, encourage and sustain innovative creativity. Effective policy-making depends on authoritative analysis of the multiple institutional and regulatory levers which stimulate or stifle company-level innovation. For modern governments, innovation will be the primary driver of successful industrial and enterprise policy, but also policies in areas such as education, employment and taxation. Innovation is also **pervasive** and **diverse**. It takes place in firms of all size, in every region and in every sector, not just in 'naturally innovative' high-tech sectors such as biotechnology and information technology. Innovation policy which focuses exclusively on high technology therefore risks missing the much larger opportunities for improved competitiveness and new products and processes in more traditional industries, which remain major employers. New knowledge is not only created through research and development. It is also acquired as a result of investment in plant and machinery, and most importantly through human resources development.

Innovation is also unevenly **distributed**. The innovation performance of countries, and of different regions and sectors within individual countries, very widely varies. Innovative capacity of industry is highly skewed towards larger firms but there are a growing number of lively and dynamic technology-based SMEs. Many are making a vital contribution to technological progress, are achieving great success in international markets, and are growing rapidly. But SMEs tend to lack both the internal resources and the external networks necessary for easy access to the knowledge, skills, technologies and finance on which innovation depends. Furthermore, technology oriented SMEs are disproportionately affected by many institutional barriers and costs. Innovation tends to be **systemic** rather than linear. That means, the process of innovation is fairly multidimensional and involves many different players. Successful innovation may entail a transfer of technology but the speed and the success of the transfer almost

certainly depend on conditions in the local and national *innovation environment*. Innovation capacity therefore requires the development of highly interconnected and well functioning *innovation systems*. They serve to ensure the intensive flow of information between companies, researchers, entrepreneurs, investors, consultants, patent agents, local authorities and other intermediaries. Such systems are *de facto* networks of individuals and proximity is their important feature.

Nevertheless, the most important element of innovation competitiveness is *technological innovation*. Although significant advantages can be gained by investing in institutions, building infrastructures, improving macroeconomic stability, or enhancing the human capital of the population, all these factors eventually have diminishing returns. The same applies for the labor, financial and goods markets efficiency. Long term, productivity can be increased and standard of living expanded only with technological innovation. This is particularly important for advanced economies approaching the limits of internal knowledge, since the possibility of integrating exogenous technologies tends to disappear. Less-advanced countries can still improve their productivity by adopting existing technologies or making incremental improvements in other areas. But countries that have reached the innovation stage of development, increase in productivity is no longer sufficient. These countries must design and develop cutting-edge products and processes to maintain at a competitive edge. This requires an environment beneficial to innovative activity and supported by both the public and private sectors. More precisely, this means ample investments in research and development, high-quality scientific research institutions, extensive collaboration in research between universities and industry, and the effective protection of intellectual property.

IMPORTANCE OF COMPETITIVENESS

Competitiveness is defined as the set of institutions, policies, and factors that determine the level of productivity of a country (*Porter, 1990*). The level of *productivity* defines the level of *prosperity* that can be earned by an economy. In other words, more competitive economies are able to produce higher levels of income for their citizens. Since productivity also determines the return on investments in an economy, and returns are the fundamental determinants of the growth, a more competitive country is one that is going to grow faster over the medium to long run. The concept of country competitiveness thus involves static and dynamic components: *level of income* and economy's *growth potential*. Competitiveness is therefore fundamental for sustainable prosperity of a nation. While GDP per capita may swing over time due to certain macroeconomic shifts, political developments, resource prices and flow of foreign investments, the only reliable basis of true prosperity remains in the productive potential of a nation's economy. While sound macroeconomic policies and management remains important for governments, their central focus should be on competitiveness.

Importance of competitiveness has got widespread international acceptance in the last decade, but is still not necessarily well understood. The most perceptive misunderstanding of competitiveness is in measuring how successful a country is in gaining the global market share for its products. Because one country's success comes at the expense of others, this makes global competitiveness a zero-sum game. This view of competitiveness is used sometimes to justify government interventions in favor of local

economy, including subsidies, restraints on local wages, and intervention in local currency exchange value. These interventions tend to be seen as incentives for domestic export, but in fact drain national income and drag public policies away from focus on the most productive use of the national resources. True competitiveness is measured only by productivity. Productivity of an economy, measured by the value of goods and services produced per unit of the nation's human, capital, and natural resources, depends both on the value of a nation's products and services and the efficiency with which they can be produced. Higher productivity supports high wages, a strong currency, attractive returns to capital and with them a high standard of living and prosperity.

Because many nations are able to improve their prosperity by improving productivity, the global economy is not a zero-sum game. Improving productivity will raise the value of products produced, improve local incomes and ultimately expand the global pool of new demand that has to be met. Globalization has increased the returns to productivity by opening up scalable new markets for competitive countries. Globalization has also effectively raised the costs of low productivity, reducing the ability of a protected local market to sustain in low productivity business or provide high wages for less-skilled employees. The central challenge here is to create the market conditions in which companies and employees throughout an economy can upgrade their productivity while maintaining reasonable costs of living and the costs of doing business in the country.

MEASURING TECHNOLOGY AND INNOVATION COMPETITIVENESS

Assessing a country's strengths and weaknesses in technology and innovation competitiveness is challenging because of the sheer number and variety of existing influencing factors. Most of the available competitiveness measurement models confront this complexity through the use of a combination of market surveys and hard statistical data. The dependent variable used in developing these models is the level of GDP per capita, adjusted for purchasing power parity (PPP). GDP per capita is the broadest measure of national productivity and is strongly linked over time to a nation's standard of living. However, GDP of a country can also be influenced by a wide array of short-term and idiosyncratic factors such as natural disasters, macroeconomic shocks, and price movements in dominant export industries. Since a wide variety of internal company, external business environment and cluster conditions affect technology and innovation competitiveness, it can also be explained and measured through some microeconomic fundamentals. GDP per employee or GDP per hour worked are therefore also used as dependent variable for productivity in specific technology and innovation activities.

The *technology competitiveness performance* is assessed predominantly through the ICT readiness indicators. Those indicators try to capture presence of ICT conducive components, by taking into consideration a number of features of the broad business environment (i.e. accessibility of digital content), some regulatory aspects (i.e. laws related to ICT), and the soft and hard infrastructure for ICT (i.e. number of telephone lines and Internet servers); the degree of preparation needed for individuals (i.e. Internet access to schools), business sector (i.e. quality of management schools) and the government (i.e. government prioritization of ICT) to use ICT; and the actual use of ICT by the above three stakeholders. Dimensions of *innovation capacity performance* are captured mostly through the

main external indicators of innovation (i.e. the availability of high-skilled and educated people, availability of finance for innovation projects and the support of governments for innovation activities; internal indicators (i.e. innovation efforts that firms undertake through investments, entrepreneurial and collaboration efforts among innovating firms and public sector, intellectual property generated as a throughput in the innovation process); and outputs of the innovation activities (as the number of firms that have introduced innovations onto the market or internally, patentable technological and non-technological innovations and their economic effects etc.).

There is a wide variety and substantial amount of reports and indexes evaluating the technology and innovation competitiveness performance of nations and regions. The reports usually include quantitative indicators and qualitative analysis. The most important reports are regularly published by the World Economic Forum (*Global Competitiveness Report, Lisbon Review* and *Global Information Technology Report* with INSEAD), European Commission (*European Competitiveness Report*, *European Innovation Scoreboard*), IMD (*World Competitiveness Yearbook*), UNCTAD (*Information Economy Report*) and OECD (*Science, Technology and Industry Scoreboard*). An index may stand for two different things; either a single numerical value that combines a number of quantitative indicators or a set of indicators of which no common value is defined. The most important competitiveness indexes available are: GCI - *Global Competitiveness Index* (World Economic Forum), *Networked Readiness Index* (World Economic Forum and INSEAD), *Innovation Index* (Porter & Stern), *The European Competitiveness Index* (The Huggins Associates) and *Euro-Creativity Index* (Florida & Tinagli).

The vast amount of statistical data behind those reports and indexes rely very much on standard international statistical databases maintained by the OECD, EUROSTAT, World Bank and ITU. This data is collected from the national statistical bureaus and institutes and depend very much on their accuracy and standards applied for its collection. The most reliable comprehensive data comes through the OECD and EUROSTAT sources, but unfortunately they do not capture the inputs from the most of RCI focus countries in the Eastern and Southeastern Europe (Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Kosovo, Macedonia, Moldova, Montenegro, Serbia and Ukraine). On the other hand statistics from the World Bank and ITU manage to cover most of the focus countries, but very often data is missing, is outdated or not accurate and entirely reliable. In some cases of newly established countries like Kosovo and Montenegro, data is very hard to find at all. In these particular cases the only sources of information are random market surveys or empirical evidences. Having all this in mind, this paper relies as a rule on the data and analysis published by World Economic Forum in the *Global Competitiveness Report 2008-2009*, *Global Information Technology Report 2008-2009* and *The Lisbon Review 2008*.

SUMMARY

Technology in general and information and communication technologies (ICT) in particular have proven to be critically important as key enabler of socioeconomic progress and development, enhancing productivity and economic growth, bringing prosperity in many ways. ICT is increasingly revolutionizing production processes, access to markets and information sources together with social interactions.

Innovation is the single most important engine of long-term competitiveness. The growing importance and the ability of companies, institutions and countries to innovate, have far-reaching implications for their strategy. The critical questions is what policymakers, business leaders, scholars, and entrepreneurs can do, either separately or acting together, to catalyze both public and private sector *innovation environment* (and hence grow and increase their competitiveness) and improve *innovation capacity of* their economies.

Competitiveness is fundamental for sustainable prosperity of a nation. More competitive economies are able to produce higher levels of income for their citizens. More competitive country is one that is likely to grow faster than others over the medium to long run. The central challenge for policymakers is to create the market conditions in which companies and employees throughout an economy can upgrade their productivity while maintaining reasonable costs of living and of doing business in the country.

Assessing a country's strengths and weaknesses in technology and innovation competitiveness is challenging because of the number and variety of existing dynamically changing influencing factors, numerous inconsistent reports and indexes as well as of the quality and availability of statistical and real market data.

III. TECHNOLOGY AND INNOVATION COMPETITIVENESS PERFORMANCE OF THE EASTERN AND SOUTHEASTERN EUROPEAN COUNTRIES

TECHNOLOGY READINESS PERFOMANCE

The technology readiness performance indicates the agility with which an economy adopts existing technologies to enhance the productivity of its industries. It consists of many different indicators like availability of latest technologies in the country or firm-level technology absorption as well as some hard statistical data like laws related to ICT, FDI and technology transfer, mobile phone and broadband subscribers, number of Internet and PC users among the population.

In the *Global Competitiveness Report 2008-2008* the best technology competitiveness performance above all other Eastern and Southeastern European countries in RCI focus is reported for **Montenegro**. Although this country is showing up in the GCR for the first time ever as the standalone country and economy[1], it managed to get a high rank of 43 and position itself as a *follower* to global technology competitiveness *leaders*, and in front of some more advanced Eastern European countries like Romania,

[1] Montenegro has been previously referenced as 'Serbia and Montenegro' or 'Federal Republic of Yugoslavia'.

Croatia or Poland. The main drivers for this ranking were relatively large numbers of PCs and mobile phones in use by its population, while some other technology indicators are within the averages of the RCI focus group. Montenegro is followed by a group of *moderate* performers (ranks 50-74) led by Serbia, then Ukraine and Azerbaijan. The group of *catching-up* countries (ranks 75-99) is led by Macedonia FYR, and then Albania, Moldova and Georgia. The weakest performers are Bosnia and Herzegovina and Armenia as they are clearly the *laggards* in this (and not only this) category (*Table 1*).

Table 1: GCR 2008-2009 Technological Readiness Rankings

Rankings - Technological readiness

Country/Economy	Rank	Score
Montenegro	43	3.96
Serbia	61	3.45
Ukraine	65	3.38
Azerbaijan	72	3.23
Macedonia, FYR	83	3.05
Albania	92	2.89
Moldova	95	2.85
Georgia	97	2.80
Bosnia and Herzegovina	109	2.61
Armenia	112	2.56

Closer look into the indicators of technology readiness index shows that countries of the group have different and uneven technology strengths. The overall leader in this category Montenegro leads the group in only one specific category – number of PC *per capita*. On the other hand, Azerbaijan outperforms the entire group in three categories - availability of latest technologies, firm-level technology absorption and laws related to ICT. Serbia scores above all in FDI and technology transfer and broadband Internet subscribers. Ukraine leads in relative number of mobile phone subscribers while Bosnia and Herzegovina has more Internet users *per capita* than other RCI focus countries.

The *Global Information Technology Report 2008-2009* shows a bit different picture of technology readiness performance of the same group of countries. In this report the group of RCI focus countries is relatively weaker in performance than in the GCR, since most of them are positioned as relatively *moderate* and *catching up*, while three of them are listed as *laggards*. Outside of other competitiveness indicators, the best score and the best ranking in the *Networked Readiness Index 2008-2009* is shown by **Azerbaijan** who managed to improve its rank year-over-year and come up as 60. The most important contributors to this score are clearly the advancements that Azerbaijan has achieved in the ICT related *political and regulatory environment* and government both *readiness* and *usage* of ICT. Azerbaijan is followed by Ukraine, Montenegro and Macedonia FYR. Serbia[2] is showing up as 84 for the first time in the *NRI* while Georgia and Moldova are showing stagnant trend with 90-100 ranking. Albania, Bosnia and Herzegovina and Armenia are again at the bottom of the list with stagnant or declining *laggard* positions over 100 (*Table 2*).

[2] Montenegro has been previously referenced as 'Serbia and Montenegro' or 'Federal Republic of Yugoslavia'.

Table 2: Networked Readiness Index 2008–2009 and 2007-2008 Rankings (of total 134 countries)

RCI Rank	NRI 2008-2009 Rank	NRI 2007-2008 Rank	Country/Economy	2008-2009 Score
1.	60.	67.	Azerbaijan	3.93
2.	62.	70.	Ukraine	3.88
3.	71.	n/a	Montenegro	3.79
4.	79.	83.	Macedonia, FYR	3.67
5.	84.	n/a	Serbia	3.62
6.	88.	91.	Georgia	3.48
7.	99.	96.	Moldova	3.30
8.	105.	108.	Albania	3.23
9.	106.	95.	Bosnia and Herzegovina	3.23
10.	114.	106.	Armenia	3.06

Just like with the *GCR,* closer look into the NRI sub-indexes and pillar indicators reveals a bit more dynamic picture of strengths and weaknesses of the specific countries in the group. While Azerbaijan shows most consistent performance across the spectrum of indicators, it's been outperformed in the *market environment* by Georgia; in the *infrastructure environment* by Montenegro, Ukraine, Macedonia, Serbia, FYR and Moldova; in the *individual readiness* by Ukraine, Serbia, Macedonia FYR, Bosnia and Herzegovina and Georgia; and in the *individual usage* by almost all countries of the group but Georgia and Armenia (*Table 3*).

Table 3: Top performers on each pillar of the Networked Readiness Index 2008–2009 (134 countries)

Country/Economy	Environment			Readiness			Usage		
	Market	Regulator	Infra.	Individual	Business	Govrnmt	Individual	Business	Govrnmt
Azerbaijan	63.	54.	81.	78.	61.	40.	94.	55.	35.
Ukraine	90.	95.	43.	51.	80.	74.	59.	71.	56.
Montenegro	67.	89.	30.	88.	91.	78.	43.	97.	101.
Macedonia, FYR	83.	97.	63.	70.	81.	68.	50.	109.	93.
Serbia	114.	98.	53.	59.	77.	85.	58.	113.	98.
Georgia	53.	91.	96.	77.	115.	77.	100.	101.	90.
Moldova	118.	76.	80.	106.	121.	97.	80.	87.	103.
Albania	110.	114.	116.	91.	118.	86.	82.	120.	106.
Bosnia and Herzegovina	122.	122.	92.	73.	108.	122.	71.	108.	129.
Armenia	120.	116.	86.	109.	111.	116.	108.	111.	125.

Unfortunately the technology readiness performance data were not available for Kosovo.

INNOVATION CAPACITY PERFORMANCE

The innovation capacity performance indicates the quality and determination within an economy environment to become and sustain being conducive to innovative activity, supported by both the public and private sectors. In particular, this means sufficient investment in research and development (R&D) especially by the private sector, the presence of high-quality scientific research institutions, availability of scientists and engineers, extensive collaboration in research between universities and industry, government procurement of advanced technology products, and the protection of intellectual property through utility patents.

By the *Global Competitiveness Report 2008-2009* the clear leader in technology innovation among the RCI focus group of countries is **Azerbaijan**. With the rank 40 and total score of 3.53 (<7) it became one of the global technology innovation *followers* ahead of many European countries like Hungary and Italy or even Russia. The key driver for this position of Azerbaijan is definitely the public sector and its contribution to the quality of the national innovation system. Azerbaijan is followed by Ukraine and Serbia as *moderate* innovators and then Montenegro and Macedonia as *catching-up*. The rest of the group is clearly lagging behind, since ranking in between Armenia (106) and Albania (132), just in front of the two most obvious *laggards* among global innovators – Bolivia and Paraguay (*Table 4*).

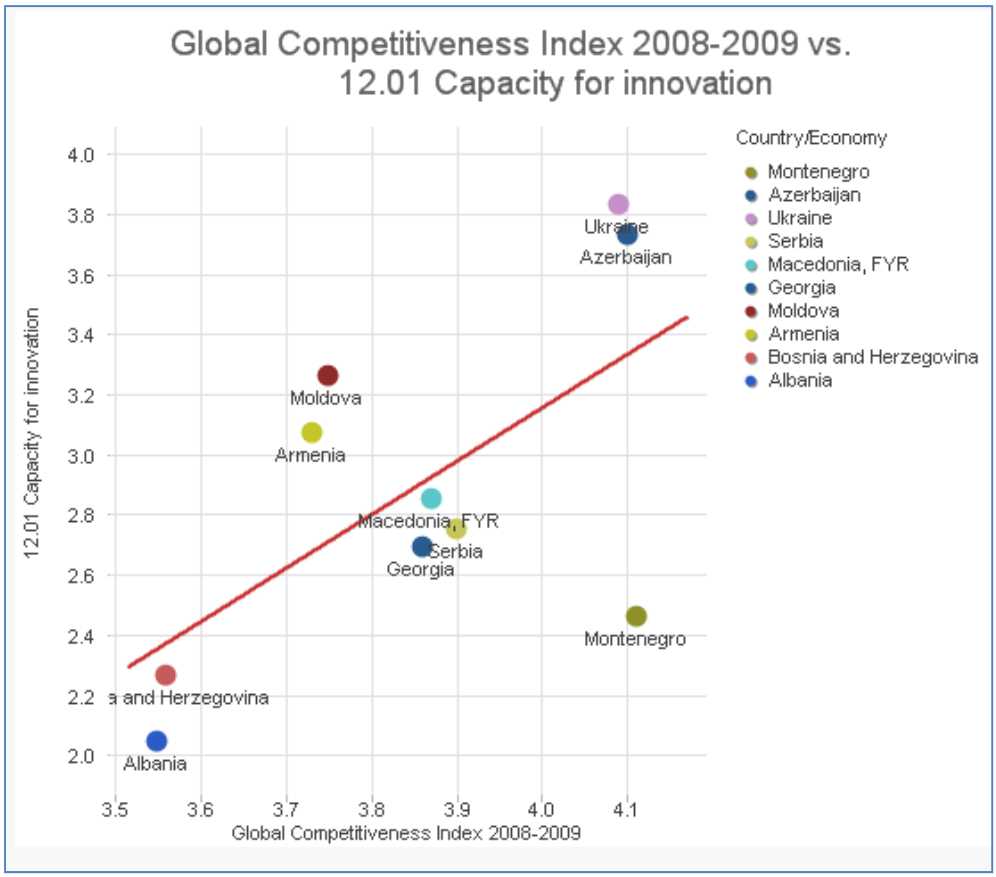
Table 4: GCR 2008-2009 Innovation Rankings

Rankings - Innovation

Country/Economy	Rank	Score
Azerbaijan	40	3.53
Ukraine	52	3.40
Serbia	70	3.09
Montenegro	88	2.96
Macedonia, FYR	99	2.86
Armenia	106	2.77
Georgia	107	2.74
Moldova	116	2.61
Bosnia and Herzegovina	128	2.37
Albania	132	2.22

Azerbaijan is also a clear winner in the RCI focus group when it comes to many specific innovation indicators, like quality of scientific and research institutions, university-industry research collaboration, government's procurement of advanced technology products and availability of scientists and engineers. The only innovation indicators in which Azerbaijan was outperformed by other countries were number of utility patents (Georgia), company spending on R&D and capacity for innovation (Ukraine). A slightly different picture is generated when the *GCR 2008-2009* scores are compared with the specific innovation capacity indicator rankings. In this case **Ukraine** is showing better innovation capacity competitiveness than Azerbaijan, while Moldova and Armenia, normally less competitive countries get distinctively more attention on their innovation capacity performance compared with others in the group (*Table 5*).

Table 5



More complex picture on innovation capacity performance of RCI focus group countries is created when we look into the *Lisbon Review 2008* report. The *Lisbon Review* has been designed to report on progress of EU member countries, candidate countries and potential EU candidate countries against *EU Lisbon Strategy* goals, improve Europe's productivity and competitiveness through various policy initiatives, including the ones in the area of innovation, information technology, research and development. In this report, RCI focus group countries are listed among other non-EU European and Central Asian countries and spread throughout the ranking of the 16 comparators.

Here **Montenegro** again leads the group (2nd), based on a number of strengths i.e. financial services and sustainable development. This is perhaps linked to the critical importance of tourism for its economy. **Azerbaijan** is the second (3rd) ranked country from the group. Its clear competitive strength is in social inclusion, with a low unemployment rate and a high female participation rate in the labor force, although the quality and quantity of education require improvements. Also notable is the enterprise environment (2nd), with many improvements made in recent years to streamline the business start-up environment in particular. The country is also ranked 2nd for the development of the information society, with high government prioritization in this area, although ICT penetration rates still remain somewhat low by

international standards. On the other hand, the greatest weaknesses are seen in the low levels of innovation and R&D (ranked 6th) and poor network industries (also 6th). **Ukraine** comes third (7th) of the countries in the area since seen the strongest of them all in the innovation and R&D, where it also outperforms the EU accession 12 average. **Georgia** is rated fourth (8th) since its great performance in the enterprise environment, where ranked first and remarkably outperforming even the EU15 average. On the other hand, there are many areas for improvement, notably in better promoting the development of information societies, among others. **Macedonia FYR** gets fifth (9th) thanks to some comparative strength, such as comparatively high ranking for financial services (4th). **Moldova** made to sixth (10th) position for its solid performance in the enterprise environment and social inclusion. **Serbia** scored seventh (11th) due to the above average performance in the areas like information society and network industries. **Armenia** came eighth (13th) with no particular scoring highlights except performance in the financial services. The last two ranked countries shown in the table are **Albania** (15th) and **Bosnia and Herzegovina** (16th). These countries trail all comparators by a wide margin, with Albania ranked last in three areas (innovation, financial services and sustainable development) and Bosnia and Herzegovina ranked last of all countries in two areas (enterprise environment and the lack of social inclusion) (*Table* 6) .

Table 6

Table 6: Rankings and Scores of Non-EU European and Central Asian Economies

	Final Index		Subindexes															
			Information Society		Innovation and R&D		Liberalization		Network Industries		Financial Services		Enterprise Environment		Social Inclusion		Sustainable Development	
Economy	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Croatia	1	4.10	1	3.69	3	3.41	4	4.05	1	4.98	2	4.70	11	4.19	7	4.03	2	3.78
Montenegro	2	3.96	4	3.27	7	3.15	2	4.22	5	3.93	1	4.88	12	4.07	5	4.11	1	4.08
Azerbaijan	3	3.88	2	3.45	6	3.24	3	4.16	6	3.89	5	4.05	2	4.60	2	4.38	3	3.30
Turkey	4	3.82	3	3.34	5	3.25	1	4.51	4	4.18	3	4.57	3	4.51	14	3.30	9	2.89
Russian Federation	5	3.82	9	3.16	2	3.62	10	3.71	2	4.45	10	3.88	10	4.22	1	4.41	6	3.08
Kazakhstan	6	3.70	6	3.19	4	3.33	7	3.89	9	3.68	8	3.97	4	4.44	3	4.18	8	2.96
Ukraine	7	3.69	7	3.18	1	3.66	11	3.66	3	4.20	12	3.78	9	4.23	4	4.17	14	2.64
Georgia	8	3.66	11	2.88	9	2.90	5	3.96	10	3.56	6	4.00	1	4.96	9	3.80	5	3.22
Macedonia, FYR	9	3.53	8	3.17	12	2.78	6	3.91	8	3.82	4	4.05	6	4.42	15	3.29	11	2.84
Moldova	10	3.50	10	3.00	10	2.82	12	3.62	11	3.49	9	3.92	8	4.34	8	3.89	10	2.89
Serbia	11	3.44	5	3.20	8	3.00	13	3.62	7	3.82	11	3.80	14	3.89	12	3.53	13	2.65
Tajikistan	12	3.35	13	2.75	13	2.73	8	3.72	16	2.80	14	3.54	15	3.89	6	4.07	4	3.25
Armenia	13	3.29	16	2.48	11	2.79	9	3.71	13	3.19	7	3.99	13	3.94	10	3.74	15	2.46
Kyrgyz Republic	14	3.23	15	2.63	14	2.72	16	3.41	15	2.83	15	3.38	5	4.43	13	3.48	7	2.98
Albania	15	3.12	14	2.70	16	2.37	15	3.42	14	2.93	16	3.28	7	4.38	11	3.65	16	2.24
Bosnia and Herzegovina	16	3.12	12	2.83	15	2.43	14	3.47	12	3.45	13	3.63	16	3.46	16	2.92	12	2.74
EU27	-	4.73	-	4.53	-	4.18	-	4.90	-	5.32	-	5.41	-	4.71	-	4.66	-	4.11
EU15	-	5.07	-	4.86	-	4.62	-	5.22	-	5.77	-	5.79	-	4.86	-	4.92	-	4.47
Accession 12	-	4.31	-	4.13	-	3.62	-	4.51	-	4.75	-	4.93	-	4.52	-	4.34	-	3.67

The Lisbon Review 2008 © 2008 World Economic Forum

Unfortunately the innovation capacity performance data were not available for Kosovo.

COMPETITIVENESS PERFORMANCE

The measurement of the competitiveness performance relies on a broad and complex concept structured by World Economic Forum around the academic work of Harvard Business School professor Michael Porter and his theory of competitiveness. For the purpose of this paper, it's appropriate to explain competitiveness as ability of an organization to perform efficiently and successfully on the market over a longer period of time. It comes as an end result of many different but interdependent and closely inter-related activities that tend to economically reinforce each other. For example, innovation is not possible without institutions that guarantee intellectual property rights, cannot be performed in a country with poorly educated and trained labor, and will never take place in economy with inefficient market or without extensive and efficient infrastructure.

The *Global Competitiveness Index 2008-2009* aggregates 12 different pillars of competitiveness into a single index. Since those pillars affect countries of different stage of development in a different way, they are consolidated in the three main groups to reflect adequately a country competitiveness status. Those groups are the following: **Basic requirements** (Institutions, Infrastructure, Macroeconomic stability and Health and primary education); **Efficiency enhancers** (Higher education and training, Goods market efficiency, Labor market efficiency, Financial market sophistication, Technological readiness and Market size); and **Innovation and sophistication factors** (Business sophistication and Innovation). *Basic requirement* performance is important for a country that competes on their factor endowments, like the unskilled labor and natural resources, and this economy is called **factor-driven**. On the other hand, indicators of *efficiency enhancers'* performance is important for more developed countries competing on efficient production processes and increased product quality, and this stage of economy development is called **efficiency-driven**. And finally, *innovation and sophistication factors'* performance is relevant for more wealthy countries competing through new and unique products and services, and this economy is **innovation-driven**. More sophisticated indicators will also identify economies in **transition** from one stage to another.

When this model is applied to RCI focus group of countries (*Table 7*) we are getting the following results:

Table 7: List of Countries/Economies Stage of Development

Stage 1 factor-driven	Transition from 1 to 2	Stage 2 efficiency-driven	Transition from 2 to 3	Stage 3 innovation-driven
Moldova	Armenia	Albania		
	Azerbaijan	Bosnia and Herzegovina		
	Georgia	Macedonia, FYR		
		Montenegro		
		Serbia		
		Ukraine		

As seen from the above table, most of the countries in focus are recognized by GCI as *efficiency-driven* economies. Some of them (Armenia, Azerbaijan and Georgia) are in transition stage from *factor* to *efficiency-driven* economies, while Moldova is categorized as the only *factor-driven* economy in the group. To keep up with their competitiveness, *factor-driven* economies have to focus primarily on well-functioning public and private institutions, well-developed infrastructure, a stable macroeconomic framework, and a healthy and literate workforce. In the *efficiency-driven* economies competitiveness is increasingly dependent on higher education and training, efficient goods markets, well-functioning labor markets, sophisticated financial markets, a large domestic or foreign market, and the ability to utilize the benefits of existing technologies. *Innovation-driven* economies may maintain their competitive position by focusing on innovation, production of new and different goods and by using the most sophisticated production processes. Further on, it will be interesting to analyze how RCI focus countries are performing in competitiveness relative to their stage of development and to the key enablers of competitiveness identified at the particular stage.

In the *Global Competitiveness Index 2008-2009* ranking (*Table 8*) most of the RCI focus countries are concentrated in the *moderate* (50-74) and *catching-up* (75-99) categories. Only Bosnia and Herzegovina and Albania are falling behind the group and rank over 100 with other *laggards* (up to the total of 134 countries seized by the GCR). The best global competitiveness rank within the group again got **Montenegro** (65th). With total score of 4.11 Montenegro outperforms other *efficiency-driven* economies in macroeconomic stability, health and primary education, financial market sophistication and technological readiness while lags behind in infrastructure and size of the market. **Azerbaijan** ranks second (69th) driven by results in innovation and labor market efficiency while lags slightly behind the average *transition efficiency-driven* economy in health and primary education, market size and goods market efficiency. **Ukraine** has got third (72nd) by outperforming other *efficiency-driven* economies in higher education and training, market size and innovation while fall behind in quality of institutions and macroeconomic stability. **Serbia** is ranked fourth (85) thanks to the above the average *efficiency-driven* economy performance in health and primary education and labor market efficiency while stays short in infrastructure, institutions, business sophistication and goods market efficiency.

Macedonia FYR came up fifth (89th) for its competitive performance in macroeconomic stability and health and primary education while is insufficient in infrastructure, business sophistication, market size, technical readiness and labor market efficiency compared with other *efficiency-driven* economies. **Georgia** is sixth (90th) with over performing in labor market efficiency while staying behind in most of other indicators of competitiveness, especially innovation, market size and technological readiness, compared to *transition efficiency-driven* economies. **Moldova** comes up seventh (95th) by being more competitive than other *resource-driven* economies in macroeconomic stability, health and primary education, higher education and training, labor market efficiency and technology readiness while falling behind in market sophistication, market size and innovation. **Armenia** has got to eight (97th) but remained under the performance of *transition efficiency-driven* economies in all the competitiveness indicators but labor market efficiency. **Bosnia and Herzegovina** is ranked ninth (107th) with similar performance as Armenia but within the category of *efficiency-driven* economies, specifically behind in infrastructure and innovation capacity. And finally **Albania** ranked tenth (108th) for being behind the

efficiency-driven economies in all competitiveness indicators but labor market efficiency, being specifically weak in infrastructure and innovation.

Table 8: Global Competitiveness Index 2008-2009 Rankings

Rankings - Global Competitiveness Index 2008-2009		
Country/Economy	Rank	Score
Montenegro	65	4.11
Azerbaijan	69	4.10
Ukraine	72	4.09
Serbia	85	3.90
Macedonia, FYR	89	3.87
Georgia	90	3.86
Moldova	95	3.75
Armenia	97	3.73
Bosnia and Herzegovina	107	3.56
Albania	108	3.55

When looking for the best performing country in the RCI focus group by *GCI 2008 Sub-Index and Pillar* (*Table 9*), we discover that **Montenegro** (an *efficiency-driven* economy) scores the best in the *Basic Requirements Sub-Index*, **Ukraine** (an *efficiency-driven* economy) scores best in the *Efficiency enhancers Sub-Index* and **Azerbaijan** (a *transition* from *factor* to *efficiency-driven* economy) in the *Innovation and sophistication factors Sub-Index*. When it comes to best performing countries by 12 pillars of competitiveness, the results are the following: **Montenegro** ranks as the best in 5 pillars: *Institutions*, *Health and primary education, Goods market efficiency*, *Financial market sophistication* and *Technological readiness;* **Ukraine** as the best in 3 pillars *Higher education and training, Market size* and *Business sophistication*; **Azerbaijan** in 2 pillars *Infrastructure* and Innovation; **Macedonia FYR** in the pillar *Macroeconomic stability* and **Georgia** in the pillar *Labor market efficiency*.

Finally, there are many specific hard data (statistics) and soft data (survey) indicators that may give us an opportunity to analyze further down, bellow the pillar level, in search for specific country competitive strengths or weaknesses. For example, the pillar *Macroeconomic stability* is aggregated from the following indicators:

Macroeconomic stability	Macedonia, FYR
3.01 Government surplus/deficit*	Montenegro
3.02 National savings rate*	Azerbaijan
3.03 Inflation*	Bosnia and Herzegovina
3.04 Interest rate spread*	Bosnia and Herzegovina

This level and detail of analysis would require an additional report and therefore will not be exercised within the scope of this paper.

Table 9: Best RCI Performers Per GCI Sub-Index and Pillar Category

Pillars of Global Competitiveness Index 2008	Country/Economy
Basic requirements Sub-Index	**Montenegro**
Institutions	Montenegro
Infrastructure	Azerbaijan
Macroeconomic stability	Macedonia, FYR
Health and primary education	Montenegro
Efficiency enhancers Sub-Index	**Ukraine**
Higher education and training	Ukraine
Goods market efficiency	Montenegro
Labor market efficiency	Georgia
Financial market sophistication	Montenegro
Technological readiness	Montenegro
Market size	Ukraine
Innovation and sophistication factors Sub-Index	**Azerbaijan**
Business sophistication	Ukraine
Innovation	Azerbaijan

Unfortunately, competitiveness performance data were not available for Kosovo.

SOME KEY COUNTRY INDICATORS

ALBANIA

Key indicators

Population (millions), 2007	*3.2*
GDP (PPP) per capita (int'l $), 2007	*6,298*
Internet users per 100 population, 2006	*15.0*
Internet bandwidth (mB/s) per 10,000 population, 2006	*n/a*
Mobile telephone subscribers per 100 population, 2007	*72.1*

Networked Readiness Index

Edition (number of economies)	*Rank*
2008–2009 (134)	*105*
2007–2008 (127)	*108*
2006–2007 (122)	*107*

ARMENIA

Key indicators

Population (millions), 2007	*3.0*
GDP (PPP) per capita (int'l $), 2007	*4,946*
Internet users per 100 population, 2006	*5.7*
Internet bandwidth (mB/s) per 10,000 population	*n/a*
Mobile telephone subscribers per 100 population, 2005	*10.5*

Networked Readiness Index

Edition (number of economies)	*Rank*
2008–2009 (134)	*114*
2007–2008 (127)	*106*
2006–2007 (122)	*96*

AZERBAIJAN

Key indicators

Population (millions), 2007	*8.6*
GDP (PPP) per capita (int'l $), 2007	*7,618*
Internet users per 100 population, 2007	*12.2*
Internet bandwidth (mB/s) per 10,000 population, 2007	*7.1*
Mobile telephone subscribers per 100 population, 2007	*50.8*

Networked Readiness Index

Edition (number of economies)	*Rank*
2008–2009 (134)	*60*
2007–2008 (127)	*67*
2006–2007 (122)	*71*

BOSNIA AND HERZEGOVINA

Key indicators

Population (millions), 2007	*3.8*
GDP (PPP) per capita (int'l $), 2007	*7,074*
Internet users per 100 population, 2007	*26.8*
Internet bandwidth (mB/s) per 10,000 population, 2007	*5.1*
Mobile telephone subscribers per 100 population, 2007	*62.3*

Networked Readiness Index

Edition (number of economies)	*Rank*
2008–2009 (134)	*106*
2007–2008 (127)	*95*
2006–2007 (122)	*89*

GEORGIA

Key indicators

Population (millions), 2007	*4.4*
GDP (PPP) per capita (int'l $), 2007	*4,694*
Internet users per 100 population, 2007	*8.2*
Internet bandwidth (mB/s) per 10,000 population, 2005	*0.1*
Mobile telephone subscribers per 100 population, 2006	*38.4*

Networked Readiness Index

Edition (number of economies)	*Rank*
2008–2009 (134)	*88*
2007–2008 (127)	*91*
2006–2007 (122)	*93*

KOSOVO

Key indicators

Population (millions), 2007	***2.1***
GDP (PPP) per capita (int'l $), 2007 est.	*2.300*
Internet users per 100 population, 2007 est.	*n/a*
Internet bandwidth (mB/s) per 10,000 population, 2005	*n/a*
Mobile telephone subscribers per 100 population, 2006 est.	*37*

Networked Readiness Index

Edition (number of economies)	*Rank*
2008–2009 (134)	*n/a*
2007–2008 (127)	*n/a*
2006–2007 (122)	*n/a*

MACEDONIA, FYR

Key indicators

Population (millions), 2007	*2.0*
GDP (PPP) per capita (int'l $), 2007	*8,491*
Internet users per 100 population, 2007	*20.4*
Internet bandwidth (mB/s) per 10,000 population, 2007	*0.2*
Mobile telephone subscribers per 100 population, 2007	*95.5*

Networked Readiness Index

Edition (number of economies)	*Rank*
2008–2009 (134)	*79*
2007–2008 (127)	*83*
2006–2007 (122)	*81*

MOLDOVA

Key indicators

Population (millions), 2007	***3.8***
GDP (PPP) per capita (int'l $), 2007	*2,897*
Internet users per 100 population, 2007	*18.5*
Internet bandwidth (mB/s) per 10,000 population, 2007	*9.3*
Mobile telephone subscribers per 100 population, 2007	*49.6*

Networked Readiness Index

Edition (number of economies)	*Rank*
2008–2009 (134)	*99*
2007–2008 (127)	*96*
2006–2007 (122)	*92*

MONTENEGRO

Key indicators

Population (millions), 2007	***0.6***
GDP (PPP) per capita (int'l $), 2007	*9,238*
Internet users per 100 population, 2007	*46.8*
Internet bandwidth (mB/s) per 10,000 population, 2006	*12.5*
Mobile telephone subscribers per 100 population, 2006	*107.3*

Networked Readiness Index

Edition (number of economies)	*Rank*
2008–2009 (134)	*71*
2007–2008 (127)	*n/a*
2006–2007 (122)	*n/a*

SERBIA

Key indicators

Population (millions), 2007	*7.4*
GDP (PPP) per capita (int'l $), 2007	*10,071*
Internet users per 100 population, 2007	*15.2*
Internet bandwidth (mB/s) per 10,000 population, 2007	*21.4*
Mobile telephone subscribers per 100 population, 2007	*85.7*

Networked Readiness Index

Edition (number of economies)	*Rank*
2008–2009 (134)	*84*
2007–2008 (127)	*n/a*
2006–2007 (122)	*n/a*

UKRAINE

Key indicators

Population (millions), 2007	46.4
GDP (PPP) per capita (int'l $), 2007	6,968
Internet users per 100 population, 2007	21.6
Internet bandwidth (mB/s) per 10,000 population, 2005	0.2
Mobile telephone subscribers per 100 population, 2007	119.6

Networked Readiness Index

Edition (number of economies)	Rank
2008–2009 (134)	**62**
2007–2008 (127)	**70**
2006–2007 (122)	**75**

IV. CONCLUSIONS

This paper has explored the technology and innovation competitiveness of eleven RCI focus countries from Eastern and Southeastern Europe: Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Kosovo, Macedonia FYR, Moldova, Montenegro, Serbia and Ukraine. We have assessed the performance of these countries in the Global Competitiveness Report 2008-2009, Global Information Technology Report 2008-2009 and Lisbon Review 2008. Our goal was to explain the basic methodological concept and importance of technology and innovation competitiveness, describe the status of competitiveness in these countries, identify their competitive strengths and weaknesses and without in-depth analysis try to benchmark their performance against each other and, where necessary, other EU and Eastern Europe countries.

Our research has shown that there are some similarities but also many differences among these countries in terms of their technology and innovation competitive potential. Most of those countries fell into the categories of *moderate* and *catching-up* countries, by being ranked between 50-100 on the *Global Competitiveness Index* or *Global Networked Index*. Their economies are mostly in the *transition* from *factor-driven* to *efficiency-driven* and in the *efficiency-driven* stage of development. Most of them consistently fail to address the most critical factors and enablers of their competitive momentums and exhibit a wide range of inconsistent performance indicators across the competitiveness pillars spectrum, without being really focused on the most important ones.

On the other hand this group of countries is really hard to compare and benchmark, since they represent a wide spectrum of economic, political and historic patterns. Countries from the Southeastern Europe tend to be easier to compare, but they have developed recently many economic and political differences that make that task almost impossible to accomplish. Montenegro stands apart for having achieved a relatively high level of competitiveness, which has been well sustained in recent years. Thus it is not surprising that EU is looking at Montenegro as the closest country from RCI focus group to accede to the European Union. Among other Southeastern European countries, such as Serbia and Macedonia FYR, competitive performance is much weaker and more mixed. These countries must continue their efforts to carry out reforms, making it possible for them to realize their goal of membership in the European Union. Finally, some SEE countries, like Albania, Bosnia and Herzegovina and Kosovo (not on the international data charts yet!), which have experienced much turbulence in recent years, are assessed as being very uncompetitive according to our research.

Other countries that have considerable difficulties in making the transition to a more market-based economy are those from the Caucasus region. Although Azerbaijan is clearly the sub-regional leader in competitiveness, much remains to be done in Georgia and Armenia to bring them to the average competitive level of Eastern Europe region, with a view to eventually achieving EU performance standards. However, despite diversity, our research has also shown that these countries share certain positive features in their competitive environments but also some common weaknesses in the quality of public institutions, particularly inadequate protection of property rights and the lack of an independent judiciary. These areas require immediate attention in order to move them closer to the more competitive countries of Europe.

Some of the Eastern European countries, like Ukraine and Moldova, excel in the quality of health and primary education, higher education and training, innovation and technology readiness but still fail to provide quality of institutions, stable macroeconomic environment, business sophistication and some much needed infrastructure to attract investors. Many of the structural and institutional reforms that are necessary tend to be difficult indeed for them to implement.

Overall, despite the many remaining challenges and current global and regional economic downturn, and in view of the strong efforts for reform already underway, with the unwavering support of the international community, we should remain positive about the potential for the future competitiveness of countries in the Eastern and Southeastern Europe.

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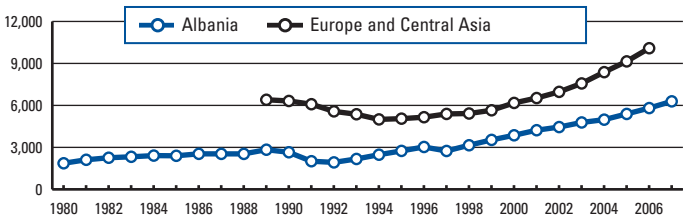
VI. APPENDIX

Albania

Key indicators

Total population (millions), 2007 .....3.2
GDP (US$ billions), 2007.....10.6
GDP per capita (US$), 2007 .....3,353.7
GDP (PPP) as share (%) of world total, 2007 .....0.03

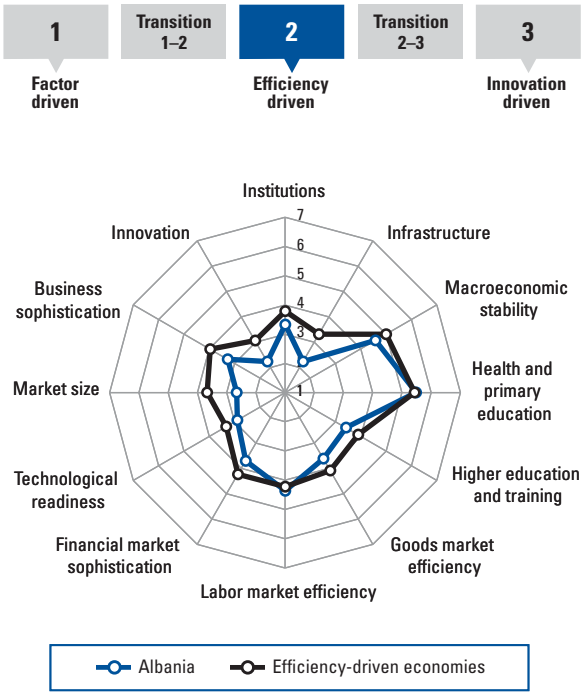
GDP (PPP US$) per capita, 1980–2007



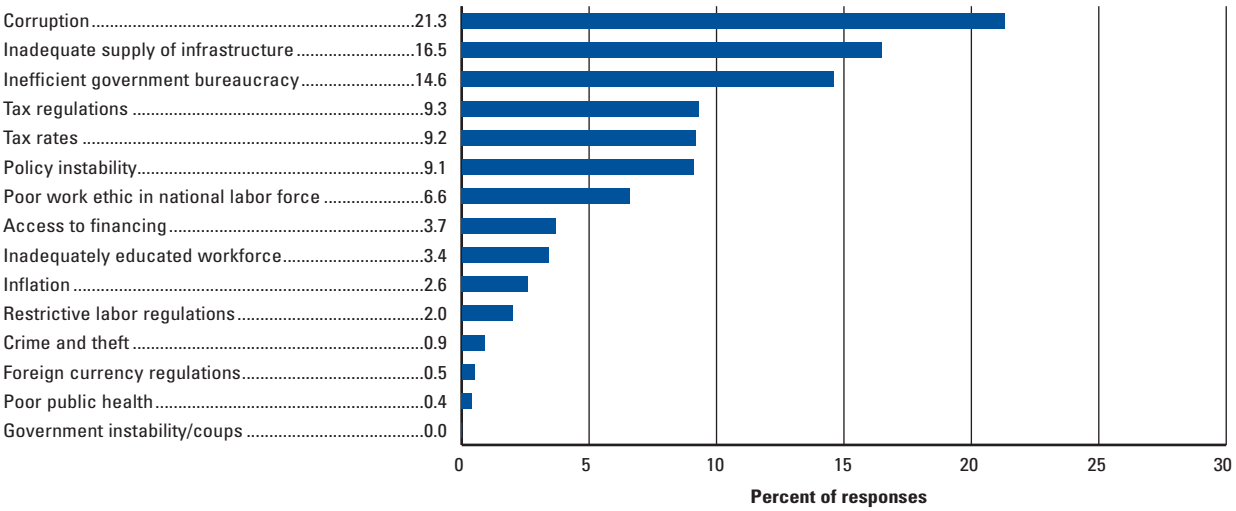
Global Competitiveness Index

	Rank (out of 134)	Score (1–7)
GCI 2008–2009	**108**	**3.6**
GCI 2007–2008 (out of 131)	109	3.5
GCI 2006–2007 (out of 122)	98	3.6
Basic requirements	**100**	**3.9**
1st pillar: Institutions	109	3.3
2nd pillar: Infrastructure	121	2.2
3rd pillar: Macroeconomic stability	96	4.6
4th pillar: Health and primary education	69	5.5
Efficiency enhancers	**99**	**3.4**
5th pillar: Higher education and training	97	3.4
6th pillar: Goods market efficiency	119	3.6
7th pillar: Labor market efficiency	67	4.4
8th pillar: Financial market sophistication	103	3.7
9th pillar: Technological readiness	92	2.9
10th pillar: Market size	106	2.7
Innovation and sophistication factors	**130**	**2.7**
11th pillar: Business sophistication	123	3.3
12th pillar: Innovation	132	2.2

Stage of development



The most problematic factors for doing business



Note: From a list of 15 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Albania

The Global Competitiveness Index in detail

■ Competitive **Advantage** ■ Competitive **Disadvantage**

	INDICATOR	RANK/134	
	1st pillar: Institutions		
1.01	Property rights	126	■
1.02	Intellectual property protection	124	■
1.03	Diversion of public funds	90	■
1.04	Public trust of politicians	105	■
1.05	Judicial independence	121	■
1.06	Favoritism in decisions of government officials	108	■
1.07	Wastefulness of government spending	89	■
1.08	Burden of government regulation	67	■
1.09	Efficiency of legal framework	117	■
1.10	Transparency of government policymaking	122	■
1.11	Business costs of terrorism	87	■
1.12	Business costs of crime and violence	77	■
1.13	Organized crime	101	■
1.14	Reliability of police services	81	■
1.15	Ethical behavior of firms	84	■
1.16	Strength of auditing and reporting standards	109	■
1.17	Efficacy of corporate boards	95	■
1.18	Protection of minority shareholders' interests	101	■
	2nd pillar: Infrastructure		
2.01	Quality of overall infrastructure	120	■
2.02	Quality of roads	114	■
2.03	Quality of railroad infrastructure	109	■
2.04	Quality of port infrastructure	124	■
2.05	Quality of air transport infrastructure	76	■
2.06	Available seat kilometers*	117	■
2.07	Quality of electricity supply	128	■
2.08	Telephone lines*	85	■
	3rd pillar: Macroeconomic stability		
3.01	Government surplus/deficit*	113	■
3.02	National savings rate*	110	■
3.03	Inflation*	47	■
3.04	Interest rate spread*	105	■
3.05	Government debt*	94	■
	4th pillar: Health and primary education		
4.01	Business impact of malaria	62	■
4.02	Malaria incidence*	1	■
4.03	Business impact of tuberculosis	44	■
4.04	Tuberculosis incidence*	37	■
4.05	Business impact of HIV/AIDS	56	■
4.06	HIV prevalence*	23	■
4.07	Infant mortality*	64	■
4.08	Life expectancy*	76	■
4.09	Quality of primary education	74	■
4.10	Primary enrollment*	65	■
4.11	Education expenditure*	99	■
	5th pillar: Higher education and training		
5.01	Secondary enrollment*	88	■
5.02	Tertiary enrollment*	83	■
5.03	Quality of the educational system	80	■
5.04	Quality of math and science education	62	■
5.05	Quality of management schools	113	■
5.06	Internet access in schools	101	■
5.07	Local availability of research and training services	124	■
5.08	Extent of staff training	71	■

	INDICATOR	RANK/134	
	6th pillar: Goods market efficiency		
6.01	Intensity of local competition	127	■
6.02	Extent of market dominance	126	■
6.03	Effectiveness of anti-monopoly policy	125	■
6.04	Extent and effect of taxation	68	■
6.05	Total tax rate*	77	■
6.06	No. of procedures required to start a business*	75	■
6.07	Time required to start a business*	86	■
6.08	Agricultural policy costs	114	■
6.09	Prevalence of trade barriers	63	■
6.10	Trade-weighted tariff rate*	65	■
6.11	Prevalence of foreign ownership	111	■
6.12	Business impact of rules on FDI	116	■
6.13	Burden of customs procedures	103	■
6.14	Degree of customer orientation	107	■
6.15	Buyer sophistication	109	■
	7th pillar: Labor market efficiency		
7.01	Cooperation in labor-employer relations	46	■
7.02	Flexibility of wage determination	45	■
7.03	Non-wage labor costs*	94	■
7.04	Rigidity of employment*	61	■
7.05	Hiring and firing practices	27	■
7.06	Firing costs*	85	■
7.07	Pay and productivity	10	■
7.08	Reliance on professional management	103	■
7.09	Brain drain	104	■
7.10	Female participation in labor force*	76	■
	8th pillar: Financial market sophistication		
8.01	Financial market sophistication	126	■
8.02	Financing through local equity market	132	■
8.03	Ease of access to loans	71	■
8.04	Venture capital availability	101	■
8.05	Restriction on capital flows	103	■
8.06	Strength of investor protection*	123	■
8.07	Soundness of banks	104	■
8.08	Regulation of securities exchanges	134	■
8.09	Legal rights index*	3	■
	9th pillar: Technological readiness		
9.01	Availability of latest technologies	104	■
9.02	Firm-level technology absorption	110	■
9.03	Laws relating to ICT	103	■
9.04	FDI and technology transfer	97	■
9.05	Mobile telephone subscribers*	74	■
9.06	Internet users*	73	■
9.07	Personal computers*	92	■
9.08	Broadband Internet subscribers*	117	■
	10th pillar: Market size		
10.01	Domestic market size*	99	■
10.02	Foreign market size*	115	■
	11th pillar: Business sophistication		
11.01	Local supplier quantity	121	■
11.02	Local supplier quality	120	■
11.03	State of cluster development	126	■
11.04	Nature of competitive advantage	125	■
11.05	Value chain breadth	123	■
11.06	Control of international distribution	91	■
11.07	Production process sophistication	93	■
11.08	Extent of marketing	92	■
11.09	Willingness to delegate authority	117	■
	12th pillar: Innovation		
12.01	Capacity for innovation	134	■
12.02	Quality of scientific research institutions	133	■
12.03	Company spending on R&D	133	■
12.04	University-industry research collaboration	134	■
12.05	Gov't procurement of advanced tech products	119	■
12.06	Availability of scientists and engineers	115	■
12.07	Utility patents*	88	■

* Hard data

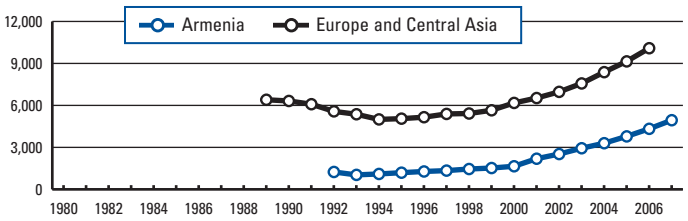
Note: For further details and explanation, please refer to the section "How to Read the Country/Economy Profiles" at the beginning of this chapter.

Armenia

Key indicators

Total population (millions), 2007 .....3.0
GDP (US$ billions), 2007.....8.0
GDP per capita (US$), 2007 .....2,297.5
GDP (PPP) as share (%) of world total, 2007 .....0.03

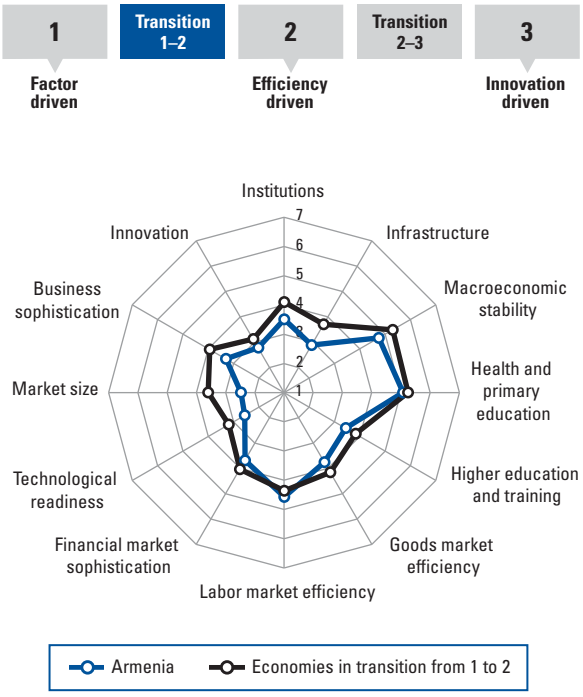
GDP (PPP US$) per capita, 1980–2007



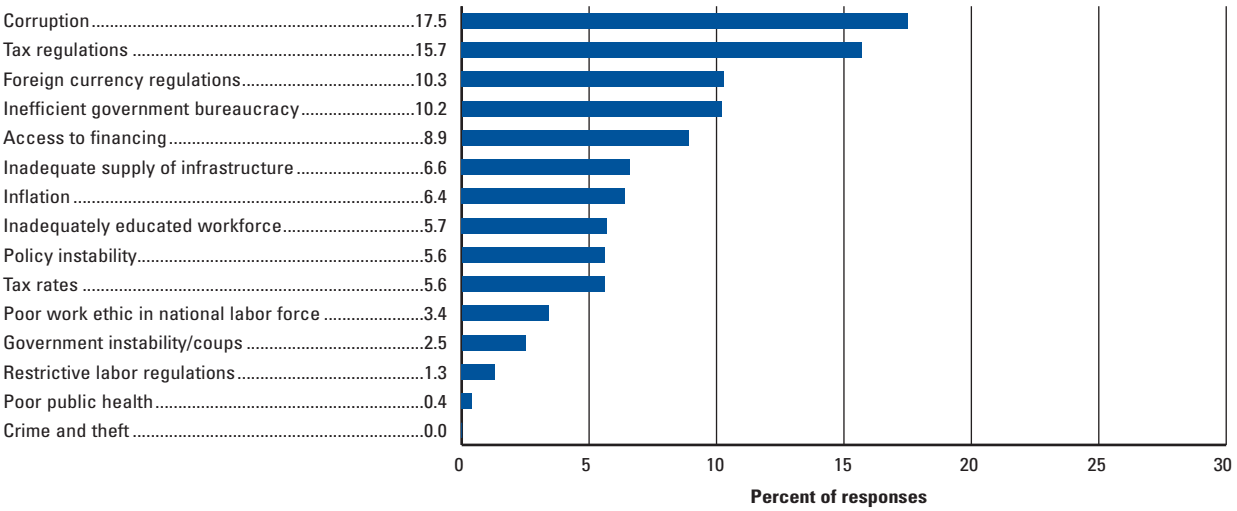
Global Competitiveness Index

	Rank (out of 134)	Score (1–7)
GCI 2008–2009	**97**	**3.7**
GCI 2007–2008 (out of 131)	93	3.8
GCI 2006–2007 (out of 122)	80	3.9
Basic requirements	**93**	**4.0**
1st pillar: Institutions	96	3.5
2nd pillar: Infrastructure	90	2.9
3rd pillar: Macroeconomic stability	83	4.7
4th pillar: Health and primary education	97	5.1
Efficiency enhancers	**103**	**3.4**
5th pillar: Higher education and training	94	3.4
6th pillar: Goods market efficiency	110	3.7
7th pillar: Labor market efficiency	45	4.6
8th pillar: Financial market sophistication	107	3.7
9th pillar: Technological readiness	112	2.6
10th pillar: Market size	111	2.5
Innovation and sophistication factors	**113**	**3.0**
11th pillar: Business sophistication	120	3.3
12th pillar: Innovation	106	2.8

Stage of development



The most problematic factors for doing business



Note: From a list of 15 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Armenia

The Global Competitiveness Index in detail

■ Competitive **Advantage** ■ Competitive **Disadvantage**

	INDICATOR	RANK/134	
	1st pillar: Institutions		
1.01	Property rights	69	
1.02	Intellectual property protection	108	
1.03	Diversion of public funds	110	
1.04	Public trust of politicians	104	
1.05	Judicial independence	123	
1.06	Favoritism in decisions of government officials	94	
1.07	Wastefulness of government spending	77	
1.08	Burden of government regulation	71	
1.09	Efficiency of legal framework	97	
1.10	Transparency of government policymaking	103	
1.11	Business costs of terrorism	33	■
1.12	Business costs of crime and violence	32	■
1.13	Organized crime	67	
1.14	Reliability of police services	95	
1.15	Ethical behavior of firms	115	
1.16	Strength of auditing and reporting standards	97	
1.17	Efficacy of corporate boards	123	
1.18	Protection of minority shareholders' interests	124	
	2nd pillar: Infrastructure		
2.01	Quality of overall infrastructure	91	
2.02	Quality of roads	79	
2.03	Quality of railroad infrastructure	83	
2.04	Quality of port infrastructure	115	
2.05	Quality of air transport infrastructure	85	
2.06	Available seat kilometers*	99	
2.07	Quality of electricity supply	89	
2.08	Telephone lines*	65	
	3rd pillar: Macroeconomic stability		
3.01	Government surplus/deficit*	103	
3.02	National savings rate*	38	■
3.03	Inflation*	61	
3.04	Interest rate spread*	117	
3.05	Government debt*	26	■
	4th pillar: Health and primary education		
4.01	Business impact of malaria	67	
4.02	Malaria incidence*	67	
4.03	Business impact of tuberculosis	69	
4.04	Tuberculosis incidence*	75	
4.05	Business impact of HIV/AIDS	49	■
4.06	HIV prevalence*	23	■
4.07	Infant mortality*	84	
4.08	Life expectancy*	87	
4.09	Quality of primary education	82	
4.10	Primary enrollment*	109	
4.11	Education expenditure*	97	
	5th pillar: Higher education and training		
5.01	Secondary enrollment*	57	
5.02	Tertiary enrollment*	65	
5.03	Quality of the educational system	98	
5.04	Quality of math and science education	76	
5.05	Quality of management schools	124	
5.06	Internet access in schools	103	
5.07	Local availability of research and training services	125	
5.08	Extent of staff training	117	

	INDICATOR	RANK/134	
	6th pillar: Goods market efficiency		
6.01	Intensity of local competition	132	
6.02	Extent of market dominance	133	
6.03	Effectiveness of anti-monopoly policy	132	
6.04	Extent and effect of taxation	84	
6.05	Total tax rate*	42	■
6.06	No. of procedures required to start a business*	58	
6.07	Time required to start a business*	38	■
6.08	Agricultural policy costs	30	■
6.09	Prevalence of trade barriers	104	
6.10	Trade-weighted tariff rate*	41	■
6.11	Prevalence of foreign ownership	84	
6.12	Business impact of rules on FDI	87	
6.13	Burden of customs procedures	122	
6.14	Degree of customer orientation	108	
6.15	Buyer sophistication	88	
	7th pillar: Labor market efficiency		
7.01	Cooperation in labor-employer relations	58	
7.02	Flexibility of wage determination	34	■
7.03	Non-wage labor costs*	80	
7.04	Rigidity of employment*	51	
7.05	Hiring and firing practices	16	■
7.06	Firing costs*	19	■
7.07	Pay and productivity	47	■
7.08	Reliance on professional management	125	
7.09	Brain drain	106	
7.10	Female participation in labor force*	41	■
	8th pillar: Financial market sophistication		
8.01	Financial market sophistication	107	
8.02	Financing through local equity market	112	
8.03	Ease of access to loans	120	
8.04	Venture capital availability	130	
8.05	Restriction on capital flows	60	
8.06	Strength of investor protection*	67	
8.07	Soundness of banks	88	
8.08	Regulation of securities exchanges	119	
8.09	Legal rights index*	52	
	9th pillar: Technological readiness		
9.01	Availability of latest technologies	116	
9.02	Firm-level technology absorption	109	
9.03	Laws relating to ICT	105	
9.04	FDI and technology transfer	92	
9.05	Mobile telephone subscribers*	123	
9.06	Internet users*	102	
9.07	Personal computers*	62	
9.08	Broadband Internet subscribers*	102	
	10th pillar: Market size		
10.01	Domestic market size*	106	
10.02	Foreign market size*	125	
	11th pillar: Business sophistication		
11.01	Local supplier quantity	114	
11.02	Local supplier quality	111	
11.03	State of cluster development	130	
11.04	Nature of competitive advantage	60	
11.05	Value chain breadth	94	
11.06	Control of international distribution	122	
11.07	Production process sophistication	103	
11.08	Extent of marketing	123	
11.09	Willingness to delegate authority	123	
	12th pillar: Innovation		
12.01	Capacity for innovation	68	
12.02	Quality of scientific research institutions	101	
12.03	Company spending on R&D	96	
12.04	University-industry research collaboration	116	
12.05	Gov't procurement of advanced tech products	122	
12.06	Availability of scientists and engineers	80	
12.07	Utility patents*	63	

* Hard data

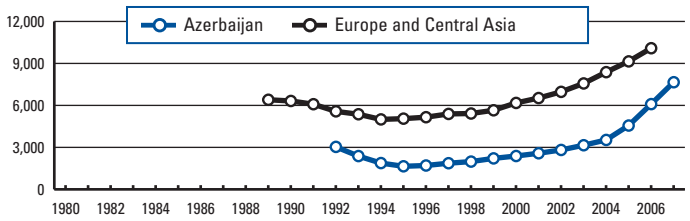
Note: For further details and explanation, please refer to the section "How to Read the Country/Economy Profiles" at the beginning of this chapter.

Azerbaijan

Key indicators

Total population (millions), 2007 ..... 8.5
GDP (US$ billions), 2007 ..... 31.3
GDP per capita (US$), 2007 ..... 3,662.9
GDP (PPP) as share (%) of world total, 2007 ..... 0.11

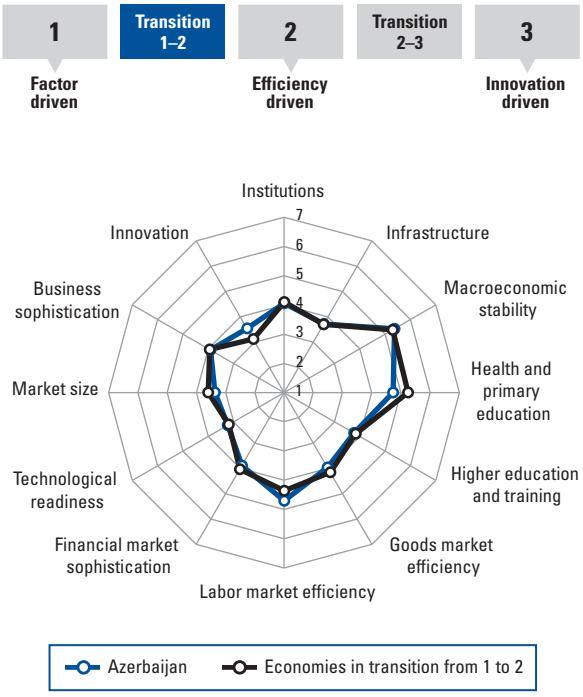
GDP (PPP US$) per capita, 1980–2007



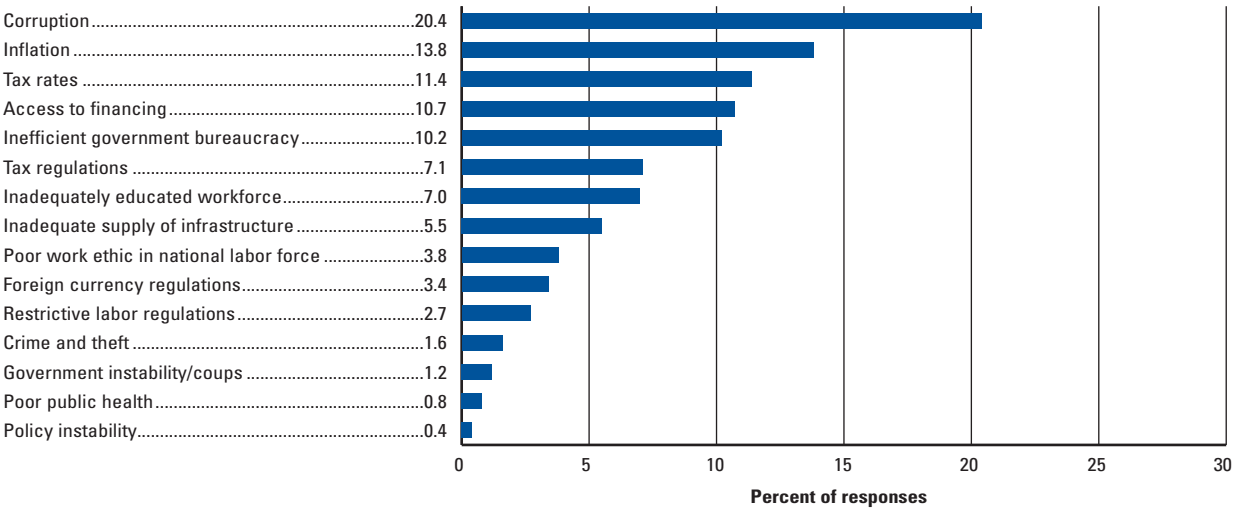
Global Competitiveness Index

	Rank (out of 134)	Score (1–7)
GCI 2008–2009	**69**	**4.1**
GCI 2007–2008 (out of 131)	66	4.1
GCI 2006–2007 (out of 122)	62	4.1
Basic requirements	**62**	**4.5**
1st pillar: Institutions	62	4.0
2nd pillar: Infrastructure	61	3.7
3rd pillar: Macroeconomic stability	45	5.3
4th pillar: Health and primary education	102	4.7
Efficiency enhancers	**79**	**3.8**
5th pillar: Higher education and training	80	3.8
6th pillar: Goods market efficiency	89	4.0
7th pillar: Labor market efficiency	34	4.7
8th pillar: Financial market sophistication	92	3.9
9th pillar: Technological readiness	72	3.2
10th pillar: Market size	73	3.4
Innovation and sophistication factors	**57**	**3.7**
11th pillar: Business sophistication	81	3.9
12th pillar: Innovation	40	3.5

Stage of development



The most problematic factors for doing business



Note: From a list of 15 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Azerbaijan

The Global Competitiveness Index in detail

■ Competitive **Advantage** ■ Competitive **Disadvantage**

	INDICATOR	RANK/134	
	1st pillar: Institutions		
1.01	Property rights	80	■
1.02	Intellectual property protection	69	■
1.03	Diversion of public funds	73	■
1.04	Public trust of politicians	43	■
1.05	Judicial independence	84	■
1.06	Favoritism in decisions of government officials	55	■
1.07	Wastefulness of government spending	55	■
1.08	Burden of government regulation	15	■
1.09	Efficiency of legal framework	64	■
1.10	Transparency of government policymaking	83	■
1.11	Business costs of terrorism	43	■
1.12	Business costs of crime and violence	24	■
1.13	Organized crime	68	■
1.14	Reliability of police services	59	■
1.15	Ethical behavior of firms	56	■
1.16	Strength of auditing and reporting standards	84	■
1.17	Efficacy of corporate boards	81	■
1.18	Protection of minority shareholders' interests	122	■
	2nd pillar: Infrastructure		
2.01	Quality of overall infrastructure	56	■
2.02	Quality of roads	59	■
2.03	Quality of railroad infrastructure	33	■
2.04	Quality of port infrastructure	58	■
2.05	Quality of air transport infrastructure	48	■
2.06	Available seat kilometers*	97	■
2.07	Quality of electricity supply	90	■
2.08	Telephone lines*	80	■
	3rd pillar: Macroeconomic stability		
3.01	Government surplus/deficit*	31	■
3.02	National savings rate*	2	■
3.03	Inflation*	130	■
3.04	Interest rate spread*	95	■
3.05	Government debt*	10	■
	4th pillar: Health and primary education		
4.01	Business impact of malaria	71	■
4.02	Malaria incidence*	76	■
4.03	Business impact of tuberculosis	78	■
4.04	Tuberculosis incidence*	77	■
4.05	Business impact of HIV/AIDS	64	■
4.06	HIV prevalence*	50	■
4.07	Infant mortality*	111	■
4.08	Life expectancy*	101	■
4.09	Quality of primary education	94	■
4.10	Primary enrollment*	105	■
4.11	Education expenditure*	103	■
	5th pillar: Higher education and training		
5.01	Secondary enrollment*	80	■
5.02	Tertiary enrollment*	95	■
5.03	Quality of the educational system	78	■
5.04	Quality of math and science education	92	■
5.05	Quality of management schools	119	■
5.06	Internet access in schools	49	■
5.07	Local availability of research and training services	67	■
5.08	Extent of staff training	39	■

	INDICATOR	RANK/134	
	6th pillar: Goods market efficiency		
6.01	Intensity of local competition	96	■
6.02	Extent of market dominance	105	■
6.03	Effectiveness of anti-monopoly policy	119	■
6.04	Extent and effect of taxation	38	■
6.05	Total tax rate*	60	■
6.06	No. of procedures required to start a business*	108	■
6.07	Time required to start a business*	69	■
6.08	Agricultural policy costs	57	■
6.09	Prevalence of trade barriers	102	■
6.10	Trade-weighted tariff rate*	73	■
6.11	Prevalence of foreign ownership	51	■
6.12	Business impact of rules on FDI	78	■
6.13	Burden of customs procedures	63	■
6.14	Degree of customer orientation	70	■
6.15	Buyer sophistication	90	■
	7th pillar: Labor market efficiency		
7.01	Cooperation in labor-employer relations	45	■
7.02	Flexibility of wage determination	49	■
7.03	Non-wage labor costs*	94	■
7.04	Rigidity of employment*	70	■
7.05	Hiring and firing practices	9	■
7.06	Firing costs*	35	■
7.07	Pay and productivity	46	■
7.08	Reliance on professional management	113	■
7.09	Brain drain	53	■
7.10	Female participation in labor force*	36	■
	8th pillar: Financial market sophistication		
8.01	Financial market sophistication	77	■
8.02	Financing through local equity market	117	■
8.03	Ease of access to loans	100	■
8.04	Venture capital availability	60	■
8.05	Restriction on capital flows	100	■
8.06	Strength of investor protection*	86	■
8.07	Soundness of banks	116	■
8.08	Regulation of securities exchanges	115	■
8.09	Legal rights index*	16	■
	9th pillar: Technological readiness		
9.01	Availability of latest technologies	56	■
9.02	Firm-level technology absorption	52	■
9.03	Laws relating to ICT	45	■
9.04	FDI and technology transfer	39	■
9.05	Mobile telephone subscribers*	87	■
9.06	Internet users*	88	■
9.07	Personal computers*	100	■
9.08	Broadband Internet subscribers*	110	■
	10th pillar: Market size		
10.01	Domestic market size*	80	■
10.02	Foreign market size*	62	■
	11th pillar: Business sophistication		
11.01	Local supplier quantity	84	■
11.02	Local supplier quality	88	■
11.03	State of cluster development	107	■
11.04	Nature of competitive advantage	46	■
11.05	Value chain breadth	70	■
11.06	Control of international distribution	50	■
11.07	Production process sophistication	47	■
11.08	Extent of marketing	82	■
11.09	Willingness to delegate authority	78	■
	12th pillar: Innovation		
12.01	Capacity for innovation	39	■
12.02	Quality of scientific research institutions	40	■
12.03	Company spending on R&D	67	■
12.04	University-industry research collaboration	47	■
12.05	Gov't procurement of advanced tech products	23	■
12.06	Availability of scientists and engineers	28	■
12.07	Utility patents*	67	■

* Hard data

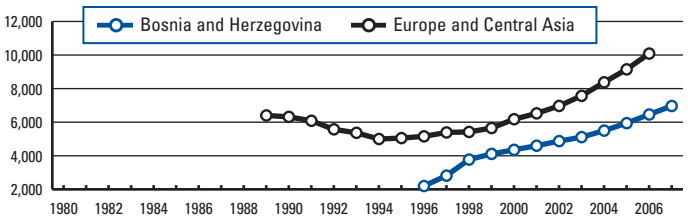
Note: For further details and explanation, please refer to the section "How to Read the Country/Economy Profiles" at the beginning of this chapter.

Bosnia and Herzegovina

Key indicators

Total population (millions), 2007 ..... 4.0
GDP (US$ billions), 2007 ..... 14.8
GDP per capita (US$), 2007 ..... 3,712.1
GDP (PPP) as share (%) of world total, 2007 ..... 0.00

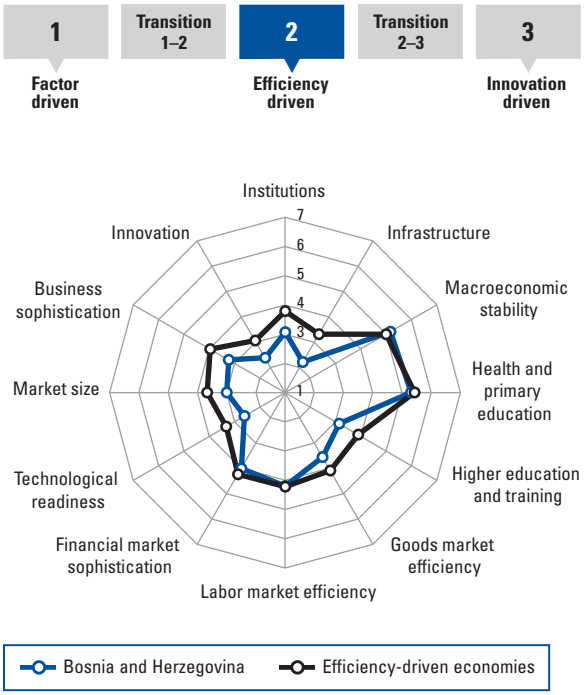
GDP (PPP US$) per capita, 1980–2007



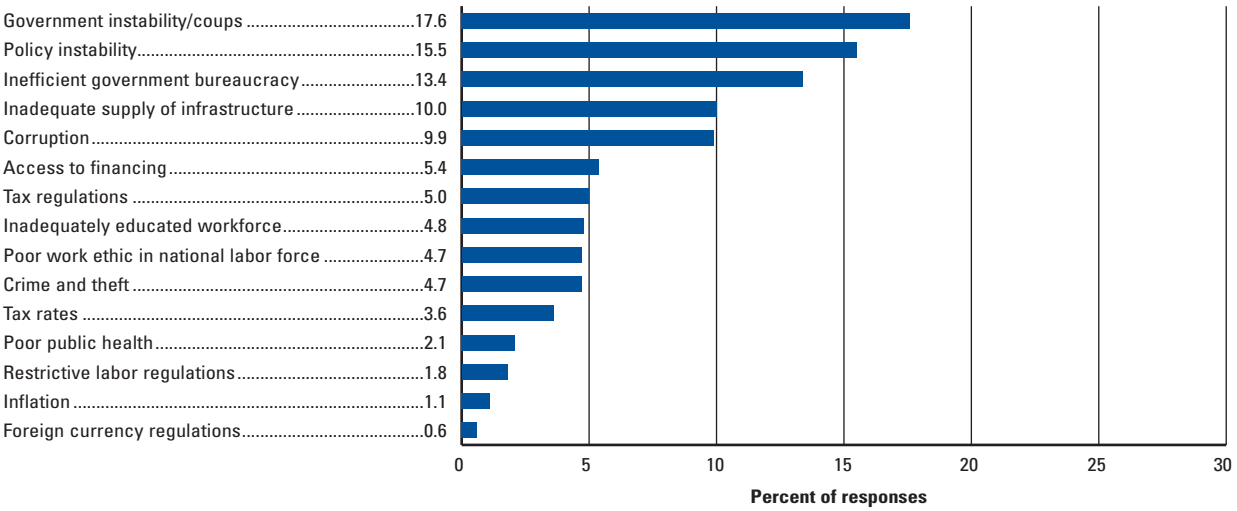
Global Competitiveness Index

	Rank (out of 134)	Score (1–7)
GCI 2008–2009	**107**	**3.6**
GCI 2007–2008 (out of 131)	106	3.6
GCI 2006–2007 (out of 122)	82	3.8
Basic requirements	**98**	**3.9**
1st pillar: Institutions	123	3.1
2nd pillar: Infrastructure	123	2.2
3rd pillar: Macroeconomic stability	57	5.2
4th pillar: Health and primary education	82	5.3
Efficiency enhancers	**102**	**3.4**
5th pillar: Higher education and training	109	3.1
6th pillar: Goods market efficiency	123	3.5
7th pillar: Labor market efficiency	85	4.2
8th pillar: Financial market sophistication	86	4.0
9th pillar: Technological readiness	109	2.6
10th pillar: Market size	92	3.0
Innovation and sophistication factors	**129**	**2.8**
11th pillar: Business sophistication	125	3.2
12th pillar: Innovation	128	2.4

Stage of development



The most problematic factors for doing business



Note: From a list of 15 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Bosnia and Herzegovina

The Global Competitiveness Index in detail

■ Competitive **Advantage** ■ Competitive **Disadvantage**

	INDICATOR	RANK/134	
	1st pillar: Institutions		
1.01	Property rights	121	■
1.02	Intellectual property protection	125	■
1.03	Diversion of public funds	75	■
1.04	Public trust of politicians	125	■
1.05	Judicial independence	116	■
1.06	Favoritism in decisions of government officials	124	■
1.07	Wastefulness of government spending	123	■
1.08	Burden of government regulation	129	■
1.09	Efficiency of legal framework	128	■
1.10	Transparency of government policymaking	130	■
1.11	Business costs of terrorism	23	■
1.12	Business costs of crime and violence	70	■
1.13	Organized crime	87	■
1.14	Reliability of police services	111	■
1.15	Ethical behavior of firms	130	■
1.16	Strength of auditing and reporting standards	121	■
1.17	Efficacy of corporate boards	129	■
1.18	Protection of minority shareholders' interests	130	■
	2nd pillar: Infrastructure		
2.01	Quality of overall infrastructure	127	■
2.02	Quality of roads	131	■
2.03	Quality of railroad infrastructure	104	■
2.04	Quality of port infrastructure	134	■
2.05	Quality of air transport infrastructure	132	■
2.06	Available seat kilometers*	130	■
2.07	Quality of electricity supply	60	■
2.08	Telephone lines*	54	■
	3rd pillar: Macroeconomic stability		
3.01	Government surplus/deficit*	79	■
3.02	National savings rate*	130	■
3.03	Inflation*	10	■
3.04	Interest rate spread*	38	■
3.05	Government debt*	59	■
	4th pillar: Health and primary education		
4.01	Business impact of malaria	63	■
4.02	Malaria incidence*	1	■
4.03	Business impact of tuberculosis	68	■
4.04	Tuberculosis incidence*	66	■
4.05	Business impact of HIV/AIDS	26	■
4.06	HIV prevalence*	1	■
4.07	Infant mortality*	56	■
4.08	Life expectancy*	42	■
4.09	Quality of primary education	57	■
4.10	Primary enrollment*	n/a	
4.11	Education expenditure*	n/a	
	5th pillar: Higher education and training		
5.01	Secondary enrollment*	110	■
5.02	Tertiary enrollment*	73	■
5.03	Quality of the educational system	92	■
5.04	Quality of math and science education	45	■
5.05	Quality of management schools	107	■
5.06	Internet access in schools	89	■
5.07	Local availability of research and training services	126	■
5.08	Extent of staff training	126	■

	INDICATOR	RANK/134	
	6th pillar: Goods market efficiency		
6.01	Intensity of local competition	98	■
6.02	Extent of market dominance	106	■
6.03	Effectiveness of anti-monopoly policy	134	■
6.04	Extent and effect of taxation	112	■
6.05	Total tax rate*	66	■
6.06	No. of procedures required to start a business*	103	■
6.07	Time required to start a business*	108	■
6.08	Agricultural policy costs	121	■
6.09	Prevalence of trade barriers	53	■
6.10	Trade-weighted tariff rate*	94	■
6.11	Prevalence of foreign ownership	100	■
6.12	Business impact of rules on FDI	128	■
6.13	Burden of customs procedures	92	■
6.14	Degree of customer orientation	110	■
6.15	Buyer sophistication	119	■
	7th pillar: Labor market efficiency		
7.01	Cooperation in labor-employer relations	102	■
7.02	Flexibility of wage determination	33	■
7.03	Non-wage labor costs*	60	■
7.04	Rigidity of employment*	93	■
7.05	Hiring and firing practices	20	■
7.06	Firing costs*	53	■
7.07	Pay and productivity	129	■
7.08	Reliance on professional management	133	■
7.09	Brain drain	119	■
7.10	Female participation in labor force*	17	■
	8th pillar: Financial market sophistication		
8.01	Financial market sophistication	120	■
8.02	Financing through local equity market	99	■
8.03	Ease of access to loans	96	■
8.04	Venture capital availability	113	■
8.05	Restriction on capital flows	85	■
8.06	Strength of investor protection*	67	■
8.07	Soundness of banks	96	■
8.08	Regulation of securities exchanges	97	■
8.09	Legal rights index*	16	■
	9th pillar: Technological readiness		
9.01	Availability of latest technologies	123	■
9.02	Firm-level technology absorption	133	■
9.03	Laws relating to ICT	118	■
9.04	FDI and technology transfer	133	■
9.05	Mobile telephone subscribers*	85	■
9.06	Internet users*	54	■
9.07	Personal computers*	78	■
9.08	Broadband Internet subscribers*	70	■
	10th pillar: Market size		
10.01	Domestic market size*	86	■
10.02	Foreign market size*	103	■
	11th pillar: Business sophistication		
11.01	Local supplier quantity	93	■
11.02	Local supplier quality	113	■
11.03	State of cluster development	133	■
11.04	Nature of competitive advantage	116	■
11.05	Value chain breadth	113	■
11.06	Control of international distribution	130	■
11.07	Production process sophistication	123	■
11.08	Extent of marketing	100	■
11.09	Willingness to delegate authority	119	■
	12th pillar: Innovation		
12.01	Capacity for innovation	126	■
12.02	Quality of scientific research institutions	128	■
12.03	Company spending on R&D	119	■
12.04	University-industry research collaboration	125	■
12.05	Gov't procurement of advanced tech products	131	■
12.06	Availability of scientists and engineers	100	■
12.07	Utility patents*	88	■

* Hard data

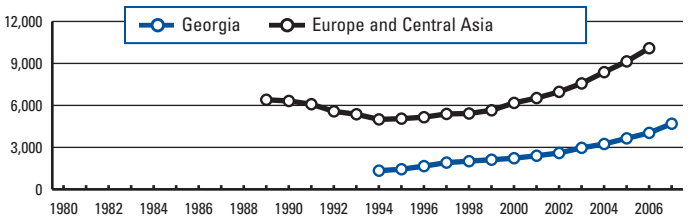
Note: For further details and explanation, please refer to the section "How to Read the Country/Economy Profiles" at the beginning of this chapter.

Georgia

Key indicators

Total population (millions), 2007 ..... 4.4
GDP (US$ billions), 2007 ..... 10.3
GDP per capita (US$), 2007 ..... 2,355.2
GDP (PPP) as share (%) of world total, 2007 ..... 0.03

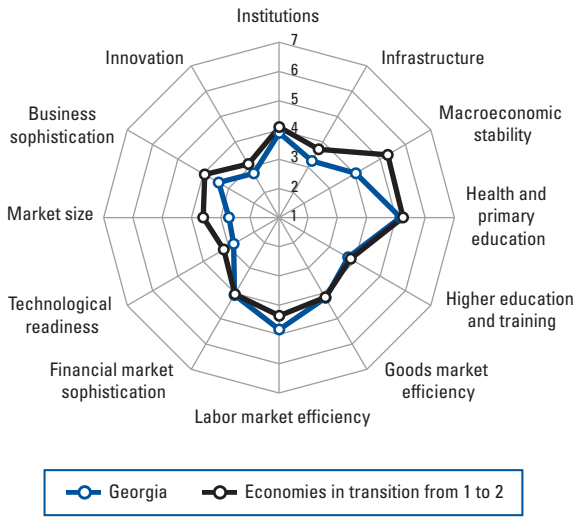
GDP (PPP US$) per capita, 1980–2007



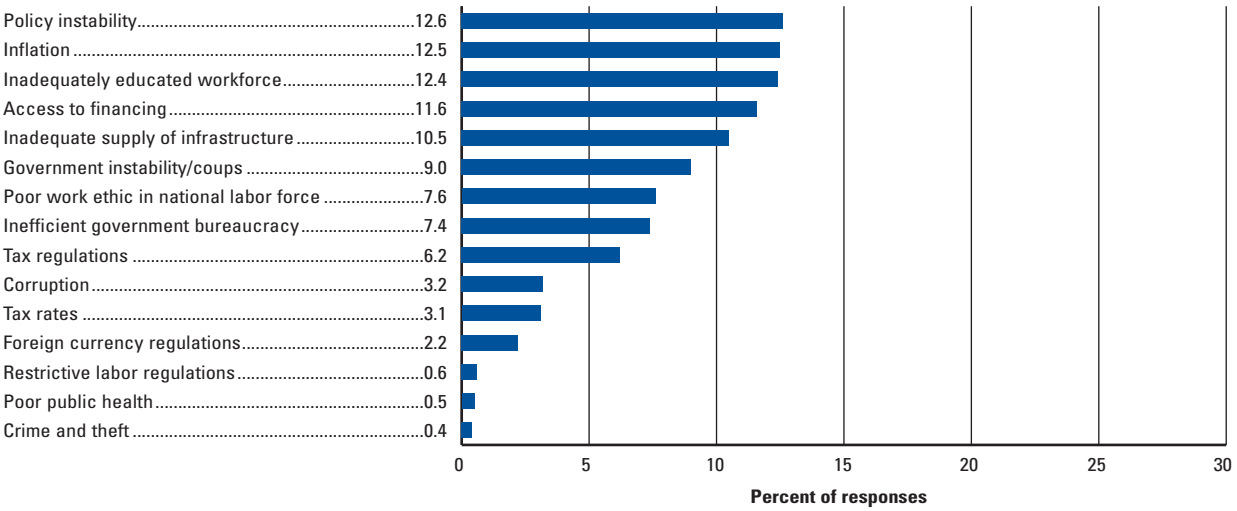
Global Competitiveness Index

	Rank (out of 134)	Score (1–7)
GCI 2008–2009	**90**	**3.9**
GCI 2007–2008 (out of 131)	90	3.8
GCI 2006–2007 (out of 122)	87	3.7
Basic requirements	**91**	**4.1**
1st pillar: Institutions	69	3.9
2nd pillar: Infrastructure	77	3.2
3rd pillar: Macroeconomic stability	118	4.0
4th pillar: Health and primary education	91	5.1
Efficiency enhancers	**87**	**3.7**
5th pillar: Higher education and training	84	3.7
6th pillar: Goods market efficiency	71	4.2
7th pillar: Labor market efficiency	22	4.8
8th pillar: Financial market sophistication	79	4.1
9th pillar: Technological readiness	97	2.8
10th pillar: Market size	102	2.7
Innovation and sophistication factors	**109**	**3.1**
11th pillar: Business sophistication	112	3.4
12th pillar: Innovation	107	2.7

Stage of development



The most problematic factors for doing business



Note: From a list of 15 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Georgia

The Global Competitiveness Index in detail

■ Competitive **Advantage** ■ Competitive **Disadvantage**

	INDICATOR	RANK/134	
	1st pillar: Institutions		
1.01	Property rights	109	■
1.02	Intellectual property protection	106	■
1.03	Diversion of public funds	45	■
1.04	Public trust of politicians	53	■
1.05	Judicial independence	112	■
1.06	Favoritism in decisions of government officials	51	■
1.07	Wastefulness of government spending	47	■
1.08	Burden of government regulation	6	■
1.09	Efficiency of legal framework	100	■
1.10	Transparency of government policymaking	86	■
1.11	Business costs of terrorism	50	■
1.12	Business costs of crime and violence	39	■
1.13	Organized crime	62	■
1.14	Reliability of police services	39	■
1.15	Ethical behavior of firms	85	■
1.16	Strength of auditing and reporting standards	88	■
1.17	Efficacy of corporate boards	98	■
1.18	Protection of minority shareholders' interests	123	■
	2nd pillar: Infrastructure		
2.01	Quality of overall infrastructure	80	■
2.02	Quality of roads	68	■
2.03	Quality of railroad infrastructure	38	■
2.04	Quality of port infrastructure	67	■
2.05	Quality of air transport infrastructure	86	■
2.06	Available seat kilometers*	110	■
2.07	Quality of electricity supply	78	■
2.08	Telephone lines*	83	■
	3rd pillar: Macroeconomic stability		
3.01	Government surplus/deficit*	119	■
3.02	National savings rate*	111	■
3.03	Inflation*	111	■
3.04	Interest rate spread*	116	■
3.05	Government debt*	36	■
	4th pillar: Health and primary education		
4.01	Business impact of malaria	45	■
4.02	Malaria incidence*	77	■
4.03	Business impact of tuberculosis	61	■
4.04	Tuberculosis incidence*	81	■
4.05	Business impact of HIV/AIDS	42	■
4.06	HIV prevalence*	23	■
4.07	Infant mortality*	98	■
4.08	Life expectancy*	83	■
4.09	Quality of primary education	81	■
4.10	Primary enrollment*	91	■
4.11	Education expenditure*	104	■
	5th pillar: Higher education and training		
5.01	Secondary enrollment*	73	■
5.02	Tertiary enrollment*	55	■
5.03	Quality of the educational system	83	■
5.04	Quality of math and science education	75	■
5.05	Quality of management schools	110	■
5.06	Internet access in schools	61	■
5.07	Local availability of research and training services	117	■
5.08	Extent of staff training	73	■

	INDICATOR	RANK/134	
	6th pillar: Goods market efficiency		
6.01	Intensity of local competition	114	■
6.02	Extent of market dominance	95	■
6.03	Effectiveness of anti-monopoly policy	111	■
6.04	Extent and effect of taxation	24	■
6.05	Total tax rate*	52	■
6.06	No. of procedures required to start a business*	9	■
6.07	Time required to start a business*	19	■
6.08	Agricultural policy costs	75	■
6.09	Prevalence of trade barriers	28	■
6.10	Trade-weighted tariff rate*	4	■
6.11	Prevalence of foreign ownership	53	■
6.12	Business impact of rules on FDI	60	■
6.13	Burden of customs procedures	65	■
6.14	Degree of customer orientation	103	■
6.15	Buyer sophistication	86	■
	7th pillar: Labor market efficiency		
7.01	Cooperation in labor-employer relations	48	■
7.02	Flexibility of wage determination	17	■
7.03	Non-wage labor costs*	85	■
7.04	Rigidity of employment*	8	■
7.05	Hiring and firing practices	5	■
7.06	Firing costs*	7	■
7.07	Pay and productivity	39	■
7.08	Reliance on professional management	68	■
7.09	Brain drain	76	■
7.10	Female participation in labor force*	89	■
	8th pillar: Financial market sophistication		
8.01	Financial market sophistication	94	■
8.02	Financing through local equity market	107	■
8.03	Ease of access to loans	82	■
8.04	Venture capital availability	88	■
8.05	Restriction on capital flows	33	■
8.06	Strength of investor protection*	26	■
8.07	Soundness of banks	83	■
8.08	Regulation of securities exchanges	103	■
8.09	Legal rights index*	52	■
	9th pillar: Technological readiness		
9.01	Availability of latest technologies	89	■
9.02	Firm-level technology absorption	108	■
9.03	Laws relating to ICT	94	■
9.04	FDI and technology transfer	90	■
9.05	Mobile telephone subscribers*	88	■
9.06	Internet users*	97	■
9.07	Personal computers*	85	■
9.08	Broadband Internet subscribers*	78	■
	10th pillar: Market size		
10.01	Domestic market size*	101	■
10.02	Foreign market size*	106	■
	11th pillar: Business sophistication		
11.01	Local supplier quantity	131	■
11.02	Local supplier quality	131	■
11.03	State of cluster development	91	■
11.04	Nature of competitive advantage	79	■
11.05	Value chain breadth	92	■
11.06	Control of international distribution	111	■
11.07	Production process sophistication	84	■
11.08	Extent of marketing	97	■
11.09	Willingness to delegate authority	87	■
	12th pillar: Innovation		
12.01	Capacity for innovation	97	■
12.02	Quality of scientific research institutions	113	■
12.03	Company spending on R&D	121	■
12.04	University-industry research collaboration	109	■
12.05	Gov't procurement of advanced tech products	93	■
12.06	Availability of scientists and engineers	84	■
12.07	Utility patents*	44	■

* Hard data

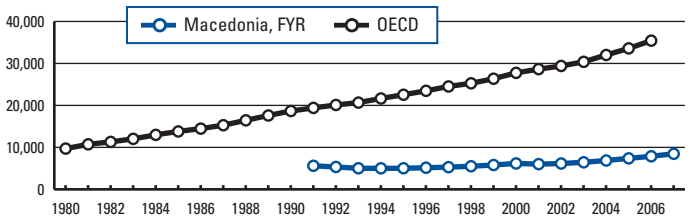
Note: For further details and explanation, please refer to the section "How to Read the Country/Economy Profiles" at the beginning of this chapter.

Macedonia, FYR

Key indicators

Total population (millions), 2007 ..... 2.0
GDP (US$ billions), 2007 ..... 7.5
GDP per capita (US$), 2007 ..... 3,659.0
GDP (PPP) as share (%) of world total, 2007 ..... 0.03

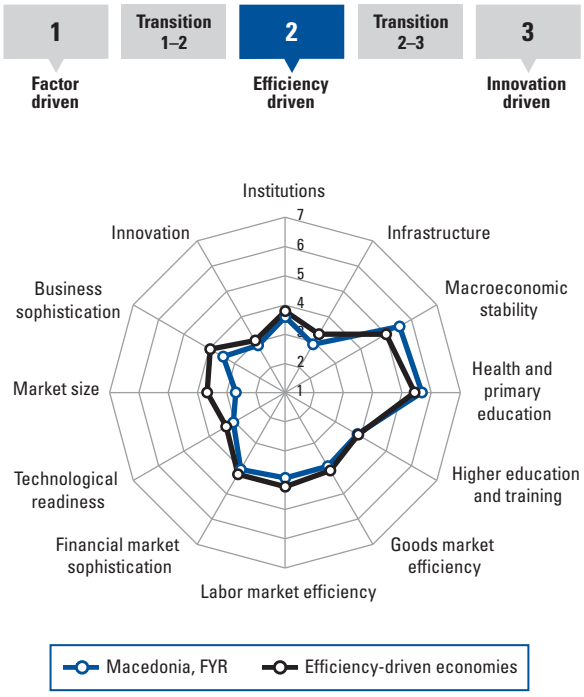
GDP (PPP US$) per capita, 1980–2007



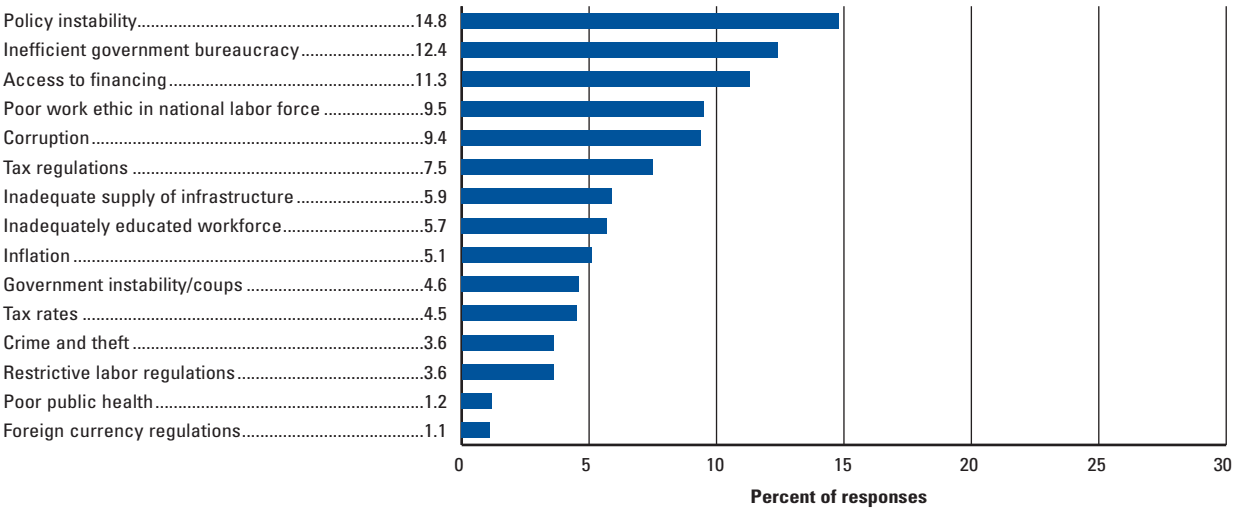
Global Competitiveness Index

	Rank (out of 134)	Score (1–7)
GCI 2008–2009	**89**	**3.9**
GCI 2007–2008 (out of 131)	94	3.7
GCI 2006–2007 (out of 122)	84	3.8
Basic requirements	**68**	**4.4**
1st pillar: Institutions	90	3.6
2nd pillar: Infrastructure	89	2.9
3rd pillar: Macroeconomic stability	31	5.5
4th pillar: Health and primary education	55	5.7
Efficiency enhancers	**92**	**3.6**
5th pillar: Higher education and training	73	3.8
6th pillar: Goods market efficiency	98	3.9
7th pillar: Labor market efficiency	113	3.9
8th pillar: Financial market sophistication	83	4.0
9th pillar: Technological readiness	83	3.0
10th pillar: Market size	104	2.7
Innovation and sophistication factors	**105**	**3.2**
11th pillar: Business sophistication	107	3.5
12th pillar: Innovation	99	2.9

Stage of development



The most problematic factors for doing business



Note: From a list of 15 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Macedonia, FYR

The Global Competitiveness Index in detail

■ Competitive **Advantage** ■ Competitive **Disadvantage**

	INDICATOR	RANK/134	
	1st pillar: Institutions		
1.01	Property rights	96	■
1.02	Intellectual property protection	107	■
1.03	Diversion of public funds	47	■
1.04	Public trust of politicians	83	■
1.05	Judicial independence	113	■
1.06	Favoritism in decisions of government officials	74	■
1.07	Wastefulness of government spending	71	■
1.08	Burden of government regulation	68	■
1.09	Efficiency of legal framework	113	■
1.10	Transparency of government policymaking	79	■
1.11	Business costs of terrorism	96	■
1.12	Business costs of crime and violence	76	■
1.13	Organized crime	113	■
1.14	Reliability of police services	79	■
1.15	Ethical behavior of firms	104	■
1.16	Strength of auditing and reporting standards	95	■
1.17	Efficacy of corporate boards	110	■
1.18	Protection of minority shareholders' interests	105	■
	2nd pillar: Infrastructure		
2.01	Quality of overall infrastructure	93	■
2.02	Quality of roads	83	■
2.03	Quality of railroad infrastructure	70	■
2.04	Quality of port infrastructure	85	■
2.05	Quality of air transport infrastructure	121	■
2.06	Available seat kilometers*	125	■
2.07	Quality of electricity supply	77	■
2.08	Telephone lines*	58	■
	3rd pillar: Macroeconomic stability		
3.01	Government surplus/deficit*	52	■
3.02	National savings rate*	83	■
3.03	Inflation*	28	■
3.04	Interest rate spread*	67	■
3.05	Government debt*	44	■
	4th pillar: Health and primary education		
4.01	Business impact of malaria	82	■
4.02	Malaria incidence*	1	■
4.03	Business impact of tuberculosis	82	■
4.04	Tuberculosis incidence*	48	■
4.05	Business impact of HIV/AIDS	77	■
4.06	HIV prevalence*	1	■
4.07	Infant mortality*	63	■
4.08	Life expectancy*	55	■
4.09	Quality of primary education	59	■
4.10	Primary enrollment*	73	■
4.11	Education expenditure*	43	■
	5th pillar: Higher education and training		
5.01	Secondary enrollment*	77	■
5.02	Tertiary enrollment*	69	■
5.03	Quality of the educational system	65	■
5.04	Quality of math and science education	52	■
5.05	Quality of management schools	92	■
5.06	Internet access in schools	84	■
5.07	Local availability of research and training services	99	■
5.08	Extent of staff training	83	■

	INDICATOR	RANK/134	
	6th pillar: Goods market efficiency		
6.01	Intensity of local competition	107	■
6.02	Extent of market dominance	117	■
6.03	Effectiveness of anti-monopoly policy	107	■
6.04	Extent and effect of taxation	47	■
6.05	Total tax rate*	86	■
6.06	No. of procedures required to start a business*	58	■
6.07	Time required to start a business*	30	■
6.08	Agricultural policy costs	35	■
6.09	Prevalence of trade barriers	79	■
6.10	Trade-weighted tariff rate*	96	■
6.11	Prevalence of foreign ownership	113	■
6.12	Business impact of rules on FDI	106	■
6.13	Burden of customs procedures	70	■
6.14	Degree of customer orientation	97	■
6.15	Buyer sophistication	104	■
	7th pillar: Labor market efficiency		
7.01	Cooperation in labor-employer relations	101	■
7.02	Flexibility of wage determination	22	■
7.03	Non-wage labor costs*	117	■
7.04	Rigidity of employment*	106	■
7.05	Hiring and firing practices	78	■
7.06	Firing costs*	45	■
7.07	Pay and productivity	79	■
7.08	Reliance on professional management	110	■
7.09	Brain drain	126	■
7.10	Female participation in labor force*	94	■
	8th pillar: Financial market sophistication		
8.01	Financial market sophistication	99	■
8.02	Financing through local equity market	82	■
8.03	Ease of access to loans	113	■
8.04	Venture capital availability	62	■
8.05	Restriction on capital flows	96	■
8.06	Strength of investor protection*	67	■
8.07	Soundness of banks	102	■
8.08	Regulation of securities exchanges	82	■
8.09	Legal rights index*	29	■
	9th pillar: Technological readiness		
9.01	Availability of latest technologies	112	■
9.02	Firm-level technology absorption	131	■
9.03	Laws relating to ICT	84	■
9.04	FDI and technology transfer	109	■
9.05	Mobile telephone subscribers*	63	■
9.06	Internet users*	77	■
9.07	Personal computers*	36	■
9.08	Broadband Internet subscribers*	61	■
	10th pillar: Market size		
10.01	Domestic market size*	103	■
10.02	Foreign market size*	101	■
	11th pillar: Business sophistication		
11.01	Local supplier quantity	96	■
11.02	Local supplier quality	94	■
11.03	State of cluster development	123	■
11.04	Nature of competitive advantage	132	■
11.05	Value chain breadth	90	■
11.06	Control of international distribution	78	■
11.07	Production process sophistication	105	■
11.08	Extent of marketing	104	■
11.09	Willingness to delegate authority	118	■
	12th pillar: Innovation		
12.01	Capacity for innovation	83	■
12.02	Quality of scientific research institutions	95	■
12.03	Company spending on R&D	98	■
12.04	University-industry research collaboration	89	■
12.05	Gov't procurement of advanced tech products	111	■
12.06	Availability of scientists and engineers	70	■
12.07	Utility patents*	88	■

* Hard data

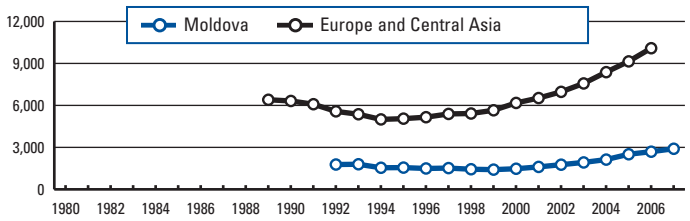
Note: For further details and explanation, please refer to the section "How to Read the Country/Economy Profiles" at the beginning of this chapter.

Moldova

Key indicators

Total population (millions), 2007 ..... 4.2
GDP (US$ billions), 2007 ..... 4.2
GDP per capita (US$), 2007 ..... 1,248.5
GDP (PPP) as share (%) of world total, 2007 ..... 0.02

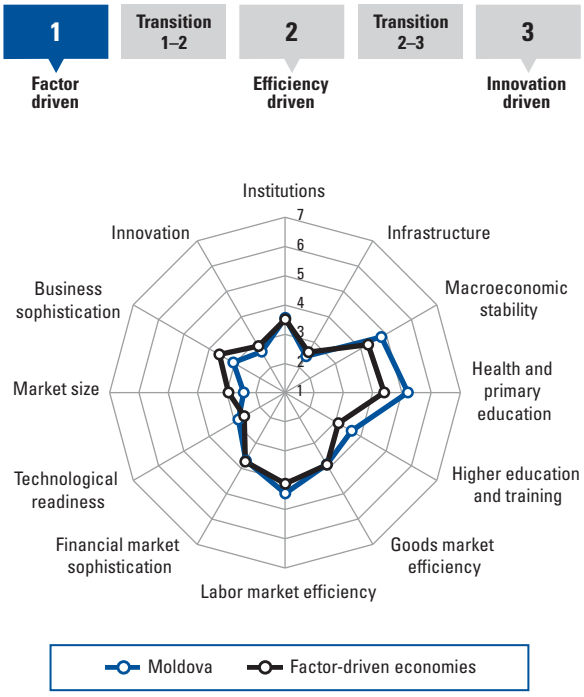
GDP (PPP US$) per capita, 1980–2007



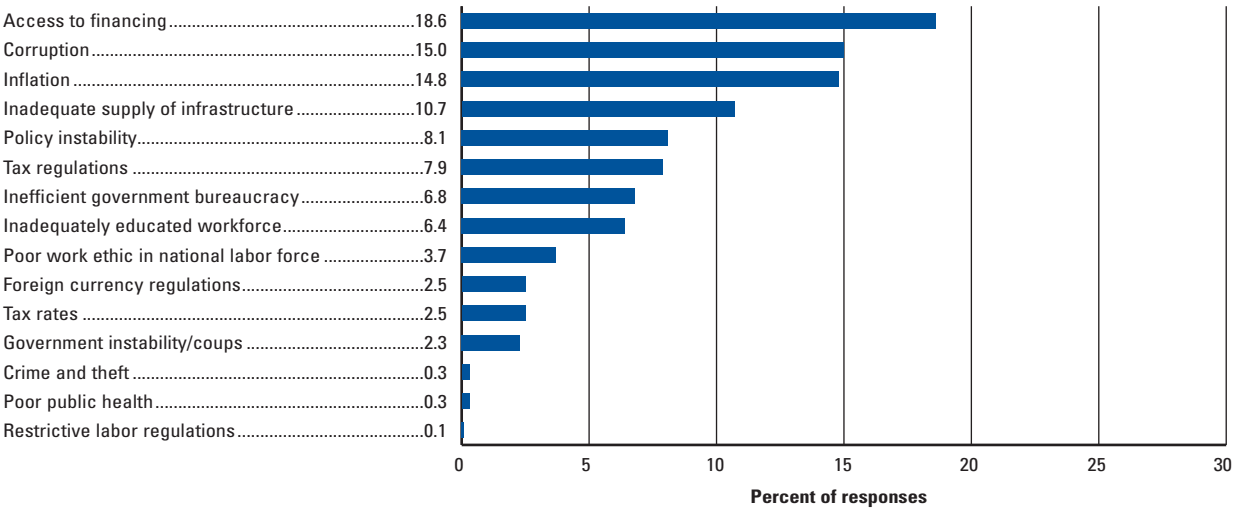
Global Competitiveness Index

	Rank (out of 134)	Score (1–7)
GCI 2008–2009	**95**	**3.8**
GCI 2007–2008 (out of 131)	97	3.6
GCI 2006–2007 (out of 122)	86	3.8
Basic requirements	**95**	**4.0**
1st pillar: Institutions	92	3.6
2nd pillar: Infrastructure	113	2.4
3rd pillar: Macroeconomic stability	80	4.8
4th pillar: Health and primary education	89	5.2
Efficiency enhancers	**98**	**3.5**
5th pillar: Higher education and training	88	3.6
6th pillar: Goods market efficiency	105	3.8
7th pillar: Labor market efficiency	55	4.5
8th pillar: Financial market sophistication	104	3.7
9th pillar: Technological readiness	95	2.9
10th pillar: Market size	114	2.4
Innovation and sophistication factors	**128**	**2.8**
11th pillar: Business sophistication	131	3.1
12th pillar: Innovation	116	2.6

Stage of development



The most problematic factors for doing business



Note: From a list of 15 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Moldova

The Global Competitiveness Index in detail

■ Competitive **Advantage** ■ Competitive **Disadvantage**

	INDICATOR	RANK/134	
	1st pillar: Institutions		
1.01	Property rights	98	■
1.02	Intellectual property protection	70	■
1.03	Diversion of public funds	82	■
1.04	Public trust of politicians	86	■
1.05	Judicial independence	111	■
1.06	Favoritism in decisions of government officials	100	■
1.07	Wastefulness of government spending	93	■
1.08	Burden of government regulation	99	■
1.09	Efficiency of legal framework	108	■
1.10	Transparency of government policymaking	87	■
1.11	Business costs of terrorism	31	■
1.12	Business costs of crime and violence	46	■
1.13	Organized crime	65	■
1.14	Reliability of police services	113	■
1.15	Ethical behavior of firms	121	■
1.16	Strength of auditing and reporting standards	92	■
1.17	Efficacy of corporate boards	68	■
1.18	Protection of minority shareholders' interests	103	■
	2nd pillar: Infrastructure		
2.01	Quality of overall infrastructure	123	■
2.02	Quality of roads	133	■
2.03	Quality of railroad infrastructure	62	■
2.04	Quality of port infrastructure	131	■
2.05	Quality of air transport infrastructure	93	■
2.06	Available seat kilometers*	121	■
2.07	Quality of electricity supply	79	■
2.08	Telephone lines*	56	■
	3rd pillar: Macroeconomic stability		
3.01	Government surplus/deficit*	65	■
3.02	National savings rate*	66	■
3.03	Inflation*	126	■
3.04	Interest rate spread*	42	■
3.05	Government debt*	47	■
	4th pillar: Health and primary education		
4.01	Business impact of malaria	57	■
4.02	Malaria incidence*	1	■
4.03	Business impact of tuberculosis	98	■
4.04	Tuberculosis incidence*	95	■
4.05	Business impact of HIV/AIDS	57	■
4.06	HIV prevalence*	74	■
4.07	Infant mortality*	60	■
4.08	Life expectancy*	89	■
4.09	Quality of primary education	89	■
4.10	Primary enrollment*	103	■
4.11	Education expenditure*	87	■
	5th pillar: Higher education and training		
5.01	Secondary enrollment*	59	■
5.02	Tertiary enrollment*	53	■
5.03	Quality of the educational system	90	■
5.04	Quality of math and science education	63	■
5.05	Quality of management schools	126	■
5.06	Internet access in schools	86	■
5.07	Local availability of research and training services	122	■
5.08	Extent of staff training	111	■

	INDICATOR	RANK/134	
	6th pillar: Goods market efficiency		
6.01	Intensity of local competition	65	■
6.02	Extent of market dominance	125	■
6.03	Effectiveness of anti-monopoly policy	123	■
6.04	Extent and effect of taxation	100	■
6.05	Total tax rate*	65	■
6.06	No. of procedures required to start a business*	58	■
6.07	Time required to start a business*	48	■
6.08	Agricultural policy costs	116	■
6.09	Prevalence of trade barriers	35	■
6.10	Trade-weighted tariff rate*	45	■
6.11	Prevalence of foreign ownership	118	■
6.12	Business impact of rules on FDI	94	■
6.13	Burden of customs procedures	86	■
6.14	Degree of customer orientation	106	■
6.15	Buyer sophistication	116	■
	7th pillar: Labor market efficiency		
7.01	Cooperation in labor-employer relations	29	■
7.02	Flexibility of wage determination	53	■
7.03	Non-wage labor costs*	107	■
7.04	Rigidity of employment*	70	■
7.05	Hiring and firing practices	33	■
7.06	Firing costs*	67	■
7.07	Pay and productivity	15	■
7.08	Reliance on professional management	80	■
7.09	Brain drain	122	■
7.10	Female participation in labor force*	40	■
	8th pillar: Financial market sophistication		
8.01	Financial market sophistication	103	■
8.02	Financing through local equity market	110	■
8.03	Ease of access to loans	102	■
8.04	Venture capital availability	120	■
8.05	Restriction on capital flows	108	■
8.06	Strength of investor protection*	81	■
8.07	Soundness of banks	95	■
8.08	Regulation of securities exchanges	121	■
8.09	Legal rights index*	29	■
	9th pillar: Technological readiness		
9.01	Availability of latest technologies	118	■
9.02	Firm-level technology absorption	98	■
9.03	Laws relating to ICT	91	■
9.04	FDI and technology transfer	76	■
9.05	Mobile telephone subscribers*	94	■
9.06	Internet users*	69	■
9.07	Personal computers*	60	■
9.08	Broadband Internet subscribers*	81	■
	10th pillar: Market size		
10.01	Domestic market size*	114	■
10.02	Foreign market size*	111	■
	11th pillar: Business sophistication		
11.01	Local supplier quantity	122	■
11.02	Local supplier quality	126	■
11.03	State of cluster development	134	■
11.04	Nature of competitive advantage	102	■
11.05	Value chain breadth	109	■
11.06	Control of international distribution	132	■
11.07	Production process sophistication	90	■
11.08	Extent of marketing	127	■
11.09	Willingness to delegate authority	93	■
	12th pillar: Innovation		
12.01	Capacity for innovation	59	■
12.02	Quality of scientific research institutions	119	■
12.03	Company spending on R&D	108	■
12.04	University-industry research collaboration	131	■
12.05	Gov't procurement of advanced tech products	130	■
12.06	Availability of scientists and engineers	109	■
12.07	Utility patents*	88	■

* Hard data

Note: For further details and explanation, please refer to the section "How to Read the Country/Economy Profiles" at the beginning of this chapter.

Montenegro

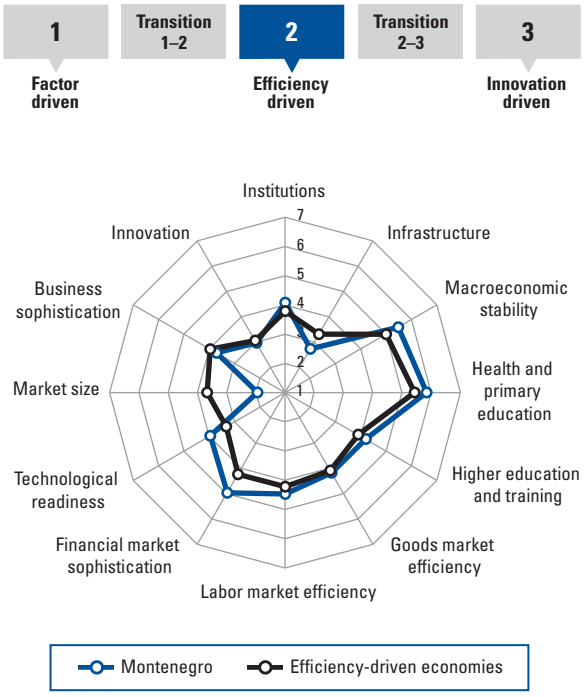
Key indicators

Total population (millions), 2007 ..... 0.7
GDP (US$ billions), 2007 ..... 3.0
GDP per capita (US$), 2007 ..... 4,085.3
GDP (PPP) as share (%) of world total, 2007 ..... n/a

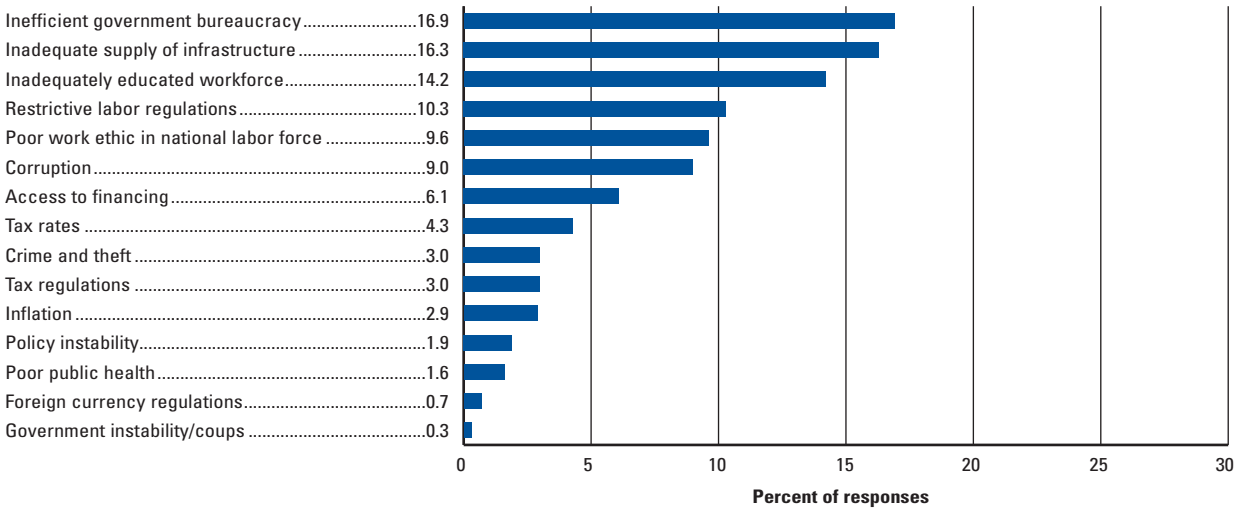
Global Competitiveness Index

	Rank (out of 134)	Score (1–7)
GCI 2008–2009	**65**	**4.1**
GCI 2007–2008 (out of 131)	82	3.9
GCI 2006–2007 (out of 122)	n/a	n/a
Basic requirements	**59**	**4.5**
1st pillar: Institutions	59	4.1
2nd pillar: Infrastructure	100	2.7
3rd pillar: Macroeconomic stability	35	5.5
4th pillar: Health and primary education	42	5.8
Efficiency enhancers	**72**	**3.9**
5th pillar: Higher education and training	55	4.2
6th pillar: Goods market efficiency	69	4.2
7th pillar: Labor market efficiency	53	4.5
8th pillar: Financial market sophistication	35	5.0
9th pillar: Technological readiness	43	4.0
10th pillar: Market size	125	1.9
Innovation and sophistication factors	**88**	**3.3**
11th pillar: Business sophistication	90	3.7
12th pillar: Innovation	88	3.0

Stage of development



The most problematic factors for doing business



Note: From a list of 15 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Montenegro

The Global Competitiveness Index in detail

■ Competitive **Advantage** ■ Competitive **Disadvantage**

	INDICATOR	RANK/134	
	1st pillar: Institutions		
1.01	Property rights	64	■
1.02	Intellectual property protection	99	■
1.03	Diversion of public funds	54	■
1.04	Public trust of politicians	56	■
1.05	Judicial independence	85	■
1.06	Favoritism in decisions of government officials	48	■
1.07	Wastefulness of government spending	50	■
1.08	Burden of government regulation	83	■
1.09	Efficiency of legal framework	68	■
1.10	Transparency of government policymaking	59	■
1.11	Business costs of terrorism	14	■
1.12	Business costs of crime and violence	40	■
1.13	Organized crime	60	■
1.14	Reliability of police services	58	■
1.15	Ethical behavior of firms	76	■
1.16	Strength of auditing and reporting standards	73	■
1.17	Efficacy of corporate boards	70	■
1.18	Protection of minority shareholders' interests	88	■
	2nd pillar: Infrastructure		
2.01	Quality of overall infrastructure	102	■
2.02	Quality of roads	119	■
2.03	Quality of railroad infrastructure	78	■
2.04	Quality of port infrastructure	75	■
2.05	Quality of air transport infrastructure	73	■
2.06	Available seat kilometers*	123	■
2.07	Quality of electricity supply	110	■
2.08	Telephone lines*	48	■
	3rd pillar: Macroeconomic stability		
3.01	Government surplus/deficit*	28	■
3.02	National savings rate*	105	■
3.03	Inflation*	52	■
3.04	Interest rate spread*	53	■
3.05	Government debt*	56	■
	4th pillar: Health and primary education		
4.01	Business impact of malaria	18	■
4.02	Malaria incidence*	1	■
4.03	Business impact of tuberculosis	14	■
4.04	Tuberculosis incidence*	52	■
4.05	Business impact of HIV/AIDS	15	■
4.06	HIV prevalence*	1	■
4.07	Infant mortality*	45	■
4.08	Life expectancy*	49	■
4.09	Quality of primary education	40	■
4.10	Primary enrollment*	30	■
4.11	Education expenditure*	93	■
	5th pillar: Higher education and training		
5.01	Secondary enrollment*	39	■
5.02	Tertiary enrollment*	40	■
5.03	Quality of the educational system	57	■
5.04	Quality of math and science education	34	■
5.05	Quality of management schools	67	■
5.06	Internet access in schools	74	■
5.07	Local availability of research and training services	78	■
5.08	Extent of staff training	84	■

	INDICATOR	RANK/134	
	6th pillar: Goods market efficiency		
6.01	Intensity of local competition	91	■
6.02	Extent of market dominance	82	■
6.03	Effectiveness of anti-monopoly policy	85	■
6.04	Extent and effect of taxation	30	■
6.05	Total tax rate*	22	■
6.06	No. of procedures required to start a business*	120	■
6.07	Time required to start a business*	51	■
6.08	Agricultural policy costs	60	■
6.09	Prevalence of trade barriers	56	■
6.10	Trade-weighted tariff rate*	39	■
6.11	Prevalence of foreign ownership	65	■
6.12	Business impact of rules on FDI	37	■
6.13	Burden of customs procedures	81	■
6.14	Degree of customer orientation	94	■
6.15	Buyer sophistication	63	■
	7th pillar: Labor market efficiency		
7.01	Cooperation in labor-employer relations	105	■
7.02	Flexibility of wage determination	78	■
7.03	Non-wage labor costs*	75	■
7.04	Rigidity of employment*	70	■
7.05	Hiring and firing practices	88	■
7.06	Firing costs*	70	■
7.07	Pay and productivity	58	■
7.08	Reliance on professional management	81	■
7.09	Brain drain	65	■
7.10	Female participation in labor force*	48	■
	8th pillar: Financial market sophistication		
8.01	Financial market sophistication	67	■
8.02	Financing through local equity market	30	■
8.03	Ease of access to loans	29	■
8.04	Venture capital availability	44	■
8.05	Restriction on capital flows	26	■
8.06	Strength of investor protection*	19	■
8.07	Soundness of banks	54	■
8.08	Regulation of securities exchanges	49	■
8.09	Legal rights index*	16	■
	9th pillar: Technological readiness		
9.01	Availability of latest technologies	79	■
9.02	Firm-level technology absorption	91	■
9.03	Laws relating to ICT	66	■
9.04	FDI and technology transfer	87	■
9.05	Mobile telephone subscribers*	43	■
9.06	Internet users*	59	■
9.07	Personal computers*	28	■
9.08	Broadband Internet subscribers*	n/a	
	10th pillar: Market size		
10.01	Domestic market size*	125	■
10.02	Foreign market size*	130	■
	11th pillar: Business sophistication		
11.01	Local supplier quantity	94	■
11.02	Local supplier quality	85	■
11.03	State of cluster development	128	■
11.04	Nature of competitive advantage	77	■
11.05	Value chain breadth	99	■
11.06	Control of international distribution	88	■
11.07	Production process sophistication	83	■
11.08	Extent of marketing	80	■
11.09	Willingness to delegate authority	52	■
	12th pillar: Innovation		
12.01	Capacity for innovation	120	■
12.02	Quality of scientific research institutions	92	■
12.03	Company spending on R&D	76	■
12.04	University-industry research collaboration	68	■
12.05	Gov't procurement of advanced tech products	67	■
12.06	Availability of scientists and engineers	71	■
12.07	Utility patents*	88	■

* Hard data

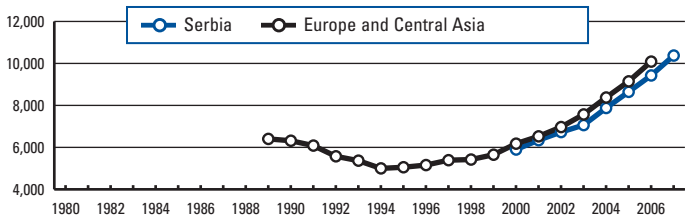
Note: For further details and explanation, please refer to the section "How to Read the Country/Economy Profiles" at the beginning of this chapter.

Serbia

Key indicators

Total population (millions), 2007 .....7.4
GDP (US$ billions), 2007.....41.7
GDP per capita (US$), 2007 .....5,595.9
GDP (PPP) as share (%) of world total, 2007.....n/a

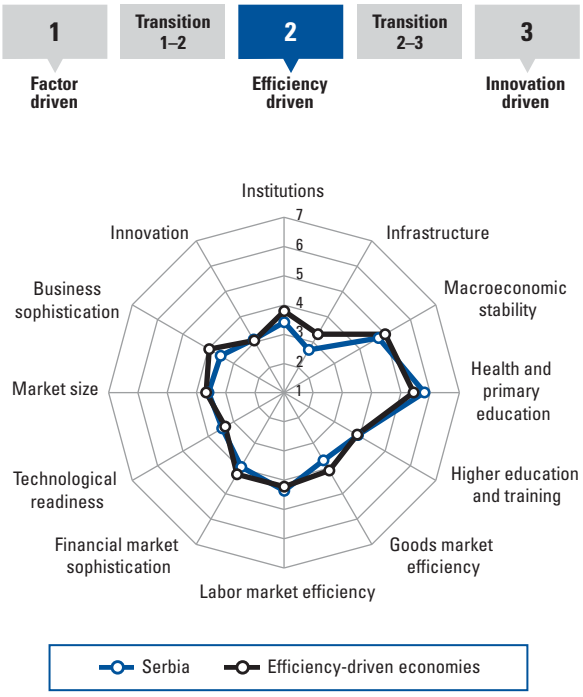
GDP (PPP US$) per capita, 1980–2007



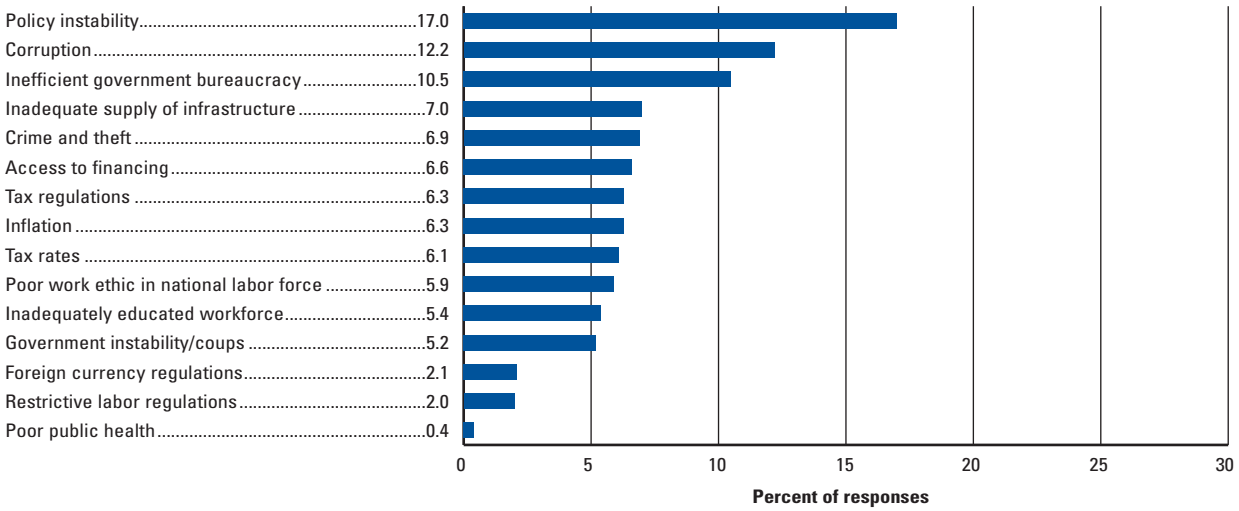
Global Competitiveness Index

	Rank (out of 134)	Score (1–7)
GCI 2008–2009	**85**	**3.9**
GCI 2007–2008 (out of 131)	91	3.8
GCI 2006–2007 (out of 122)	n/a	n/a
Basic requirements	**88**	**4.1**
1st pillar: Institutions	108	3.4
2nd pillar: Infrastructure	102	2.7
3rd pillar: Macroeconomic stability	86	4.7
4th pillar: Health and primary education	46	5.8
Efficiency enhancers	**78**	**3.8**
5th pillar: Higher education and training	70	3.9
6th pillar: Goods market efficiency	115	3.7
7th pillar: Labor market efficiency	66	4.4
8th pillar: Financial market sophistication	89	3.9
9th pillar: Technological readiness	61	3.5
10th pillar: Market size	65	3.6
Innovation and sophistication factors	**91**	**3.3**
11th pillar: Business sophistication	100	3.5
12th pillar: Innovation	70	3.1

Stage of development



The most problematic factors for doing business



Note: From a list of 15 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Serbia

The Global Competitiveness Index in detail

■ Competitive **Advantage** ■ Competitive **Disadvantage**

	INDICATOR	RANK/134	
	1st pillar: Institutions		
1.01	Property rights	108	■
1.02	Intellectual property protection	105	■
1.03	Diversion of public funds	81	■
1.04	Public trust of politicians	109	■
1.05	Judicial independence	106	■
1.06	Favoritism in decisions of government officials	109	■
1.07	Wastefulness of government spending	87	■
1.08	Burden of government regulation	132	■
1.09	Efficiency of legal framework	102	■
1.10	Transparency of government policymaking	82	■
1.11	Business costs of terrorism	90	■
1.12	Business costs of crime and violence	64	■
1.13	Organized crime	97	■
1.14	Reliability of police services	67	■
1.15	Ethical behavior of firms	96	■
1.16	Strength of auditing and reporting standards	96	■
1.17	Efficacy of corporate boards	119	■
1.18	Protection of minority shareholders' interests	132	■
	2nd pillar: Infrastructure		
2.01	Quality of overall infrastructure	119	■
2.02	Quality of roads	115	■
2.03	Quality of railroad infrastructure	88	■
2.04	Quality of port infrastructure	84	■
2.05	Quality of air transport infrastructure	98	■
2.06	Available seat kilometers*	95	■
2.07	Quality of electricity supply	75	■
2.08	Telephone lines*	33	■
	3rd pillar: Macroeconomic stability		
3.01	Government surplus/deficit*	54	■
3.02	National savings rate*	125	■
3.03	Inflation*	84	■
3.04	Interest rate spread*	90	■
3.05	Government debt*	71	■
	4th pillar: Health and primary education		
4.01	Business impact of malaria	39	■
4.02	Malaria incidence*	1	■
4.03	Business impact of tuberculosis	70	■
4.04	Tuberculosis incidence*	48	■
4.05	Business impact of HIV/AIDS	55	■
4.06	HIV prevalence*	23	■
4.07	Infant mortality*	39	■
4.08	Life expectancy*	55	■
4.09	Quality of primary education	48	■
4.10	Primary enrollment*	34	■
4.11	Education expenditure*	82	■
	5th pillar: Higher education and training		
5.01	Secondary enrollment*	64	■
5.02	Tertiary enrollment*	56	■
5.03	Quality of the educational system	49	■
5.04	Quality of math and science education	31	■
5.05	Quality of management schools	87	■
5.06	Internet access in schools	79	■
5.07	Local availability of research and training services	74	■
5.08	Extent of staff training	121	■

	INDICATOR	RANK/134	
	6th pillar: Goods market efficiency		
6.01	Intensity of local competition	128	■
6.02	Extent of market dominance	131	■
6.03	Effectiveness of anti-monopoly policy	129	■
6.04	Extent and effect of taxation	73	■
6.05	Total tax rate*	39	■
6.06	No. of procedures required to start a business*	91	■
6.07	Time required to start a business*	48	■
6.08	Agricultural policy costs	89	■
6.09	Prevalence of trade barriers	96	■
6.10	Trade-weighted tariff rate*	55	■
6.11	Prevalence of foreign ownership	109	■
6.12	Business impact of rules on FDI	112	■
6.13	Burden of customs procedures	96	■
6.14	Degree of customer orientation	105	■
6.15	Buyer sophistication	102	■
	7th pillar: Labor market efficiency		
7.01	Cooperation in labor-employer relations	111	■
7.02	Flexibility of wage determination	47	■
7.03	Non-wage labor costs*	75	■
7.04	Rigidity of employment*	93	■
7.05	Hiring and firing practices	32	■
7.06	Firing costs*	44	■
7.07	Pay and productivity	93	■
7.08	Reliance on professional management	118	■
7.09	Brain drain	131	■
7.10	Female participation in labor force*	3	■
	8th pillar: Financial market sophistication		
8.01	Financial market sophistication	122	■
8.02	Financing through local equity market	85	■
8.03	Ease of access to loans	93	■
8.04	Venture capital availability	85	■
8.05	Restriction on capital flows	109	■
8.06	Strength of investor protection*	50	■
8.07	Soundness of banks	110	■
8.08	Regulation of securities exchanges	105	■
8.09	Legal rights index*	16	■
	9th pillar: Technological readiness		
9.01	Availability of latest technologies	120	■
9.02	Firm-level technology absorption	126	■
9.03	Laws relating to ICT	74	■
9.04	FDI and technology transfer	14	■
9.05	Mobile telephone subscribers*	58	■
9.06	Internet users*	64	■
9.07	Personal computers*	35	■
9.08	Broadband Internet subscribers*	37	■
	10th pillar: Market size		
10.01	Domestic market size*	61	■
10.02	Foreign market size*	84	■
	11th pillar: Business sophistication		
11.01	Local supplier quantity	91	■
11.02	Local supplier quality	109	■
11.03	State of cluster development	104	■
11.04	Nature of competitive advantage	110	■
11.05	Value chain breadth	96	■
11.06	Control of international distribution	102	■
11.07	Production process sophistication	114	■
11.08	Extent of marketing	99	■
11.09	Willingness to delegate authority	94	■
	12th pillar: Innovation		
12.01	Capacity for innovation	92	■
12.02	Quality of scientific research institutions	49	■
12.03	Company spending on R&D	97	■
12.04	University-industry research collaboration	62	■
12.05	Gov't procurement of advanced tech products	92	■
12.06	Availability of scientists and engineers	50	■
12.07	Utility patents*	49	■

* Hard data

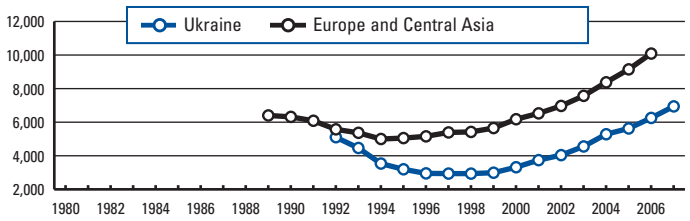
Note: For further details and explanation, please refer to the section "How to Read the Country/Economy Profiles" at the beginning of this chapter.

Ukraine

Key indicators

Total population (millions), 2007 ..... 45.5
GDP (US$ billions), 2007 ..... 140.5
GDP per capita (US$), 2007 ..... 3,046.1
GDP (PPP) as share (%) of world total, 2007 ..... 0.49

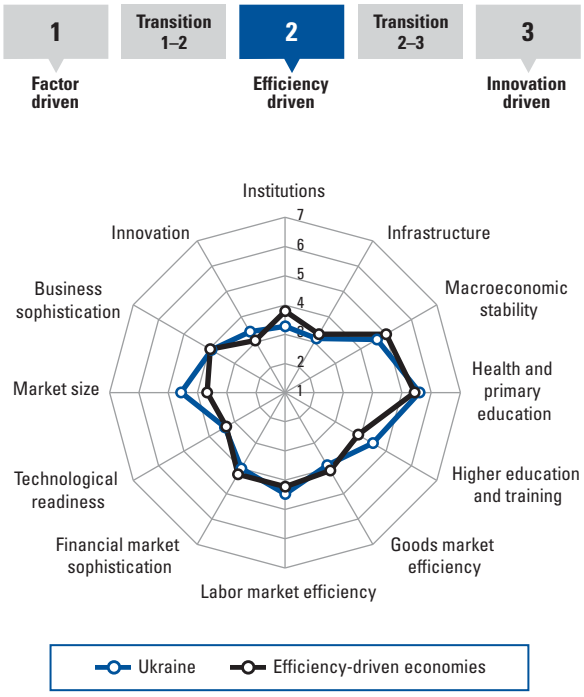
GDP (PPP US$) per capita, 1980–2007



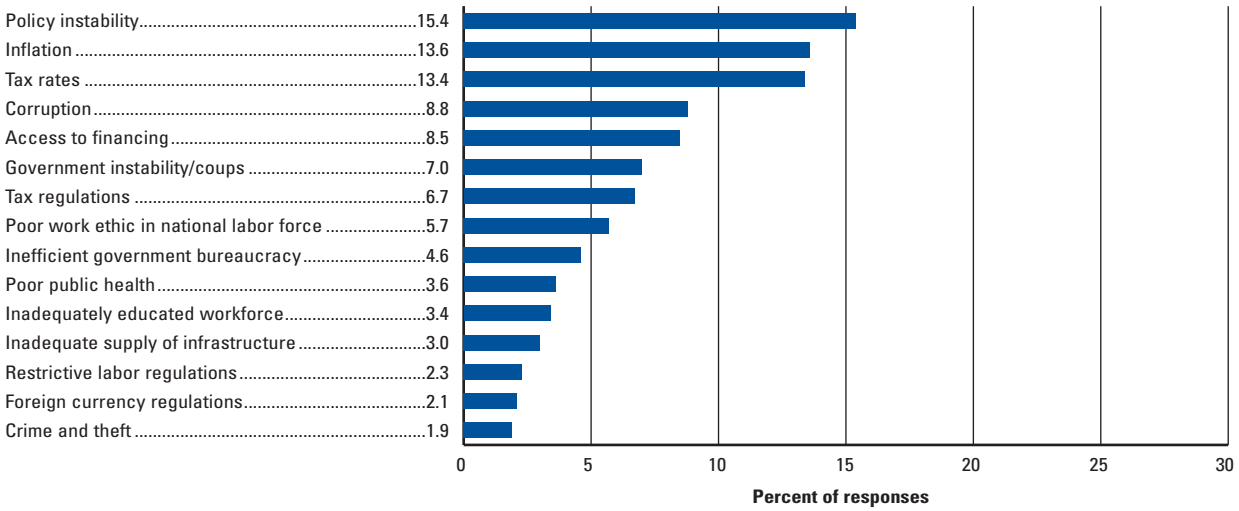
Global Competitiveness Index

	Rank (out of 134)	Score (1–7)
GCI 2008–2009	**72**	**4.1**
GCI 2007–2008 (out of 131)	73	4.0
GCI 2006–2007 (out of 122)	69	4.0
Basic requirements	**86**	**4.1**
1st pillar: Institutions	115	3.3
2nd pillar: Infrastructure	79	3.1
3rd pillar: Macroeconomic stability	91	4.6
4th pillar: Health and primary education	60	5.6
Efficiency enhancers	**58**	**4.1**
5th pillar: Higher education and training	43	4.5
6th pillar: Goods market efficiency	103	3.9
7th pillar: Labor market efficiency	54	4.5
8th pillar: Financial market sophistication	85	4.0
9th pillar: Technological readiness	65	3.4
10th pillar: Market size	31	4.6
Innovation and sophistication factors	**66**	**3.7**
11th pillar: Business sophistication	80	3.9
12th pillar: Innovation	52	3.4

Stage of development



The most problematic factors for doing business



Note: From a list of 15 factors, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Ukraine

The Global Competitiveness Index in detail

■ Competitive **Advantage** ■ Competitive **Disadvantage**

	INDICATOR	RANK/134	
	1st pillar: Institutions		
1.01	Property rights	123	■
1.02	Intellectual property protection	114	■
1.03	Diversion of public funds	97	■
1.04	Public trust of politicians	101	■
1.05	Judicial independence	119	■
1.06	Favoritism in decisions of government officials	96	■
1.07	Wastefulness of government spending	98	■
1.08	Burden of government regulation	91	■
1.09	Efficiency of legal framework	116	■
1.10	Transparency of government policymaking	114	■
1.11	Business costs of terrorism	67	■
1.12	Business costs of crime and violence	61	■
1.13	Organized crime	98	■
1.14	Reliability of police services	106	■
1.15	Ethical behavior of firms	118	■
1.16	Strength of auditing and reporting standards	113	■
1.17	Efficacy of corporate boards	89	■
1.18	Protection of minority shareholders' interests	129	■
	2nd pillar: Infrastructure		
2.01	Quality of overall infrastructure	86	■
2.02	Quality of roads	120	■
2.03	Quality of railroad infrastructure	30	■
2.04	Quality of port infrastructure	87	■
2.05	Quality of air transport infrastructure	105	■
2.06	Available seat kilometers*	58	■
2.07	Quality of electricity supply	80	■
2.08	Telephone lines*	50	■
	3rd pillar: Macroeconomic stability		
3.01	Government surplus/deficit*	78	■
3.02	National savings rate*	85	■
3.03	Inflation*	127	■
3.04	Interest rate spread*	72	■
3.05	Government debt*	18	■
	4th pillar: Health and primary education		
4.01	Business impact of malaria	75	■
4.02	Malaria incidence*	1	■
4.03	Business impact of tuberculosis	114	■
4.04	Tuberculosis incidence*	89	■
4.05	Business impact of HIV/AIDS	99	■
4.06	HIV prevalence*	111	■
4.07	Infant mortality*	56	■
4.08	Life expectancy*	95	■
4.09	Quality of primary education	37	■
4.10	Primary enrollment*	84	■
4.11	Education expenditure*	60	■
	5th pillar: Higher education and training		
5.01	Secondary enrollment*	50	■
5.02	Tertiary enrollment*	14	■
5.03	Quality of the educational system	40	■
5.04	Quality of math and science education	32	■
5.05	Quality of management schools	71	■
5.06	Internet access in schools	69	■
5.07	Local availability of research and training services	66	■
5.08	Extent of staff training	99	■

	INDICATOR	RANK/134	
	6th pillar: Goods market efficiency		
6.01	Intensity of local competition	105	■
6.02	Extent of market dominance	75	■
6.03	Effectiveness of anti-monopoly policy	96	■
6.04	Extent and effect of taxation	127	■
6.05	Total tax rate*	107	■
6.06	No. of procedures required to start a business*	75	■
6.07	Time required to start a business*	61	■
6.08	Agricultural policy costs	132	■
6.09	Prevalence of trade barriers	113	■
6.10	Trade-weighted tariff rate*	49	■
6.11	Prevalence of foreign ownership	123	■
6.12	Business impact of rules on FDI	120	■
6.13	Burden of customs procedures	109	■
6.14	Degree of customer orientation	50	■
6.15	Buyer sophistication	81	■
	7th pillar: Labor market efficiency		
7.01	Cooperation in labor-employer relations	69	■
7.02	Flexibility of wage determination	61	■
7.03	Non-wage labor costs*	125	■
7.04	Rigidity of employment*	90	■
7.05	Hiring and firing practices	11	■
7.06	Firing costs*	19	■
7.07	Pay and productivity	16	■
7.08	Reliance on professional management	83	■
7.09	Brain drain	83	■
7.10	Female participation in labor force*	31	■
	8th pillar: Financial market sophistication		
8.01	Financial market sophistication	91	■
8.02	Financing through local equity market	92	■
8.03	Ease of access to loans	66	■
8.04	Venture capital availability	58	■
8.05	Restriction on capital flows	110	■
8.06	Strength of investor protection*	107	■
8.07	Soundness of banks	112	■
8.08	Regulation of securities exchanges	120	■
8.09	Legal rights index*	8	■
	9th pillar: Technological readiness		
9.01	Availability of latest technologies	82	■
9.02	Firm-level technology absorption	80	■
9.03	Laws relating to ICT	78	■
9.04	FDI and technology transfer	100	■
9.05	Mobile telephone subscribers*	21	■
9.06	Internet users*	62	■
9.07	Personal computers*	86	■
9.08	Broadband Internet subscribers*	68	■
	10th pillar: Market size		
10.01	Domestic market size*	29	■
10.02	Foreign market size*	37	■
	11th pillar: Business sophistication		
11.01	Local supplier quantity	74	■
11.02	Local supplier quality	87	■
11.03	State of cluster development	83	■
11.04	Nature of competitive advantage	87	■
11.05	Value chain breadth	89	■
11.06	Control of international distribution	40	■
11.07	Production process sophistication	53	■
11.08	Extent of marketing	85	■
11.09	Willingness to delegate authority	107	■
	12th pillar: Innovation		
12.01	Capacity for innovation	31	■
12.02	Quality of scientific research institutions	48	■
12.03	Company spending on R&D	52	■
12.04	University-industry research collaboration	49	■
12.05	Gov't procurement of advanced tech products	54	■
12.06	Availability of scientists and engineers	54	■
12.07	Utility patents*	65	■

* Hard data

Note: For further details and explanation, please refer to the section "How to Read the Country/Economy Profiles" at the beginning of this chapter.