

Kazakhstan

**An
Economic
Profile**



July 1993

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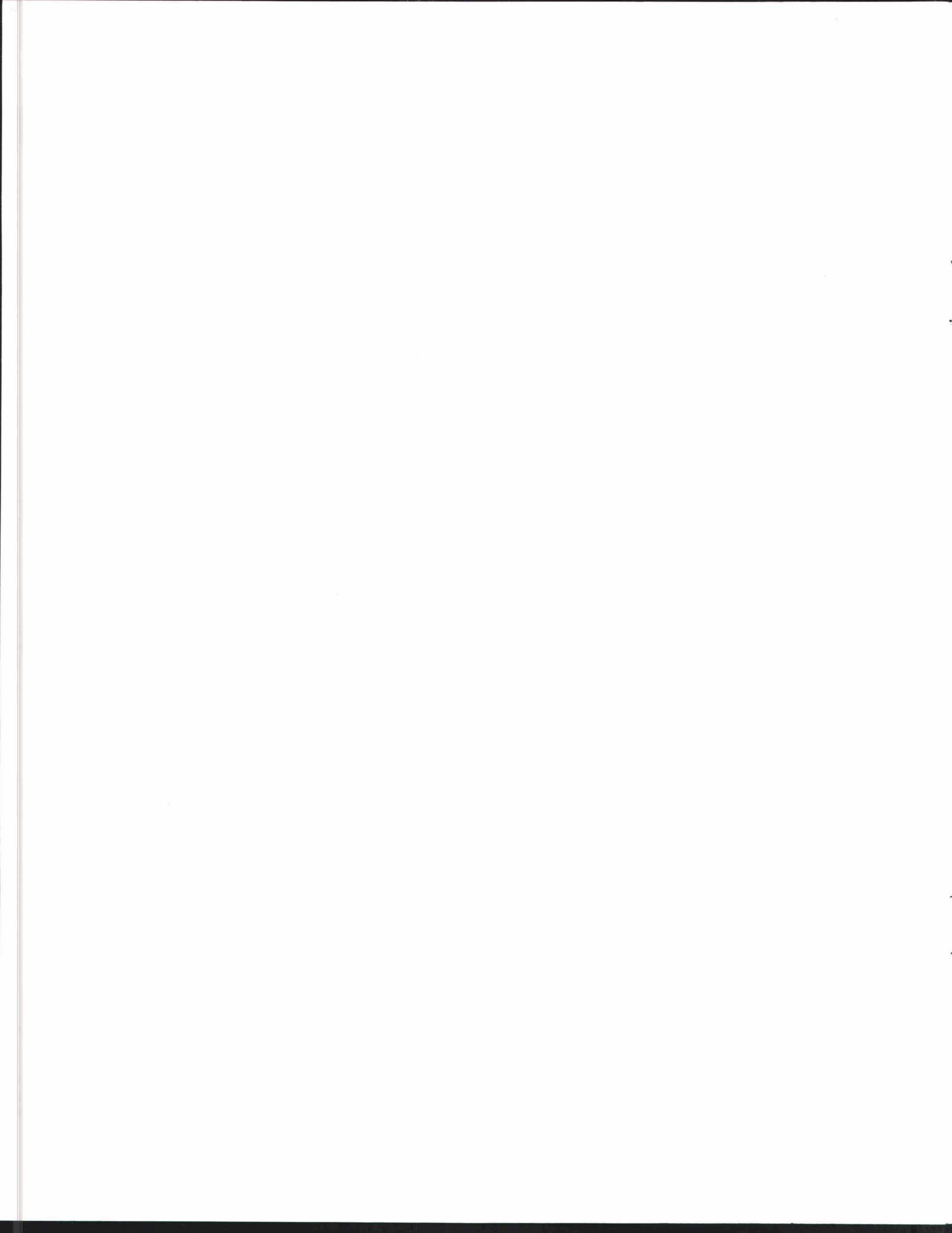
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Kazakhstan: An Economic Profile

July 1993



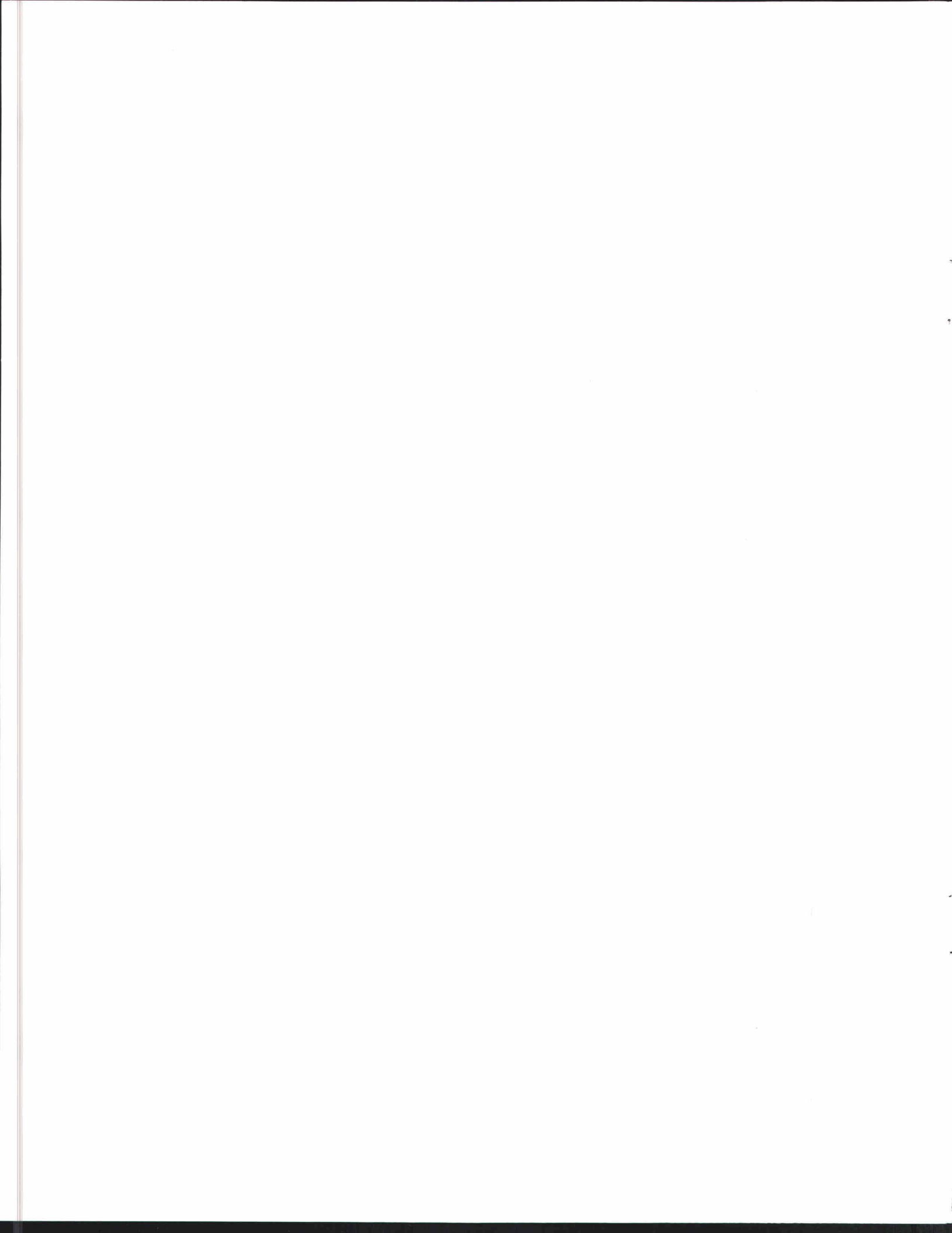
Kazakhstan: An Economic Profile

Preface

This is one in a series of profiles of the republics of the former Soviet Union that are intended to provide basic reference material as a backdrop for assessing future developments in these new states. The profile provides a description of the geography, population, and economy of Kazakhstan and compares its level of development, growth, and social welfare with that in Mexico and Turkey.

International comparisons, particularly for aggregate measures such as GNP, are difficult to make because of differences in definitions and methods used by various countries in compiling statistics. International currency exchange rates are deficient for this purpose because they do not reflect the relative purchasing power of different currencies over the whole range of output of goods and services included in GNP. Exchange rates may differ greatly from purchasing power parities. Because of the lack of these parities, alternative measures have been selected. These measures set forth in the body of the profile include primarily data for which comparable international statistics were available.

For the most part, official statistics in the public domain were used in compiling the tables and other numerical entries. The annual statistical abstract for Kazakhstan (National Economy of Kazakhstan SSR) was the most important source of data. Extensive use was also made of *Trud v SSSR* (Labor in the USSR), *Sotsial'noye razvitiye v SSSR* (Social Development in the USSR), and the *Perepis' naseleniya* (Population Census). Reference country comparisons relied on the information found in their yearbooks and in various UN and OECD publications covering national accounts, food consumption, and the like. More detailed data on the profile state are included in the appendixes.



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Figure 1
Kazakhstan

Administrative divisions			
Old name	New name	Old name	New name
Aktyubinsk	Aqtöbe	Mangystau	Mangghystaū
Alma-Ata	Almaty	Pavlodar	Pavlodar
Chimkent	Ongtüstik Qazaqstan	Severo-Kazakhstan	Soltustik Qazaqstan
Dzhambul	Zhambyl	Semipalatinsk	Semey
Dzhezkazgan	Zhezqazghan	Taldy-Kurgan	Taldyqorghan
Gur'yev	Atyraū	Tselinograd	Aqmola
Karaganda	Qaraghandy	Turgay	Torghay
Kokchetav	Kokshetaū	Ural'sk	Batys Qazaqstan
Kustanay	Qostanay	Vostochno-Kazakhstan	Shyghys Qazaqstan
Kyzyl-Orda	Qyzylorda		



— International boundary
 — Oblys boundary
ALMATY National capital
 — Railroad
 — Road

Oblys centers are shown in green.
 An oblys is named only when its name differs from that of its administrative center.

0 400 Kilometers
 0 400 Miles

Population

- Greater than 1,000,000
- 400,000 - 1,000,000
- 200,000 - 400,000
- Less than 200,000

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Kazakhstan: An Economic Profile

Geography and Climate

Kazakhstan is the second-largest republic in the former USSR. At 2.7 million square kilometers (km), it is larger than Western Europe, over twice the size of Alaska, and approximately four times the size of Texas. Moreover, it is the most sparsely settled of the former Soviet republics, with just 6.2 persons per square kilometer. It is situated almost equidistant between the Atlantic and Pacific Oceans. At its greatest expanse, Kazakhstan extends over 1,600 km from north to south and nearly 3,200 km between east and west.

The country's terrain is primarily an extensive flatland, rising from its nadir in the western Caspian lowlands and sloping gradually upward toward the east. Three natural regions are readily distinguishable: the Caspian Depression and Turan Lowland in the west and southwest, the higher Kazakh Upland and Betpak-Dala Desert in the center, and the Altay Mountains and Tien Shan in the east and southeast.

Kazakhstan has a dry, continental climate, because of its location in the center of the Eurasian landmass. The country's great distance from the oceans, together with the shield of high mountains to the east and southeast, prevents moist air masses from entering the region. Consequently, rainfall over the plains is light and irregular, averaging fewer than 10 inches (250 millimeters) per year, while the southern desert and western Caspian Depression are even drier. Most of this limited precipitation occurs during the summer. Kazakhstan's considerable distance from the moderating influence of oceans increases temperature variation between seasons. In the north, at Petropavl (Petropavlovsk), mean temperatures range between -18.7 degrees Celsius (-2 degrees Fahrenheit) in January and 18.8°C (66°F) in July. In the south, at Shymkent (Chimkent) January temperatures average -3°C (27°F) while July temperatures at Turkistan (Turkestan) (180 kilometers northwest of Shymkent) average 28.3°C (83°F).

The soils and natural vegetative zones of Kazakhstan lie in an east-west direction reflecting the relatively moister climate in the north and drier climate in the south. The wooded steppe of West Siberia penetrates northern Kazakhstan in a narrow band of birch, aspen, and willow trees, underlain by chernozem (black earth) soils. To the south, the receding forests are replaced by meadow steppe, with chestnut brown soils. Moving farther to the south, vegetation becomes more sparse as these soils give way to a more alkaline variety. Finally, in southern and western Kazakhstan, higher temperatures and minimal rainfall produce extensive deserts and semideserts.

For purposes of economic and demographic analysis, Kazakhstan is best understood as two distinct regions (see appendix A for detailed discussion). Northern Kazakhstan is a continuation of the steppelands of Russia, while the southern part consists primarily of semideserts and oases typical of the four neighboring Turkic-Islamic republics of Central Asia. Eight of the 11 *oblystar* (oblasts) that compose northern Kazakhstan—Qaraghandy (Karaganda), Kokshetau (Kokchetav), Qostanay (Kustanay), Pavlodar, Soltustik Qazaqstan (Severo-Kazakhstan), Shyghys Qazaqstan (Vostochno-Kazakhstan), Aqmola (Tselinograd), and Torgay (Turgay)—have population majorities that are Russian and Ukrainian. Only Aqtobe (Akt'yubinsk), Semey (Semipalatinsk), and Batys Qazaqstan (Ural'sk) have ethnic Kazakh majorities. The southern tier of *oblystar*—Almaty (Alma-Ata), Atyrau (Gur'yev), Zhambyl (Dzhambul), Zhezqazghan (Dzhezkazgan), Qyzylorda (Kyzyl-Orda), Mangghystau (Mangistau), Taldyqorghhan (Taldy-Kurgan), and Ongtustik Qazaqstan (Chimkent)—are populated principally by Kazakhs and other Turkic peoples. The capital city of Almaty, however, has an ethnic European majority.

Almaty



History and Government

The Kazakh people evolved as a mixture between the Turkish tribes who lived in the territory of current Kazakhstan in the eighth century and the Mongols who moved into the region in the 13th century. This mixed heritage is reflected in the Mongolian physical features of many Kazakhs, as well as their use of a Turkic language. For centuries, Kazakh clans wandered throughout the region as nomads and herders. This continued up to the advent of Russian, and later Soviet rule, when civil war, forced collectivization, and purges caused massive fatalities and drove hundreds of thousands to flee to China and Afghanistan.

The current geographic dimensions of Kazakhstan are somewhat smaller than the earlier domain of the nomadic Kazakhs and smaller than the original territory of the Soviet autonomous region. First organized as an autonomous republic in Russia in 1920, it was called the Kirgiz ASSR until 1925, when the name was changed to Kazakh ASSR in accordance with the change of the name of the titular nationality. At the same time, the original capital region (Orenburg) was shifted to Russia and the far southeast city of Alma-Ata became the capital of the Kazakh ASSR. When the Kazakh Republic was elevated to union republic

status in 1936, the region of the Karakalpak ASSR (annexed in 1924) was transferred to Uzbekistan. As of 1 January 1991, Kazakhstan was administratively divided into 19 *oblystar* that contained 211 rayons and 84 cities, with the capital at Almaty. Kazakhstan declared independence on 16 December 1991 and was admitted to the United Nations on 2 March 1992.

Kazakhstan's form of government was set in the Constitution adopted by the legislature in January 1993. The Constitution provides for a separation of powers between a strong, independently elected president, a legislature, and a quasi-independent judiciary. The president appoints, with the consent of the legislature, a prime minister, deputy prime ministers, ministers of foreign affairs, defense, finance, and interior, as well as a state security chairman. The president is elected for a five-year term. The unicameral legislature currently has 365 deputies, all of whom are directly elected. The legislature is to be reduced in size before the December 1994 elections. An implementing statute will determine the number of legislators and whether they are elected from districts or proportionally by parties.

Parliament building



Local governments have only limited independence in Kazakhstan. The president appoints a chief for each of the 19 *oblystar*, but *oblys* (oblast), city, and regional representative bodies are elected. The actions of local bodies and officials are subject to annulment by higher administrative levels and the courts.

Population and Labor Force

Kazakhstan was the fourth-most-populous former Soviet republic with 16.89 million people (1 January 1992). Its population is much smaller than that of Mexico (88.6 million in 1992) and Turkey (56.47 million in 1991). Over the past decade, Kazakhstan's population has grown more slowly than that of Mexico or Turkey, largely because of the reference countries' higher fertility rates. As a result, relative to the working-age population in 1989, there are more children and fewer senior citizens in Mexico and Turkey than in Kazakhstan. Women make up 52 percent of Kazakhstan's population, a somewhat higher share than in the reference countries. Table 1 presents a selection of key population characteristics.

Kazakhstan's population is similar to that of the two reference countries in terms of mortality and life expectancy. Reported infant mortality, however, a major component of overall mortality, was somewhat

lower in Kazakhstan—only 25.9 deaths per 1,000 births in 1989 in Kazakhstan as compared to 33.0 in Mexico and 61.6 in Turkey.¹

Kazakhstan's population is less urbanized than both Mexico's and Turkey's. In addition, both Mexico and Turkey have greater shares of their total populations living in their largest cities than Kazakhstan has living in Almaty.

Kazakhstan is unique among the former Soviet republics in that it is the only one where the titular nationality accounted for a minority of the population. In 1979, ethnic Kazakhs were only 36 percent of the population while Russians comprised 41 percent. Ten years later, because of the much higher fertility rates for ethnic Kazakhs, their share came to nearly 40 percent while the Russian share had decreased to 38

¹ Because of definitional differences, Kazakhstan's official infant mortality rate, which is an important indicator of health conditions in any country, cannot be directly compared with other countries' rates. The reported infant mortality rates are understated, in part, because they do not include deaths in the first seven days of life after birth. Estimates for Kazakhstan suggest that the rate was about 45 in 1989.

Table 1
Selected Demographic Statistics, Selected Years

	Kazakhstan		Mexico		Turkey	
	1979	1989	1980	1990	1980	1990
Population						
Total (thousands)	14,684	16,464	66,847	81,141	44,737	57,130
Male	7,076	7,974	33,039	39,879	22,695	28,949
Female	7,609	8,490	33,808	41,262	22,042	28,181
Average annual growth rate (percent)	1.2		2.0		2.5	
Age dependency ratios ^a (per 100 persons, ages 15 to 64)						
Total	63	57	98 ^b	75	78	71
Young (0-15)	53	49	91 ^b	67	70	63
Old (over 64)	10	9	6 ^b	7	8	8
Percent urban	54	57	66	NA	44	61
Total fertility rate ^c (births per woman)	3.0	2.8	4.6	3.5	4.6	3.6
Life expectancy (years)	67	69	67	71	63	69
Largest cities (thousands)	Almaty	1,128	Mexico City	13,879 ^d	Istanbul	6,407 ^e
	Qaraghandy	614	Guadalajara	2,265 ^d	Ankara	3,022 ^e

Note: Because of rounding, the components may not add to the totals shown.

^a Age dependency is the number of people younger or older than the working ages (15 to 64) per 100 working-age persons.

^b Based on 1979 data.

^c Total fertility rate represents the number of children a woman would bear in her life if she survived to the end of the reproductive age and was subject over this period to the regime of age-specific fertility rates observed in the given country and year.

^d Data are for 1980. It is estimated that the 1991 population of Mexico City was roughly 20 million, which would make it the largest urban concentration in the world.

^e Data are for 1989 and include some neighboring urban areas.

percent.² As of 1 January 1992, the respective shares were 42 percent and 37 percent. Kazakh demographers predict that Kazakhs will be a majority by the year 2002.

Substantial population shifts are partly responsible for the changing ethnic balance in Kazakhstan. Nearly 200,000 ethnic Germans departed between 1989 and 1992, mostly to Germany. A substantial number of

² Germans (4.6 percent), Ukrainians (5.3 percent), Uzbeks (2 percent), and Tatars (2 percent) constitute the next largest ethnic groups, with Byelorussians, Azeris, and others comprising the balance of the population. Many Germans were deported to Kazakhstan from their autonomous region in Russia when it was abolished after the German invasion in 1941.

Russians have also been leaving, but the arrival of Russians from other parts of Central Asia and natural population growth have kept their total number from declining. Kazakhstan's policy of inviting the return of ethnic Kazakhs from other states and subsidizing their resettlement in northern Kazakhstan, where the departure of Europeans has opened up housing and agricultural jobs, is also affecting the ethnic balance. Already 45,000 Kazakhs have returned from Mongolia and another 15,000 are expected this year. There are more than a million Kazakhs in nearby regions of Russia, Mongolia, and China.



Woman in Kazakh costume

The Kazakh language, which belongs to the family of Turkic languages, was originally written in Arabic script. In the 1930s, the Latin alphabet was used before a change was made to Cyrillic. Recently, a law designating Kazakh as the official state language of the republic was passed. Currently, the proportion of Russians who speak Kazakh is less than 1 percent, but two-thirds of all Kazakhs speak Russian. The share of Russian speakers in the total population rose from 79.5 to 83.1 percent between 1979 and 1989, while the share of Kazakh speakers also increased by 4 percentage points to 40.2 percent.

Literacy is nearly universal, and the population is considered to have attained a level of education comparable to the rest of the former Soviet Union. As of the 1989 census, 64 percent of the population aged 15 and over had completed secondary school, up from

Table 2
Distribution of Labor Force by Sector, 1990

	Kazakhstan	Mexico	Turkey
Total, national economy (thousands)	6,739.0^a	26,100.0	19,574.3
Total, national economy (percent share)	100.0	100.0	100.0
Industry and construction ^b	33.0	26.4	20.5
Agriculture and forestry	20.0 ^c	22.0	47.1
Transportation and communications	10.0	4.3	4.3
Trade and public dining	8.0	12.9	11.3
Credit, insurance, other services, and miscellaneous ^d	29.0	34.4	16.8

^a Data include state workers and employees and collective farmers; private labor is excluded. The percentage shares apply to the entire labor force.

^b Including mining and quarrying industries.

^c Includes state farms, collective farms, and private agriculture. The share is probably understated because of undercounting of the labor used on private plots worked by individual households.

^d For Mexico and Turkey, this category includes finance, insurance, real estate, business services; community, social and personal services, and other activities not counted elsewhere. For Kazakhstan, this category includes administrative activities, housing-communal economy, health, physical culture and social services, education, culture and art, science, and other unspecified activities.

44.5 percent in 1979. The share with completed higher education rose from 7 percent to nearly 10 percent in the same period.

Despite some similarities, the distribution of the labor force in Kazakhstan differs substantially from that in Mexico and Turkey (table 2). The differences reflect not only the impact of Soviet development policy but also differing levels of development in the three countries. Thus, about one-third of all workers in Kazakhstan are employed in the industrial and construction sectors as compared with roughly one-fifth in the reference countries. At the same time, the share of agriculture in total employment is comparatively low in Kazakhstan.

Table 3
Ethnic Kazakh Share in State-Sector
Employment, 1987

Percent

	Percent
Total	33
Industry	21
Agriculture ^a	52
Transportation and communications	28
Construction	21
Trade and public dining	29
Housing-communal economy and personal services	23
Health, physical culture, and social security	38
Education	43
Culture and art	42
Science and scientific services	25
Government administration	40

^a Excludes collective farms.

The labor force expressed as a share of the total population is somewhat larger in Kazakhstan (40 percent) than in either Mexico (33 percent) or Turkey (35 percent). The higher share stems partly from the much higher labor force participation rates, especially for women in Kazakhstan, that were the consequence of a Soviet policy of relying on large annual infusions of labor as a means of stimulating economic growth. In 1990, one-half of Kazakhstan's state sector work force was female as compared to one-third in both Turkey and Mexico. Moreover, Kazakhstan has an older population than the reference countries, with one-third below age 15 as compared with nearly two-fifths for both Mexico and Turkey.

Another noteworthy feature of the labor force is that Russians are disproportionately represented in the higher paying sectors such as industry, transport, and science, while the ethnic Kazakh presence in the lower paying sectors such as health care, culture, art, and education exceeds their population share. This pattern is repeated in most non-Russian republics of the former Soviet Union, reflecting in part the earlier Soviet policy of dispatching comparatively more skilled Russians to the republics to staff new industrial enterprises (table 3).

Table 4
Gross Domestic Product by Sector
of Origin, 1989

Percent share
(current prices)

	Kazakhstan	Turkey	Mexico
Total	100.0	100.0	100.0
Industry	18.4	32.9 ^a	28.6 ^a
Agriculture, forestry, and fishing	34.1	15.4 ^b	7.6 ^b
Construction	18.3	4.0	3.6
Transportation and communications	8.6	10.0	7.6
Trade and distribution	7.4	17.2	27.2
Services and other	13.2	20.5	25.4

^a Includes gas and water transmission.

^b Includes hunting.

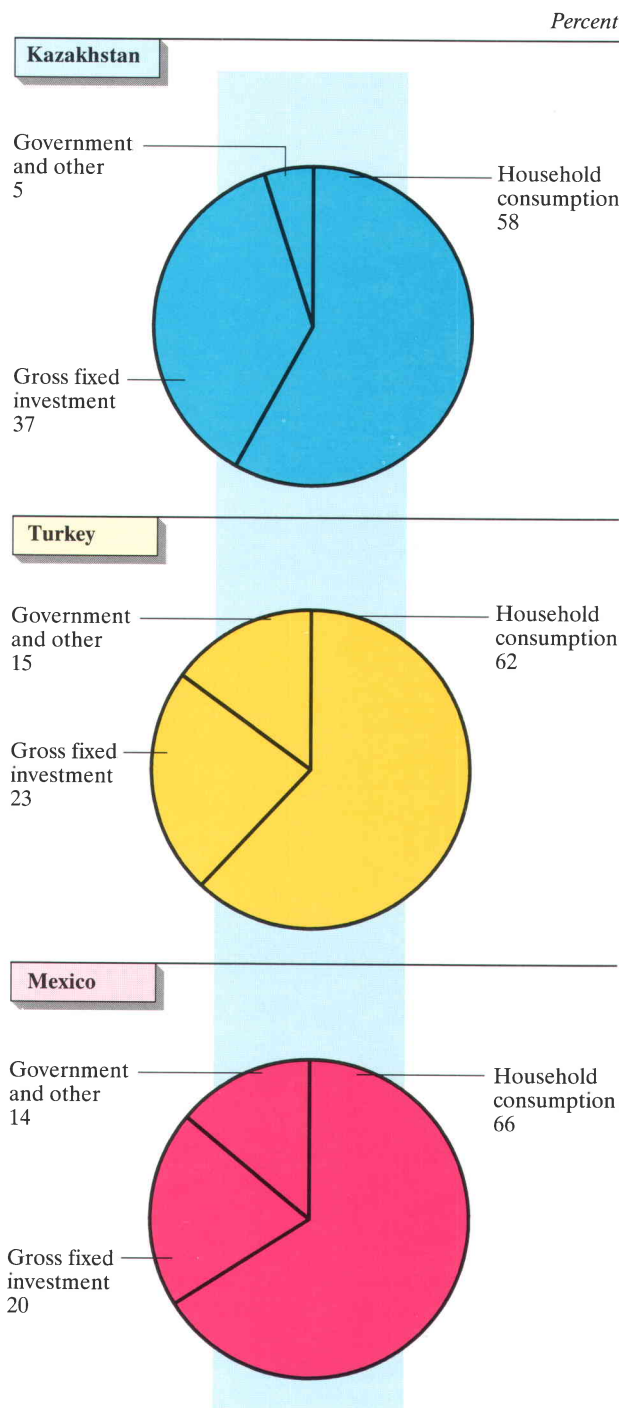
Structure and Performance of the Economy

Aggregate Measures. Gross Domestic Product (GDP) accounts comparable to those of the West are not yet available for Kazakhstan. Preliminary estimates suggest, however, that industrial, agricultural, and construction activity probably contribute roughly 70 percent of total GDP compared with half in Turkey and over one-third in Mexico (table 4). Trade and services may account for one-fifth of Kazakhstan's GDP, as compared to nearly two-fifths in Turkey and over half in Mexico.

The distribution of Kazakhstan's domestic product among final uses—consumption, investment, and government services—differs somewhat from patterns observed in the reference countries. According to preliminary estimates, Kazakhstan devotes a somewhat smaller share of its GDP to consumption than Turkey and Mexico. The share of investment in Kazakhstan's GDP was substantially higher than in the reference countries.

GNP growth rates comparable with those in the West have not yet been calculated for the former Soviet republics. Preliminary estimates for Kazakhstan

Figure 2
Gross Domestic Product
by End Use, 1989



suggest, however, that GDP in Kazakhstan increased at 2.2 percent annually during 1981-88, double the 1.1-percent annual growth registered by Mexico but substantially below the 5.4 percent achieved by Turkey. Despite the overall expansion of the economy, it appears that the productivity of labor and capital combined stagnated or declined in Kazakhstan during the 1980s as compared with growth rates of 1 and 2 percent, respectively, in the public and private sectors of the Turkish economy.

Industry. Kazakhstan was one of the less industrialized of the former Soviet republics. With per capita value of industrial output in 1989 nearly 15 percent below the all-union level, it ranked ninth among the former republics. During 1981-90, industrial output grew at an estimated average annual rate of about 1.9 percent.³ While approaching the rate of growth achieved by Mexico (2.4 percent), the rate in Kazakhstan was roughly one-fourth of the 7 percent posted by Turkey. Industrial production in Kazakhstan declined by roughly 1 percent in 1991 and by about 15 percent in 1992, according to government statistics.

Kazakhstan is richly endowed in industrial raw materials. These include deposits of oil, coal, iron ore, chromite, manganese, copper, and other nonferrous metals, all of which occur in sufficient quantities to permit net exports to other former republics. Kazakhstan's role as a major producer of energy has allowed the republic to export, on a net basis, energy equivalent to about 10 percent of total domestic use. Its net imports of gas and electricity are more than offset by exports of coal and oil. Kazakhstan is also a major producer of a few manufactured goods—rolled metal, mineral fertilizer, selected construction materials, bulldozers, tractors, and agricultural machinery.

For the most part, however, Kazakhstan depends on outside supplies of a wide array of industrial materials and manufactured goods—chemicals and petrochemicals, most types of machinery, forestry products, soft goods, and processed foods. On balance, during 1990

³ Official data record average growth of 3.2 percent during 1981-90, a rate that is believed to be biased upward because of a failure to properly correct for price inflation.

Figure 3
Selected Industrial Activity in Kazakhstan



*Metallurgical plant in Oskemen
(Ust'-Kamenogorsk)*



Kazakhstan imported 2.3 rubles of industrial goods for every 1.0 ruble of industrial exports. Table 5 and appendix table B-5 provide data on Kazakhstan's most important industrial products.

The composition of industrial production in Kazakhstan differs in important ways from that in the reference countries. Most notable is the much larger share of machinery industries in total output and the substantially smaller share of the fuels and power branches (table 6).

The production of electric power exceeds the generation of power in Turkey by nearly three-fourths but is one-fifth below the level produced by Mexico. On a per capita basis, however, the generation of kilowatt hours in Kazakhstan exceeds levels in Mexico and Turkey by four and six times, respectively.

Agriculture. Limited by a dry, continental climate and a relatively short growing season, Kazakhstan lags behind most other former republics in output per hectare of farming area. With 16 percent of the former Soviet Union's farming area (plowland), Kazakhstan accounted for roughly 7 percent of total

farm output in the late 1980s. The semiarid conditions in most of the country, taken together with the minor role of irrigation, result in a narrow range of crop alternatives and, because of the relatively low moisture demands, a major emphasis on grain crops. Even then, wide fluctuations in year-to-year precipitation lead to sharp swings in grain yields per unit of sowings.

Because of these constraints on high and stable crop yields, livestock raising predominated in the latter half of the 1980s and accounted for roughly three-fifths of farm output. Within these limits, Kazakhstan has, nevertheless, produced above its domestic needs and has consistently been a net exporter of agricultural products (primarily grain) to other republics.

Until recently, the private sector, contributing roughly one-fourth of farm output, had practically no individual holdings. State and collective farm households were permitted to cultivate private plots of one-half to 1 acre (less than 0.5 hectare) and maintain one to two head of livestock. In addition, nonagricultural

Figure 4
Major Energy Facilities in Kazakhstan



Table 5
Production of Important Industrial Products, Selected Years

	Kazakhstan			Mexico			Turkey		
	1980	1985	1989	1980	1985	1989	1980	1985	1989
Primary energy									
Electric power (<i>billion kWh</i>)	61.5	81.3	89.7	61.9	96.7	124.0	23.3	33.3	52.0
Oil (<i>million metric tons</i>)	18.7	22.8	25.4	99.9	136.0	131.0	2.4	2.1	2.9
Natural gas (<i>billion cubic meters</i>)	4.3	5.1	6.3	27.8	24.1	22.2	0.0	0.1	0.1
Coal (<i>million metric tons</i>)	115.0	131.0	138.0	7.0	9.8	10.6	18.1	34.4	52.1
Metallurgy									
Crude steel (<i>million metric tons</i>)	6.0	6.2	6.8	7.2	7.4	7.8	1.7	4.9	7.8
Iron ore (<i>million metric tons</i>)	25.8	23.0	23.8	8.1	8.1	5.4	2.6	4.0	4.5
Manganese ore (<i>1,000 metric tons</i>)	50.7	84.1	151.9	161.0	150.6	136.7	41.6	10.8	... ^a
Chrome ore (<i>million metric tons</i>)	3.3	3.3	3.6	0	0.3	0.6	0.6	0.9	1.6
Chemicals									
Mineral fertilizers (<i>million metric tons</i>)	1.3	1.4	1.7	0.9	1.4	1.7	NA	1.3	1.3
Sulfuric acid (<i>million metric tons</i>)	1.9	1.7	1.9 ^b	2.4	2.2	1.9 ^c	0.2	0.5	0.6
Caustic soda (<i>1,000 metric tons</i>)	42.6	57.5	62.8	224.0 ^c	330.5	380.3	34.0 ^c	13.2	88.0
Tires (<i>million units</i>)	NA	1.5	2.5	11.6	13.9	10.0 ^a	NA	5.6	6.6
Chemical fibers (<i>1,000 metric tons</i>)	19.3	21.0	20.6	289.0	345.0	376.0	108.0	200.0	302.0
Forestry products									
Sawn timber (<i>million cubic meters</i>)	2.1	2.0	2.0	2.0	2.2	2.1	4.7 ^c	4.9 ^d	4.9 ^b
Paper (<i>1,000 metric tons</i>)	17.6	10.8	2.9	1,863.0	2,189.0	2,425.0	392.0	285.8	285.0 ^b
Construction materials									
Cement (<i>million metric tons</i>)	7.1	7.5	8.6	16.4	20.3	23.8	12.9	17.6	23.8
Processed foods									
Vegetable oil (<i>1,000 metric tons</i>)	83.7	74.1	92.2	385.0	603.0	626.0	131.0	225.1	429.7
Macaroni products (<i>1,000 metric tons</i>)	88.3	108.7	127.9	136.0	144.0	NA	111.0	166.2	198.1
Granulated sugar (<i>1,000 metric tons</i>)	271.6	150.0	96.7	2,562.0	3,210.0	3,384.0	1,048.6	1,286.0	1,209.0
Other consumer goods									
Washing machines (<i>1,000 units</i>)	175.2	183.3	264.4	585.0	344.9	558.2	231.0	344.8	621.1
Radios (<i>1,000 units</i>)	... ^a	7.5	54.8	1,029.0	627.7	589.5	52.0	163.5	218.5

^aZero or negligible.

^bData are for 1987.

^cExcludes soda lyes, a residual byproduct.

Kazakhstan: Tires includes those for automobiles and agricultural machines.

Turkey: Paper includes newspaper, writing paper, and wrapping paper. Sugar includes both cube and crystal sugar. Tires includes truck, bus, automobile, and tractor tires. Vegetable oil includes only refined olive, sunflower seed, and cotton seed oils. Sawn timber is classified as "lumber" in the Turkish source.

Table 6
Comparative Structure of
Industrial Output ^a

Percent share

	Kazakhstan ^b 1989	Turkey 1985	Mexico 1984
Electric power	7.0	13.2	2.7
Fuels	11.1	17.2	25.4
Chemicals and petrochemicals	6.7	5.5	17.7
Metals	13.9	5.9	11.7
Machinery	23.6	13.8	10.4
Wood, paper, and pulp	3.5	5.1	5.5
Construction materials	8.0	3.9	1.6
Soft goods	14.1	11.6	7.7
Processed foods	10.3	14.8	15.4
Other industries	1.8	9.0	1.9

^a Value-added statistics were used in these computations.
^b Shares reflect domestic prices, which, in terms of world prices, tend to substantially undervalue fuels and metals and overvalue many manufactures.

Table 7
Selected Characteristics of Agricultural
Enterprises

	Kazakhstan ^a	Turkey ^b	Mexico ^c
Number of farms	2,516	3,650,910 ^c	4,280,220
Agricultural land per farm (<i>hectares</i>)	781,206	62	26
Cattle (<i>per farm</i>)	2,695	4	5
Hogs (<i>per farm</i>)	919	NEGL	2
Sheep and goats (<i>per farm</i>)	12,125	19	NA
Number of workers (<i>per farm</i>)	565	3 ^d	1.2 ^d

^a 1988 state and collective farms only.

^b Data are for 1988.

^c Private sector only. Data are for 1988.

^d Data are for 1990 and include workers occupied in forestry and fishing.

Table 8
Kazakhstan: Production of Major Agricultural Products,
Selected Years

Thousand metric tons
(except where noted)

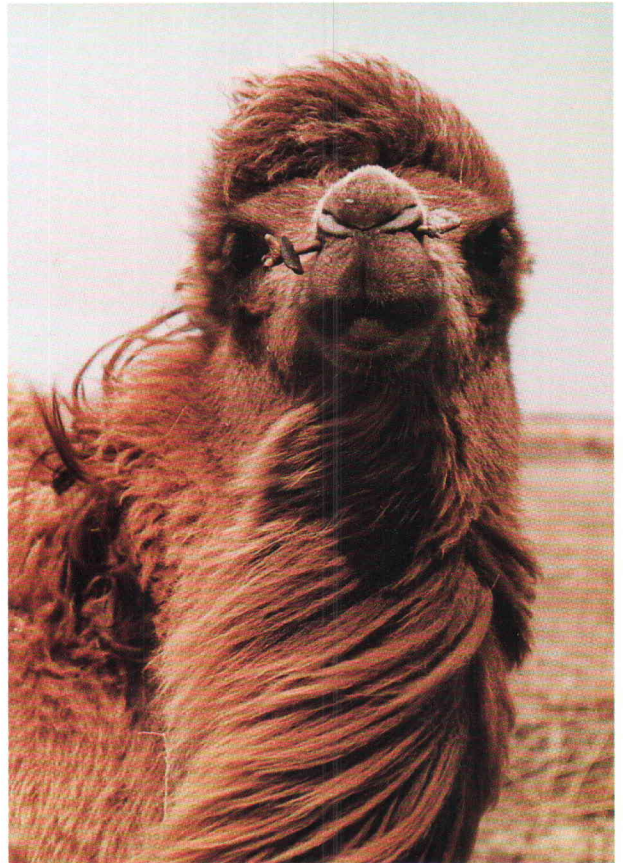
	1980	1985	1988	1989	1990	1991
Meat	1,069	1,133	1,493	1,573	1,560	1,524
Milk	4,597	4,763	5,321	5,563	5,642	5,555
Eggs (<i>million</i>)	3,369	3,803	4,202	4,253	4,185	4,075
Wool (<i>tons</i>)	103,600	97,600	108,400	109,900	107,900	104,400
Potatoes	2,238	2,197	2,260	1,783	2,324	2,143
Vegetables	1,085	1,085	1,354	1,254	1,136	955
Grain	25,900	22,694	20,970	18,797	28,488	11,192

households had, and still have, very small “garden-size” plots for cultivation. Thus, Kazakhstan’s agriculture is dominated by 2,120 state farms and 408 collective farms. Kazakhstan’s collective farms are organized nominally as “producer’s cooperatives” whereas state farms are organized along the lines of state-operated industrial enterprises. The data in table 7 suggest the immense size of these enterprises. In mid-1991, there were 604 private farms, but a year later their number had risen to 7,800 with an average size of about 275 hectares.

In contrast, Turkey has 3,651 privately operated farming units that produce all farm output. In Mexico nearly three-fifths of farmland is owned by communal or *ejido* farmers, while the rest is distributed among 4,280 private farms. Until very recently, the holders of communal land did not have property rights. They could pass cultivation rights to direct descendants but could not sell land, rent it, or use it as collateral for credit. Communal lands could be utilized either individually or collectively. In 1992, these constraints on Mexican farm productivity were lifted permitting the individual communal member to lease or transfer land to other members and provide an environment that could foster private-sector investment in agriculture.

Farm output increased by 11 percent in Kazakhstan during 1981-90. Increases for the same period were 23 percent in Turkey and 20 percent in Mexico. Production in Kazakhstan fell in 1991, but rebounded in 1992 largely because of a bumper grain crop.

Kazakhstan had the greatest fluctuation in farm output among the three countries. While all three countries have large farm acreages in arid and semi-arid areas with wide year-to-year variability in precipitation, comparatively larger shares of Kazakhstan’s crop and livestock production are grown under such circumstances. During the last half of the 1980s, the variation between the lowest and highest annual level of farm output came to 23 percent in Kazakhstan, 13 and 8 percent in Turkey and Mexico, respectively. Overall, when production of crops and livestock for 1989-90 is valued with US “farm gate” prices (1988),



Camel in southern Kazakhstan

Kazakhstan’s farm output was roughly three-fifths that of Turkey and one-half that of Mexico. The value of livestock production as a share of the value of total farm output varied widely ranging from slightly more than one-fifth in Turkey to about three-fifths in Kazakhstan and Mexico. Production of important commodities in Kazakhstan is given for a series of years in table 8.

As a reflection, in part, of its dry, continental climate Kazakhstan lags in crop productivity as compared to Turkey and Mexico. When yields of six major crops



Gas station in Almaty

(average 1988-89) are weighted together, Turkish and Mexican overall yield indexes are both roughly double that of Kazakhstan. In contrast, milk yield per cow in Kazakhstan is twice that of Mexico and four times that of Turkey. This superior performance carries over to both the private and socialized sectors where milk yields are nearly identical. Traditionally, dairy operations in countries such as Mexico and Turkey are characterized by very small individual household holdings where livestock feeding is limited to poor-quality hay and other forage crops. High-energy (grains) and high-protein feeds (oilseeds) comprise a relatively higher share of Kazakhstan's feed rations.

Transportation. Kazakhstan's transport network is poorly developed. Only the largest cities, primarily in the extreme north and along the southern perimeter, are linked by railroads and paved roads. Natural conditions for water navigation are unfavorable. For the country as a whole, there is less length of rails and road per unit of area than in the reference countries (tables 9 and 10). Within the context of this underdeveloped transport network, railroads provide the bulk of freight transport services, (86 percent of all ton kilometers in 1990, appendix table B-7). Passenger transport services were more evenly dispersed among the various modes, with buses carrying just over half of all passenger traffic (appendix table B-8).

Table 9
Land Transport Networks

Kilometers

	Kazakhstan 1989	Turkey 1991	Mexico 1991
All roads ^a	193,600	280,953	292,294
Paved	104,500	44,449	81,961 ^a
Unpaved	89,100	236,504	NA
Rail	14,460	10,393	26,510
Electrified	NA	795	NA

^a 1989.

Table 10
Density of Land Transport Networks ^a

Kilometers per 1,000
square kilometers

	Kazakhstan	Turkey	Mexico
All roads	71	365	152
Paved	38	58	43
Unpaved	33	307	NA
Rail	5	13	14
Electrified	NA	1	NA

^a Because of limited data, table combines data from 1989 and 1991. All Kazakh data are for 1989; paved roads and railroad distances for Mexico are also for 1989. All Turkish data are for 1991.

Investment. According to official data, growth in investment in Kazakhstan in the 1980s proceeded at an average annual rate of 3.7 percent, somewhat below the all-union rate of growth. Nevertheless, by 1990 the level of investment was more than two-fifths above 1980. Turkish investment grew at an average annual rate of 5.4 percent, but investment in Mexico declined during the decade.

In addition to the disparities in rates of growth, there were major differences in the patterns of overall investment between Kazakhstan and Turkey.⁴ Consumer-oriented investment in the late 1980s in housing and services accounted for more than two-fifths of

⁴ Comparable investment data for Mexico are not readily available.

overall investment in Turkey as compared to less than one-third of the total in Kazakhstan. In contrast, the latter devoted nearly three-fifths of its investment to industry and agriculture, compared to roughly one-third in Turkey (table 11).

Reflecting Kazakhstan's relatively large reserves of fuels and metallurgical ores and its central role as a provider of raw materials to the processing industries of European Russia (including the Urals), Kazakhstan has devoted roughly two-thirds of industrial investment to fuels and metallurgy. Given this investment focus, Kazakhstan had to rely on the other republics for most producer and consumer durables and military hardware.

Economic Reform

The Government of Kazakhstan has committed itself to creating a market economy. To that end, in 1991 and 1992, it adopted many appropriate pieces of legislation, but on the whole, their implementation has been relatively slow. Kazakhstan now has its own central bank and has begun the process of creating a commercial banking system. Soviet-style profits and turnover taxes have been replaced by value-added and excise taxes. Most prices and economic activity have been freed from state controls. Programs to privatize property and demonopolize the economy have been adopted.

Privatization. In 1991, nearly nine-tenths of all employed Kazakhs worked in the state sector (table 12). Despite the dominance of the state, various forms of private economic activity have made noticeable inroads in the economy and are being encouraged.

Most prominent among the new forms are producer cooperatives. They grew considerably in 1989 and 1990 increasing almost threefold in terms of the number of business entities (to 12,441) and almost fourfold in terms of employment (to 276,300 workers). Commercial activity therein increased nearly tenfold, with gross receipts coming to 2,678.7 million rubles.

Table 11
Comparative Investment Allocations,
by Sector

Percent share

	Kazakhstan 1989	Turkey 1990
Agriculture	19.8	6.9
Industry	36.7	29.8
Construction	4.2	.. ^a
Transportation and communications	6.9	22.1
Trade and services	13.6	16.2
Housing	18.8	25.0

^a Believed to be included under trade and services.

Construction work accounted for more than two-fifths of cooperative business activity with the balance attributed to sales of consumer goods and a variety of other activities. In 1991, however, the number of cooperatives declined to 10,100 and employment to 249,000. Cooperatives in Kazakhstan are most active in the capital region of Almaty, similar to other new economic entities throughout the former Soviet Union.

In addition to cooperatives, there were 25,100 persons engaged in individual labor activities in the first half of 1990, of which just over one-half were involved in domestic trade undertakings and roughly one-third in domestic services. Such private activity appears to have increased in 1991. Private agriculture accounted for an increasingly large share of total employment, rising from roughly 2 percent in 1985 to nearly 5 percent in 1990, but the share declined in 1991. In 1991, stores operating under lease accounted for 16 percent of retail sales.

The Kazakhstani Government has adopted an ambitious program to privatize 60 to 70 percent of state property in stages by the year 2000. Various approaches are to be used, mainly sales and issuances

Private consumer goods market
in Almaty



Table 12
Kazakhstan: Employment by Form of Property, 1987-91

Percent share

	1987	1988	1989	1990	1991
Total	100.0	100.0	100.0	100.0	100.0
State	93.8	92.7	91.6	88.4	89.6
Collective farms	3.8	3.6	3.4	3.4	3.4
Cooperatives	0.1	0.5	2.4	3.1	2.5
Nonagricultural (private)	0.1	0.2	0.2	0.2	0.3
Agricultural (private)	2.2	3.0	2.4	4.9	4.2

of investment accounts to all citizens. Land is to be privatized through long-term leasing, not ownership. Although the government has vacillated in carrying out this program in 1992, modest progress has been made. By fall, over 5,000 enterprises had been privatized, 8 percent of the total and mainly in retail trade. By midyear, nearly one-fifth of state-owned apartments had been sold to private citizens. As of 1 October there were also 8,500 peasant farms, as compared with 3,300 at the beginning of the year.

Inflation and Unemployment. Comparisons of inflation rates with the reference countries as of early 1992 are almost meaningless given the current economic disarray in the former Soviet republic. Until the situation stabilizes and better statistics are produced, only general comments can be made. Inflation in Kazakhstan was low in the 1980s, but retail prices rose 86 percent in 1991, the consequence of sharp increases in most state-set prices and decontrol of others. As a result of Kazakhstan's decontrol of most

prices in January 1992, retail prices more than doubled in that month alone, and the rate of inflation for 1992 was reported to be 1,440 percent.

Both reference countries experienced extremely rapid inflation rates during the 1980s. In Mexico, the Consumer Price Index (CPI) from 1980 to 1991 increased on the average 60.3 percent per year. The CPI for Turkey between 1982 and 1990 rose on the average 50.1 percent per year.

While Kazakhstan was still part of the Soviet Union, unemployment was not officially acknowledged.⁵ As of August 1992, 22,400 unemployed persons were registered at job placement centers. From a labor force of 7.5 million (December 1991) this translates into a low-end unemployment rate of 0.3 percent. But this excludes individuals who would be considered unemployed under conventional accounting. Because the process to register as unemployed is difficult and protracted, many of those who are out of work do not register. In October 1990, the unemployment rate in Turkey was about 7 percent. The 1991 rate in Mexico was estimated at 14 to 17 percent.

Foreign Economic Relations

Foreign trade provides Kazakhstan with supplies of key industrial raw materials, while also affording an outlet for domestic production, especially of industrial materials and farm products. Industrial materials from domestic output are supplemented by imports from other republics. For instance, imported metals permitted Kazakhstan to produce large shares of Soviet bulldozers, rolled steel mill equipment, and agricultural machinery for domestic use as well as exports to other republics of the former Soviet Union. In 1989, imports represented 19 percent of total domestic consumption, and exports amounted to 11 percent of production.

Ninety percent of exports and 80 percent of imports in 1990, expressed in domestic prices, have been with other former Soviet republics. Russia is by far Kazakhstan's largest trading partner, accounting for over half of all Kazakhstan's interrepublic trade in 1990. With regard to such trade, Kazakhstan was a net importer of products from electric power, oil and

⁵ All republics of the former Soviet Union are in the process of developing such statistics.

Table 13
Kazakhstan: Energy Production, Consumption, and Exports, 1991

	Production in Natural Units	Thousand Barrels Per Day Oil Equivalent
Primary energy production		
Total		1,776
Oil (<i>thousand b/d</i>)	532	532
Natural gas (<i>billion cubic meters</i>)	8	129
Coal (<i>million tons</i>)	130	1,100
Electric power (<i>billion kWh</i>)	3	15
Consumption		
Total (percent shares)	100	1,300
Oil	35	
Gas	11	
Coal	49	
Other ^a	5	
Net exports ^b		476

^a Primary electricity, shale oil, and peat.

^b Net exports are calculated by subtracting consumption from production.

gas, chemicals and petrochemicals, machinery, forestry products, construction materials, soft goods, and processed foods. Kazakhstan's main contributions to interrepublic exports are coal, which makes Kazakhstan a net exporter of fuel and energy, ferrous and nonferrous metals, wool products, and agricultural products (mostly grain). (See table 13.)

Kazakhstan has been actively seeking foreign investment. Its basic law, which is now undergoing revision, was adopted in January 1991 and provides tax breaks and guarantees against expropriation but does not yet fully conform to international standards. Joint ventures are encouraged but are not yet significant in terms of their numbers or ruble turnover. Total trade turnover was only 70 million rubles in 1991 (table 14), with most of the comparatively few joint ventures engaged in industrial activities.⁶

⁶ Includes only functioning joint ventures, which are those that have commenced their intended production or service activities. Registered joint ventures include, in addition to functioning joint ventures, potential projects that have been agreed to by firms in Kazakhstan and abroad and whose nominal existence has been registered by authorities in Kazakhstan.

Table 14
Kazakhstan: Development of Joint Ventures
With Foreign Partners, 1988-90

	1988	1989	1990	1991	1993 ^a
Number of functioning joint ventures	1	10	15	22	40
Trade in million rubles					
Joint-venture exports	... ^b	3	10	20	NA
Joint-venture imports	... ^b	0	2	50	NA

^a As of 1 March.

^b Zero or negligible.

Thus far, joint ventures have made the greatest contribution in extractive industries, particularly in the sale of coking coal from the Qaraghandy region. This large venture accounted for over half of all joint-venture activity in Kazakhstan in 1990. Among recent (postindependence) joint ventures, the most significant one seems likely to be the proposed Tengizchevroil company with Chevron Oil. With approval by the Kazakhstani parliament pending, this joint venture could begin operations in 1993. The economic significance of the project is enormous. The Tengiz and Korolev oilfields have estimated reserves ranging between 10 billion and 44 billion barrels (the latter is twice the size of Prudhoe Bay fields). Foreign technical and financial participation, however, is critical to the ultimate success of this project. Extraction is made difficult by the high pressure within the deposits, and processing is complicated by the high sulfur content of the oil.

Living Standards and Social Indicators

Personal Income. Most families in Kazakhstan derive the bulk of their income from wages earned in state employment. In line with past Soviet policy, wage differences have been fairly narrow. Above-average wages generally have been paid in industry, construction, transportation, science, finance, and government, with the lowest paid sectors being health, education, and other services (appendix table B-3). Wages differ considerably among *oblystar*. In 1990, the wages in the highest paying *oblys*—Mangghystau—exceeded the national average by 28 percent, while those in the lowest paying *oblys*—Ongtustik Qazaqstan—fell

below it by 16 percent. Similar differences are shown by a broader measure that includes all incomes and state-paid education and health care. Kazakhstan's collective farmers have been paid wages well below those of state farmers, but the difference has been narrowing. When all money incomes are taken into account, per capita incomes of collective farm families fell below those of all state employer families by 28 percent in 1990.

Until recently, little information has been available on the distribution of income within the former Soviet Union and its republics. Data available for 1990, the last year before rapid inflation set in, indicated that 24 percent of the population in Kazakhstan had incomes below 100 rubles per month, the semiofficial poverty line. At the same time, 23 percent of the population had incomes over 200 rubles per month:

Per capita monthly income, 1990

Average Monthly Income ^a (rubles)	Share of Population (percent)
Less than 75.0	10.0
75.1 to 100.0	14.4
100.1 to 150.0	31.1
150.1 to 200.0	21.5
More than 200.0	23.0

^a Includes pensioners.

Collective farm market in
Almaty



Although unambiguous statistics on income distribution are difficult to obtain for international comparisons, the information available suggests that incomes have been distributed more equally in Kazakhstan than in either Turkey or Mexico.

Survey data for 1991 show that Kazakhstani families spent a little over three-quarters of their after-tax incomes on food, clothing, and durables. Roughly one-tenth of income went to purchase services. Even when the underground economy is included, the service sector remains extremely small by Western standards and continues to be the subject of endless complaints about quality and availability of its offerings.

Food Consumption. The caloric content of the average daily diet in the latter half of the 1980s in Kazakhstan (3,188 calories), as well as in Turkey (3,324 calories) and Mexico (3,048 calories), exceeded both US and internationally recommended dietary allowances.⁷

The share of calories from starchy staples (potatoes and grain products), a rough indicator of dietary quality, in all three countries was above those in the

⁷ Recommended daily caloric allowances for US adults are 2,650 for males and 1,950 for females.

developed West.⁸ The share of calories from starchy staples (44 percent) in the Kazakhstani people's diet was roughly equivalent to the all-union average but considerably below that of Turkey (68 percent). Somewhat surprisingly, the difference is not larger even in those *oblystar* with a relatively high proportion of indigenous Kazakh population. Apparently, because of supply constraints, the formerly nomadic ethnic Kazakhs with their historical dependence on livestock products have been forced to change their eating habits to match that of the more settled Slavic peoples.

Inventories of Selected Consumer Durables. Kazakhstani families are relatively well supplied with consumer durables, although their quality may be low by Western standards. Virtually all families had radios, television sets, and washing machines in 1991, and 92 percent had refrigerators. On the other hand, only 20 percent owned automobiles, and probably well under one-third of urban families had a home telephone. In

⁸ As household incomes rise, consumers tend to substitute animal products, vegetables and fruits, vegetable oils, fats, and other "quality" foods for the "inferior" starchy staples.



Housing in Almaty

1991, 782,000 families were on waiting lists for them. The tabulation below provides ownership rates of selected household durables for the three countries:

Holdings per 1,000 population

	Kazakhstan 1988	Turkey 1988-89 average	Mexico 1989
Durable goods			
Telephones	97	120	127
Televisions	277	172	120
Automobiles	46	37	102

Because the higher quality of Mexican and Turkish consumer durables results in greater reliability, enhanced operating life, and fewer repairs, numerical measures do not capture the full difference.

Housing. As of the late 1980s, the provision of housing in Kazakhstan was probably below that in the two reference countries. In terms of total housing space per capita, the average Kazakh in 1990 was provided with 14 square meters; 14.4 square meters in urban areas, and 13.4 square meters in rural areas. By

way of contrast, the average Turk had approximately 21 square meters. In 1989, practically three-quarters of all Kazakhstani urban housing was owned by the state, while the remainder was held privately or by housing cooperatives. In the rural areas, the share held by the state was somewhat lower. In terms of the availability of housing amenities, Kazakhstani standards are probably below the levels of the two reference countries, although the lack of adequate data makes a definitive judgment impossible:

Percent share of housing equipped with amenities^a

Utility	Kazakhstan 1989	Mexico 1990	Turkey ^b 1989
Running water	50	79	99
Hot water	32	NA	NA
Central heating	49	NA	17.3
Sewerage	41	75	95.3
Bathing facilities	37	NA	99

^a End of year shown. Figures for Kazakhstan are for urban and rural areas combined. In rural areas only 15 percent of the homes had running water, 2 percent had hot water, 7 percent had sewerage, 21 percent had central heating, and 5 percent had bathing facilities.

^b Does not include housing outside of municipal boundaries or squatter housing, where amenities are far less available.

Rents on state-owned apartments in Kazakhstan are low and heavily subsidized. Rents cover less than one-fifth of current maintenance costs, and much housing is in disrepair. Despite the low rents, housing conditions are the subject of much complaint. In 1989, only 18 percent of Kazakhstani families (as compared to 13 percent for the former Soviet Union as a whole) who were on waiting lists for better housing actually upgraded their circumstances. Such shortages have been chronic and persistent despite a sizable program to build new housing in the 1980s.

Pensions, Health, and Welfare. The people of Kazakhstan are covered by a Soviet-type comprehensive system of social security; health care and education are provided without direct charge. Old age, disability, and survivor pensions are provided, along with

sickness pay and benefits and family allowances. New legislation adopted in 1991 modified the traditional social security system to establish three separate funds: for pensions and family allowances; for other kinds of benefits; and for employment. The funds are financed from budget funds, large payroll taxes paid by enterprises, and a 1-percent tax on employee wages. Minimum pensions and other benefits are set at the level of the minimum wage, which has been increased to compensate for increased prices in 1992. The employment fund finances extensive job placement and job retraining programs and also provides unemployment benefits. Eligible persons can receive benefits for three months equal to half their previous wage, but not lower than the minimum wage nor higher than the average wage in the country.

As in Kazakhstan, the populations of Mexico and Turkey are covered by social welfare programs and unemployment compensation schemes. In Turkey, three separate social insurance funds exist: the Government Employees Retirement Fund, the Social Insurance Institution, and Bag-Kur. The Mexican Social Security Institute provides basic sickness, disability, and old-age benefits to all eligible people, while private health insurance and pension programs provide supplemental benefits. Although comparisons on such complex matters are tenuous, it appears that the reference countries' social safety nets are generally less comprehensive than Kazakhstan's. Roughly two-thirds of the eligible population received monthly old-age benefits in Turkey in 1990, whereas Kazakhstan's net extended to 87 percent of the eligible population in 1989. In Mexico, the law excludes people in isolated areas of the country, and not all self-employed people have registered with the Social Security Institute. Turkey's programs are indexed for inflation, but Mexico's benefits are not. Currently, Kazakhstan's pensions and other benefits are increased through periodic government decrees and are not indexed to inflation.

Following the Soviet model, health care in Kazakhstan has been universally available and provided without direct charge. Private practice supplemented this system to a small extent. All hospitals and other facilities are state owned, as well as their personnel and government employees. Kazakhstan has not made

significant moves to encourage the development of private or insurance-based health care systems. Both Mexico and Turkey have mixed health care systems in which the state dispenses some care, while private facilities and insurance programs provide care or provide the means to obtain care to the balance of the population.

The quality of medical training and support facilities in Kazakhstan appears to be inferior to that in Mexico and Turkey, even though both countries' medical training and services fall short of the quality standards of the developed West.

In terms of health-related outcomes, life expectancy of the people of Kazakhstan (69 years in 1989 for both sexes) was similar to both Mexico (71 in 1990) and Turkey (69 in 1990). The two leading causes of death in Kazakhstan and Turkey were circulatory illnesses and cancer. In Mexico, the two leading causes of death were accidents and circulatory illnesses.

Pollution. Industrial smokestack emissions in major cities are chiefly responsible for Kazakhstan's pollution problems. Air pollution in some regions is severe. The city of Temirtau, for example, which is dominated by the metallurgy and chemical industries, emitted over 800,000 tons of pollutants in 1990—roughly one-fourth of total emissions of a country like Hungary. Most industrial plants are not equipped with pollution-control devices, and most of this equipment does little to screen gaseous emissions, such as sulfur dioxide. Even if such equipment is installed, getting spare parts or maintenance is costly if not impossible. Automobiles are a lesser source of air pollution, except in the capital city of Almaty, where they generated over three-fourths of air pollution emissions in 1987.

Kazakhstan also is plagued by contamination problems typical of Third World countries. Even though three-quarters of pollution control funding is devoted to reducing water pollution, such pollution is still widespread. Almost one-fourth of sewage from Kazakhstan's cities and rural villages is not purified; in fact, less than half of Kazakhstan's rural villages have sewers.

Table 15
Social Indicators in Kazakhstan, Turkey, and Mexico, 1989

	Kazakhstan	Mexico	Turkey
Consumption measures			
Per capita living space (square meters per capita)	14.1	NA	21.0 ^a
Running water (percent of urban living space)	91.0	NA	NA
Doctors (per 10,000 persons)	41.2 ^a	10.8 ^b	9.0
Alcoholism and drug abuse			
Alcohol-related deaths (per 100,000 persons)	3.1	NA	NA
Crime rates (per 10,000 persons ages 15 to 69)			
Murder and attempted murder	1.4	NA	0.74
Rape and attempted rape ^c	3.3	NA	1.08
Theft	42.2	NA	1.75
Fraud	2.2	NA	0.49
Drug-related	3.1	NA	0.31
Embezzlement	22.2	NA	0.07
Suicide			
Total (per 100,000 persons)	19.5	NA	20.9 ^d
Family structure and divorce			
Average family size (members)	4.0	NA	NA
Divorces (per 1,000 persons)	4.0	NA	0.06 ^e
Life expectancy (years at birth)	68.7	71.4 ^a	68.9 ^a
Infant mortality (per 1,000 births)	25.9 ^f	33.0 ^a	1.6 ^a
Other			
Net migration (1,000 persons)	-130.9 ^g	NA	-3,345.0 ^b

^a 1990 data.

^b 1988 data.

^c Based on male population, ages 15-69.

^d 1987 data.

^e 1985 data.

^f CIR infant mortality estimates for Kazakhstan are 49.3 and 39.7 for males and females, respectively.

^g 1991 data.

The area around Semey also suffers from the effects of massive nuclear testing. Over 700 nuclear explosions have taken place in Kazakhstan since 1949, and most occurred in the Semey area. In August 1991, Kazakhstani officials banned nuclear testing at the Semey nuclear test range, but the ecological effects of past nuclear explosions continue to plague the people and the land. Environmental damage and health problems resulting from these tests prompted the labeling of these areas as ecological disaster zones, and farming has been banned. Nevertheless, over

450,000 people living in the Semey region have been exposed to dangerous levels of radiation. Contamination has spread primarily through water and soil, but people continue to eat fish from the rivers and graze cattle in restricted areas.

Finally, the shrinking of the Aral Sea has resulted in severe environmental degradation in the surrounding area. Diversion of the sea's major tributary rivers to irrigate agricultural crops has resulted in a 40-percent

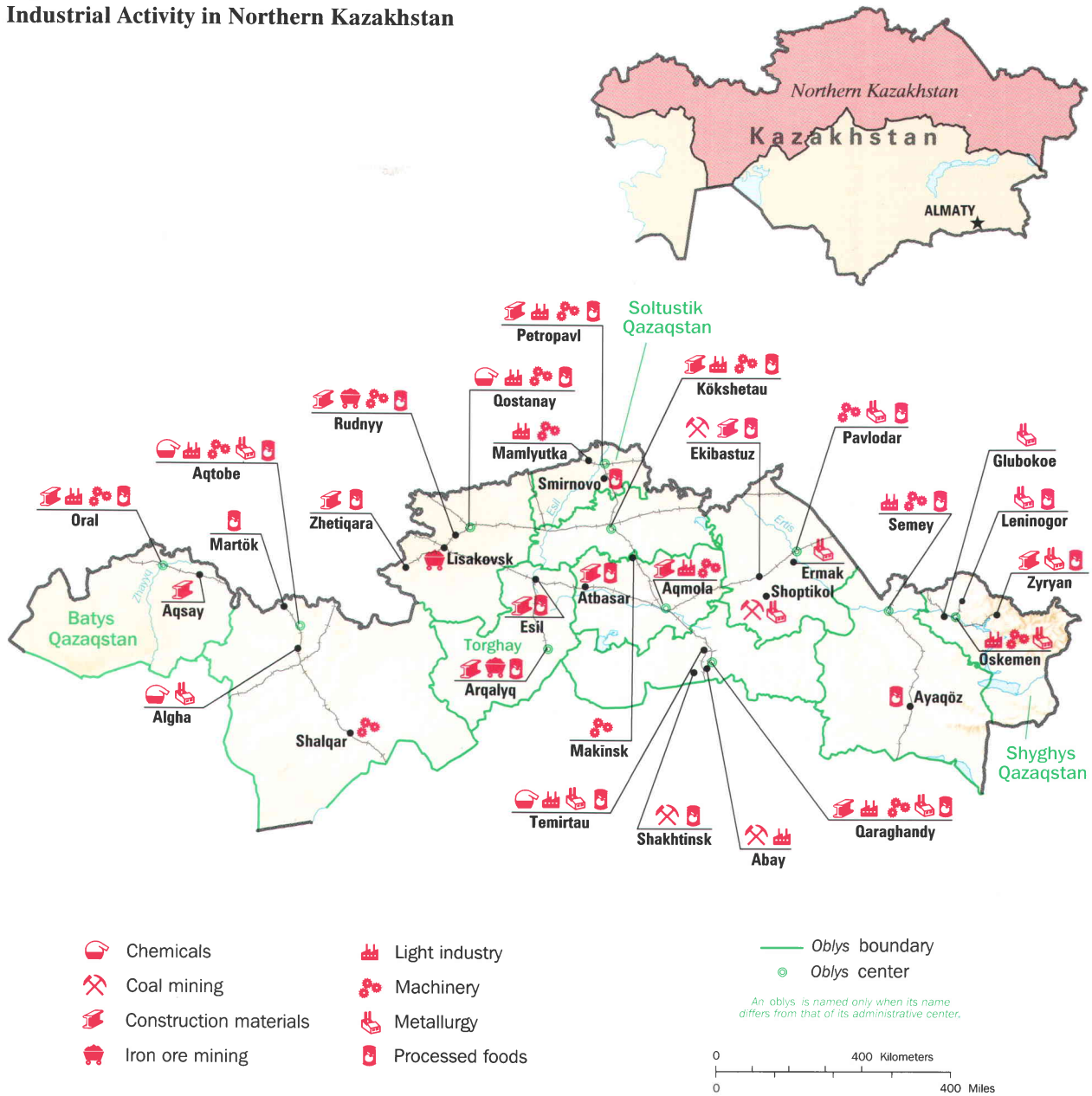
drop in the Aral's surface area, and this has devastated local farming and fishing operations. At the same time, there have been severe health ramifications. The quality of drinking water, for example, is declining as the waterline recedes. Frequent windstorms sweep up dust and salt from the exposed lakebed and aggravate respiratory illnesses. Moreover, a growing rodent population in the Aral Sea area has contributed to outbreaks of diseases such as bubonic plague. The Kazakh Ministry of Health officials claim that only 7 percent of the 500,000 people living in the Aral Sea region are healthy, and life expectancy has fallen to 55 years—lower than most other regions in the country.

Other Social Indicators. A collection of social indicators describing aspects of Kazakhstani society not covered in other sections is shown in table 15.

According to official data, Kazakhstan compares fairly well to the reference countries with regard to several of the social indicators. Kazakhstan has many more doctors relative to its population than do Turkey and Mexico. In addition, Kazakhstan's suicide rate is slightly below that of Turkey.

With regard to these comparisons, it should be noted that many physicians in Kazakhstan are engaged in public health and administrative activities that are normally carried out by nonphysicians in other countries. In addition, official infant mortality data for Kazakhstan significantly understate the actual situation.

Figure 5
Industrial Activity in Northern Kazakhstan



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Appendix A

Economic Regions of Kazakhstan

Northern Kazakhstan

Location, Area, and Physical Geography. Northern Kazakhstan, which is populated primarily by Russians and Ukrainians, is a continuation of the southern steppelands of Russia and consists of the following 11 *oblystar*—Aqtobe, Qaraghandy, Kokshetau, Qostanay, Pavlodar, Soltustik Qazaqstan, Shyghys Qazaqstan, Semey, Aqmola, Torghay, and Batys Qazaqstan. Northern Kazakhstan's total area of 1.4 million square kilometers comprises 52 percent of Kazakhstan's territory.

Because of the relatively moister climate in the north and arid climate in the south, most of Kazakhstan's cropland is located in the steppes of the north and northeast, where growing conditions, though marginal, allow for the farming of grains and other crops. Overall, roughly two-thirds of Kazakhstan's farm output is produced in the northern 11 *oblystar*.

The soils, natural vegetative zones, and climate of northern Kazakhstan have their closest North American analogues in the Canadian Provinces of Saskatchewan and Alberta with a growing season of 110 to 120 days and an annual precipitation of between 12 and 20 inches (300 to 500 millimeters). This area was the centerpiece of Nikita Khrushchev's gamble in the mid-1950s of opening up to cultivation 42 million hectares of "virgin land." The high risk was associated with the large year-to-year fluctuation in precipitation in this semiarid area.

Resources, Energy, and Industry. Northern Kazakhstan has a diverse and rich base of industrial materials consisting of mineral fuels, iron ore, nonferrous metals, and nonmetallic ores. In 1989, this area accounted for 10 percent of ferrous ore production in the former Soviet Union, nearly 20 percent of its coal, and a large share of finished steel products. The Qaraghandy (Karaganda) coal basin, which began production in the 1930s in conjunction with the development of the Magnitogorsk steel mills in the southern Urals, was

one of the country's major suppliers of coking coal. The building of giant steelworks at Temirtau ("iron mountain") and nearby Solonichka and the opening of additional coal mines at Saran have made Qaraghandy the center of the sizable mining-metallurgical complex.

During the 1950s, Ekibastuz, an area to the northeast of Qaraghandy, became another major coal-producing center. The brown coal in this basin is of generally poor quality, but its cheap extraction costs make it economical to develop. This basin's deposits have been used, both locally and abroad, primarily for the production of electricity in thermal power plants.

Northern Kazakhstan has substantial deposits of metal ores. Iron ore found in Qostanay Oblisy (Rudnyy, Lisakovsk, Qashar) supplies the blast furnaces of Magnitogorsk and other Urals iron and steel plants, mills in the Kuzbass, as well as integrated iron- and steel-producing facilities at Qaraghandy and Temirtau. Together, these latter plants produce over 5 million tons of steel per year.

Shyghys Qazaqstan Oblisy, in the foothills of the Altay Mountains, is the country's principal center of nonferrous metallurgy. Lead, zinc, copper, gold, silver, cadmium, and other nonferrous ores are found in the region east of the upper Ertis, a river whose waters provide the hydropower for smelting and refining these ores.

Although northern Kazakhstan's industry is dominated by the extractive and metals-processing sectors, other industries contribute. The Qaraghandy region produces construction and mining machinery, chemicals, cement, and processed foods. Aqmola manufactures agricultural and transport equipment, and Pavlodar is a major center of oil refining, chemical machinery, and construction machinery.

Transportation. With a poorly articulated highway and water navigation system, northern Kazakhstan depends heavily on rail lines to move freight. Because they serve as links between Central Asia and Russia, most rail lines run north-south. The Turk-Sib, the Trans-Kazakhstan Trunk, and Tashkent-Orenburg lines are the dominant north-south freight carriers. An exception is the South Siberian line that follows an east-west course through northern Kazakhstan and provides an important supplement to the Trans-Siberian railroad. In addition, pipelines transport oil from Qaraghandy northeast to Pavlodar and on to Russia. The density of paved roads in the north is less than 10 percent of the density in Ukraine.

Population, Urbanization, and Regional Issues.

Northern Kazakhstan had an estimated 9,098,000 people in 1992, which accounted for 53.9 percent of Kazakhstan's total population. In 1989, 58.2 percent of the population was urban, as compared with 57.2 percent for Kazakhstan as a whole. Between 1979 and 1989 (the intercensal period), northern Kazakhstan's population grew at an average annual rate of 0.9 percent, as compared to 1.5 percent average annual growth for the Southern tier.

The government's 1992 population data indicate that northern Kazakhstan's population is about one-third ethnic Kazakhs, while Slavic peoples comprise 53 percent of the population (Russians 45.2 percent). Kazakhs were a minority in all but three of the *oblystar*: Aqtobe, Semey, and Batys Qazaqstan. Russians were most heavily concentrated in the Soltustik Qazaqstan and Shyghys Qazaqstan Oblystar.

Several nationalities residing in northern Kazakhstan have demanded changes in their status. Because a large share along northern Kazakhstan's border is Russian, some prominent officials have asserted that there should be a partial return of Kazakhstani lands to Russia.

Southern Kazakhstan

Location, Area, and Physical Geography. Southern Kazakhstan, with its predominantly Kazakh population, consists primarily of semidesert and oases typical of the four neighboring Turkic-Muslim republics of

Central Asia. The area embracing eight *oblystar*—Almaty, Atyrau, Zhambyl, Zhezqazghan, Qyzylorda, Mangghystau, Taldyqorghhan, and Ongtustik Qazaqstan covers an area of 1.3 million square kilometers, 48 percent of Kazakhstan's territory.

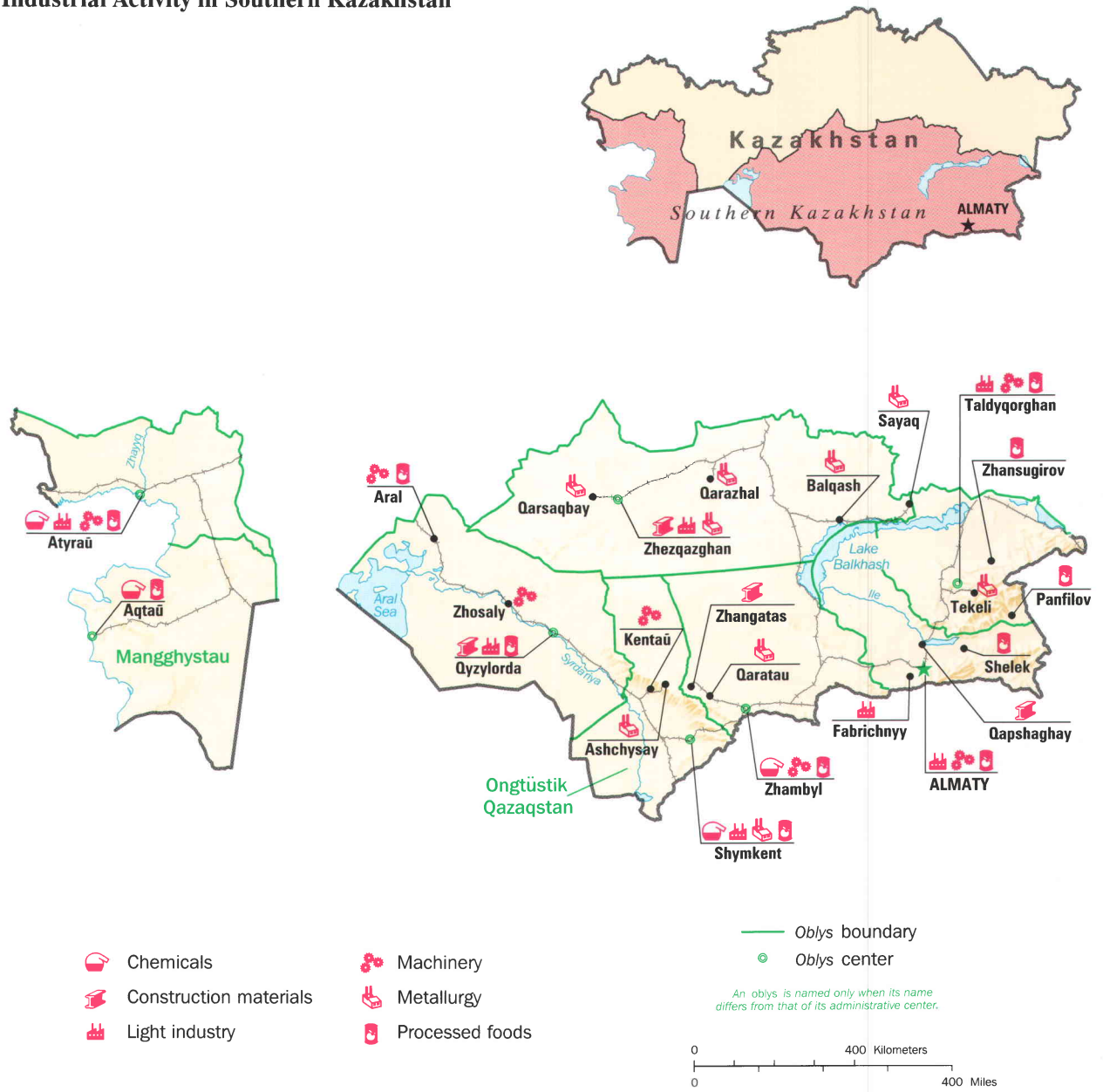
The soils, natural vegetative zones, and climate of southern Kazakhstan have their closest North American analogue in northeast Arizona and New Mexico. The western portions of the region are extremely dry, both in the Caspian Lowland and in the areas near the Aral Sea, where diminished precipitation has contributed to increasing desertification.

Other than a small amount of "dry-farming" in the south, most agricultural activity depends on widespread irrigation. Water is provided by the Ertis, Shu, and Talas Rivers and the lower reaches of the Syrdariya and a wide array of crops—vegetables, fruits, small grains, rice, tobacco, and sugar beets—are sustained by these irrigation systems. The vast flatland that covers both northern and southern Kazakhstan gives way to grassland at the foothills of the Tien Shan, which provide sustenance for cattle and sheep.

Resources, Energy, and Industry. Although the southern and western areas of Kazakhstan are less well-endowed than the north in industrial resources, they nonetheless have major deposits of oil and copper and lead ores. Copper mining in the east at Zhezqazghan is based on the largest reserves of the former Soviet Union. Shymkent in the south was the former Soviet Union's major center for lead smelting. Oil deposits have been found in the southwest in the Atyrau fields along the northern shore of the Caspian, farther south at Tengiz and in the desert area of the Tupqaraghan Peninsula.

Industrial production in the south is dominated by the petrochemical, chemical, food processing, soft goods, and machinery branches. Petrochemicals, fertilizers, and pharmaceuticals are produced in Shymkent and Zhambyl. The soft goods and food-processing branches in the south are largely centered in Almaty, Shymkent, and Taldyqorghhan.

Figure 6
Industrial Activity in Southern Kazakhstan



Islamic shrine near Qyzylorda



Transportation. Southern Kazakhstan features road and rail networks that are less developed than the average for the republic. Only Taldyqorghana, Zhambyl and Atyrau Oblasty have above-average densities of rails while just Almaty, Ongtustik Qazaqstan, and Zhambyl Oblasty have above average road densities. As in the north, railroads are the main source of transport and likewise run north-south. The north-south oriented lines of the Turk-Sib, Tashkent-Orenburg, and Trans-Kazakhstan connect the south with Central Asia, Siberia, and European Russia. Oil and gas pipelines traverse the Tupqaraghan Peninsula, where petroleum deposits were discovered. An additional three pipelines run north-south transporting gas from Uzbekistan.

A very thinly developed road system provides only 5 percent of the density of paved roads in a more developed republic such as Ukraine. Thirty-seven percent of the paved roads are in the south.

Population, Urbanization, and Regional Issues.

Southern Kazakhstan is the smaller of Kazakhstan's two regions, with an estimated population of 7,793,500 in 1992 (accounting for 46.1 percent of Kazakhstan's total population). In 1989, 56.1 percent of the population was urban, as compared with 57.2 percent for Kazakhstan as a whole. As indicated

above, between 1979 and 1989 southern Kazakhstan's population grew nearly twice as fast as that in northern Kazakhstan.

Kazakhs are the predominant group in southern Kazakhstan with slightly more than half of the population, according to 1992 data. Europeans constitute about a third of the population with Russians accounting for 28 percent. There are more than 300,000 Uzbeks around Shymkent and also 800,000 people of other Turkic nationalities.

Southern Kazakhstan includes territory once loosely controlled by the Uzbek principalities and the Turkmen tribes. Kazakhstan's Central Asian neighbors declared their support for the maintenance of existing borders in the 1991 agreements on the formation of the Commonwealth of Independent States and other bilateral agreements. Nevertheless, should ethnic unrest become severe and more nationalistic governments take control in Central Asia, Kazakhstan could face challenges for control of some areas. Ongtustik Qazaqstan Oblasty is perhaps most insecure because of strong Uzbek economic and cultural presence. Tashkent, Uzbekistan's capital city, is only a few kilometers from the border and a main road to its western regions passes through the southern tip of Kazakhstan.

Appendix B
Selected Economic Statistics

Table B-1
Kazakhstan: Nationality Structure, 1992

	Total		Northern		Southern	
	<i>Thousands</i>	<i>Percent</i>	<i>Thousands</i>	<i>Percent</i>	<i>Thousands</i>	<i>Percent</i>
Total	16,891.6	100.0	9,098.1	100.0	7,793.5	100.0
Kazakh	7,073.1	41.9	2,949.3	32.4	4,123.8	52.9
Russian	6,257.1	37.0	4,108.6	45.2	2,148.4	27.6
German	786.1	4.6	611.2	6.7	174.9	2.2
Ukrainian	889.8	5.3	700.5	7.7	189.3	2.4
Uzbek	356.4	2.1	12.1	0.1	344.3	4.4
Tatar	336.6	2.0	210.3	2.3	126.3	1.6
Byelorussian	183.7	1.1	152.7	1.7	31.0	0.4
Azeri	97.9	0.6	20.0	0.2	77.9	1.0
Other	910.9	5.4	333.4	3.7	577.5	7.4

Note: Because of rounding, the components may not add to the totals shown.

Table B-2
Kazakhstan: Births, Deaths, and Natural Growth of the Population, Selected Years

Per 1,000 persons

	1980	1985	1986	1987	1988	1989	1990	1991
Births	23.9	25.1	25.6	25.7	24.8	23.0	21.7	21.0
Deaths	8.0	8.0	7.4	7.6	7.7	7.6	7.7	8.0
Natural growth	15.9	17.1	18.2	18.1	17.1	15.4	14.0	13.0

Table B-3
Kazakhstan: Average Monthly Wages for Wage and Salary Workers
by Branch of the Economy, Selected Years

Rubles

	1980	1985	1986	1987	1988	1989	1990	1991
All branches	167.1	186.5	192.7	199.3	214.6	233.6	265.4	459
Industry	187.6	212.4	218.0	223.5	244.6	266.6	296.0	563
Agriculture ^a	167.0	197.5	210.9	217.2	225.3	243.8	292.4	434
State farms	168.3	199.5	213.5	219.7	227.4	245.1	295.9	NA
Construction	205.9	233.8	240.3	249.7	276.0	304.6	330.3	573
Construction-assembly work	207.8	234.9	241.4	251.3	275.6	303.0	331.3	NA
Transportation	205.8	220.6	226.0	234.7	255.1	272.7	302.7	513
Railroad	212.1	225.6	231.1	247.4	270.0	281.2	313.6	NA
Water	193.1	220.2	225.4	237.0	252.1	288.1	324.5	NA
Urban-electrical, automobile	203.6	218.9	224.3	230.5	250.0	269.2	297.2	NA
Communications	133.7	145.1	146.9	156.3	185.0	197.8	227.5	414
Trade and public dining ^b	128.4	137.0	139.8	140.4	149.3	168.9	212.6	377
Information-processing services	119.6	123.6	142.8	147.3	164.3	205.1	240.6	NA
Housing-communal economy ^c	130.0	141.7	143.9	148.2	164.1	178.3	198.9	359
Health, physical, and social services	120.7	125.2	127.2	134.4	140.9	158.2	178.0	357
Education	125.4	139.2	143.7	156.0	161.9	171.9	182.1	333
Culture	102.4	105.4	106.4	109.3	117.6	129.4	161.1	300
Art	114.5	120.0	122.3	125.8	130.7	141.2	169.5	327
Science	182.8	202.8	212.6	220.8	260.9	292.5	320.2	517
Credit and social insurance	144.0	158.2	168.9	173.3	175.8	202.0	354.2	823
Government administrative services	147.5	154.5	160.7	173.2	197.2	228.2	334.7	508

^a Excludes collective farmers.

^b Includes material-technical supply and sales, and procurement.

^c Includes other nonproductive domestic services.

Table B-4
Kazakhstan: Capital Investment, by Sector of the Economy,
Selected Years

Percent

	1976-80	1980	1981-85	1985	1986-90	1990
Total	100.0	100.0	100.0	100.0	100.0	100.0
Industry	31.3	32.3	33.2	34.6	34.4	33.0
Agriculture	25.9	26.0	25.1	24.0	21.5	22.1
Construction	2.6	2.7	2.8	2.7	4.0	5.1
Transportation and communications	10.0	10.0	9.4	9.5	8.9	9.0
Housing ^a	15.1	14.2	15.6	16.2	18.6	19.0
Other ^b	15.1	14.8	13.9	13.0	12.6	11.8

^a Includes individual construction.

^b Includes trade and public dining, material-technical supply and sales, information processing, procurement, forestry, communal economy, science, art, and education.

Table B-5
Kazakhstan: Production of Selected Industrial Products,
Selected Years

	1980	1985	1986	1987	1988	1989	1990	1991
Primary energy								
Electric power (<i>billion kilowatt hours</i>)	61.5	81.3	85.1	88.5	88.4	89.7	87.4	86.0
Oil, including gas condensate (<i>million metric tons</i>)	18.7	22.8	23.7	24.5	25.5	25.4	25.8	26.6
Natural gas (<i>billion cubic meters</i>)	NA	5.0	5.0	5.0	6.6	6.3	6.6	7.3
Coke (<i>million metric tons</i>)	NA	31.0	32.3	32.0	32.2	30.3	NA	NA
Coal (<i>million metric tons</i>)	115.0	131.0	138.0	142.0	143.0	138.0	131.0	130.0
Metallurgy								
Steel (<i>1,000 metric tons</i>)	5,967.0	6,155.0	6,496.0	6,555.0	6,766.0	6,831.0	6,753.0	6,400.0
Finished rolled ferrous metals (<i>1,000 metric tons</i>)	4,114.0	4,188.0	4,566.0	4,580.0	4,874.0	5,013.0	4,899.0	4,700.0
Machinery								
Metal-cutting equipment (<i>units</i>)	3,017.0	2,848.0	2,630.0	2,155.0	2,214.0	2,307.0	2,578.0	2,400.0
Stamping and pressing equipment (<i>units</i>)	1,439.0	1,295.0	1,249.0	1,139.0	1,161.0	1,205.0	1,173.0	1,200.0
Excavators (<i>units</i>)	1,803.0	1,877.0	1,843.0	1,045.0	570.0	528.0	710.0	600.0
Bulldozers (<i>units</i>)	8,863.0	13,670.0	14,504.0	15,220.0	14,810.0	15,308.0	13,328.0	10,300.0
Agricultural machinery (<i>million rubles</i>)	272.4	366.2	389.0	399.1	322.9	228.1	215.0	NA
Chemicals								
Mineral fertilizers (<i>1,000 metric tons</i>)	1,262.0	1,429.7	1,520.3	1,602.9	1,737.1	1,704.9	1,655.9	1,500.0
Sulfuric acid (<i>1,000 metric tons</i>)	1,891.4	1,670.8	1,850.1	2,007.5	2,062.7	1,895.6	3,151.1	2,800.0
Caustic soda (<i>1,000 metric tons</i>)	42.6	57.5	38.2	58.0	61.1	62.8	65.0	48.1
Synthetic plastics and resins (<i>1,000 metric tons</i>)	38.2	177.7	179.6	193.9	182.0	203.1	215.0	200.0
Tires for automobiles and agricultural machines (<i>1,000 units</i>)	NA	1,451.9	2,010.4	2,312.6	2,697.4	2,450.4	2,632.6	3,000.0
Chemical fibers and yarn (<i>1,000 metric tons</i>)	19.3	21.0	23.6	23.4	21.8	20.6	17.4	NA
Forestry products								
Timber production (<i>1,000 cubic meters</i>)	2,183.0	2,313.0	2,462.0	2,373.0	2,403.0	2,512.0	2,335.0	NA
Sawn timber (<i>1,000 cubic meters</i>)	2,132.0	2,035.0	2,022.0	2,138.0	2,143.0	2,000.0	1,760.0	1,500.0
Plywood (<i>1,000 cubic meters</i>)	96.9	118.1	122.1	104.7	104.2	121.2	112.4	NA
Cellulose (<i>1,000 metric tons</i>)	45.4	40.5	48.6	49.1	51.4	53.1	44.5	40.9
Paper (<i>1,000 metric tons</i>)	17.6	10.8	0.6	1.6	2.7	2.9	1.5	1.0
Construction materials								
Cement (<i>1,000 metric tons</i>)	7,099.0	7,549.0	8,066.0	8,349.0	8,446.0	8,650.0	8,301.0	7,600.0
Asbestos-cement sheets (<i>million units</i>)	590.5	643.1	652.0	668.4	681.0	691.0	722.1	721.0
Construction bricks (<i>million units</i>)	1,989.2	1,947.1	2,054.5	2,268.3	2,353.7	2,468.4	2,285.1	2,100.0
Prefabricated reinforced concrete (<i>1,000 cubic meters</i>)	6,067.3	6,574.6	6,824.4	7,534.5	7,746.6	7,716.7	7,504.1	NA

Table B-5
Kazakhstan: Production of Selected Industrial Products,
Selected Years (continued)

	1980	1985	1986	1987	1988	1989	1990	1991
Processed foods (industrial)								
Meat (<i>1,000 metric tons</i>)	607.8	665.4	807.2	848.1	868.7	946.2	898.6	846.0
Butter (<i>1,000 metric tons</i>)	60.0	69.3	74.4	75.9	79.6	83.3	85.1	76.0
Whole milk (<i>1,000 metric tons</i>)	1,106.9	1,224.9	1,269.2	1,433.0	1,470.5	1,491.1	1,469.6	NA
Cheese (<i>1,000 metric tons</i>)	24.2	28.5	29.8	30.3	32.7	35.1	35.2	33.3
Vegetable oil (<i>1,000 metric tons</i>)	83.7	74.1	75.5	80.0	85.4	92.2	95.0	101.0
Macaroni products (<i>1,000 metric tons</i>)	88.3	108.7	108.3	115.0	121.7	127.9	132.5	136.0
Confectionery goods (<i>1,000 metric tons</i>)	201.9	220.8	229.0	236.0	244.1	255.3	258.9	214.0
Granulated sugar (<i>1,000 metric tons</i>)	NA	150.0	129.0	129.0	101.0	96.7	89.8	62.3
Canned foods (<i>million units</i>)	411.4	391.2	446.9	449.3	468.1	448.4	441.8	369.0
Soft goods								
Cotton fabrics (<i>million square meters</i>)	112.5	132.6	136.2	120.2	146.8	149.5	151.3	134.0
Wool fabrics (<i>million square meters</i>)	30.5	28.6	28.3	29.5	32.8	33.7	34.2	31.1
Silk fabrics (<i>million square meters</i>)	23.5	66.6	69.5	72.8	74.9	75.2	69.7	57.7
Stocking-hosiery goods (<i>million pairs</i>)	69.0	76.7	77.2	78.2	80.5	82.6	87.7	83.2
Knitted goods (<i>million units</i>)	95.6	100.3	102.3	105.3	108.1	122.8	126.8	112.0
Sewn goods (<i>million rubles</i>)	984.1	1,214.7	1,201.9	1,212.4	1,264.0	1,288.8	1,344.4	NA
Footwear, all types (<i>million pairs</i>)	30.2	32.3	32.5	32.7	34.1	35.2	36.5	34.1
Other consumer goods								
Furniture (<i>million rubles</i>)	192.2	275.9	280.7	281.1	307.9	342.4	362.7	NA
Washing machines (<i>1,000 units</i>)	175.2	183.3	188.2	176.8	166.2	264.4	367.4	391.0
Electric irons (<i>1,000 units</i>)	301.0	444.0	455.0	468.0	462.0	486.0	580.0	535.0
Radios (<i>1,000 units</i>)	.. ^a	7.5	13.9	24.1	47.3	54.8	74.3	86.3

^a Zero or negligible.

Table B-6
Freight Traffic in Kazakhstan, 1985-90

Million ton-kilometers

	1985	1986	1987	1988	1989	1990
Total	447,649	466,741	471,385	487,166	482,985	474,656
Rail	382,507	397,907	404,583	416,875	409,573	407,139
Pipeline	20,114	22,665	20,559	21,804	22,320	18,807
River	3,437	3,613	3,761	3,962	3,857	3,851
Truck	41,492	42,456	42,391	44,435	47,147	44,777
Air	99	100	91	90	88	82

Table B-7
Passenger Transport in Kazakhstan, 1985-90

Million passenger-kilometers

	1985	1986	1987	1988	1989	1990
Total	57,281	60,829	62,759	65,184	67,067	68,449
Rail	15,749	16,922	17,888	18,637	18,921	19,690
Bus	30,939	32,754	33,342	34,686	35,384	35,355
Air	10,491	11,040	11,423	11,759	12,657	13,291
River	102	113	106	102	105	113

Table B-8
Kazakhstan: Trade in Domestic Prices, 1990

Million rubles

	Interrepublic Trade		International Trade		Total Foreign Trade	
	Exports	Imports	Exports	Imports	Exports	Imports
Total	8,443.3	14,314.1	906.4	3,515.7	9,349.7	17,829.8
Industry	6,512.9	13,772.5	874.1	3,350.4	7,387	17,122.9
Power	233.3	419.8	0	0	233.3	419.8
Oil and gas	782.9	1,176.6	12.4	4.6	795.3	1,181.2
Coal	304.1	155.8	1.9	0	306.0	155.8
Other fuel	0	0.6	0	0	0	0.6
Ferrous metals	838.5	939.0	197.6	26.6	1,036.1	985.6
Nonferrous metals	480.2	255.1	297.1	19.9	777.3	275.0
Chemical and petrochemical	960.7	1,521.8	120.9	204.7	1,081.6	1,726.5
Machinery	745.6	4,703.6	40.8	806.3	786.4	5,509.9
Forestry products	21.8	690.5	0.9	141.5	22.7	832.0
Construction materials	114.1	295.8	1.6	35.5	115.7	331.3
Soft goods	1,395.2	1,981.8	140.9	1,392.0	1,536.1	3,373.8
Processed foods	561.3	1,232.3	50.7	647.4	612.0	1,879.7
Other industries	75.2	399.8	9.3	51.9	84.5	451.7
Agriculture	1,732.1	226.7	31.9	165.1	1,764.0	391.8
Other	198.3	314.9	0.4	0.2	198.7	315.1

Table B-9
Kazakhstan: Trade in Foreign Trade Prices, 1990

Million rubles

	Interrepublic Trade		International Trade		Total Foreign Trade	
	Exports	Imports	Exports	Imports	Exports	Imports
Total	8,449.5	14,549.6	1,039.0	1,900.3	9,488.5	16,449.9
Industry	7,322.1	14,113.2	1,025.1	1,823.3	8,347.2	15,936.5
Power	350.0	629.7	0	0	350.0	629.7
Oil and gas	2,455.0	3,161.4	43.2	5.2	2,498.2	3,166.6
Coal	284.3	145.7	1.8	0	286.1	145.7
Other fuel	0	0.4	0	0	0	0.4
Ferrous metals	926.3	1,098.4	244.4	61.7	1,170.7	1,160.1
Nonferrous metals	795.4	424.4	496.1	21.1	1,291.5	445.5
Chemical and petrochemical	785.2	1,298.4	94.0	149.9	879.2	1,448.3
Machinery	894.9	5,247.2	50.2	708.7	945.1	5,955.9
Forestry products	17.4	480.4	0.7	88.9	18.1	569.3
Construction materials	135.9	279.7	2.0	12.9	137.9	292.6
Soft goods	345.8	603.0	61.9	339.8	407.7	942.8
Processed foods	272.5	466.6	23.0	419.4	295.5	886.0
Other industries	59.4	277.9	7.8	15.7	67.2	293.6
Agriculture	909.3	88.4	13.5	76.8	922.8	165.2
Other	218.1	348.0	0.4	0.2	218.5	348.2

