
**INVESTMENT GUIDE
TO
THE MACHINERY INDUSTRY
IN
THE REPUBLIC OF KAZAKHSTAN**

1999

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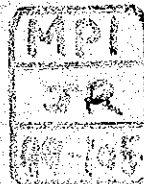
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Published in March 1999

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The findings and interpretations expressed in this documents are those of the Study Team only and are based on the study period from November 1997 to March 1999.

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PART I. OVERVIEW

Kazakhstan and the Machinery Industry at a Glance

Kazakhstan's machinery industry is closely linked to the revitalization process that is taking place in the agricultural and mining sectors. Notwithstanding the large endowment of mineral resources and the vast arable land area, the economy has experienced a difficult economic transition from the former centrally planned system to a market economy. Although the situation in the mining and mineral processing industry is not as severe as that in the agriculture and agro-industrial activities, enterprises operating in this area lack expertise in operating within a free market system. In agriculture and agro-industrial activities the capacity of the machinery industry has been limited. Most of the machinery has been imported from other countries, with local manufacturers currently supplying about 15 percent of domestic requirements. As a result of these conditions, there are a number of business opportunities in machinery and equipment supplies in agricultural and agro-industrial operations, as well as mining and mineral processing activities.

The outlook for the machinery industry will depend on the derived demand for machinery equipment from the mineral processing and agro-industrial activities, and the ability of the industry to compete with foreign suppliers. During the past few years, the trend growth rate of machinery output has been the same as that of total industrial production, suggesting that in the future the demand for machinery products will follow the country's gradual recovery. However, short-term movements of machinery production are likely to initially differ from those of industrial output. These differences will reflect supply adjustments of the machinery industry to output changes that have been unrelated to changing market conditions, production disturbances associated with interruptions in electricity and other utility services, and shipment delays of raw material and intermediate inputs. As the quality of infrastructure improves, movements in machinery production will increasingly converge with those of overall industrial production.



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☑ Major Economic Indicators

After more than 70 years of operating under a centrally planned economy, Kazakhstan has had to undergo extraordinary adjustments in its transition to a market economy. The transition was initially characterized by large internal and external macroeconomic imbalances, but more recently the country has made considerable progress toward a cohesive market economy as a result of the government's comprehensive reform program. The two major channels of reform have been macroeconomic policies aimed at economic stability through fiscal, monetary and exchange rate policies, and liberalization policies aimed at structural reform and growth. Inflation has successfully been lowered from over 1,000 percent a year in 1994 to less than 20 percent in 1997, and inflation in 1998 has been estimated at 8.5 percent.

At the same time, the introduction of price liberalization measures has improved the allocation of resources throughout the economy. The movement from administered prices to more flexible market-determined prices brought about fundamental changes in the way that businesses and households responded to economic conditions. Under the central planning system that prevailed before 1992, prices had no allocative function. The introduction of price liberalization measures improved the allocation of resources throughout the economy, but it created assimilation difficulties for many enterprises in the machinery industry and related activities, particularly in terms of product development and marketing strategies.

Significant trade liberalization measures have also been undertaken, including the elimination of import and export licensing for most goods and the removal of export quotas. The government has introduced a revised package of structural reforms that includes the Medium-Term Program for Deepening Reforms and aims to promote sustainable growth through privatization. The resulting economic stabilization measures, coupled with fundamental structural reforms, have brought about an improvement in the market performance of the country. The majority shares of holding company subsidies have been offered in mass privatization of state-owned enterprises, and many smaller subsidies have been auctioned on the local level. Most state farms have been privatized, and oil, gas and mineral reserves have been awarded to foreign investors.

The ultimate economic objective of the structural reform plan has been the establishment of a self-sustained economic growth based on an open market economy, driven by high levels of foreign investment and domestic savings. As an extension of the stabilization policies adopted during the last three years, the new macroeconomic objectives aim to further lower inflation, reduce the fiscal deficit, and strengthen the domestic currency. The focus of the plan, however, has been the development of the real sectors of the economy, and the strengthening of institutions to support that expansion. Institutional

strengthening mechanisms include improved ownership rights and the development of the legal system to protect those rights and those established under contract law. As part of that process, privatization has been nearly completed in the agro-industrial sector, although the plan recognizes the slow adjustment of agriculture and some other sectors to market-oriented activities. To counter this trend, efforts have been made to revitalize those sectors by improving managerial skills and reducing corruption. These changes have succeed in reversing the downward trend in the real value of GDP, albeit by a modest amount.

To strengthen the country's growth and development, the government recently introduced the *Kazakhstan – 2030* plan, under which foreign investment is to be encouraged, particularly in the exploitation and processing of natural resources, infrastructure, communications and information technology. The State Committee on Investment is charged with ensuring that appropriate policies are developed for foreign direct investment. The aim of the investment strategy is to move the country from a labor and resource-intensive economy to one based on capital and technology-intensive activities. In that way, it is expected that the share of agriculture and mining in the overall production of the economy will be reduced in favor of processing and high value-added activities.

Foreign direct investment (FDI) has reached US\$1.1 billion and it now represents over 5 percent of GDP. Nevertheless, most of the investment has been directed towards the country's oil and gas industries and the non-ferrous metallurgy industry, with investment in other sectors representing less than 20 percent, that is, only 1 percent of the country's GDP.

To broaden the economic base and reduce the country's vulnerability to external shocks, a number of non-energy related production activities are to be developed, including machinery, light industries, food industries, infrastructure, chemicals, and services such as those related to tourism. In support of these initiatives, the government plans to adopt pro-active industrialization policies. During the initial period of the program through 2010, those policies will focus on labor-intensive industries in agriculture, light industries, food industries, tourism, construction materials, and infrastructural development.

Development of the Machinery Industry and Government Policy

Opportunities for investment in the machinery industry are beginning to emerge after nearly a decade of adjustment to the changes that followed the disintegration of the centrally planned economy. Initially, a number of enterprises attempted to introduce new products, but output of the industry contracted as a result of both the reduction in the derived demand for machinery equipment from the mineral processing and agro-industrial activities, and supply shortages in the industry itself. The trend growth rate of machinery

output in the post-independence eras averaged about -1.6 percent each year, about the same as that of total industrial production. Equipment inventory also suffered throughout most of the 1990s, and sales of agricultural machinery nearly stopped because of declining output in the agricultural sector and the lack of farm liquidity.

This situation is beginning to reverse itself gradually as the country begins to experience a positive output growth. Real gross domestic product (GDP) expanded by 0.5 percent in 1996, and in both 1997 and 1998 it rose more than 2 percent a year. Growth has been recorded for ferrous and non-ferrous metallurgy, the oil and gas extraction industry and the food-processing sector. Nevertheless, shortfalls in production continue in most major products of the machinery industry. As in the past, the large shortfall has been due to material shortages and the lack of consumer solvency. Lower production in downstream industries have caused large cutbacks in the production of alkaline and lead storage batteries for automobiles, power capacitors, and low-capacity electric motors for home appliances. There were also large reductions in the output of machine tools, press-forging machines and spare parts. There has been little, if any, production in metal-cutting machine tools, nor has production occurred in equipment for processing of polymer materials and equipment for light industry.

The number of available tractors has declined by about one-third since the country's independence, and the inability to replace machinery has inevitably resulted in a marked deterioration of the existing equipment inventory. More recently, the performance of the industry has been mixed. Output of tractor drills and mowers has increased, while that of cultivators, tractor plows, tractors, disc harrows and bulldozers has decreased. Tractor-trailers have not been produced because of the shortage of financial capital to purchase material input. Disc harrows, tractor drills and electrical shearing machines have also not been produced in some oblasts because of funding shortages.

Given that excessive investments in equipment and machinery were typical for a command economy, the decline in numbers was at first tolerable as machines were broken up to provide spare parts. Today this process is approaching a saturation level and there is an immediate need for new tractors and harvesting combines, as well as replacement parts. In an attempt to revitalize the industry, the government has issued a decree on the Program of Forming and Developing the Agricultural Machinery Building Industry. The program aims to define the measures needed to resolve the problems confronting the industry by (a) evaluating the requirements of the agricultural sector for machinery equipment; (b) designing a strategy for the establishment of an efficient industry that can satisfy domestic requirements and compete in foreign markets; (c) identifying the types of machinery that need to be produced in the country; (d) reviving farm demand for machinery; (e) promoting the establishment of research and development in the industry; and (f) developing a plan of action for the program. The program will be supported by regulatory measures to

alleviate some of the major bottlenecks in agriculture and the machinery building industry.

The government's plan for the machinery industry is directed at the promotion of market-driven economic expansion in the machinery industry and other sectors of the economy. It has avoided the promotion of import-substitution policies that develop domestic manufacturing capability for goods previously imported through such policies as import controls, overvalued exchange rates, binding ceilings on interest rates, pervasive price regulation, and a large share of public ownership of productive activities. In other countries, the effect of those protectionist policies has been to creation of highly inefficient industries. In Kazakhstan, the government's plan instead relies on market-driven expansion that is supported by public sector policies and practices and infrastructural development, and one that forms an integral part of its national development plan. These conditions are beneficial to foreign investors in the machinery industry.

Basic Information on Kazakhstan

Geography and Natural Resources:

Area: *total area:* 2,717,300 sq km, or 7 times larger than Japan; *land area:* 2,669,800 sq km.

Land boundaries: *total:* 12,012 km; *border countries:* China 1,533 km, Kyrgyzstan 1,051 km, Russia 6,846 km, Turkmenistan 379 km, Uzbekistan 2,203 km.

Climate: continental, cold winters and hot summers, arid and semi-arid.

Natural resources: major deposits of petroleum, coal, iron ore, manganese, chrome ore, nickel, cobalt, copper, molybdenum, lead, zinc, bauxite, gold, uranium.

Economy

Industries: oil, coal, iron ore, manganese, chromite, lead, zinc, copper, titanium, bauxite, gold, silver, phosphates, sulfur, iron and steel, nonferrous metal, tractors and other agricultural machinery, electric motors, construction materials.

Agriculture: grain (mostly spring wheat), cotton, wool, meat.

Exports: *commodities:* oil, ferrous and nonferrous metals, chemicals, grain, wool, meat, coal; *major partners:* Russia, Ukraine, Uzbekistan.

Imports: *commodities:* machinery and parts, industrial materials, oil and gas; *major partners:* Russia and other former Soviet republics, China.

Major Investor Countries: Canada, France, Germany, Great Britain, Italy, Japan, NIS Republics, Norway, South Korea, Turkey, USA.

Transportation

Railways:

total: 13,841 km in common carrier service; does not include industrial lines.
broad gauge: 13,841 km 1.520-m gauge (3,299 km electrified).

Highways:

total: 87,873 km public roads; *paved:* 82,568 km; *unpaved:* 5,305 km (1994).

Continued...

Government:

Name of country: *conventional long form:* Republic of Kazakhstan; *conventional short form:* Kazakhstan; *former:* Kazakh Soviet Socialist Republic.

Type of government: republic.

Capital: Astana (new); Almaty ('second capital').

Administrative divisions: 14 oblasts and 1 city (Almaty) - Astana Oblast, Aktobe Oblast, Almaty Oblast, Atyrau Oblast, East Kazakhstan Oblast, Karaganda Oblast, Kyzylorda Oblast, Kostanai Oblast, Mangystau Oblast, North Kazakhstan Oblast, Pavlodar Oblast, South Kazakhstan Oblast, West Kazakhstan Oblast, Zhambyl Oblast.

Independence: 16 December 1991 (from the Soviet Union).

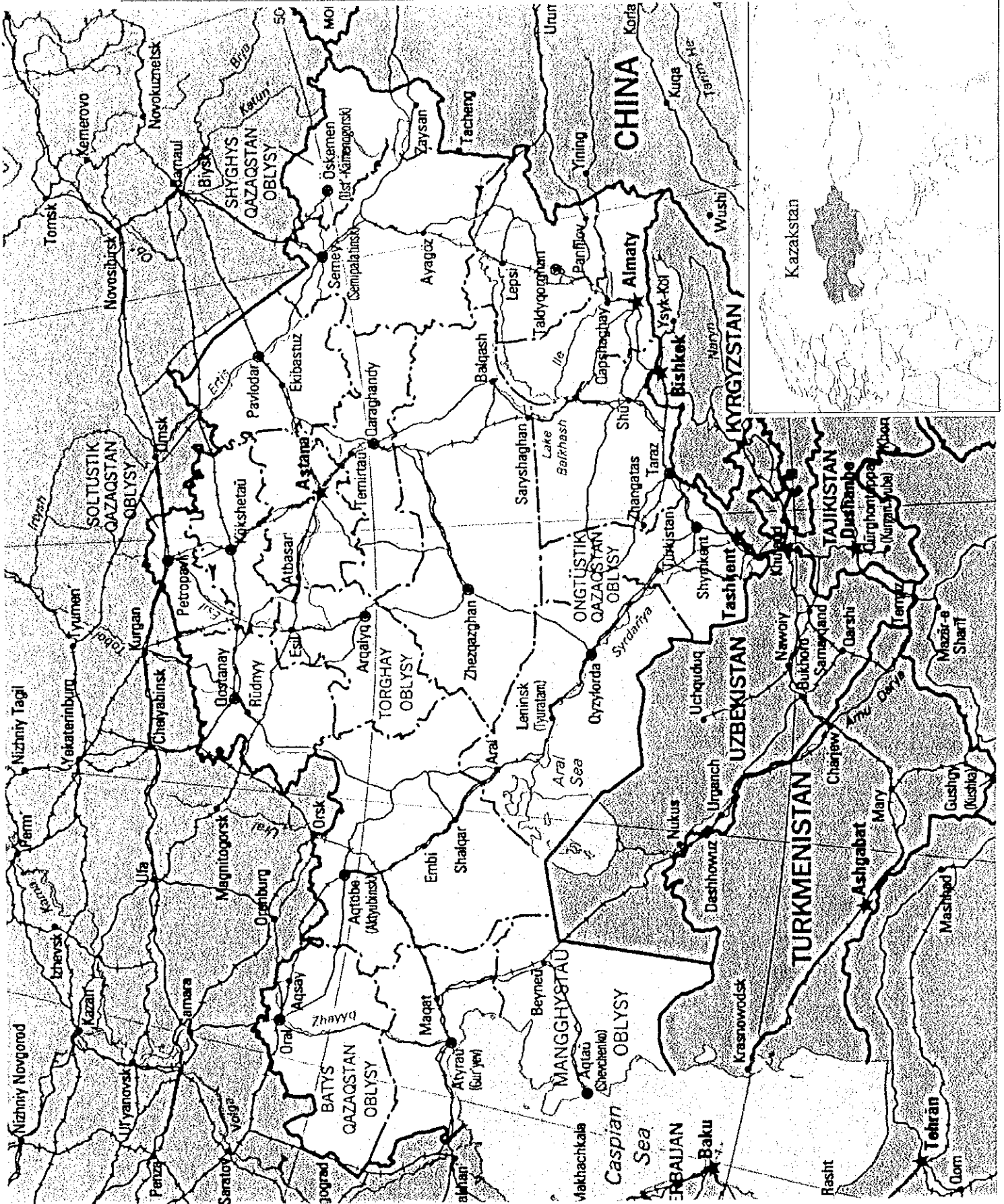
Constitution: adopted 28 January 1993; amended in April 1995 and August 1995.

Legal system: based on civil law system.

Executive branch: *Chief of state:* President Nursultan A. Nazarbayev (since 22 February 1990).

Legislative branch: bicameral Parliament

Judicial branch: Supreme Court

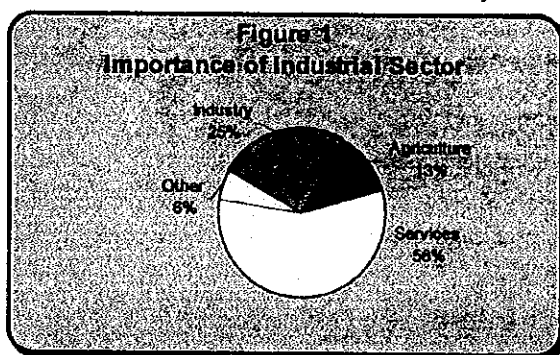


PART II ECONOMIC CONDITIONS AND GOVERNMENT PRIORITIES

Economic Policy Affecting the Machinery Industry

1. Structure of the Economy

Natural resources form the basis for Kazakhstan's relatively diversified economic structure. The country is endowed with oil, gas, and mineral resources, including gold, iron ore, coal, chrome, wolfram, and zinc, while its vast area of arable land is mainly oriented towards the production of basic



products. Kazakhstan has a total land area of about 2.7 million square kilometers of which 221 million hectares or 75 percent are designated as agricultural land. Some 190 million hectares of agricultural land are semi-arid pastures, meadowlands or fallow, leaving 33 million hectares for cultivation.

The geographic regions can be divided into the following five:

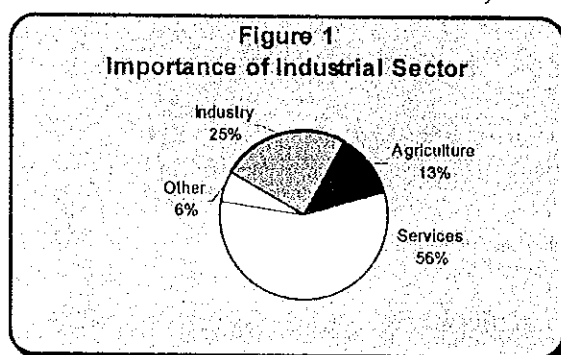
- *The northern region* is characterized by heavy industries and large-scale grain production. It covers an area of 600,900 square kilometers and is the leading economic region of the country in both agriculture and industry. Major railway and river arteries pass through the area, which is rich in coal, iron and copper ore, bauxite and gold deposits. Its industries include machine building, fuel and energy and mining activities. There are also enterprises involved in petroleum processing and in the production of ferroalloys and aluminum. The agro-industrial complex plays an important role in the region's economy. Grain crops account for three-quarters of the cultivated areas and the region is also a major producer of sunflowers and flax and has a developed food-processing industry.
- *The central region* has mining and mineral processing activities. Its 398,800 square kilometers have a wealth of natural resources, coal mining, chemical

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- *The central region* has mining and mineral processing activities. Its 398,800 square kilometers have a wealth of natural resources, coal mining, chemical

production, ferrous and non-ferrous metallurgy, machine building and construction industries.

- The *southern region* is mainly oriented towards agricultural activities such as cotton, and it has some light industries and mining activities. It is the least economically developed region of the country. However, the agricultural base has spawned the development of food processing and light industries, and metallurgical, mining, chemical and machine-building industries have been established.
- The *western region* has much of the oil and gas industry. There are also large deposits of chromite, manganese, nickel and copper, and some of the leading industries include fish processing, mineral processing and fertilizers. The Tenghiz oil field holds reserves comparable to the largest petroleum fields in Saudi Arabia.
- The *eastern region* covers 277,000 square kilometers with almost half of all the forested land of the country. It is rich in tin, tungsten and vanadium ores, and its industries produce non-ferrous metallurgy, machines, engineering equipment, power, and chemicals. It is also a food processing center and has light industries.

2. Economic Performance since Independence

Under the Soviet Union the economy of Kazakhstan was transformed from a land of pastoral nomads into one with large-scale and diverse industries, and advanced crop growing and animal husbandry. The transformation was accomplished by the Soviet system's ability to direct massive amounts of resources toward large projects for economic and social development. The transportation infrastructure was of special importance to Kazakhstan because of its vast territory. Over 100,000 kilometers of roads and a rail network of 14,500 kilometers were built during the Soviet era. The country became a large producer of non-ferrous and ferrous metals, coal, petroleum, grain and animal husbandry products. After the Virgin Lands campaign in the second half of the 1950s, Kazakhstan also became a major producer of cereals for the Soviet Union. The country's share in the production of wheat in the Soviet Union exceeded 30 percent.

During the 1970s and early 1980s Kazakhstan's growth began to stagnate because of rigidities in the planning system, and industrial production decreased to one-third the rate of growth of earlier years. Before reorganization could take place, *perestroika* (restructuring) was launched in the late 1980s without a clear strategy.

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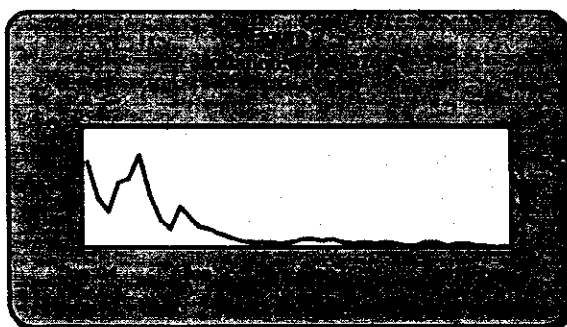
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Table 1				
Key Macroeconomic Indicators, 1994-97				
	1994	1995	1996	1997
GDP (million US\$)	12.6	16.3	20.7	22.9
Per Capita (US\$)	757	985	1,252	1,385
Real GDP growth rate (%)	-25.4	-8.9	0.3	2.0
Industry Value Added (% of GDP)	na	23.5	21.3	na
Agriculture Value Added (% of GDP)	na	12.3	12.8	na
Inflation (%) ^{a/}	1,258	247	39.7	17.5
Average Exchange Rate Tenge/US\$	35.5	61.7	71.0	75.0
Real Interest rates ^{b/}	na	13.2	7.6	15.6
State Budget Deficit (% to GDP)	3.9	3.6	2.8	2.8
Export (million US\$)	3,285	5,197	5,894	6,411
Import (million US\$)	4,205	5,419	6,296	6,995
Trade Balance (million US\$)	-920	-222	-402	-584

^{a/} Based on consumer prices.
^{b/} Refinancing rates adjusted for inflation. Data for 1997 based on January to May information.
^{c/} Estimate.

Sources: Government of Kazakhstan; Centre for Economic Reform; also derived from National Bank of Kazakhstan and National Statistical Agency.

The results were disappointing and efforts to improve the situation were undertaken in 1990. The Supreme Council of the Soviet Union examined the issue of transition to a regulated market economy, concluding that each republic should begin developing its own concepts and models of economic transformation consistent with its individual circumstances. However, implementation of these decisions was superseded by the dramatic political events in the Soviet Union of August and December 1991 when the leaders of Russia, Belarus and the Ukraine agreed to dissolve the Soviet Union and Kazakhstan gained its independence.



After more than 70 years of operating under a centrally planned economy where the institutions and a system of incentives were far removed from those in market economies, the Kazakh socio-economic system has had to undergo extraordinary adjustments. The initial conditions for the transition were characterized by large internal and external

macroeconomic imbalances. Despite the chaos that followed the change and the size and socio-cultural diversity of the country, the government has made considerable progress toward a cohesive market economy. Macroeconomic stabilization has been a major result of government's consistent economic policy since the country declared its independence in 1991 and introduced the

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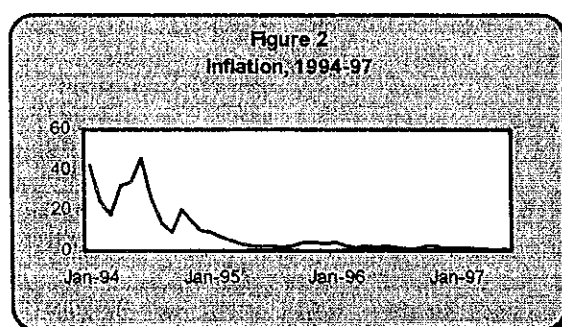
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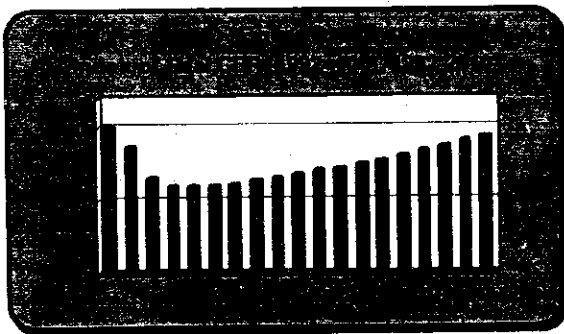
Current economic reforms are bringing about large structural changes in the economy, despite unfavorable external conditions caused by the recent crisis in Asia, the drop in world prices for Kazakhstan's leading exports of oil, metals and grains, and Russia's financial troubles. Output declines have occurred in Kazakhstan's industrial products in the form of heavy machinery and machine tools, rolled metals, and construction materials. Notwithstanding the reforms, there still remain inefficient production processes, poor maintenance and management, outdated technologies, and frequent supply disruptions, all of which contribute to high production and distribution costs and low output volumes.

In the medium-term, Kazakhstan should achieve a steady growth of 3-4 percent. To maintain this growth, Kazakhstan will require significant foreign capital to develop not only its oil and gas export capacity, but also a wide range of other productive activities. The diversification of the economy from its reliance on oil and a few other natural resources will protect the economy from future shocks in world commodity markets. The transformation of Kazakhstan into a well-balanced economy will need to parallel adjustments to the needs of the internal and global markets. For the machinery industry, a success recovery of production will depend on the ability of manufacturers to focus production activities in areas where they can successfully compete with foreign imports.

3. Structural Reforms

To strengthen the country's growth and development, the government recently introduced the *Kazakhstan – 2030* plan, under which foreign investment is to be encouraged, particularly in the exploitation and processing of natural resources, infrastructure, communications and information technology. The program focuses on achieving the following seven long-term objectives: national security, internal political stability and consolidation of the society, economic growth based on an open market economy, with a high level of external investment

and domestic saving, public health, education and welfare, energy resources, infrastructure, transport and communications, in particular, and professional public administration.



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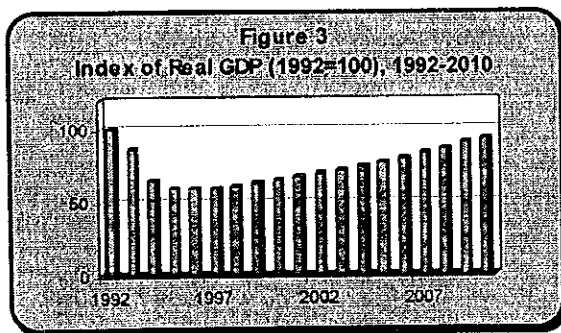
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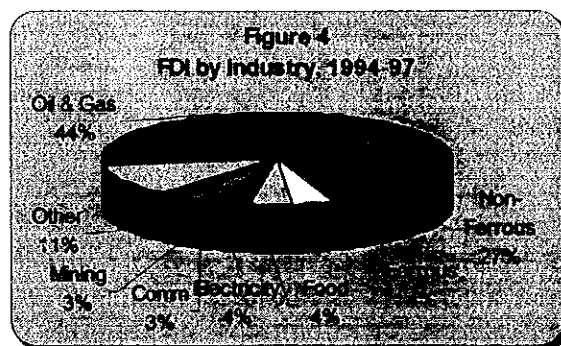
and domestic saving, public health, education and welfare, energy resources, infrastructure, transport and communications, in particular, and professional public administration.



The aim of the government's structural reform program is to move the country from a labor and

resource-intensive economy to one based on capital and technology-intensive

activities. In that way, it is expected that the share of agriculture and mining in the overall production of the economy will be reduced in favor of processing and high value-added activities. The anticipated overall improvements in the economic and social is expected to improve the investment environment.



In an effort to broaden the economic base and reduce the country's vulnerability to external shocks, a number of non-energy related production activities are to be developed, including machinery, light industries, food industries, infrastructure, chemicals, and services such as those related to tourism. In support of these initiatives, the government plans to adopt pro-active industrialization policies. During the initial period of the program through 2010, those policies will focus on labor-intensive industries in agriculture, light industries, food industries, tourism, construction materials, and infrastructural development.

	Units	1990	1993	1994	1995	1996
Instruments and Spare Parts	'000 tons	1,092,461	239,902	147,106	199,956	179,062
Metallurgical Equip, of which						
Metal cutting machines	units	2,578	1,193	42,957	114	na
Press-forging machines	units	1,173	730	434	269	127
Rolling Stock Machines	'000 tenge	4,353,819	242,125	259,530	605,136	688,604
Chemical Equip and Spare Parts	'000 tenge	389,056	15,430	13,654	36,414	239,681
Agricultural Machines, of which						
Agricultural machinery	'000 tenge	5,567,081	854,420	435,832	299,021	257,666
Livestock and feed production machinery	'000 tenge	3,637,553	402,371	156,648	154,332	80,323

Source: National Statistical Agency.

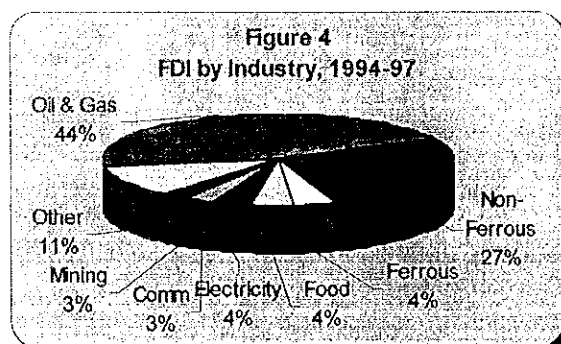
B. Priority Sectors for the Machinery Industry

1. Agriculture

Agriculture is an important part of the Kazakhstan economy, but the performance of the sector has undergone large structural adjustments. Since

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Table 2
Output of Basic Machinery Products, 1990-96
(volume and value)

	Units	1990	1993	1994	1995	1996
Instruments and Spare Parts	'000 tons	1,092,461	239,902	147,106	199,956	179,062
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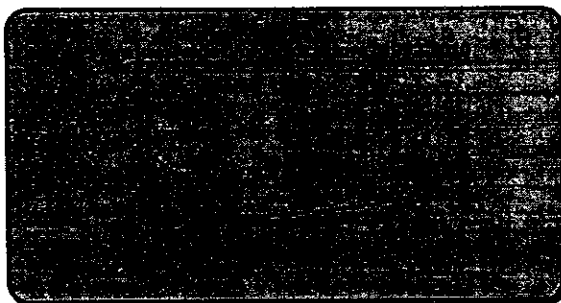
Agriculture is an important part of the Kazakhstan economy, but the performance of the sector has undergone large structural adjustments. Since

the country's independence, agricultural output has declined dramatically because of the sharp drop in productivity and the fall in the area of land utilized for agriculture. Kazakhstan has been able to meet its domestic requirements, but grain exports have been severely reduced. Only in the areas where the private sector has played an important role, such as the production, distribution and marketing of fruits and vegetables, has the performance been favorable.

Year	Total		Crop on	
	Agricultural	Total Crops	Irrigated Lands	Livestock
1993	139,222	94,664	na	44,558
1994	111,627	73,320	11,930	38,307
1995	84,064	55,073	18,109	28,990
1996	77,443	52,837	na	24,606

Source: National Statistical Agency.

Kazakhstan's agricultural sector is composed of three types of agricultural enterprises: (a) *state agricultural enterprises* accounted for more than 65 million hectares, or 30 percent of the total agricultural land in 1995; (b) *non-state agricultural enterprises* are collective enterprises that include joint-stock companies and small agricultural enterprises; and (c) *private enterprises* consist of personal household plots, gardens and orchards that are not on agricultural land but are private property. Several factors are needed to improve conditions in agricultural production: (a) substantive restructuring of farms; (b) increased financial liquidity and greater access to credit by farm units; (c) access to water supplies and the desalinization of soil; (d) improvements in the market distribution systems; and (e) greater access to spare parts and fuel.



The government has attempted to alleviate the liquidity crisis in agriculture. Some funds are being provided as grants, while others are being distributed through low-interest rate loans. The Agricultural

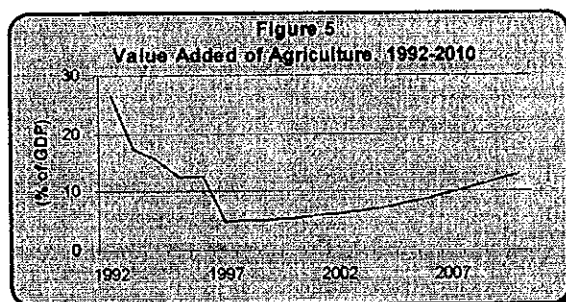
Support Fund (ASF) has been established as a mechanism for the transfer of debts of agricultural producers to the ASF. The bulk of that debt has originated from the farmer rather than from the agro-processing industry. In addition to its debt-resolution function, the ASF provides direct subsidy support to targeted activities such as sheep farming through wool price supports.

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2. Mining

Kazakhstan's vast hydrocarbon and mineral resources are regarded as the prime engine of growth for the economy. However, these expectations have yet to be met, and current oil production levels are significantly below their pre-independence levels. While Kazakhstan continues to depend on Russia for its oil exports, a recent agreement on the Caspian Pipeline Consortium between the Kazakhstan and Russian governments and oil companies will provide Kazakhstan with an oil export route. This development is likely to accelerate production volumes and the distribution of Kazakhstan's oil and gas to world markets, and it will considerably enhance the investment interests of foreign oil companies. There are also plans to build a 3,000-kilometer pipeline to the Xinjiang province of western China.

Mining activities are largely directed towards extraction and few processing activities take place within Kazakhstan since traditionally, these activities were closely linked to processing activities in other FSU countries, and especially Russia. Since independence in 1991, however, trade has increasingly been redirected toward markets outside the Newly Independent States (NIS), notably China and Germany. Kazakhstan has one-third of the world's chromium and manganese deposits and it has substantial reserves of other minerals: 50 percent of the former Soviet Union's tungsten and lead, 40 percent of its zinc and copper, and 25 percent of its bauxite, silver and phosphorus. Kazakhstan is also the largest NIS producer of beryllium, tantalum, barite, uranium, cadmium, and arsenic.

More than half of the country's mining, processing, and smelting enterprises use outdated equipment and are in need of replacement. Although the situation in the mining and mineral processing industry is not as severe as in the country's agriculture and agro-industrial activities, enterprises operating in this area lack expertise in operating within a free market system. The Kazakhstan mining industry operated under a central planning system and lost some of its traditional markets with the breakup of the Soviet Union. There are a number of business opportunities in mining and mineral processing activities, notably in infrastructure development, mine and plant reconstruction, service procurement, and machinery equipment supplies.

Table 4
Output Index of Selected Industries, 1990-96
(1985=100)

	1990	1991	1992	1993	1994	1995	1996
Total of Industrial Sector	116.9	115.5	97.9	83.9	60.1	52.1	48.7
All Machinery	110.7	113.4	94.9	81.0	50.9	36.8	34.4
- Tractors and agr.mach.	88.2	85.6	56.8	42.4	25.0	15.9	16.5
- Construction machinery	102.0	91.9	63.3	46.8	24.1	12.8	20.9
Light and food industries	171.1	186.8	178.2	109.2	148.4	92.9	69.0
Energy	131.5	200.4	139.5	135.6	123.4	72.4	76.2
Metallurgy	125.5	142.4	159.1	135.9	146.0	211.4	198.7
Mining	129.7	135.3	137.1	83.6	85.5	55.0	39.1
Chemicals	150.8	156.8	137.4	101.0	79.1	72.9	59.1
Appliances	131.3	143.4	123.6	119.2	74.9	56.6	58.2
Transport vehicles	108.6	126.8	104.7	58.0	36.5	34.7	37.7

Source: Ministry of Energy, Industry and Trade.

During the Soviet era Kazakhstan was transformed from an agriculture-based economy to a large scale-industrial complex. At the beginning of the 1990s Kazakhstan supplied 70 percent of the Soviet Union's production of lead, zinc, titanium and magnesium tin, 90 percent of its phosphorus and chrome, and over 60 percent of its silver and molybdenum. Despite the continuing importance given to the sector, the government recognizes that the development of high value-added products must become an essential part of its growth strategy. The industrial sector accounts for one-fourth of GDP and is mainly directed toward the country's rich resource base, which includes petroleum, coal, iron ore, manganese, chrome ore, nickel, cobalt, copper, molybdenum, lead, zinc, bauxite, gold and uranium.

The government has been actively promoting the development of several key industries it has targeted. Under the earlier Medium-Term Program for Deepening Reforms, it has sought to modernize and expand existing infrastructure, especially transportation, electric power and telecommunications, to improve the legal and regulatory regime, and advance its privatization programs in order to establish a conducive environment for investment. In rail transport, the government's aim under the plan has been twofold: (a) to expand and modernize the rail network, and (b) to privatize railway-related services.

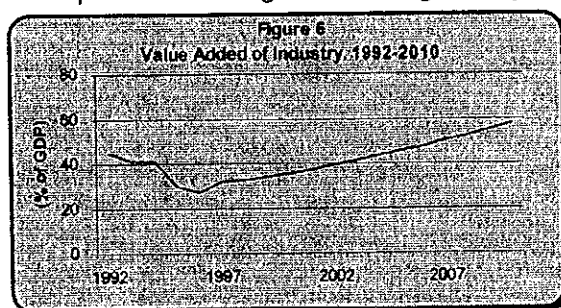
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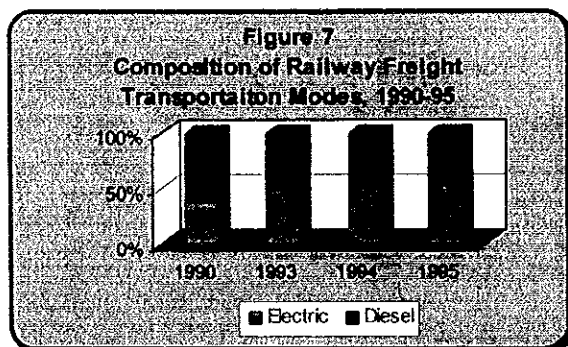
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3. Transportation

Kazakhstan is the world's largest land-locked country and its relative isolation makes it essential to develop transportation facilities to access international markets. Kazakhstan has 21,600 kilometers of railways, 115,500 kilometers of



paved roads, and 4,000 kilometers of navigable waterways. The railroad system links it to Europe via Russia, to the Persian Gulf via Iran, and to the Pacific Rim via China. Although there is a developed road network connecting all major cities, lack of funds has left most routes poorly maintained. Kazakhstan recently signed an agreement with China and the

Kyrgyz Republic to upgrade a road network over the Karakorum mountain range to the Indian subcontinent.

Kazakhstan's road and railway infrastructure will require significant, long-term financing from international financial institutions and private investors. The same situation confronts other Central Asian countries and there have been recent efforts to coordinate initiatives in the transport sector through the regional Transit Transport Framework Agreement. Member countries include Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan and their neighbors Afghanistan, Armenia, Azerbaijan, China, Georgia, the Islamic Republic of Iran, Pakistan, the Russian Federation and Turkey.

	Railway	Air	Road	Maritime
1985	382,507	99	17,721	3,437
1990	406,963	80	18,544	3,851
1991	374,230	67	17,946	3,426
1992	286,109	63	14,705	2,523
1993	192,258	66	10,000	1,546
1994	146,777	87	3,866	818
1995	124,503	138	2,079	802
1996	112,780	137	1,396	444
1997 (6 months)	52,987	61	360	125

National Statistical Agency, *Statistical Bulletin No. 2 (1997)*.

The objective of the agreement is to establish a regional regulatory framework that will make transit operations in Central Asia efficient and cost-effective, thereby promoting external trade of the sub-region and bolstering economic growth of the member countries. As part of the agreement, member countries are to harmonize their technical standards in the development of a regional transport networks.