Eurasian Development Bank

Development of Mechanical Engineering in the EDB Member States

EDB Sector Report no. 16

УДК 621.0
ББК 34.41
Д 49

Development of Mechanical engineering in the EDB Member States. – Almaty, 2012. – 54 pages.

ISBN 978-601-7151-33-1

The Eurasian Development Bank (EDB) is an international financial institution established to promote economic growth and integration processes in Eurasia. The Bank was founded by the intergovernmental agreement signed in January 2006 by the Russian Federation and the Republic of Kazakhstan. Tajikistan, Belarus, Armenia and Kyrgyzstan joined the Bank in 2009–2011.

Electric power, transportation infrastructure and high-tech and innovative industries are key areas of the Bank's financial activity. In line with its charter, the Bank views information and research support for integration in Eurasia as a priority of its analytical work.

УДК 621.0
ББК 34.41

The authors:

Dmitry Kuvalin –
DSc. (Economy) – Deputy Director of the Institute of Economic Forecasting,
Russian Academy of Sciences (IEF RAS)

E-mail: dbkuvalin@ecfor.ru

Petr Lavrinenko –
Junior Research Assistant, IEF RAS

E-mail: lavrik@ecfor.ru

Ardak Tashenov –
MSc. – Head of Strategic Analysis and Monitoring Department, Strategy and Research, EBD

E-mail: tashenov_as@eabr.org

Aleksey Hersonskyi –
Senior Researcher, IEF RAS

E-mail: alkhe@ecfor.ru

Vadim Potapenko –
Junior Research Assistant, IEF RAS

E-mail: vadimpotap@ecfor.ru

ISBN 978-601-7151-33-1

Copy-editor:
Gulnaz Imamniyazova, EBD

Address:
Eurasian Development Bank
220, Dostyk ave., Almaty, 050051,
Republic of Kazakhstan
Telephone: +7 (727) 244 40 44
Fax: +7 (727) 244 65 70, +7 (727) 291 42 63
E-mail: info@eabr.org, research@eabrnews.org
http://www.eabr.org

Design, layout and printing:
RUAN Publishing Company

This sector report is a part of the EDB series on regional integration in industries and economic sectors of the Bank's member states and other post–Soviet countries.

To date, the following sector reports have been published and distributed:

- Nuclear Energy Complexes in Russia and Kazakhstan: Prospects for Development and Cooperation
- Water and Energy Resources in Central Asia: Utilisation and Development Issues
- CIS Common Electric Power Market
- Eurasian Development Bank's Investment Policy and Environment
- EurAsEC's International Transport Corridors
- Effects of Climate Change on Water Resources in Central Asia
- Economic Cooperation in the Agricultural Sector of CIS Countries
- Space Industry in CIS Countries: Prospects for Cooperation
- Integration Processes in the CIS Telecommunications Sector
- The Stock Markets of Russia and Kazakhstan: Prospects for Integration
- Russian and Kazakh Nuclear Energy: Trends in Economic Cooperation
- The Investment Aspect of the Region's Water Sector Development
- Developing EurAsEC's Air Transport Potential
- Small Hydropower in the CIS: Current Status and Development Prospects
- Integration Processes in the Electric Power Sectors of the EDB Member States

All publications from this series are available at the EDB's official website:

http://www.eabr.org/e/research/industryres/

D. Kuvalin, P. Lavrinenko, A. Tashenov, A. Hersonskyi, V. Potapenko (2012) Development of Mechanical Engineering in the EDB Member States. Sector report no. 16 © Eurasian Development Bank

Contents

Tables

Figures

List of abbreviations

Belstat – National Statistical Committee of the Republic of Belarus

CES – Common Economic Space

CIS – Commonwealth of Independent States

CU – Customs Union

EDB – Eurasian Development Bank

EurAsEC – Eurasian Economic Community

FEACN – Foreign Economic Activity Commodity Nomenclature

IEF RAS – Institute of Economic Forecasting, Russian Academy of Sciences

MAZ – JSC "Minsk Automobile Plant"

MTW – Production Association "Minsk Tractor Works"

OKVED – All-Russian Classifier of Types of Economic Activity

PPP – Purchasing Power Parity

R&D – Research & Development

Rosstat – Russian Federal State Statistics Service

WTO – World Trade Organisation

Main Conclusions

1. Due to the global economic crisis, mechanical engineering output declined sharply in 2008–2009. A post–crisis increase in production, employment and operational efficiency is currently under way in the sector.
2. At the present time, some 70–90% of all mechanical engineering production is imported by the member states of the Eurasian Development Bank (EDB) from countries outside the region ("the region" is hereinafter used to refer to the member states of the EDB). This tendency is primarily caused by a gap in the levels of technical development and production efficiency within the mechanical engineering sectors. Operational efficiency in the mechanical engineering companies of the region's republics is – on average – several times lower than it is in companies located in the world's leading manufacturing countries.
3. Increasing dependency on imports and low market competitiveness threaten the prospects for future growth in the sector. Mechanical engineering within the region is strongly dependent on supplies of machine tool components from outside the region.
4. The profitability of many mechanical engineering companies is very low due to relatively low levels of product demand. At the same time, unstable financial conditions prevent long–term development programmes being implemented and hinder access to affordable finance.
5. Modernisation of the industry requires significant financial investment. Manufacturing engineering companies frequently find it hard to access to "affordable credit" and this hampers their development. On top of that, the financial systems of the Customs Union (CU) member states are unable to provide the support needed for the export of non–primary goods. In a range of sectors, modernisation is impossible without direct or indirect state funding.
6. Companies in the region mainly manufacture products for their own internal markets and for the markets of the other EDB member states. This confirms that there is integration in the sector.
7. The process of integration taking place within the territories of the former USSR is helping – through the reconstruction and development of common chains of production – to make better use of the technical and productive potential of the region.

Introduction

Mechanical engineering is the most important sector in the economy of any industrially developed country and includes the production of various types of equipment, machinery, tools, appliances and consumer goods. Mechanical engineering primarily relates to the processing industries; it embraces agriculture, energy, metallurgy, transportation and other sectors of the economy and underpins the stability of their operations.

Sustainable development and consistent operation of the sector largely determine the energy and material output capacities of the economy, labour productivity, the level of industrial safety and, ultimately, the economic security of the country. These indicators are the most important factors for successful economic development.

The aim of this industry report is to look at the prospects for developing and integrating mechanical engineering in the member states of the Eurasian Development Bank (EDB) – Armenia, Belarus, Kazakhstan, Kyrgyzstan, Russia and Tajikistan.

The report contains an analysis of the mechanical engineering sectors of the EDB member states. Particular consideration is given to the current situation, trends in development and the mechanical engineering import–export structure. The major obstacles to development and key opportunities for growth are also discussed. The process of integration in this sector is analysed and priority areas where the process can be intensified in the region are outlined.

1. Regional trends in developing mechanical engineering in 2006–2011

In the post–Soviet period of economic development, until the year 2000, mechanical engineering in the Bank's member states was in sharp decline. A period of growth ensued, although this was brought to an end by the developments of 2008.

The relatively rapid growth of mechanical engineering output since 2010 bears witness to the potential for development in the sector. However, these rates are significantly lower than the growth in demand, which is being met by imports.

Looking to the future, the sector is in need of effective and qualitative development. The task facing all the member countries of the CU is to maintain and develop mechanical engineering potential and substitute imports of basic products. In what follows, mechanical engineering will be understood to mean the combination of three types of economic activity: the production of machinery and equipment (hereinafter simply referred to as "equipment"), the production of electrical, electronic and optical equipment (hereinafter referred to as "electrical equipment") and the production of means of transport and associated equipment (hereinafter referred to as "transport facilities"). The production of arms, ammunition and military hardware is not included.

Mechanical engineering in the region can be compared in terms of volume of output in US dollars, using the Purchasing Power Parity (PPP) indicator[1]. It is difficult to make comparisons on the basis of this indicator, because figures relate to the different national economies as a whole and are not specific to mechanical engineering. However, using PPP, these values can be compared and the order of the numbers better understood. When calculated in terms of PPP, Russian mechanical engineering output in 2011 totalled $345 billion, while the relevant figures for Belarus, Kazakhstan and Armenia were $50, $11 and $0.09 billion respectively. There is insufficient data available to determine precisely the scale of manufacturing output in Kyrgyzstan and Tajikistan. Using methods of indirect analysis, however, and for manufacturing activity as a whole, one can conclude that the volume of mechanical engineering output in these countries is very small and comparable in size to that of Armenia.

Almost all manufacturing production – 97% according to PPP–based calculations – is accounted for by the Russian Federation and Belarus, although Russia's output is almost seven times that of Belarus. Output in Belarus is five times that of the Republic of Kazakhstan. In the republics of Armenia, Kyrgyzstan and Tajikistan, manufacturing production is almost zero, when compared with the figures for the region as a whole.

The position of mechanical engineering in the economic structure of individual republics of the CU varies. In Kazakhstan, it accounts for just 0.6% of gross value added, whereas in Russia the equivalent figure is 2.9% (see Table 1.1). This is, however, relatively small in comparison to leading manufacturing countries. In Germany, for example, manufacturing accounts for 8.1% of gross value added and in Japan – 7.2%. Only in Belarus the figure is comparable with those of Germany and Japan, at 7.1% of value added.

Manufacturing structure also differs markedly between the CU countries. In Russia, for example, the three main mechanical engineering activities account for approximately the same volume of value added. In Belarus and in Kazakhstan, more than 50% of mechanical engineering value added is from equipment production.

[1] Estimates of PPP for 2011 are based on the PPP for 2008 and deflators of GDP in the given countries and USA in 2009–2011.

Table 1.1.
Mechanical engineering gross value added (% of the total gross value added)

	Russia	Belarus	Kazakhstan	Germany	USA	Japan
Mechanical engineering	2.9	7.1	0.6	8.1	4	7.2
Equipment production	0.9	3.6	0.3	3	1	1.9
Electrical equipment production	0.9	1.9	0.2	2.5	2.1	2.9
Transport facility production	1.1	1.6	0.1	2.6	0.9	2.4

Source: Rosstat, Belstat, Statistical Agency of the Republic of Kazakhstan, Eurostat, US Bureau of Economic Analysis, Statistics Bureau of Japan, IEF RAS estimates

Note: The data for Russia relates to 2011, the data for Belarus, Kazakhstan and USA relates to 2010 and that for Germany and Japan to 2009. For the USA, gross domestic product is expressed as % GDP. No data for Armenia, Kyrgyzstan and Tajikistan has been included in the table, since no detailed information on the production levels of the various economic activities in these countries is publicly available.

Innovation is extremely important to the development of mechanical engineering. Innovation within the sector not only promotes the increased competitiveness of mechanical engineering products, but also of other sectors using machines and equipment in the production process. Mechanical engineering occupies the leading position in terms of innovation in the economies of developed countries.

From this standpoint, the Global Innovations Index, calculated for a total of 141 countries, accurately reflects the current situation in respect of innovative activity in the region's republics.

Index	Russia	Kazakhstan	Belarus	Armenia	Tajikistan	Kyrgyzstan
Global Innovation Index (location)	51	83	78	69	108	109
Research & Development activity (location)	41	118	104	89	115	131
Number of researchers per million inhabitants	2580.9	637.3	2134.8	1796.4	253.9	434.5
Gross expenditure on R&D activity (% GDP)	1.3	0.2	0.6	0.3	0.1	0.5
Quality of R&D institutions	47.4	28	no data	32.8	36.5	16.5
R&D, business-initiated (expenditure, %)	624	327	52	no data	no data	23.3
R&D, business-funded (expenditure, %)	266	135	288	no data	1.1	36.4
R&D, funded from outside the region (expenditure, %)	6.5	1	8.5	42	0.6	0.7

Table 1.2.
Global Innovation Index 2012*

Source: http://www.globalinnovationindex.org

Note: *Gross expenditure on R&D (% GDP) – total expenditure on research during the period. Quality of R&D institutions (World Economic Forum) based on the results of reports.

In terms of innovative development, it is clear that Russia is currently well ahead of the other countries in the region. From this point of view, therefore, prospects for the development of mechanical engineering in the Russian Federation can be considered as most favourable of all.

Behind Russia, according to the ratings, are Armenia, Belarus and Kazakhstan. The figures for Tajikistan and Kyrgyzstan are modest. The priorities for developing and increasing mechanical engineering competitiveness are to stimulate research and development activity and technology transfer. New innovative decisions must be harmonised both with the needs of the country's economy and the new possibilities being opened up by scientific and technical progress.

Russia

In Russia, machinery and equipment production and the automobile industry are the main subsectors. However, the country is well behind the global leaders both in respect of volume of production (as the low volume of Russian mechanical engineering exports suggests) and the quality of products manufactured.

In 2011, the contributions of Russia's largest mechanical engineering subsector – equipment production and automobile, trailer and semi-trailer production – totalled 24.7% and 27.9% respectively (see Table 1.3).

The contributions of electrical equipment and aircraft production (including spacecraft) lay in the range 9.8–12%, while railway rolling stock, medical equipment, electronic components, shipbuilding and ship repair lay in the range 3.8–7.8%. The volume of computer and office equipment production in Russia is not great – its contribution to mechanical engineering output is just 1.4% in total.

Between 2006 and 2011, the structure of Russian mechanical engineering did not undergo any significant changes. The main difference was a 2.4% reduction in equipment manufacture. The contribution of rolling stock production increased to 1.8%, but the contributions of other types of mechanical engineering activity did not exceed 1.3%.

	2006	2011
Mechanical engineering – total	100	100
Equipment production (excluding the production of arms and ammunition)	27.1	24.7
Production of office equipment and computer technology	1.4	1.4
Electrical equipment production	13.1	12
Production of electronic components, radio apparatus, television and telecommunications equipment	5.7	5.7
Production of medical equipment; measuring, monitoring, test and control equipment; optical devices, photographic and cinematographic equipment; clocks and watches	6.6	7
Production of motor vehicles, trailers and semi-trailers	26.8	27.9
Shipbuilding and ship repair	4.8	3.8
Aircraft production, including spacecraft	8.5	9.8
Production of railway rolling stock, other transport facilities and equipment	6	7.8

Table 1.3.
The structure of Russian mechanical engineering output by type of economic activity (%)

Source: Rosstat, IEF RAS estimates

Real subsector output in 2006–2011 changed as follows. In 2007, in the majority of subsectors, the volume of production grew by comparison with the previous year (see Table 1.4), in some cases significantly. Stagnation or a reduction in output was observed only in the electrical equipment, construction and ship-repair subsectors.

The effects of the global economic crisis were first apprarent in 2008. In a number of activities, output either fell or remained at the same level as the previous year. Nevertheless, there were unchanged rates of growth in the shipbuilding, aircraft construction and railway mechanical engineering subsectors. In 2009, a sharp decline in production in all mechanical engineering subsectors was observed and volume fell in real terms below the figures for 2006.

In 2010–2011, production grew rapidly – essentially to post-crisis levels. In some cases, the results for 2011 actually outstripped 2006 values. In railway rolling stock production, for example, output increased by 50% for five consecutive years, while in automobile, trailer and semi-trailer manufacture over the same period, the figure was 41%. Aircraft construction (including spacecraft), office equipment and the production of computer technology also saw growth of 3%.

At the same time, the shipbuilding and ship repair subsectors saw a fall in output of 30%, equipment fell by 9% and electrical equipment by 7%.

The main tendency in Russian mechanical engineering in 2006–2011 was a reduction in the employment rates as a result of the economic crisis (see Figure 1.1). Throughout 2006–2008, the number of employed in the mechanical engineering subsectors remained

Table 1.4.
Output dynamics of the Russian mechanical engineering subsectors*

Source: Rosstat, IEF RAS estimates

Note: *during the period 2006–2011, compared to 2006, output at fixed price per employee

	2006	2007	2008	2009	2010	2011
Equipment production	1	1.23	1.2	0.72	0.83	0.91
Production of office equipment and computer technology	1	1.49	1.27	0.85	1	1.03
Electrical equipment production	1	1.01	0.94	0.68	0.85	0.93
Production of electronic components, radio apparatus, television and telecommunications equipment	1	1.09	0.99	0.68	0.87	0.98
Production of medical equipment; measurement, monitoring, test and control equipment; optical devices, photographic and cinematographic equipment; clocks and watches	1	1.05	1.04	0.75	0.97	0.97
Production of motor vehicles, trailers and semi-trailers	1	1.19	1.17	0.58	1.02	1.41
Shipbuilding and ship repair	1	0.95	1.03	0.87	0.84	0.7
Aircraft production, including spacecraft	1	1.08	1.16	1.02	0.98	1.03
Production of railway rolling stock, other transport facilities and equipment	1	1.15	1.22	0.85	1.27	1.49

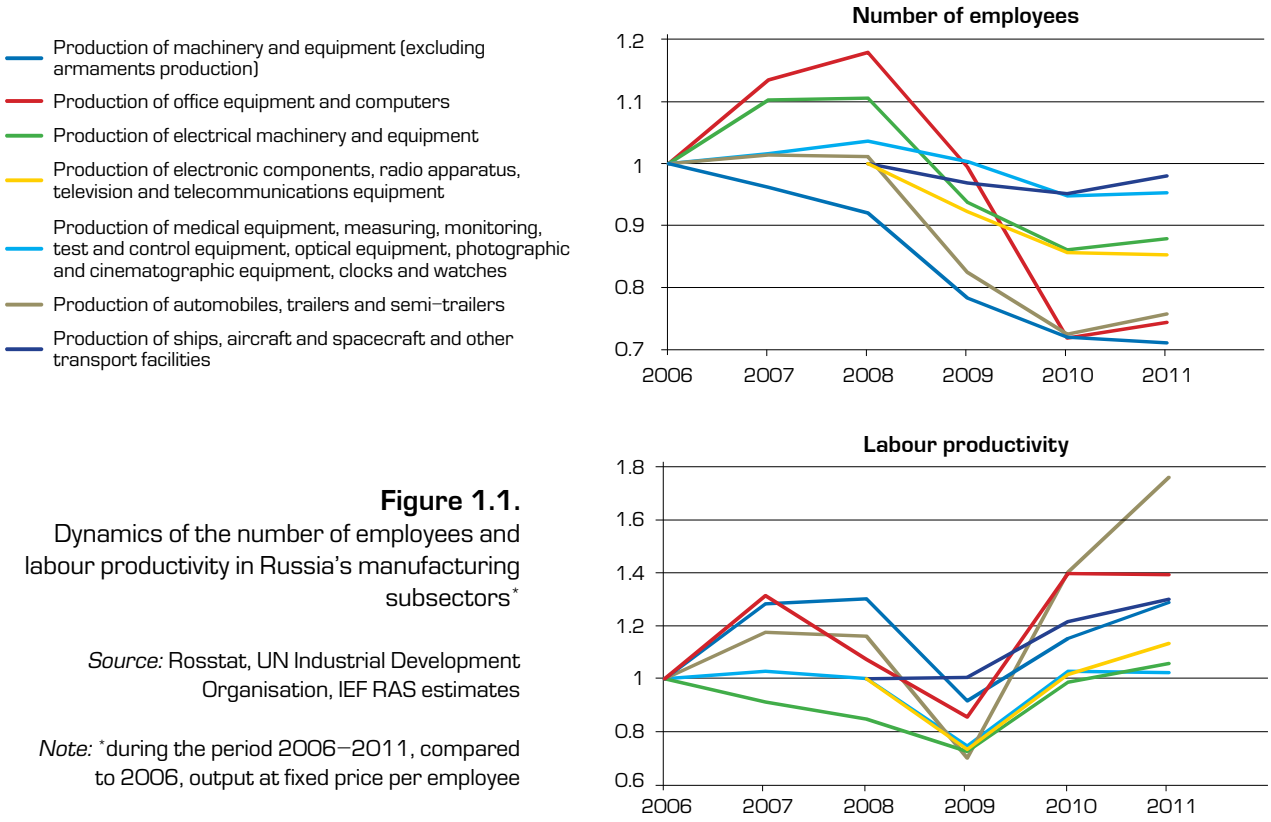


Figure 1.1.
Dynamics of the number of employees and labour productivity in Russia's manufacturing subsectors*

Source: Rosstat, UN Industrial Development Organisation, IEF RAS estimates

Note: *during the period 2006–2011, compared to 2006, output at fixed price per employee

unchanged (except machinery and equipment production), but that number fell sharply in 2009. As a result, the employment in all the subsectors reviewed was lower in 2011 than in 2006.

The crisis-driven reduction in the employment volume was accompanied, however, by a recovery in production figures and, as a result, growth of mechanical engineering output. Between 2006 and 2011, therefore, the production of automobiles, trailers and semi-trailers grew by 76%, office equipment and computers grew by 39%, ships, aircraft, spacecraft and other transport facilities by 30% and equipment by 29%.

The growth in output was primarily linked with the decrease in excessive employment.

In 2011, mechanical engineering output in Russia stood at 4.88 trillion roubles ($1.66 billion)[2], or 5.2% of total economic output (see Table 1.5).

Machinery and equipment production accounted for 24.7% of all mechanical engineering output, with electrical, electronic and optical equipment accounting for 26% and transport facilities and associated equipment – 49.3%.

In the equipment production subsector, the most productive industries are manufacture of domestic appliances, engines, turbines and machinery and equipment for the construction and mining industries. In 2011, this accounted for 0.12–0.13 trillion roubles ($4.1–4.4 billion).

Production of electrical equipment outstripped production of electrical machinery and equipment, measuring equipment and the manufacture of electronic components, radio apparatus, television and telecommunications equipment. In terms of sales, this type of production amounted to 0.59, 0.3 and 0.28 trillion roubles, respectively ($20.1, $10.2 and $9.8 billion). At the same time (in 2011), sales of office, medical and computer mainframe equipment did not exceed 0.07 trillion roubles.

The largest output in the transport facilities subsector was accounted for by cars at 0.92 trillion roubles ($31.3 billion), followed by aircraft (including spacecraft) at 0.48 trillion roubles ($16.3 billion) and railway rolling stock at 0.38 trillion roubles ($12.9 billion). Output of goods vehicles and ships accounted for 0.29 and 0.18 trillion roubles respectively ($9.9 and $6.1 billion).

It is worth mentioning that mechanical engineering cannot be properly characterised in terms of the current volume of sales. It is important to know how much of that output can actually be sold on the global market, what the level of internal demand is and the percentages that will be satisfied by domestic suppliers and imports. In order to help answer these questions, Russian mechanical engineering balances have been calculated for the various types of economic activity. When calculating balances, the six-figure foreign economic activity commodity nomenclature (FEACN) is re-grouped into the all-Russian classifier of types of economic activity (OKVED).

In 2011, Russia exported 0.49 trillion roubles ($16.7 billion) of mechanical engineering products – 10% of total mechanical engineering output. At the same time, the volume of imports was practically identical to output at 4.48 trillion roubles ($152.4 billion). In 2011, the total demand for manufactured goods within Russia amounted to 8.87 trillion roubles ($301.8 billion), a little more than half of which was met by imports.

For the majority of economic activities, the export-weighted average is generally no more than 15% of output volume. The exceptions are: bearings, toothed gears and parts for mechanical gears and drives, the export of which amounts to 34.5% (although output is relatively low for this type of activity), shipbuilding and ship repair – at 25.9%, electronic components, radio apparatus, television and telecommunications equipment at 20.9% and aircraft (including spacecraft) at 19.2%. It can be assumed from these figures that Russian mechanical engineering output is not in great demand on global markets.

[2] Hereinafter the calculated average value of nominal exchange rates for the relevant annual period is applied

At the same time, foreign manufactured engineering products are in heavy demand on the Russian market for most types of economic activity. For example, in 2011 imports were able to satisfy 80.2% of internal demand for office equipment and computers, machine tools (79.4%), medical equipment (74.4%), machinery and equipment for agriculture (77.3%), electronic components, radio apparatus, television and telecommunications equipment (71%) and bearings, toothed gears and parts for mechanical gears and drives (65.5%). The dependence of the Russian economy on foreign imports across such a diverse range of engineering goods is an alarm call.

Table 1.5.
Russian mechanical engineering value balances for 2011

Source: Rosstat, UN Statistics Division, IEF RAS estimates

	Output (trillion roubles)	Exports (trillion roubles)	Imports (trillion roubles)	Consumption (trillion roubles)	Demand satisfied by imports (%)	Exports (% of output)
Mechanical engineering	4.88	0.49	4.48	8.87	50.5	10
Equipment production	1.21	0.1	1.58	2.68	58.9	8.5
Production of turbines and engines, excluding aircraft, rocket, motor vehicle and motor cycle engines	0.13	0.01	0.02	0.14	13.2	4.6
Production of bearings, toothed gears and parts for mechanical transmissions and drives	0.03	0.01	0.03	0.05	65.5	34.5
Production of agricultural machinery and equipment	0.05	0	0.17	0.21	77.3	8.5
Machine tool production	0.02	0	0.07	0.09	79.4	14
Production of lift equipment	0.09	0	0.09	0.17	51.7	3.8
Production of machinery and equipment for the metallurgical industry	0.07	0	0.03	0.1	32.5	2.3
Production of machinery and equipment for the construction and resource extraction industries	0.12	0.01	0.18	0.29	62.8	11.3
Production of domestic appliances not included in other product groupings (refrigerators, freezers, washing machines, dish washers, microwave ovens, etc.)	0.12	0	0.06	0.18	31.3	1.8
Electrical equipment production	1.27	0.15	1.33	2.44	54.3	12
Production of office equipment and computer technology	0.07	0.01	0.23	0.29	80.2	12
Production of electrical machinery and equipment	0.59	0.05	0.32	0.86	37.5	8.3
Production of medical equipment, including surgical equipment and orthopaedic appliances	0.05	0	0.12	0.16	74.4	7.8
Production of electronic components, radio apparatus, television and telecommunications equipment	0.28	0.06	0.53	0.75	71	20.9
Production of measuring, monitoring, control and test equipment; optical devices, photographic and cinematographic equipment; clocks and watches	0.3	0.03	0.12	0.38	30.7	11.6
Production of transport facilities and equipment	2.4	0.23	1.57	3.74	42.1	9.7
Production of internal combustion engines for motor vehicles	0.1	0.01	0.09	0.17	52.7	13.8
Motor car production	0.92	0.02	0.55	1.46	37.7	1.7
Bus and trolleybus production	0.06	0	0.01	0.07	20.6	3.7
Trucks production	0.29	0.01	0.1	0.38	27.4	3.5
Shipbuilding and ship repair	0.18	0.05	0.11	0.25	45.5	25.9
Railway rolling stock production	0.38	0.02	0.11	0.46	23.3	6.4
Aircraft production, including spacecraft	0.48	0.09	0.17	0.56	30.4	19.2

Note: The output estimates for 2011 given in the table are based on the data obtained per OKVED class for 2011 and the output structure of the various OKVED groups and sub-classes for 2010 taken from Rosstat Form No.1 "Companies". Export/import estimates in roubles were calculated using average annual dollar-rouble rates of exchange. The consumption is taken to mean the sum of total output and total imports. Exports are not included.

A better balance between demand for domestically produced and imported goods was achieved in the engines and turbine production subsector, with only 13.2% of demand in 2011 being met by imports. For the production of domestic appliances, this figure amounted to 31.3%; equipment for the metallurgical industry – 32.5%; electrical equipment – 37.5%; and measuring equipment – 30.7%.

In the transport facilities subsector, imported products satisfied 42.1% of demand. Foreign suppliers satisfied 52.7% of the demand for automobile internal combustion engines, 37.7% and 27.4% of the demand for motor cars and trucks respectively; 20.6% of the demand for buses and trolleybuses; and 23.3% of the demand for railway rolling stock.

Taken as a whole, Russian mechanical engineering is almost completely focused on its internal market, although the sector is actually unable to satisfy much of the demand from the Russian market. As a result, this demand has to be met by imports.

Table 1.6 presents Russian production data of the main mechanical engineering goods groups in 2011, in physical indices. The scale of production of many items in Russia is extremely large. During the year, for example, more than 1.7 million cars and 0.2 million trucks, 43,000 buses and trolleybuses, 14,000 tractors, 6,000 combine harvesters, 3 million washing machines and some 2,000 excavators were manufactured. These types of production are analysed in real terms later in this report, but the data given in *Tables 1.4* and *1.5* allows us to conclude that existing volumes of output only partly cover economic demand. It follows, therefore, that if the processes of import replacement were intensified, there would be significant potential for growth in domestic output.

Buses and trolleybuses	43.3	Combine harvesters	6.2
Self-propelling cranes	4.1	Forging and pressing machines	2.2
Trucks, including chassis	207	Metal-cutting machine tools	2.5
Motor cars	1737	Domestic gas cooker hotplates	529
Domestic washing machines	3030	Tractors	14.4
Mainline goods rolling stock	62.8	Domestic refrigerators and freezers	4102
Glass-cases and refrigerated counters	591	Excavators	2

Table 1.6.
Production of mechanical engineering goods in Russia in 2011 (thousands)

Source: Rosstat, 2011

Russian automobile production

Automobile production is the largest manufacturing sector in Russia. In 2011, output in monetary terms amounted to 1.37 trillion roubles ($46.6 billion), with exports of 0.04 trillion roubles ($1.4 billion) and imports of 0.75 trillion roubles ($25.5 billion). Correspondingly, the visible demand for automobile production last year amounted to 2.08 trillion roubles ($70.8 billion). A significant share of this demand – 36.5% is currently met by imports.

In recent years, the Russian automobile production market has seen stable growth – particularly in respect of motor cars. On the one hand, this tendency is linked to the growth in the numbers of people able to purchase cars, and on the other, with the still relatively low level of car use in Russia, which is set to rise over the coming years. It is possible therefore to forecast a long-term, positive dynamic in this market.

In 2011, production of cars in Russia outstripped its pre-crisis level, while production of trucks and buses also increased, following a slump in 2009, though it was unable to reach its 2008 level (see Figure 1.2).

Despite significant demand for cars, imports in 2011 fell by one half compared to 2008 figures and totalled 1 million vehicles. Here, the process of import substitution has been made possible by increased production of foreign makes of car within Russia and by the active modernisation of the vehicle manufacturing sector.

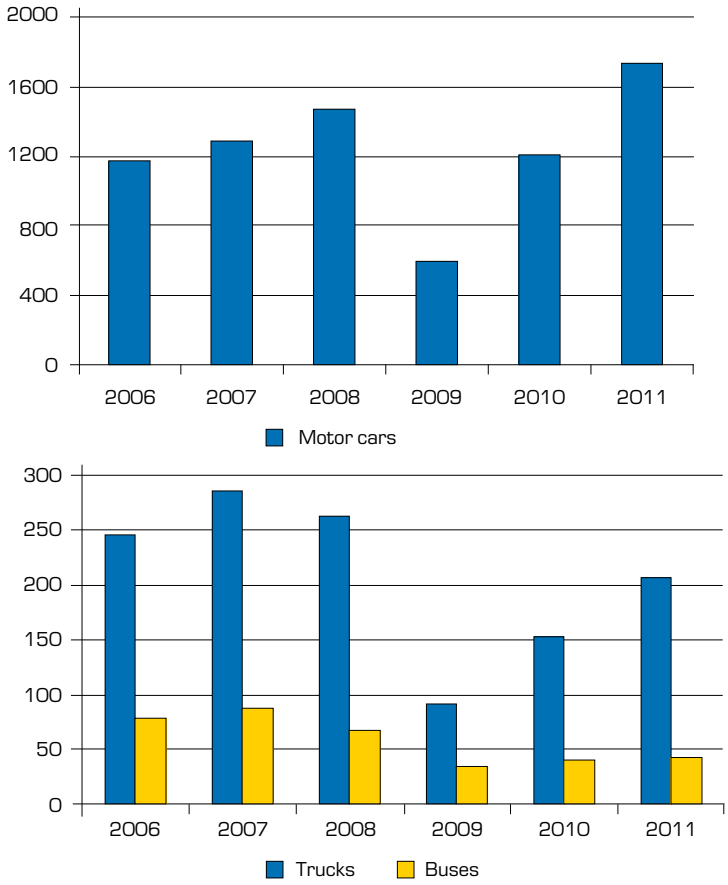


Figure 1.2.
Automobile production in Russia (thousands)

Source: Rosstat

Railway mechanical engineering in Russia

In 2011, Russian railway mechanical engineering output amounted to 0.38 trillion roubles ($12.98 billion), with exports of 0.02 trillion roubles ($0.7 billion) and imports of 0.11 trillion roubles ($3.7 billion). Railway mechanical engineering is one of several manufacturing sectors in Russia with a relatively low share of imports in terms of visible demand (23.3%).

In 2011, manufacture of the sector's main products – mainline electric locomotives, mainline diesel locomotives, diesel locomotive shunters and mainline freight vagons – reached pre-crisis levels. The future of railway mechanical engineering looks promising, since the planned restructuring of the rail transportation system over the coming years is expected to increase product demand.

In addition, railway mechanical engineering in Russia is an important integrating element for the economies of Russia, Belarus and Kazakhstan, since – as mentioned in Section 4 – the corresponding export flows into the economies of Belarus and Kazakhstan are significant and represent a major share of the imports of railway mechanical engineering production in these countries.

Belarus

In 2007–2008, in Belarus, mechanical engineering production grew by 10% and 14% respectively. During the crisis in 2009, it had fallen by 25% and in 2010 increased by 17%. The results for 2010 outstripped the 2006 figure by 9%.

The 2008–2009 economic crisis years had a negative effect on the mechanical engineering sectors. Government measures specifically aimed at increasing credit stimulated internal

demand and allowed output to recover, but this led to an external trade deficit and, subsequently, to currency crisis and devaluation in 2011. Devaluation undoubtedly stimulated a growth in exports, though the possibilities of that developing further remain limited.

Moves to shore up the economy in Belarus certainly helped to strengthen the relationship between the partners of the Common Economic Space (CES).

In 2011, mechanical engineering output in Belarus in monetary terms amounted to 58.7 trillion roubles (Belarus), equivalent to $12.7 billion (see Table 1.7). Of that output volume, 46.3% was accounted for by machinery and equipment production (primarily agricultural equipment), 32.4% by transport facilities and associated equipment and 21.3% by electrical, electronic and optical equipment.

In 2011, exports accounted for 65% of all mechanical engineering output in Belarus. Transport facilities and equipment accounted for 71.3% of total production exported, machinery and equipment production for 66.2% and electrical, electronic and optical equipment for a little more than half. Imports satisfied 70% of the demand for mechanical engineering output and the same figure was recorded for the transport facilities and equipment subsector.

	Output (trillion Belarusian roubles)	Exports (trillion Belarusian roubles)	Imports (trillion Belarusian roubles)	Demand satisfied by imports (%)	Exports (% of output)
Mechanical engineering	58.7	38.2	48.3	70.1	65
Production of machinery and equipment	27.2	18	21.9	70.4	66.2
Production of electrical, electronic and optical equipment	12.5	6.6	14.5	70.9	52.7
Production of transport facilities and equipment	19	13.5	11.9	68.6	71.3

Table 1.7.
Mechanical engineering market balances in Belarus, 2011

Source: Belstat, UN Statistics Division, IEF RAS estimates

Generally, mechanical engineering in Belarus is relatively advanced, particularly with regard to agriculture and transportation (see Table 1.8). For example, Belarus produces over 59,000 tractors, 2,000 combined harvesters, 22,000 trucks and 2,000 buses per annum. In addition, current output includes the production of domestic appliances, such as refrigerators, washing machines and televisions.

Designation	2006	2007	2008	2009	2010	2011
Metal–cutting machine tools (thousand units)	4.7	4.6	4.6	2.5	3.7	4.3
Tractors (thousand units)	49.2	59.6	65.1	45.3	44.4	59.1
Trucks (thousand units)	23.2	25.5	26.3	11.5	13.5	22.8
Buses (thousand units)	2.1	2.16	2.2	1.52	2.1	2.16
Trolleybuses (thousand units)	0.18	0.31	0.45	0.4	0.3	0.2
Excavators (thousand units)	0.9	1.84	2.5	1.05	1.5	1.78
Refrigerators, freezers (million units)	1.05	1.07	1.1	1	1.1	1.2
Televisions (thousand units)	1067	702	717	352	446	404
Washing machines (thousand units)	12.7	163.3	216.5	236.4	273.8	310.9

Table 1.8.
Production of mechanical engineering goods in Belarus, 2006 – 2011

Source: Belstat

Both monetary and physical indices illustrate the relatively high level of development of mechanical engineering in Belarus. This also ensures that production is not only in demand within Belarus itself, but also on foreign markets. However, due to the relatively small size of Belarus's economy, mechanical engineering is also limited in scale and not able to satisfy

internal demand for every type of product. Consequently, the country is forced to import a significant volume of mechanical engineering products.

The government is taking measures to stimulate import substitution. For example, a factory has been constructed in the town of Osipovich to produce railway rolling stock. Belarusian Railways, CJSC Grand Express (Russia) and the EDB are jointly financing the project.

Motor industry in Belarus

Motor industry is one of the largest mechanical engineering sectors in Belarus and bus and goods vehicle production account for a significant proportion of total output. There is no large-scale production of cars in the republic. Automobile production in Belarus is export oriented, with Russia being the main sales outlet. In 2011, for example, exports of buses and trucks totalled $1.5 billion – 75% of which went to Russia.

In spite of their focus on exports, manufacturers in Belarus are able to meet domestic demand almost entirely. In 2011, imports of buses and trucks totalled just $0.1 billion.

Last year, production of trucks was comparable with, but still not equal to pre-crisis levels. Bus production was not affected by the 2009 crisis and has remained at the same level to the present (see Figure 1.3).

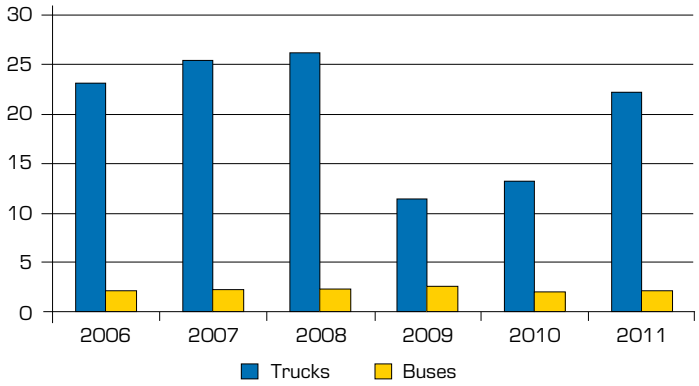


Figure 1.3.
Automobile production in Belarus (thousands)

Source: Belstat

Kazakhstan

Kazakhstan's mechanical engineering is oriented towards the mining and metallurgical, oil and gas, agricultural and transportation production sectors.

In 2011, mechanical engineering output in Kazakhstan (excluding the data for installation and repair of transport facilities) amounted to 278.2 billion tenge ($1.9 billion) or 1.7% of total industrial output (see Table 1.9). Machinery and equipment accounted for 27.8% of total mechanical engineering output, with electrical, electronic and optical equipment accounting for 31.3% and transport facilities and equipment for 40.9%.

The dynamics of Kazakh mechanical engineering gross value added over the period are similar to those of Russia (see Table 1.10), that is, a high rate of growth in 2007, a fall during 2008–2009 and recovery in 2010. As a result, the actual gross value added for machinery and equipment production in 2010 outstripped the 2006 figure by 55%, electrical, electronic and optical equipment production exceeded the figure by 24% and transport facilities and equipment by 117%.

In 2011, the growth in mechanical engineering output continued in Kazakhstan. Last year, the actual volume of production of the various mechanical engineering industries increased by 17% compared with 2010. The major growth generators were the motor vehicle, trailer and semi-trailer production sector (where output increased by 63% compared with 2010) and other types of automotive transport (29% growth).

Kazakhstan's internal demand for mechanical engineering production is very much dependent on imports: 92.1% of manufacturing engineering consumption is covered by supply from abroad.

	Output* (billion tenge)	Exports (billion tenge)	Imports (billion tenge)	Demand satisfied by imports (%)	Exports (% of output)
Mechanical engineering	278.2**	102.6	2037.7	92.1	36.9
Production of machinery and equipment	77.4	51.3	809.2	96.9	66.3
Production of electrical, electronic and optical equipment	87	42.5	735.9	94.3	48.9
Production of transport facilities and equipment	113.8	8.8	492.6	82.4	7.7

Note: *Volume of production at current prices. **Excluding production figures for the machinery and equipment repair and installation subsector.

Table 1.9.
Kazakhstan's mechanical engineering values (2011)

Source: Statistical Agency of the Republic of Kazakhstan, Customs Union Commission, UN Statistics Division, IEF RAS estimates

	2006	2007	2008	2009	2010
Equipment production	1	1.32	1.43	1.13	1.55
Electrical equipment production	1	1.08	1.07	1.01	1.24
Production of transport facilities	1	1.03	0.8	0.85	2.17

Note: * In the period 2006–2010 compared to 2006

Table 1.10.
Dynamics of mechanical engineering gross value added in Kazakhstan*

Source: Statistical Agency of the Republic of Kazakhstan, IEF RAS estimates

In 2011, Kazakhstan produced 8,200 cars and 900 commercial vehicles, 330,000 televisions and 66,000 washing machines (see Table 1.11). The production volume of these goods in Kazakhstan is many times lower than in Russia and Belarus. The production indices for other types of goods are also relatively low.

Designation	2006	2007	2008	2009	2010	2011
Motor cars	2945	6311	3271	745	3176	8195
Trucks	1523	2043	1013	353	510	901
Pumps	11798	10313	12813	11408	13252	13757
Washing machines	101811	126720	68175	71877	97276	65851
Television receivers	410155	322518	326374	282861	349233	330433

Table 1.11.
Production of manufactured goods in Kazakhstan (2006–2011, units)

Source: Statistical Agency of the Republic of Kazakhstan

The chief characteristic of mechanical engineering in Kazakhstan is the predominance of assembly plants in the vehicle construction, railway and agricultural subsectors.

The main areas of future growth in mechanical engineering in Kazakhstan will no doubt be the transport sectors. The number of new vehicle, electric and diesel locomotive assembly plants in the country is growing. In the near future, railway mechanical engineering will be operating at a scale sufficient to supplement and replace existing rolling stock.

However, there are systemic problems in the transportation segment which, in our opinion, will not be resolved even in the medium term. Of these, the most urgent is the country's lack of a strong production of component parts. For example, only one major operator in the railway sector (Kazakhstan Temir Zholy National Company) requires some 2,800 types of spare parts with domestic producers able to supply only 500 of these[3].

The second biggest problem is the lack of machine-tool manufacture – the keystone of all mechanical engineering sectors.

Component supply problems and deterioration of the machine-tool stock are problems common to all countries in the region.

[3] Data provided by the Vice-Minister of Industry and New Technologies of Kazakhstan N. Abdibekov at the Kazakhstan–German railway manufacturing engineering forum.

2. Mechanical engineering import and export analysis

Throughout the period 2006–2011, all the CU countries remained net importers of mechanical engineering products. In Russia, Belarus and Kazakhstan, dependence on mechanical engineering imports increased during the period under review. During 2006–2011, Russian mechanical engineering exports grew by 29% (total exports in the 84–90 FEACN group in US dollars), while imports grew by 123%. In Belarus, the growth in exports was 85%, while imports totalled 96%. In Kazakhstan, exports grew by 4%, and imports increased by 30% over the same period.

In 2011, the majority of mechanical engineering exports from the region's republics went to Russia – $16.6 billion (see Table 2.1). Mechanical engineering exports from Belarus accounted for $6.8 billion, while exports from Kazakhstan totalled $0.7 billion. As a proportion of the total manufacturing exports from the region's republics, the contributions of Armenia, Kyrgyzstan and Tajikistan are almost negligible.

An analogous situation exists with respect to imports, with the significant exception, however, of the Russian Federation: Russian imports of mechanical engineering production amounted to $152.4 billion in 2011. Kazakhstan's imports amounted to $13.9 billion, while those of Belarus made up $8.6 billion. The combined import contribution of Armenia, Kyrgyzstan and Tajikistan did not exceed $1 billion.

All the region's countries are net importers of mechanical engineering products, yet only Belarus has comparable export and import figures. In the other republics, the costs related to importing machinery, equipment and means of transportation are some 8–20 times greater than the sums earned from exports (in Russia, the ratio is 9).

	Mechanical engineering output ($ billion)		Percentage of operations with mechanical engineering output				
			Total volume of operations involving country member (%)		GDP of the country member (%)		
	exports	imports	exports	imports	exports	imports	net exports
Russia	16.6	152.4	3.2	49.9	0.9	–8.2	–7.3
Belarus	6.8	8.6	16.9	18.8	13.9	–17.6	–3.7
Kazakhstan	0.7	13.9	0.8	26.6	0.4	–7.6	–7.2
Armenia	0.05	0.78	3.8	18.8	0.5	–7.7	–7.2
Kyrgyzstan**	0.09	0.73	4.6	23.5	1.9	–15.2	–13.4
Tajikistan**	0.06	0.67	5.	25.2	1.1	–11.9	–10.8

Table 2.1. Mechanical engineering exports and imports in the region's republics in 2011*

Note: *Recalculation of absolute export/import indicators carried out using average annual dollar–national currency rates. Includes operations between the countries of the Customs Union.**Data for 2010

Source: Customs Union Commission, UN Statistics Division, National Statistical Service of the Republic of Armenia, National Statistical Committee of the Kyrgyz Republic, Rosstat, Belstat, Statistical Agency of the Republic of Kazakhstan, Statistical Agency of the President of the Republic of Tajikistan

In all countries of the region (except Belarus), the volume of mechanical engineering exports as a percentage of total exports is very small and never in excess of 5%. In the Republic of Belarus, mechanical engineering exports amounted to 16.9% of total exports in 2001. On the other hand, imports of mechanical engineering production as a proportion of all imports is high in all the countries under review: the lowest percentage is recorded by Belarus and Armenia (18.8%) while Russia, with mechanical engineering products being the main type of goods imported, records the highest percentage (49.9%).

The fact that imports of mechanical engineering products outweigh exports has a significant effect on the economic growth of the CU countries. In 2011, net exports of machinery, equipment and transport facilities in Russia came to 7.3% of GDP. The figures for Kazakhstan and Armenia are comparable to those of Russia, while in Kyrgyzstan and Tajikistan the figures are 13% and 11% of GDP respectively. Only Belarus has relatively low negative net exports of mechanical engineering products at 3.7% of GDP. Belarus' total exports of mechanical engineering products is also high – 13.9% of GDP.

Russia

In 2011, Russia's net exports of mechanical engineering production amounted to $135.8 billion. In other words, Russia's imports of machinery and equipment far outstrip the country's exports. Russia was, in fact, a net importer (at various levels of desaggregation) in respect of all economic activities under consideration (see Table 2.2). Moreover, the level of imports relating to almost all economic activities significantly exceeded the level of exports.

As regards the export of Russian mechanical engineering products, 21.1% of the $16.6 billion earned is accounted for by equipment, 31.3% by electrical equipment and 47.6% by transport facilities. The main exports are aircraft – $3.1 billion, electronic components, radio apparatus, television and telecommunication equipment – $2 billion and electrical machinery and equipment – $1.7 billion.

Of the $152.4 billion of mechanical engineering imports to Russia, equipment production and transport facility production each accounted for 35.2%, while electric equipment accounted for 31.3%. The major imports are cars – $18.7 billion; electronic components, radio apparatus, television and telecommunications equipment – $18.2 billion; electrical equipment – $11 billion; equipment for the construction and resource extraction industries – $6.3 billion; aircraft – $5.8 billion; and agricultural equipment – $5.6 billion.

The Russian Federation has significant opportunity to substitute imports. The very high demand for mechanical engineering production is currently being met mainly by imports. Moreover, in recent years Russian companies have been purchasing imported equipment more and more frequently. In 2011, they purchased imported equipment more frequently than domestic machinery and equipment.

In the short to medium term, the increase in internal demand for cars and consumer durables is likely to continue, since for these types of products, market saturation in Russia is still very low compared to more developed countries. In practically all industrial sectors, achieving maximum utilisation of current capacity in the middle of the first decade of the 2000s actually increased the demand for machine tools – another potential growth area for mechanical engineering in Russia.

However, in many areas of the economy, the increasing demand for mechanical engineering products is being met almost entirely by foreign supplies. The available import substitution potential therefore depends on how quickly mechanical engineering equipment can be modernised. In some sectors – car manufacture, for example – it is clear that production could be modernised within a relatively short period of time, provided that consumer demand remains stable and returns on investment can be kept relatively low. Financial resources accumulated during periods of economic growth remain the major source of mechanical engineering capital investment. The latter requires special efforts on behalf of the state to facilitate companies' access to affordable sources of finance.

The potential to increase exports of Russian mechanical engineering output is, however, limited. Firstly, growing internal demand (both consumer and investment) will swallow up a large part of any increase in the volume of output and severely limit any significant accumulation of export production. Secondly, the technology gap which exists in respect of the developed countries makes it difficult to forecast any significant increase in demand for Russian mechanical

engineering production on world markets. At present, for almost all product groups, imports considerably outweigh exports. This indicates a weak demand for Russian products on the global market, and the situation is hardly likely to change quickly, even if there are improvements in product quality.

Belarus

In 2011, Belarus' net exports amounted to $1.8 billion and the value of imports was comparable to that of exports. Belarus is a net importer of equipment and electrical equipment. Import and export figures are largely comparable (although in most product groups, the volume of imports actually outweighed that of exports). Exports of agricultural machinery and equipment exceeded imports fourfold.

The country is a net exporter in the transport facilities sector, where exports exceed imports mainly due to the net export of trucks. Imports of internal combustion engines, cars and railway rolling stock all exceed the corresponding volumes of export.

With regard to of mechanical engineering exports, 47.1% of the $6.8 billion earned was accounted for by equipment, 17.6% by electrical equipment and 35.3% by transport facilities. The largest export groups are machinery and equipment for agriculture at $1.8 billion, trucks at $1.4 billion and electrical equipment at $0.6 billion.

In 2011, Belarus' main imports were electrical equipment ($1 billion); electronic components, radio apparatus, television and telecommunications equipment ($0.8 billion); cars ($0.6 billion), car engines and agricultural machinery and equipment ($0.5 billion each).

Belarus depends on imports for a very wide range of mechanical engineering goods. In 2011, the negative trade balance in respect of such goods effectively reduced the potential GDP of the country by 17.6% – the highest figure for any country in the region. The current structure of industry, recent financial difficulties and ambiguous analyses of economic growth all hamper the rapid modernisation of the mechanical engineering industry, without which import substitution is very difficult to achieve.

At the same time, Belarus' mechanical engineering is largely export–oriented. This applies mainly to its major industries – agriculture and transportation engineering. However, these exports are primarily oriented towards supplying the countries of the CES – Russia and Kazakhstan, which account for some 73% of Belarusian mechanical engineering exports. In other words, increases in mechanical engineering exports in Belarus are driven by an increase in demand for Belarusian products in Russia and Kazakhstan. Further increases in demand are likely, due to integration and forecasts of economic growth in these countries. So, Belarus does have the potential to increase mechanical engineering exports, but its potential is primarily associated with those products which are already being exported to Russia and Kazakhstan.

Kazakhstan

In 2011, the balance of trade in mechanical engineering products in Kazakhstan amounted to $13.2 billion. Kazakhstan, like Russia, is a net importer in all the economic categories under consideration. Mechanical engineering exports amounted to $0.7 billion, of which the export of equipment accounted for $0.35 billion, electrical equipment – $0.29 billion and transport facilities – $0.06 billion.

In 2011, Kazakhstan's main imports included electronic components, radio apparatus, television and telecommunications equipment – $1.8 billion; and electrical machinery and equipment and railway rolling stock – $1.5 billion each.

According to forecasts, Kazakhstan's economy is set to undergo dynamic development, making it likely that demand for mechanical engineering products will increase. At present, however, mechanical engineering output in Kazakhstan is relatively low and the sector is not yet able to

Table 2.2.
Mechanical engineering exports and imports (by type) in Russia, Belarus and Kazakhstan in 2011 ($ billion)*

	Russia			Belarus			Kazakhstan		
	exports	imports	net exports	exports	imports	net exports	exports	imports	net exports
Mechanical engineering – total	16.6	152.4	–135.8	6.8	8.6	–1.8	0.7	13.9	–13.2
Equipment production	3.5	53.6	–50.2	3.2	3.9	–0.7	0.4	5.5	–5.2
Production of turbines and engines, excluding aircraft, rocket, motor vehicle and motor cycle engines	0.2	0.6	–0.4	0	0	0	0	0.1	–0.1
Production of bearings, toothed gears and parts for mechanical transmissions and drives	0.3	1.1	–0.8	0.1	0.3	–0.2	0.1	0.2	–0.1
Production of agricultural machinery and equipment	0.2	5.6	–5.5	1.8	0.5	1.3	0	0.4	–0.4
Machine tool production	0.1	2.5	–2.4	0.1	0.3	–0.2	0	0.1	–0.1
Production of material handling equipment	0.1	3	–2.9	0.2	0.3	–0.1	0	0.2	–0.2
Production of machinery and equipment for the metallurgical industry	0.1	1.1	–1	0	0.1	0	0	0.1	–0.1
Production of machinery and equipment for the construction and resource extraction industries	0.5	6.3	–5.8	0.2	0.4	–0.2	0	0.9	–0.8
Production of domestic appliances not included in other groups (refrigerators, freezers, washing machines, dish washers, microwave ovens, etc.)	0.1	1.9	–1.8	0	0.1	0	0	0.1	–0.1
Production of electrical, electronic and optical equipment	5.2	45.1	–40	1.2	2.6	–1.4	0.3	5	–4.7
Production of office equipment	0.1	2.7	–2.6	0	0.1	–0.1	0	0.2	–0.2
Production of electronic calculators and other information processing equipment	0.2	5.3	–5.1	0	0.2	–0.1	0.1	0.6	–0.5
Production of electrical machinery and equipment	1.7	11	–9.3	0.6	1	–0.3	0.1	1.5	–1.4
Production of medical equipment, including surgical equipment and orthopaedic appliances	0.1	4.1	–4	0.1	0.2	–0.2	0	0.5	–0.5
Production of electronic components, radio apparatus, television and telecommunications equipment	2	18.2	–16.2	0.2	0.8	–0.6	0.1	1.8	–1.7
Production of measuring, monitoring, test and control equipment; optical devices, photographic and cinematographic equipments; clocks and watches	1.2	3.9	–2.8	0.2	0.3	–0.1	0	0.5	–0.4
Production of transport facilities	7.9	53.6	–45.7	2.4	2.1	0.3	0.1	3.4	–3.3
Production of internal combustion engines for motor vehicles	0.5	3.1	–2.7	0.2	0.5	–0.4	0	0.2	–0.2
Motor car production	0.5	18.7	–18.2	0.1	0.6	–0.5	0	0.6	–0.6
Bus and trolleybus production	0.1	0.5	–0.4	0.1	0	0.1	0	0.1	–0.1
Trucks production	0.3	3.5	–3.2	1.4	0.1	1.3	0	0.4	–0.4
Shipbuilding and ship repair	1.6	3.9	–2.2	0	0	0	no data	no data	no data
Railway rolling stock production	0.8	3.7	–2.8	0	0.4	–0.3	0	1.5	–1.5
Aircraft production, including spacecraft	3.1	5.8	–2.6	no data	no data	no data	no data	no data	no data

Source: Customs Union Commission, UN Statistics Division, IEF RAS estimates

Note: The import and export data for Russia and Belarus were compiled using the FEACN six–figure coding. Since Kazakhstan's foreign trade statistics is based on FEACN four–figure coding, the figures for import and export data based on economic activity are estimated.

satisfy demand on its internal markets. As the economy grows, therefore, large-scale import substitution in Kazakhstan is unlikely to take place and in any case is simply not practical in respect of many products, since vast resources would be needed to set up new mechanical engineering industries.

The volume of mechanical engineering exports from Kazakhstan is low – in 2011, just 0.4% of GDP (the lowest rate of all the CES countries) – and exports are focused on the Russian market. It would be unwise to predict a dramatic increase, but given the creation of the CES, it is possible to foresee an increase in the flow of exports in some product groups (for example, bearings, electrical equipment).

Armenia, Kyrgyzstan, Tajikistan

In 2011, mechanical engineering exports amounted to $0.05 billion in Armenia, $0.12 billion in Kyrgyzstan and $0.06 billion in Tajikistan (see Table 2.3). In all three countries, mechanical engineering imports outstripped exports – $0.78 billion in Russia, $0.95 billion in Kyrgyzstan and $0.67 billion in Tajikistan.

	Armenia			Kyrgyzstan			Tajikistan		
	exports	imports	net exports	exports	imports	net exports	exports	imports	net exports
Mechanical engineering – total	0.05	0.78	–0.73	0.12	0.95	–0.83	0.06	0.67	–0.61
Equipment production	0.01	0.34	–0.33	0.02	0.31	–0.29	0.01	0.21	–0.2
Electrical equipment production	0.03	0.27	–0.24	0.04	0.22	–0.18	0.01	0.22	–0.21
Production of transport facilities	0	0.17	–0.17	0.06	0.42	–0.36	0.04	0.23	–0.19

Table 2.3. Mechanical engineering imports and exports in Armenia, Kyrgyzstan and Tajikistan in 2011 ($ billion)

Source: UN Statistics Division, Statistical Agency of the President of the Republic of Tajikistan, Institute of Economic Forecasting RAS estimates

3. Problems of and prospects for developing mechanical engineering

Mechanical engineering in the EDB member countries is based on models developed in the USSR. The collapse of the USSR severely damaged the sector and the economic conditions that prevailed in the aftermath were not conducive to recovery or the re-establishment of normal trade relations.

The mechanical engineering sectors in the countries of the former Soviet Union are very different both in terms of capacity and types of production, but they have a similar background and face common challenges as they strive to achieve their industrial potential.

When compared with the leading mechanical engineering nations, the region's republics suffer from **low levels of productivity**. In 2011, mechanical engineering output in Russia stood at approximately $130 million PPP per employee, in Belarus – $170,000 and in Kazakhstan – $140,000. In the USA, for example, this rate exceeded $350,000 per employee in 2010. Clearly, any comparison of industrial output using PPP figures (calculated for GDP as a whole) can only be regarded as approximate. In addition, the structure of mechanical engineering is very different in the countries under consideration. Estimates of this type do, however, allow variations in labour productivity to be assessed. The figures reveal that in Russia, Belarus and Kazakhstan, there is a two- to three-fold shortfall in productivity when compared to the leading mechanical engineering nations.

Assembly plants dependent on imported components are limited in the added value and productivity levels they can achieve.

Low labour productivity means higher production costs for the region's manufacturers than for their foreign counterparts and, subsequently, lower competitivity for their products.

According to an IEF RAS report of Russian companies operating in the real economic sector (see Tables 3.1 and 3.2), Russian consumers are disappointed by the quality of domestically-produced goods – a clear demonstration of the significant **difference between Russian mechanical engineering technology and that of leading nations**. The same can be said of mechanical engineering in the other countries of the region.

Period	Yes and quite a lot	Yes, but very little	No	Total number of companies reported
January – February 2002	8.82	54.41	36.76	100
June – July 2003	7.43	52.57	40	100
February – March 2005	8.07	52.8	39.13	100
August – September 2006	11.04	44.16	44.8	100
March – April 2008	11.02	59.85	29.13	100
February – March 2010	6.25	51.88	41.87	100
October – December 2011	6.38	55.32	38.3	100

Table 3.1.
Answers to the question: "Among the domestically-produced machinery and equipment used in your company is there anything you would regard as equal in quality to an equivalent manufactured in a country outside the region?"

Source: RAS Institute of Economic Forecasting report of 150 – 200 Russian real economic sector companies

Note: data given as a %, total response = 100%

Figures for labour productivity in the sector can be used to estimate differences in the level of technological development. However, inefficient use of labour resources and excessive employment (i.e., the number of employees over and above the number required to achieve the same level of output using a given type of technology) is not only connected with low levels of technology; this indicator also has an administrative or organisational component.

Table 3.2.
Answers to the question: "How would you evaluate the difference in quality between machinery and equipment manufactured inside the region and that manufactured in countries outside the region in recent years?"

Source: RAS Institute of Economic Forecasting report of 150 – 200 Russian real economic sector companies

Note: Data given as a %, total response = 100%

Period	Recently there has been less difference in quality	Remained at approximately the same level	The difference in quality continues to increase in favour of imported equipment	Total number of companies reported
January – February 2002	15.27	43.51	41.22	100
June – July 2003	16.67	45.83	37.5	100
February – March 2005	19.5	40.25	40.25	100
August – September 2006	14.29	45.45	40.26	100
March – April 2008	15.63	50.75	33.59	100
February – March 2010	15.72	36.48	47.8	100
October – December 2011	12.95	50.36	36.69	100

In research by Uzyakov (2011), a method was devised and tested in which the labour productivity gap could be separated into technical and organisational components. This method allows the scale of the material resources needed for achieving target output volumes in the relevant sector to be compared. Comparison of the scale of material resources needed to achieve a given output represents the gap in technology between the countries under consideration.

The results show that low levels of labour productivity in Russia are to a large extent caused by organisational problems. Nevertheless, even after organisational components have been removed, the size of the technology gap in respect of Japan, Germany and the USA remains significant.

Dependency on imported mechanical engineering products is a serious problem. Given the mechanical engineering trade balances in Russia, Belarus and Kazakhstan (see Table 1.5), it is clear that there is almost no domestic production in many subsectors, while in others it is reasonably well developed, though not sufficient to meet demand. As a result, demand for the products in these subsectors has to be met by imports.

This situation would not improve significantly, even if all the countries in the region were treated as a common market. In fact, it would worsen, because the exchange rates of the republics are extremely sensitive to external impact (this is particularly the case for Russia and Kazakhstan, where fuel and energy account for more than half of all exports). The periodic and unavoidable fluctuations in the price of oil and other resource–based commodities, brought about by changes in exchange rates, would have a significant effect on the cost of purchasing mechanical engineering products from outside the region.

National currencies with low exchange rates actually stimulate domestic producers, including mechanical engineering companies. However, such is the dependence of the region's countries on imports that increases in the cost of supplying foreign equipment outweigh any of the advantages brought about by the low exchange rate valuations of the national currencies. Aside from this, however, the quality of mechanical engineering production in the republics – even allowing for the cheapness of their national currencies – is, in many cases, simply not high enough to bring about any increase in demand for it.

The volume of mechanical engineering products exported by the region is small, due to the **lack of an effective support system**.

This is largely the result of the technology gap between the region's republics and the global leaders in mechanical engineering. Nevertheless, for certain products, machinery and equipment exports could be greater, if only there was a developed institutional and financial system in place to support non–raw material exports. As it is, economic and political support for domestic non–raw material exports is restricted to the armaments market.

One of the fundamental obstacles to developing mechanical engineering in the CU countries is **the lack of available finance**. This problem is amply illustrated by the fact that in Russia, in 2011, only 7.7% of capital investment was covered by bank credit. As a result, mechanical engineering companies often have no way of financing the modernisation or expansion of their production facilities. The direct consequences of that are low levels of labour productivity and the resultant technology gap. Creating a system of financing mechanical engineering – including research and development institutes – would significantly improve the sector's performance.

Transport costs and high energy–output ratios, which limit **profitability** and reduce price competitiveness, have a negative effect on the development of the region's mechanical engineering companies. High levels of fixed asset depreciation, together with outdated equipment and technology, do little to support profitable production. Due to a lack of easy access to affordable credit, mechanical engineering companies are forced to rely on their own resources to fund development. But for the reasons mentioned above, profitability in the majority of cases is relatively low and frequently close to zero. These circumstances seriously hinder modernisation of production facilities and complicate access to credit resources.

The entry of the largest economic region – Russia and Kazakhstan – to the World Trade Organisation is likely to exacerbate market competition between manufacturers in the Bank's member countries and those from outside the region. Competition can, of course, have a positive impact, but when the mechanical engineering sector problems described above are taken into account (low profitability, difficulties in obtaining credit, technology gap, excessive employment, etc.), position of some subsectors could seriously deteriorate.

These problems can also affect mechanical engineering companies from outside the region, which use facilities in Russia and other CU republics producing sub–assemblies and spare parts. Where import duties on finished products are high, there is an economic justification for the launch of such companies. But in situations where customs duties have to be reduced, the rate of expansion of such assembly facilities and the further localisation of production in the region's republics can fall dramatically.

On joining the WTO, a transition period is envisaged, during which customs tariffs in respect of mechanical engineering production will be amended and the necessary measures for addressing the problems of WTO entry can be implemented.

Analysis of all these facts and statisics does allow an assessment to be made of the sector's current potential and prospects for its future development.

Since the middle of the 2000–2010 period, there has been rapid renewal and **modernisation of the production potential of some mechanical engineering subsectors**, primarily oriented towards meeting demand (cars, domestic appliances, etc.). This promotes competitiveness and facilitates the substitution of imports.

The growing markets of the CU republics are attracting foreign investors who have been willing to develop production in the CU territory (the industrial assembly plants of the leading global car makers in Russia and Kazakhstan are an obvious example). The **process of creating foreign production within the region** increases the potential for assimilating and dispersing foreign technology and expertise.

There has been a positive dynamic in mechanical engineering efficiency indicators in recent years. Firstly, following the crisis years of 2008 and 2009, labour productivity grew

rapidly in some mechanical engineering subsectors. Secondly, since the end of the 1990s, there has been a gradual reduction in specific expenditure on primary resources. According to IEF RAS forecasts (Shirov et al, 2012), further increases in the production efficiency indicators of these mechanical engineering subsectors can be expected in the short–to–medium term, mainly due to organisational improvements in labour productivity and without the need for additional expenditure on investment. The hope is that non investment–driven growth of this type can maintain the high levels of progress in the sector, at least over the next few years.

In recent years, the development of key mechanical engineering subsectors has been a factor in the economic policies of the governments of the region. **State support for mechanical engineering** is being mobilised. Examples include the consolidation of aircraft and shipbuilding companies in Russia and active financing of the sector by development banks, the state industrialisation programme in Kazakhstan and state support for the motor vehicle and tractor industries in Belarus.

Relatively **favourable fiscal policies** throughout the region are creating additional opportunities to develop mechanical engineering. The fiscal burden on the economy is lower than, for example, in Germany, so in the process of developing mechanical engineering in the CU member states, lower fiscal costs could significantly increase competitiveness[4].

The countries of the region have a "historic" mechanical engineering base: some of the industries that were highly–developed during the Soviet period are now in decline. But the remaining specialists, design teams and production facilities are still able to contribute to recovery.

The increased wealth of the populations of the republics coupled with the relatively low ownership levels of cars and durable goods should stimulate **demand for the products of those mechanical engineering subsectors** oriented towards consumer markets (a process which has been under way for several years).

At the same time, the modernisation of different sectors of the region's economies should stimulate demand for the results of investment in mechanical engineering. Meeting this growing demand without significantly increasing the level of imports is possible only under conditions of stable development in domestic mechanical engineering and mitigation of the problems affecting it.

The **creation of a Common Economic Space** and the prospect of other republics being allowed to join it is leading to a reduction in the cost of trade between the member countries and opening up new possibilities for cooperation both for companies in the mechanical engineering sector and for their suppliers. In addition, common customs tariffs create barriers to the supply of mechanical engineering products from outside the region and increase demands for the import–substitution production of the companies in the region.

The strengthening of integration processes will allow the region's historical mechanical engineering production links to be restored and further developed.

In order to establish measures for further development of the mechanical engineering sector, an objective analysis of strengths, weaknesses, opportunities and threats needs to be carried out.

In *Table 3.3*, the results of a SWOT analysis are presented, which detail the current strengths and weaknesses and highlight potential opportunities and threats. These are grouped

[4] In 2011 the Russian system of insurance premium rates was changed: companies' burden was increased. This decision was critised as the one that undermines competitiveness of the country economy, primarily, of processing sectors. However, this opinion contradicts with statistical data: even after increasing nominal rates of insurance premiums, the burden associated with their payment remains relatively insignificant.

	Positive factors	Negative factors
Internal context	*Strengths (S)*	*Weaknesses (W)*
	Modernisation of some mechanical engineering subsectors	Low labour productivity compared with the leading nations
	Foreign production growing in the region	Technically inferior to mechanical engineering's global leaders
	Increased efficiency in mechanical engineering production over recent years	Absence of large-scale production for many kinds of mechanical engineering products
	Potential for further rapid growth in labour productivity	Dependence on imports of mechanical engineering products
	Activation of state support to some mechanical engineering sectors	Low levels of profitability among mechanical engineering companies
External context	*Opportunities (O)*	*Threats (T)*
	Projected growth in demand – both consumer and investment – for mechanical engineering products	Lack of available large-scale funding
	Integration taking place between the countries of the region	Sensitivity of the region's national currencies to external shocks
	Comparatively favourable fiscal policy	Absence of institutional support for exports
	Existence of a "historical" mechanical engineering base	Possible sharpening of competitive relations with foreign producers due to WTO accession

Table 3.3.
SWOT analysis of the potential for developing mechanical engineering in the region

according to the source, the internal state of the mechanical engineering sector and its external environment.

The export/import analysis of the mechanical engineering sectors of the countries reported demonstrates that the sector would be unable to compete on world markets in the short and medium term. Imports of some types of mechanical engineering production are, therefore, likely to increase.

Nevertheless, removal of the major obstacles to development could increase the export potential of the sector and reduce dependence on imports. Given the rapid growth in internal demand for sector production, it would be practical for mechanical engineering companies to focus on their internal markets.

One of the most important and realistic ways of developing the mechanical engineering sector in the current climate would be to encourage cooperation between the countries in the region. This would help increase production, boost exports, expand investment and promote the introduction of new technologies.

4. Cooperation in the mechanical engineering sector (mutual trade and investment)

Current flows of mechanical engineering products between the countries of the region

The volume of trade in mechanical engineering products between the countries of the region is very small when compared to the total volume of external trade. In 2011, the total combined export and import of mechanical engineering products in the region amounted to $201.4 billion, yet trade between the countries amounted to just $21.6 billion or 10.7% of the total volume.

In 2011, the flow of mechanical engineering exports between the CU member states – Russia, Belarus and Kazakhstan – accounted for $10.5 billion of the total volume of $10.8 billion, since trade between Armenia, Kyrgyzstan and Tajikistan is virtually non-existent.

At the same time, several large-scale mechanical engineering production flows can be identified in trading between the CU countries (see the top section of Table 4.1):

- Exports from Belarus to Russia – $4.7 billion in 2011;
- Exports from Russia to Kazakhstan – $3.3 billion;
- Exports from Russia to Belarus – $1.9 billion.

The flows of exports from Kazakhstan to Russia and from Belarus to Kazakhstan are much smaller, amounting to $0.4 and $0.2 billion respectively.

Exports of mechanical engineering products from Russia to Armenia, Kyrgyzstan and Tajikistan are very low, totalling $0.2 billion in 2011. Exports to these countries from Belarus are even lower and exports from Kazakhstan are virtually non-existent.

The dependence of exporters of machine-building products on the region's markets varies considerably (see the middle section of Table 4.1). These market shares are critically important to producers of machinery and equipment in Belarus and Kazakhstan. Belarus directs 73% of all exports into the region – 69.1% of which go to Russia. The region absorbs 57.1% of Kazakh exports, nearly all of which go to Russia. At the same time, Russia is less dependent on the CU country markets – only 32.5% of all Russian mechanical engineering exports end up in the region (19.9% in Kazakhstan and 11.4% in Belarus).

Russia imports virtually no mechanical engineering goods from the region. Countries outside the region accounted for 96.6% of all imports to Russia in 2011 (see the bottom section of Table 4.1). In Belarus and Kazakhstan the corresponding figures are 77.7% and 74.6% respectively – the remaining imports to these countries come from Russia. Armenia, Kyrgyzstan and Tajikistan purchase some 90% of all imports from countries outside the region. It is clear that imports of mechanical engineering products come overwhelmingly from countries outside the region. This is direct evidence of the low levels of competitiveness plaguing the region's mechanical engineering companies.

Dynamics of the major flows of mechanical engineering products between the countries of the region in 2008–2011

The major flows of mechanical engineering products between the countries of the region have remained stable over the last four years (see Figure 4.1). However, flow volumes have fluctuated markedly. These fluctuations can be explained by the fall in demand for equipment and transport

Exports ($ billion)		To							
		Russia	Belarus	Kazakhstan	Armenia	Kyrgyzstan	Tajikistan	Rest of the world	Total
From	Russia	–	1.9	3.3	0.09	0.06	0.04	11.2	16.6
	Belarus	4.7	–	0.2	0.01	0.03	0.01	1.8	6.8
	Kazakhstan	0.4	0	–	0	0.01	0	0.3	0.7
	Armenia	0.01	0	0	–	0	0	0.04	0.05
	Kyrgyzstan	0.02	0.01	0	0	–	0	0.09	0.12
	Tajikistan	0	0	0	0	0	–	0.06	0.06
	Rest of the world	147.3	6.7	10.3	0.68	0.85	0.62	–	166.5
	Total	152.4	8.6	13.9	0.78	0.95	0.67	13.5	190.8
Exports (%)		To							
		Russia	Belarus	Kazakhstan	Armenia	Kyrgyzstan	Tajikistan	Rest of the world	Total
From	Russia	–	11.4	19.9	0.5	0.4	0.2	67.5	100
	Belarus	69.1	–	3.2	0.1	0.4	0.1	27	100
	Kazakhstan	55	0.7	–	0	1.4	0	42.9	100
	Armenia	20	0	0	–	0	0	80	100
	Kyrgyzstan	16.7	8.3	0	0	–	0	75	100
	Tajikistan	0	0	0	0	0	–	100	100
	Rest of the world	88.5	4	6.2	0.4	0.5	0.4	–	100
	Total	79.9	4.5	7.3	0.4	0.5	0.4	7.1	100
Imports (%)		From							
		Russia	Belarus	Kazakhstan	Armenia	Kyrgyzstan	Tajikistan	Rest of the world	Total
To	Russia	–	3.1	0.3	0	0	0	96.6	100
	Belarus	22.1	–	0.1	0	0.1	0	77.7	100
	Kazakhstan	23.8	1.6	–	0	0	0	74.6	100
	Armenia	11.5	1.3	0	–	0	0	87.2	100
	Kyrgyzstan	6.3	3.2	1.1	0	–	0	89.5	100
	Tajikistan	6	1.5	0	0	0	–	92.5	100
	Rest of the world	82.8	13.6	2.2	0.3	0.7	0.4	–	100
	Total	8.7	3.6	0.4	0	0.1	0	87.2	100

Table 4.1.
Flow of mechanical engineering production between the region's countries and the rest of the world in 2011

Source: Customs Union Commission, UN Statistics Division, IEF RAS estimates

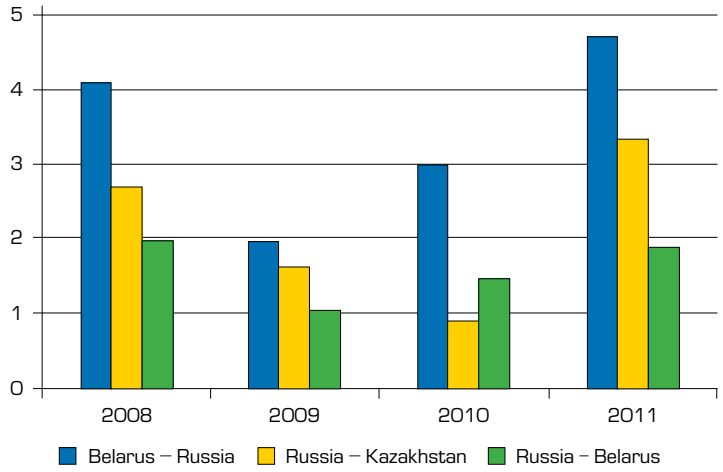
facilities brought about by the world economic crisis. In 2009, a sharp decline in foreign trade was observed as a result of the crisis. In 2011, the major flows not only recovered, but went on to exceed their pre–crisis levels.

Mutual trade in mechanical engineering products in 2011 (by type of economic activity)

Table 4.2 gives a breakdown (by type of economic activity) of the three largest export flows of mechanical engineering products between the countries. Exports to Russia from Belarus mainly

Figure 4.1.
Major flows of mechanical engineering production between the countries of the region in 2008–2011 ($ billion)

Note: The first country in the pair is the exporter



involve agricultural machinery and equipment ($1.14 billion in 2011), trucks ($1.01 billion) and electrical equipment ($0.49 billion). There are also significant flows of machinery and equipment for the construction and mining sectors; pumps, compressors and hydraulic systems and vehicle engines.

At least one half of all Belarus' major exports are to Russia. However, the majority of Belarus' exports rarely enjoy a share on Russia's markets in excess of 5% (the exceptions are trucks – 28.8%, machinery and equipment for agriculture – 20.4% and buses and trolleybuses – 15.7%).

The major Russian exports to Belarus are electrical equipment ($0.35 billion in 2011), vehicle engines ($0.27 billion), rolling stock ($0.22 billion) and electronic components, radio apparatus, television and telecommunications equipment ($0.18 billion). Some Russian exports enjoy a significant share of Belarus' market. Exports of vehicle engines, for example, have a 59.4% market share in Belarus. Railway rolling stock occupies 26.1% of the market, while electrical machinery and equipment exports have a 21.5% share. In fact, Russian goods in general enjoy high market share in Belarus, sometimes reaching 50–60%.

The dominant exports from Russia to Kazakhstan are rolling stock ($0.62 billion in 2011), electrical equipment ($0.52 billion) and electronic components, radio apparatus, television and telecommunications equipment ($0.3 billion).

Dynamics of the major flows of mechanical engineering products between the countries of the region in 2008–2011 (by type of economic activity)

The dynamics of the major export flows of mechanical engineering subsectors in 2008–2011 were similar to those observed for mechanical engineering production as a whole (see Figure 4.2), i.e., a reduction in the volumes exported during 2009 due to the crisis and returning to (or exceeding) pre-crisis volumes in 2011. Note that the export of electrical, electronic and optical equipment from Russia to Kazakhstan in 2011 was several times higher than the 2010 figure and exceeded the corresponding export figure from Belarus to Russia.

Mutual investment between the countries of the region

Practically all mutual direct investment can be attributed to just three of the countries of the region – Russia, Belarus and Kazakhstan (see Table 4.3).

Table 4.2.
Major mechanical engineering export flows between the countries of the region in 2011*

	Exports, Belarus to Russia			Exports, Russia to Belarus			Exports, Russia to Kazakhstan		
	$ billion	% exports, Belarus to all countries	% imports, Russia from all countries	$ billion	% exports, Russia to all countries	% imports, Belarus from all countries	$ billion	% exports, Russia to all countries	% imports, Kazakhstan from all countries
Mechanical engineering – total	4.71	69.1	3.1	1.88	11.4	22.4	3.33	19.9	24
Equipment production (excluding the production of arms and ammunition)	2.17	67.4	4	0.55	15.9	14.2	1.18	34.1	21.4
Production of pumps, compressors and hydraulic systems	0.14	80.3	3.5	0.07	20.1	21.1	0.25	72.4	34.2
Production of bearings, toothed gears and parts for mechanical transmissions and drives	0.06	68.6	5.5	0.07	23.1	28.2	0.07	21.6	37
Production of agricultural machinery and equipment	1.14	64.4	20.4	0.02	13.2	4.1	0.11	73.6	26.2
Machine tool production	0.07	83.6	2.8	0.02	17.3	7.1	0.02	20.3	29.6
Production of material handling equipment	0.12	79.5	4	0.03	29	12.8	0.05	47.9	25.1
Production of machinery and equipment for the construction and resource extraction industries	0.15	84.7	2.4	0.07	14.8	19.5	0.13	28.4	15.4
Production of domestic appliances not included in other groups (refrigerators, freezers, washing machines, dish washers, microwave ovens, etc.)	0.04	84.3	2.2	0.01	9.3	11.9	0.03	27.4	21.2
Production of electrical, electronic and optical equipment	0.83	70.3	1.8	0.64	12.5	25	1.02	19.9	20.3
Production of electrical machinery and equipment	0.49	79.1	4.5	0.35	21.5	37.2	0.52	32	34.4
Production of electronic components, radio apparatus, television and telecommunications equipment	0.18	76.6	1	0.18	8.9	20.8	0.3	14.6	16.6
Production of measuring, monitoring, test and control equipment; optical devices, photographic and cinematographic equipments; clocks and watches	0.13	58.7	3.3	0.08	7.2	30.4	0.12	10.7	25.9
Production of transport facilities and associated equipment	1.71	71.1	3.2	0.68	8.7	32.2	1.13	14.5	33.6
Production of internal combustion engines for motor vehicles	0.13	73.8	4	0.27	59.4	48.8	0.04	9.9	24
Car production	0.09	99.6	0.5	0.03	6.6	6	0.13	27.9	20.2
Bus and trolleybus production	0.08	51.8	15.7	0.01	9.6	45.9	0.04	37.1	32.7
Trucks production	1.01	74.1	28.8	0.03	9	27.3	0.12	37.1	30.8
Rolling stock production	0.03	62.9	0.7	0.22	26.1	59.9	0.62	73.1	41.5

Source: Customs Union Commission, UN Statistics Division, IEF RAS estimates

Note: The economic activity import and export data for Russia and Belarus was compiled using the FEACN six–figure coding. Since Kazakhstan's foreign trade statistics is based on FEACN four–figure coding, the figures for import and export data based on economic activity are estimated.

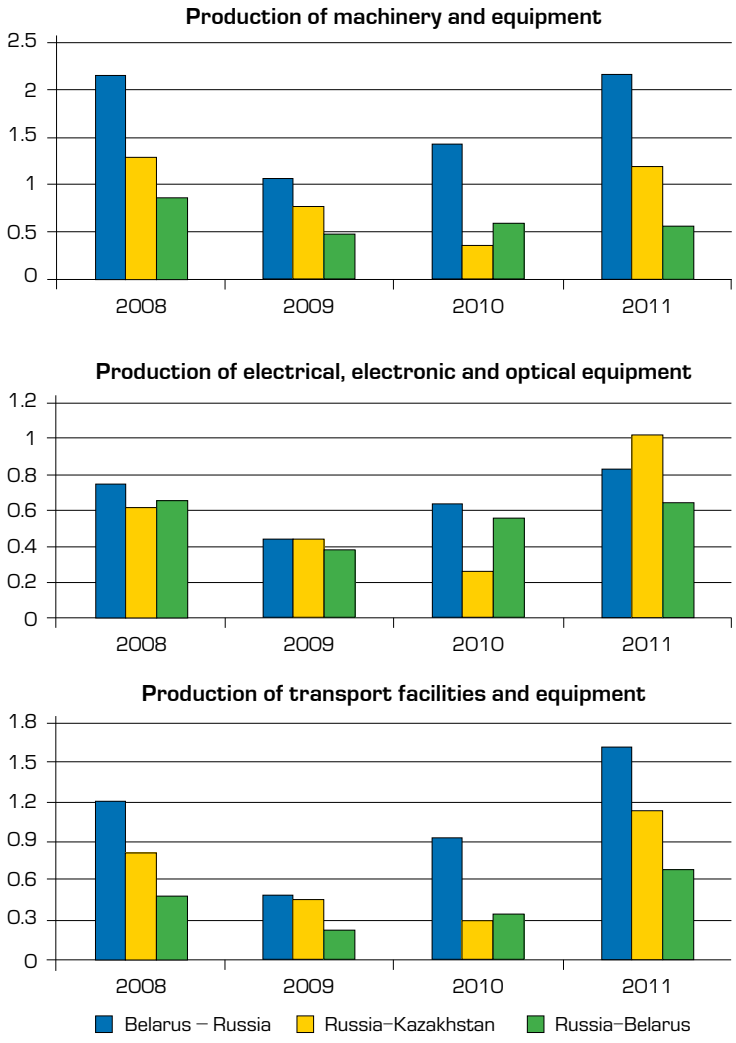


Figure 4.2.
Major flows of mechanical engineering products between the countries of the region in 2008–2011 (by type of economic activity, $ billion)

Note: The first country of the pair is the exporter.

The major direct investment flows are as follows:

1. Belarus – Russia ($1.25 billion in 2010);
2. Russia – Belarus ($0.68 billion);
3. Kazakhstan – Russia ($0.15 billion).

Given the size of economies of the countries under review, the stated direct investment flows are significant only to Belarus.

Table 4.3.
Mutual direct investment between the countries of the region in 2010 ($ million)

Source: CIS Statistical Committee

Direction		Into					
		Russia	Belarus	Kazakhstan	Armenia	Kyrgyzstan	Tajikistan
From	Russia	–	675.1	5.5	no data	0	0
	Belarus	1246.7	–	48.2	0.2	no data	no data
	Kazakhstan	150.7	0	–	0.2	4.8	6.5
	Armenia	no data	no data	no data	–	no data	no data
	Kyrgyzstan	no data	no data	0.1	no data	–	no data
	Tajikistan	no data	no data	no data	no data	no data	–

5. Current integration processes

Mechanical engineering creates the conditions in which key sectors of the economy function and the sector also invests to produce the equipment, materials and transport facilities required.

Currently, the largest integration project in the region is the joint construction by Belarus and Russia of a nuclear power station in Belarus. The first phase of the project is due to be completed in 2017, the second in 2018.

Another major cooperation project – this time in the field of mechanical engineering – is the merger of the leading Russian and Belarusian trucks manufacturers KamAZ and MAZ.

Active cooperation is also being pursued in agricultural mechanical engineering – another merger, in this case involving Tractor Plants of the Russian Federation and MTZ of Belarus.

Creation of a "Eurasian" multi-functional space system based on micro-satellites is also a possibility for the future.

The global leader in the production of dumper trucks, BelAZ – OJSC Belarusian Autoworks, is actively developing. The company has a strong position on the Russian and Kazakh markets, where it owns assembly plants and service production facilities.

Over the last two years, 12 Belarusian equipment assembly plants[5] have been created in Kazakhstan under the "Road Map" programme for trade and economic cooperation between Belarus and Kazakhstan.

Currently, the machinery and equipment of BelAZ, MTZ, Gomselmash, OJSC Minsk Motor Plant, OJSC Minsk Vehicle Plant, Mogilevliftmash, OJSC Bobruiskagromash and OJSC Belkard is being assembled in Kazakhstan.

The establishment of the CES that will lift restrictions on the transfer of labour, capital and goods is bringing new opportunities for development of the sector.

Introducing Customs Union standards and practices

The Eurasian Economic Commission is actively involved in forming the statutory and regulatory basis of the CU and the CES. The process of introducing CU standards and practices in its member states began in 2012. These are needed to ensure that the CES is only able to function under a common set of safety regulations and mutual recognition by its members of the competent certifying bodies. Once these standards and practices have been adopted, the corresponding national regulations will cease to apply.

The mechanical engineering activities subject to common CU regulations include: machinery and equipment, high- and low-voltage equipment, wheeled vehicles, tractors, agricultural machinery, forestry machinery, railway and rapid-transit rolling stock, light-rail vehicles, trams, watercraft, systems and equipment for metering water, gas, thermal energy and electrical energy, systems and equipment for the processing and measurement of crude oil and telecommunications systems. Many of the CU standards and practices will come into force over the next two to three years and will help increase competitiveness, stimulate innovation and protect markets from infiltration by inferior quality products.

Analysis of existing barriers to integration

As with other sectors, mechanical engineering is affected by many individual factors which together create a favourable (or unfavourable) environment. International ratings relating to

[5] Data provided by the Deputy Prime Minister of Belarus Valery Ivanov at the 8th session of the Intergovermental Belarusian-Kazakh Commission for trade and economical cooperation. http://www.soyuz.by/ru/?guid=70665

Table 5.1.
Schedule for the introduction of Customs Union standards and practices in the field of mechanical engineering

Source: Committee for Technical Regulation and Metrology, Ministry of Industry and New Technologies of the Republic of Kazakhstan

On the safety of low-voltage equipment	From July 1, 2012
On the safety of devices operating on gaseous fuels	From February 15, 2013
On the safety of machinery and equipment	From February 15, 2013
On the electromagnetic compatibility of equipment	From February 15, 2013
On lift safety	From April 18, 2013
On the safety of railway rolling stock	From 2015
On the safety of high-speed rail transportation	From 2015
On the safety of wheeled transportation	From 2015

attractiveness, competitiveness, transparency and ease of doing business are normally used to evaluate the commercial conditions in a particular country.

When comparing countries, the World Bank and World Economic Forum use a wide range of methods to calculate development, competitiveness and business quality indices (see Appendix 1). Using these international ratings, countries can be ranked in terms of the commercial environments they offer and obstacles to trade can be evaluated.

Clearly, the Russian Federation has the most developed economy and the best ratings for the most important economic indicators.

However, Russia is not superior to its regional partners in every respect and, in some respects, lags far behind Belarus and Kazakhstan – for example, with regard to the ease of doing business.

This suggests economic integration within the region – and also within the mechanical engineering sector – is best served by capitalising on the advantages offered by each individual country, while trying to minimise any disadvantages.

When setting up and developing mechanical engineering production, it is possible to study the indicators appertaining to simplified procedures for the registration of new companies in Belarus, taxation in Kazakhstan and the higher costs of innovative research in Russia.

Barriers to integration were also studied in the UNIDO (United National Industrial Development Organisation) project on supporting commercial integration processes in the EurAsEC countries and interacting with the UNIDO global network (see Appendix 2). A report entitled Analysis of the level of industrial cooperation between the country members of the Eurasian Economic Community and the way to its development has been drafted based on that research work.

The aim of the research was to obtain information from companies about levels of development, the problems of and prospects for industrial cooperation between the EurAsEC member countries.

By analysing the "express assessment" of the EurAsEC member countries (Belarus, Tajikistan, Kazakhstan, Kyrgyzstan and Armenia) we gain a picture of the current obstacles to regional cooperation (which are closely linked to individual country needs).

Almost 90% of respondents answered positively to the question of whether there is a need to increase cooperation between EurAsEC partners. The most desirable forms of cooperation appear to be those linked with trade (70%), information exchange (60%), industrial cooperation and the creation of joint ventures (60%).

When asked about service requirements, respondents answered as follows: consulting services to help establish and develop partnerships – 60% of all respondents; availability of information on potential partners, goods and markets – 70% of all respondents.

The absence of reliable information (65%) was identified as the major problem in response to questions about difficulties in establishing and implementing industrial cooperation.

With regard to proposals for improving partnerships, 80% of respondents supported the idea of setting up a single centre to promote industrial cooperation and 75% were in favour of creating a mechanism to establish links between producers and consumers.

The need for cooperation in the field of industrial modernisation and the organisation of commercial partnerships was cited by more than 90% of the respondents.

The above results led to the following conclusions.

One of the main obstacles to the creation of the CES is the difficulty in obtaining information, particularly about the competitive potential of the EurAsEC countries (there is information, but not enough of it and it is difficult to access). Another obstacle is the lack of any joint initiative or programme to facilitate industrial integration. In theory, such programmes do exist, but it is mainly small and medium–sized enterprises which need better access to these programmes. The innovation infrastructure designed to promote international industrial cooperation and improve business relations needs to be reinforced.

The express analysis suggests that companies are not able to access a comprehensive range of consulting services to assist in their modernisation. It is not sufficient to simply open highly–specialised project offices focusing on investment and technology. These must be staffed by competent personnel able to advise on the full range of complex modernisation issues. Personnel must also be trained on issues relating to commercial partnership. The most important task is to develop pilot projects and programmes which can demonstrate concrete results.

It is also clear that barriers to integration exist both institutionally and in terms of knowledge and expertise. The main barriers are still associated with limitations upon economic development. In other words, where rapid economic growth is common to an entire region, barriers to integration simply melt away. But where economic growth is sluggish, the effects of institutional change will be minimal. It must therefore be recognised that the Russian economy, with its huge domestic market, will, in the foreseeable future, continue to be the engine of growth and the major target for developing mechanical engineering in the region. The main objectives in integrating mechanical engineering should therefore be as follows:

- To use to the fullest extent the demand potential of mechanical engineering products on the Russian market. Aim: to bring down the barriers limiting demand for mechanical engineering products in the smaller countries of the CU.
- To raise the level of technological development in all the countries of the region to that enjoyed by Russia. Aim: to reduce technological barriers to integration.
- To harmonize the legislative and other institutional conditions affecting the operation of mechanical engineering companies. Aim: to remove institutional barriers to enterprises in the countries of the CU producing and selling equipment, including barriers relating to state procurement.

Conclusion

Our aim has been to analyse prospects for development and integration in mechanical engineering of the member countries of the Bank.

Based on the results of the analysis, we have been able to draw the following conclusions: the region has a huge potential to develop mechanical engineering thanks to the presence of one of the most promising domestic markets in the world, and the availability of the resources required for this development and opportunities for increasing both efficiency and export volumes. Some of the current challenges facing mechanical engineering, even allowing for their gradual elimination, will continue to impact the industry in the long term. This applies particularly to the relatively low levels of labour productivity, the technology gap and the dependence on mechanical engineering imports. The same might also be said of the dependency of national currency exchange rates on external economic conditions, since this poses a risk to mechanical engineering development. At the same time, the financing of mechanical engineering and support for non–primary exports could be improved.

If no attempt is made to address the major challenges facing mechanical engineering, the accession of Russia and the other countries of the region to the WTO will heighten the risks to some subsectors of the industry.

The report has defined the main directions of integration development for mechanical engineering in the EDB member countries.

The issues raised in the report need to be discussed and require more detailed scientific study to enable specific recommendations to be identified and solutions to the socio–economic and political problems affecting integration in the EDB member countries to be developed.

References

BEA (2012) Bureau of Economic Analysis. Official website. Available at: http://www.bea.gov

Eurostat (2012) European Statistical System. Official website. Available at: http://epp.eurostat.ec.europa.eu

INSEAD (2012) European Institute of Business Administration. Official website. Available at: www.insead.edu

SBJ (2012) Statistics Bureau of Japan. Official website. Available at: www.stat.go.jp/english

UNIDO (2012) United Nations Industrial Development Organisation. Official website. Available at: www.unido.ru

UNSTATS (2012) United Nations Statistics Division. Official website. Available at: www.unstats.un.org

WGI (2012) The Worldwide Governance Indicators project. Official website. Available at: www.govindicators.org

WB (2012) the World Bank Group Official site, available at http://www.doingbusiness.org

IEF RAS – Institute of Economic Forecasting, Russian Academy of Sciences Official site, available at www.ecfor.ru

Kygyz Republic (2012) National Statistics Committee of the Kyrgyz Republic Official site, available at www.stat.kg

ISC CIS (2012) Interstate Statistical Committee of the CIS Official site, available at www.cisstat.com

OECD (2012) Organisation for Economic Cooperation and Development. Official site, available at http://www.oecd.org

Republic of Armenia (2012) National Statistical Service of the Republic of Armenia. Official site, available at www.armstat.am/ru

Republic of Belarus (2012) National Statistical Committee of the Republic of Belarus Available at: http://belstat.gov.by/

Republic of Kazakhstan (2012) Statistical Agency of the Republic of Kazakhstan. Official site, available at http://www.stat.kz

Rosstat (2012) Federal State Statistics Service Official site, available at http://www.gks.ru

Republic of Tajikistan (2012) Statistical Agency of the President of the Republic of Tajikistan Official site, available at www.stat.tj/ru

Global Competitiveness rating statistics website – http://www.weforum.org/issues/global–competitiveness

CU (2012) Customs Union Commission Available at: www.tsouz.ru

M. Uzyakov (2011) "The effective use of primary resources as an indicator of technological development: retrospective analysis and forecasting"; *Problems with forecasting* No.2.

A. Shirov, M. Gusev, A. Yantovskyi, V. Potapenko (2012) "The long term development of the Russian economy and problems relating to the effective use of labour"; *Problems with forecasting* No.1.

Annex 1. Rankings

1. The Methodology of the Doing Business rankings calculation (The World Bank Group)

Source: The Doing Business project statistics – http://russian.doingbusiness.org/

1. The ease of doing business, starting a business

Covers all procedures officially required, or commonly done in practice, for an entrepreneur to start up and formally operate an industrial or commercial business, as well as the time and cost to complete them and the paid–in minimum capital requirement. These procedures include obtaining all necessary licenses and permits and completing any required notifications, verifications or inscriptions for the company and employees with relevant authorities. The ranking on the ease of starting a business is the simple average of the percentile rankings on its component indicators.

After a study of laws, regulations and publicly available information on business entry, a detailed list of procedures is developed, along with the time and cost of complying with each procedure under normal circumstances and the paid–in minimum capital requirement. Subsequently, local incorporation lawyers, notaries and government officials complete and verify the data.

2. Getting electricity

Covers all procedures required for a business to obtain a permanent electricity connection and supply for a standardized warehouse. These procedures include applications and contracts with electricity utilities, all necessary inspections and clearances from the utility and other agencies and the external and final connection works. The report divides the process of getting an electricity connection into distinct procedures and calculates the time and cost of completing each procedure. The ranking on the ease of getting electricity is the simple average of the percentile rankings on its component indicators.

Data are collected from the electricity distribution utility, then completed and verified by electricity regulatory agencies and independent professionals such as electrical engineers, electrical contractors and construction companies. The electricity distribution utility reported is the one serving the area (or areas) where warehouses are located. If there is a choice of distribution utilities, the one serving the largest number of customers is selected.

3. Registering property

Covers the full sequence of procedures necessary for a business (buyer) to purchase a property from another business (seller) and to transfer the property title to the buyer's name so that the buyer can use the property for expanding its business, use the property as collateral in taking new loans or, if necessary, sell the property to another business. The process starts with obtaining the necessary documents, such as a copy of the seller's title if necessary, and conducting due diligence if required. The transaction is considered complete when it is opposable to third parties and when the buyer can use the property, use it as collateral for a bank loan or resell it. The ranking on the ease of registering property is the simple average of the percentile rankings on its component indicators.

4. Getting credit

Measures the legal rights of borrowers and lenders with respect to secured transactions through one set of indicators and the sharing of credit information through another. The first set of indicators measures whether certain features that facilitate lending exist within the applicable collateral and bankruptcy laws. The second set measures the coverage, scope and accessibility of credit information available through public credit registries and private credit bureaus. The ranking on the ease of getting credit is based on the percentile rankings on the

sum of its component indicators: the depth of credit information index and the strength of legal rights index.

5. Protecting investors

Measures the strength of minority shareholder protections against directors' misuse of corporate assets for personal gain. The indicators distinguish 3 dimensions of investor protections: transparency of related–party transactions (extent of disclosure index), liability for self–dealing (extent of director liability index) and shareholders' ability to sue officers and directors for misconduct (ease of shareholder suits index). The data come from a report of corporate and securities lawyers and are based on securities regulations, company laws, civil procedure codes and court rules of evidence. The ranking on the strength of investor protection index is the simple average of the percentile rankings on its component indicators.

6. Paying taxes

Covers the taxes and mandatory contributions that a medium–size company must pay in a given year as well as measures of the administrative burden of paying taxes and contributions. Taxes and contributions measured include the profit or corporate income tax, social contributions and labor taxes paid by the employer, property taxes, property transfer taxes, dividend tax, capital gains tax, financial transactions tax, waste collection taxes, vehicle and road taxes, and any other small taxes or fees. The ranking on the ease of paying taxes is the simple average of the percentile rankings on its component indicators, with a threshold being applied to one of the component indicators, the total tax rate. The threshold is defined as the highest total tax rate among the top 30% of economies in the ranking on the total tax rate. It is calculated and adjusted on a yearly basis. This year's threshold is 32.5%. The threshold is not based on any economic theory. Instead, it is mainly empirical in nature, set at the lower end of the distribution of tax rates levied on medium–size enterprises in the manufacturing sector as observed through the paying taxes indicators.

7. Trading across borders

Measures the time and cost (excluding tariffs) associated with exporting and importing a standardized cargo of goods by sea transport. The time and cost necessary to complete every official procedure for exporting and importing the goods are recorded; however, the time and cost for sea transport are not included. All documents needed by the trader to export or import the goods across the border are also recorded. For exporting goods, procedures range from packing the goods into the container at the warehouse to their departure from the port of exit. For importing goods, procedures range from the vessel's arrival at the port of entry to the cargo's delivery at the warehouse. For landlocked economies, these include procedures at the inland border post, since the port is located in the transit economy. Payment is made by letter of credit, and the time, cost and documents required for the issuance or advising of a letter of credit are taken into account. The ranking on the ease of trading across borders is the simple average of the percentile rankings on its component indicators.

8. Enforcing Contracts

Indicators on enforcing contracts measure the efficiency of the judicial system in resolving a commercial dispute. The data are built by following the step–by–step evolution of a commercial sale dispute before local courts. The data are collected through study of the codes of civil procedure and other court regulations as well as reports completed by local litigation lawyers and by judges. The ranking on the ease of enforcing contracts is the simple average of the percentile rankings on its component indicators.

9. Resolving insolvency

Studies the time, cost and outcome of insolvency proceedings involving domestic entities. The name of this indicator set was changed from closing a business to resolving insolvency to more

accurately reflect the content of the indicators. The indicators did not change in content or scope. The data are derived from questionnaire responses by local insolvency practitioners and verified through a study of laws and regulations as well as public information on bankruptcy systems. To make the data comparable across economies, several assumptions about the business and the case are used.

The Doing Business economy rankings (The World Bank Group)

As shown in *Table 1*, Belarus is ahead of other countries in the region in respect of:

- Ease of company registration
- Ease of ownership registration
- Ease of contract registration

Kazakhstan is way ahead of other countries in respect of such indicators as investor protection and taxation.

Russia is in the lead only in terms of contract enforcement indicator.

In accordance with Doing Business rankings, Kazakhstan, Armenia and Belarus are the leading countries in the region.

Nevertheless, it should be remembered that this data says nothing about the general economic situation in the countries, or their levels of development. It is only a measure of the ease of starting a new business in the given country.

2. The Principles for calculating the World Economic Forum Global Competitiveness index

Key indicators

Institutions. The institutional environment is determined by the legal and administrative framework within which individuals, firms, and governments interact to generate wealth.

Infrastructure. The level of economic development is determined by the level of development of the country's infrastructure, i.e., economic activity (its forms and types), and sectors with potential for development. All these aspects depend on infrastructure. A well–developed infrastructure decreases the negative effect of distance between centres of population. In general, infrastructure includes railways, motorways, ports, air links, mobile telecommunications, networks, etc.

Macroeconomic environment. Includes the following factors: the level of involvement of the state in the economy, the capacity of the state, government and central bank to regulate fiscal and monetary policy, inflation, etc.

Goods market efficiency. Many indicators are used in respect of this parameter, including the levels of supply and demand, competition, the presence of monopolies, state involvement in company trade, sales taxation, etc.

Labour market efficiency. This is a measure of location capacity, the rate at which employees can be retrained, the level of disposability of the workforce, the size of the workforce, its age range, etc.

Financial market development. This is a measure of the investment environment, the level of confidence in financial institutions, the level of development of the banking sector, the level of reliability of securities transactions, etc.

Market size. The ability to use economies of scale based on the size of sales markets, export/ import levels, etc.

Table 1.
The Doing Business rankings*

Economy	Ease of Doing Business	Starting a Business	Getting Electricity	Registering Property	Getting Credit	Protecting Investors	Paying Taxes	Trading Across Borders	Enforcing Contracts	Resolving Insolvency
Armenia	55	10	150	5	40	97	153	104	91	62
Belarus	69	9	175	4	98	79	156	152	14	82
Kazakhstan	47	57	86	29	78	10	13	176	27	54
Kyrgyzstan	70	17	181	17	8	13	162	171	48	150
Russia	120	111	183	45	98	111	105	160	13	60
Tajikistan	147	70	178	90	177	65	168	177	42	68

Source: the Doing Business project statistics – http://russian.doingbusiness.org

Note: The methodology used in the Doing Business ranking is described in the annexes.

Table 2.
Estimates of development in various socio-economic spheres (points scores awarded by WEF experts*)

	Institutions	Infrastructure	Macroeconomic environment	Health and primary education	Higher education	Goods market efficiency
Russia	3.2	4.5	4.5	5.9	4.6	3.6
Armenia	3.5	3.5	4.2	5.4	3.7	3.7
Kazakhstan	3.6	3.6	5.3	5.5	4.2	4
Kyrgyzstan	3	2.5	3.7	5.2	3.8	3.6
Tajikistan	3.8	3	3	5	3	4
	Labour market efficiency	Financial market development	Technological readiness	Market size	Business sophistication	Innovation
Russia	4.5	3.2	3.6	5.7	3.5	3.2
Armenia	4.6	3.6	3	2.5	3.3	2.6
Kazakhstan	4.9	3.4	3.4	4.2	3.5	2.8
Kyrgyzstan	4.4	3.5	2.7	2.5	3	2.1
Tajikistan	4	3	3	2	3	3

Source: Global Competitiveness – http://www.weforum.org/issues/global-competitiveness

Business sophistication. A measure of business environment quality, activity quality and company strategy, the quantity and quality of suppliers, their mutual interaction, barriers to market entry, etc.

Global Competitiveness Rating / the World Economic Forum

The most important factor here is ease of access to finance (interest rates, ease of obtaining credit, etc.) Under this parameter and in accordance with ratings of UNESCO, GGI and the World Bank, the countries of the region are rated as follows:

Table 3.
Availability of credit

Indicator/rating position	Russia	Kazakhstan	Armenia	Tajikistan	Kyrgyzstan
Availability of credit	98	88	55	115	47

Source: Global Competitiveness – http://www.weforum.org/issues/global-competitiveness

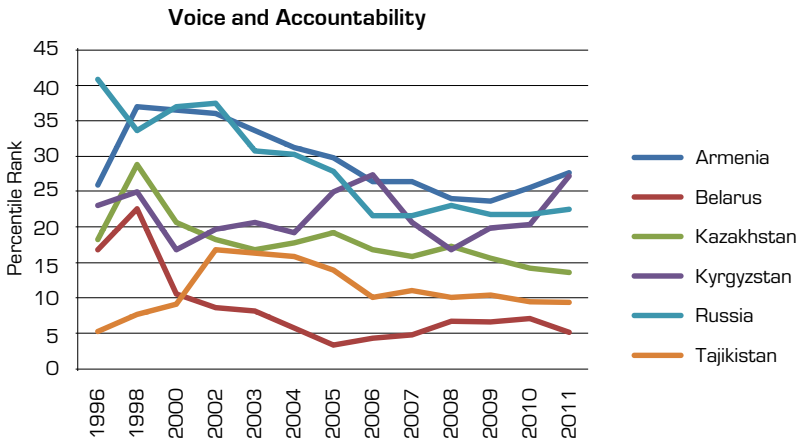
The *table* shows that, in the vast majority of cases, Russia and Kazakhstan score highest (figures for Belarus are not included). Although some of the scores awarded to countries in the region by the experts of the World Economic Forum have raised doubts, the general standard of evaluation is considered acceptable.

3. The Worldwide Governance Indicator Rating (WGI) Project/ World Bank

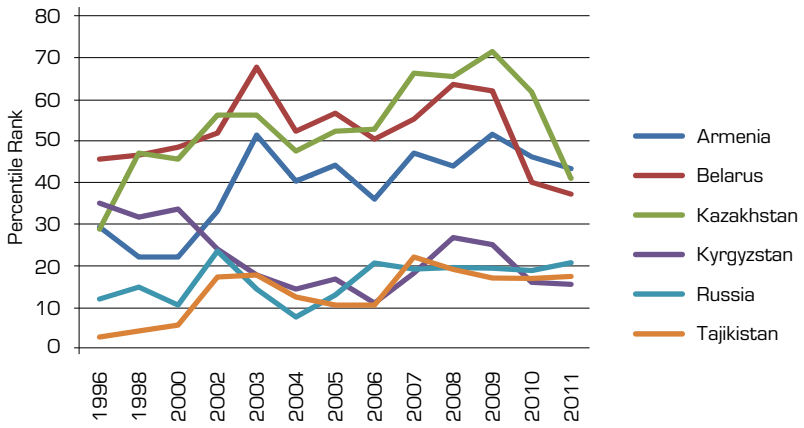
In addition to its numerous financial and economic functions, the World Bank conducts research and compiles statistics in a number of different fields. The Global Government Effectiveness Index is one of the scientific projects of the World Bank. The Index covers the following indicators:

- Voice and Accountability;
- Political Stability and Absence of Violence;
- Government Effectiveness;
- Regulatory Quality;
- Rule of Law;
- Control of Corruption

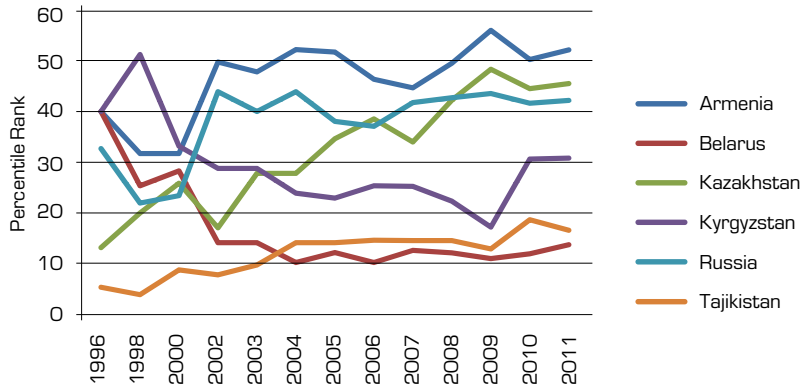
The ratings of the countries of the region, as estimated by the World Bank, are shown in the following Figures.



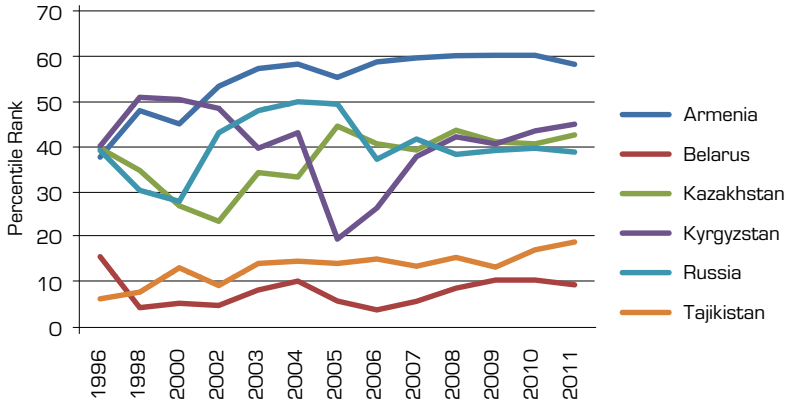
Political Stability and Absence of Violence

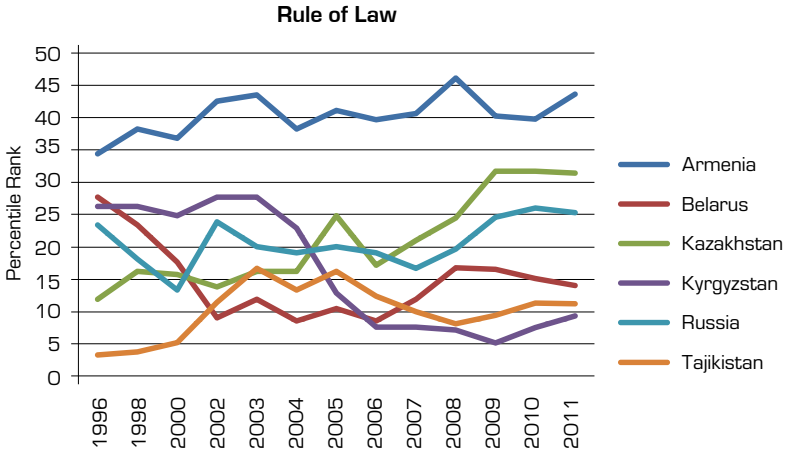


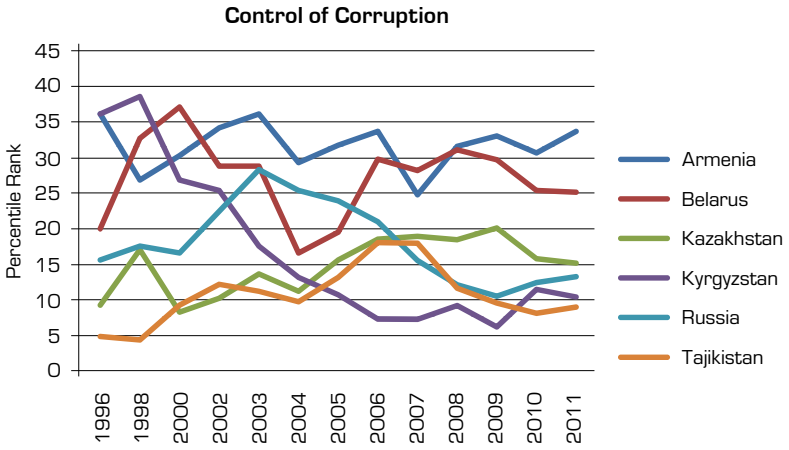
Government Effectiveness



Regulatory Quality




Rule of Law
Percentile Rank
50
45
40
35
30
25
20
15
10
5
0
1996
1998
2000
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
Armenia
Belarus
Kazakhstan
Kyrgyzstan
Russia
Tajikistan


Control of Corruption
Percentile Rank
45
40
35
30
25
20
15
10
5
0
1996
1998
2000
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
Armenia
Belarus
Kazakhstan
Kyrgyzstan
Russia
Tajikistan

Annex 2. Analysis of barriers to mutual integration between country members of the EurAsEC

Based on the report: Analysis of the level of industrial cooperation between the member countries of the Eurasian Economic Community (EurAsEC) and the way to its development conducted as part of the UNIDO project for supporting the processes of industrial cooperation in the EurAsEC and interacting with the UNIDO global network

"Express analysis" is aimed at obtaining information from a representative number of industrial companies (large, small and medium–sized) about the status of development, problems and prospects for industrial cooperation between the country members of the EurAsEC.

A report was carried out among 402 industrial companies (of all types of ownership) by distributing a questionnaire. The completed forms were then processed in the UNIDO project offices (UNIDO is a project intended to support the processes of industrial integration in the countries of the EurAsEC and mutual cooperation within the global network of UNIDO centres).

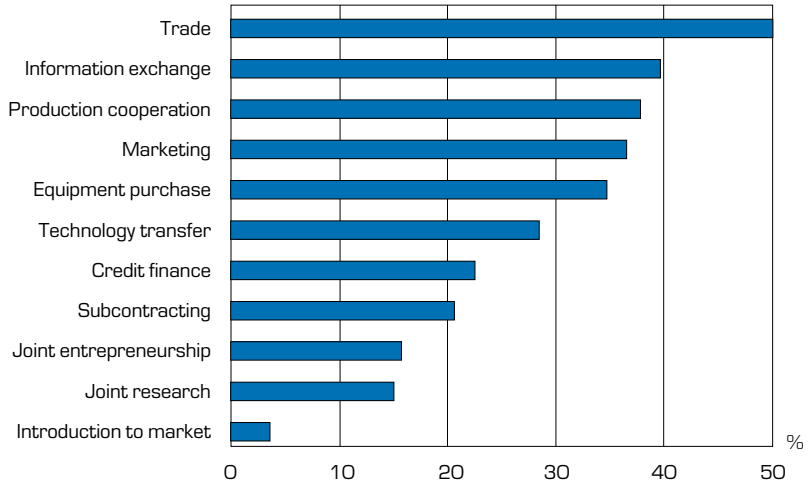
The organisations reported primarily focus on production activity (around 94%) with a smaller number of private organisations offering services (around 19%). Some of the organisations reported are manufacturing companies which also offer services.

A large number of the companies reported focus on the production of foodstuffs, including drinks, tobacco, machinery and equipment, chemicals, pharmaceuticals, textiles and clothing.

The main results of the report were:

- **Desirable or achievable forms of cooperation/partnership in the EurAsEC**

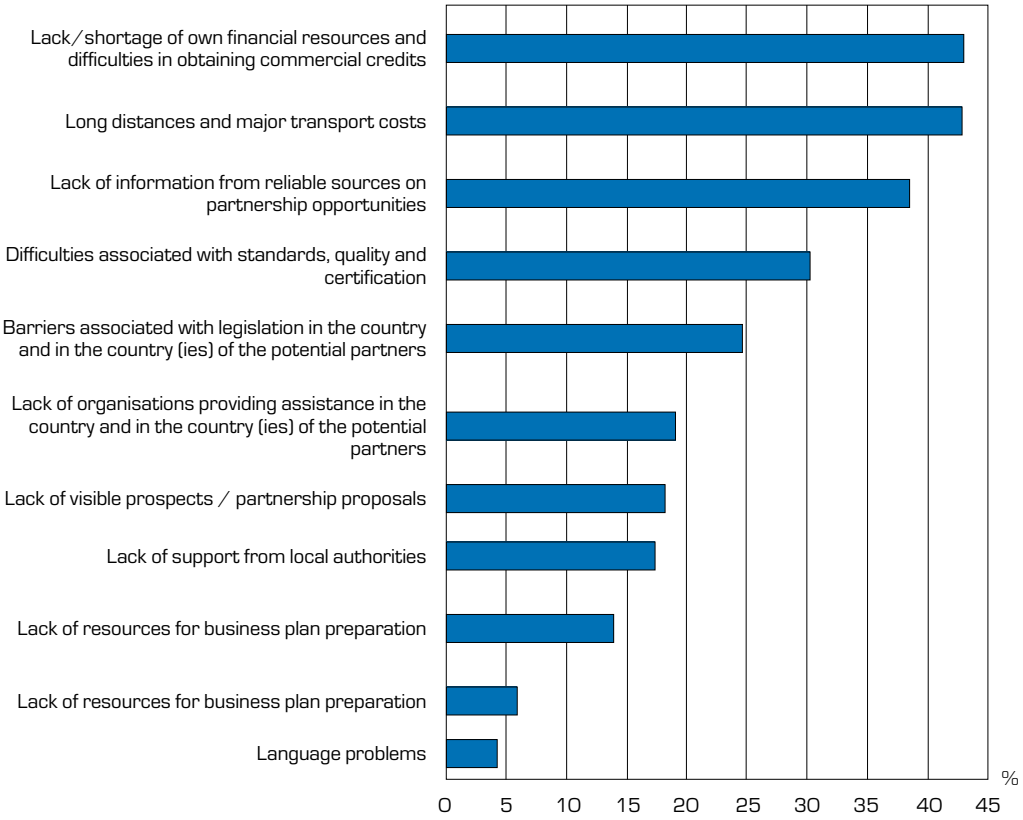
The preferred forms of cooperation in the EurAsEC region are: trade (50%), information (40%), manufacturing cooperation (38%), marketing (37%) and equipment purchase (35%).



- **Main difficulties / obstacles to the setting up and/or implementation of commercial cooperation with foreign partners**

The Figure shows the four main difficulties/problems affecting all organisations in the countries represented by the EurAsEC:

1) Lack of own financial resources and difficulties in obtaining commercial loans for funding joint projects (43%);
2) Large distances and significant transportation costs (43%);
3) Lack of information from reliable sources on the possibilities of establishing partnerships (39%);
4) Problems linked to differences in standards, quality and certification (30%).



Problems linked with the absence of information from reliable sources on opportunities to establish partnerships are characterised by low indicator values (i.e., by the levels of consumption identified):

- in respect of the availability of services (Question 5). For example, access to reliable sources of information on opportunities to establish partnerships with foreign partners, organisations, help with sub-contracting arrangements, access to new technology, etc;
- in respect of access to information to help companies increase their competitiveness and develop mutually-beneficial commercial partnerships and collaboration with companies in other countries (Question 7). For example, on products and markets, on potential partners, on technology and equipment, etc.

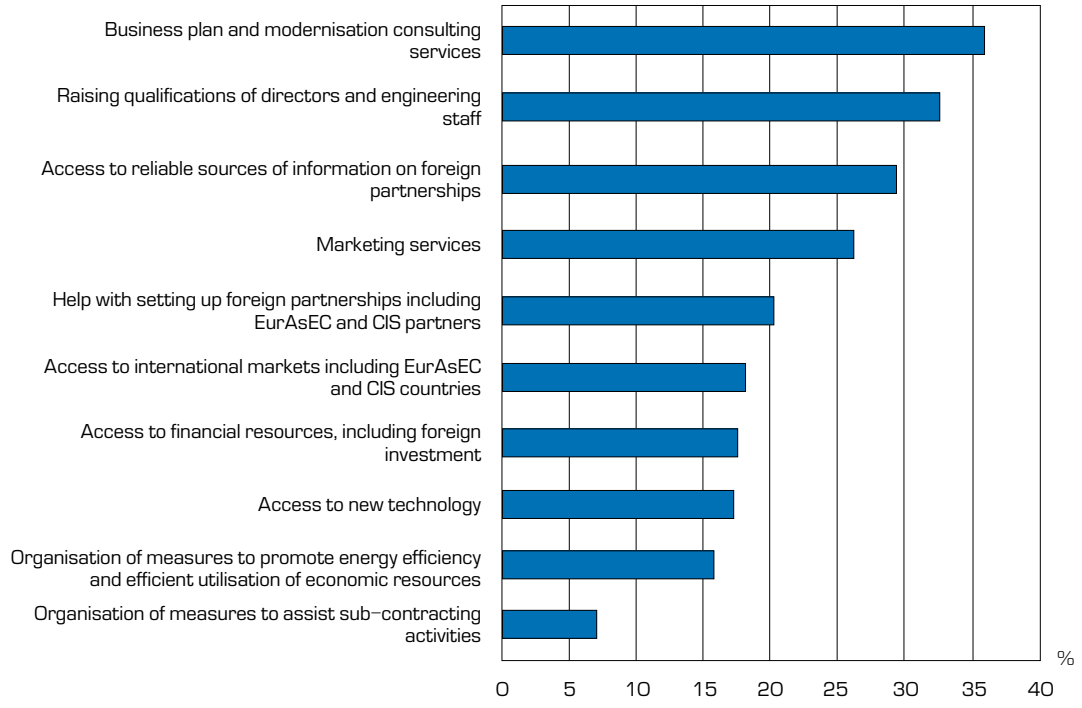
The following question – the lack of own financial resources and difficulties in obtaining commercial loans for funding joint projects – characterised by low indicator values (i.e., by the levels of consumption identified):

- in respect of the availability of services (Question 5). Access to financial resources – including foreign investment – to reliable sources of information on the possibilities of establishing relations with foreign partners, access to international markets – including the member countries of the EurAsEC and CIS, etc.;
- in respect of access to information to help companies increase their competitiveness and develop mutually–beneficial commercial partnerships and collaboration with companies in other countries (Question 7). For example, questions relating to the possibility of financing company modernisation programmes, possible partners, opportunities to win contracts (sub–contracts) from major companies, etc.

The problems linked with differences in standards and in quality and certification requirements, characterised by low indicator values (i.e., by the levels of consumption identified): in the area of possible improvements to the mechanism of creating partnerships in the EurAsEC (Question 8). For example, the creation of a common database for establishing links between manufacturers and consumers, etc.

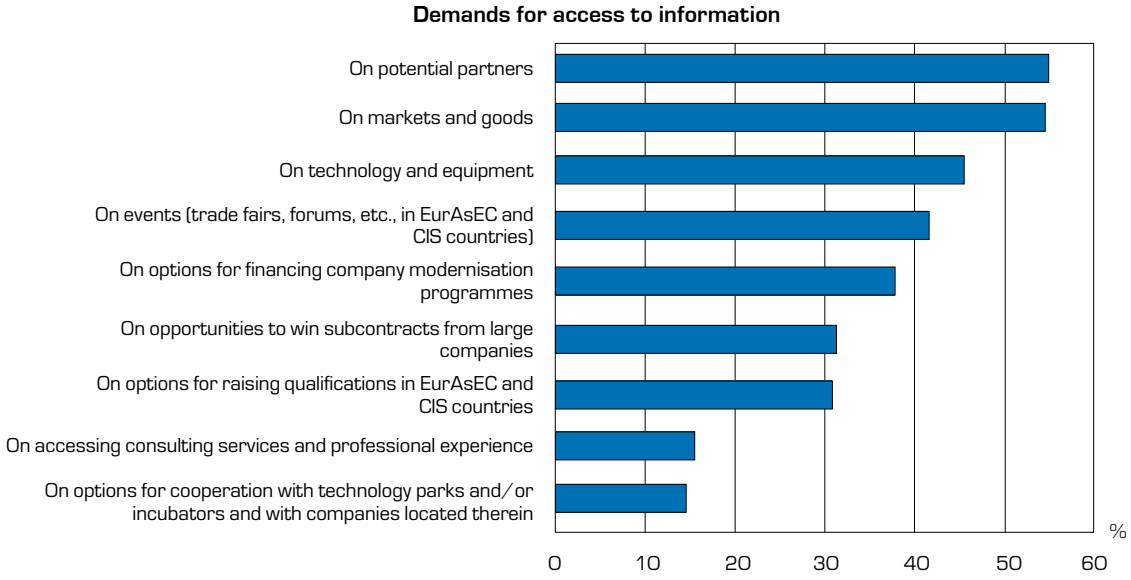
- **Are sufficient services in the following sectors available to companies in your country?**

Level of service provision in the EurAsEC



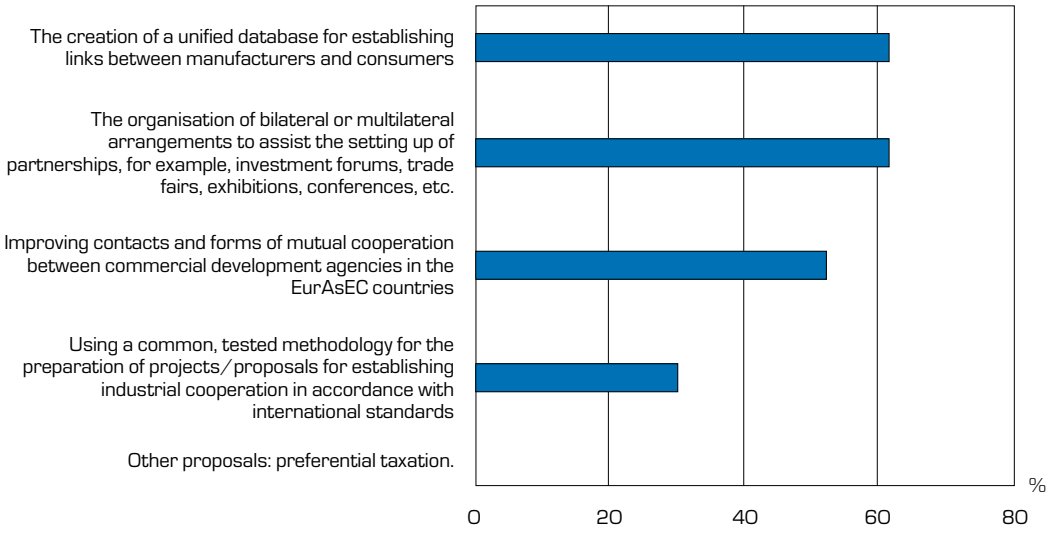
A more critical view of the services/organisations/measures intended to help with sub–contracting, which are very poorly represented in all EurAsEC countries (7%). The following services were given low ratings: access to international markets, including markets in EurAsEC and CIS countries (18%); access to financial resources, including foreign investment (17%); the organisation of measures to increase energy efficiency and resource economy (16%) and access to new technology. From the data presented in the above Figure, it is clear that the majority of services are very poorly represented and the current absence of such services severely hampers the development of cooperation between the countries of the EurAsEC.

- **Would access to such information help your company increase its competitiveness and develop mutually–beneficial commercial partnerships and collaborations with EurAsEC and CIS countries?**



Based on the above data, access to information on potential partners was chosen – together with information on products and markets – by 55% of respondents as most desirable, with 45% requesting information on technology and equipment and 42% choosing the creation of events such as exhibitions, forums, etc., in EurAsEC and CIS countries. The data was compiled on the basis of the average number of report respondents choosing access to such information as the most relevant factor for increasing company competitiveness and developing mutually–beneficial commercial cooperation and collaboration.

- **How is it possible, in your opinion, to improve the mechanism for creating partnerships in the EurAsEC?**



The creation of a unified database for establishing links between manufacturers and consumers was seen as a positive step by 62% of respondents; the organisation of bi– or multi–lateral arrangements to assist the setting up of partnerships, for example, investment forums, trade fairs, exhibitions, conferences (62%); improving contacts and forms of mutual cooperation between commercial development agencies in the EurAsEC countries (52%). A smaller percentage responded positively to the need to apply a common methodology to the preparation of projects / proposals for establishing industrial cooperation (30%).

- **Would the creation of a common centre for promoting commercial cooperation/ partnerships with foreign countries be practical in your country?**

96% of respondents saw the creation of such a centre in their home country as positive.

Additionally

- **With which group of countries has cooperation already been established (or with which group would it be desirable to establish cooperation)?**

	Tajikistan (%)	Kazakhstan (%)	Belarus (%)	Kyrgyzstan (%)	Armenia (%)	Average (%)
Member states of the EurAsEC – Belarus, Kazakhstan, Kyrgyzstan, Russia and Tajikistan	78	100	100	97	91	93.2
CIS countries – Armenia, Azerbaijan, Moldova, Uzbekistan and Ukraine	25	83	91	60	45	60.6
Other countries	0	0	17	5	19	8.3

- **Main difficulties/obstacles to the setting up and/or implementation of commercial cooperation with foreign partners**

	Tajikistan (%)	Kazakhstan (%)	Belarus (%)	Kyrgyzstan (%)	Armenia (%)	Average (%)
Absence of information from reliable sources on the setting up of possible partnerships	33	70	55	33	3	38.5
Absence/lack of resources for business plan development/proposals for partnerships set up in accordance with accepted international practices	22		19	6	6	14
Absence/lack of support by local institutions/ organisations	6	30	20	20	10	17.4
Absence of organisations providing assistance to businesses in the home country(ies) of the potential partners	23	26	11	34	2	19.1
Lack of own financial resources and difficulties in obtaining commercial loans for funding joint projects	45	52	45	50	23	43
Barriers related to legislation in the home country(ies) of the potential partners, in particular, those linked with taxation, customs regulations and duties, etc.	13	26	42	15	28	24.6
Problems related to differences in standards and in quality and certification requirements	6	48	55	18	25	30.2
Absence of visible prospects and/or absence of partnership proposals	9	26	33	20	3	18.2
Large distances and significant transportation costs	25	57	48	30	55	42.9
Different national currencies and floating exchange rates	2	4	16	4	4	6
Language issues	2	9	3	2	6	4.2

Journal of Eurasian Economic Integration

The Journal of Eurasian Economic Integration is a quarterly academic and analytical journal published in Russian by the Eurasian Development Bank. The members of Editorial board and Advisory council are distinguished academicians, practitioners and experts in regional integration. Eurasian Economic Integration brings together academic and analytical articles, reviews of books relating to regional integration, interviews and quarterly chronicles of regional integration. With its focus on economics, the journal is a rich source of material addressing a broad range of issues specific to Eurasian integration. These include integration theory and its relevance to the development context; economic integration (trade, investment, financial institutions); institutional integration; cooperation issues in the post–Soviet space; and international experience of regional integration. The first issue was published in the third quarter of 2008.

Requirements for submissions. Papers should be sent by e–mail to editor@eabr.org for blind review. There are no strict limitations on the length of articles. However, the Editorial Board recommends authors to adhere to 6,000–8,000 words or 30,000–40,000 characters. In addition to the main text, authors must supply a brief author(s)' biography (100–150 words), executive summary (100–150 words) and bibliography. These materials must be attached in a separate file.

EDB Eurasian Integration Yearbook

Eurasian Integration Yearbook publishes a wide range of articles and other materials in English on theory and practical aspects of Eurasian integration. The major part of the annual Yearbook consists of English versions of selected articles published in the Journal of Eurasian Economic Integration and other analytical publications of EDB. These are supplemented by integration chronicles for the respective year. The Yearbook improves access of the world community to the best papers on various issues of regional integration published in Russian. Apart from papers published in the Journal of Eurasian Economic Integration, papers written specifically for the Yearbook are also welcome (submission in English or Russian).

Sector reports

The EDB's Analytical Department publishes industry and country reports. Electronic versions are available at: http://www.eabr.org/rus/publications/AnalyticalReports/.

Consultancy

The Bank provides consultancy services to its strategic partners and clients. The Bank's Strategy and Research Department has in–house expert resources and can involve specialists from other departments, such as project managers, corporate financing, treasury, legal department. External experts from the extensive pool of the CIS countries' experts could be mobilised to work on consultancy projects.

Areas of expertise:

- Analysis of a current status and dynamics of development in selected sectors in the member states of the Bank and other EurAsEC countries;
- Financial markets' analytical reviews in the EurAsEC countries;
- Economic and legal analysis of integration agreements and institutions in the Eurasian space;
- Development banks' operations and activities in the CIS countries and issues of cooperation.

Contacts

Vladimir Yasinskiy

Member of the Executive Board,
Managing Director for Strategy and Research, EDB
E–mail: yasinskiy_va@eabr.org
Telephone: +7 (727) 244 68 75

Ella Baybikova

Head of Strategy and Research
Department, EDB
E–mail: baybikova_er@eabr.org
Telephone: +7 (727) 244 40 44, ext. 6908

ISBN 978-601-7151-33-1