



# MINING AND GEOLOGY STATISTICS 2015 DATA

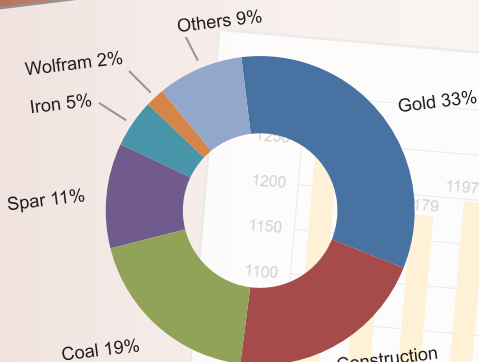


Figure 5: Mining licenses by minerals, December 31, 2015

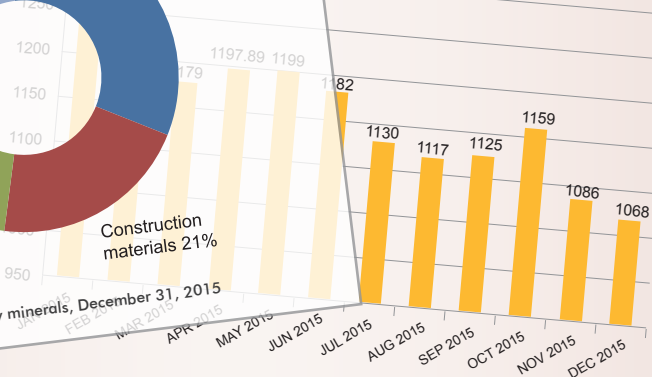


Figure 12: Average gold price, US\$/ounce.  
Source: London Bullion Market Association



MINING AND  
GEOLOGY STATISTICS  
**2015 DATA**

## General Notes

### Abbreviations

bln	billion (abbreviation only used in tables)
ha	hectare (abbreviation only used in tables)
mln	million (abbreviation only used in tables)
MNT	Mongolian currency “tugrik”
MRAM	Mineral Resources Authority of Mongolia
NSO	National Statistical Office of Mongolia
kg	kilogram
US\$	US dollar
t	metric tonne (1.000 kg)
ths	thousand (abbreviation only used in tables)
EITI	Extractive Industries Transparency Initiative
GS	Geological survey
GES	Geological exploration survey

### Conventions:

Metric units are used throughout the text.

Prices for precious metals are quoted in troy ounces (31.1035 gram).  
For the sake of brevity, the prefix “troy” is omitted.

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# Introduction

Reliable numbers and thoroughly researched information are crucial for making the right decisions. For this reason, MRAM has published monthly statistics in the Mongolian language on its website during the past months. Since the beginning of 2015, half-year statistics are printed.

The years 2014 and 2015 brought many changes and improvements to the Mongolian mining sector. Adaptations in the administration and management of exploration and mining and the royalties and taxation schemes were necessary to minimize the negative offsets caused by the downward price trend of recent years, caused by the waning of the high-price mine product phase at around the end of 2012.

The slow phasing out of the mineral boom and its associated high-price phase for mine products which lasted from around 2004 until the end of about 2012 - only to be interrupted shortly after the transatlantic financial crises of 2008 - led to a price decay of the main Mongolian foreign currency earners, which are copper concentrate, coking coal, iron ore and concentrate, gold and fluor spar.

Worldwide, exploration budgets of the major companies suffered cuts. Junior companies, essential to the replenishment of mineral resources, were starved of capital and had to drastically cut their exploration activities.

The changes of the fundamental values in the minerals market left their mark on the commodity driven economy of Mongolia and are reflected in the statistics.

Data on the crude oil industry is not included in the statistics presented here.

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## 1

## Summary Data on Mining and Geology Sector

1. Number of valid licenses (2015.XII.31)	3329
Mining licenses	1494
Exploration licenses	1835
2. Valid licensed area (2015.XII.31)	13.9 mln.ha
Mining licensed area	1.3 mln.ha
Exploration licensed area	12.6 mln.ha
3. Licensed area of Mongolian territory (2015.XII.31)	8.9%
Mining licensed area	0.8%
Exploration licensed area	8.1%
4. Share of mining sector in the Gross Domestic Product (2014)	17.1% *
5. Share of mining industry in Gross Industrial Output (2015)	67.2% *

table continued

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6. Mining production of main products (2015)	
Copper concentrate with 35% grade	890.7 ths t*
Molybdenum concentrate with 47% grade	5441.0 t*
Gold	14556.2 kg*
Fluorspar concentrate	230.8 ths t*
Iron ore	6173.4 ths t*
Zinc concentrate	89.6 ths t*
7. Main minerals export (2015)	
Fluorspar ore and concentrate	280.3 ths t**
Iron ore and concentrate	5065.1 ths t**
Copper concentrate	1477.8 ths t**
Zinc	84.1 ths t**
Gold	11.3 t**
Molybdenum ore and concentrate	5.0 ths t**
Coal	14426.4 ths t**
8. Produced coal (2015)	23979.0 ths t
9. Sold coal (2015)	22125.0 ths t
10. GS conducted at expense of the state budget (2015)	9.3 bln.MNT
11. GES conducted at expense of the license holders 2014	157.2 bln.MNT
12. Implementation of approved budget revenue plan (2015)	118.9%
License fee, Reimbursement	100.8%
Service revenue	475.7%

**Table 1: Key data from the mining and geology sector**

 Sources: \* Data from National Statistical Office, [www.1212.mn](http://www.1212.mn);

 \*\* Data from Customs General Administration, [www.ecustoms.mn](http://www.ecustoms.mn)



# 2

## Contribution of Mining to the National Economy

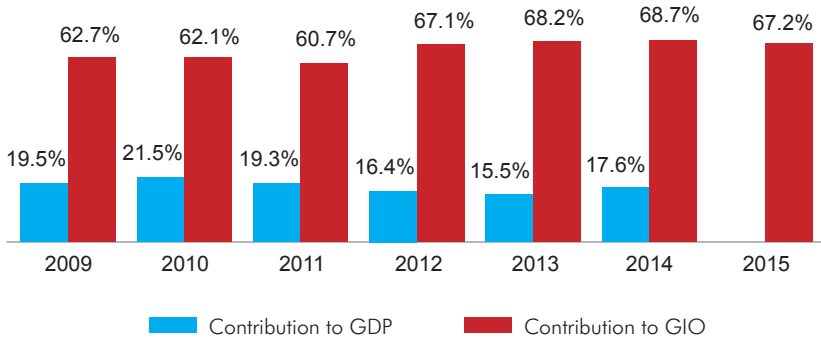


Figure 1: Contribution of mining to Gross Domestic Product (GDP) and Gross Industrial Output (GIO). Nominal values. Source: NSO

	2013	2014	2015
annual increase GDP (%), const prices, MNT	11.7	7.8	2.3 (e)
share of mining in GDP, MNT real (%)	16.8	26.0	
share of mining in industrial output (%), MNT (including petroleum)	68	68.5	67
share of mine products in export (%), US\$	81.9	82.9	78.8

Table 2: Share of mining in selected economic and social indicators. Sources: NSO, or calculated from NSO data; 2015: preliminary results. (e): estimated by WB<sup>1</sup>

<sup>1</sup> World Bank Group: Mongolia Economic Update, November 2015

# 3

## Statistics of Mineral Licenses Areas

Aimags and capital city	Total			Thereof:					
				Mining			Exploration		
	Number of Licenses	Area (ths ha)	Percentage of total territory	Number of Licenses	Area (ths ha)	Percentage of total territory	Number of Licenses	Area (ths ha)	Percentage of total territory
<b>Total</b>	<b>3329</b>	<b>13,931.5</b>	<b>8.9</b>	<b>1494</b>	<b>1,320.3</b>	<b>0.8</b>	<b>1835</b>	<b>12,611.2</b>	<b>8.1</b>
Arkhangai	43	91.3	1.7	27	12.9	0.2	16	78.4	1.4
Bayan-Ulgii	99	461.5	10.1	27	11.2	0.2	72	450.3	9.8
Bayankhongor	195	681.4	5.9	74	53.1	0.5	121	628.3	5.4
Bulgan	114	564.2	11.6	61	16.8	0.3	53	547.4	11.2
Govi-Altai	207	1,479.3	10.4	28	25.5	0.2	179	1,453.7	10.3
Govi-Sumber	22	106.1	19.2	12	38.7	7.0	10	67.4	12.2
Darkhan-Uul	86	25.0	7.6	65	9.1	2.8	21	15.9	4.9
Dornogovi	403	1,922.5	17.6	164	179.5	1.6	239	1,743.0	15.9
Dornod	156	656.0	5.3	63	40.3	0.3	93	615.7	5.0
Dundgovi	178	847.3	11.3	79	128.8	1.7	99	718.5	9.6
Zavkhan	83	524.5	6.4	6	10.7	0.1	77	513.8	6.2
Orkhon	11	13.0	15.5	8	2.8	3.3	3	10.2	12.2
Uvurkhangai	60	150.7	2.4	31	16.8	0.3	29	134.0	2.1
Umnugovi	252	2,742.1	16.6	84	502.3	3.0	168	2,239.8	13.6
Sukhbaatar	126	1,030.6	12.5	57	43.8	0.5	69	986.8	12.0
Selenge	171	131.9	3.2	121	29.8	0.7	50	102.2	2.5
Tuv	369	284.0	3.8	281	121.6	1.6	88	162.4	2.2
Uvs	246	1,099.4	15.8	44	14.5	0.2	202	1,084.9	15.6
Ulaanbaatar	193	14.4	3.0	172	12.2	2.6	21	2.3	0.5
Khovd	136	667.2	8.8	24	7.8	0.1	112	659.4	8.7
Khovsgul	41	174.7	1.7	18	7.6	0.1	23	167.1	1.7
Khentii	198	274.5	3.4	105	34.5	0.4	93	240.0	3.0

Table 3: Number of valid licenses and area by province. December 31, 2015.  
Source: Computerized mining cadastre system, MRAM

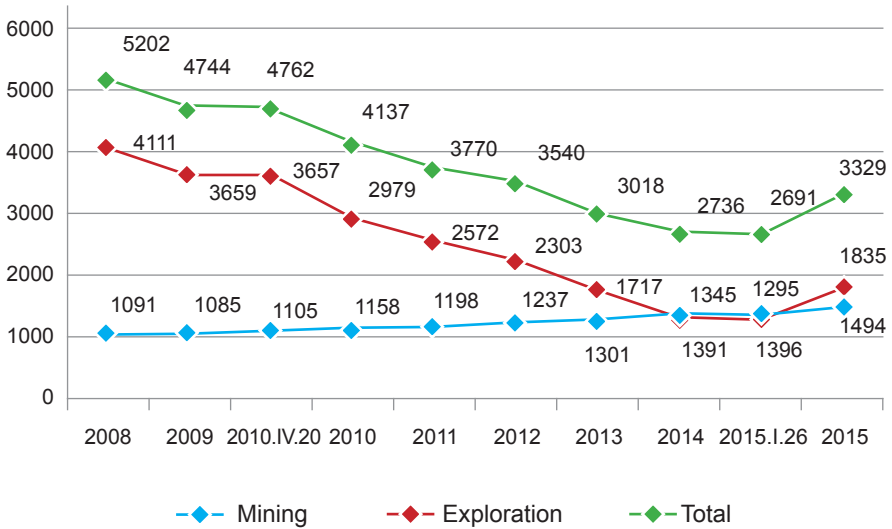


Figure 2: Number of license holders by investors; 2008-2015

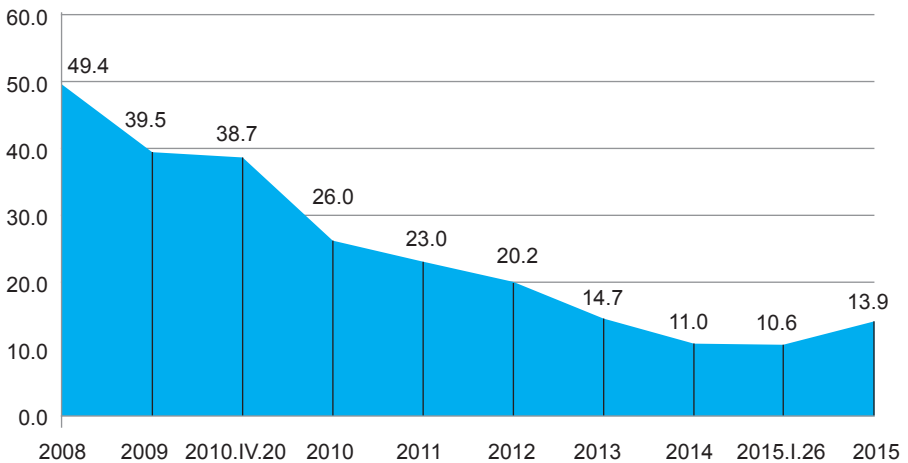


Figure 3: Area covered by valid licenses, (mha) 2008-2015

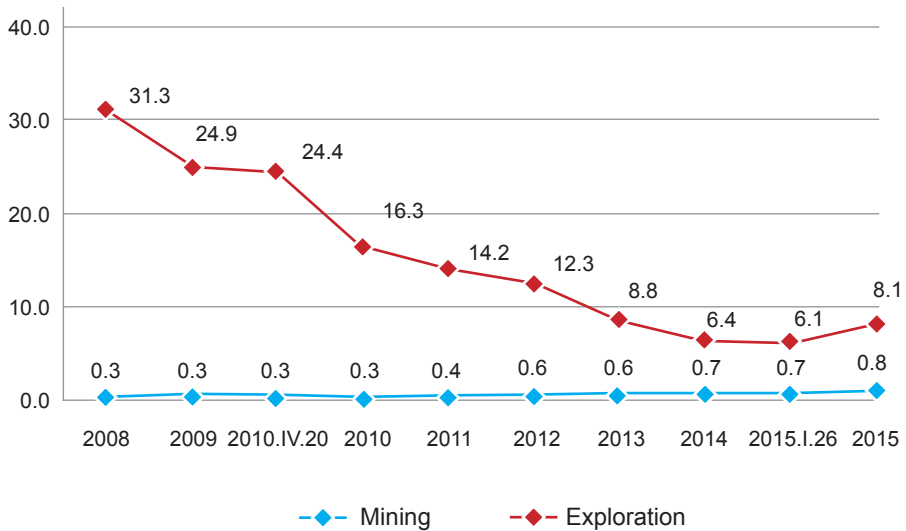


Figure 4: Percentage of licensed area to total territory, 2008 to 2015

Explanation: From 20 Apr 2010 to 26 Jan 2015 no new exploration licenses were granted.

Name of area	Area (mln ha)	Percentage of total territory
Valid mining licensed area	1.2	0.8%
Valid exploration licensed area	12.6	8.1%
State protected area	27.0	17.2%
Special purpose territory	25.8	16.5%
Strategic deposit, government reserved area	37.1	23.7%
Settled area, border and railway strip area	11.0	7.1%
Other prohibited area	62.5	40.0%

Table 4: Area registered in Geology and Mining Cadastre. January 19, 2016

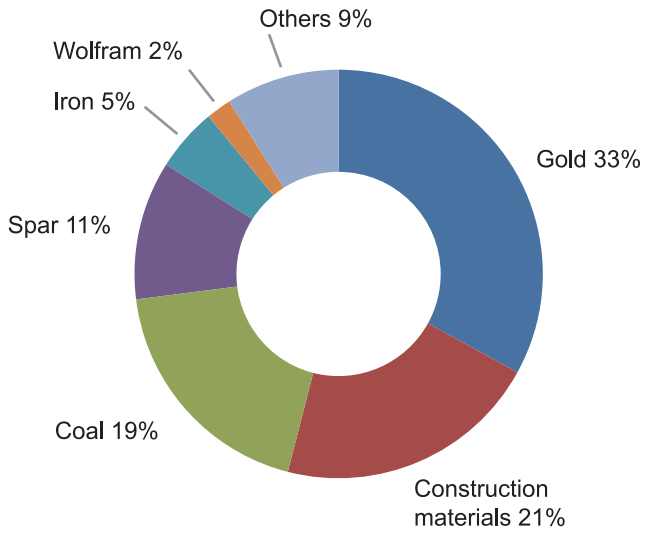


Figure 5: Mining licenses by minerals, December 31, 2015

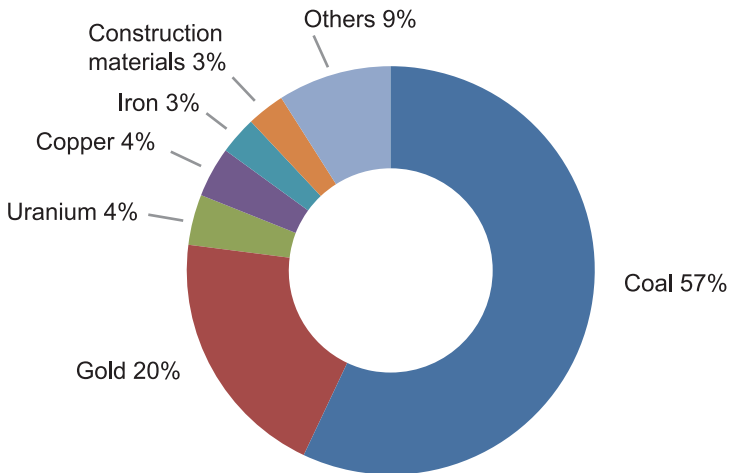


Figure 6: Mining licensed areas by minerals, December 31, 2015

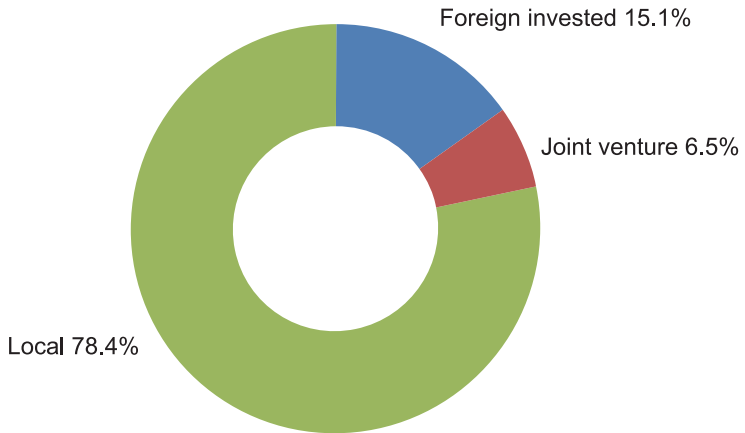


Figure 7: License holders by investor origin. December 31, 2015

Joint venture	License holders		Licenses		Area (mln ha)	
<b>Total</b>	<b>1899</b>	<b>100.0%</b>	<b>3329</b>	<b>100.0%</b>	<b>13.9</b>	<b>100.0%</b>
Foreign invested	287	15.1%	582	17.5%	3.05	21.9%
Joint venture	124	6.5%	278	8.4%	1.81	13.0%
Local	1488	78.4%	2469	74.2%	9.07	65.1%

Table 5: License holders, number of licenses, areas by investor origin. December 31, 2015

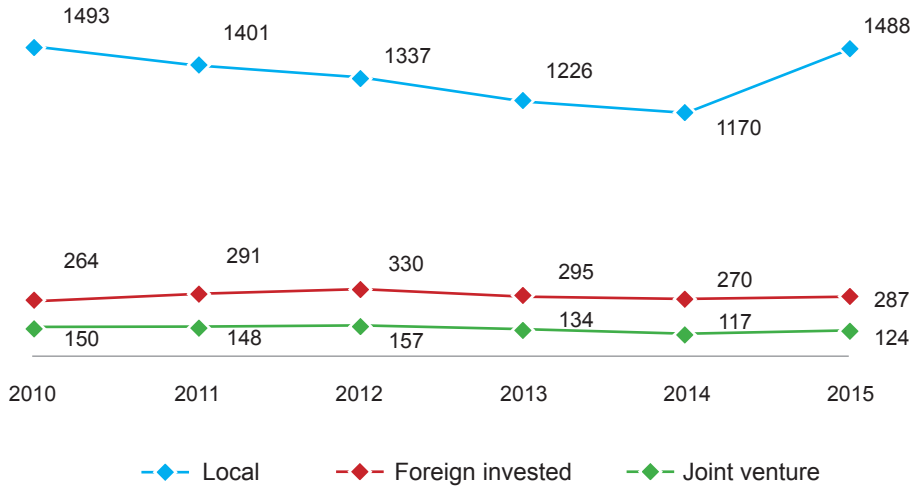


Figure 8. Number of license holders, 2010-2015

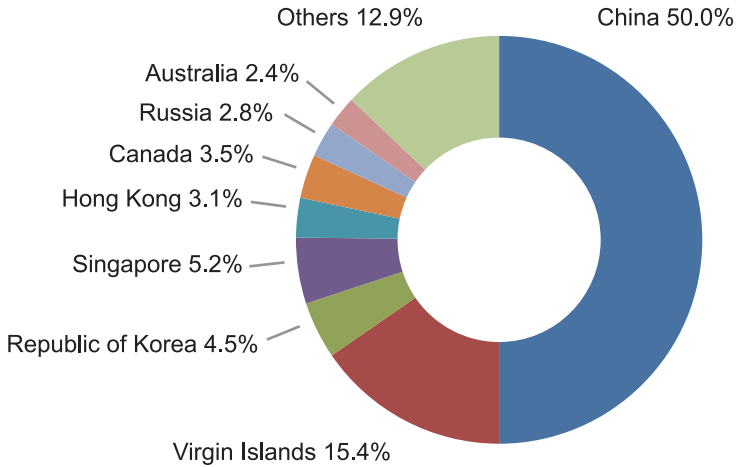


Figure 9: Numbers of foreign license holders by country. December 31, 2015

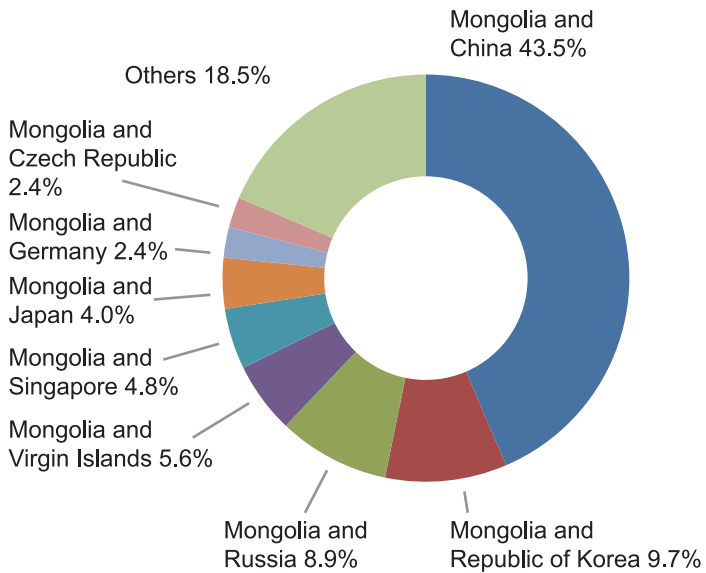


Figure 10: Number of joint venture license holders by countries. December 31, 2015



	Number of licenses	Percent
<b>Total number of licenses</b>	<b>3174</b>	<b>100 %</b>
<b>Licenses owned by Mongolian entities</b>	<b>2306</b>	<b>72.7%</b>
<b>Licenses owned by single-country foreign entities</b>	<b>579</b>	<b>18.2%</b>
China	205	6.6%
Virgin Islands	142	4.5%
Singapore	47	1.5%
Republic of Korea	19	0.6%
Canada	19	0.6%
Russia	9	0.4%
Hong Kong	22	0.7%
Australia	11	0.3%
USA	7	0.2%
Luxembourg	41	1.3%
Bermuda	5	0.2%
Netherlands	27	0.9%
Malaysia	4	0.1%
Kazakhstan	1	0.0%
Barbados	4	0.1%
Belize	1	0.0%
Bulgaria	4	0.1%
Germany	1	0.0%
Ukraine	1	0.0%
Switzerland	3	0.1%
New Zealand	1	0.0%
India	3	0.1%
Japan	2	0.0%

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	Number of licenses	Percent
Licenses owned by joint foreign entities	289	9.1%
Mongolia, China	92	2.9%
Mongolia, Russia	49	1.6%
Mongolia, Republic of Korea	21	0.7%
Mongolia, Virgin Islands	11	0.3%
Mongolia, Singapore	21	0.7%
Mongolia, Japan	10	0.3%
Mongolia, Germany	5	0.2%
Mongolia, Great Britain	6	0.2%
Mongolia, Czech Republic	5	0.2%
Australia, Mongolia	7	0.2%
Kazakhstan, Mongolia, Netherlands	5	0.2%
Mongolia, Luxembourg	2	0.1%
Mongolia, Hong Kong, Japan	5	0.2%
Macao, Mongolia, Hong Kong	1	0.0%
Mongolia, USA, Virgin Islands, Republic of Korea	1	0.0%
Mongolia, Bulgaria	3	0.1%
Mongolia, Virgin Islands, Luxembourg	1	0.0%
Mongolia, Canada	5	0.0%
Mongolia, Canada, China	1	0.0%
Mongolia, Russia, Ukraine	1	0.0%
Mongolia, Poland	1	0.0%
Mongolia, Hungary	1	0.0%
Mongolia, Hong Kong	4	0.1%
USA, China	1	0.0%
Belarus, Great Britain	1	0.0%
Virgin Islands, Singapore	3	0.1%

Table 6: Origin countries of license holders. Status as December 31, 2015

	2008	2009	2010	2011	2012	2013	2014	2015
1. New issued	1358	628	235	79	95	72	113	596
Mining	110	78	90	79	95	72	97	91
Exploration	1248	550	145	0	0	0	16	736
2. Surrendered area	184	232	105	89	141	146	119	150
Mining	7	2	6	4	7	16	13	25
Exploration	177	230	99	85	134	130	106	125
3. Canceled	231	713	458	275	270	347	123	173
Mining	47	75	39	65	139	43	14	10
Exploration	184	638	419	210	131	304	109	163
4. Expired	347	274	248	225	175	253	289	179
5. Transferred	681	439	448	441	200	8	51	88
Mining	83	63	59	58	47	8	38	46
Exploration	598	376	389	383	153	0	13	42
6. Extended	620	354	791	997	601	317	444	336
7. Pledged	86	75	50	62	38	61	40	22
Mining	49	46	36	39	22	42	34	22
Exploration	37	29	14	23	16	19	6	0
8. Terminated pledges				28	42	31	29	24
Mining				8	15	29	24	19
Exploration				20	27	2	5	5
9. Refunded				94	56	15	11	19
Mining				29	16	9	7	10
Exploration				65	40	6	4	9

Source: Computerized mining cadastre system, MRAM

Table 7: Changes in license registry, 2008 to 2015

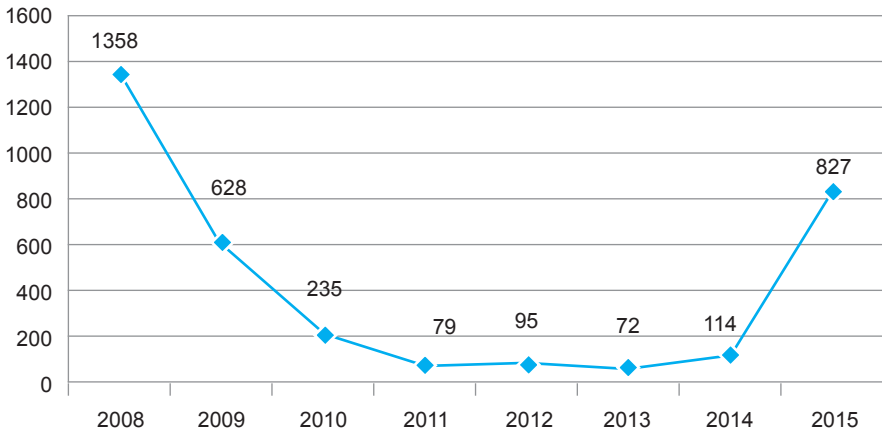


Figure 11: Number of issued licenses, 2008 to 2015

**Notes on the developments concerning licensing procedures:**

1) With the implementation of the Minerals Law Amendments in July 2014, the moratorium imposed in 2010 on granting new exploration licenses was lifted.

2) In 2013 a criminal court judge revoked 106 mining licenses, because of unclear circumstances under which these licenses were obtained. A resolution was passed in 2014 to resolve the issues of the expropriated license holders.

# 4

## Mining Statistics: Production, Export, Price

### 4.1. Production, export

	2009	2010	2011	2012	2013	2014	2015
Copper concentrate with 35% grade Cu (ths t)	370.9	357.1	347.4	347.6	533.3	712.0	890.7
Molybdenum concentrate with 47% grade Mo (t)	5125.0	4677.1	4163.1	4050.2	3869.2	4254.0	5441.0
Gold, kg	9803.3	6037.1	5702.6	5995.0	8904.4	11503.8	14556
Fluorspar concentrate (ths t)	115.3	140.7	116.4	157.2	76.4	374.9	230.8
Iron ore and concentrate (ths t)	1379.0	3203.2	5678.3	7561.4	6011.2	10260.5	6173.4
Zinc concentrate (ths t)	141.5	112.6	104.7	119.1	104.1	93.2	89.6
Tungsten concentrate (t)	38.6	19.9	12.6	66.0	-	-	-

Table 8: Production of major commodities, 2009 to 2015

Name of Country	Unit	2014		2015	
	ths t, ths \$	Volume	Value	Volume	Value
1. Fluorspar ore, concentrate	ths t, ths \$	313.3	71,360.6	280.3	65,533.8
China	ths t, ths \$	128.2	32,572.5	117.2	28,587.1
Kyrgyzstan	ths t, ths \$	4.9	997.0	5.4	1,098.6
Russian Federation	ths t, ths \$	179.5	37,424.8	154.4	35,023.9
Uzbekistan	ths t, ths \$	0.6	319.0	0.1	37.2
Ukraine	ths t, ths \$	0.2	47.3	0.1	33.6
Republic of Korea	ths t, ths \$	-	-	3.0	720.7
Belarus	ths t, ths \$	-	-	0.1	32.7
2. Iron ore, concentrate	ths t, ths \$	6,324.4	446,363.6	5,065.1	227,199.7
China	ths t, ths \$	6,324.4	446,363.6	4,531.4	206,872.7
Singapore	ths t, ths \$	-	-	220.6	10,318.0
Hong Kong	ths t, ths \$	-	-	313.1	10,009.0
3. Copper concentrate	ths t, ths \$	1,378.1	2,573,621.8	1,477.8	2,280,135.3
China	ths t, ths \$	1,373.4	2,560,729.3	1,467.3	2,258,079.6
Russian Federation	ths t, ths \$	-	-	5.8	14,348.9
Japan	ths t, ths \$	4.7	12,892.5	4.6	7,706.8
4. Zinc ore, concentrate	ths t, ths \$	99.4	113,167.3	84.1	101,658.5
China	ths t, ths \$	99.4	113,167.3	84.1	101,658.5
5. Tungsten ore, concentrate	t, ths \$	1,484.6	18,993.6	1,703.3	13,671.8
China	t, ths \$	708.6	7,355.9	998.3	7,230.0
Russian Federation	t, ths \$	79.7	690.7	-	-
Netherlands	t, ths \$	49.9	1,217.8	25.0	186.6
USA	t, ths \$	264.7	4,401.6	190.0	1,539.4
Republic of Korea	t, ths \$	-	-	55.0	512.4
Singapore	t, ths \$	139.8	2,405.8	-	-
Vietnam	t, ths \$	241.9	2,921.8	435.0	4,203.4

table continued

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Name of Country	Unit	2014		2015	
	ths t, ths \$	Volume	Value	Volume	Value
6. Molybdenum ore, concentrate	t, ths \$	4,030.5	35,677.2	5,022.5	29,473.8
Republic of Korea	t, ths \$	682.0	7,862.8	1,188.0	10,909.8
China	t, ths \$	3,170.3	26,360.1	3,656.3	18,058.2
Russian Federation	t, ths \$	142.1	1,024.8	-	-
USA	t, ths \$	36.0	429.5	-	-
Kyrgyzstan	t, ths \$	-	-	178.2	505.8
7. Gold	kg, ths \$	10,040.8	405,244.3	11,316.4	419,708.2
United Kingdom	kg, ths \$	9,386.9	379,965.7	8,449.4	315,410.6
France	kg, ths \$	0.3	10.1	-	-
Switzerland	kg, ths \$	653.6	25,268.5	2,867.0	104,297.6
8. Cathode copper	ths t, ths \$	6.3	41,925.3	12.4	66,674.6
China	ths t, ths \$	6.3	41,925.3	3.6	18,966.5
Republic of Korea	ths t, ths \$	-	-	8.4	46,337.8
Indonesia	ths t, ths \$	-	-	0.1	496.0
Taiwan	ths t, ths \$	-	-	0.2	874.3
9. Coal	ths t, ths \$	19,481.5	848,600.5	14,426.4	555,026.6
Republic of Korea	ths t, ths \$	0.0	3.6	1.1	90.1
China	ths t, ths \$	19,461.4	847,173.2	13,965.8	532,308.7
Russian Federation	ths t, ths \$	20.0	1,423.7	76.8	5,980.4
United Kingdom	ths t, ths \$	-	-	161.5	7,071.1
Singapore	ths t, ths \$	-	-	221.2	9,576.3

Table 9: Export of mine products by countries from 2014 to 2015

## 4.2. Time series of selected mineral commodity prices

Metal trading around the globe occurs 24 hours a day. Contract prices of the commodities depend on lot size, quality and specifications of the commodity, cash or future payment, and many more contractual characteristics.

As about 90 % of non-ferrous metal trading takes place in the London Metal Exchange (LME), LME price quotations are widely used around the globe as reference prices. Metal prices for a few alloys and steel raw materials, the non-ferrous metals Aluminum, Copper, Lead, Nickel, Tin, Zinc, the minor metals Cobalt, Molybdenum, and the precious metals Platinum, Palladium and the Platinum Group Metals are published by the LME and widely used as global reference prices.

The “Official Cash Settlement Prices” are commonly used as reference price. They are published as daily prices or monthly averages. “Cash” refers to immediate delivery and payment (spot market).

Another important source for metal prices is the Metal Bulletin (MB), which is published twice/week.

Gold and silver prices are based on prices published by the London Bullion Metal Association (LBMA).

This chapter presents prices of selected metals which are important for the Mongolian mining sector.



	2012	2013	2014	2015	2015/2014 %
Gold, ounce	1668.8	1411.0	1271.2	1160.1	91.3%
Silver, ounce	31.5	23.8	19.1	15.7	82.4%
Copper, t	7952.5	7325.8	6859.5	5501.0	80.2%
Zinc, t	1947.7	1910.1	2161.0	1928.8	89.3%
Blue lead, t	2062.6	2142.0	2095.4	1786.1	85.2%
Tin, t	21112.2	22309.3	21909.9	16079.3	73.4%
Molybdenum, t	28037.3	22583.3	25203.0	14618.2	58.0%
Tungsten, t	55349.0	54470.0	50971.0	36082.4	70.8%
Iron ore, t	128.4	125.0	93.1	49.8	53.5%
Fluorite Flotation Concentrate AG-97, t	456.3	349.4	305.7	283.3	92.7%
Fluorite ore MG-85, t	365.7	294.0	240.0	244.3	101.8%
Thermal coal, t	75.0	60.0	56.6	49.1	86.7%
Coking coal, t	200.0	150.0	150.0	106.2	70.8%

Table 10: Average commodity prices in the world market from 2012 to 2015 (US\$). Compiled from various internet sources, mainly kitco.com, www.lme.com, asiametals.com, www.umetal.com, www.infomine.com, www.sxcoal.com.

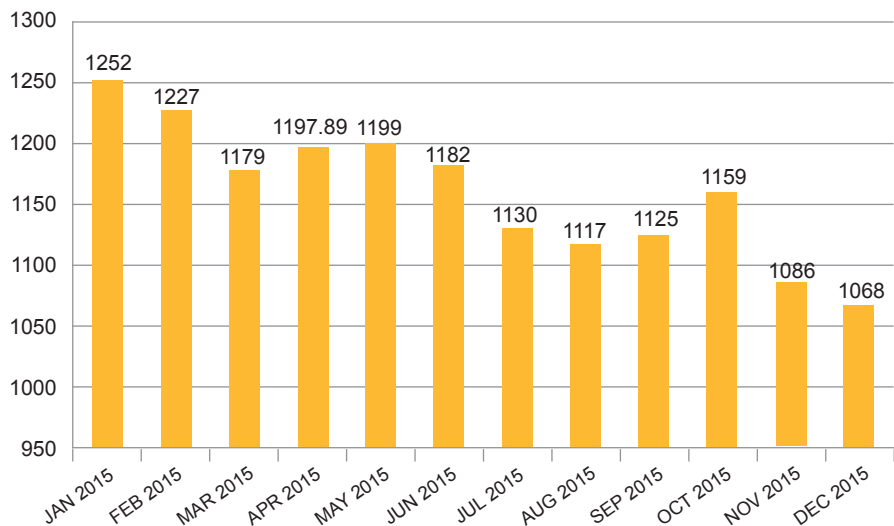


Figure 12: Average gold price, US\$/ounce. Source: London Bullion Market Association

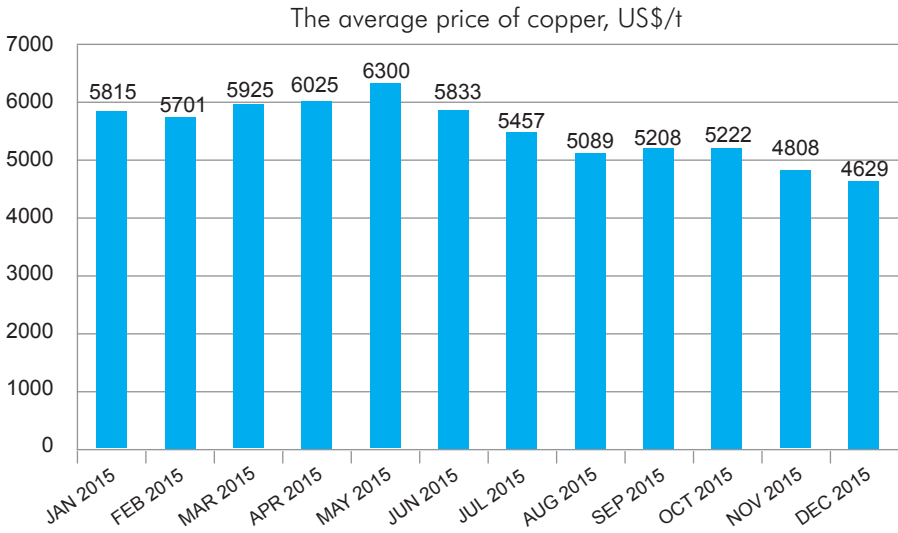


Figure 13: Monthly average copper price. Source: [www.westmetal.com](http://www.westmetal.com)

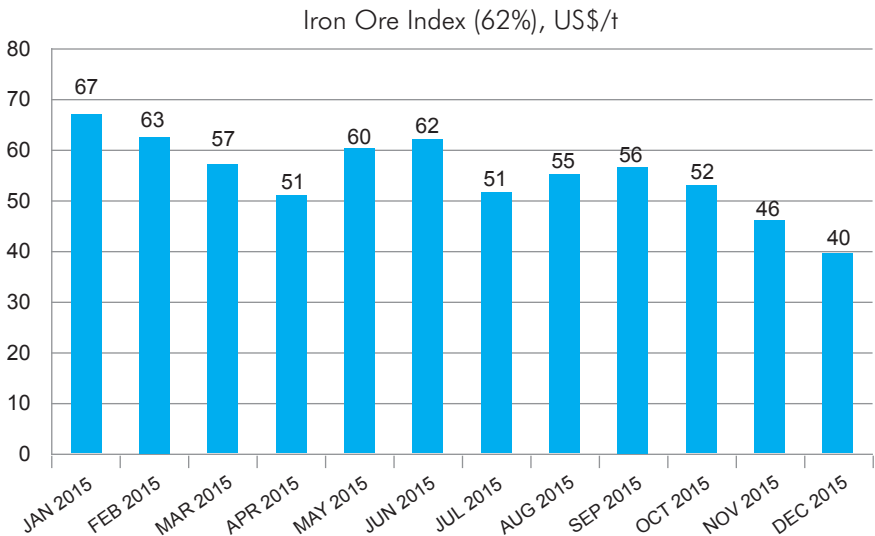


Figure 14: Monthly average iron ore index. Source: Index Mundi (<http://www.indexmundi.com/commodities/?commodity=iron-ore&months=12>)

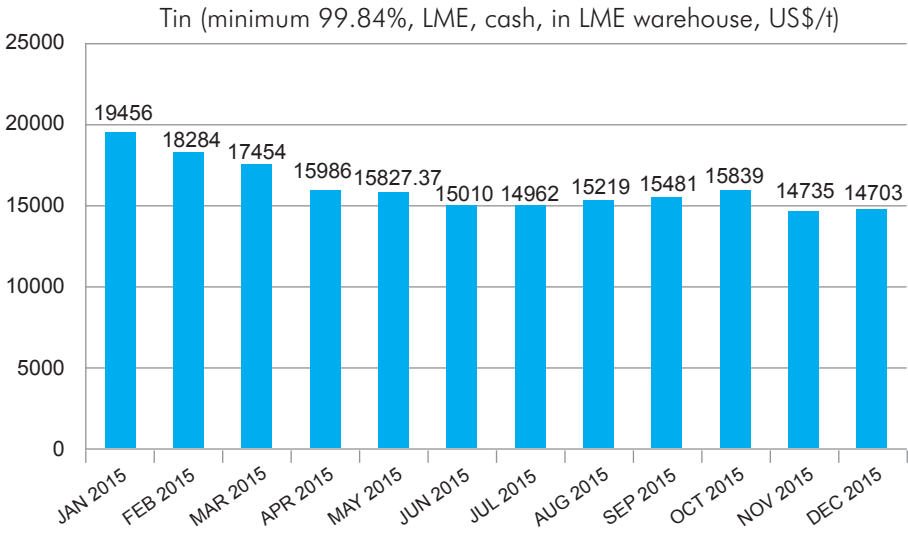


Figure 15: Monthly average tin price

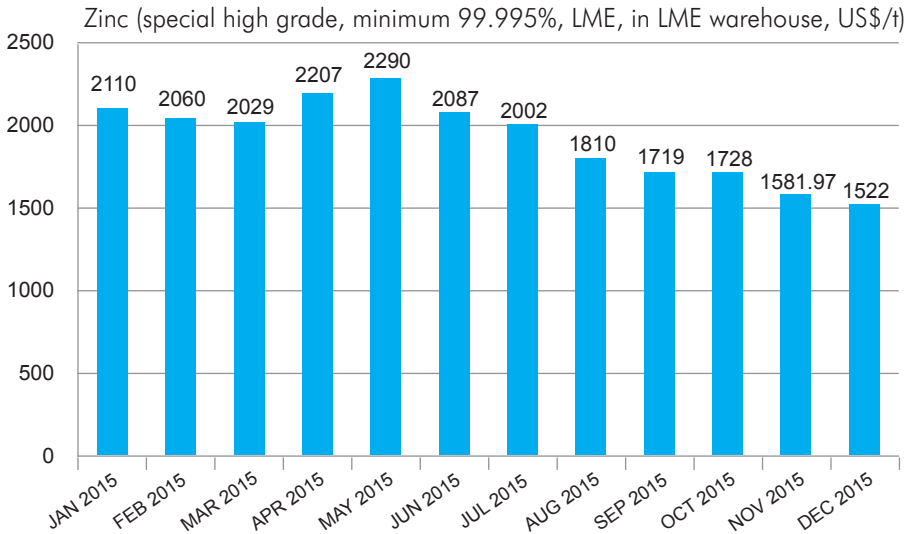


Figure 16: Monthly average zinc price

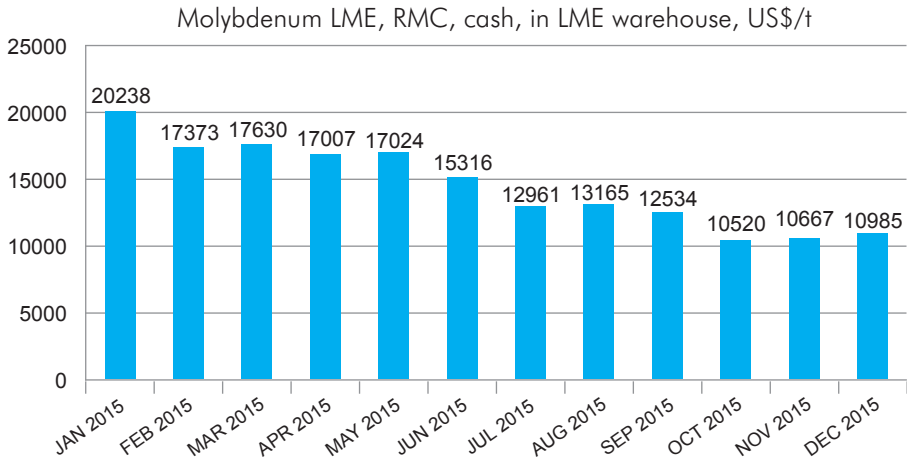


Figure 17: Monthly average molybdenum prices, RMC (Roasted molybdenum concentrate). RMC contains between 57% and 63% molybdenum purity.

([http://www.bgr.bund.de/EN/Themen/Min\\_rohstoffe/Produkte/produkte\\_node\\_en.html?tab=Commodity+prices](http://www.bgr.bund.de/EN/Themen/Min_rohstoffe/Produkte/produkte_node_en.html?tab=Commodity+prices))

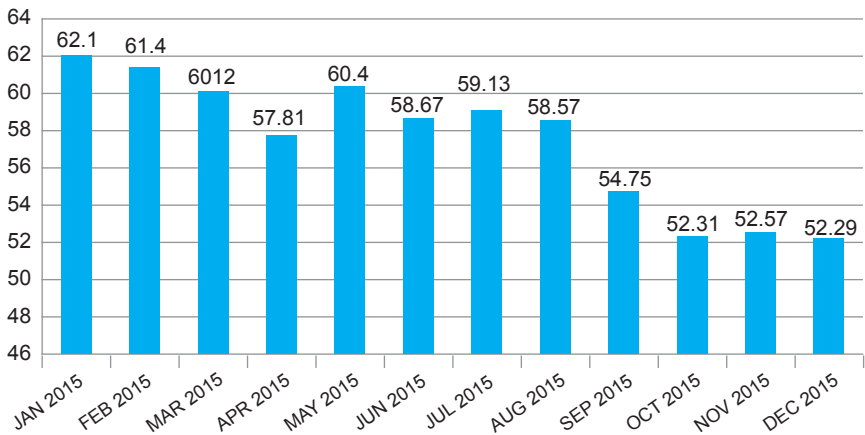
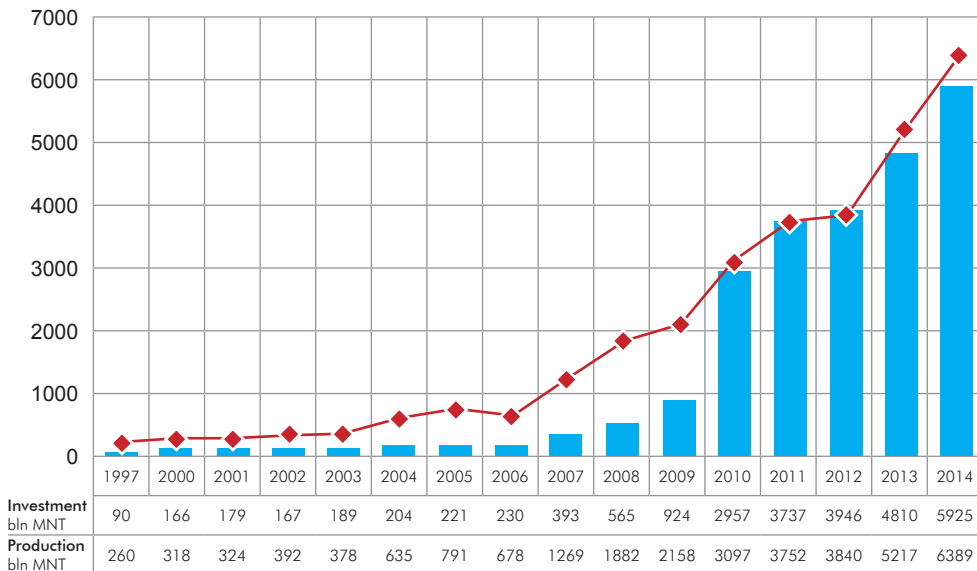


Figure 18: Thermal coal price in 2015, US\$/tonne. Source: [www.worldbank.org/en/research/commodity-markets](http://www.worldbank.org/en/research/commodity-markets)

### 4.3. Mining Investment

Name of Country	2010		2011		2012		2013		2014	
<b>Total</b>	<b>2957.4</b>	<b>100%</b>	<b>3737.4</b>	<b>100%</b>	<b>3947.0</b>	<b>100%</b>	<b>4810.8</b>	<b>100%</b>	<b>5925.2</b>	<b>100%</b>
Mongolia	31.8	1%	56.2	2%	83.3	2%	98.8	2%	794.00	13.4%
Malaysia	-	-	1.0	0%	2.6	0%	0.4	0%	-	-
Mongolia- Russian Federation	-	-	-	-	1.2	0.0003	-	-	303.28	5.1%
Mongolia-Republic of Korea	-	-	-	-	3.3	0%	-	-	-	-
Mongolia-China	-	-	-	-	1.2	0%	-	-	9.17	0.2%
Mongolia-Japan	-	-	-	-	-	-	-	-	4.73	0.1%
USA	0.5	0%	0.3	0%	-	-	9.7	0%	0.90	0.0%
Bermuda	0.01	0%	-	-	-	-	-	-	-	-
Bulgaria	0.3	0%	0.4	0%	0.5	0%	0.6	0%	-	-
Virgin Islands	1492.9	50%	3651.0	98%	3518.5	89%	4578.8	95%	4166.34	70.3%
Federal Republic of Germany	-	-	7.6	0%	-	-	-	-	-	-
Canada	-	-	-	-	-	-	1.2	0%	3.40	0.1%
Cayman Island	6.9	0%	7.6	0%	65.0	2%	11.6	0%	-	-
Russian Federation	133.5	5%	3.5	0%	167.6	4%	1.2	0%	2.13	-
Republic of Korea	0.2	0%	-	-	-	-	-	-	15.88	0.3%
China	39.3	1%	9.4	0%	103.6	3%	108.5	2%	600.20	10.1%
Japan	-	-	0.2	0%	-	-	-	-	-	-
Czech Republic	4.0	0%	0.2	0%	0.2	0%	0.019	-	-	-
Ukraine	1247.9	42%	-	-	-	-	-	-	-	-
Thailand	-	-	-	-	-	-	-	-	17.47	0.3%
Singapore	-	-	-	-	-	-	-	-	7.54	0.1%
Hong Kong	-	-	-	-	-	-	-	-	0.20	0.0%

Table 11: Mining investment by mining license holders, 2014 to 2015, bln MNT



■ Investment, bln MNT      -◆- Production, bln MNT

Figure 19: Mine production and Investment, 1997 to 2014. Sources: Investment data from Mining Division, MRAM; Production data from [www.1212.mn](http://www.1212.mn), NSO

# 5

## Rehabilitation work by mining license holders, 2006 to 2014

Activities	Previous years	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Area covered by mining (ha)	14640	1001	1436	709	631	1709	2042	1430	1038	1561	26198
Rehabilitated area (ha)	9046	1125	1356	932	711	1533	1443	1402	807	960	19316
Expenses for rehabilitation	11183	4662	8960	7683	8300	9657	7013	14808	7382	9212	88859
Area covered by technical rehabilitation (ha)	3558	843	980	823	580	1290	480	1177	532	523	10786
Area covered by biological rehabilitation (ha)	2395	628	1001	670	300	520	521	378	370	322	7103
Environmental protection expenses (mln MNT)	6030	2488	3501	3592	4158	5708	3323	8597	3876	11683	52957

Table 12: Rehabilitation work by mining license holders, 2006-2014

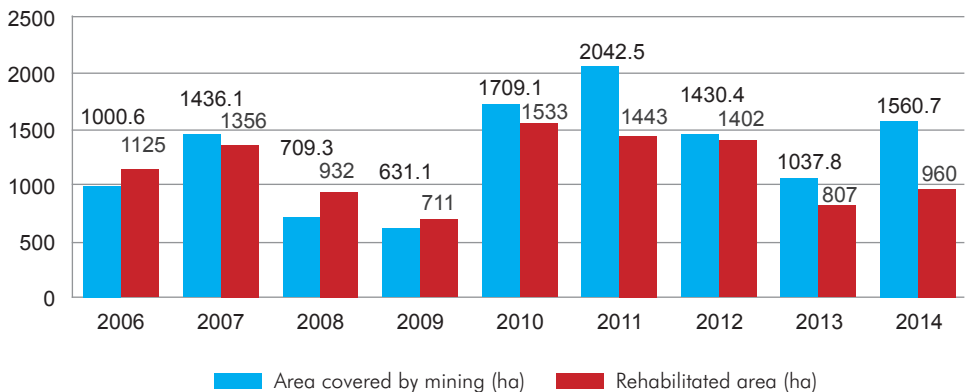


Figure 20: Mined and rehabilitated area, 2006 to 2014

# 6

## Coal Statistics

Main destination of the Mongolian coal exports is China. China's total coal import decreased by 29.4 percent compared to December 2014 by reaching 186,430,000 tonne, coking coal import decreased by 20.6 percent by December 2015, of which

- Coking coal amounted to 43,400,000 t
- Thermal coal made up 60,910,000 t, and
- Lignite coal amounted to 44,720,000 t.

Source: [www.sxcoal.com](http://www.sxcoal.com)

Total Mongolian export to China in 2015 added up to 14,467,500 ton. This is about 7.1 % of the Chinese total coal import.

The Mongolian coal exports to China comprise these categories:

- Coking coal 7,022,300 t
- Semi coking coal 5,304,300 t
- Thermal coal 2,140,900 t



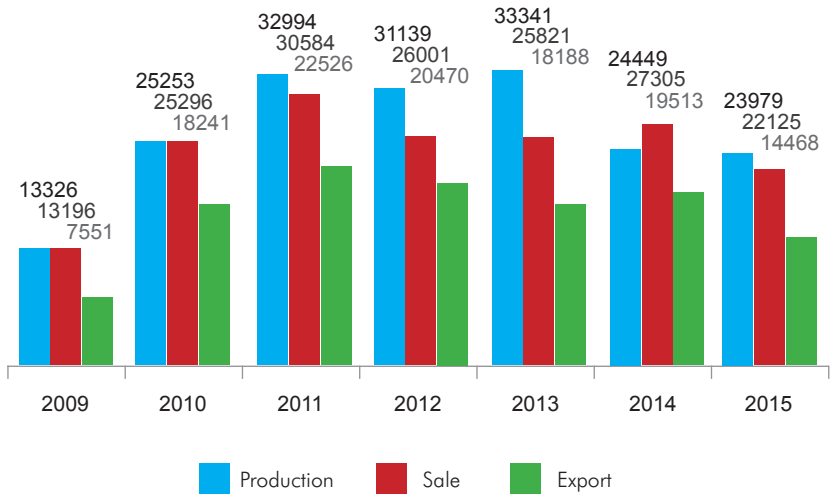


Figure 21: Coal production, sale and export, 2009 to 2015 (ths t)

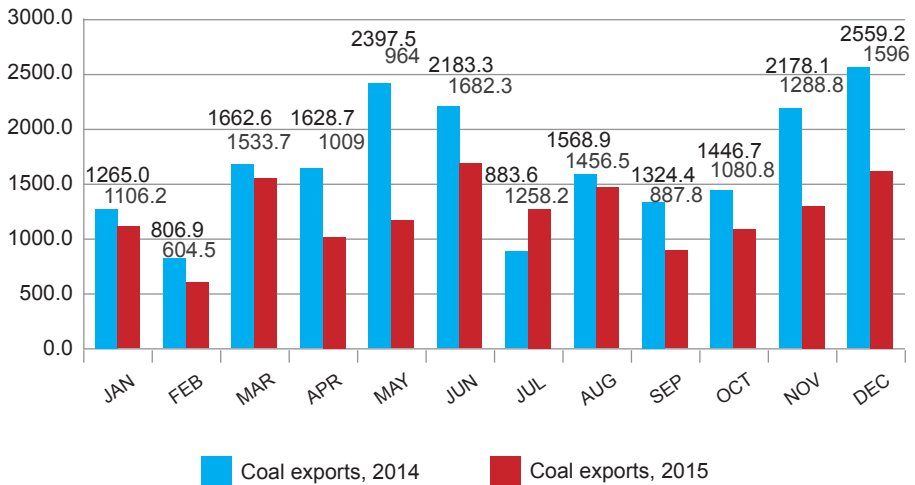


Figure 22: Coal export in comparison with the previous year, (ths t).

Source: Data form Coal mining companies to MRAM

Activities	Stripping (ths m <sup>3</sup> )	Mining (ths t)	Selling (ths t)	Export (ths t)
TOTAL	92,975.4	23,978.9	22,125.4	14,467.5
Energy coal mines	31,677.2	6,696.1	6,805.7	
Export coal mines	59,043.0	16,590.5	14,467.5	14,467.5
Local coal mines	2,255.2	692.3	852.2	

Table 13: Stripping, mining, sale and export of Coal mines, November 2015

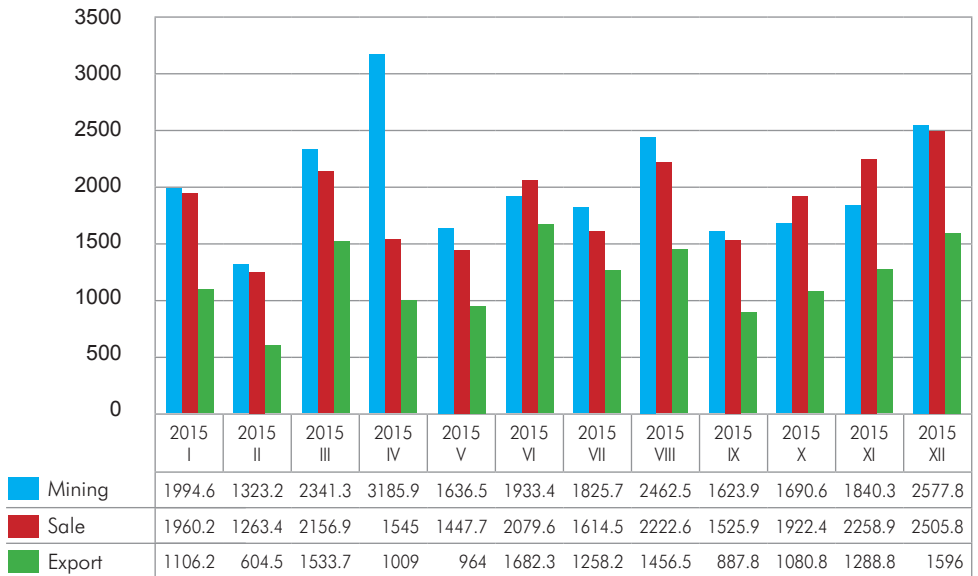


Figure 23: Coal mining, sale and export, JAN to DEC 2015, ths t

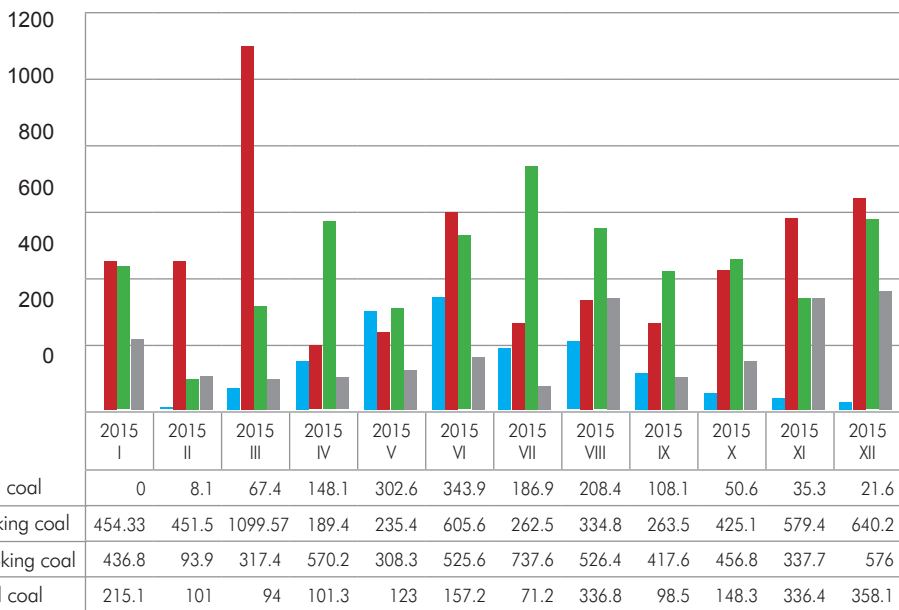


Figure 24: Composition of exported coal, JAN to DEC 2015, ths t  
Source: Data from Coal mining companies to MRAM

## 7

## Geological statistics

## 7.1. Mineral resources

Mineral types	Units	Reserve
Gold (rock)	ths kg	2548.4
Gold (placer)	kg	228177.2
Iron	ths t	1822434
Copper	t	60654700
Zinc	t	6171820
Lead	t	2073320
Molybdenum	ths t	1530.4
Tungsten	ths t	437.5
Rare earth elements	ths t	2354.4
Uranium	t	180152.1
Tin	ths t	132.8
Fluorspar	ths kg	47842.74
Coal	t	38522.04
Shale	mln t	607.01
Limestone	mln t	1864.4

Table 14: Mineral resource reserve registered in the State Integrated Registry, end of 2014. Source: Data base of mineral resources discussed in Mongolian Professional Minerals Council meetings.

## 7.2. Geological survey work carried out by State budget

Name of Country	2012		2013		2014		2015	
	mln MNT	%	mln MNT	%	mln MNT	%	mln MNT	%
<b>TOTAL</b>	<b>3997.6</b>	<b>79%</b>	<b>6809.9</b>	<b>93%</b>	<b>9209.22</b>	<b>92%</b>	<b>9280.6</b>	<b>82%</b>
SGMP 1:200000	847.8	100%	763.8	96%	807.231	89%	330.5	63%
SGMP 1:50000	3005.9	74%	5809.4	96%	7314.83	93%	5556.7	78%
Thematic work	84.2	100%	155.8	34%	1003.52	88%	3167.7	92%
Cooperation projects	59.7	100%	80.9	169%	83.6352	70%	225.6	79%

**Table 15: Geological survey conducted at expense of the state budget (mln MNT, 2012-2015)**

### 7.3. Geological survey work (prospection, exploration) conducted at expense of the State budget

Project period	Covering area (km <sup>2</sup> )	Percentage of total territory
<b>Finished projects:</b>		
<b>Total</b>	<b>888,881.0</b>	<b>56.34%</b>
2001-2003	38,900.0	2.47%
2003-2004	61,100.0	3.87%
2005-2007	203,385.0	12.89%
2007-2010	218,000.0	13.82%
2010-2012	367,496.0	23.29%
<b>Ongoing projects:</b>		
2011-2014	401,021.1	25.60%
<b>Ongoing projects:</b>		
2013-2016	287,924.4	18.38%

Table 16: State geological mapping, scale 1:200'000

Project period	Covering area (km <sup>2</sup> )	Percentage of total territory
<b>Finished projects:</b>		
<b>1932-2014</b>	<b>485,937.64</b>	<b>31.02%</b>
Ongoing projects:		
2011-2014	34396.58	2.20%
2012-2015	24,275.1	1.55%
2013-2016	11,747.7	0.75%
2014-2017	65,724.0	4.20%

Table 17: Geological mapping and prospecting scale 1:50'000. Source: Regional Geological Subdivisions of Geological Survey, MRAM

#### 7.4. Geological and exploration survey work conducted at the expenses of exploration license holders

	2008	2009	2010	2011	2012	2013	2014	Percentage share to total
<b>Total</b>	<b>155,560</b>	<b>124,155</b>	<b>173,388</b>	<b>302,497</b>	<b>323,970</b>	<b>142,647</b>	<b>157,219.6</b>	<b>100.0%</b>
Preparation	26361.8	3498.8	4672.7	5030.6	4788.8	3667.7	3,074.0	2.1%
Mapping	1833.1	1908.5	2269.7	3946.5	4638.8	2135.3	2,984.6	2.1%
Geological survey	2600.9	3561.5	2852.4	6865.6	3812.9	2348.3	2,494.4	1.7%
Sampling	1877.7	1675.4	2561.0	5681.9	6578.1	2550.5	2,246.9	1.6%
Geophysical work	10497.4	12295.6	20581.7	28655.3	23234.9	12873.5	12,394.3	8.5%
Mining	2652.8	4534.1	5151.4	10277.7	5141.2	2110.7	4,808.3	3.4%
Drilling	99726.5	66980.2	107941.6	190077.3	206606.5	79179.3	85,294.9	50.4%
Geochemical work	1057.6	622.0	377.0	1562.5	3285.0	2129.2	744.2	0.5%
Laboratory	5566.6	7335.9	7642.1	19017.9	22043.9	10477.6	10,451.9	6.8%
Topogeodetic work	2062.9	1291.2	1674.2	5776.5	2344.2	1567.7	1,320.4	0.9%
Hydrogeological work	583.3	1846.3	453.0	2571.0	4116.4	704.2	2,781.3	2.0%
Transport	0.2	5058.4	5720.6	6466.2	6586.5	4825.2	3,666.5	2.6%
Indoor, laboratory investigation	0.5	4601.0	4543.4	10455.3	18431.8	10480.8	19,750.7	13.9%
Environment reclamation	708.7	620.9	647.4	698.8	1420.9	1212.7	2,007.6	1.3%
Field sampling	30.0	1557.1	1547.9	2139.5	853.9	336.1	1,481.8	1.0%
Geomorphology	-	-	-	-	11.0	25.3	0.0	0.0%
Archeology	-	-	-	-	1065.8	478.0	123.0	0.1%
Paleontology	-	-	-	-	917.2	419.2	88.3	0.1%
Other	-	6768.0	4752.0	3274.3	8092.8	5125.5	1,506.3	1.1%

Table 18: Geological and exploration survey work carried out by exploration license holders (mln MNT, 2008 to 2014). Source: Reports of exploration license holders



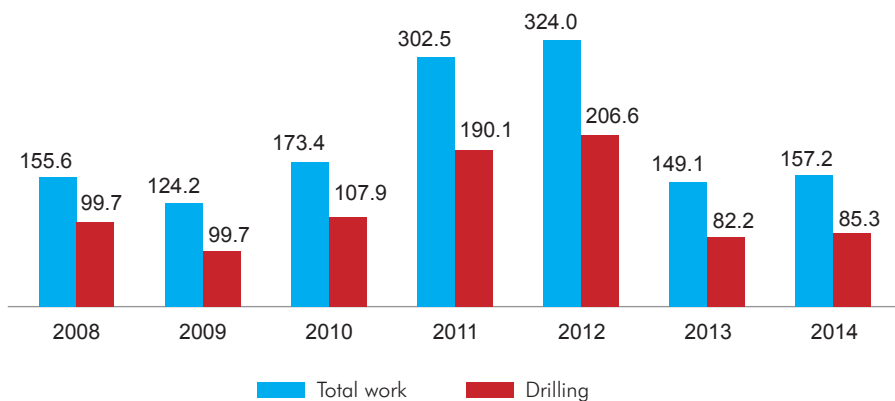


Figure 25: Private funding of geological exploration work and drilling (bln MNT, 2008 to 2014)

## 8

## Exploration work statistics by investing countries, 2012 to 2014 (mln MNT)

Investor country	2012		2013		2014	
	Expenditure	Percentage share to total	Expenditure	Percentage share to total	Expenditure	Percentage share to total
<b>Total</b>	<b>326189.1</b>	<b>100%</b>	<b>149086.3</b>	<b>100%</b>	<b>157219.9</b>	<b>112%</b>
Mongolia	209653.8	64%	97597.1	65%	72108.2	51%
France	-	-	-	-	22674.5	16%
China	34347.3	11%	8805.2	6%	12331.9	9%
Virgin Island	11430.0	4%	6720.9	5%	14058.6	10%
Hong Kong	4805.4	1%	1076.8	1%	228.6	0%
Canada	4254.2	1%	752.5	1%	448.4	0%
Australia	2401.5	1%	2491.9	2%	1268.4	1%
Republic of Korea	1533.4	0%	1005.8	1%	404.3	0%
Singapore	1527.7	0%	904.5	1%	16126.5	11%
Russian Federation	1264.2	0%	98.1	0%	80.5	0%
Switzerland	1260.2	0%	667.3	0%	-	-
Netherlands	1177.7	0%	1176.1	1%	1471.4	1%
Barbados	447.8	0%	114.9	0%	-	-
India	64.3	0%	42.9	0%	135.6	0%
Luxembourg	49.2	0%	42.6	0%	2509.3	2%
Bermuda	42.8	0%	230.9	0%	306.2	0%
Japan	18.3	0%	68.5	0%	-	-
USA	10.9	0%	-	-	-	-
Australia-Mongolia	27534.1	8%	15057.3	10%	251.3	0%
Mongolia-China	4308.3	1%	1662.5	1%	1322.3	1%

table continued

continuation of table

Investor country	2012		2013		2014	
	Expenditure	Percentage share to total	Expenditure	Percentage share to total	Expenditure	Percentage share to total
Mongolia-Virgin Island	4061.0	1%	929.6	1%	4793.3	3%
Mongolia-Republic of Korea	4060.0	1%	2685.0	2%	331.2	0%
Mongolia-Russian Federation	1354.3	0%	174.2	0%	590.3	0%
Mongolia-Singapore	1299.0	0%	654.5	0%	2598.1	2%
Mongolia-Hong Kong-Japan	948.1	0%	1672.8	1%	549.6	0%
Mongolia-Germany	926.2	0%	28.9	0%	4.8	0%
Mongolia-Hong Kong	716.6	0%	287.5	0%	153.6	0%
Mongolia-Virgin Island-Germany	381.1	0%	45.7	0%	-	-
Mongolia-Virgin Island-Luxembourg	128.0	0%	143.3	0%	30.6	0%
Mongolia-Canada	109.1	0%	153.5	0%		0%
Mongolia-Luxembourg	20.7	0%	1.5	0%	225.2	0%
Malasia-Mongolia	19.9	0%	5.0	0%	-	-
Mongolia-Virgin Island-Japan	19.8	0%	-	-	-	-
Mongolia-Japan	19.6	0%	13.2	0%	2.0	0%
Mongolia-USA-Belgium-Netherlands-United Kindom, Singapore-China	-	-	4.8	0%	-	-
Luxembourg-Seychelles	3222.6	1%	934.2	1%	2198.3	2%
Australia-New Zealand	1937.4	1%	2198.1	1%	-	-
Hong Kong-China	320.4	0%	436.9	0%		0%
Virgin Island-Singapore	218.8	0%	101.6	0%		0%
USA-China	207.1	0%	53.1	0%	9.1	0%
Belarus-United Kingdom	46.9	0%	-	-		0%
Australia-China	41.4	0%	47.1	0%		0%
Others	13.9	0%	4.2	0%	7.5	0%

Table 19: Exploration work carried out by investing countries (mln MNT, 2012 to 2014)

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MRAM prepares monthly statistics which are regularly updated and published on the MRAM's website [www.mram.gov.mn](http://www.mram.gov.mn)

Mid-year statistics are printed twice a year. They can also be downloaded from the MRAM website [www.mram.gov.mn](http://www.mram.gov.mn)

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# MINING AND GEOLOGY STATISTICS 2015 DATA

