

**MINING INDUSTRY
AS A SOURCE OF ECONOMIC GROWTH IN
KYRGYZSTAN**

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ABBREVIATIONS

CDF	Comprehensive Development Frameworks
CIS	Commonwealth of Independent States
CJSC	Closed Joint Stock Company
DFID	Department for International Development of UK
EITI	Extractive Industries Transparency Initiative
GDP	Gross Domestic Product
HDI	Human Development Index
IBC	International Business Council
IDF	Institutional Development Fund
JSC	Joint Stock Company
KAE	Kadamjay Antimony Enterprise
KBME	Kara-Balta Mining Enterprise
KME	Khaydarkan Mercury Enterprise
KME	Khaydarkan Mercury Enterprise
KMME	Kyrgyz Mining and Metallurgical Enterprise
KOC	Kumtor Operating Company
KR	Kyrgyz Republic
MDG	Millennium Development Goals
MRB	Mineral Raw Base
NPRS	National Poverty Reduction Strategy
OJSC	Open Joint Stock Company
PTL	Power Transmission Line
UNO	United Nations Organization
USD	United States Dollars
WB	World Bank

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- *For providing information required:*
 - “Kumtor Operating Company”, a gold-mining company;
 - “Kyrgyzaltyn” JSC, Makmal gold mining company;
 - “Central Asia Gold Limited”, an Australian gold mining company;
 - “Kentor Gold”, an Australian mineral exploration company;
 - “Eurasian Minerals”, a Canadian mineral exploration company;
 - Khaydarkan Mercury JSC;
 - “Kurmentycement”, a cement-producing plant;
 - “Jergalan”, a coal-mining company;
 - “Silicate”, a silicate-producing plant;
 - “Shoro”, a water-bottling company.

Executive Summary

This study is aimed at defining a role for the mining industry in the country and evaluating its possible impacts on economic development in the future.

Mineral resources development is an essential condition for successful economic development of Kyrgyz Republic. In fact, it is the only possible way to raise social welfare in remote high mountainous regions. At the present time, some recovery of investment activities in mining industry has been observed. However, the lack of long-term capital investments in mining and geological exploration projects is still acutely felt. Many investors explain this by shortcomings in the Kyrgyz legislation, in particular, the complicated procedure of granting mineral rights based upon negotiations and also, weak information system containing data on mineral resources of the country. International experts have noted more than once that in spite of the significant size of territory and good level of geological study, **the minerals potential of the country remains underdeveloped.**

The mining industry demonstrated its viability during the collapse of USSR and today, it is a core industry in the Kyrgyz Republic. At present, its output is 25.578 billion som or 48% of all the industrial production. Its share in GDP is 10.2%, in export volume – 41.1% and tax revenues – 11%. The royalty on subsoil use yields budget revenues of 568.0 million som per year.

The mining industry involves more than 15 thousand workers. Monthly average wage is about 10 600 som about four times higher than the average for Kyrgyzstan, which was 2240.3 som in 2004. The study showed that creation of one job in mining industry would lead to creation of 1.6 jobs in related industries that provide supply of goods and services for mining.

The conditions for sector development are considered as very favorable.

Kyrgyzstan has more than one hundred years of history of industrial development of mines, which has formed mining traditions and dynasties of professional miners. About 20 towns and mining villages were founded in the mining areas.

During 80 years of geological survey activities, a comprehensive geological infrastructure with detailed geological maps, maps of geophysical and geochemical fields and other regional researches has been developed. Hundreds of minerals deposits of different types were discovered. The territory of the country is characterized by a high intensity of mineral deposits, many discovered during the Soviet period, the potential of which, as experts say, remains untapped. In the long-term perspective, Kyrgyzstan will have to develop high mountainous areas that constitute 60% of its total territory. These areas have limited possibilities to be

involved in other economic activities and in this regard, the mining industry can play a decisive role in their development.

During the past years, the country has been facing the problem of internal migration of population from remote high mountainous regions to over-populated Chui valley and the capital. The migration is caused by unemployment and lack of opportunities requiring labor. Mining industry development can become a powerful factor to constrain migration.

Fast growth of world prices for many minerals (especially for gold, uranium, mercury) makes the mining sector very perspective for development.

The prognosis of mining sector development to 2020 is made on the basis of the results of the study of data related to: production volume, direct and indirect employment, tax revenues to state budget. Three scenarios: low growth (passive), medium growth (reformed) and high growth (speculated) are considered.

The low-growth scenario assumes the situation corresponding the existing status of mining sector and the case when the government does not undertake any positive measures for speeding up the sector development including fiscal and particularly, regulatory improvements. None of the recommendations on changing the situation formulated in the Road Map will be accepted and implemented. The Government's decision on development of Taldy-Bulak Levoberejny and Jerooy mines will not be made in the near term.

The calculations demonstrate that in such case, the **gold-mining industry may cease its existence by 2010** that will cause the loss of 3000 direct jobs and 4800 jobs in indirect employment. Tax revenues to the budget will be reduced by USD 38 million and the share of mining industry in exports will fall USD 250 million (10 billion som). Retained value will be reduced by USD 50 million and that will substantially deteriorate the trade balance of Kyrgyzstan.

The scenario of medium growth envisages a substantial reform of the mining sector proposed in the Road Map.

According to this scenario, investments can amount to USD 680 million and annual contribution to GDP for 2010-2020 will increase by 3 times (up to USD 90 million). Export volume will increase by USD 90 million (to USD 390 million) and retained value will reach USD 170 million. Additionally, 5 thousand jobs direct and 8 thousand jobs indirect will be created.

The speculative scenario considers the maximum benefit for the country from the mining industry, which can be obtained if the risks are significantly reduced through sector reform and accompanied by favorable conditions. High prices on

gold, mercury and other metals will be maintained. Local production will substitute for the import of goods and new mines will be discovered.

Under these conditions, investments can exceed one billion US dollars. Annual average revenues will be USD 650 million and tax revenues – USD 120 million, while exports will reach USD 576 million. Employment, including indirect, will be 66 thousand jobs and retained value will be USD 237 million. In order to calculate the speculative scenario the gold price of USD 470/oz is used. Today, it has reached USD 560/oz with a tendency of further increase that makes the speculative scenario more real.

The World Bank experts (Report # 24709 - KY) demonstrated examples from world practice when reform of state governance and fiscal regime led to a major turning point in the investment flows into the mining sector. Such effect was observed during the 1990's in Peru, Chile, Mexico, Bolivia, Argentina, Brazil, Tanzania, Burkina-Faso, Madagascar, and Mongolia.

The analysis of legislation and governance of the mining sectors in those countries show that they initially contained the same shortcomings that are in existing Kyrgyz legal frameworks. Their elimination, obviously, will increase the effectiveness of mining sector.

In particular:

- liberalization of tax regime will allow developing mineral reserves with lower grades of ore that at present are marginal;
- introduction of license/rental fees will activate turnover of licenses, which are now held for speculative purposes;
- improvement of the legal base and administration of subsoil use will reduce investment risks, and will enable mines with poor ores to be developed.

It is necessary to make a significant reduction in the interference by state authorities in the economic activities of mining companies. The thesis that the mines were opened during the Soviet time at the state costs and therefore, state has the right to control their development is not correct going into the future.

Investors' interest in the mining business in Kyrgyzstan has considerably increased. During the last five years, the number of registered mining companies has increased by one and half times. For the same period, the number of working companies decreased by 50%. The reasons of failures of investors are various and therefore, should be analyzed. An imperfect legal base and administrative obstacles play an important role, and need to be eliminated.

The mining legislation saved the relicts of the Soviet command system, and under market conditions they complicate the functioning of mining companies.

Specialized laws – Law on subsoil, law on oil and gas, law on coal, law on agreements on production sharing – contradict one another. By-laws – regulations, instructions, and orders widely interpret laws complicating the licensing procedures and miners' works. Moreover, there are legislative obstacles to exporting of products of mining companies.

It is recommended to develop a new Mining Code that will change the existing specialized laws. The new Code focuses on the reduction of unjustified interference of state authorities in the subsoil users' work.

The reform of access and granting of mining rights, in particular, for small deposits, is a priority mission for the Government to implement. An applicant for license should be provided with the “first come, first served” principle, which registers the application for a free area immediately without requiring any technical project, feasibility study or confirmation of financial and professional status.

The international expert employed by the present Grant Implementation Project, who introduced the license cadastre management in the above-mentioned countries, shared with the staff of State Geology Agency the best world practice in licensing system administration. However, its introduction will require the improvement of mining legislation and willingness of the licensing body to work with this improvement.

The mining tax system should also be improved: royalty rates for some types of minerals are too high and constrain the development of new mines; amortization mechanisms do not allow the depreciation of main assets over the life of mine and many other points. The chapter “Mining taxation” prepared for the draft of the new Tax Code reduces the tax burden, but unjustly complicates administration of taxation, increasing corruptive resources and consequently: investment risks. Special concern is caused by the substitution of taxation based on law with tax payments based on negotiations, envisaged in the cases of concessions and agreements on production sharing.

According to the experience of many countries, progressive license/rental fees should be introduced that discourages holding licenses without development. It is advisable to provide part of the fees to local communities in order to prevent collisions with mining companies.

Creation of an electronic database connected to global geographic information systems (GIS) is an urgent task in the systematization of geological information. GIS will increase the value of accumulated geological data and will give the possibility to use progressive distance (aerocosmic) methods of exploration. Additional financial resources, provided partially by license fees, will be needed for its creation.

Kyrgyzstan has limited opportunities to replenish geological information from the state budget. Timely collection, processing and storage of the information that comes from mining, especially, exploration companies is a necessary work to be done by the State Geology Agency.

Information on subsoil belonging to the State should be publicly available and spread widely without requiring special permission of administrative authorities of the State Geology Agency. The archive should work as a public library on a self-sustaining basis. The information transferred by the Geology Agency to license holders should be also open to the public. Time of confidentiality of geological information provided by companies should be limited.

International experts, more than once, have noted the high potential of small-scale mines and prospectivity of their development. However, there is a lack of development experience of such mines. At the present time, informal gold mining is widely spread, and involves up to 5 thousand people. The efficiency of their work is low due to the absence of skills and knowledge in extraction and mining technologies. In China, artisanal mining also became quite popular. These provide, to a considerable extent, supplies of the country for some minerals: for example, mercury. It is necessary to obtain the skills of organizing such mining activities from other countries. Probably, assistance from to international donors will be needed in order to implement a special program for involving local communities into the small mining business.

The implementation of recommended reforms will require significant efforts by the Government. However, they will be repaid by the enhancement of mining industry, which will become a substantial source of economic growth in Kyrgyzstan.

CHAPTER I. MINING INDUSTRY AS A SOURCE OF ECONOMIC GROWTH

1. BACKGROUND

Geographical location. The Kyrgyz Republic (Kyrgyzstan) is located in the centre of Eurasia and borders with China, Kazakhstan, Uzbekistan and Tajikistan. The total area is 198.5 thousand km². The country occupies the western part of the Tyan-Shan mountain system. More than half of its area is 2500 m or higher above sea level where agriculture is impossible.

Climate. Climate is dry continental and changes from arid in the valleys to humid arctic in the highlands, which complicate mining activities.

Population.

Total number:	5.12 million
Native population (Kyrgyz):	2.6 million
Population density:	24 person per km ²
Average population growth rate per year:	0.8%
Urban population:	51%
Labor resources:	2.3 million
Number of economically active population (2000):	1.875 million
Adult literacy rate (above 15 years old):	98.7%
Including with higher education:	10%

According to the World Bank classification, Kyrgyzstan is a country with low-income per capita.

Infrastructure. Kyrgyzstan is landlocked and is distant from sea-ports and markets for minerals production.

Transport communications. Kyrgyzstan has a developed system of transport communications. The length of highways is 19.3 thousand km and highways maintained by companies is 16 thousand km. Railways are part of railway network of Central Asian countries. In the country, three international airports function “Manas” in Bishkek, and in Osh and Issykkul. There are airports for lightweight airplanes in internal lines in Karakol, Talas, Balykchy and Cholpon-Ata.

Electricity. Electricity has a well-developed infrastructure with relatively low production cost. According to the specialists, not more than 9% of the potential hydropower is utilized, and the total resource could reach 140 billion kW if fully developed.

Telecommunications. The country is provided with radio relay lines with a total length of 4.629 km. There are 75 relay stations, which connect oblast and rayon centers.

Geological infrastructure. More than 7.4 thousand km of drilling, around 1000 km of underground workings, and more than 8 mln m³ of trenches have been

drilled and dug. Eighty percent of territory is covered by geological survey and mapping at 1:50 000 scale.

2. HISTORY OF DEVELOPMENT AND MODERN STATUS OF MINING SECTOR

Kyrgyzstan has strong mining traditions.

The beginning of 20th century witnessed the development of industries of coal, oil, lead, mercury and copper in the country. During the World War II, more than 20 enterprises were operating, extracting lead, antimony, mercury, gold, tungsten, arsenic and coal. Later, the mining and metallurgical sector of Kyrgyzstan played a substantial role in the raw material economy of the USSR. Its share in total production of minerals in certain periods constituted 15-18% of lead, 40-100% of mercury, 100% of antimony, 30% of rare-earth metals and 15% of uranium production.

Kadamjay Antimony Enterprise (KAE) produced about 15% of world antimony production. In 1990, Kyrgyzstan produced 17608 t of antimony taking the third place after China and Bolivia. KAE has finished the exploitation of its own deposits, and now is functioning mainly with imported raw material.

Khaydarkan Mercury Enterprise (KME) has been operating on the world largest antimony-mercury mine Khaydarkan for 70 years. Since 1940, about 45 thousand t of mercury has been extracted. The output of the metal in 1989 reached 793 t, which was more than 1/4 of the world production.

Kara-Balta Mining Enterprise (KBME) was built in 1951 as a uranium-processing enterprise. It developed six uranium mines: two in Kyrgyzstan and four in Kazakhstan. The raw materials base was transferred entirely to Kazakhstan and then completely lost after the collapse of USSR. The enterprise provided up to 20% of the uranium production of Soviet Union.

The production capacity of KBME was 1.5 million t of ore per year and 2.5 thousand t of output. The enterprise produced at the same time molybdenum, tungsten and rhenium. For the recent years, it has been refining up to 25 t of gold and silver per year.

Kyrgyz Mining-Metallurgical Enterprise ((KMME) today it is called Kyrgyz Chemical-Metallurgical Plant) began operation during the World War II on the mines Aktyuz and Boordu. In 1962 rare earth metals mining on the Aktyuz-Kutessay mine started. The enterprise produced 14 rare-earth elements as metals, salts, alloys and luminophors. The production capacity was 600-800 t per year. Today, the rare-earth mines are no longer operating.

Makmal Gold-Mining Enterprise was built in 1986. The history of industrial gold-production in Kyrgyzstan started at that time.

Oil exploration began in 1900. By 1913, its extraction reached 3000 t. Now seven oil and gas deposits are working. Oil production fell from 490 thousand t in 1958 and was about 73.3 thousand t in 2004 (3.7% of demand). Gas production fell substantially and was 32.2 million m³ in 2001 (3% of demand).

In the second part of 19th century, the first coal-mining companies emerged in the south of the country. In 1913, 27 coal-mines with total production of about 100 thousand t of coal per year providing coal for the whole Central Asia. In 1940-60's the coal mining activities took place in seven underground coal-mines and five coal strip-mines and achieved 4.9 million t (1979). The republic consumes about 1.9 million t of coal per year but its production fell to 0.495 million t in 2004 because of depletion of resources and low profitability of production.

In the 1980's the extraction of non-ore raw materials for producing construction materials was successfully developed satisfying the demands of building industry of the country and was supplying the neighbor republics of Soviet Union. This included cement (more than 1 million t per year), bricks, stone casting and facing materials. Stone-processing facilities were brought into production during that period

Of other non-metallic minerals, KME produced a concentrate of fluorspar since 1968. In total 200 thousand t of product was produced with production of 14 500 t in 1971. KBME produced up to 50 thousand of barite from raw materials imported from Kazakhstan, but with the collapse of USSR the raw-material base was lost.

From 1987 the mining and metallurgical sector was growing faster than the economy of Kyrgyzstan, in general, due to significant investments made in a number of enterprises (KBME, KMME, Saryjaz Tin Enterprise). By the end of 1980's Kyrgyzstan produced 100% of Soviet Union's total production of antimony, up to 64% of its rare-earth products and up to 15% of its uranium.

Up to 50 million rubles annually were invested in reconnaissance and exploration of minerals. Approximately 50 thousand workers in the mining industry and about 11 thousand workers in reconnaissance and exploration activities were employed.

From 1993, foreign investments began flowing to gold-mining industry of Kyrgyzstan. In 1996 a world-class gold mine, Kumtor, with reserves of more than 300 t of metal and production capacity of 650 thousand ounces per year began production. Two mines have been prepared for development each containing 65-70 t gold reserves.

Private companies extract tin in small amounts.

Extraction and bottling of mineral and drinking water from wells were also started. More than twenty enterprises dealing with bottling of mineral and drinking water were established with the participation of foreign capital.

In recent years, artisanal mining activities on placer and hard-rock gold were started. This type of activities involves about 5 thousand artisans.

The Kyrgyz Republic thus has considerable experience in mineral resources mining and has well-qualified hereditary employees.

Table 1. Production of minerals in 2004

Minerals	Measureme nt unit	Production volume	Price per unit of product in USD	Estimated income	Actual employment (people)	Number of working companies
Oil	tons	73293	145	10632	1439	2
Gas	thousand m3	28169	60	1683	600	2
Coal	tons	495000	10	4950	2600	37
Mineral water for medical treatment	m3	1715007	0,001	1715,007	no data	16
Mineral water for drinking	m3	11675,4	0,15	1751,31	no data	26
Bed rock gold	kg	21999	13000,000	285987	3011	7
Placer gold	kg	12,6	13000	163,8	15	1
Artisanal gold	kg	250	13000	3250	1250	
Silver	kg	11700	230	2691	0	4
Mercury	tons	459,2	9321	4280	803	1
Antimony	tons	1112	750	835	1227	3

*PIU of World Bank IDF Grant for Building Capacity in Governance and Revenues Streams
Management for Mining and Natural Resources*

Fluorspar	tons	3038,1	90	273,4	150	1
Gypsum	tons	14000	100	1400	242	3
Cement materials	tons	87000	5	435	307	2
Facing stone	m3	10000	10	100	547	8
Silica raw materials	tons	15000	20	300	50	1
Construction materials						
Clay	m3	966600	4	3866,4	952	16
Sand-gravel aggregate	m3	491300	4	1965,2	1474	6
Limestone	tons	445050	5	2225,25	15	2
Building stone	tons	40000	3	120	150	6
Sands	m3	485600	5	2428	142	2
Expanded clay and agglomerite	m3	2000	5	10	19	1
Total				331062	14993	145

3. MINERAL RAW MATERIALS POTENTIAL OF THE COUNTRY

In Soviet time, the geological structure of the territory of Kyrgyzstan was studied in detail and many hundreds of mineral deposits were discovered. Some of them were subject to detailed exploration with approved reserve calculations, and put onto the state balance. The data on the deposits in the state balance can be reviewed in order to evaluate the total mineral potential of the country.

Table 2. State balance of mineral resources

Type of mineral	Measurement unit	Number of deposits in balance	Confirmed reserves
Fuel and energy resources			
Oil	Thous. tons	11	12925
Gas	Million m3	11	7312
Coal	Thous.tons	49	1316918
Precious metals			
Hard rock gold	tons	24	348
Placer gold	tons	24	5,9
Silver	tons	12	326
Base and rare metals			
Mercury	tons	4	40335
Antimony	tons	7	265444
Tin	tons	2	209221
Tungsten	tons	2	124943
Copper	tons	7	140500
Lead	tons	3	27400
Zink	tons	2	17600
Rare earth	tons	1	51500
Molybdenum	tons	1	2410
Bismuth	tons	3	4401
Arcenic	tons	2	497200
Cobalt	tons	1	273
Beryllium	tons	1	11701
Non-ore raw materials			
Fluorspar	Thous. tons	4	2279
Gypsum	Thous. tons	9	37031

*PIU of World Bank IDF Grant for Building Capacity in Governance and Revenues Streams
Management for Mining and Natural Resources*

Rock salt	Thous. tons	8	32191
Facing stone	Thous.m3	11	43400
Ceramic raw materials	Thous.m3	2	11079
Wollastonite	Thous. tons	1	2553
Bentonite clays	Thous. tons	1	587
Mica	Thous. tons	1	837
Pyrites	Thous. tons	1	3198
Construction materials			
Clay	Thous.m3	65	262078
Sand-gravel aggregate	Thous.m3	86	474322
Lime stone	Thous. tons	8	51217
Building stone	Thous.m3	25	98679
Sands	Thous.m3	6	65773
Expanded clay and fly ash	Thous.m3	6	112232
Rockwool	Thous.m3	2	1451
Potter clay	Thous.m3	1	10
Mineral water	Thous.m3/day	15	12

4. CONTRIBUTION OF MINING SECTOR TO THE ECONOMY OF KYRGYZSTAN

The following data include mining, mining-metallurgical, industrial minerals and coal companies directly related to the extraction of minerals¹. According to the data of National Statistics Committee, the number of mining companies that held state registration in recent years has grown.

	2000	2001	2002	2003	2004
Number of registered companies	428	464	508	566	624
Growth rate %	100,0	108,4	118,7	132,2	145,8

The number of working companies for this period fell by half:

	2000	2001	2002	2003	2004
Number of working companies	316	316	161	158	161
Growth rate (%%)	100,0	100,0	50,9	50,0	50,9
including:					
Large	22	22	18	12	12
Share (%%)	7,0	7,0	11,2	7,6	7,4
Growth rate (%%)	100,0	100,0	81,8	54,5	54,5
Medium	25	25	26	22	15
Share (%%)	7,9	7,9	16,1	13,9	9,3
Growth rate (%%)	100,0	100,0	104,0	88,0	60,0
Small	269	269	117	124	134
Share (%%)	85,1	85,1	72,7	78,5	83,3
Growth rate (%%)	100,0	100,0	43,5	46,1	49,8

By 1st of January 2004, 624 companies were registered (included in the single state register of statistical units) that is 1.5 times higher than in 2000. Along with that, the number of economically active companies has fallen. In 2000, they were 74% of all the registered companies, while in 2004 it became 26%. The number of actually working companies for 5 years fell from 316 to 161. Of them, the number of big mining companies fell by 45.5%, medium ones – 40.0% and small ones – 51.2%.

¹ The statistical data published are not always identical, therefore, the figures should be considered as estimated variables.

The big mining companies (more than 200 employees) are mainly those established during Soviet time: big mining and metallurgical companies, coal-mining companies and building industry companies dealing with construction materials extraction. During the years of independence only one big mining company was created, which is Kumtor. The reduction in the number of big companies is mainly linked to the closure of a number of coal mining and construction companies.

Considering that the prices for most types of minerals on the world markets in this interval of time have substantially increased, the decline of activities of mining companies can be explained only by internal reasons, which need to be discussed in separate studies.

More than 80% of working industries refer to small companies (up to 50 employees), although their number fell drastically and this should be taken into account during developing tax policy and mining legislation.

There is a direct link between number of registered companies and issued licenses. Mainly small companies are involved in geological exploration and mining of coal, construction materials and mineral waters. If the State Agency for geology annuls more than 150 licenses each year, then most of small companies go to the list of stagnating companies.

The following table shows the number of new applications made every year for each license type. Obviously, the development is positive but real question is still pending: how proportional is the level of activity of mining companies and licensing to the potential of the country?

Table 3

Number of issued licenses

Total	1998	1999	2000	2001	2002	2003
Oil and gas	1	12	3	32	11	8
Coal	17	10	13	13	28	27
Other metals	10	4	1	2	7	15
Gold, silver	30	27	27	26	41	74
Non-metals	31	49	41	53	59	71
Water	13	19	29	36	29	38
Total	102	121	114	162	175	233
Total (except oil, gas and water)	88	90	82	94	135	187

The total number of licenses issued by the State Geology Agency to different companies and individual persons (as of 01.01.2004) is 615 (table 4)

Table 4

Number of working licenses

Type of mineral	Reconnaissance	Exploration	Mining	Total	Total (%)
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*PIU of World Bank IDF Grant for Building Capacity in Governance and Revenues Streams
Management for Mining and Natural Resources*

Oil and gas	22	16	17	55	8,9
Coal	0	7	69	76	12,4
Other metals	10	0	13	23	3,7
Gold	83	24	35	142	23,1
Non-metals	28	5	165	198	32,2
Underground water	0	0	121	121	19,7
Total	143	52	420	615	100,0
Total (%)	23,3	8,5	68,3	100,0	

According to the opinion of the World Bank Consultant on Mining Cadastre issues, E.Ortega, taking into account the size of territory of KR, its geological potential and availability of geological and mining information, this number can be considered as small in comparison with other nations.²

² “*Diagnostics, design, implementation and training for Mining Cadastre System*”. Report of the mission of the World Bank Consultant Enrique Ortega. Bishkek 2005.

5. MACROECONOMIC CONTRIBUTION OF MINING INDUSTRY

Macroeconomic indicators characterizing the mining sector of KR since 1995 have considerably increased. They are a direct result of the introduction into operation of gold mining project, Kumtor, in 1997.

The share of mining industry and manufactured metals³ in GDP on average for the last five years from data of the National Statistics Committee constituted 10.2% (12.9% in 2000; 13.8% in 2001; 5.9% in 2003 and 10% in 2004).

The share of mining industry in overall volume of exports on average for the last five years made 41.3% (39% in 2000; 47.6% in 2001; 33.9% in 2002; 45.1% in 2003 and 41.1% in 2004).

The fall in 2002 is explained by the accident in Kumtor mine.

³ Share of manufactured metal received after metal processing is not separated from the whole industry but it is small in comparison with the total industry.

Table 5. Economic contribution of mining industry to the country

Indicator	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Share in GDP, %	1,5	1,1	5,6	6,6	7,7	12,9	13,8	5,9	8,2	10,0
Share in overall industry, %	12,3	9,7	34,1	41,1	42,1	45,6%	48,2%	39,1%	46,8%	48,4%
Gross income, million som	872,0	964,0	6150,0	8737,0	14345,0	18893,5	21515,5	16620,3	22913,1	25578,1
Share of employment from economically active population, %	1,1	1,0	0,9	0,8	0,7	0,6	0,7	0,8	0,8	0,7
Share in exports, %	13,8	10,9	30,8	40,2	40,5	39,0	47,6	33,9	45,1	41,1
Volume of export, million USD	56,0	55,0	186,0	206,0	183,6	196,9	226,7	164,8	262,1	300,0
Share in imports, %	2,7	1,9	7,9	5,5	12,4	24,1	27,7	27,8	27,3	29,0
Volume of import, million USD	13,0	16,0	55,0	46,0	74,0	133,3	129,5	163,4	195,6	273,0
Share in tax revenues	7,2	9,0	3,2	6,1	4,8	6,3	5,6	9,0	11,2	11,4
Volume of all tax revenues* (million som)	174,0	118,0	121,0	179,2	288,1	484,9	421,6	773,0	1094,0	1248,0
Volume of all tax revenues* (million USD)	16,0	9,0	7,0	8,7	7,6	9,9	8,7	16,5	25,0	29,2

* without payments to Social Fund

6. TAX REVENUES TO STATE BUDGET

Mining companies pay the following taxes:

Profit tax	20 % (10% since 1 January 2006)
VAT	20% on imported materials, services and production Zero-rated VAT for export production (except gold) Gold exports VAT exempt
Road tax	0.8% of income
Emergency prevention tax	1.5% of income
Mineral raw base recovery tax	2% (tin, tungsten, mercury, oil, coal, antimony, sand, clay, sand-gravel mixtures, etc) 5% (gold, silver) 8% (construction limestone) 10% (color metals, graphite) 12% (molybdenum, lead, rare earth, face stones)
Excise tax	25% on jewelry imported and produced for the republic 800 som/t (\$20/t) for diesel fuel, 3000 som/t (\$75/t) for gasoline imported and produced by legal entities and individuals in KR
Land tax rates in 2004	16-44 som/hectare (\$0.5-1.1/hectare) for geological exploration, reconnaissance works 160-440 som/hectare (\$4-11/hectare) for operating mines, pits, etc. 930-1320 som/hectare (\$23.2-34/hectare) mining companies
Customs duty rates on imported Goods	0-10% (10% jewelry, 5-10% for some types of ores and equipment)
Customs fee	0.15% for imported equipment value
Customs VAT	0% some types (list approved by the Government of KR) of equipment imported to KR are exempted from VAT (main assets are exempted from VAT since January 2006) 20% for the rest of equipment and goods
Taxes and payments to Social Fund from payroll	
Income/withholding tax	10% up to 50 fold minimal annual wage from the amount of income (up to 60000 som (\$ 1500 per year)) 20% more than 50 fold minimal annual wage (10% since 1 January 2006)
Tax on non-residents' income	30%
Contributions to Social fund	33% of wage Employers – 25%, employees – 8%

Data of the Ministry of Finance KR in the following Table 6 and figure 1 describes the tax revenues and payments from mining companies for the last five years.

Table 6. Tax revenues to budget from mining industry (million soms)

Period	Withholding tax	Profit tax	VAT	Excise tax	Land tax	Road tax	Emergency prevention tax	other	Total
1	2	3	4	5	6	7	8	9	10
2000	83,3	82,6	29,3	59,8	0,8	183,1	41	5,3	484,9
2001	107,6	100,1	56,1	0	1,2	106,2	40	10,2	421,6
2002	211,3	86	105,6	0,9	3,1	77,1	105,9	183,1	773
2003	189	53,6	94,3	0,5	3,4	116,1	163,7	473,8	1094,4
2004	161,5	40,2	119,1	0,8	6,7	107,3	180	632,7	1 248,4

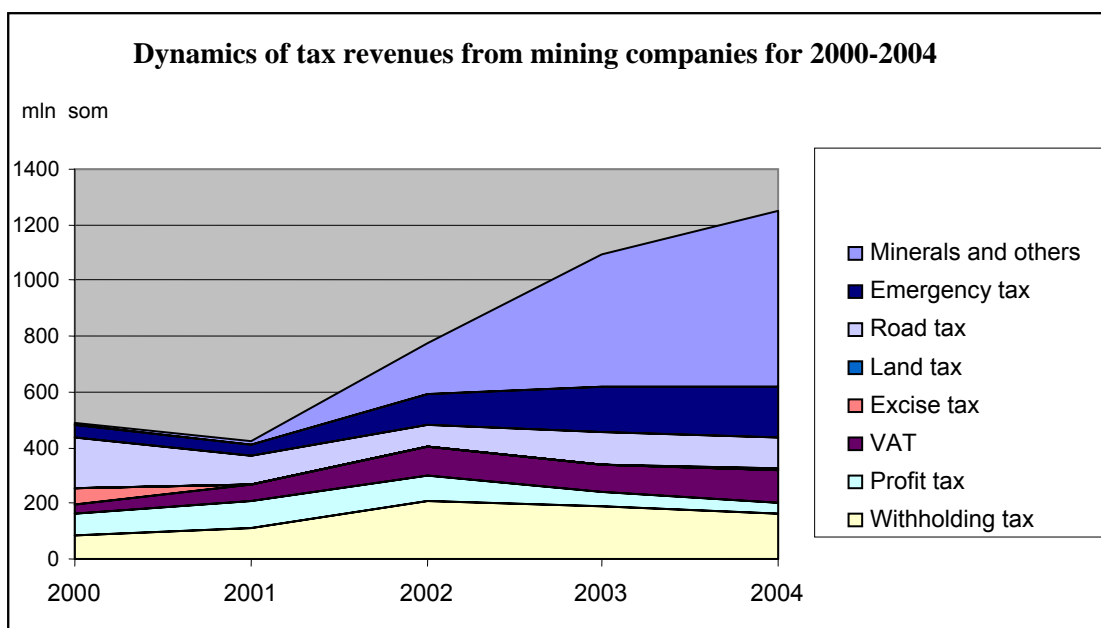


Figure 1

Total tax revenues and payments from the mining industry to the state budget amounted to 4022.3 million som for the past five years. In 2004, it constituted 1248.4 million som, an increase by 2.6 times (484.9 million som) in comparison with that of 2000, which indicates yearly growth of the role of the mining sector in the overall economic development of the country. A sharp increase of tax revenues in recent years is linked to the end of tax exemptions provided for Kumtor Gold Company according to the General Agreement of 1993.

At the same time, statistical data show that total sum of revenues from the profit tax is steadily falling from 82.6 million som in 2000 to 40.2 million som in 2004, a 50%

reduction.

Accordingly, the share of revenues from the profit tax decreased in the total amount of tax revenues from 17% in 2000 to 3.2% in 2004. The decrease of revenues from profit tax is explained by following factors:

- Revision of profit tax rate from 30% to 20%;
- Decrease of profitability of mining companies that depends on many reasons including mining and geological conditions of ore-extraction and problems of management in commodity marketing.

The total amount of revenues from road tax fell from 183.1 million som in 2000 to 107 million som in 2004 or 41.4%. The share of this tax decreased for the period from 37.8% in 2000 to 8.6% in 2004.

Mining companies additionally pay taxes for the recovery of minerals raw base (Table 7). The absolute sum and share of taxes for the recovery of minerals raw base in total amount of tax revenues has substantially increased in recent years. According to the Finance Ministry taxes for recovery of minerals raw base paid by mining companies in 2004 made 568.0 million som and increased by more than 23 times compared to 2000 (24.0 mln som). The main role belongs to Kumtor Gold Company as tax holidays given to the company by the Government expired. Considering the expected decrease of gold mining in the current year, these indicators will be much more modest until Jerooy and Taldy-Bulak Levoberejny start operation.

Table 7

Actual taxes on recovery of minerals raw base (royalty) for 2000-2004 (mln som)

Item	2000	2001	2002	2003	2004
taxes on recovery of minerals raw base	24	24,2	186,8	422,9	568

As this tax is not used for recovery, it becomes a pure royalty for its payer. Despite this tax being called “a tax for recovery of minerals raw base”, in 2004 only 35 mln som or 6% of revenues are used for the needs of geology.

The tax for recovery of minerals raw base (royalty) constitutes 45.5% of all tax payments of mining industry, and is a significant additional item of expenditures of mining companies, which limits the development of this sector.

Taking into account that foreign investors also consider as royalty the road tax and emergency tax, the total is 68.5% of all the tax payments of a mining company.

7. CONTRIBUTION TO STATE REVENUES ACCORDING TO EITI REPORTS⁴

Extractive Industries Transparency Initiative is aimed at improving natural resources management in order to make an effective use of natural wealth, creation of competitive legal and tax conditions for attracting and sustaining private capital investments, increasing value added of the sector in terms of favorable taxation, creation of employment and related sectors that will enable to hold sustainable economic growth and poverty reduction.

The Extractive Industries Transparency Initiative was announced by UK Prime Minister Tony Blair at the World Summit on Sustainable Development in Johannesburg, September 2002. Its aim is to increase transparency over payments by companies to governments and government-linked entities, as well as transparency over revenues by those host country governments. The World Bank, EBRD, and a number of developing countries support its implementation. The Kyrgyz Government endorsed EITI in 2004. The Principles of EITI were approved by the London 2003 Conference participants representing participating countries, donor organizations, mining companies and civil society.

The EITI Principles

- We share a belief that the prudent use of natural resource wealth should be an important engine for sustainable economic growth that contributes to sustainable development and poverty reduction, but if not managed properly, can create negative economic and social impact.
- We affirm that management of natural resource wealth for the benefit of a country's citizens is in the domain of sovereign government to be exercised in the interests of their national development.
- We recognize that the benefits of resource extraction occur as revenue streams over many years and can be highly price dependent.
- We recognize that a public understanding of government revenues and expenditures over time could help public debate and inform choice of appropriate and realistic options for sustainable development.
- We underline the importance of transparency by governments and companies in the extractive industries and the need to enhance public financial management and accountability.
- We recognize that achievement of greater transparency must be set in the context of respect for contracts and laws.

⁴ This section of the study has been developed by the EITI specialists of the World Bank Group.

- We recognize the enhanced environment for domestic and foreign direct investment that financial transparency may bring.
- We believe in the principle and practice of accountability by government to all citizens for the stewardship of revenue streams and public expenditure.
- We are committed to encouraging high standards of transparency and accountability in public life, government operations and in business.
- We believe that a broadly consistent and workable approach to the disclosure of payments and revenues is required, which is simple to undertake and to use.
- We believe that disclosure in a given country should involve all extractive industry companies operating in that country.
- In seeking solutions, we believe that all stakeholders have important and relevant contributions to make – including governments and their agencies, extractive industry companies, service companies, multilateral organizations, financial organizations, investors and non-governmental organizations.

The Initiatives are supported by many international organizations like the World Bank, European Bank for Reconstruction and Development, DFID, the governments of Germany, Norway, and Netherlands. Many developing countries participate in the EITI.

In London Conference the participating countries and donor organizations, as well as civil society and mining companies approved EITI Criteria and called the countries to consider the criteria as minimal requirements.

The EITI Criteria

1. Regular publication of all material oil, gas and mining payments by companies to governments (“payments”) and all material revenues received by governments from oil, gas and mining companies (“revenues”) to a wide audience in a publicly accessible, comprehensive and comprehensible manner.
2. Where such audits do not already exist, payments and revenues are the subject of a credible, independent audit, applying international auditing standards.
3. Payments and revenues are reconciled by a credible, independent administrator, applying international auditing standards and with publication of the administrator’s opinion regarding that reconciliation including discrepancies, should any be identified.
4. This approach is extended to all companies including state-owned enterprises
5. Civil society is actively engaged as a participant in the design, monitoring and evaluation of this process and contributes towards public debate.
6. A public, financially sustainable work plan for all the above is developed by the host government, with assistance from the international financial institutions

where required, including measurable targets, a timetable for implementation, and an assessment of potential capacity constraints.

Under good governance principles implementation in Kyrgyz Republic, the openness of information on activity of mining industries, increase of financial revenues transparency have an important role and KR supported this initiative and joined it. The EITI Council was established consisting of government representatives, extracting companies and civil society. Also the EITI Committee was created aimed to carry out organizational support to the Council. Importantly, the Committee is entitled, if necessary, to ask specialists from government agencies and experts to facilitate in decision making process.

In the EITI frameworks the Government intends to publish regular reports on payments and revenues from extractive companies on the half-year basis.

In the frameworks of Extractive Industries Transparency Initiative (EITI) the preliminary list of mining companies that present reports of financial streams, periodicity of reporting and reporting indicators are defined and approved by the Regulation of the Government of KR of 23 September 2004 # 710 “On approving indicators of reporting (standard forms)”.

Significant progress was achieved during the first months of EITI implementation. After March 2005 events, the government faced different capacity constraints and as a result the implementation was slowed down. However, during the first half of 2006 several activities were made, including”

- Nomination of new members in the Council and Committee in lieu of those who quit these bodies for various reasons;
- The EITI Secretariat drafted the Action Plan, which was then considered by the Committee members, as well as by Council members at the Conference held on March 28, 2006. After that the Council members approved the Action Plan. The World Bank has praised the Plan and gave its comments. During upcoming two years the works on EITI will be conducted under the Action Plan;
- The 2004 and 2005 aggregated reports have been prepared and posted on the Ministry of economy and finance website. The reports need to be audited by the audit companies.

The reporting should be made based on accounting of financial resources (cash method) in order to compare this information with the data of Government where a company works.

The present statistical bulletin shows data on six mining industry companies, which are included in the above-mentioned list by the Regulation of Government of KR of 23 September 2004 # 710:

Table 8

#	Name of company	Location	Type of economic activity by State classification of economic activity
1	JSC Kyrgyzaltyn	Naryn oblast Chuy oblast Jalalabat oblast Chuy oblast Issykkul oblast	Extraction of precious metals and ores of rare metals Production of organic main chemical substances Production of precious metals Production of lead, zinc and tin
2	JSC Khaydarkan Mercury Enterprise	Batken oblast	Production of antimony and mercury
3	Kumtor Gold Company	Issykkul oblast	Production of precious metals
4	JSC Kyrgyzneftegas	Jalalabat oblast	Extraction of crude oil and associated gas
5	State Joint Stock Company Ak-Ulak	Naryn oblast	Extraction of coal by open pit mining
6	JSC Sulyuktakomur	Batken oblast	Extraction of lignite (brown coal) by underground mining

The companies monitored in 2005 produced industrial production for 19406,9 million som. In 2005, the budget of KR received 1207,8 million som of taxes and 118,2 million som of non-tax revenues. 7.4% or 1207.6 million som of total amount of tax revenues to the state budget are provided by the companies monitored under EITI. Of total amount of taxes paid by the considered companies to state budget, the tax on development and recovery of mineral raw base (royalty) is a most specific contribution of extractive industries. They paid 475,4 million som or 91,7% of revenues from this type of tax to state budget.

Table 9

Tax and non-tax revenues to state budget of Kyrgyz Republic in 2005

<i>(million som)</i>	State budget revenues	Including payments from companies
Tax revenues	16 361,4	1 207,8
Withholding tax	1 744,2	258,1
Profit tax	1 283,2	22,3
Tax on production assets of companies	-	-
VAT	7 088,6	74,8
VAT on domestic products	1 337,4	55,6

VAT on imported products	5 751,2	0,3
Excise duties	1 149,7	0,8
Excises on domestic (local) products	489,3	0,1
Excises on imported products	660,0	1,4
Road tax	472,4	19,8
Emergency situations prevention payments	937,2	19,1
Development and recovery of minerals raw base	518,5	91,7
Land tax from legal persons	294,1	1,9
Custom duties	1 664,0	5,2
Other tax revenues	1 209,5	0,3
Non-tax revenues	3 567,9	3,3

Table 10

Financial revenues streams from activities of mining companies included in the EITI list in KR for 2005

Profit tax	22 260,8
Property tax	-
Custom duties	85 757,4
Tax on development and recovery of minerals raw base	475 434,4
Concession payments	89 887,0
Royalty	-
State share dividends	11 377,0
License payments	16 462,4
Leasing and rent payments	510,6
Share and assets payments	-
Repayment of credit and interests to budget.	20,0
Social Fund Payments	247 291,5
Volume of produced output by current prices	19 406 869,1
Coal mining support	23 500,0
Geological exploration	30 863,1

8. EXPORT POTENTIAL OF MINING SECTOR

It is obvious that the Kyrgyz Republic, as a small country, cannot develop without intensive exports to maintain a positive trade balance. At the present time, foreign economic activities in the Kyrgyz Republic are facing serious problems. The trade balance is negative. Mining sector products are almost entirely exported, providing almost half of the country's exports.

The gold produced by Kumtor Gold Company and JSC Kyrgyzaltyn goes to the refinery plant of Kara-Balta Mining Enterprise and thence to western markets.

Antimony produced by Kadamjay Antimony Enterprise is well known in the world. More than 80 companies in Russia, Belarus, Uzbekistan, Kazakhstan, Ukraine, Great Britain, Venezuela, Korea and others consume this product.

Mercury is exported to China, Russia, Kazakhstan, Ukraine, USA, India and France.

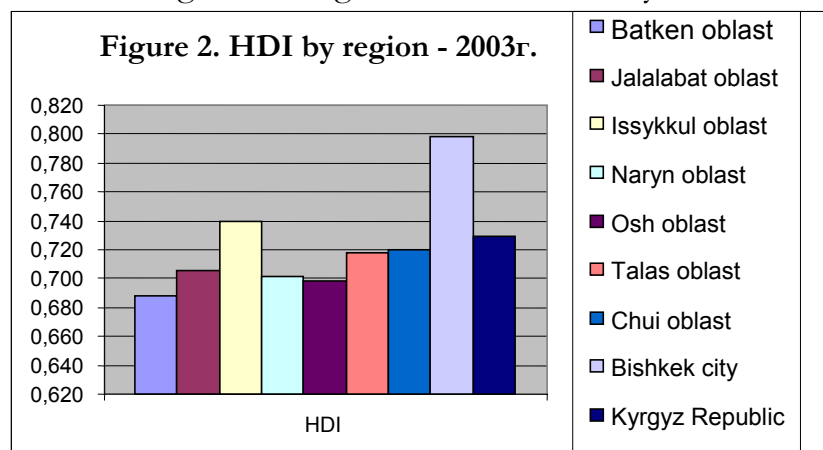
During Soviet period, the volume of lanthanides exceeded the demands of USSR. Products were exported to Japan, South Korea, and Germany. At present, KMME is no longer in the extraction phase but is processing rare earth concentrates from inventory.

Of the non-metallic materials, cement (up to 0.3 million tons), cement-asbestos materials, fluorspar, and facing tiles of granite and marble are exported to neighboring countries.

Strong mining sector development could substantially increase exports.

9. MINING SECTOR AND HUMAN DEVELOPMENT

According to the UN classification given in its Human Development Report (2005), Kyrgyzstan belong to a category of countries with medium level of human development and takes 109 place among 177 countries by the Human Development Index (HDI). In 2003, HDI was 0.729 for the country. The regional estimates of this indicator show significant variations. Bishkek (0.798) and Issykkul oblast (0.740) have leading positions exceeding the average rate for the country as illustrated in Figure 2.



Human resources, as a type of economic capital, is one of the main factors of development in Kyrgyzstan, and in other countries. The mining industry, in general, exerts a positive impact on human capital development. The impact of the mining industry is obvious at regional and national levels in such important sectors as education, health care and social protection.

In general, the contribution of mining industry to social infrastructure development in rural regions of the country is very high. During the construction period in 1994-1996, the revenues to budget, extra-budgetary funds and social support of KOC totaled:

- 1 million USD - Issykkul Development Fund;
- 700 thousand USD - Social assistance to local population and switching secondary schools and nursery schools to electric heating;
- 38 million USD - Infrastructure development in Issykkul and Naryn oblasts and installation of power transmission line of 220 kW and 154 km of length – Balykchy-Tamga.

The following shows the annual contributions of KOC to the Issykkul Development Fund in 2002-2004:

	2002	2003	2004
Contributions to Issykkul Social Development Fund	\$543,808	\$120,000	\$168,036

Furthermore, at the stage of exploration, mining companies construct and maintain the roads that the local population also use. KOC spent about 5.6 million USD for

improving and maintaining roads to the mine in 1997-2004. About 6 million USD were spent for reconstruction of the road to Barskoon (45 km).

As mines are often located in remote and undeveloped regions, they do not make a substantial impact on the infrastructure. Nevertheless, spills of potent aggressive and toxic substances can happen on the roads. However, that harm cannot be compared to the contribution of mining companies to infrastructure development.

Along with the support of national cultural projects, KOC provides aid to farmers of Issykkul and Naryn oblasts. The corporate donations also cover orphan homes, hospitals, old people's homes, etc., which regularly receive humanitarian aid from Canada. In 1997-2004, humanitarian assistance to local communities was about 3 million USD.

JSC Kyrgyzaltyn spent more than 2 million USD for social infrastructure development during five years. Its social activities include providing donations and medical services free of charge and at reduced charge in its medical offices to invalids from work and war, old people, and large families. Financial aid of JSC Kyrgyzaltyn through its branches for 2001-2004 reached 1.5 million som.

The anticipated revenues from the operation of gold mine Taldy-Bulak Levoberejny for the life of mine should yield a withholding tax of 1.0 million USD and regional payments of 4.9 million USD. Contributions made by Taldy Bulak Gold Mining Company to the community include the following:

- 40,000 USD - to the towns of Kemin and Orlovka to help the poor and needy
- 20,000 USD – for the clean up of the rubbish dump on the outskirts of Orlovka, which was an extreme health hazard both to the town and to the water supply.

Moreover, it was agreed to create a local fund by paying 1% of the net profit until repayment in full of external debt and thereafter 2% of the net profit through the duration of the life of the Taldy-Bulak Joint Venture.

The companies, particularly with foreign investments involved in geological exploration activities make their own contribution to development by creating jobs with competitive salaries and increasing tax revenues for the state budget despite the fact that they do not make a profit. An average rate of monthly salaries for local specialists in such companies is more than 500 USD while the work reward at the state geological expeditions is no more than 100-150 USD per month. Payments to Social Fund, as for example by JSC Kentor, were 3.7 million USD and by Eurasian Minerals Inc. subsidiaries – Altyn Minerals and Kichi-Chaarat were 1 039 000 som and 356 531 som respectfully.

Health care. Mining companies, due to the importance of the health of their workers organize medical services. Such companies as Kyrgyzaltyn and KOC have their own

medical offices with infrastructure and personnel. The companies develop the qualifications of doctors by providing them with special courses abroad. According to the recent program of social assistance, KOC has resumed its support of the Barskoon Diagnostic Center. Furthermore, KOC assists the Tyan-Shan Fund through financing the medical treatment of orphans and the poor by invitation of doctors from abroad. In 2003 and 2004, the company donated about 8.5 million som for the construction of Altyn Balalyk Children's Health Center in Issykkul.

Education. Education in Kyrgyzstan is facing serious problems caused by the reduction of state financing. In this regard, mining companies support local schools by acquiring textbooks, equipment, etc. They provide scholarships for children of local communities and children of local staff. Each year KOC makes a contribution to the educational program "Personnel of 21st Century" with a total of 1.4 million USD from the beginning of this assistance. Annually, more than 100 KOC's workers raise their qualifications in the framework of the program "Assistance in Raising Educational Level". Moreover, KOC in the framework of the project "Educating Personnel in 21st Century" supported by the Canadian Government implemented a program of professional education. The aim was to meet demands of the industry with graduates with high professional skills. The program used Canadian models of professional, technical and commercial education in partnership with University of Technologies of South Alberta and Institute of Applied Sciences and Technologies of Saskatchewan Province. KOC spent for professional education about 1.4 million USD in 1997-2004. Other foreign companies bring in international standards of knowledge by inviting consultants-instructors who teach local specialists modern programs in geology and mining.

Widespread economic decline has caused submarginal conditions for human development in the country. Mining companies provide their employees and local communities a number of services that significantly complement state social services. Therefore, successful activities of mining companies enable sustainable development and support of human potential in the country.

CHAPTER II. ECONOMIC CONTRIBUTION OF WORKING MINING PROJECTS AT NATIONAL AND LOCAL LEVELS

1. GENERAL PROVISIONS

A study of the main economic parameters of working mining companies and their contribution to the economy of the country was conducted in order to make a prognosis of future possible impact of mining industry on economic growth in Kyrgyzstan.

For this purpose two gold-mining companies, one mercury producing and two non-ore mineral companies, one coal-mining and one mineral water producing company are selected.

The following companies have been studied:

- Kumtor Operating Company (KOC)
- Makmal gold-mining enterprise (MGM)
- Khaydarkan mercury enterprise
- “Kurmentyement” cement producing plant
- “Jergalan” coal mining enterprise
- “Silicate” silica blocks producing plant
- “Shoro” mineral water producing company

The method of calculation and processing of the data collected is given in the report “Economic Impact Assessment of Mining Industry in Kyrgyzstan” of PRC Ken-Too.

Production

Table 11 shows the annual average indicators of production during several periods.

Table 11

Production of marketable product

Item	measurement	MGM 1999- 2004	KOC 1997- 2004	KME 2000- 2004	Kurmenty Cement 2003-2004	Jergalan 2000- 2004	Silicate 2004	Shoro 2003- 004
Annual average volume of market product in physical terms								
<i>Gold</i>	kg	1152	19650					
<i>Mercury</i>	t			504.8				
<i>Fluorspar concentrate</i>	t			2331				
<i>Silicate bricks</i>	Thous.pieces						255	
<i>Washed sand</i>	t						36200	

<i>Limestone</i>	t				25320			
<i>Cement</i>	t				3421			
<i>coal</i>	t					26962		
<i>Bottled water</i>	l							2608350
Annual average volume of marketable product in monetary terms	Thous. Som	540081	7969750	127169	27610	17219	3078	20285

Employment

The study defined:

- direct employment (personnel directly hired by company)
- indirect employment (jobs created in unaffiliated companies-subcontractors that sell goods and services to mining company)
- induced employment (employment created as a result of emergence of local business – stores, transport, services, schools, hospitals or through the increase of demand on goods and services at the expense of mining company workers).

Direct employment

Table 12 shows the annual average number of workers in the companies under survey.

Table 12

Annual average number of workers and average monthly wage

Item	MGM 1999-2004	KOC 1997-2004	KME 2000-2004	Kurmenty Cement 2003-2004	Jergalan 2000-2004	Silicate 2004	Shoro 2003-004
Total of annual average including:	1006	1489	977	245	315	145	519
<i>Expatriates</i>		121					
<i>Local</i>	327	1368	975	245	315	145	519
<i>Non-local</i>	679		2				
Average monthly wage (som)	7567	24600	3118	1533	1543	6138	2000

The average monthly wage varies widely. In Kumtor where the production technology and work organization correspond to modern standards, the average monthly wage of local population is much higher than the average in Kyrgyzstan. The average monthly wage in Kyrgyzstan was 2240.3 som in 2004.

Indirect employment

As the study found, mining companies purchase materials in CIS countries and abroad. Only small part of them (about 3%) is purchased from local producers: limestone, food and clothes (Makmal).

However, local companies provide services to all the mining companies studied. These include repair contractors, railway works, services of state bodies, project design organizations, etc.⁵

Mainly local subcontractor companies are involved during the construction stage. Table 12 shows the estimate of indirect employment.

Table 13

Estimate of indirect employment

Item	MGM 1999-2004	KOC 1997-2004	KME 2000-2004	Kurmenty Cement 2003-2004	Jergalan 2000-2004	Silicat 2004	Shoro 2003-004
Construction companies	55	73				2	2
Project design organizations	10						
Other companies providing services	576	897	149	24	26	8	3
Suppliers of materials, clothes, food	819	808	288	141	33	16	17
Sellers							330
Total indirect employment	1460	1178	437	165	59	27	352
Induced employment	139	101	282	118	70	17	
Total	1599	1879	719	283	129	44	352

An estimate of indirect and induced employment with regard to direct employment demonstrated the following results, as coefficients, which are used to make prognostic estimates:

- **MGM – 1599/1006 = 1.6,**
- **KOC - 1879/1489 = 1.3,**
- **KME - 719/ 977 = 0.7,**
- **Kurmentycement – 283/245 = 1.2,**
- **Jergalan – 129/315 = 0.5,**
- **Silicat JSC - 44/145 = 0.3,**
- **Shoro – 352/512 = 0.7.**

The frequently published information that mining companies create in unaffiliated organizations 4-6 jobs per one job in mining company, is not applicable to

⁵ “Economic impact assessment of mining industry in Kyrgyzstan”. Report of PRC Ken-Too. Bishkek 2005.

Kyrgyzstan. This is because most of the goods necessary for mining companies are not produced in the country but imported from abroad.

Contribution to state income

Taxes

Table 14 shows annual average sum of taxes and payments to the state by periods.

Table 14

Annual average sum of taxes and payments

Mln som

Item	MGM	KOC	KME	Kurmenty Cement	Jergalan	Silicat	Shoro
Period, years	1999-2004	1997-2004	2000-2004	2003-2004	2000-2004	2004	2003-004
Tax on minerals recovery (royalty)		132	2.5	1.3	0.3	0.1	0.2
Road and emergency tax	13.2	99	3.4	0.6	0.3	0.1	0.5
Profit tax	35.8	346*	3.9				0.5
Social fund tax	22.5	99	9.2		1.5	0.4	0.1
Withholding tax	6.9	77	1.9	0.1	1.1	0.2	0.09
Other taxes (concession, VAT, land tax, etc)	0.3	240	0.1	2.6		1.5	0.3
Total	78.7	993	21.0	4.6	3.2	2.3	1.4

*Sum of dividends paid by KOC to the Government of KR

Local purchases

Table 15 contains annual average local purchases and services from unaffiliated organizations by periods.

Table 15

Annual average local purchases of goods and services from other organizations

Mln som

Item	MGM	KOC	KME	Kurmenty Cement	Jergalan	Silicat	Shoro
Period, years	1999-2004	1997-2004	2000-2004	2003-2004	2000-2004	2004	2003-004
Purchase of materials produced in Kyrgyzstan	7.5	92.1*	0.6	9.0		1.3	3.5
Purchase of materials produced in other countries purchased at local wholesale outlets	163.2	0*	30.6	3.3	3.9	0.6	
Suppliers mark-up	32.6	0*	6.1	0.7	0.8	0.1	

Services of other organizations	111.9	450*	29.7	5.1	4.2	1.3	0.3
Total	152.0	542.1	36.4	14.8	5.0	2.7	3.8
Annual average purchases	540.1	9153	127.2	34.9	17.2	3.1	20.3
% of local purchases to annual income	28.1	5.9	28.6	42.4	29.1	87	18.7

* Variables are tentative.

Retained value

Retained value (the value added retained in the country during the sale in the internal market and the export of marketable product) consists of local purchases and services, wages of local workers and taxes. Table 16 shows the volume of retained value of the companies subject to study.

Table 16

Annual average retained value

Mln som

Item	MGM	KOC	KME	Kurmenty cement	Jergalan	Silicat	Shoro
Period	1999-2004_{TT}	1997-2004_{TT}	2000-2004_{TT}	2001-2004_{TT}	2000-2004_{TT}	2004_T	2003-2004_{TT}
Annual average local purchases from other companies	152.0	542.1	36.5	14.8	5.0	2.7	3.8
Wage of local workers	58.3	336.1	3.0	6.5	5.7	1.2	12.4
Taxes	78.7	647	21.0	4.6	3.2	2.3	1.4
Total	289.0	1525.1	60.5	25.9	13.9	6.2	17.6
Average annual sales proceeds	540.1	9153	127.2	34.9	17.2	3.1	20.3
% of annual income	53.5	16.7	47.6	74.2	80.8		86.7

Comparison of production indicators received from different companies depending on type of production (mercury, gold, coal, oil) and scale of company, show the following.

In 2004 productivity of one worker was:

- In 2004 productivity of one worker was:
- In Kumtor – 12,32 k of gold or 6815 thousand som
- In Kyrgyzaltyn – 1.3 k of gold or 657 thousand som
- In Khaydarkan – 512 k of mercury and 3.5 t fluorspar of 188 thous.som
- In Komur – 162 t of coal or 67 thous. som
- In Kyrgyzneftegas – 14 thous.m3 of gas made 215 thous. som or 34 t of oil
- In companies of building industry – 79 thous. som

So, labor productivity in monetary terms depends on the scale of company and type of raw material and can vary by 10-40 times for metal minerals and by 100 times in comparison with the companies of building industry and coal sector.

2. PROGNOSIS OF MINING INUSTRY DEVELOPMENT

The prognosis of mining industry development to 2020 is made on the basis of the study of the data related to production volume, direct and indirect employment, and taxes to the state budget. Three scenarios are considered: low growth, medium growth and high growth. Special attention is paid to gold production as the dominate resource in the mining sector.

2.1 Low growth scenario (Passive)

The low-growth scenario considers the current situation in the mining sector where the government does not undertake any actions to speed up sector development including fiscal and regulatory improvements. None of the recommendations in the Road Map will be accepted and implemented. The decision of the Government on development of Taldy-Bulak Levoberejny and Jerooy mines will not be made in a timely manner.

Gold mining companies

For the period from 1997 to 2004 the mining companies such as Kumtor Operating Company (KOC), Makmal gold mine (MGM), and Solton-Sary gold mine (SSGM) extracted 167 tons or 5377 thous. ounces of gold.

The annual average number of permanent workers at these companies for 1997-2004 was 2611 workers.

The relation of indirect and induced employment to direct employment at MGM constitute 1.6⁶. This coefficient is accepted to calculate employment at all the gold mining companies. The indirect employment at the present time companies is 6341 jobs. Taking into account the annual investments in production, the annual average employment may increase to 6788 jobs.

For a period from 1997 to 2004, the mining companies paid USD137.1 million taxes and other payments.

The above data indicate the significant contribution of mining companies to the economy of Kyrgyzstan at present. However, the prognostic indicators demonstrate the decrease of gold production by KOC as well as MGM.

The open-pit of the Kumtor deposit has been 75% mined and it will be mined fully from the existing reserves by 2010.

⁶ Unfortunately, the data from KOC is provided incompletely.

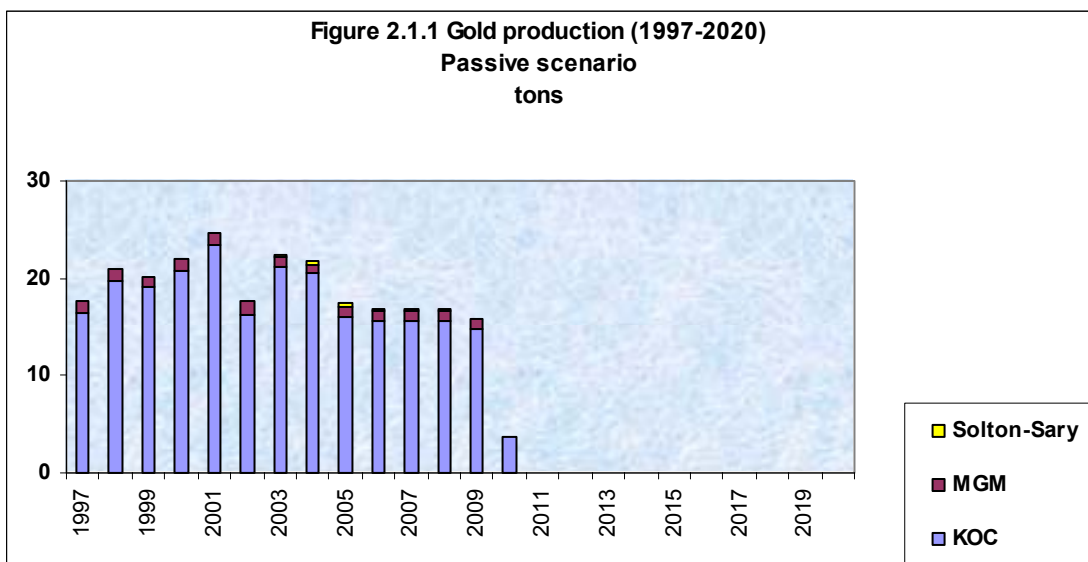
In Makmal, the open-pit mining has been finished while the underground reserves are not fully developed. According to calculations, the mining of present reserves will be completed by 2009.

SSGM increases gold production but this does not make a significant impact upon the general indicators.

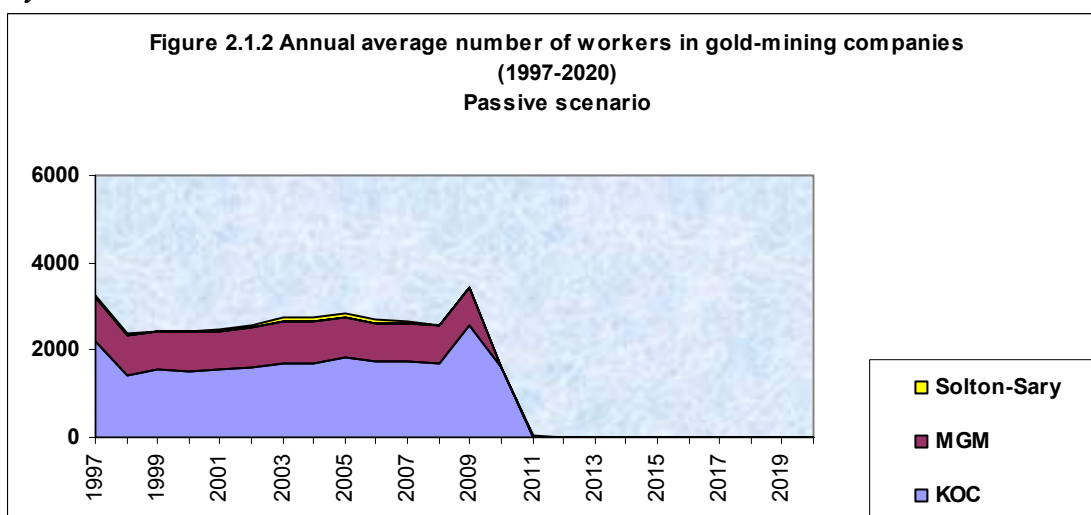
The passive scenario of the present study assumes that KOC will not start underground mining after open-pit mining; MGM will not start mining of underground reserves to level 2370; SSGM will not reach the project capacity, gradually decreasing the productivity of mining in Altyn-Tor and Buchuk mines.

The figures 2.1.1-2.1.4 illustrate the results of activities of gold-mining companies in the frame of passive scenario for a period of 1997-2004.

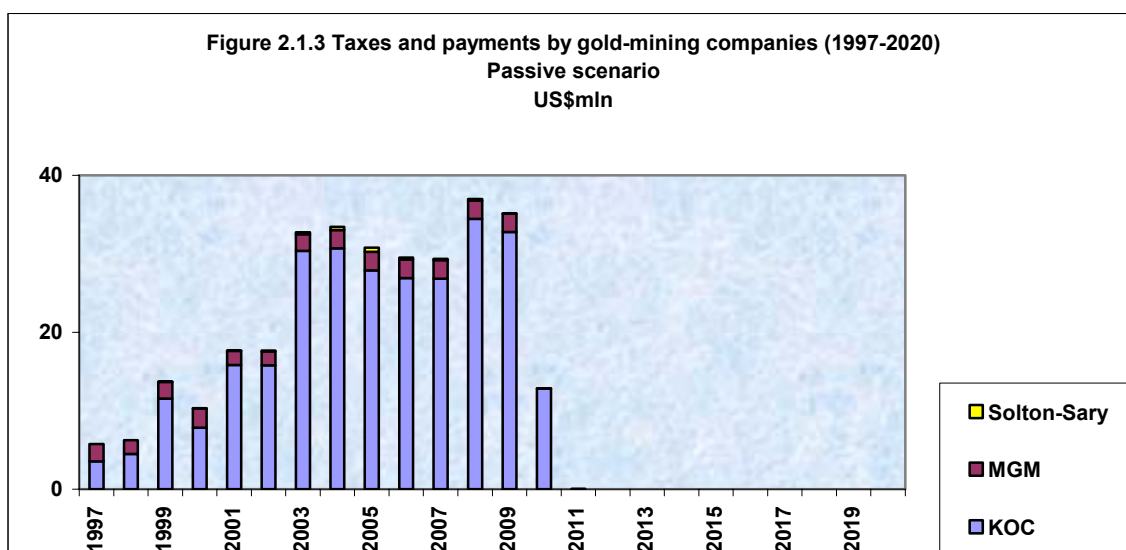
Gold Production



Employment

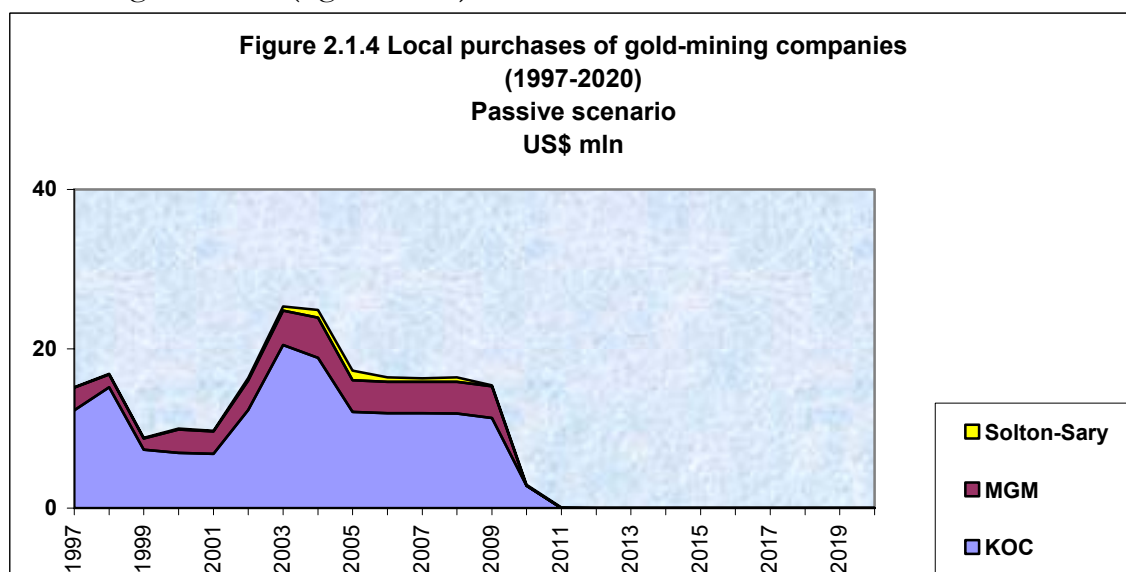


Taxes



Local purchases

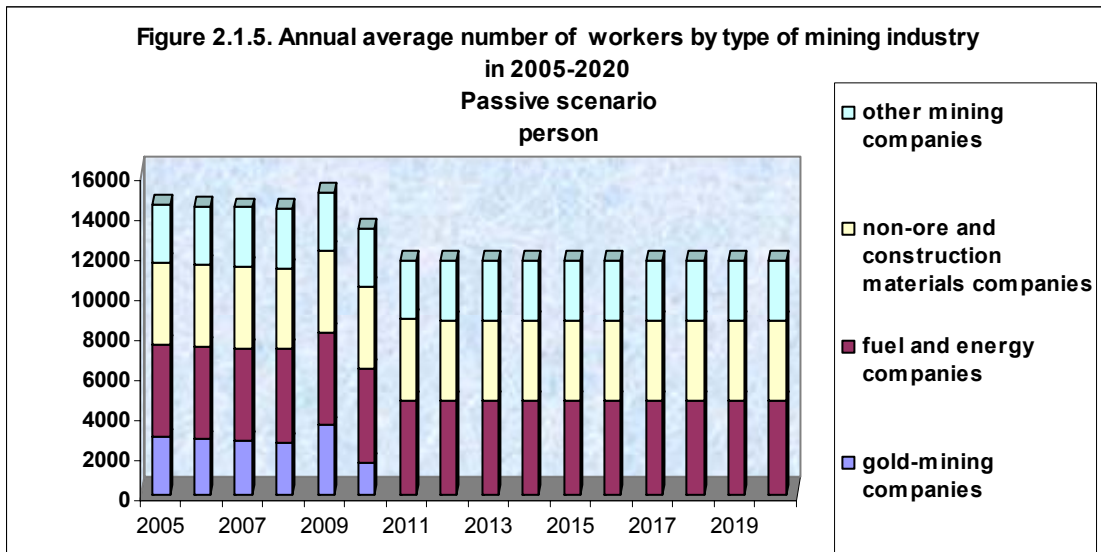
The annual average purchases of local materials and services by gold-mining companies are considered as actual: KOC – 5.9%, MGM and SSGM – 28.1% of annual average income (figure 2.1.4).



The mining industry as a whole under the Passive Scenario

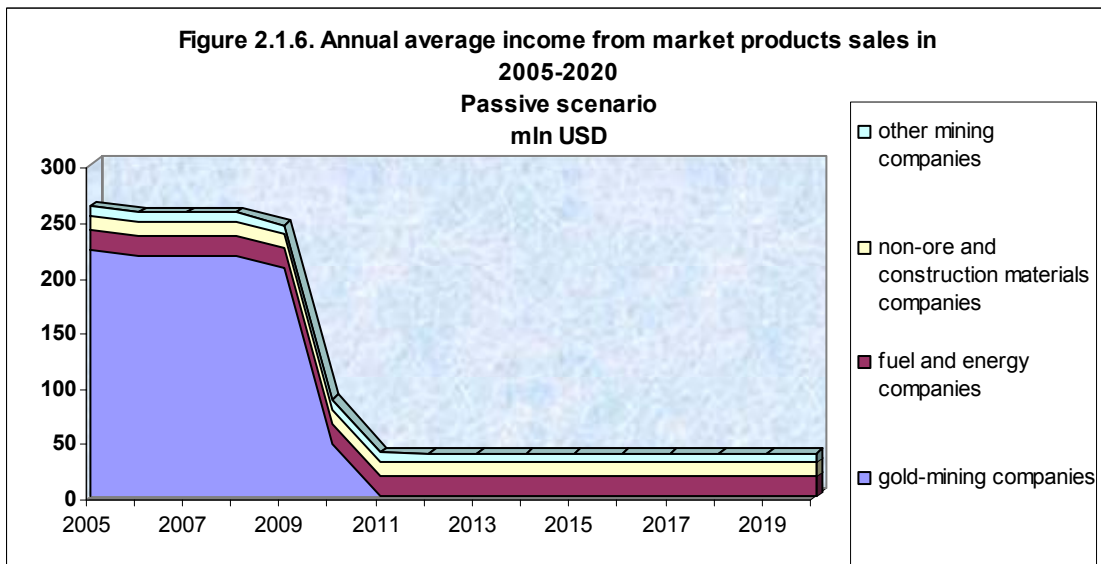
The dynamics of change of annual average number of employees, income from product marketed, tax revenues, and the retained value by sectors of the mining industry under the passive scenario are given in figures 2.1.5-2.1.6a-b.

Employment



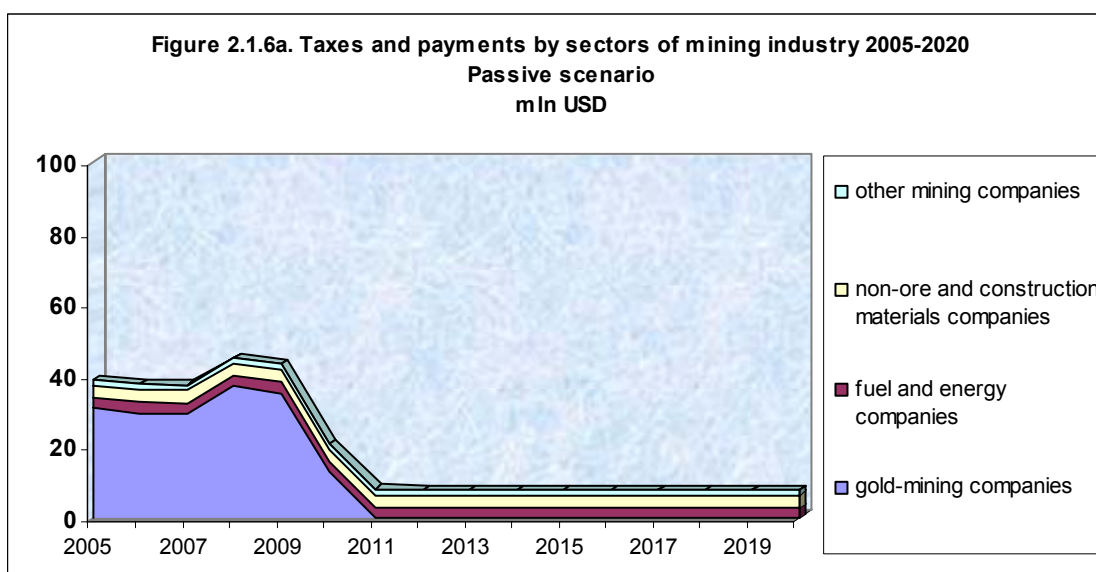
As is seen in figure 2.1.5, employment is provided mainly by the fuel and energy sector. The gold mining industry is in the last place as it directly depends on labor productivity. The stoppage of gold mining will cause the loss of 3 thousand jobs, which makes about 20% of all the employment in the mining industry.

Sale revenues



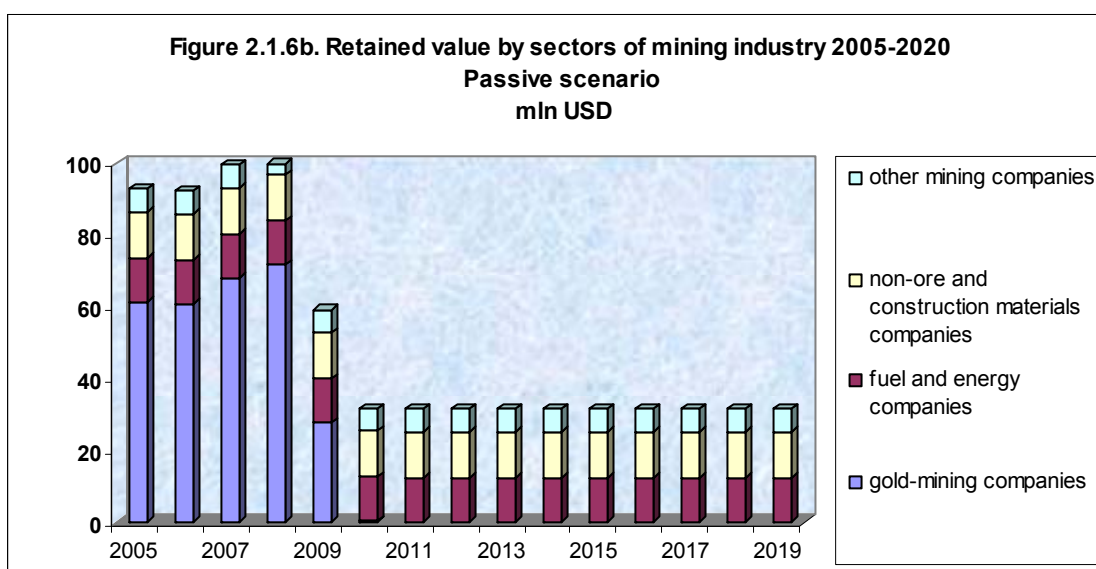
Gold mining makes more than 80% of income from the entire mining sector. The stoppage of gold mining will substantially influence the fall of GDP (up to 10%).

Taxes



Gold mining is the main part of tax revenues from the mining sector. As a result of the anticipated recession of gold mining by 2011 in the passive scenario, the amount of tax payments will fall by 75%.

Retained value



One of the important economic parameters is retained value. It consists of expenditures on local purchases of goods and services, wages and taxes. As the figure 2.1.6b illustrates, the largest amount of retained value belongs to gold-mining, therefore, there is a threat of decline of retained value by 2010 by 70%. Considering that gold sale makes 40% of all the exports, the stoppage of gold mining anticipated in the passive scenario will substantially deteriorate the trade balance of the country.

The Passive scenario estimates the main parameters that define the economics of the mining industry as a whole for a period of 2005-2010 (Table 17).

Table 17

Economic Benefits Streams Indicators – 2005-2010

Passive scenario

(Gold price is 400\$ per ounce from 2005)

Indicator	Unit of Measurement	Gold-ore, total	Fuel and energy	Non-ore	Other	Total
Investments, total	US\$ mln	124,21				124,21
Production cost, annual average	US\$ mln	227,88	17,63	13,12	8,26	266,89
Total taxes, annual average	US\$ mln	29,46	2,91	3,58	1,51	37,46
Export balance, annual average	US\$ mln	228			6,52	234,40
Employment total	Person	7247	6959	8501	6797	29504
<i>direct</i>	person	2787	4639	4048	2924	14398
<i>indirect and induced</i>	person	4460	2320	4453	3874	15106
Annual payroll	US\$ mln	12,20	4,24	3,70	2,67	22,81
Local purchases, annual average	US\$ mln	14,55	5,13	5,56	2,19	27,43
Retained value	US\$ mln	56,21	12,28	12,85	6,37	87,70

As it is noted earlier, under the Passive scenario all the gold mining companies will cease their activities by 2010. With the same rates of extraction of other minerals (coal, oil, construction materials, mercury, etc.), the contribution of mining industry to the economy of the country for the period of 2010-2020 will have the following indicators:

Table 18

Economic Benefits Streams Indicators – 2010-2020

Passive scenario

(Gold price is 400\$ per ounce from 2005)

Indicator	Unit of Measurement	Gold-ore, total	Fuel and energy	Non-ore	Other	Total
Investments, total	US\$ mln	0,00				0,00
Production cost, annual average	US\$ mln	0,03	17,63	13,12	8,26	39,05
Total taxes, annual average	US\$ mln	0,01	2,91	3,58	1,51	8,00
Export balance, annual average	US\$ mln	0			6,52	6,56
Employment total	Person	6	6959	8501	6797	22263
<i>direct</i>	person	2	4639	4048	2924	11613

<i>indirect and induced</i>	person	4	2320	4453	3874	10650
Annual payroll	US\$ mln	0,00	4,24	3,70	2,67	10,62
Local purchases, annual average	US\$ mln	0,01	5,13	5,56	2,19	12,89
Retained value	US\$ mln	0,02	12,28	12,85	6,37	31,51

The comparison of these two periods shows that in the case of the Passive Scenario there will be no investments in the mining sector, income will fall by 85%, tax revenues will fall by 79%, exports will cease, wages will fall by 50% and the level of retained value will reduce by 64%.

Conclusions:

- 1. If the Government does not undertake decisive actions for the mining sector, the gold mining industry will cease its existence by 2010.**
- 2. Stoppage of gold mining by 2010 will cause the loss of 3000 direct jobs and 4800 of indirect jobs.**
- 3. Retained value will fall by USD 50 million**
- 4. Tax revenues to the state budget will be USD 38 million less.**
- 5. GDP will fall 8-10%**
- 6. Exports will be reduced by USD 250 million (more than 10 billion som) which will substantially deteriorate the trade balance of Kyrgyzstan.**

2.2 Medium growth scenario (Reformed)

The medium growth scenario envisages a substantial reform of the mining sector according to the Road Map (see “Road Map and Recommendations to the Government”).

The experts of World Bank (Report No 24709-KY) have demonstrated examples from world practice when the reform of state regulation and fiscal regime led to a fundamental turning point in investment flows to the mining sector. Such effect was in place in the 1990's in Peru, Chile, Mexico, Bolivia, Argentina, Brazil, Tanzania, Burkina-Faso, Madagascar and Mongolia.

Analysis of legislation and regulation of the mining sector of these countries shows that they initially contained similar shortcomings to those that now exist in Kyrgyz norms. The elimination of these will of course, increase the effectiveness of the mining sector.

In particular:

- Relieving the tax regime to allow the mining of reserves with lower grades, which today are marginal;
- Introduction of license/rental fees will encourage license turnover for deposits, which are now held for speculation purposes;
- Correction of the legal base and mining administration will reduce the risks of investments and accordingly reduce the discounting coefficient while defining the evaluation of net present value of the projects, and this will indirectly allow investors to put low-grade mines into operation.

Contribution of the gold-mining industry

The medium growth scenario assumes:

- start of operation of the most advanced gold mines Jerooy, Taldy-Bulak Levoberejny with gold reserves of 60-70 t;
- development of small-scale mines with gold reserves of 8 to 20 t, which are under project development (Kuru-Tegerek, Ishtamberdi, Tereksay, Altyn-Tor and Buchuk of the Solton-Sary mine) with annual gold extraction of 0.5 t;
- Continuation of Kumtor mine development;
- Development of two anticipated medium-scale mines;

Gold price for calculations is accepted as USD 400 per ounce.

Kumtor

Investments of about USD 87 million are planned for 2009-2010. The amount of extracted metal is accepted at 12 t per year.

Jerooy

The amount of investments for developing the Jerooy mine is estimated at USD 63 million. The life of the mine is 13 years. The production of gold is 4.9 t per year.

Taldybulak-Levoberejny

The amount of investments is USD 60.4 million. The expected mine production is 11 years with annual metal production of 4.5 tons.

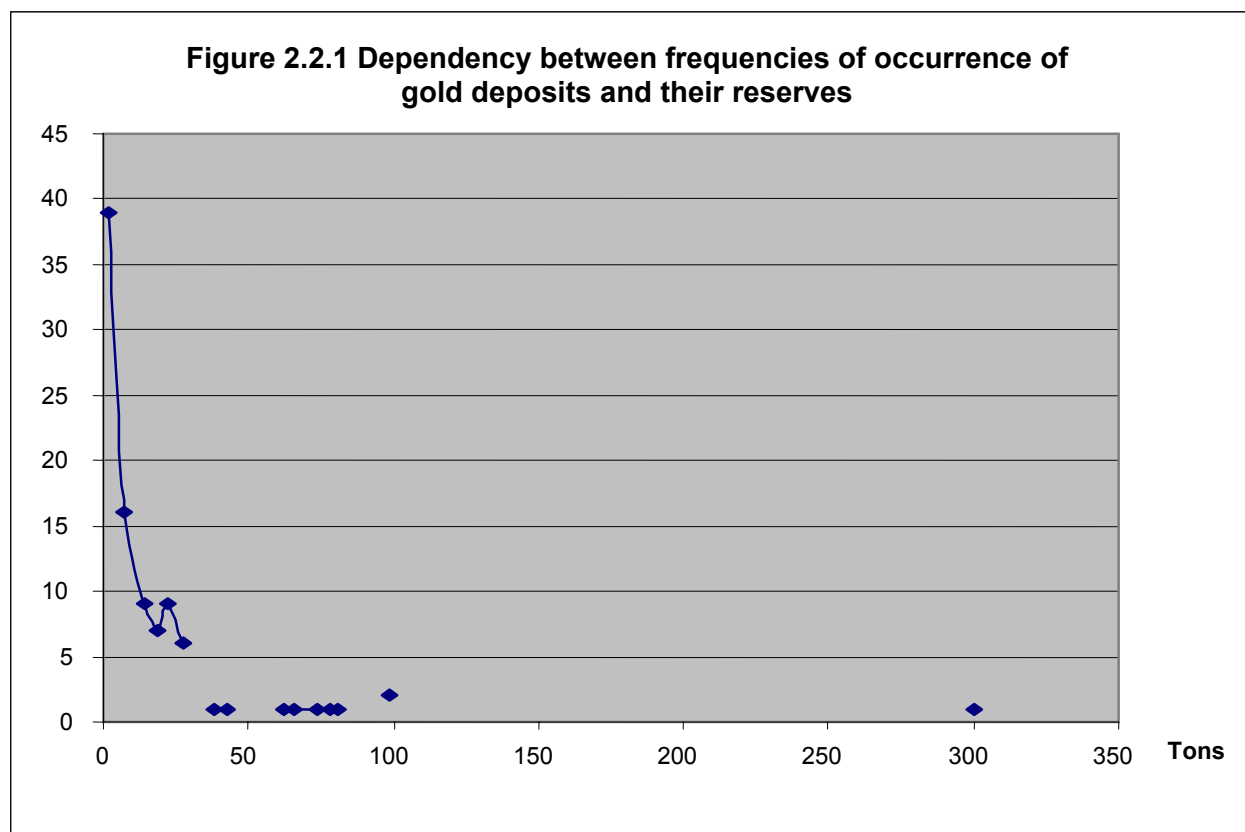
Small-scale mines

In order to mine the small-scale deposits, USD 126 million will need to be invested. The total amount of extracted metal to 2020 will be 53 t.

By 2020 the mining of large deposits – Jerooy and Taldy-Bulak will be completed.

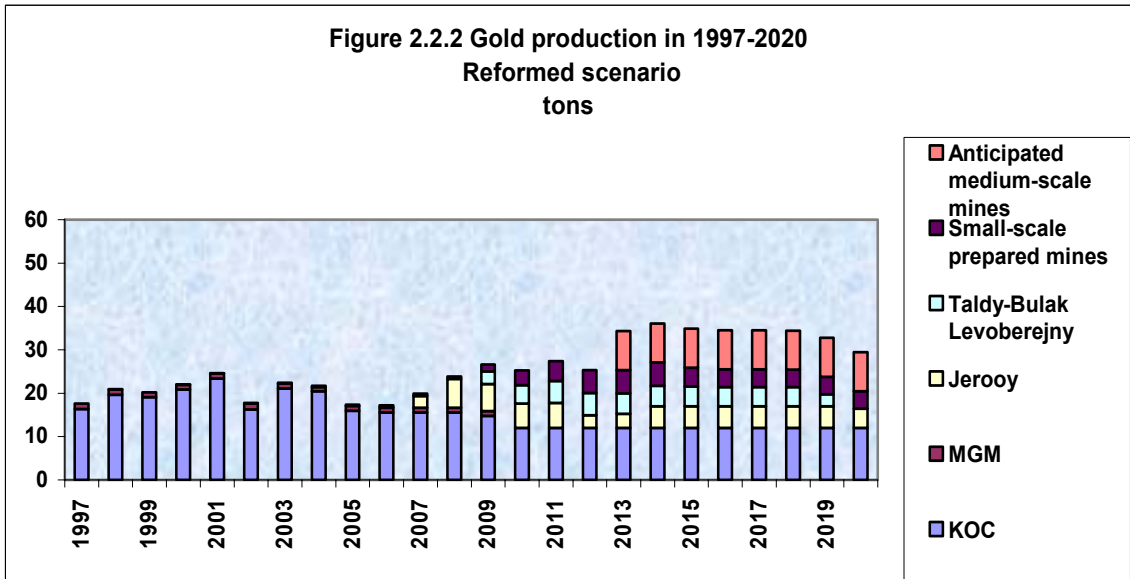
Anticipated medium-scale mines

At the present time, intensive exploration of new and existing gold deposits is taking place on the territory of Kyrgyzstan. The survey of exploration companies showed that they consider a relatively high probability for discovery of gold deposits with 30-60 t reserves. This scenario assumes that in case of reforming the sector, these works will end up with the opening of two deposits by 2010 with reserves of 50 t each. The probability of such discovery is confirmed by the stochastic chart of the distribution of known gold occurrences, which has a gap in the area of deposits with indicated reserves (2.2.1)

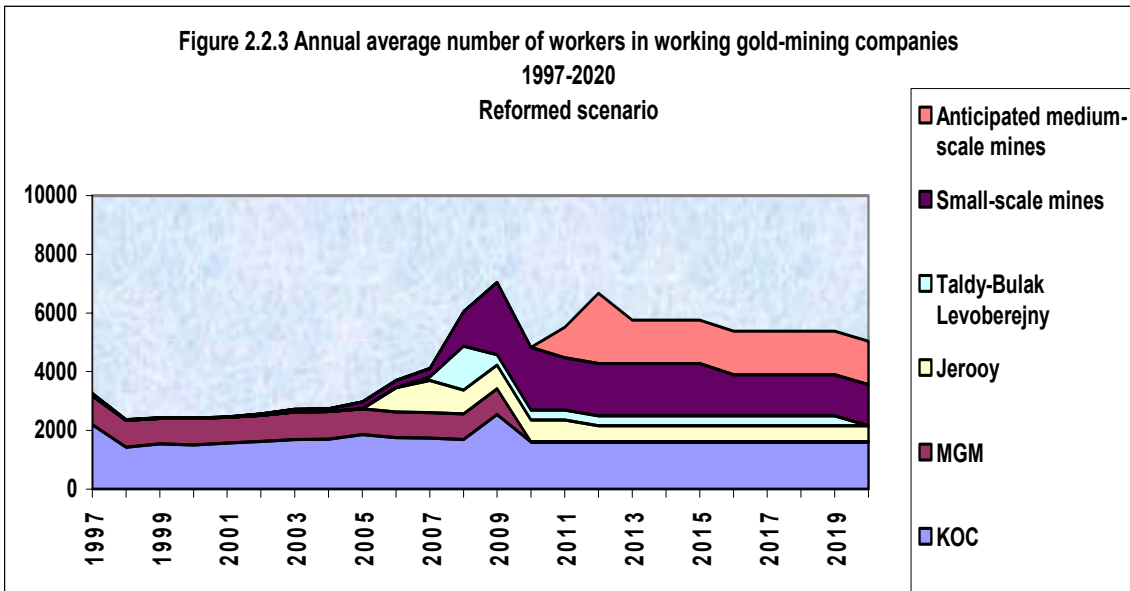


The dynamics of gold-mining industry development under the reformed scenario are given in the figures 2.2.2 - 2.2.11

Gold production

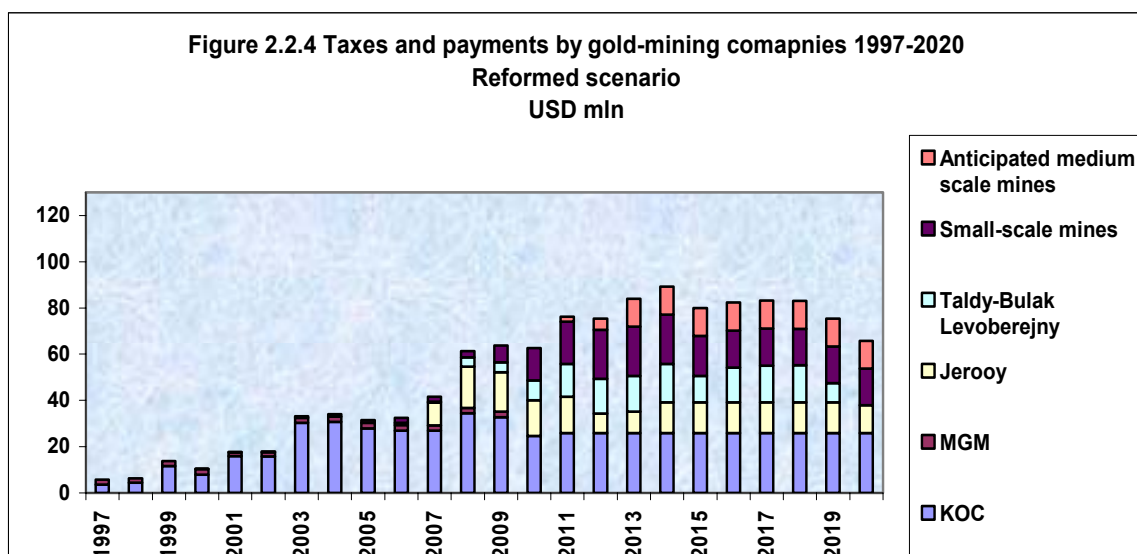


Employment



More than 7000 people will be employed in 2009 and 2013 in the periods of construction of mines. Annual average number of jobs for 2005-2020 will amount to 4405. Direct and indirect employment will reach more than 17000 jobs for this period.

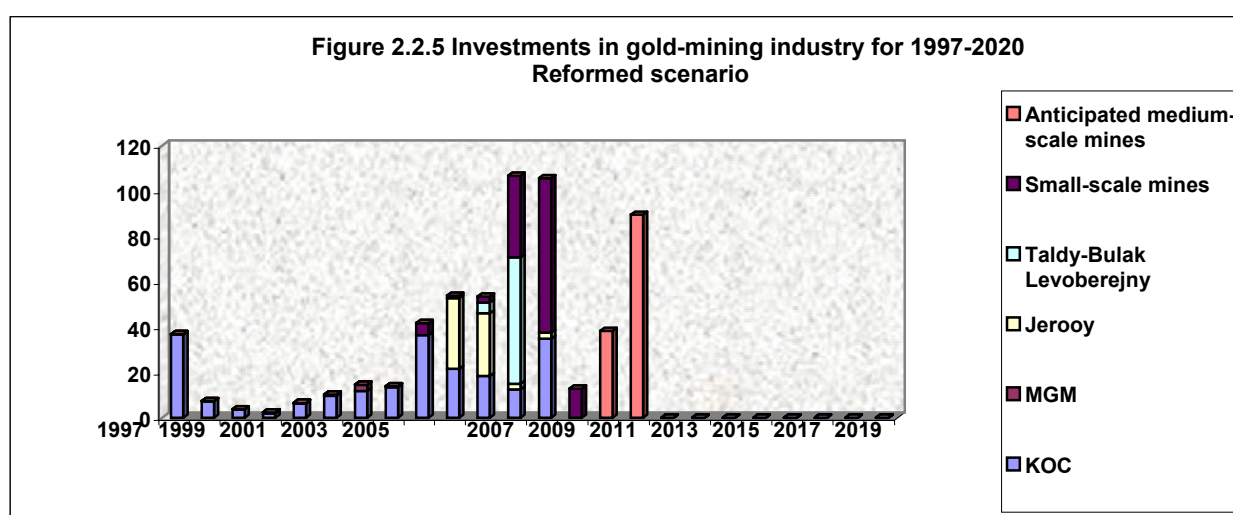
Taxes



The annual average amount of taxes and other payments from gold-mining companies will be USD 65.02 million for the period of 2005-2020. More than USD 80 million per year will be achieved in 2014.

Investments

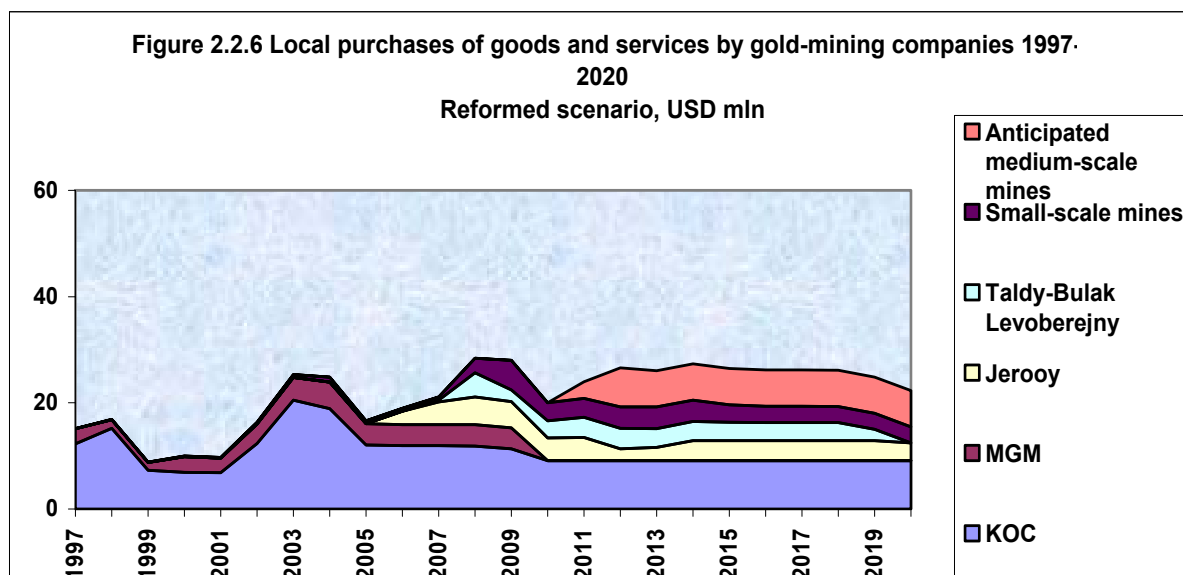
During the period 2005-2020 the total amount of investments in the gold-mining industry will reach USD 503 million. The maximum capital expenditures (more than USD 100 million) will take place in 2008-2009 with the introduction of a number of mines into operation.



* Investments have not been considered after 2013.

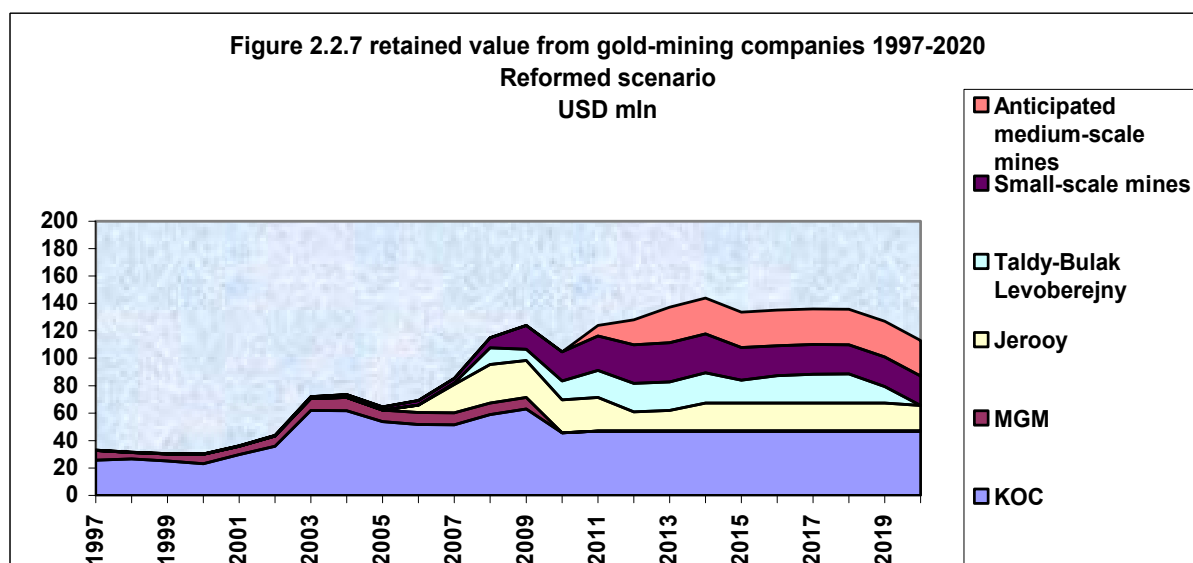
Local purchases

Annual average cost of local service and purchases during 2005-2020 will constitute USD 24.3 million. The maximum will be in construction period 2008 and reach more than USD 28 million. This is explained by expenditures for local construction materials.



Retained value

One of the most important indicators of the impact of the mining industry on the economy of Kyrgyzstan is the indicator of retained value.



As it is seen in the figure 2.2.7, the largest retained value will be in 2014, more than USD 140 million.

Contribution of the mining industry as a whole under the reformed scenario

Along with gold-mining companies, the reformed scenario assumes the operation of other mines, whose owners are now making geologic and economic evaluations.

Kara-Korum wollastonite mine

At the present time, the technology of extraction of concentrates BK-1, BK-2, BK-3 is under development. This scenario considers the start of operations from 2010. At an annual production of 200 thousand of ore, reserves will last 22 years. The total sum of initial investments is USD 31.5 million.

Trudovoe tin deposit

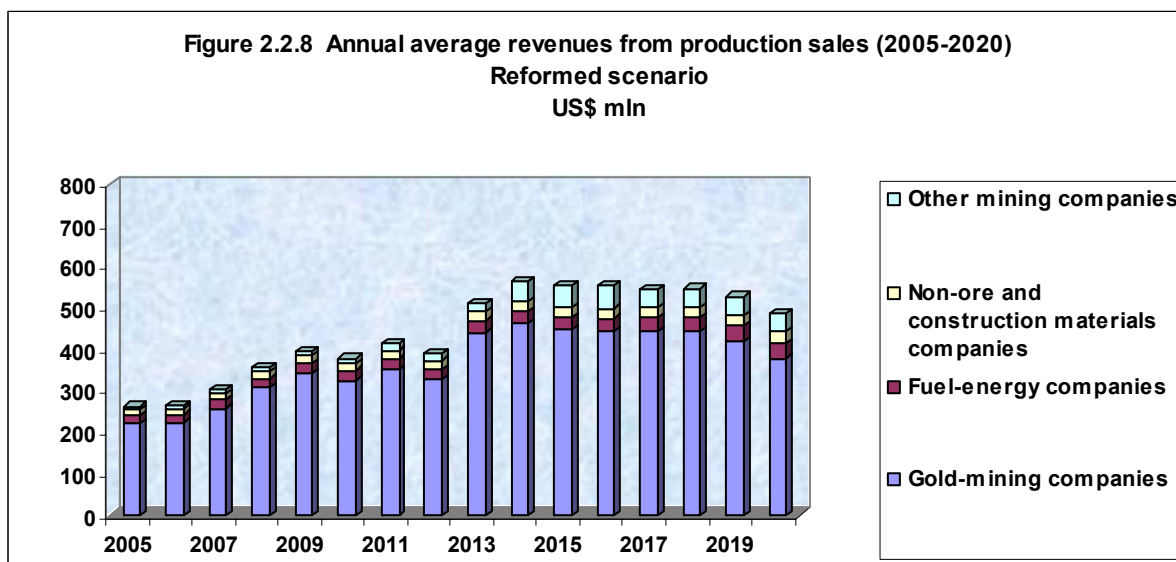
The mining of tin- ores has resumed at the Trudovoe deposit. In 2005, about 5000 tons of ore were mined. In order to increase the production of mining and processing of ore, it is necessary to invest US\$ 17.6 million. With the average price of tin at US \$ 6500 per ton in October 2005, the tentative price for tin in concentrate will be US\$ 5652 per ton. With a gradual increase of production capacity to 100 thousand tons per year, the mine will operate for 11 years.

The development of Trudovoe tin deposit and Kara-Korum wollastonite deposit will result in the creation of 200 permanent jobs. During construction, employment will increase to 500 direct jobs and more than 700 indirect jobs. The annual average sum of taxes will be US\$ 916 thousand.

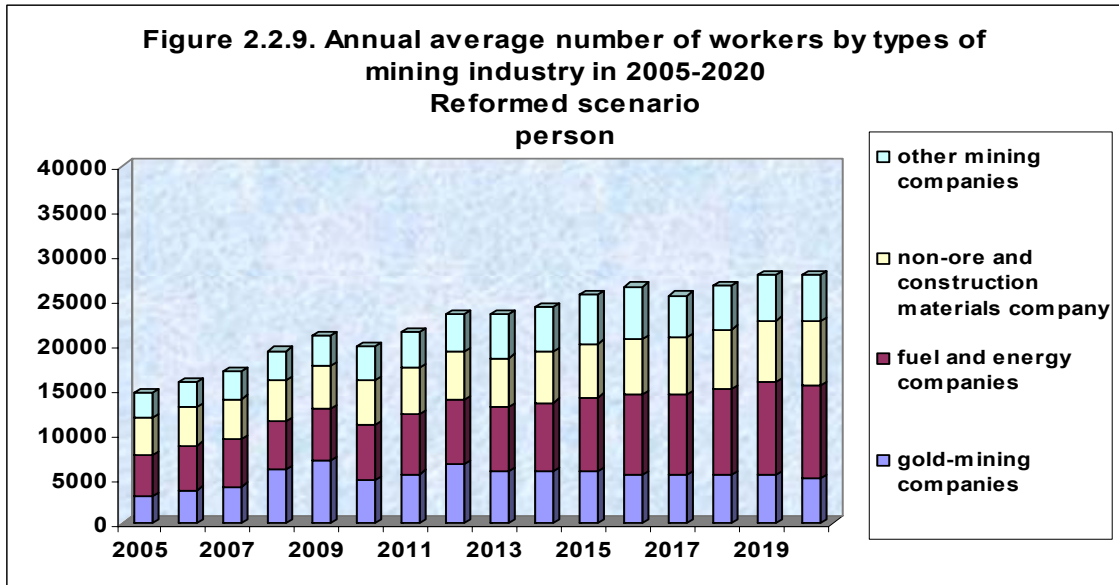
Non-ore minerals

The reformed scenario assumes the increase in the production of mineral construction materials, hydrocarbons, and other minerals. The growth of production of construction materials is expected to be on the basis of the dynamics of demand in internal markets.

Production

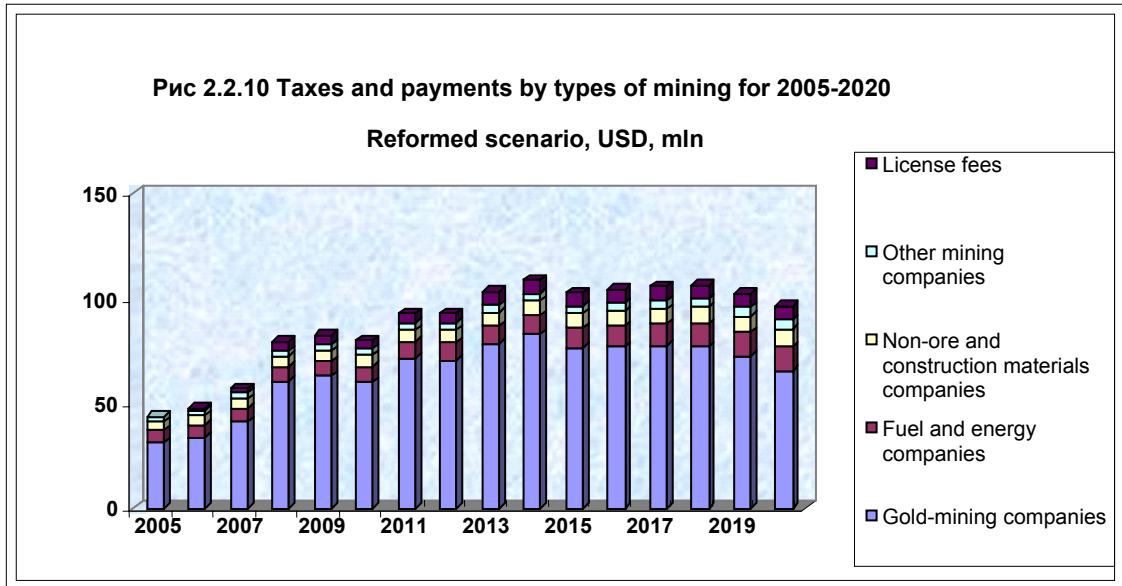


Employment



According to the reformed scenario, the number of workers in the mining sector will grow to 27 thous. people by 2019

Taxes



The main share of tax payments belongs to the gold-mining sector and is linked to the high royalty (5%).

Retained value

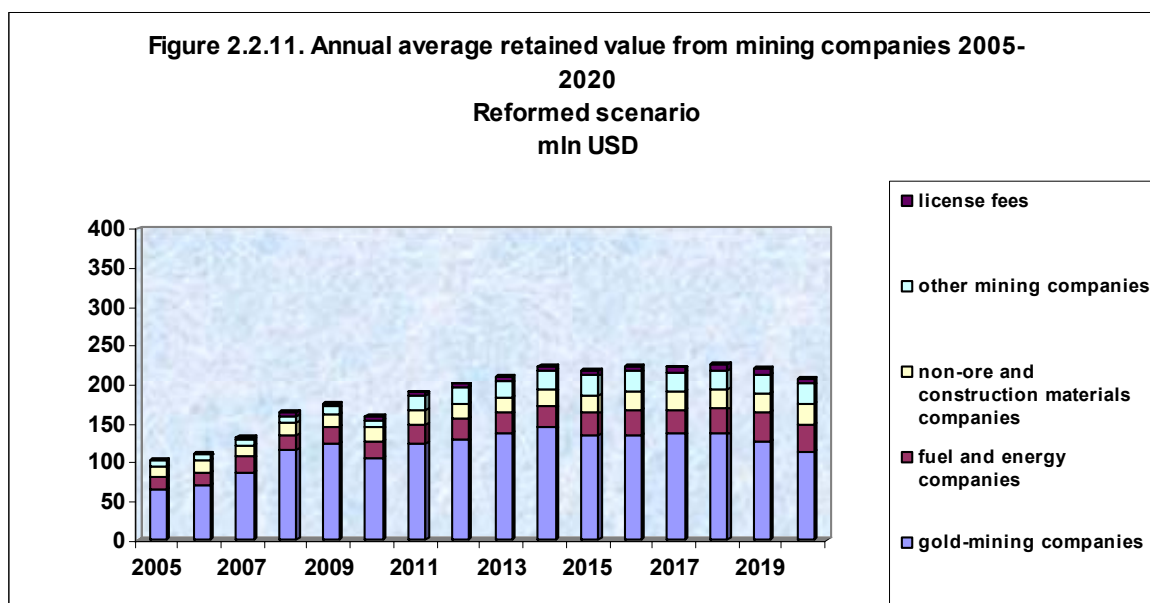


Table 19 shows the economic benefits of the mining industry as a whole.

Table 19

Economic Benefits Streams Indicators – 2005-2020

Reformed scenario

(Gold price is 400\$ per ounce from 2005)

Indicator	Unit of Measurement	Gold-ore, total	Fuel and energy	Non-ore	Other	Total
Investments, total	US\$ mln	502,76	104,90	24,73	51,29	683,67
Production cost, annual average	US\$ mln	364,90	27,70	20,55	28,09	441,23
Total taxes, annual average	US\$ mln	65,02	8,51	6,11	10,53	90,18
Export balance, annual average	US\$ mln	365			26,71	391,61
Employment total	Person	11454	9112	11597	8618	40781
<i>direct</i>	person	4405	6074	5522	3936	19939
<i>indirect and induced</i>	person	7049	3037	6075	4682	20843
Annual payroll	US\$ mln	17,15	8,85	4,81	3,90	34,71
Local purchases, annual average	US\$ mln	24,31	8,60	8,84	3,62	45,36
Retained value	US\$ mln	106,48	25,96	19,76	18,05	170,25

Average annual amount of commodity output in physical terms

Product	Measurement unit	Gold	Fuel and energy	Non-ore	Other
gold	kg	28613			
oil	t		100000		
gas	thous.M3		45000		
coal	t		1000000		
mineral water	M3				20000
mercury	t				600
antimony	t				1000
tin	t				470
wollastonite concentrate	t				97960
fluorspar	t			5000	
gypsum	t			20000	
cement material	t			150000	
cover stone	M3			15000	
Silica raw material	t			25000	
clay	M3			1500000	
Sand-gravel aggregate	M3			750000	
Limestone	t			750000	
building stone	t			60000	
Sand	M3			750000	
Expanded clay and agglomerit	M3			3000	

Under the reformed scenario the largest share of investments, taxes paid by mining sector, and exports will belong to the gold-mining sector. At the same time, the contribution of fuel-energy and non-metallic sectors will grow.

Conclusions:

Shown in the reformed scenario: if the Government undertakes decisive measures for improving the tax and regulatory environment of the mining sector, it is expected that:

- 1. Gold-mining will remain one of the main sectors in the budget**
- 2. Tax revenues to the state budget from the mining sector will exceed USD 100 mln**
- 3. Growth rates of minerals production will be increased twice during the 8-10 years period**
- 4. The total investment will grow by 5 times**
- 5. Direct and indirect employment will increase by two times**
- 6. Exports will be USD 390 million per year.**

2.3 High Growth Scenario (Speculative)

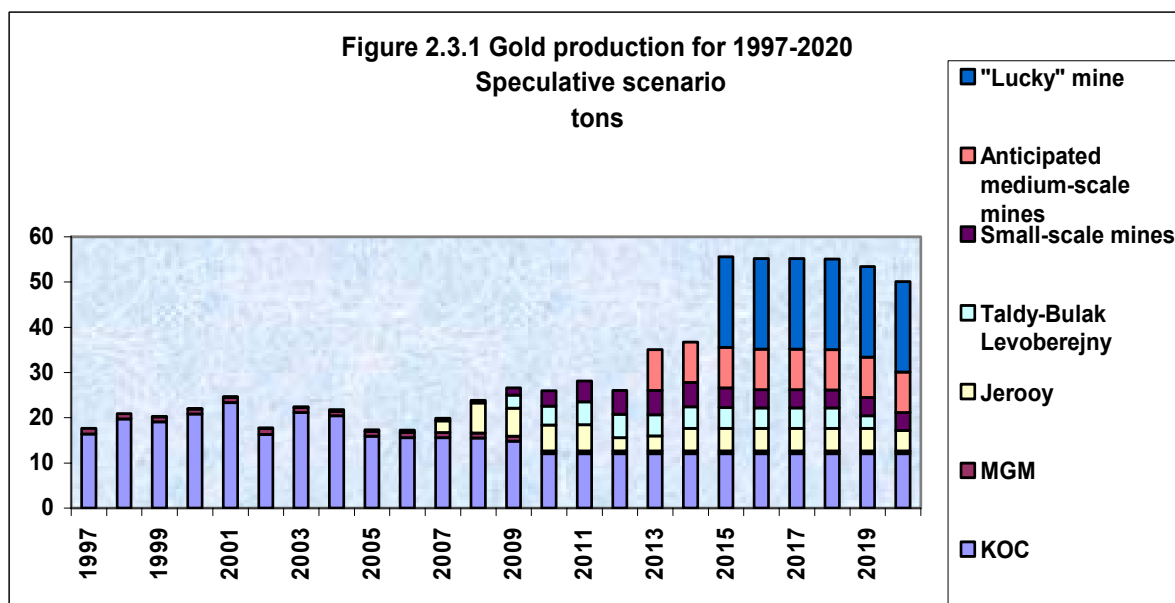
The speculative scenario considers the maximum profit to the country from mining that can be reached by reforming the sector, and that reforms will have a favorable result:

- investment risks will be substantially reduced due to the sector regulation reforms
- high prices of gold (USD 470 per ounce) and other minerals will be preserved
- further mining of underground resources of the Kumtor gold-mine (200 t) with annual production of 12 t
- anticipated medium-scale deposits with 50 t each with annual production of 4.5 t
- a gold-mine “Lucky” from 2015 equal to Kumtor mine will start operation. A possibility of such discovery is also confirmed by the statistical distribution of existing gold mines (figure 2.2.1).
- extraction of coal will increase by three times, extraction of oil and gas will double in comparison with the current period
- demand for construction materials and their extraction will increase by 2-4 times
- industry will develop production of a number of supplies (explosive substances, chemical reagents, metal items, etc.) that will increase local purchases and indirect employment (up to coefficient 3).

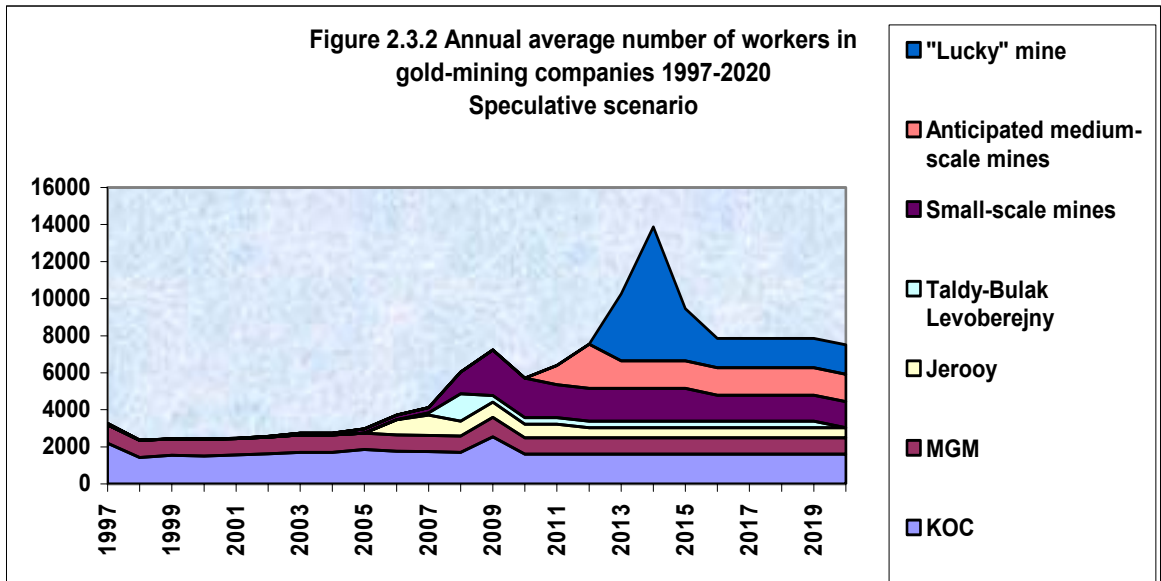
Figures 2.3.1-2.3.7 illustrate the main parameters of the contribution of gold-mining companies to the economy of Kyrgyzstan under the speculative scenario.

Gold-mining companies

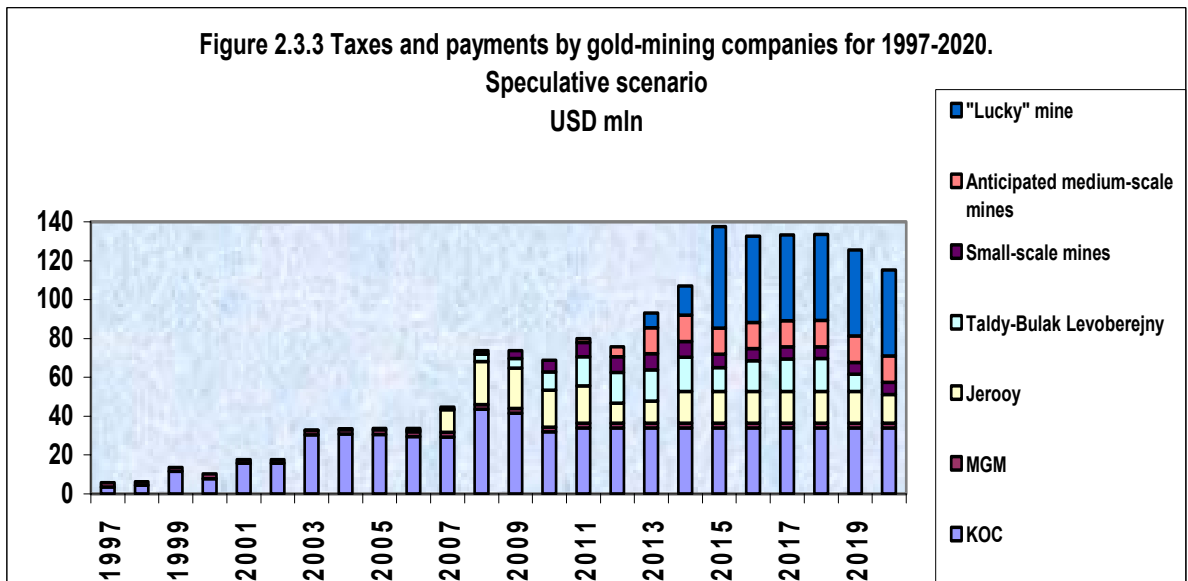
Gold production

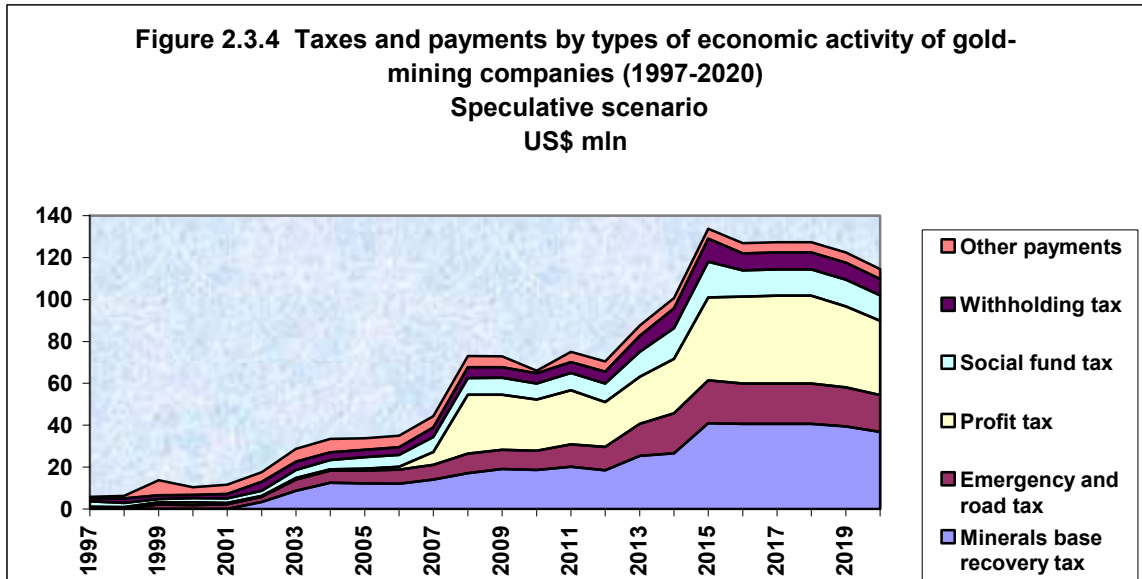


Employment

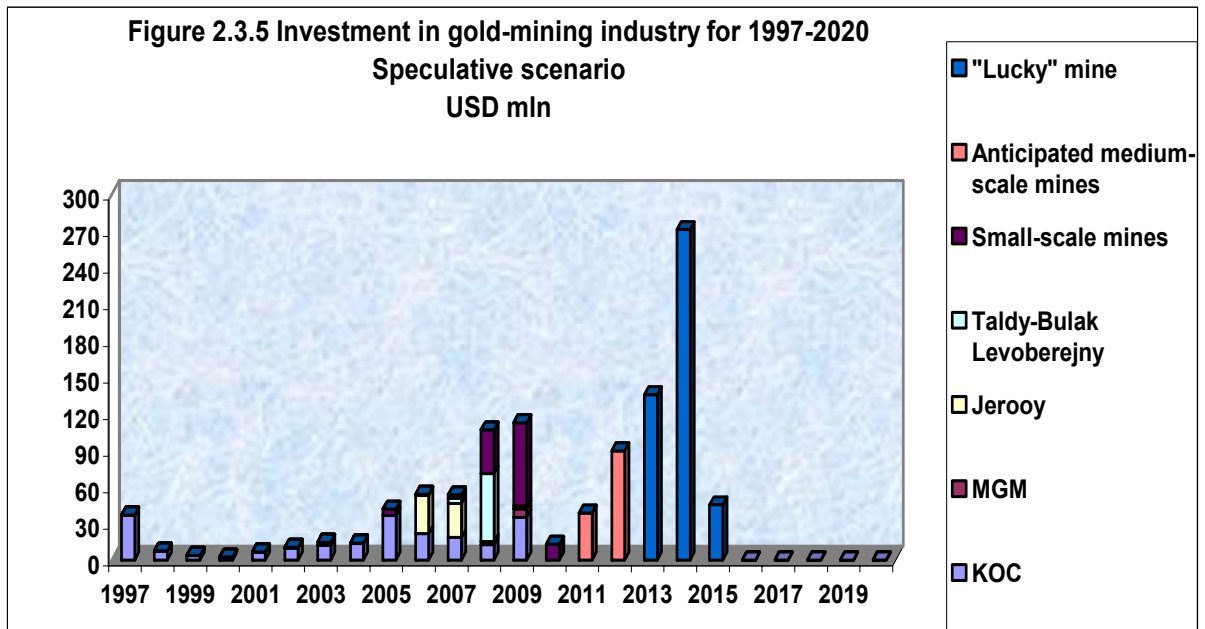


Taxes

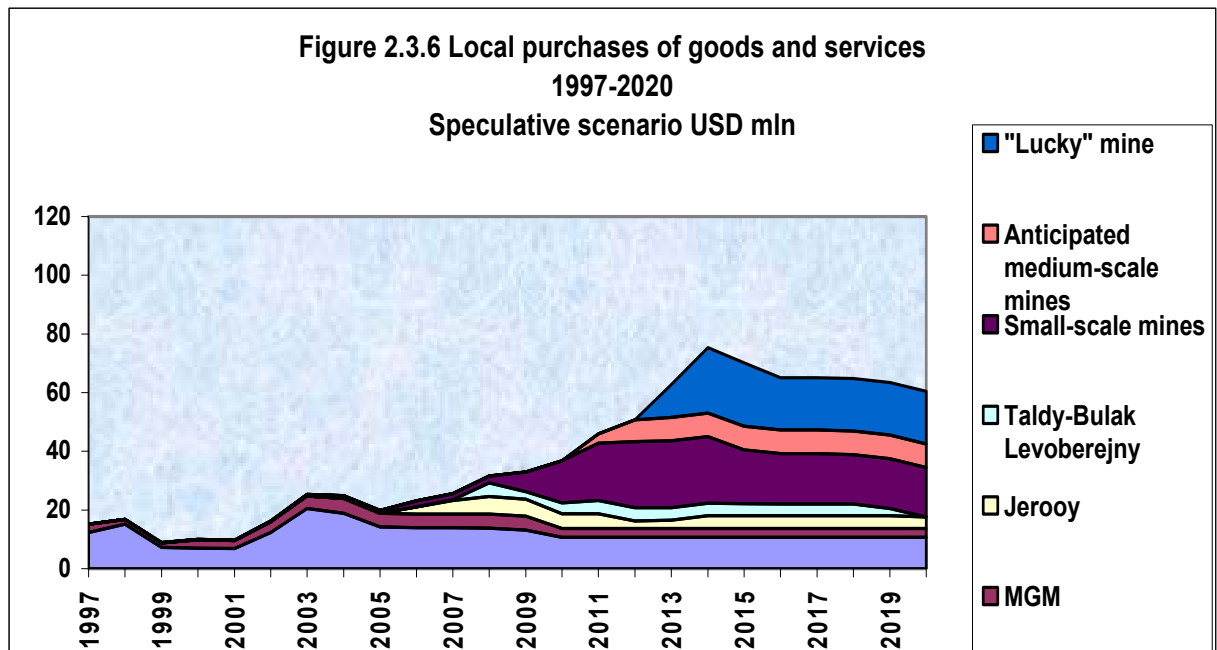




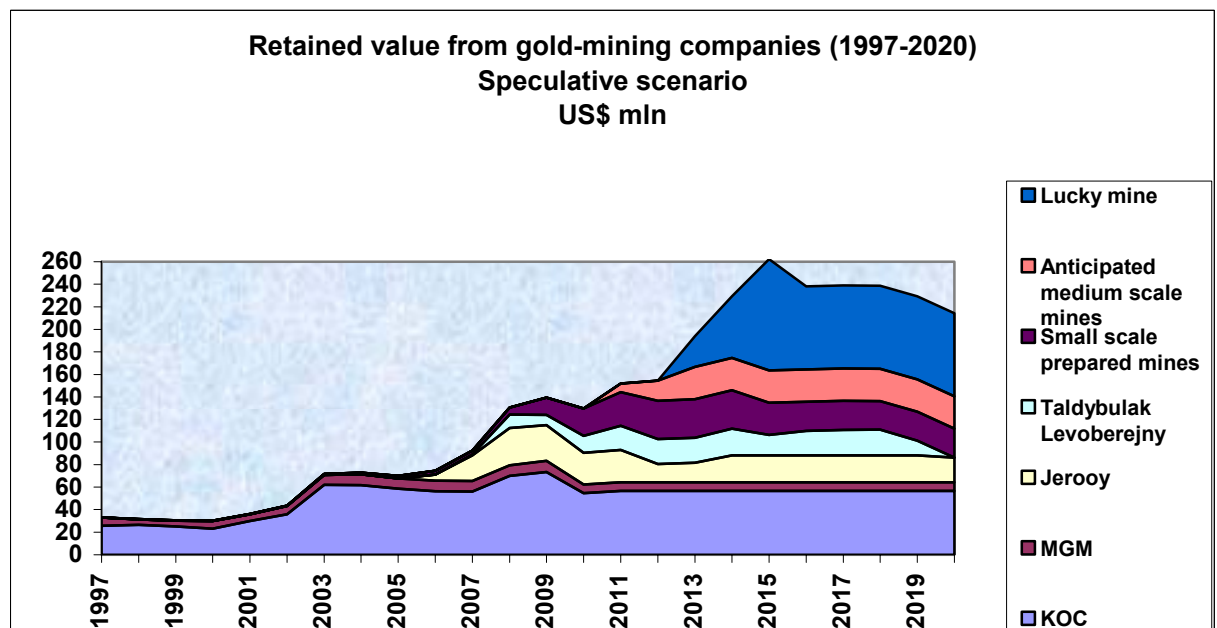
Investments



Local purchases



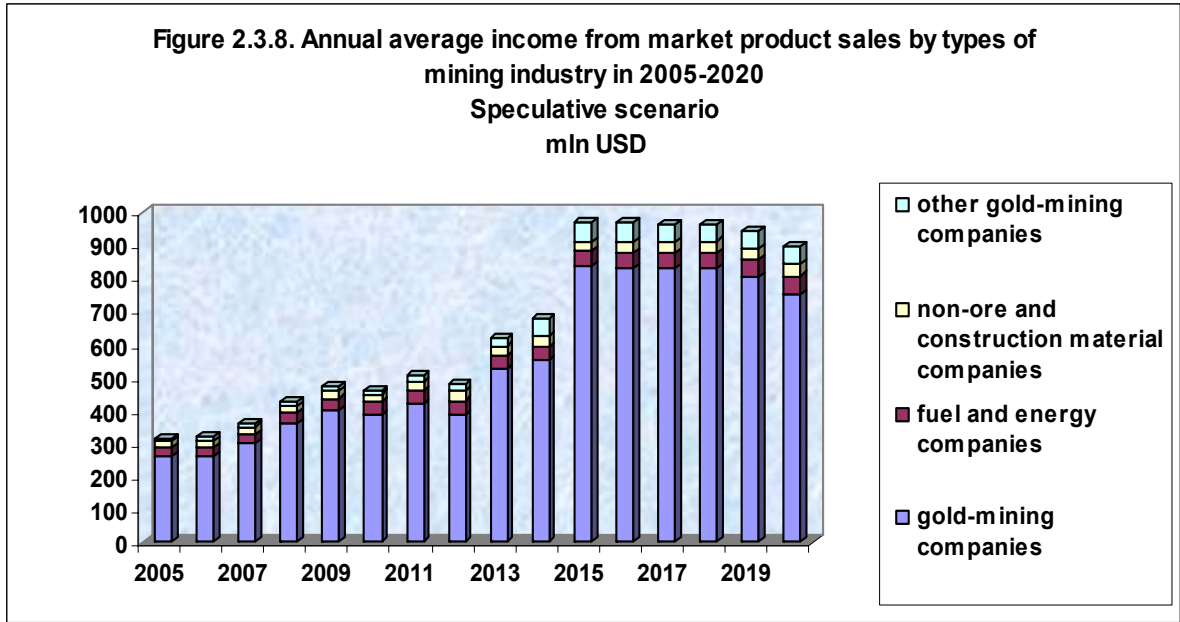
Retained value



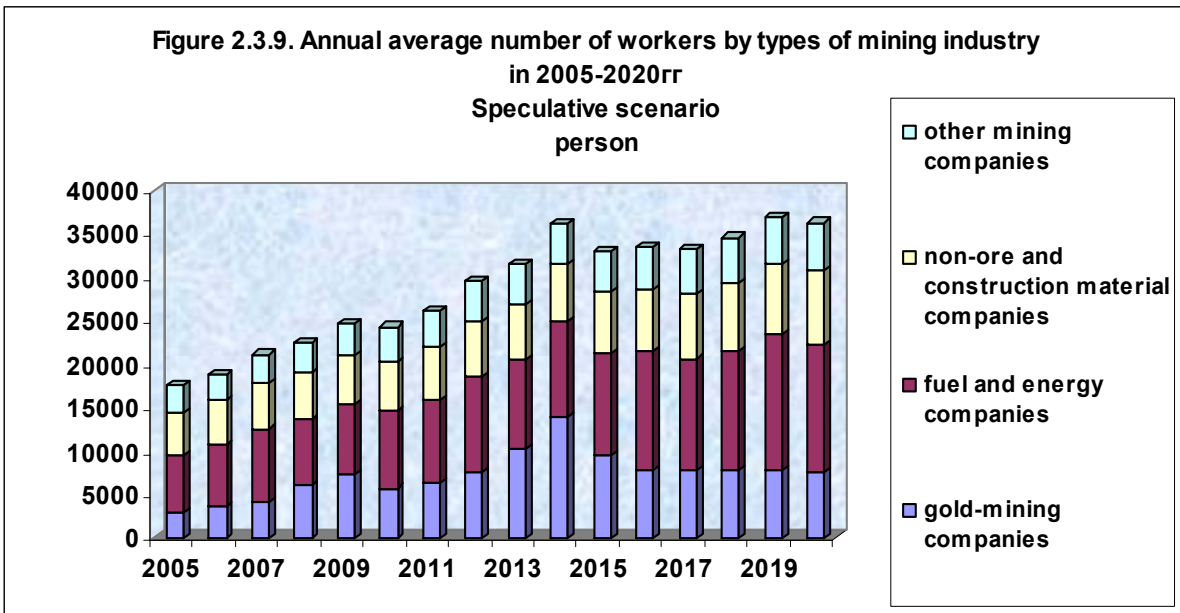
Contribution of the mining industry as a whole under the Speculative Scenario

The dynamics of the change of annual average number of employees, income from marketing, taxes and retained value as a whole by sectors of the mining industry under the Speculative Scenario for 2005-2020 are illustrated in figures 2.3.8-2.3.11.

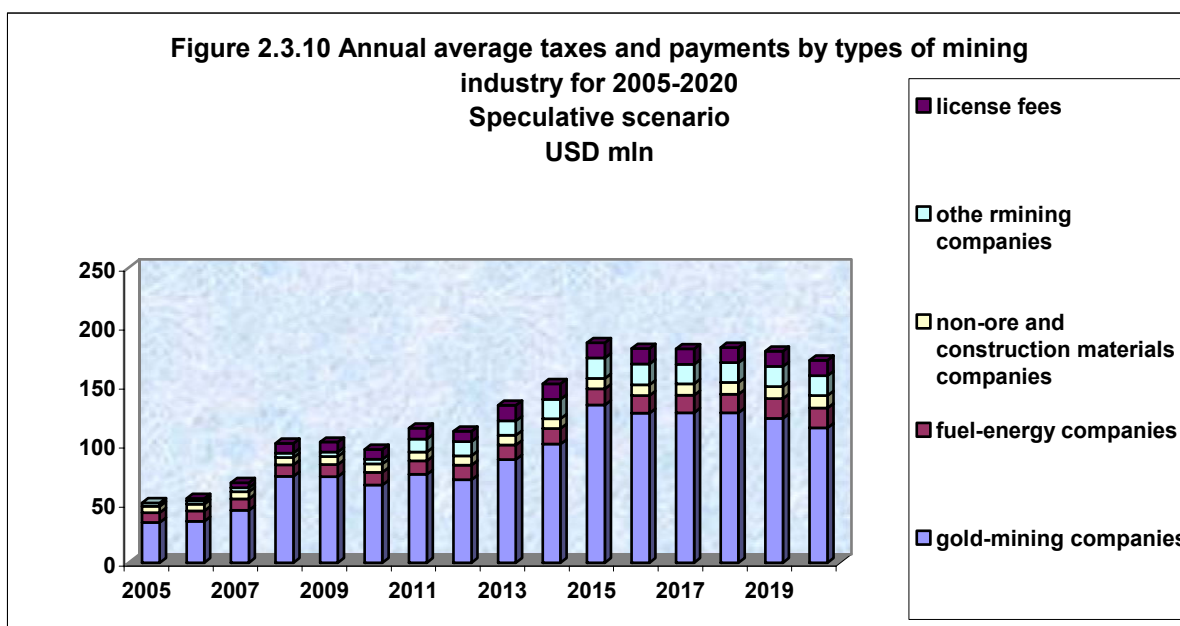
Production



Employment



Taxes



Retained value

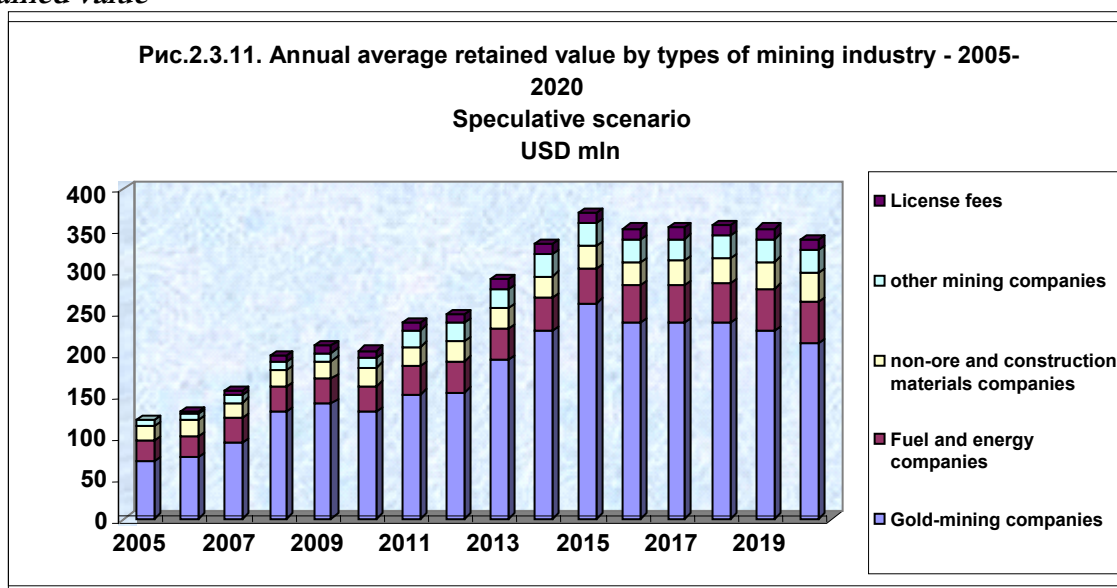


Table 20 gives the main parameters defining the economy of the mining sector of Kyrgyzstan in the speculative scenario.

Table 20

Economic Benefits Streams Indicators – 2005-2020
Speculative Scenario

(Gold price is 470\$ per ounce from 2005)

Indicator	Unit of Measurement	Gold-ore, total	Fuel and energy	Non-ore	Other	Total
Investments, total	US\$ mln	961,68	120,00	33,27	53,29	1168,24
Production cost,	US\$ mln	546,56	41,10	27,51	31,09	646,26

annual average						
Total taxes, annual average	US\$ mln	88,01	12,50	7,99	10,88	119,38
Export balance, annual average	US\$ mln	547			29,54	576,10
Employment total	Person	29058	14163	13551	9115	65888
<i>direct</i>	person	7265	8768	6453	4209	26694
<i>indirect and induced</i>	person	21794	5396	7098	4906	39193
Annual payroll	US\$ mln	18,00	12,79	5,90	4,15	40,85
Local purchases, annual average	US\$ mln	48,93	11,96	11,66	4,18	76,74
Retained value	US\$ mln	154,94	37,25	25,55	19,21	236,96

Average annual amount of commodity output in physical terms

Product	Measurement unit	Gold	Fuel and energy	Non-ore	Other
gold	kg	36187			
oil	t		150000		
gas	thous.M3		60000		
coal	t		1500000		
mineral water	M3				40000
mercury	t				600
antimony	t				1000
tin	t				470
wollastonite concentrate	t				97960
fluorspar	t			5000	
gypsum	t			30000	
cement material	t			200000	
Dimension stone	M3			20000	
Silica raw material	t			30000	
clay	M3			2000000	
Sand-gravel aggregate	M3			1000000	
Limestone	t			1000000	
building stone	t			80000	
Sand	M3			1000000	
Expanded clay and aggloporit	M3			4000	

The speculative scenario considers the maximum possible benefits from the mining sector under the most favorable developments.

Conclusions:

As a result of the speculative scenario in addition to the reformed scenario:

- 1. Growth rates of minerals production for 8-10 years will increase by three times**

- 2. Amount of investments for this period in mining industry will exceed USD 1 billion**
- 3. Annual average income from mineral marketing will be more than USD 900 million by 2015**
- 4. Annual average export balance will be about USD 600 million**
- 5. Number of auxiliary facilities related to the mining sector will increase and direct and indirect employment will reach 65 thousand jobs.**

Table 21 gives the main parameters defining the economy of the mining sector of Kyrgyzstan by scenarios while the figures 2.3.13-2.3.16 show the results by years 2005-2020.

Table 21

Mining Development Impact Scenarios

✚ **Passive Scenario includes:** current gold production in Kumtor, Makmal and Solton-Sary gold mines to 2010 plus existing production of mercury and non-ore materials

2005-2010

Taxes per year: US\$ 37 million

Export balance per year: US\$ 234 million

Jobs direct, number: 14398

Local purchases per year: US\$ 27 million

Investments: US\$ 124 million

Retained value per year: 87 million

Under the Passive scenario, all the gold-mining companies will stop functioning by 2010. With the existing rates of mining (coal, oil, construction materials, mercury, etc.), the contribution of mining industry to the economy of the country will be represented by the following indicators:

2010-2020

Taxes per year: US\$ 8 million

Export balance per year: US\$ 6 million

Jobs direct, number: 11613

Local purchases per year: US\$ 12 million

Investments: US\$ 0 million

Retained value per year: US\$ 31 million

✚ **Reformed Scenario:**

- Reforms in regulatory environment
- Continuation of underground development at Kumtor and Makmal gold mines
- Introduction into operation of gold mines – Jerooy, Taldybulak-Levoberejny plus mines under project design – Kuru-Tegerek, Ishtamberdi and Tereksay mine
- Introduction of 2 gold-mines with 50 t reserves each with annual production of 4.5t (9 t altogether)
- Increase of non-ore materials' production for 50%
- One new tin mine

2005-2020

Taxes per year: US\$ 90 million

Export balance per year: US\$ 391 million

Jobs direct, number: 19939

Local purchases per year: US\$ 45 million

Investments: US\$ 683 million

Retained value per year: 170 million

✚ **Speculative Scenario:** reformed scenario plus introduction into operation of “Lucky” gold mine equal to Kumtor gold mine, gold price of US\$470/ounce, 50% increase of non-ore materials, coal, oil and gas, increase of local purchases due to import substitution.

2005-2020

Taxes per year: US\$ 120 million

Export balance per year: US\$ 576 million

Jobs, number: 26694

Local purchases per year: US\$ 76 million

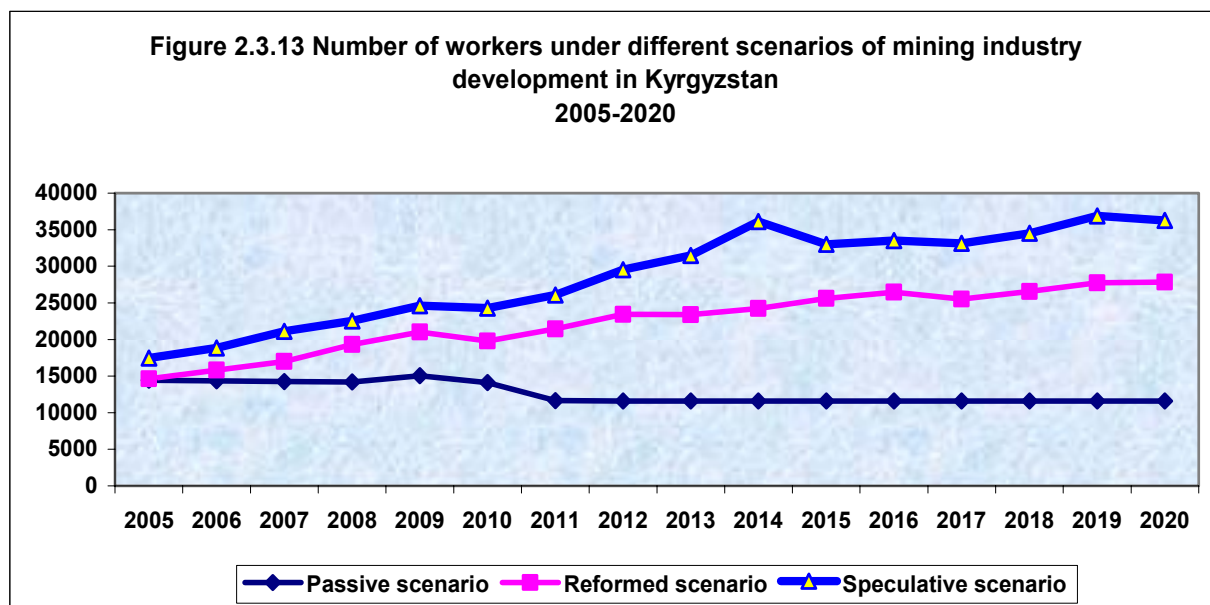
Investments: US\$ 1168 million

Retained value per year: 237 million

The dynamics of the macroeconomic indicators of the mining industry under different scenarios are illustrated in the figures 2.3.13 – 2.3.16.

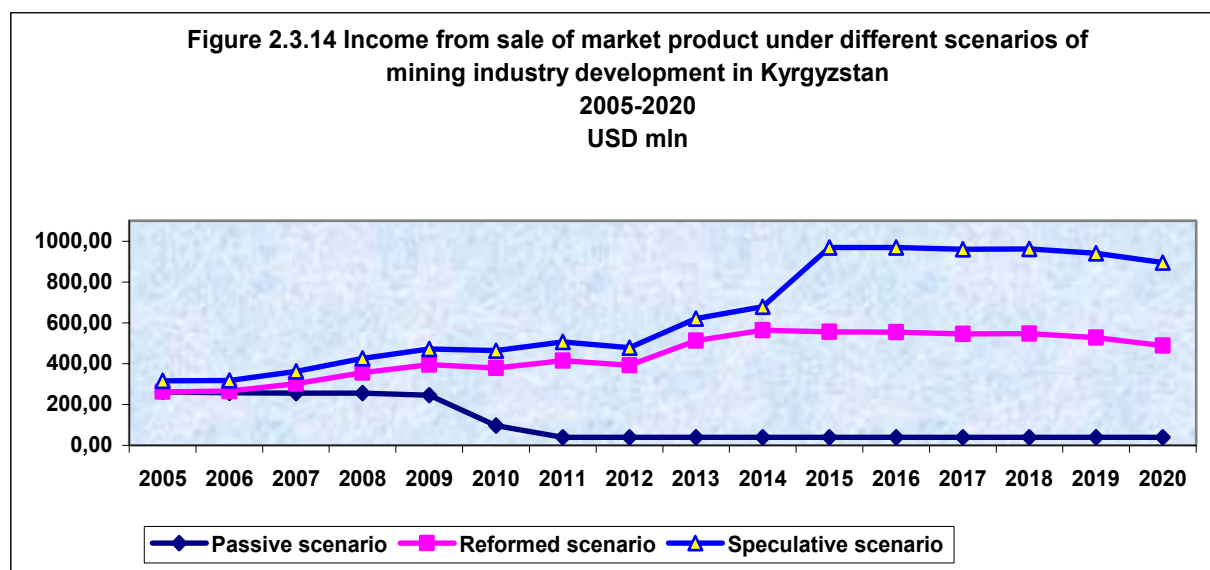
Employment directly in industry under the different scenarios shows a reduction of jobs in the Passive scenario by more than 4 000 but with sustainable growth in the Reformed and Speculative scenarios (respectively 12 thousand and 20 thousand.). The temporary increase in 2009 and 2014 correspond to assumed construction periods.

Employment under different scenarios



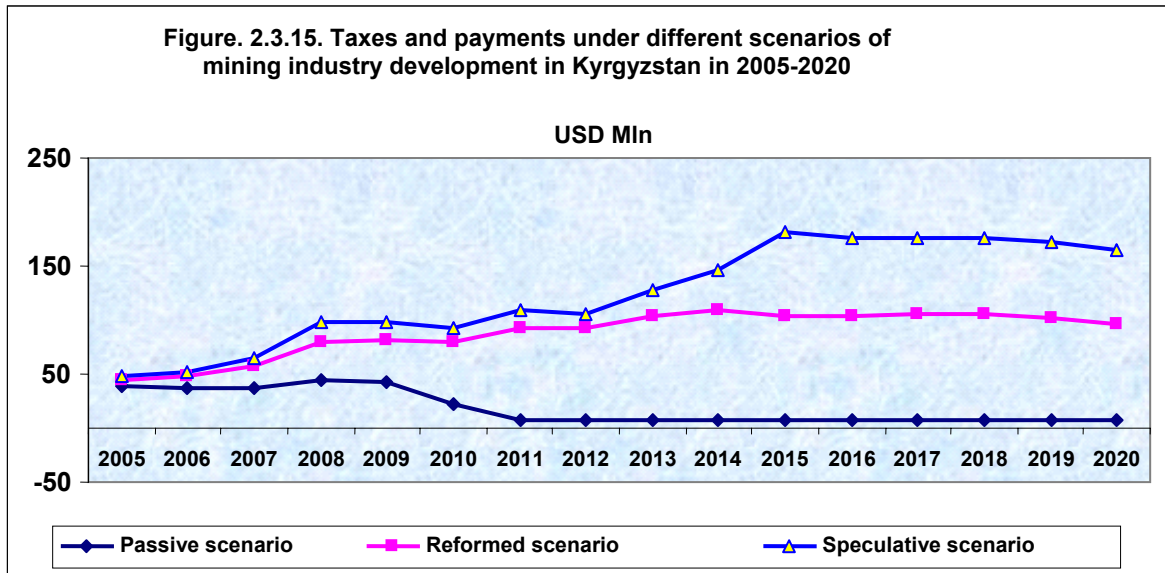
Sales proceeds

The Passive scenario forecasts a sharp fall of proceeds from sales of products from 2009 onward. Conversely, in the reformed scenario sales proceeds will double and in the speculative scenario will increase by five times.



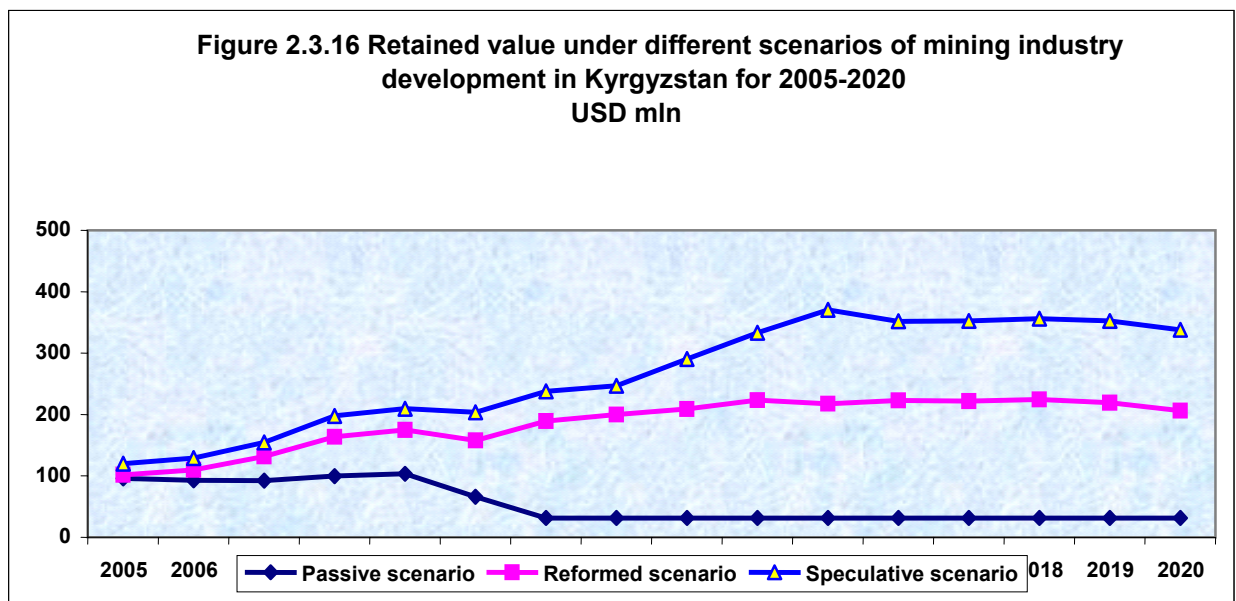
Taxes

Taxes and payments will change proportionally to incomes. In the Passive scenario tax revenues will fall during the period 2009-2011. In the Reformed scenario, they will gradually increase and grow by two and half times by 2015.



Retained value

Retained value in the Passive scenario will fall but will increase by more than two times in the Reformed scenario. Implementation of the Speculative scenario will raise retained value by three and half times by 2015.



CHAPTER III. REFORM PROCEDURES

In order to implement the second and third scenarios, it will be necessary to reform the legal regime, taxation and administration of the mining industry.

1. LEGAL REGIME FOR SUBSOIL USE

A prudent investor first studies the legislation of a country to know the business environment before making a decision to invest. The laws of the Kyrgyz Republic on subsoil use have been analyzed from the point of view of risk assessment by individual potential investors.⁷

The Law on Subsoil Use was adopted in 1992 as one of the first new laws of the Republic. Although it started the transition to market economy, strict state control over subsoil users was practiced. A complicated system of licensing based on negotiations has been legalized and is still present today.

- In 1993-1994 the World Bank experts analyzed the legal regime for mining sector and noted that: *“such provisions as requirements of optimal use of resources, state expertise of mineral stocks, accounting of extracted and non-extracted main and associate minerals, prevention of wasteful or harmful extraction practices, state’s right to determine mineral resources production, provision of raw materials, standards for geological studies and rational use of resources reflect the previous command and control philosophy”. The new mining law of 1996 was made under pressure of executive power bodies, and further of the Parliament, kept and even strengthened many parts of the previous command administration methods in various by-laws”.*
- In 1998-1999, a group of JICA experts analyzed the Law and in principle, repeated these observations.

Only a small part of these problems was corrected by legislation or only a semblance of such corrections were made while unfortunately adding further complications.

- The study of mining sector made by the World Bank experts in 2000 showed that *“the objectives made for mining and metallurgical sectors of industry to the most extent are not achieved and recommended activities are not implemented”* (recommendations of 1995). In particular, the rules of application, registration on a “first come, first served”, exclusiveness of licenses of geological study and western resource classification are not implemented”

⁷ This chapter considers the most important problems in legislation regulating subsoil use. More comprehensive overview is given in the *“Monitoring of mining legislation”*. Document of IDF Grant Project. Bishkek 2005.

- Based on the results of the study, the Government developed a plan of actions⁸ aimed at improving the mineral use process. However, only small parts of the action plan were implemented. All the above-mentioned studies were related to the Law on Subsoil Use. In the framework of the present study, all the specialized legal acts directly linked to subsoil use including by-laws such as regulations, provisions, detailing laws, and separate regulations of the Government were considered.

Furthermore, other legal documents related to mining were studied.⁹

LAW ON SUBSOIL AND RELATED DOCUMENTS

- The application of this law was narrowed with adoption of new laws on coal, oil and gas and on agreements on production sharing. As a result, there appeared a problem of overlapping rules. Moreover, the definition of terms in these laws differ. It is recommended to unite these laws in a single Mining Code.

Obviously, such uncertainty complicates administration and concerns an investor.

- The conceptual base needs significant revision. It is advisable to eliminate from use the terms of a command economy such as: “Balance stocks”, “Irrational selective working”, “Excessive losses”, “Subsoil protection”, etc. The term “Feasibility study” should have a detailed definition as a prognostic document, which serves to justify the viability of the project with a certain probability and probable risks. In practice, this term has been given a unjustified canonic meaning.
- The powers of the Government with regard to “*elaboration of legal and methodical provisions, rules, technological mining standards; expertise of geological exploration and mining projects for subsoil use and protection...*” are unusual and frightening to foreign investors, who are not used to facing such problems in other market economy countries. The competence of state authorities with regard to the production process should be limited to the norms of environment and labor safety. It is possible to introduce some reasonable restrictions on using wasteful technologies such as explosives for extracting facing stone or obsolete equipment with very low mineral recoveries.

⁸ The Order of the Government of KR as of 19 January 2002, #23 “On approving actions aimed at reforming mining sector of KR”

⁹ “*Monitoring of mining legislation*”. Document of IDF Grant Project. Bishkek 2005.

- According to the law, subsoil can be in private ownership, which contradicts the Constitution of KR, which stipulates only state/public ownership of subsoil. Such contradictions increase the risk assessment of investments.
- The rights of a license holder are not clear due to the introduction of private ownership of land. In particular, it is uncertain if a license for geological study and mining on territory that is under private ownership or rented from the state, can be issued.

LICENSING

- The chapters on granting and holding license for subsoil use should be modernized:

The requirements of the license itself and the application procedure to obtain a license should be differentiated. The “First Come, First Served” principle should be introduced. A license should be exclusive, and granting of two licenses for one area is absolutely unacceptable.

It is necessary to introduce progressive license/rental fees that will encourage license turnover and reduce speculative holding of licenses.

Licensing procedures specified in the Regulation on licensing are too complicated and bear unjustified risks for investors.

The Law defines: “Should a deposit be discovered, the licensee shall have an exclusive right to obtain a license”. However, the granting of license is conditioned by the signing some preliminary agreement on project design. “*License without license agreement is invalid*”. Project design requires significant financial costs and takes a long time during which a license holder does not have the right of the subsoil use.

Foreign companies say that they are forced to make two feasibility studies: one for the banks, another for the licensing office because the requirements differ significantly.

A company is exposed to the high risk of implementing expensive project design works without any rights to the mine. It cannot begin organizing financing, and that will delay mine development by at least a half-year.

- The necessity of a license agreement is a subject for discussion. The framework of such agreements are not specified, and that makes this document uncertain and unpredictable for the investor. It is not clear what requirements the state authority will set and if they are acceptable to the license holder: for example, the term of project design or organization of financing. There are no

guarantees for the investors that the licensing office will agree to a change in the license agreement in the case of changes in project parameters discovered during operation. The license agreement itself thus creates an additional risk for an investor.

The Government must offer very attractive mines in order to involve investors under such conditions.

- The licensing procedure requires verification of the applicant's professional qualifications. At the same time, the Law on Licensing separates types of business activities, and requires verification of professional qualifications and this is obviously an excessive requirement. Licensing of reconnaissance, exploration and mining does not comply with the concept of the Law on Licensing and is duplicated by the conditions of subsoil licensing. It must be cancelled as one of the obstacles for investments. In Russia, Kazakhstan and Belarus, minerals reconnaissance and exploration are not subject of licensing. There is considerable confusion in the understanding of (a) licensing of the type of activities and (b) licensing of subsoil objects. This confusion exists in the legislation, also.
- The competence of local state authorities in the field of mining regulation specified in the article 6 of the Law, is quite restricted.

As mining activities exerts an important impact on local communities, the local administrations have more chance to discover illegal mining of minerals in their territories or environmental violations. Therefore, the local state authorities should be given more power in minerals regulation.

Nevertheless, the requirement of the licensing office to the applicant for geological study to first obtain permission from the local authorities to conduct exploration works is excessive.

- A license for mining should be granted for a longer term; for example, 20 years and should not depend on a feasibility study, which is only a prognostic document. It should not be allowed to issue a license to different persons on one tract for different minerals.
- The Law also envisages the transfer of license to third persons but there must be an agreement with the licensing office. It does not say on what basis the agreement can be achieved and on what grounds it can be refused. To prevent speculation with licenses, it is necessary to introduce temporary restrictions to the transfer of license, for example: 2 years during which the license transfer is forbidden. It is advisable to cancel the requirement of gaining agreement of the

licensing authority for transferring the license to third persons. There is always a possibility to sell a company but not a license and that is today in practice. In this case, the licensing authority is not able to control license retransfer.

- The procedure of granting mineral rights should be modified. First of all, the application procedure and content of application for license and the procedure of granting the license should be separate from each other. The application should be registered immediately without presenting any justifications of financial and technical capacities. After registration of application, the licensing office should be given time to determine if the applied area is free, at the same time that the applicant prepares a work program, a statement of financial capacities, and a statement of experience and professionals to be employed for project implementation.

To receive a license the applicant should present a minimal work program in physical and financial terms, but a feasibility study or project should not be required. The requirement to sign an agreement on project design and the limitation of the project design period under the threat of license recall should be cancelled. An investor is uncertain what period a licensing authority would impose on him. The license recall can do serious harm to a mining company, cause difficult social consequences and delay project implementation. Therefore, the reasons for withdrawal should be clearly formulated and applied only in extreme cases. The procedure of withdrawal with obligatory offering of a time frame to correct the situation should be described. The licensing office grants mineral rights, but it is only a license holder who can make a decision on production or suspension of works and define the level of geological study and mineral depletion. The licensing office should not have competence in these matters.

- The restrictions on the export of precious metals and hydrocarbons and the priority right of National Bank to purchase precious metals should be cancelled.
- The procedure approved by the Jogorku Kenesh(Parliament) requires a very complicated licensing procedures *for exporting precious metals on the basis of the findings of a specialized expert-organization about the possibility and advisability of an export...: based upon national interests, national and environmental security of Kyrgyz Republic.* It is not defined by what principles the expert-organization will use in determining the advisability of export and whether an embargo to export based on state interests will be unexpected for a company oriented to export. An investor before investing his funds in a project should have a state guarantee that he will be able to market his product in the most profitable way. It is necessary to keep in mind that a producer of precious metals, as a rule, is bound by long-term agreements on metal supply and hedging. An investor, of

course, will increase the risk assessment given that these “*ideas of rationality*” of export are unpredictable and can be understood differently by different state officials. This presents a threat to the return on investment.

Chapter V of the Law on subsoil use – State Regulation of Subsoil Use is a cause for special concern.

- It is necessary to eliminate state standards on study, use and protection of subsoil, except for worker and environmental security. Introduction of state standards on reserve calculation methods, exploration methods, representativity of assays, and technological tests are unjustified restrictions of entrepreneurship freedom, and increase investment risks. The requirement of obligatory implementation of advance a geological study is not justified. Each company should estimate the mining risks under which it decides to invest.
- As envisaged by a new Law on Subsoil, a state accounting (balance) of reserve movements can be based upon the reports of mining companies without state expertise. The requirements of a state expertise of reserves are not clear for foreign investors, which they do not deal with in other market economy countries. State inspection on subsoil use is potentially harsh “*to impose penal sanctions according to the established order against excessive losses of minerals while extraction and processing*”.

A feasibility study is a prognostic document and the parameters in it cannot logically be set by a state agency order. Mineral losses cannot be standardized by the state and are entirely risks to the company. The state and the company understand differently the issue of rational development and extraction. This issue should be a decision of the company but not of the state. The company, in any case, will seek to maximize profit and net present value of the project.

- The possibility of interference by state authorities into business is to a considerable extent strengthened in various by-laws.

The instructions approved the State Agency for Geology and Mineral Resources, which are obligatory for implementation, are an unprecedented case of unjustified interference by the state into the production process. For example, “*Instruction on using reserve classification with regard to gold mines, approved norms of gold grades and waste materials in gravitation and flotation concentrates*”.

- “Exploration is permitted in “only on mines which have received positive evaluation (expertise) by industrial evaluation data...” Instructions on the study of “structure of the oxidation zone, secondary sulphide zone, level of gold grades, etc.”

- “Completeness and quality of primary documentation ... shall be systematically controlled by comparison with the original by competent commissions. It is also necessary to evaluate the quality of assays (Continuity of section and mass of sampling materials, correspondence of their position to specifics of geological structure , completeness and continuity of sample selection, availability and results of controlling assays), representativity of mineral-technological and geological-engineering researches...Furthermore, it is necessary to control the correspondence of summarized geological materials with primary documentation. The results of inspection should be done in the form of acts”. And many others.
- The Criminal Code envisages fines or imprisonment for “The evasion from obligatory transfer for refinement or obligatory sale of precious metals or precious stones to the state which are extracted from subsoil ...
- Along with that, the note - “an unauthorized subsoil use ... breaching the right of state ownership of subsoil, - is a very lenient penalty for such a serious law infringement.

OTHER LAWS

The Law on Oil and Gas is based on the Law on Subsoil Use, but often contradicts the Law on Subsoil. The problems begin from the conceptual base. For instance, a land allotment is proposed to be surveyed in three-dimensional coordinates???

- Different from the Law on Subsoil, this law envisages a single payment for subsoil use. The terms license, licensee, license agreement are interpreted in the context of the Law on Licensing but not of the Law on Subsoil; this leads to confusion in using these terms. The Law envisages obtaining a license for “*production, transfer, distribution and sale of natural gas, import and processing of the raw material and components for producing oil products*” while the Law on Licensing does not state this. Further, licensing of the activity and licensing of the object for activity (deposit) are inter-tangled to complete uncertainty. .
- The Government is given competences to implement “*control over exploitation and effectiveness of oil and gas use*”. Investors will consider such note as a direct administrative interference in the economic activity of a company.
- The Law has many other incorrect issues such as liability of licensee for violation of ownership rights for the information about oil and gas deposits. However, the ownership of information belongs to license holder and he has the right to use it as he wants.

The Law on Coal is a kind of compilation of the Law on Subsoil, Civil Code and Labor Code.

- The main goal of the Law, as it seems, is in receiving subsidies for the coal industry and privileges for its workers. It is not explained in which cases privileges and subsidies must be provided. This means that more active managers of companies will receive them on an unjustified basis. On one hand, a royalty is imposed for mining and on the other hand, subsidies from the state budget are provided.

It is recommended to cancel the Law on Coal and reflect all the specifics of state regulation of coal mining in the new Mining Code.

The Law on Agreements on Production Sharing. The laws on APS, which work mainly in developing countries, were adopted while gaining independence by the colonies, and when western oil companies started having trouble with high inflation, political and economical instabilities. At that time there emerged the idea of payment in natural oil as a “hard currency” and this was convenient for investors as well as governments. During the elaboration of the law, oil companies could introduce the rules by which investors received tax and other exemptions and guarantees. In Kyrgyzstan, inflation is low and therefore, the Law is meant for solving a second problem – getting tax exemptions and other privileges through negotiations, and this increases the level of corruption.

The Law is based on state participation in the profits of the company. Part of the income is given to state in the form of product. Therefore, the law considers a mechanism, similar to functioning of joint ventures with state participation, that is ineffective.

The monitoring of mining legislation of the Kyrgyz Republic demonstrates the necessity of the preparation of a new Mining Code corresponding to modern market conditions and eliminating a number of contradictions, and if possible, without the requirement to specify them in by-laws.

CONCLUSION

Summarizing the review of legislation regulating the subsoil use in Kyrgyz Republic, we note its main specifics.

In comparison with the legislation of other post-Soviet countries, the Kyrgyz legislation is more adjusted to market conditions although it has problematic requirements that considerably increase investment risks.

They are:

- a) A complicated, time-consuming, unclear and difficult to understand procedure of licensing, which allows arbitrary interpretations
- b) Absence of guarantees for mining rights during the licensing procedure that can take several months or years.
- c) Excessive regulation by the Government causing interference into production activities of mining company
- d) Unclear requirements and diffusion of terms (subsoil protection, excessive losses, selective development, etc.) inherited from the Soviet command system.
- e) Unclearness in division of powers implementing regulation of subsoil use, environmental protection, worker safety, and tax collection.
- f) Contradictions in the laws related to mining
- g) The introduction of private ownership on land has created some fundamental problems.

It is recommended to prepare a new draft of the Mining Code, which would unite the present four laws that regulate various types of subsoil use and eliminate contradictions in them. In the framework of Mining Code preparation, amendments should be devised for other laws that contradict the mining legislation.

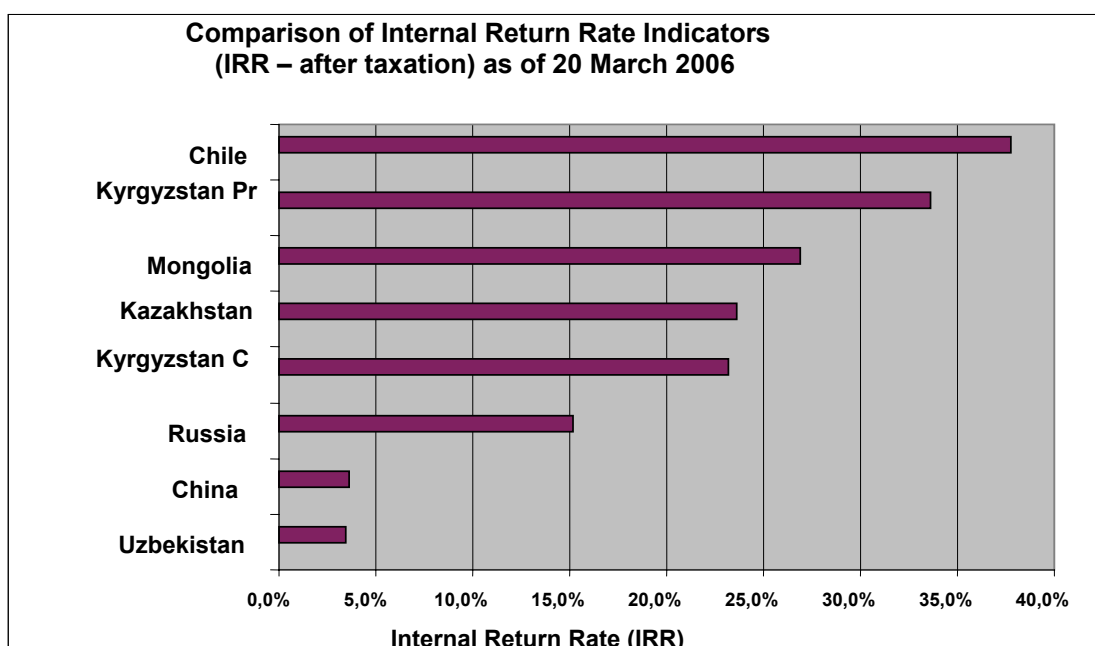
2. CONCEPT OF MINING CODE

- In conceptual terms, a new Code should reduce administrative pressure and include incentives based on market principles;
- Subsoil use should be mainly based on the principles of civil law, not of administrative law;
- The licensing procedure should be modernized, totally, establishing the right of first come - first served, and cancel the geological expertise for feasibility studies, projects and reserve accounting;
- The present legislation is oriented to large mines the number of which is limited. The large number of small mines should have more simplified access and administrative regulation;
- Guarantees of companies with regard to environmental rehabilitation should be required. Initial and final environmental audits of mining areas should be introduced in an obligatory manner. Measures against departure of companies without recultivation of mining areas should be imposed, probably by obligatory formation of bank deposits or bank guarantees.
- Obligatory annual technical reports, including electronic database, for recording geological files should be introduced. As a base for reporting standards, it is recommended to use JORC and EITI standards. Automatic annulment of license should be established in case these reports are not presented.
- International nomenclature of resources and reserves should be used.
- A priority right for subsoil use should be established where reconnaissance, exploration and mining activities are on the areas that are under private ownership.
- It is required to set a term for decisions by licensing authorities (60 days)
- It is required to introduce exclusive rights on exploitation and marketing, including export, for the minerals reserves during the whole period of extraction operations without additional licensing.
- It is required to forbid a license holder to sell minerals extracted during exploration without the preliminary agreement of the State inspection of licensing
- It is necessary to solve the problem of “mining property”, including mining pits, technological roads, buildings and construction. According to the present legislation, in case of loss of license and even land, a company remains an owner of this property blocking further mine development.
- It is necessary to limit the term of confidentiality of geological information (one year) provided by a company to the state authority.

3. TAX SYSTEM

In the framework of the IDF Grant No TF053432, the competitiveness of the mining taxation system working presently in Kyrgyzstan in comparison with those in other countries with developed mining industries was investigated.¹⁰

This study is based on the method developed by J. Otto. The comparison of tax systems is done by comparing financial and economical indicators of a “model” gold mine, typical for Kyrgyzstan, under fiscal regimes of different countries.



The study shows that current fiscal regime in Kyrgyzstan (Kyrgyzstan C in the illustration) in terms of tax burden is a little worse than the indicators for Kazakhstan and Mongolia and more favorable as compared to Uzbekistan, China and Russia.

Nevertheless, the tax system has some disadvantages. Excessively high royalty rates (up to 12% of all sales) exist for a number of minerals. The amortization mechanism does not consider specifics of a mining project that has a limited life. As a result, a mining company is not able to amortize all the main funds/assets on some projects. VAT also needs reconsideration. At the present time, Jogorku Kenesh (Parliament) is reviewing a new Tax Code. If the amendments to mining taxation are accepted, the Kyrgyz Republic will become one of the countries with the most favorable tax regime (Kyrgyzstan Pr in the illustration).

However, several provisions have been included in the draft of the new Tax Code for Mining, which use taxation methods based not on the law, but on negotiations. This refers to the definition of first market product as a base for taxation and to mining

¹⁰ “Diagnostics of fiscal regime for mining in Kyrgyzstan”. The study of IDF Grant Project. Bishkek 2005.

concession and agreements on product sharing. Such innovations create favorable conditions for corruption.

4. ROLE OF PUBLIC INSTITUTIONS

- State Agency for Geology and Mineral Resources
- Kyrgyzaltyn

The state implements mining sector regulation through the State Agency for Geology and Mineral Resources, which acts on the basis of the regulations approved by the Government. The part of the functions of state mining agency in terms of the search for investors for developing the most perspective gold mines and concluding contracts with them on behalf of the Government was given to JSC Kyrgyzaltyn.

Main objectives of the State Geology Agency are:

- Systematic complex geological study of the subsoil;
- state regulation of mining issues and improvement of the administration system of the state subsoil fund;
- attraction of direct foreign and national investments into the mining sector and for geological studies;
- subsoil protection;
- preparation of proposals for development of the mining and geological sector.

Following the repeated recommendations of international experts (JICA -1999, World Bank - 2001) on establishing a single body that regulates mining industry, the Government empowered the State Geology Agency to implement this administration. However, geological work still predominates in the Agency. Furthermore, administrative and business management is focused on its entrepreneurial branches with minimal attention to the mining industry now in place.

A development policy has not been formulated and its administration is not working. A traditional Soviet administration structure has been kept to a large extent, based on command and control methods, even to setting prices for works done by its expeditions (entrepreneurial branches).

A sample structure of mining sector administration corresponding to international practice, (which does require more study), should contain the branches given in the document “On restructuring of mining sector administration”.¹¹

5. GEOLOGICAL INFORMATION

The state has lost control over obtaining a substantial part of geological information. Mainly, private mining and exploration companies retain this information. Collection of operative geological-economic information, without which it is impossible to implement good monitoring, is not effective and systematic.

Accumulation and storage of geological information at the State Agency for Geology is paper-based. In the archives there are thousands of typed geological reports that have valuable information from the past years, processing which is impossible to do without modern methods and therefore, difficult to access by potential investors. This rich information collection, accumulated for many decades in paper form, has not been modified for the use in modern and highly effective remote methods of minerals exploration.

Only a small part of geological and geochemical information is in an electronic data base.

The issue of the information presentation to potential investors and its price is still not regulated. Reporting standards for license holders are not formulated and geological information flows are not controlled. Samples and core material do not come from companies at all.

The State Geology Agency does not have sufficient funds for the conversion of information to electronic forms with connections to a global geographic system. Such a conversion, of course, would raise the attractiveness of the country for investors.

The creation of an electronic database with GIS connection, and digitization of graphical information is a priority objective in geological information systematization. Furthermore, there should be requirement that companies present their information in electronic version.

- It is necessary to make state-owned information about the subsoil publicly accessible and available as widely as possible without requiring special permission from the State Geology Agency. The archive should work as a public library on a self-sufficiency basis. The information given by the State Geology Agency to license holders should also be public.

¹¹ “On restructuring of mining sector administration”. Document of IDF Grant Project. Bishkek 2005.

- Companies should have the right for confidentiality of the information they obtain for a limited period. The period set by the Law for confidentiality and private information ownership is presently too long. It is necessary to take into account that in order to raise effectiveness of reconnaissance and exploration, geologists need knowledge on neighboring territories and deposits. The experts from McCloud-Dixon recommend setting a confidentiality period, using the experience of Canadian provinces, from 90 days to 1 year, depending upon the nature of the information.

- Kyrgyzstan today has a very limited capacity to obtain geological information from expenditures of the state budget. Therefore, collection, processing and storage of information from mining and exploration companies are of high priority. The State Agency for Geology should develop reporting standards, which will include requirements for providing electronic data bases and reports; using the threat of license annulment if needed.

ROAD MAP AND RECOMMENDATIONS TO THE GOVERNMENT

1. Mining legislation

- A. Prepare a new Mining Code, which should eliminate a number of contradictions with the Constitution and other laws. Liberate mining legislation from the Soviet command and control system requirements, which constrain development of market economy mechanisms.
- B. Revise provisions in other laws including Criminal Code, Administrative Code, Land Code, Law on Precious Metals, and Law on Licensing and by-laws in order to eliminate the provisions that increase investors' risks .

2. Mining regulation

- A. Formulate a policy of mining industry development and work out a program for stimulating the development of known small and medium scale deposits, the number of which is large
- B. Cancel the requirement of licensing professional activities in the field of reconnaissance, exploration and mining
- C. Reduce administrative pressure on mining companies by canceling the requirement of state expertise of reserves, geological expertise of feasibility studies and projects
- D. Cancel the requirements and standards ("complex of activities on rational extraction of minerals from subsoil and mineral components while processing") set by the state for the study, use and protection of subsoil, except for environmental and safety requirements.

3. Mining Licensing

- A. Improve licensing procedure by clear separation of objects subject to bid, and those offered on a first come - first served basis
- B. Introduce licensing procedures according to the principle "first come, first served" (the applicant first in time receives the license)
- C. Eliminate the granting of a license on one area to several license holders for different minerals (other than oil and gas)
- D. Develop and introduce changes in the existing legislation (Law of KR on Subsoil and Land Code) to simplify the formulation of land allotments for mining.
- E. Define clearly the formulation of requirements for a license agreement and cancel the need for agreements on project design and for license extensions both of which increase investment risks

- F. Set standard investment conditions, which can be applied to all types of investors in order to avoid the negotiation method during the preparation of the license agreement
- G. Cancel the dependence of license issue on the agreement by owners of land rights and on the expertise of feasibility studies and projects

4. Fiscal regime

- A. Set up royalty rates competitive to other countries and develop mechanisms of bonus calculation for commercial discovery of mines
- B. Introduce mechanisms of accelerated amortization of main assets, which take into account the limited life of mine production facilities.
- C. Develop projects of laws for canceling the road tax and emergency situation prevention tax for mining companies
- D. Set up zero-rated VAT on export of a marketable product from mineral raw materials, in particular, dore gold and refined gold; with refunding of VAT only as a deduction of the profit tax
- E. Introduce in the new Tax Code, free-rate VAT for geological explorations works
- F. Introduce annual progressive license/rental fees to stop holding licenses for speculation purposes. These funds should be used to create GIS and to finance socio-economic development in the location of the licensed area
The received funds should be used for:
 - Creation of a State geological information system;
 - Financing socio-economic development of the areas of the mine in order to increase the interest of local communities in mine development and prevent conflicts with mining companies.

5. Institutional policy and improvement of public institutions

- A. Stop establishing joint ventures with State shareholding. Privatize the state shares in existing joint ventures to avoid conflict of interests between the role of State as an owner or shareholder of mining companies and the role of state as a “regulator” of mining sector
- B. Work out a privatization program for state-owned mining enterprises and expeditions
- C. The State Agency for Geology and Mineral Resources should actively monitor mineral markets in order to offer known deposits of minerals in high demand to investors.

6. Improvement of geological infrastructure

- A. The priority objective should be conversion of archive research materials into electronic form with connections to a global geographic system (GIS). Create database of geological information in electronic form.
- B. Approve reporting standards for mineral rights holders and formulate obligatory requirement for regular geological report presentation including the obligatory presentation of e-database of samples
- C. Convert to the international mineral reserve classification system
- D. Limit confidentiality term for geological information provided by license holders, after which information should be publicly available
- E. Work out the procedure of free access to geological archives.

7. Strengthening responsibilities of mining companies

- A. Strengthen guarantees of companies in environmental rehabilitation. Introduce efficient and protective measures against companies leaving without re-cultivation of areas, by setting up an accumulative bank deposits or bank guarantees. Develop a mechanism of control over the availability of funds to provide sufficient finance for rehabilitation activities after mine closure.
- B. Provide timely regular information to local communities about environmental monitoring results
- C. Strengthen oversight of state-owned companies' activities, in particular, with regard to the development and publication of financial reports and the use of international accounting standards
- D. Provide submission of regular reports on profits and other incomes within EITI for increasing transparency in the mining sector.

8. Other

- A. Learn from the experience of other countries in developing small-scale mines and introduce these procedures into Kyrgyzstan
- B. Establish centers for raising qualifications of management personnel and specialists of high and middle management in mining companies.
- C. Establish a center for preparation of specialists in small scale mine development
- D. Organize preparation of personnel for mining specialties, a deficit of which is felt at the present time
- E. With the purpose of stimulating import-substitution, elaborate a mechanism of encouraging the use of supplies manufactured on the territory of Kyrgyzstan
- F. Stimulate the supply of marketable gold and silver produced in the country to the internal market to help develop the jewelry sector of the country.