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“Joint Venture and State-owned Enterprise In The Copper Industry”:

The case of Oyu-Tolgoi LLC (Mongolia) and Codelco (Chile)

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Hiermit möchte ich mich herzlichst bei all den Menschen bedanken,
die mich durch meine Studienzeit begleitet und unterstützt haben.

Abstract

The copper industry has experienced significant changes in the last decade. Enormous Chinese economic progress has made a substantial contribution to this development. The concentration of the copper market shifted from developed countries to developing and less developed countries. New players rose to the top of the copper market. Thus, it is time to update the whole copper industry.

For the economies of copper exporting countries, such as Chile and Mongolia, the last decade was a successful time. The most important copper company in each country - Codelco in Chile and Oyu-Tolgoi LLC in Mongolia - is essential to the economy of the country it represents. However, these companies are completely different. While Codelco is a fully state-owned company, Oyu-Tolgoi LLC is a joint venture.

This paper compares the different structures and different management systems of these two companies with regard to their competitiveness and profitability.

Keywords:

State-owned enterprise, Joint Venture, Copper industry, Codelco, Oyu-Tolgoi LLC,

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Acronyms

CIPEC: Intergovernmental Council of Copper Exporting Countries

BRIC States: Brazil, Russia, India and China

CIEPLAN: La Corporacion de Investigaciones Economicas para Latinoamerica

COCHILCO: Comision Chilena del Cobre, Chilean Copper Commission

CODELCO: The National Copper Corporation of Chile

FDI: Foreign Direct Investment

MPRP: Mongolian People's Revolutionary Party

JV: Joint Venture

IJV: International Joint Venture

OPEC: Organization of the Petroleum Exporting Countries

UNEP: United Nations Environmental Programme

1 Introduction

It seems today that the world economy acts completely within a free market system. Throughout the world, economists, scholars and politicians talk about the advantages of this system. These people, furthermore, recommend the neo-liberal economic system, which is a further development of a free market economy. Neo-liberalists support the intensification of the role of private sectors and recommend the deregulation of national companies. However, even within these economically neo-liberal-oriented countries, there are sectors, where the privatization of national companies does not work. State-owned enterprises still play important roles in the respective economies of these countries.

On the other hand, the globalized world economy of today forces countries and companies to cooperate internationally. Here, one of the most used methods is the joint venture cooperation. Many countries in the world practice this kind of cooperation. Especially in the commodity market, it is a very commonly used method.

It is very interesting to compare such different companies. Here, the author chose the Chilean state-owned copper giant Codelco and the Mongolian copper JV, Oyu-Tolgoi LLC. While Codelco is a 100% state-owned company, Oyu-Tolgoi LLC is a cooperation between the British-Australian commodity giant Rio-Tinto, the Canadian commodity company Ivanhoe Mines Ltd and the Mongolian government. These two companies act in the globally competitive copper market and the question is as follows:

How do these different companies' structures and management systems influence the company's profitability and competitiveness?

Clearly, it is difficult to understand the results of these two companies without knowledge of the copper market. Thus, the first chapter of this paper summarizes and updates the copper market in general. It is a market, which mirrors the world economic development of the last decade. The copper industry, especially, demonstrates the highly visible shift of world economic power from North America and Europe to Southeast Asia and South America in the last decade. Particularly, Southeast Asia and China enormously caught up with North

American and European countries. The importance of China for the copper industry is today remarkable.

Many countries have profited from the enormous Chinese economic development. Especially, commodity-exporting countries, which are mainly less developed, profited greatly from Chinese development. Mongolia is one of those countries.

Indeed, Mongolia and Chile are economically very similar. Both are oriented towards the exportation of commodities and, according to their population, are relatively small in their respective regions. Copper plays an important role in both countries' economies. To understand better the current economic situation of these countries, the author also summarized these countries' economies, histories and their copper industries in this paper.

2 Copper

People were already familiar with copper 10,000 years ago and used it for their everyday life. However, the real beginning of mass production was in the industrialization era, from the end of the 19th to the beginning of 20th century, when the mining of copper had risen by 10 times what it had been in the past.¹

Everywhere within the earth's crust there exists some portion of copper - in some place more and in other places less. The difficulty of the extraction of copper is that it requires the mining of a lot of earth to get only a little bit copper. On average, in a ton of earth's crust, there is 55gram copper.²

Copper is a reddish-orange metal with the chemical element Cu. Thanks to its physical and chemical characteristics, copper is today one of the most used metal. Pure copper is malleable and has very high thermal and electrical conductivity. As well, copper does not lose any quality by recycling, which makes it very environmentally beneficial.

Copper also has the quality of being antimicrobial, which means some copper alloys are strongly resistant against bacteria. This characteristic is widely used, especially in hospitals, to decrease the transportation of diseases between human.

Another very important property of copper is the so-called "Antibiofouling" (=Anti biological fouling) characteristic, which means that bacteria does not grow on a copper surface, making copper highly corrosive resistant and very useful for marine and agricultural equipment.

Today, 60% of all copper production in the world is used for electrical wires, 20% for roofing and plumbing, 15% for industrial machinery and 5% as a component for metal alloys.³

¹"Kupfer-Werkstoff und Anwendung." *Österreichische Kupferinstitute*. <http://www.kupferinfo.at/> July.10.2012

² *ibid.*

³ *Ibid.*

2.1 World Copper Market

2.1.1. History

In the copper market, as like in many other commodity markets, there has always been two different sides with two different goals. On the one side, the less developed or developing countries, as suppliers of copper, who want to receive foreign exchanges and, on the other side, the developed countries as consumers, with the desire to secure their access to raw materials.⁴ For countries like Chile, Peru, Zambia, Indonesia and Mongolia, copper is an essential product. Throughout history, these countries have been strongly dependent on this metal and the income generated by copper has played a prominent role in their respective economies. As well, developed countries were also concerned with the copper stock of their manufacturing companies and tried to gain control of the copper producing countries.

At the beginning of 20th century, the world demand for copper was around a half million tons. Due to increased wealth in cities and the two world wars, the demand for this metal skyrocketed. Additionally, Perkins invented the so-called chemical floatation method for the commodity industry in 1921, which allowed for the mining of copper from areas, which, up until that point, could not be explored.

However, in the 50's and 60's, the long running decline in the relative price of primary commodities, with respect to the prices of manufactures, led to the promotion of aggressive policies of industrialization in Latin America.⁵

On the one side, through improved mining technology, copper was more accessible, but on the other side, the consumption was not equal to production, which caused falling prices and led to the organization of the copper producing countries. In 1967, through an initialization of Rio Tinto and after the model of the Organization of the Petroleum Exporting Countries (OPEC), the main copper producing countries, Chile, Peru, Zambia and Democratic Republic Congo, established the so-called Intergovernmental Council of Copper Exporting Countries (CIPEC).

⁴ cf. Joaquin (1988), p.1

⁵ *ibid.*

This organization was designed to help these countries coordinate their export capacity in order to improve their income from the copper business.

In the late 60's, the stage of nationalization began in Chile and Zambia. The main companies of these countries were nationalized in order to have better control and revenues from the mines. However, the outcome was unsuccessful. The foreign direct investment (FDI) fell, thus, also the foreign exchange rates, which caused the financial possibility of investing in the mines to no longer be an option.

In 1974, CIPEC decreased the production of copper in order to fight against the falling copper prices at that time. However, the results were small. The coordination of the members did not work well and the market of copper was not dependent on this alliance. The high inventories, the growth of the new mines and the political change in Chile led to a decrease in the activity of the organization, which then completely dissolved in the 90's.

2.1.2. Present

2.1.2.1. Introduction

The world copper market experienced turbulent times in the last decade. One factor was the seemingly unstoppable economic growth from 2001 to 2008, which was intensified through the enormous development of emerging markets like China and India. This expansion increased the demand for copper in a way never before seen. However, the production of copper, even in time of economic boom, is limited in comparison to the demand.

Copper is a metal, which is broadly used in many sectors and when an economic boom occurs, the demand for copper remains high through all these sectors. Therefore, the demand for copper grew enormously and pushed up the price of this metal to a historic level.

Figure 1: Copper price development in US \$



Source: Handelsblatt.

http://finanzen.handelsblatt.com/kurse_einzelkurs_uebersicht.htn?chart_zeit=100000&i=354331 August.6.2012

As the chart above shows, the price of copper jumped up from around \$1,700 per ton in August 2003 to almost \$9,000 per ton in June 2006.

China is the biggest importer of copper and, in 2007, as the economy of China grew to 11,4 percent, the price of copper also reached just under the \$9,000 (per ton) mark. However, the Chinese economy slowed a bit over the following years and so also the price of copper.

In September 2009, the economic crisis began, starting with the filing of bankruptcy by Lehmann Brothers. The crisis rapidly pushed the copper price down.

Nevertheless, as the Chinese economy began to grow after just two years, the decrease in the price of copper reversed and again started to rise. In February 2011, the price reached the historical high \$10,000/t level.

With the beginning of the European debt crisis in 2011, the world economy slowed in general and so also the Chinese economy. The price of copper came down to \$8000/t level.

Copper price development is a commonly used forecasting method for the general economic trends of the future.

The endless growing demands of emerging markets are not the only explanation for this price jump. It is also that the copper market has become an area for speculators seeking out a new, stable investment sector after the US housing market bubble burst.

2.1.2.2. World Copper Production

The increase of copper production worldwide has been relatively constant in the last years to the amount of 16 millions tons in the year 2010.⁶ In general, as mentioned before, the production amount of copper is “relatively” stable. Although there are sources of copper almost everywhere on earth, the cost and energy to gain this metal remains enormously high. Every country is attempting to receive the best possible production amounts in a time when the price and demand are historically high.

The production of such metals could be increased significantly through the invention of new, easy and cost-effective methods or through new mines. Today, even if there are several new mining projects, the amount of copper production can not be increased in such amounts such as the demand for copper during the world economy boom, which was experienced during the last decade.

The two main kinds of mining are surface- and underground mining. Open-pit mining is the most used method of surface mining in the copper and molybdenum industry.⁷ This method is much cheaper than underground mining because open-pit mining does not require high-cost dewatering, ventilation and transportation systems and, furthermore, it creates the

⁶ Cochilco. (2010) p. 136

⁷ “Types of Mining”. *Detroit Salt Company*. ⁷ <http://www.detroitsalt.com/types-of-mining.html> 11 Oct. 2012.

possibility to explore relative low-grade ores.⁸ The advantage of underground mining is to explore more selective areas with high-grade concentrates.

Generally, copper will be obtained through so-called primary- and secondary production. The first involves copper being extracted through the smelting and refining of mineral ores and the second, which is today very common in industrialized countries, is recycling.

With regard to primary-production, one has to differentiate between the end products. The mine-, smelter- and refining productions differ throughout the copper producing countries. When it comes to copper mine production, Chile is by far the biggest producer in the world with one-third of the world's production -. Between 2001 and 2010, Chile increased its production around 679,900 kMT.

Table 1: Copper Mine Production by Countries: Top 20 Lists in 000 metric tons

		2010	2001	Δ	2010 (%)
1.	Chile	5.418,9	4.739,0	679,9	33,7
2.	Peru	1.247,1	722,4	524,8	7,7
3.	China	1.155,8	587,4	568,4	7,2
4.	USA	1.141,7	1.340,0	-198,3	7,1
5.	Indonesia	854,2	1.047,4	-193,2	5,3
6.	Australia	849,0	896,0	-47,0	5,3
7.	Zambia	731,7	306,9	424,8	4,5
8.	Russia	727,8	600,0	127,8	4,5
9.	Canada	525,0	633,5	-108,5	3,3
10.	Poland	425,0	474,0	-49,0	2,6
11.	Kazakhstan	412,2	470,1	-57,9	2,6
12.	Dem. Republic Congo	384,9	33,0	351,9	2,4
13.	Mexico	260,9	371,1	-110,3	1,6
14.	Iran	260,4	146,3	114,1	1,6
15.	Brazil	215,8	32,7	183,1	1,3
16.	Papua New Guinea	159,8	203,8	-43,9	1,0
17.	Argentina	140,3	191,7	-51,3	0,9
18.	Laos	132,0	-	132,0	0,8
19.	Mongolia	127,7	136,4	-8,7	0,8
20.	South Africa	112,6	141,9	-29,3	0,7

Source: Cochilco (=Comision Chilena del Cobre), Yearbook 2010, (Own illustration).

We can also observe from the table above that countries like Peru (524,800 kMT) and Zambia (424,800 kMT) have the potential to increase significantly their copper production. In

⁸ cf. Joaquin. (1988), p. 8

the 10 years represented by the graph, Peru jumped from being the 8th biggest producer to the 2nd biggest copper producer in the world. However, this is opposite from North American, where copper mine production decreased in these years. In 2010, the USA produced 198,300 tons, Canada 108,500 tons and Mexico 110,300 tons less copper in comparison to 2001.

Interestingly, the so-called BRIC states (Brazil, Russia, India and China), which are called the coming industry nations, could also increase their copper production. Russia, Brazil and China could increase their productions with 127,800 tons, 183,100 tons and 568,400 tons in these 10 years, respectively.

Even India, which does not have its own big copper mines, doubled their smelting- and refined copper amount.

Despite economic and political problems, countries like Iran and the Democratic Republic Congo also have the potential to increase copper production.

Logically, most of the biggest mines belong to the biggest producer in the world, Chile. Escondida, located in Northern Chile, is the privately owned mine of the metal Giants BHP/Billiton, Rio Tinto and Japan Escondida and is ruling this rank followed by Codelco North of the state-owned Chilean copper giant Codelco, which will be illustrated more precisely later.

Table 2: Top 20 Copper Mines by Capacity, 2010

Top 20 Copper Mines by Capacity, 2010					
Thousand metric tonnes					
Source: ICSG					
Rank	Mine	Country	Owner(s)	Source	Capacity
1	Escondida	Chile	BHP Billiton (57.5%), Rio Tinto Corp. (30%), Japan Escondida (12.5%)	Concs & SX-EW	1,300
2	Codelco Norte (Includes Chuquibambilla, Radomiro Tomic, Mina Ministro Hales project)	Chile	Codelco	Concs & SX-EW	920
3	Grasberg	Indonesia	P.T. Freeport Indonesia Co. (PT-FI), Rio Tinto	Concentrates	780
4	Collahuasi	Chile	Anglo American (44%), Xstrata plc (44%), Mitsui + Nippon (12%)	Concs & SX-EW	520
5	El Teniente	Chile	Codelco Chile	Concs & SX-EW	454
6	Taimyr Peninsula (Norilsk/ Talnakh Mills)	Russia	Norilsk Nickel	Concentrates	430
7	Antamina	Peru	BHP Billiton (33.75%), Teck (22.5%), Xstrata plc (33.75%), Mitsubishi (10%)	concentrates	400
7	Los Pelambres	Chile	Antofagasta Plc (80%), Nippon Mining (25%), Mitsubishi Materials (15%)	concentrates	400
9	Morenci	United States	Freeport-MoRan Copper & Gold Inc./Sumitomo	Concs & SX-EW	390
10	Bingham Canyon	United States	Kennecott (Rio Tinto)	Concentrates	280
10	Batu Hijau	Indonesia	PT Pukuafu 20%, Newmont 41.5%, Sumitomo Corp., Sumitomo Metal Mining & Mitsubishi Materials 31.5%, PT Multi Daerah Bersaing 7%	Concentrates	280
10	Andina	Chile	Codelco Chile	concentrates	280
13	Kansanshi	Zambia	First Quantum Minerals Ltd (80%), ZCCM (20%)	Concs & SX-EW	270
14	Los Bronces	Chile	Anglo American (100%)	Concs & SX-EW	241
15	Zhezkazgan Complex	Kazakhstan	Kazakhmys (Samsung)	concentrates	230
16	Olympic Dam	Australia	BHP Billiton	Concs & SX-EW	225
17	Rudna	Poland	KGHM Polska Miedz S.A.	concentrates	220
18	Sarcheshmeh	Iran	National Iranian Copper Industry Co.	Concs & SX-EW	204
19	Spence	Chile	BHP Billiton	SX-EW	200
20	La Caridad	Mexico	Mexicana de Cobre S. A. (Grupo Mexico)	Concs & SX-EW	195

Source: "World Copper Factbook 2010". International Copper Study Group

The 3rd biggest mine in the world is the Grasberg mine of P.T. Freeport Indonesia Co. and Rio Tinto in West Papua, Indonesia. It should be mentioned that the local people have voiced enormous criticism in terms of environmental issues caused by this specific mining operation. Nevertheless, the company is the biggest taxpayer in Indonesia and enjoys a high confidence, especially by the government.

The biggest copper producing company in the world is the Chilean copper giant Codelco, followed by the US American Freeport McMoran and British Australian BHP/Billiton, which in 2011, was the 4th biggest company in the world.⁹

Table 3: Leading copper producers 2011 by company

	Company	Copper Production (000 Metric Tons)
1	Codelco	1,757
2	Freeport-McMoran	1,441
3	BHP Billiton	1,135
4	Xstrata	907
5	Rio Tinto	701
6	Anglo	645
7	Grupo Mexico	598
8	Glencore	512
9	SCC	407
10	KGHM	426

Source: National Mining Association, 2012 http://www.nma.org/pdf/m_copper.pdf

Generally, the multinational commodity giants the British-Australian companies, BHP/Billiton and Rio Tinto, the Swiss companies, Glencore and Xstrata, and the US company, Anglo American, are all represented on the top 10 list. With the exception of Chilean Codelco and polish KGHM, the companies are all acting in different foreign countries and so they are confronted with any possible local political and social problems.

Glencore, the Swiss commodity giant, which only came on the stock exchange as of May of last year, is intending on absorbing Xstrata. If this acquisition occurs successfully, then there is a new giant in the commodity market.

⁹ cf. Eckert and Zschäpitz. "Rohstoff-Firmen verdrängen Finanzkonzerne". *Welt-online*. 7. Feb. 2011. ⁹ <http://www.welt.de/wirtschaft/article12472099/Rohstoff-Firmen-verdraengen-Finanzkonzerne.html> 26.Aug. 2012

Many less developed countries do not have the possibility and know-how to produce refined copper from mineral ores. Especially for countries, which have a lesser amount of yearly copper production, the exportation of their mineral ores directly to developed countries or to China and India, where most of the smelter and refining companies are domiciled, is a better expenditure of time and energy.

New players are joining the ranks of the top 20 list of copper smelter producers in table 4. China rules this table followed by Japan, which doesn't actually hold their own copper mines. India, who also does not own big copper mines, stands in the 4th position with a yearly production of 748,800 tons.

Developed countries like Germany, South Korea, Spain and Sweden are also represented in the top 20 ranking. The growth of Chinese and Indian smelter production is enormous. Both countries increased their production in the last 10 years – China, with a plus of 1,434,100 tons and India, with 523,200 tons. Conversely, the American (-403,000 tons) and Canadian (-253,900 tons) smelter production of copper decreased significantly in the last years. The performance of Chinese refined copper production is reflecting the country's enormous economic development in the last years. The refined copper production of the country exploded from 1,523,300 tons in 2000 to an amount of 4,573,500 tons in the year 2010.

In this table we can observe a situation similar to mine production. While the North American countries are more and more losing their significance, the developing and less developed countries are moving forwards at an unstoppable pace. Chile (+575,500 tons), Zambia (+459,400 tons), India (+388,400 tons), the Democratic Republic of Congo (+203,800 tons) and Indonesia (110,800 tons) increased their production significantly. On the contrary, the three North American countries USA (-701,900 tons), Canada (-232,200 tons) and Mexico (-107,200 tons) clearly lost their positions in the refined copper world market.

The technology giants, Japan, South Korea and Germany, where copper is used broadly, maintained their production amount.

Table 4: Top 20 refined copper production lists by country

		2010	2000	Δ
1.	China	4.537,5	1.371,1	3.166,4
2.	Chile	3.243,9	2.668,3	575,6
3.	Japan	1.548,7	1.437,4	111,3
4.	USA	1.100,2	1.802,1	-701,9
5.	Russia	864,0	824,0	40,0
6.	Germany	708,9	709,5	-0,6
7.	Zambia	685,6	226,2	459,4
8.	India	647,5	259,1	388,4
9.	South Korea	550,0	470,5	79,5
10.	Poland	547,0	486,0	61,0
11.	Australia	417,0	484,0	-67,0
12.	Peru	393,6	451,7	-58,1
13.	Belgium	388,8	423,0	-34,2
14.	Spain	339,9	315,8	24,1
15.	Kazakhstan	324,9	394,7	-69,8
16.	Canada	319,2	551,4	-232,2
17.	Mexico	291,9	399,1	-107,2
18.	Indonesia	269,2	158,4	110,8
19.	Brazil	260,5	184,6	75,9
20.	Dem. Republic Congo	232,8	29,0	203,8

Source: Cochilco, Yearbook 2010, (Own illustration).

The list of the top 20 copper refineries below reflects the refined copper production table above. The biggest companies are domiciled in China, followed by Chilean copper giant, Codelco, and Indian copper supplier, Birla Group. Technology oriented countries like USA, Japan, South Korea and Germany are also represented. Most of these companies are also on the top 20 smelter production lists.

Nevertheless, the trend in this sector is clear. The coming developing countries, India and China, with their low-wage labours, are becoming more and more important. China especially, with its domiciled developed countries' high-tech production plants, is taking over superiority. The concern of technology-oriented nations to secure their resources is now crucial. Just two years ago, China shocked the industry with its export limitation of rare earth metals, of which they hold 97% of world production. January this year, Germany's industry elites started an alliance to secure their resources in the future.¹⁰

¹⁰ cf. Deutsche Industrie. "Allianz zur Rohstoffsicherung nimmt Form an". *Handelsblatt*. 30. Jan. 2012 <http://www.handelsblatt.com/finanzen/rohstoffe-devisen/rohstoffe/deutsche-industrie-allianz-zur-rohstoffsicherung-nimmt-form-an/6128006.html> 13. July. 2012

Table 5: Top 20 Copper Refineries by Capacity, 2010**Top 20 Copper Refineries by Capacity, 2010**

Thousand metric tonnes

Source: ICSG

Rank	Refinery	Country	Owner(s)	Process	Capacity
1	Guixi	China	Jiangxi Copper Corporation	Electrolytic	900
2	Yunnan Copper	China	Yunnan Copper Industry Group (84.8%)	Electrolytic	500
2	Birla	India	Birla Group Hidaroo	Electrolytic	500
4	Chuquicamata Refinery	Chile	Codelco	Electrolytic	490
5	Codelco Norte (SX-EW)	Chile	Codelco	Electrowinning	470
6	Toyo/Niihama (Besshi)	Japan	Sumitomo Metal Mining Co. Ltd.	Electrolytic	450
6	Amarillo	United States	Grupo Mexico	Electrolytic	450
8	El Paso (refinery)	United States	Freeport-McMoRan Copper & Gold Inc.	Electrolytic	415
9	Jinchuan	China	Jinchuan Non Ferrous Co.	Electrolytic	400
9	Las Ventanas	Chile	Codelco	Electrolytic	400
11	Hamburg (refinery)	Germany	Aurubis	Electrolytic	395
12	Sterlite Refinery	India	Vedanta	Electrolytic	380
12	Pyshma Refinery	Russia	Uralelectromed (Urals Mining & Metallurgical Co.)	Electrolytic	380
12	CCR Refinery (Montreal)	Canada	Xstrata plc	Electrolytic	380
15	Ilo Copper Refinery	Peru	Southern Copper Corp.	Electrolytic	360
16	Jinlong (Tongdu) (refinery)	China	Tongling NonFerrous Metal Corp. 52 %, Sharpline International 13%, Sumitomo Corp. 7.5%, Itochu Corp. 7.5%	Electrolytic	350
16	Morenci (SX-EW)	United States	Freeport-McMoRan Copper & Gold Inc./Sumitomo	Electrowinning	350
16	Escondida (SX-EW)	Chile	BHP Billiton (57.5%), Rio Tinto Corp. (30%), Japan Escondida (12.5%)	Electrowinning	350
19	Olen	Belgium	Aurubis	Electrolytic	345
20	Onsan Refinery I	Korean Republic	LS-Nikko Co. (LS, Nippon Mining)	Electrolytic	330
20	Norilsk Refinery	Russia	Norilsk Copper	Electrolytic	330

Source: "World Copper Factbook 2010". International Copper Study Group

A very upcoming and increasing part of copper production is recycling. Copper is metal, which does not lose quality when recycled and, therefore, is today the most recycled metal after iron and aluminium.

However, the differences between developed and less developed countries are enormous.

According to United Nations Environmental Programme's (UNEP) Metal Stocks in Society (2010), copper kg per capita is 140-300 for developed countries and 30-40 kg per capita for less developed countries.¹¹ The US copper scrap in 2010 was 1,793,000 tons, thereof, 1,021,000 tons were exported and the rest went to home consumption.

¹¹ cf. UNEP. Metal Stocks in Society (2010)

2.1.2.3. World Copper Demand and Consumption

The enormous boom in the Chinese economy boosted the demand for copper. So it is no surprising that China is by far the biggest consumer of this metal. The increasing wealth in a country of 1,3 billion people requires a huge amount of copper to meet the immense demand needed for building, construction and transportation needs. China had to renew existing buildings and also had to construct new buildings to meet the rising demand by the people for a high living standard. The huge development of China's big cities reflects this trend.

Also, many foreign consumer electronic and industrial machinery and equipment companies are settled in this low-wage country with enormous growing potential, which also intensifies the necessity for copper.

Table 6: Global refined copper consumption 2010, Top 20 Lists

		2010	2001	Δ
1.	China	7.418,6	2.307,3	5.111,3
2.	USA	1.785,0	2.619,0	-834,0
3.	Germany	1.316,8	1.119,6	197,2
4.	Japan	1.060,3	1.144,7	-84,3
5.	South Korea	850,1	848,5	1,6
6.	Italy	618,8	676,0	-57,3
7.	Taiwan	532,4	540,0	-7,6
8.	India	477,5	292,6	184,9
9.	Brazil	468,4	345,0	123,5
10.	Russia	420,5	223,8	196,8
11.	Turkey	369,2	194,2	175,0
12.	Spain	335,7	299,1	36,6
13.	Mexico	318,5	436,8	-118,3
14.	Poland	259,6	271,9	-12,3
15.	Belgium	246,2	312,0	-65,8
16.	Thailand	243,8	166,5	77,2
17.	Indonesia	209,9	104,3	105,6
18.	Malaysia	196,8	159,9	36,9
19.	France	193,5	537,7	-344,2
20.	Vietnam	172,3	25,2	147,1

Source: Cochilco, Yearbook 2010, (Own illustration).

The Chinese government is trying to maintain their increasing economy and has made several supporting policies. One these policies was the premium for environmentally friendly cars, which raised the sales market of a car to an amount of 1,22 million in August 2010 in

comparison to August 2009.¹² That is a rise of 56% and if we think that a new car normally contains around 25kg of copper and a hybrid car 75kg, then a huge need for this metal exists.¹³ With a consumption increase of 5,111,000 metric tons between 2001 and 2010, China is directly in charge of the copper boom. Already, they are consuming 38,6% of the world's copper.¹⁴

Generally, the table above reflects the development of the world economy in previous years. The so-called BRIC states, Brazil, Russia, India and China, increased their consumption significantly. In opposition, the USA lost significantly. Many US companies changed their production plants in the low-wage countries. In addition, the country has experienced a big economic crisis in the previous years. However, the USA is not the only country with a contraction in copper demand - the EU countries have also experienced an enormous decrease. France (-344,200 tons), Italy (-57,300 tons) and Belgium (-65,800 tons) all experienced diminishing copper demands.

The only one, which was able to resist this trend in Europe, is Germany. The export giant with its big car- and industry machinery/equipment companies increased its consumption of copper between 2001 and 2010 around 197,200 tons. The country is also a pioneer in wind-energy engineering and in 2011 decided to no longer consider nuclear energy in the future. When we consider that a 5 MW offshore wind complex requires 30 tons of copper,¹⁵ the demand of copper will probably not diminish within Germany anytime soon.

Vietnam, Thailand and Indonesia, the populous South Asian countries, which have experienced good, constant economic growth in the last years, could also increase their copper consumption.

As is generally known, Turkey also had good economic performances in the last years and could raise consumption of copper to around 175,000 tons in 10 years.

¹² cf. "China: "Umweltprämie bringt Autoboom". *Klimaretter*. 2.Sep.2010

<http://www.klimaretter.info/mobilitaet/nachricht/6731-china-qumweltpraemieq-bringt-autoboom> 14.July.2012

¹³ cf. Bauchmüller. "Rot ist die Hoffnung". *Süddeutsche*. 8.Apr.2010

<http://www.sueddeutsche.de/wirtschaft/kupfer-fund-in-der-lausitz-rot-ist-die-hoffnung-1.11533> 14.July.2012

¹⁴ Cochilco, Yearbook (2010), p. 149

¹⁵ cf. "Kupfer in Windkraftanlagen". *Metalle pro Klima*. <http://www.metalleproklima.de/bestpractice/kupfer-in-windkraftanlagen> 11.July.2012

2.1.2.4. World Copper Trade

The international trade of copper is highly diverse. There are several kind of products, which could be exported or imported. The first, which could be traded, are copper ores and concentrates. As mentioned before, many of the less developed countries or countries with lower amounts of copper ore production are exporting their concentrates directly to other countries where the smelting and refining companies are domiciled (e.g. Mongolia). On the other side, the developed countries, which invest directly in mine projects to secure their resources (e.g. Japanese companies) or, further, they have the manufacturing plants within their own country. Japan, South Korea and Germany, all of which have big car-, consumer electronic and industry machinery/equipment companies, are securing in this way their copper resources.

Table 7: World Trade of Copper Ores and Concentrates, Top 10 Lists, 2010

<i>Export</i>				<i>Import</i>			
		2010	%			2010	%
1.	Chile	1.863,4	33,6	1.	China	1.618,9	32,5
2.	Peru	820,5	14,8	2.	Japan	1.306,4	26,2
3.	Indonesia	590,2	10,6	3.	South Korea	432,4	8,7
4.	Australia	471,1	8,5	4.	India	319,7	6,4
5.	Canada	261,8	4,7	5.	Spain	307,3	6,2
6.	Botswana	178,2	3,2	6.	Germany	282,1	5,7
7.	Papua New Guinea	158,7	2,9	7.	Philippines	137,7	2,8
8.	Brazil	157,7	2,8	8.	Bulgaria	133,4	2,7
9.	USA	147,0	2,7	9.	Brazil	117,0	2,4
10.	Mongolia	142,2	2,6	10.	Finland	114,5	2,3

Source: Cochilco, Yearbook 2010, (Own illustration).

The products of smelting companies are called blisters and this is the second product with the potential to be traded and which also contains a copper purity between 98% and 98,5%. However, the international trade amount of blisters, when compared to other products, is less. Cathodes, the third product, which could be exported and imported, have a copper purity of 99,8%.¹⁶ Usually these products are traded in metal exchange markets.

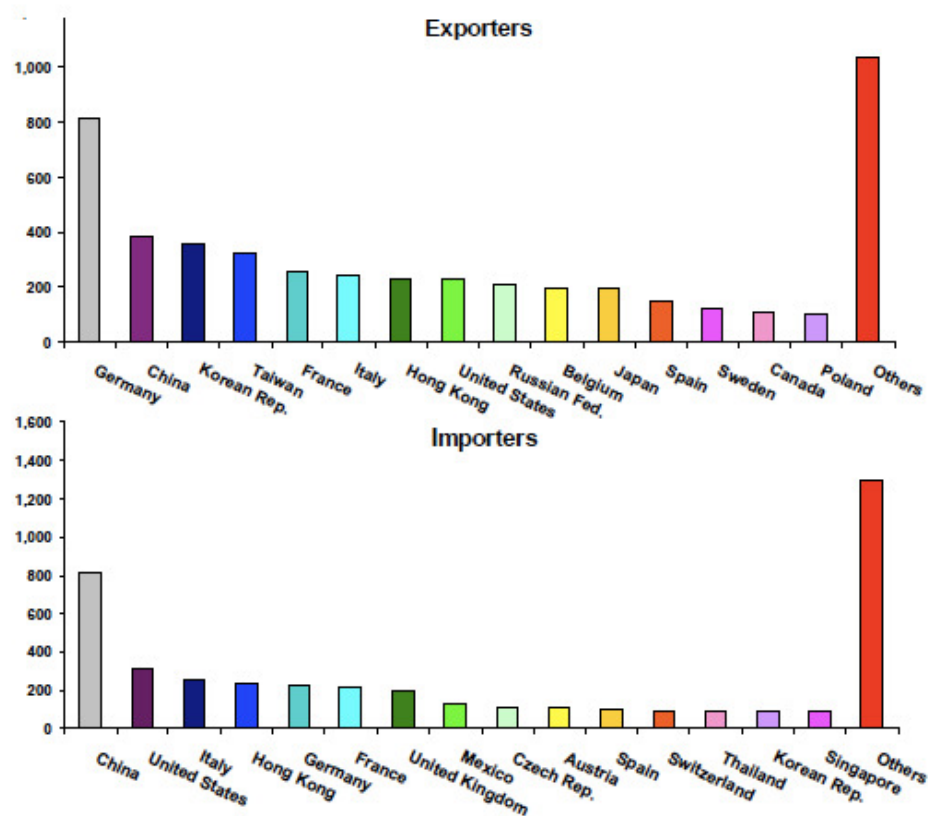
¹⁶ cf. Joaquin (1988) p. 8.

Table 8: World Refined Copper Trade, Top 10 Lists

<i>Export</i>				<i>Import</i>			
		2010	%			2010	%
1.	Chile	3.160,2	39,3	1.	China	2.920,4	37,6
2.	Zambia	753,2	9,4	2.	Germany	743,9	9,6
3.	Japan	528,4	6,6	3.	Italy	627,8	8,1
4.	Russia	443,6	5,5	4.	USA	582,9	7,5
5.	Peru	364,1	4,5	5.	Taiwan	535,5	6,9
6.	Australia	315,3	3,9	6.	South Korea	413,9	5,3
7.	Poland	288,2	3,6	7.	Brazil	253,4	3,3
8.	Kazakhstan	272,3	3,4	8.	Thailand	243,8	3,1
9.	Canada	184,3	2,3	9.	Turkey	332,5	4,3
10.	Belgium	177,4	2,2	10.	France	227,2	2,9

Source: Cochilco, Yearbook 2010, (Own illustration)

The next level in this process is making semi-products. The semi-manufacturers produce from refined copper wire rods, bars, plates, etc. and sell these products to end producers.

Figure 2: Leading Exporters and Importers of Semi-Fabricated, Copper Products in thousand metric tons, 2009

Source: World Copper Factbook 2010, International Copper Study Group

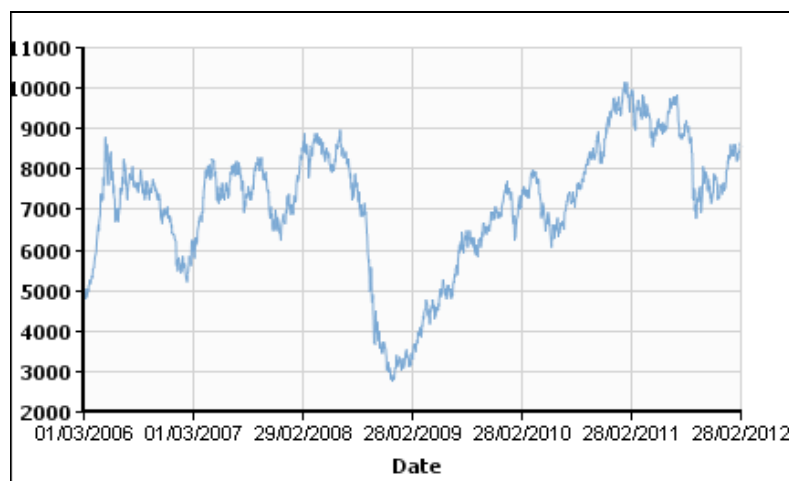
2.1.2.5. Copper Price and Speculation on Copper Price¹⁷

The copper price experienced a turbulent time in last half decade. It held a relative constant price around 2,000 USD/t point. Then, with the beginning of the Chinese economic boom in the first half of 2006, it boosted to a historical level until in 14 February 2011, when the price of a ton copper was 10,157 USD.

Important to be considered with copper price is the so-called settlement price for the present (spot price) or future day. The settlement price will be fixed based on the perception of future supply and demand in Exchange Markets mainly in the London Metal Exchange (LME), Commodity Exchange, New-York (COMEX) and the Shanghai Metal Exchange (SHME).

The increasing price also raised the volatility, which caused the rising uncertainty. If we consider the last five years, the price first experienced a steep rise and then for the next three years, roughly, was generally stable, before experience a fall of 3,000 USD points in February of 2009. Just after a few months, the price grew and reached the historical 10,000 USD point in February 2010 and then fell below 6,000 USD areas. The price is moving this year around 7,500 USD points.

Figure 3: Copper price development, LME \$/t, From March 2006 to March 2012



Source: London Metal Exchange. http://www.lme.com/copper_graphs.asp 1.Aug.2012

In the exchange markets there is also the possibility to secure with future and option contracts price variations in the future, which gives opportunity for speculators.

¹⁷ cf. Jung, A. and Schultz, T. (2010). Spielwiese für Spekulanten, Spiegel, edition 42, 2010 p. 92-99

After the new economy crises in the USA and the following European debt crisis, there was big uncertainty in the market. The confidence on stock and bond markets was shrinking and the investors were looking for stable investments. Especially for private investors, the commodity market was something easily understood and accessible.

As the big institutional investors also discovered the copper market, too many investors resided in this small market. They moved the price in order to make profits and so the volatility of the price of copper was rising and the real copper industry began to suffer under this development.

The price went up and down, so the investments, for example, in new mine projects became incalculable. Also, for construction-, automobile-, electronic- and industry machinery/equipment companies, business became difficult because they could not foresee how the price of this essential metal would develop.

Even today, the commodity market experts cannot predict the future development of the market. The fundamental data, which they normally use for their prognoses, is not the only important determinant - the mood of speculators is also highly influential on the price development of copper. In 2009, in the big metal exchange markets, copper futures were traded at 1,13 billion USD, which is 71 times more than the yearly global production of copper.

The mining companies have to secure their projects with expensive hedges and further give the increasing prices on the next processing steps and, in the end, the consumers have to carry this price increase. As opposed to the real copper industry and consumers, the banks are profiting double from this development. First they make profits from speculations and then from the hedging contracts.

2.1.3. Future

2.1.3.1.Chance

The perspective of the copper market depends mainly on world economic development. When the progress in China and India goes without rough problems, then there is enormous potential in this area. The economic boom and the increasing living standard of these two populous countries require an immense need for copper.

In addition to China and India the growing populous South Asian countries - Indonesia, Vietnam and Thailand - could also increase the demand for copper.

There are also other countries and regions, which had positive developments. Russia and some African (South Africa, Nigeria, Ghana) and South American (Peru, Argentina) countries have had a good growing economy and all have enormous needs in order to be able to catch up and reach a high living standard.

The growing technology standard means rising consumerism. The people, especially in developed countries, depend more and more on smart phones and tablet PCs. Therefore, the consumer electronic sector will also need a lot of copper in the future.

As mentioned before, as a result of the rising economy boom, an increase in living standards has also occurred. The car industry in China is booming more and more, but not everyone has a car in the most populous country of the world.

Beside all these perspectives, climate change and nature catastrophes, like the tsunami, which occurred in Japan in 2011, force us to rethink and renew our energy sector. Solar and wind energy seems to play a central role in our future.

All these require copper, but do we have enough copper?

This question is difficult to answer. On the one side, more and more new mines are being discovered and also, through the high copper price, even the mines with high costs are today profitable. Another positive aspect is that recycling gains more importance. The mining industry develops their technology and can nowadays recover copper from difficult areas, which they could not before.

All these give positive hope for the future.

2.1.3.2. Risks

Among the above-mentioned positive aspects, there are also dangers.

A big concern of copper mining companies and countries is a substitution for copper. Up until today, there is no sign of such material. However, Chile once lost their main export income, saltpetre, because a synthetic cheap material as a substitution was discovered. There are already today several substitutions for copper products (E.g. PVC and other plastic pipes in construction sector and fibre optics in telecommunication).

Technology improves further. Today especially, due to the trend of consumer products becoming smaller and smaller - known as miniaturisation – the demand for copper is less.

The economic crises in the USA and Europe has influenced the world's economic development and slowed the emerging market's progress and, as well, the demand for copper.

As mentioned before, the speculation of commodities in financial markets brings, on the one side, liquidity in this sector, but on the other side, creates unrealistic prices and, thus, damages the real copper industry.

Of course, in the end, even today we find new mines. The reserves will be depleted one day and then we will be confronted with the depletion of copper.

2.2 Chile

2.2.1. Overview

Chile is a long, narrow country with different climate zones. Through its diverse climate areas, it has various natural wealth. Though the country, with its 17 million people, is not the biggest country in South America, the economic power of Chile is one of the strongest and open. With a GDP of 281 billion USD in 2011, Chile's economy grew 6.5%, which was the second biggest growth in South America in this year. With a GDP per capita of \$16,100 Chile is the most prosperous country in South America and since 2010, the only South American member in OECD.¹⁸

Besides having strong financial institutions with good reputations, Chile is highly oriented towards foreign trade. The country has 59 trade agreements with different countries and regions (not all of them is full free trade), which is unrivalled in the world.¹⁹ The FDI in Chile in 2010 reached over 15 billion USD after 12,874 billion USD in 2009, which is an increase of 17,3%.²⁰

The economic history of the country is changing. From the end of the 19th century to the world economic crisis in 1930, saltpetre was the main export product. Since then, copper has taken over this role. After the world economic crisis in 1930, Chile tried to support their industry sector through so-called import-substituting industrialization (ISI), which means through political and economical influences to replace import products with own industrial goods.

During the second half of 20th century, the country experienced turbulent times through ideology-oriented governments. In 1970, under socialist Salvador Allende, an era of nationalization of industries and social politics began. Allende tried to make Chile more independent from other countries, especially from the USA. After the nationalization of several big companies and banks, Allende's government took over the copper mines, which were mainly owned by private US investors.

¹⁸ cf. "Chile". *CIA Factbook*. <https://www.cia.gov/library/publications/the-world-factbook/geos/ci.html>

20.Aug.2012

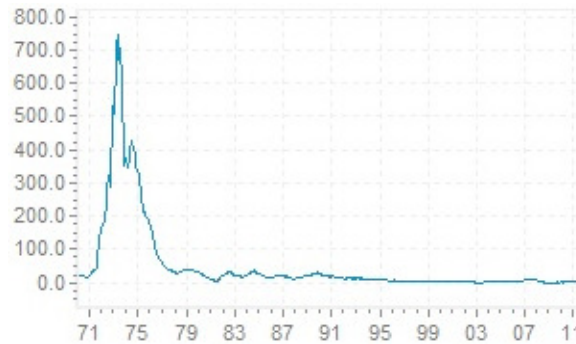
¹⁹ cf. *ibid*

²⁰ cf. Foreign Investment Committee Chile.

http://www.foreigninvestment.cl/index.php?option=com_content&view=article&id=229:noticia-principal-17&catid=38:noticias&Itemid=106 6.Aug.2012

In September 1973 came Augusto Pinochet through a US supported military coup to power. This completely changed the economic system of the country. At the beginning of the Pinochet government, the economy stayed weak and the inflation, which was beginning to gallop under Allende government, grew to a historical level.

Figure 4: Inflation Chile (historical)



Source: Global-rates. <http://www.global-rates.com/economic-indicators/inflation/consumer-prices/cpi/chile.aspx>

1.Aug.2012

At the beginning of the Pinochet era, the main ministers were staffed by military generals. Towards the end of 1974, these positions were filled by so called Chicago Boys - a group of former University of Chicago students, who were convinced of liberal free market oriented policy. Chicago Boys changed the protection and industry-oriented policy to a deregulated, privatized and strong foreign trade oriented one.

Most of the companies, which were nationalized under Allende, were again privatized and the Pinochet government again opened the Chilean market, which meant the end of import-substituting industrialization policy. The result was the diminishing of the secondary industry sector, but also a growing export sector.

In 1979, Pinochet fixed the Chilean peso on US Dollar, which caused the peso to be overvalued. The industry sector shrunk again and the unemployment rate increased to a historical high. In 1982, Chile faced a deep economic crisis caused by a high foreign debt in its bank sector. The government invested 6 billion USD in order to save the banks from collapse, which was about one third of Chilean GDP in 1983.²¹

²¹ cf. "Wirtschaft Chiles". Wikipedia. http://de.wikipedia.org/wiki/Wirtschaft_Chiles 4.Aug.2012

Pinochet was deselected in 1990 and followed by the first democratically elected president since 1971, Patricio Aylwin.

Today, the economy of the country is broadly diversified. Copper still plays an important role in the Chilean economy, but there are also other sectors, which have been developed significantly in the last decades.

Wood and wood based companies, which export products like paper and cellulose, experienced enormous growth. With 4 billion USD in 2004, the forestry industry contributed 3,1% to Chilean GDP. In 2005, this sector made up 13% of the total export of the country²².

The fish industry was a typical example of Chilean economic growth and the result of economic diversification. This sector had enormous development until 2008, but, unfortunately, a virus named infectious salmon anaemia (ISA) was found in 2007 and the sector broke down. At its peak, Chilean fish exportation was 650,000 tons in 2008 and in 2009, the sector was predicted to have reached between 250,000-300,000. As well, the workforce previously consisted of 55,000 direct or indirect workers during the boom time, but since then has remained at 25,000²³. The industry is recovering slowly from this hit.

Chile is also a growing wine country. Though the country has a long tradition of wine, since the mid 80's, the industry has begun to boom due to political stabilization and increasing quality relationships with foreign investors, especially with the Spanish and French.

The wine industry feared problems due to phylloxera louses and downy mildew, which were damaging the wine industry worldwide. Luckily, thanks to the geographical isolation of the country, these problems never came to Chile. The total export of the country in 2011 was 1.69 billion USD, which makes Chile, with 8% of the world total wine export, the 5th biggest wine exporter globally²⁴.

The finance and tourism sector also play an important role in the Chilean economy.

As well, the worldwide economic crisis of 2009 hardly affected the Chilean economy. However, the country has the so -called sovereign wealth fund, which was built during the

²² cf. "Forestry Industry". *Chilean-American Chamber of Commerce*.
www.amchamchile.cl/UserFiles/File/Forestry%20Industry.pdf 12.Aug.2012.

²³ Estrada. "Chile: Salmonindustry won't give up". *Inter Press Service* 15.Aug.2010
<http://www.ipsnews.net/2010/08/chile-salmon-industry-wont-give-up/> 16.Aug.2012

²⁴ Ramos. "With record exports of wine in 2011, Chile wraps up successful participation in prowein".
13.Mar.2012 <http://www.prnewswire.com/news-releases/with-record-exports-of-wine-in-2011-chile-wraps-up-successful-participation-in-prowein-142462285.html> 17.Aug.2012

high copper price era and was to be used in case of need. In 2009, the government was able to pick from this fund in order to stimulate the struggling economy.

Through its highly foreign investment and foreign trade oriented policy, the main Chilean economic sectors are more concentrated, which means that only a few big companies are ruling those sectors. Japanese and Norwegian fish companies are dominating the fish industry, just as the French and Spanish the wine sector.

Historically, the Chilean economy was dominated by so-called “Grupos económicos“, which are a group of people, who own several big companies and who have enormous economic and political power in the country.

Through its economic growth and stabile development, Chile remains one of the countries with the highest inequality. Through the Gini index, which measures the national income distribution, the country has a value of 52,1% in 2009²⁵, which is much more higher than the average OECD level of 0,314%²⁶.

This social inequality of the country received attention worldwide through mass student protests in 2011.

Beside social problems, Chile also has to fight with natural hazards. The country is in an earthquake active area. In February 2010, one of strongest earthquakes in the history of Chile occurred and a tsunami followed. Due to this natural catastrophe, 700 people lost their lives and it left damage equalling 30 billion USD.²⁷

²⁵ “Gini index”. *World Bank*. <http://data.worldbank.org/indicator/SI.POV.GINI/> 18.Aug.2012

²⁶ “Income Distribution”. *OECD*. <http://stats.oecd.org/Index.aspx?QueryId=26068> 18.Aug.2012

²⁷ “Erdbeben in Chile 2010”. *Spiegel online* 16.Mar.2010 <http://www.spiegel.de/panorama/bilanz-der-katastrophe-von-chile-700-menschen-starben-bei-erdbeben-und-tsunami-a-684001.html> 18.Aug.2012

2.2.2. Copper in Chile

A very important part of the Chilean economy is in the driest desert in the world - Atacama. Here, in northern Chile, exist several essential copper mines, including, among others, the Chuquibambilla mine, which is the biggest copper mine in the world. Since Saltpetre has lost its position as the most important export product of Chile in the 1930's, Copper has taken over this position and has been, throughout the years, an important pillar in the country's economy.

While during the 1950's, US investors mainly owned Chilean copper companies, the situation changed in 1964 with the government of Eduardo Frei Montalvo. Frei accused US Investors of not investing enough in the Chilean copper industry and, instead, nationalized 51% of those mines. Historically, this became known as the "Chileanization of Copper". As mentioned previously, the nationalization of copper was finalized under Allende in 1971. In that time, copper made up about 75% of the Chilean export.²⁸

Table 9: Contribution of Copper Companies to The Chilean Public Treasury, (In mill. US\$)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Contribution²⁹	880,8	900,6	446,6	995,9	1.953,5	1.301,7	1.569,8	549,5	383,7	916,1
Total Fiscal Revenue	8.494,1	10.337,8	10.771,0	12.137,1	15.501,7	16.512,7	17.874,1	16.735,9	14.880,0	15.918,0
Share of total fiscal revenue	10,4%	8,7%	4,1%	8,2%	12,6%	7,9%	8,8%	3,3%	2,6%	5,8%
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Contribution³⁰	510,7	376,0	846,7	3.607,0	6.163,1	12.909,6	14.153,1	11.181,3	4.566,7	9.753,0
Total Fiscal Revenue	14.901,0	14.167,0	15.277,0	21.047,0	28.131,0	37.811,0	44.208,0	43.468,0	32.731,0	46.629,0
Share of total fiscal revenue	3,4%	2,7%	5,5%	17,1%	21,9%	34,1%	32,0%	25,7%	14,0%	20,9%

Source: Cochilco, Yearbook 2010, (Own illustration).

²⁸ cf. Meller (2003).

²⁹ Including state-owned and 10 largest private copper companies (GMP-10)

³⁰ Data without GMP-10

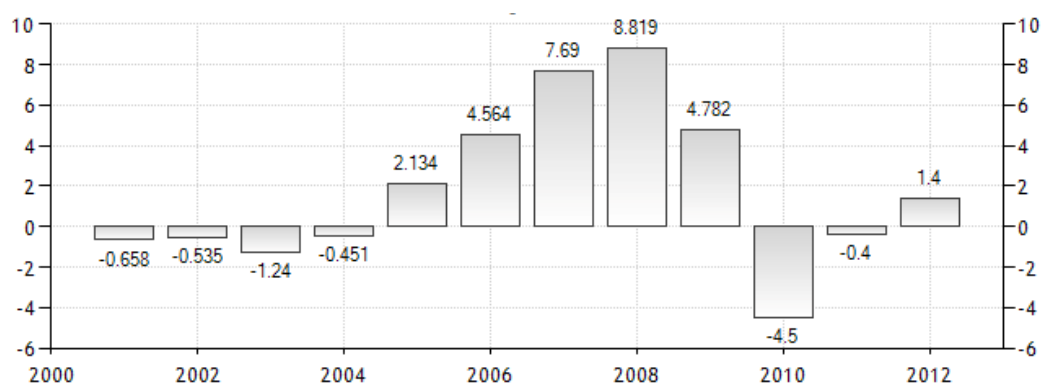
As main export and earning product of the country, copper played significant roles in the history of Chile. In 1942, President Ríos created a law, which said that 10% of the country's revenue of copper had to go directly to the army's budget. This law is still valid today.

The economy of the country is quite dependent on the price of copper. Fortunately, the price of copper has grown significantly over the last years and, therefore, the state has had more possibility to invest and support other sectors. Though Chile's current economy is diversified, the copper sector is still the most important. In 2010, over 17% of Chilean GDP came from this sector³¹.

In table 9, we can observe the contribution of Chilean copper companies to the public treasury. The significance of copper in Chile is enormous. There was time when the contribution was not that high, but with the development of copper prices over the last years, the significance of the metal has grown more and more. In 2006, the contribution of copper to the public treasury was 34.1%, which is an immense amount and in the following year, 2007, the contribution was over 14 billion USD.

The development of total fiscal revenue reflects the enormous progress of the Chilean economy. While in 1991, the fiscal revenue was only about 8.5 billion USD, after 20 years, the revenue was over 46 billion USD. As we can see in Figure 5, the enormous increase in copper price brought the Chilean government full surpluses.

Figure 5: Government Budget of Chile, (Percentage of the GDP)



Source: "Chile GDP Growth Rate". *Trading Economics*. www.tradingeconomics.com/chile/gdp-growth

17.July.2012

³¹ cf. Cochilco, Yearbook 2010, p.69

Copper is not just an important factor for the fiscal revenue, it also provides and creates a lot of jobs. In 2008, in the Chilean mining industry, in total, 167.509 people were employed directly or indirectly.³²

The mining industry is also the most important sector relating to FDI. In 2010, the FDI, which represented the mining sector, fell by 38.3%, equal to over 15 billion USD.³³

Table 10 shows that private copper companies are gaining more and more importance. While in the past, state-owned Codelco dominated Chilean copper production, other private companies are currently increasing their production capacity.

Table 10: Copper production of Chile by company, 2010

Companies	2010
Codelco-Chile	1.689,1
División Codelco Norte	903,7
División Salvador	76,2
División Andina	188,5
División El Teniente	403,6
Gaby	117,1
OTROS PRODUCTORES / Other Producers	3.729,8
Anglo American Norte	139,6
Anglo American Sur	257,7
Escondida	1086,7
Compañía Minera El Indio (1)	0,0
Michilla	41,2
Candelaria	136,4
Cerro Colorado	89,0
Quebrada Blanca	86,2
Zaldívar	144,4
El Abra	145,2
Collahuasi	504,0
Lomas Bayas	71,8
Los Pelambres	398,0
El Tesoro	95,3
Spence	178,1
OTROS / Other	356,2

Source: Cochilco, Yearbook 2010, (Own illustration)

³² cf. Perez and Villalobos, (2009).

³³ cf. Foreign Investment Committee Chile.

http://www.foreigninvestment.cl/index.php?option=com_content&view=article&id=229:noticia-principal-17&catid=38:noticias&Itemid=106 6.Aug.2012

2.2.3. Codelco

Corporacion Nacional del Cobre de Chile (CODELCO) is the biggest copper producing company in the world. This 100% state-owned company is by far the most important of the country. Codelco was created through a Chilean governmental decree in 1976 and consists of several subdivisions. The company was the main subject of so-called “Chileanisation” and “Nationalization of Copper”, which were illustrated previously. It is a company, which contributed mostly to the Chilean fiscal treasury and, more important, it is a company, which has enormous symbolic character for the Chilean people. This is illustrated by the fact that the date, July 11, 1971 - the day when the congress allowed president Allende to nationalize the copper companies - is named “The Day of National Dignity”. Hence, the government of Pinochet, which actually was unfriendly towards the US, didn’t have the heart to renationalize the company. Codelco grew over the years through fusions to a global copper giant. The contribution of the company to Chilean fiscal treasury is enormous. While the company contributed 11 billion USD to the treasury between 1970 and 1990,³⁴ it grew from 1991 to 2010 thanks to the increased copper price to an amount of over 49 billion USD, which is a tremendous number for a single company.³⁵ Besides this contribution, Codelco is also a large employer in Chile and provides jobs for more than 19,000 people.³⁶

³⁴ cf. Meller (2003).

³⁵ cf. Cochilco, Yearbook 2010, p.74

³⁶ cf. “Figures”. *Codelco*. http://www.codelco.com/cifras/prontus_codelco/2011-02-25/155208.html
12.Aug.2012

Table 11: Codelco in numbers, (in Mill. US\$)

	2006	2007	2008	2009	2010
Sales	17.077	16.988	14.425	12.379	16.066
Pre – tax profits	9.215	8.460	4.970	3.948	5.799
Treasury payments	8.334	7.933	6.829	3.048	6.069
Total assets	13.033	15.186	13.707	18.254	20.279
Total liabilities	8.505	10.442	9.831	13.811	15.748
Equity	4.528	4.744	3.876	4.443	4.531
Investment	1.219	1.605	1.975	1.681	2.309
Production (000 tons)	1.783	1665	1.548	1782	1.760

Source: “Figures”, Codelco, http://www.codelco.com/cifras/prontus_codelco/2011-02-25/155208.html

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Table 12: Employment

	2006	2007	2008	2009	2010
Own Personel	17.936	18.211	19.300	19.359	19.347
Operating contractors	24.028	26.210	23.171	22.602	23.138
Investment contractors	8.620	17.079	15.627	24.556	18.103

Source: “Figures”, Codelco, http://www.codelco.com/cifras/prontus_codelco/2011-02-25/155208.html

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2.3 Mongolia

2.3.1. Overview

A country more than four times bigger than Germany with only 2.7 million people, Mongolia is the most sparsely populated country in the world. Through its geographic position between the two giants Russia and China, the country stayed relatively isolated on the current world stage.

In 1921, after more than 200 years of Chinese occupation, Mongolia was able to free itself through Russian help. In 1924, Mongolia adopted the Russian constitution and became the second communistic country in the world. This era lasted until the collapse of the Soviet Union in 1990. In the same year, Mongolia experienced its first democratic election and is counted today as the most stabile democratic country of the former Soviet Union countries.

The economy of the country was primarily based on traditional herding and agriculture, whereas the second sector is underdeveloped due to the barren ground and continental climate with very low precipitation. Until the transition in 1990, the country's economy was strongly dependent on the Soviet Union's assistance. During this communistic period, the country was able to build a broad industry sector through help from the Soviet Union.

After the collapse in 1990, the Soviet Union's assistance disappeared over night and the country experienced a deep recession. The economic transition from socialistic to open market proved to be a difficult process. The industry sector broke down completely and left a huge lack of basic products. Even the food industry collapsed and brought the country serious problems. Mongolia had to introduce food rationing and the people began to see the powerlessness of the government and started to handle affairs themselves. It was the beginning of the gray economy, where Mongolians began to do business privately, and still today makes up a significant amount of the country's economy.

Due to 70 years of socialistic thinking, the people were accustomed to receiving everything from the state and had forgotten how to handle themselves - meaning, Mongolians had to learn to take personal responsibility.

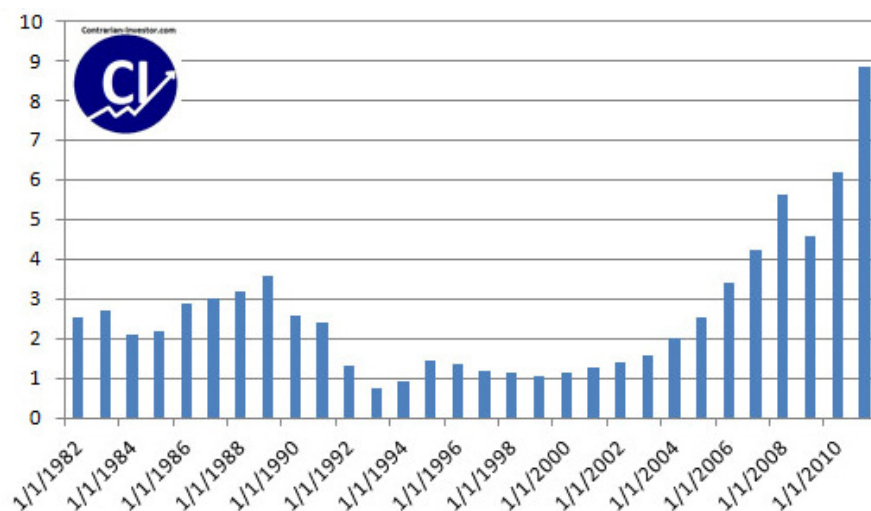
Politics had to also adjust. The first democratic chosen government, which was the old party from the Soviet period, was unable to handle the new orientation. They simply had no

experience and know-how of a market oriented economy and delayed the required market reforms. The other new party, which arose from the protests in 1990, consisted mainly of young politicians, who did not have political experience.

However, the positive point of the Mongolian political transition was that it happened peacefully and without any heavy trouble. The country's industry was inefficient and non-competitive and, after only a few years, achieved privatization and stabilization.

Since 2000, the economy of Mongolia has begun to recover from the recession. With the increasing copper prices and the start of several large mining investments, the economy has improved significantly in the last years. The two big investment projects, Oyu-Tolgoi (copper and gold) and Tavan-Tolgoi (coal), accelerated this development. The Mongolian Real GDP grew 17,3% in 2011, which was the second highest in the world behind Qatar.³⁷ However, the country has enormous problems with inflation, which was over 14,7% during the first half of 2012.³⁸ Mongolia became a member of WTO in 1997.

Figure 6: GDP-Mongolia, (In billions US\$)



Source: Hallberg, "Invest in Mongolia". *Contrarian Investor*. <http://www.contrarian-investor.com/invest-in-mongolia.html> 26.Aug.2012

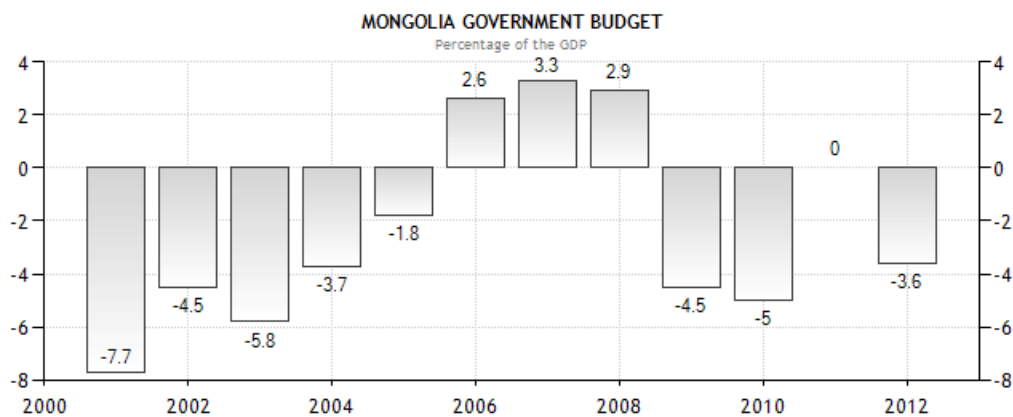
³⁷ cf. "Mongolia Quarterly Economic Update-February 2012". World Bank. <http://www.worldbank.org/en/news/2012/02/28/mongolia-quarterly-economic-update-february-2012> 14.Aug.2012

³⁸ "Mongolian Inflation Rate". *Trading Economics*. <http://www.tradingeconomics.com/mongolia/inflation-cpi> 20.Aug.2012

2.3.2. Challenges

Currently, one of main concerns in Mongolia is a possible political failure. The political parties concentrate more on their own interests and on upcoming elections than the countries current challenges. The generous cash presents given to every Mongolian before the 2012 election in a country with inflation problem reflects this reproach.

Figure 7: Mongolia Government Budget, Percentage of the GDP



Source: "Mongolia Government Budget". *Trading Economics*.

<http://www.tradingeconomics.com/mongolia/government-budget> 20.Aug.2012

The countries economy is developing positively in a never before seen way, yet the political representatives are destroying this for their own interests. Indeed, it is a critical time for the Mongolian future and coming generations and that is what the current rulers need to internalize.

Figure 7 shows that though the country's economy is growing and the main commodity prices are still high, the government is not managing a positive surplus. Instead of acting carefully in such a rapidly growing economy, the government is increasing its expenditures and overheating the country's economy.

It is also a time where the representatives are to accept the rules of market economy. Still today, there are several opinions which desire to stop foreign investments in large projects or to nationalize them, which is irresponsible and absolutely not in line with the

times. It is always damaging to hear such opinions in a country where many other foreign investors are beginning to look for investment projects.

Another challenge facing Mongolia is the need to diversify its economy. The revenue of the mining sector has to be the source for the developments of other sectors. Mongolia can learn here from the history of Chile.

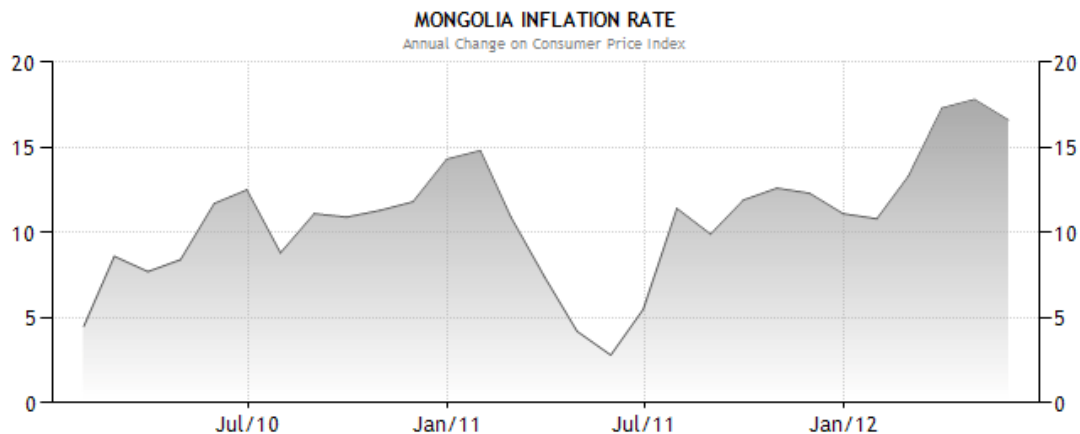
The economic diversification is indeed very limited and there is the danger of “Dutch Disease”, where the non-mining sector could be disadvantaged and the overvalued currency could bring these sectors in non-competitiveness.

The wholly dependence on Russian oil export is also a big concern for the country. Additionally, due to the fact that Mongolia only has two direct neighbours and no existing access to the sea, the issue of access to oil is critical, being that independence from Russian oil is a current goal of Mongolia. Not to be forgotten is that these Russian oil-exporting companies are a favourite political instrument of the Kremlin.

Besides this concern, over 90% of Mongolian exports in 2010 went to China,³⁹ which is also a worrying development. The country is highly dependent on the Chinese economy, which has begun to slow down recently.

However, besides oil prices, the main sources for increasing inflation in Mongolia are copper, coal and meat prices. According to the National Statistic Office of Mongolia, the increase on the price of meat was the main reason for the 14,7% inflation rate in the first half of 2012. Mongolia, with 2.7 million people, has over 40 million livestock and has the possibility to bring the price of meat under control.

³⁹ “Mongolia”. *CIA Factbook*. <https://www.cia.gov/library/publications/the-world-factbook/geos/mg.html>
20.Aug.2012

Figure 8: Mongolia Inflation Rate

Source: Mongolian Inflation Rate". *Trading Economics*. <http://www.tradingeconomics.com/mongolia/inflation-cpi> 20.Aug.2012

The people also have to understand the new situation. The fact is that Mongolia, with only 2.7 million people, is a shorthanded country. The historically based resentments directed at the Chinese cheap labour force, which are hired by companies, need to change and the rightwing politicians need to take action to reconcile the problem instead of throwing oil on the fire, making the situation worse.

Also, another factor is to reduce the gray market, which has prospered since the 1990's.

One thing that Mongolians can learn from the current world economic situation is inequality. Many developed or less developed countries are currently experiencing difficulties with the unequal distribution of income amongst its people. Mongolia is just beginning to develop its economy and improve living standards. This is the chance to not repeat the mistakes of other countries. Many countries, which passed excellent economic growth in the last years, are now facing this problem and having serious social turbulences and, according to actual statistics, Mongolia is on the road to developing a two-class society.

The remittances of abroad Mongolians played a sizeable role in the economy of the country, especially before the mining boom. Here is another possibility - the hiring and bringing back of these young educated labours.

2.3.3. Chances

A potential opportunity is to support the renewable energy sector. Mongolia has an enormous amount of land and it is in a geographical area with many hours of sunshine and constant wind intensity. As well, the energy sector of the country consists completely of coal-fuelled power plants, which cause vast environmental pollution. The capital of the country, Ulaanbaatar, is the one of most polluted cities in the world.

Generally, Mongolia is a large country with undeveloped deposits, which means that current projects could be just the beginning. Since Mongolia does not have its own technology and know-how with which to explore and develop, the political arena should provide a legal and secure environment for foreign investors.

Mongolia is a country with only 2.7 million people and most of them are young and relatively well educated. In addition, since the 1990's, many Mongolians have immigrated to other countries and sampled know-how and experiences. Through the historically nomadic lifestyle, the people are generally quite open to other cultures and easily adaptable to new situations. These are all positive aspects in a globalized world, which should be utilized for forward progress.

The tourism sector could also play an important role in the country's economy. The vast and untouched nature is an attraction for many foreign tourists. There is enormous potential for growth.

Mongolia has great chances for self-development. However, the political atmosphere must create a clean and secure environment without corruption and nepotism. The rulers should broadly diversify the economy in order to reduce dependence on commodity price volatilities. Last, but not least, the government should try to build a broad middle class to avoid future social disturbances.

2.3.4. Copper in Mongolia

The history of Mongolian copper is quite simple. The only copper producing company of Mongolia until now is Erdenet. Erdenet was built by Russian technology and is a joint venture company of the Russian (49%) and Mongolian (51%) governments, which started production in 1978. At present, the company produces 530.000 tons of copper concentrates with a content of 25% and 4.500 tons molybdenum concentrates annually.⁴⁰

Table 13: Erdenet in Numbers, (In Mill. US\$)

	2007	2008	2009	2010	2011
Revenue	850.8	765.2	572.2	850.1	958.8
Costs	566.4	756.9	436.9	698.9	619.1
Pre-Tax profit	263.2	39.5	115.8	114.9	318.5

Source: Erdenet in Numbers. *Erdenet*

http://www.erdenetmc.mn/index.php?option=com_content&view=article&id=60&Itemid=56&lang=en

23.Aug.2012

Erdenet was for many years the main contributor to the Mongolian government's budget. In 2010, the company provided 473 million USD to the general government budget, which was over 20% of the entire government revenue⁴¹.

Since Erdenet has been the only copper producing company in the country until now, the contributions and productions and any other numbers above are representative of the Mongolian copper industry in general.

⁴⁰ cf. "Technical". *Erdenet*.

http://www.erdenetmc.mn/index.php?option=com_content&view=article&id=57&Itemid=55&lang=en
22.Aug.2012

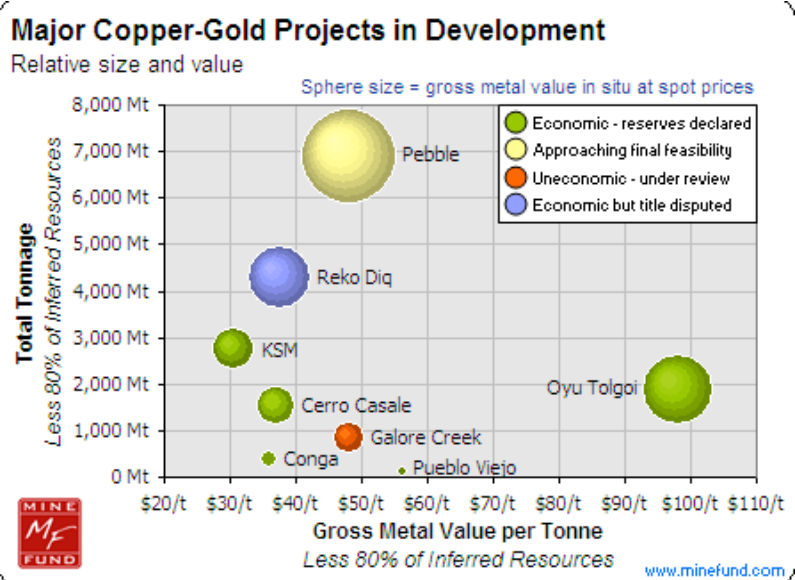
⁴¹ cf. Samoilenko. Interviewed to Oxford Business Group. http://www.mongolia.mid.ru/int_10_en.html
26.Aug.2012

2.3.5. Oyu-Tolgoi LLC⁴²

The project, Oyu-Tolgoi, is the biggest foreign investment in the history of Mongolia and located in the south of the country in the Gobi desert. This mine should have one of the largest and highest grades of copper and gold reserves in the world. Oyu-Tolgoi LLC was founded in 2009 through an agreement between the government of Mongolia, Ivanhoe Mines Mongolia INC LLC, Ivanhoe Mines LTD and Rio Tinto International Holdings Limited, where the Government of Mongolia owns 34% of the company's shares.

Figure 9 shows that Oyu-Tolgoi is highly profitable – a reason being the existence of up to 3% copper grade in some areas⁴³. The measured and indicated amount of copper is around 18 million metric tons and 21 million ounces of gold. Additionally, the same amount of copper and 25 million ounces of gold is predicted.⁴⁴ The total investment for the project is around 5.2 billion USD,⁴⁵ which for a country like Mongolia with a GDP of 8.6 billion USD, is a huge amount. The first production of Oyu-Tolgoi LLC is planned for 2013 and should be a huge stimulus for the Mongolian economy.

Figure 9: Major Copper-Gold Projects in Development



Source: "Update: Major Copper-Gold Projects". *Minefund*. <http://minefund.com/wordpress/2010/06/29/update-major-copper-gold-projects/> 25.Aug.2012

⁴² cf. Oyu-Tolgoi. <http://www.ot.mn/en/about-us> 18.July.2012

⁴³ See Appendix

⁴⁴ *ibid.*

⁴⁵ "Oyu-Tolgoi (Copper-Gold), Mongolia". *Turquoise Hill*. http://www.turquoisehill.com/s/oyu_tolgoi.asp?ReportID=379189 26.Aug.2012

The contribution of the Oyu-Tolgoi LLC to the Mongolian economy is enormous. Currently, there are already over 9,000 people working and when production begins, there will be jobs for around 3,500 Mongolians. The contribution to the Mongolian government budget is 700 million USD until the start of production and with the beginning of full operation, the amount will grow to 600 million USD annually, on average. This should boost the GDP of the country to 35% during full operation. According to IMF, Mongolia will receive around 55% of the Oyu-Tolgoi cash-flow through different taxes, fees and dividends.

The project also provides many smaller projects and business units for small and mid sized local companies. Until Q2 2012, around 3,000 companies were able to participate in the project and the transaction of those companies with Oyu-Tolgoi LLC was around 400 billion Mongolian Tögrög (MNT). Oyu-Tolgoi LLC also invested 100 billion MNT for educating future Mongolian workers in the company.⁴⁶

The future of this large project is secured by the commodity giant Rio Tinto, who recently overtook the control of Oyu-Tolgoi LLC from Ivanhoe. Rio Tinto is one of the biggest commodity companies in the world and has enormous financial potential for such projects. It is a project in a deserted area, which means that an entirely new infrastructure had to be built. Thus, it was expected that the financially better-suited Rio Tinto would overtake the command.

⁴⁶ “Economy”. *News.mn* <http://economy.news.mn/content/59599.shtml> 27.Aug.2012

3 Joint Venture and State-owned Enterprise, The Case of Oyu-Tolgoi LLC and Codelco

3.1 Joint Venture and The Case of Oyu-Tolgoi LLC

3.1.1. (International) Joint Venture

3.1.1.1. Introduction

Greece, a small, almost economically insignificant country belonging to the European Union (EU), today demonstrates the high interdependency of our world economy. The endless speculations and discussions about a possible Greek collapse due to a staggering debt problem and the resulting negative influences on other EU countries and, finally, also the EU itself, bring the economy of the continent to a point of stagnation, which, furthermore, negatively influences the economy of both the US and China. All of the small less developed and mainly raw material exporting countries worldwide, which profited from gigantic Chinese economic performances in the last decade, are beginning to now worry about their developments. In such an economic environment, it is nearly impossible for multinational companies (MNCs) to survive without having knowledge about other countries and networks. There are several different opportunities to cooperate with other companies, however, joint ventures (JV) are probably the most well-known method for obtaining knowledge and connecting with the new world.

Today, there is no doubt that the global economy is shifting to new areas - from Europe and North America to South East Asia and South America, in general. Also, in other parts of the world, countries are gaining more and more significance and all these new areas and markets are attracting other countries and companies, which are looking for new business areas. Vice versa, the new emerging markets are also looking for partnership and cooperation with highly developed and technology-based companies.

*“While it may not be true for all industries, there is ample evidence to suggest that at least in industries based on natural resources, joint-venture firms are in increasingly popular form of corporate organization”.*⁴⁷

Indeed, the commodity market is an excellent example of networking and cooperation. Many less developed countries have resources, but because of their limited structural conditions, these countries are forced to cooperate with other partners. On the other side, the commodity market is very concentrated. There are only a few large companies who are ruling the market. Especially in the last decades, there were several mergers and acquisitions and, thus, the know-how and technological innovations, which are essential for this business, are mainly only concentrated in these few giant companies.

Mining projects, by nature, are usually very high-priced and risky. The investment companies are going into uncertain regions and taking a large risk, which requires expensive investments. On the other side, the less developed countries are dependent on these large investing companies, especially for huge mining projects. However, at the same time, these host countries want to have certain control over the projects. Also, in many such cases, sentimental and emotional factors of the indigenous people are connected with these projects. If one considers all these factors, probably the most satisfying and most known form of organization is that of a joint venture, which provides both parts security and power.

Joint venture is an organization form, which was used broadly in many sectors. In the history of the car industry and also in the commodity sector, there were large JV cooperations. Indeed, it is a cooperation form, which can provide, especially for new players, many examples and experiences, which could be very helpful, especially for less developed countries in their decision-making processes.

⁴⁷ Stuckey (1983) p.149

3.1.1.2. Definition of Joint Ventures and International Joint Ventures

Due to the nature of this organization form, which differs from the given situation and conditions and also through the different local country's laws, there exist several different definitions of JV.

This paper is mainly focused on the international equity joint venture cooperation of Oyu-Tolgoi LLC. Thus,

*“Equity joint ventures are legally and economically separate organizational entities created by two or more parent organizations that collectively invest financial as well as other resources to pursue certain objectives”.*⁴⁸

Furthermore, Geringer and Hebert (1989) noted *“if at least one parent organization is headquartered outside the JV's country of operation, or if the venture has a significant level of operations in more than one country, then it is considered to be an international joint venture.”*⁴⁹

3.1.1.3. Types of Joint Ventures⁵⁰

First of all, one differs between contractual (non-equity) and equity JVs. The contractual JV is mainly aimed at short-term cooperation, especially in marketing, sales, service and innovation sectors. The main character of this cooperation form is that it does not require the setting up of a new company with a legal entity. It is a cooperation form where the parties involved can reduce their financial risks and costs and where it could be also intended to receive synergy effects from the cooperation. The advantage of contractual JV is that this kind of cooperation does not need a complicated high-cost, time wasting set-up procedure, which is especially relevant in International Joint Ventures (IJVs) and it is also much easier to finish the cooperation.

Unlike the contractual JV, the equity JV requires the set-up of a new corporation, which should be completely independent of the parent companies. According to Beamish and

⁴⁸ Anderson 1990; Pfeffer and Novak 1976 quoted in Yan and Luo, 2001 p.3

⁴⁹ Geringer and Hebert (1989) p.235

⁵⁰ cf. Abdul Jaami, “Joint Venture Structure”, 2011, New-York,
<http://www.shajlaw.com/media/reports/JointVentureStructure.pdf> 20.Aug.2012

Lupton (2009), the capital invested in a JV signals partner commitment, thereby enhancing the probability of success. Furthermore, the equity JVs split into corporate- and unincorporated JVs. Both, as mentioned before, are independent, new corporations, but the unincorporated JV has a different legal entity. The common variants of unincorporated JVs are Limited Liability Company (LLC), Limited Partnership (LP) or Limited Liability Partnership (LLP). The reason for this differentiation is the chosen tax agreement.

A corporate JV pays tax on its profit and then distributes its dividends further to the shareholders. The shareholders, in turn, have to again pay a tax, which makes it a two level taxation. The unincorporated JV has the principle of pass-through taxation, which means, as a JV, those companies do not pay federal taxes, but the earnings go directly to the co-ventures. They have to pay tax on these earnings.

3.1.1.4.Motives for Joint Ventures

The approaches for identifying motives for engaging in JVs differ in business literatures.

Killing defined four reasons for engaging in a JV.⁵¹

1. Government insistence: Many governments, especially in developing countries, try to connect their own firms with foreign investors. From the viewpoint of these countries, it is important that the home country's firms learn from investor know-how regarding technology, innovation and marketing and, vice versa, it is beneficial for foreign firms to have networks according to the home country's social and cultural industrial differences.

2. Projects are too large to finance alone: Some projects are simply too large to take the entire financial investment alone. Here, the mining and generally commodity sectors provide a good example.

3. Absence of certain skills: Often, a single firm does not have all the skills needed to make a successful business. In order to compensate this lack of know-how, the firms cooperate with other organizations.

4. Economies of scale in research and development, production and marketing: Firms try to minimize their costs by cooperating with other firms in certain areas. This point is particularly relevant for small and medium companies because of their limited resources and capabilities.

⁵¹ cf. Killing (1983), p.6

Other authors in entrepreneurship literature have different approaches in defining motives. While Harrigan (1996) differentiates the main motives engaging in joint ventures as being internal, competitive and strategic targets, Yan and Luo (2001) analyzed the thematic from practical and theoretical aspects⁵².

This paper is mainly focused on the copper industry, thus, the author of this paper prefer the reasons for going joint venture as stipulated by Stuckey. He analyzed the aluminium market, which is quite similar to the copper sector. According to Stuckey, in the aluminium industry, there are three reasons for engaging in a joint venture in order to avoid market failure.⁵³

1. The markets of the intermediate-products, especially bauxite and alumina, which are comparable with copper ore and semi-products, are “subject to failure”.
2. Technical, know-how and management expertise are not easily exchanged via the market.
3. The combination of high barriers to enter or exit in the aluminium sector and the absence of capital market in the industry.

Furthermore, Stuckey highlighted the point of the so-called “management of oligopolistic mutual interdependence”. “A joint venture offers the opportunity for cooperative and collusive behaviour between an industry’s going firms, during both planning and operation”. At the end, Stuckey pointed out the relationships between foreign firms with host country governments, which is a typical way of creating joint ventures in the aluminium industry, especially in small or economically underdeveloped countries.

Except for the absence of capital market in point three, all these reasons presented by Stuckey are adoptable to the copper industry. Only the capital market plays an important role in the commodity sector today.

⁵² Since the approaches overlap in many aspects I decided to not illustrate each point of those authors.

⁵³ cf. Stuckey (1983), p. 152ff.

3.1.1.5.Risks

Besides the many risks connected with becoming a part of a joint venture, one of the most recently discussed and illustrated risks of cooperating in joint ventures is the possible loss of intangible know-how. According to Perlmutter and Heenan, joint ventures represent an effective way of coping with the increasing competitive and technological challenges of today's environment.⁵⁴

*“Even if its products or processes are protected by patents or copyrights, a firm may nonetheless fear damaging ‘leakage’ of unprotected innovations or know-how if shared with partners. Such disclosures, between the partners or to organizations outside the venture, may have serious effects on the competitive position of a parent or the IJV, possibly creating new competitors or otherwise limiting the IJV’s or parent’s overall efficiency”.*⁵⁵

The commodity market is strongly affected on this point. The high-cost innovation processes, which the companies obtained through long-time research and development, could be potentially copied and such occurrences could significantly weaken the company's competitiveness.

Stuckey noted that *“technological- and production management know-how include the capacity to design and construct a plant with the optimal technology, to operate the plant with technical efficiency, and sometimes to modify the plant optimally when unexpected events occur”.*⁵⁶ All this know-how requires extensive experience and it is not possible to gain the necessary knowledge simply through exhaustive research alone.

⁵⁴ Perlmutter, H. V. und Heenan, D. A. (1986) p. 136–152.

⁵⁵ Parry (1985); Rugman (1985); Reich and Mankin (1986) quoted in Geringer and Hebert (1989), p. 236.

⁵⁶ Stuckey (1983), p. 163.

3.1.1.6. Culture in International Joint Ventures

*“Managers of different countries may have differing attitudes to such basic things as the desirability of material wealth, the importance of on-the-job performance, or the desirability of change. The greater the cultural gap between the parents’ base countries, the greater the problem”.*⁵⁷

Indeed, cultural differences play an important role in international joint ventures. In the 1960s, many Japanese and American joint ventures failed because of strong cultural differences between the countries.⁵⁸ It could also be assumed that there are such differences between developing and developed countries. Furthermore, besides culture differences, there are also differences in management and staff levels. According to Yan and Luo, one typical mistake in international joint ventures is that one partner tries to enforce based on cultural values and norms without respecting the other partner’s values.⁵⁹

3.1.2. The Case of Oyu-Tolgoi LLC

3.1.2.1. Formation of the Joint Venture

Since Ivanhoe Mines⁶⁰ invested vast money in exploring and defining the huge copper and gold resources, the company had the initiative to build Oyu-Tolgoi LLC. However, Ivanhoe is mainly specialized in exploring and defining resources and, thus, the investor had to look for a better financially suited partner, which they found with Rio-Tinto. Rio Tinto is one of the biggest commodity companies in the world with many years of experience in constructing new plants all over the world, in many different commodity areas and, thus, it was obvious that this company would overtake the rule of this large project. In July 2012, Rio Tinto acquired 51% of Ivanhoe’s shares.

Generally, it is a very common method in the mining industry. There are many companies, especially American, Canadian and Australian companies, which are specialized in exploring such mines in order to cooperate with other financial institutes to produce or sell the projects for producing companies.

⁵⁷ Killing (1983), p. 57

⁵⁸ *ibid.*

⁵⁹ cf. Yan and Luo (2001), p.21

⁶⁰ Ivanhoe Mines recently changed its name to Turquoise Hill Resources

This project is indeed the biggest investment until today in the history of the Mongolian economy, thus, there was enormous interest by the Mongolian government to receive a “slice of the pie”. Generally, Mongolians are people who, from their history and also from their way of life, very connected with nature. Thus, the people confronted the project with a lot of emotion and sentimentality. In addition, the media and also the government spread the feeling that the Oyu-Tolgoi project is an essential project for the Mongolian future, which caused over caution and slowed down the building of cooperation.

The project also represents the first biggest investment of a western company in Mongolia. Through the 70 years of communist rule, Mongolia almost only cooperated with Russian firms and after the political change in the 1990’s, this project is the biggest cooperation with a market-oriented firm.

After long discussions for many years, in October 2009, the Mongolian government and Ivanhoe and Rio-Tinto finally signed the contract to realize this project. The joint venture, Oyu-Tolgoi LLC, was born.

3.1.2.2. Management Structure

Two and more parents often cause poor performances for JVs.⁶¹ Oyu-Tolgoi could potentially have exactly such problems in management level. Though Rio-Tinto overtook control from Ivanhoe, the project was, from the beginning, confronted with interest from three different organizations. However, on the other side, the nature of business provides the investing companies, with their unique financial and technical know-how, the opportunity to take an active role in the project. According to Killing, if one partner is willing to play a passive role, then this joint venture will be more successful.⁶² In this case, the Mongolian government will play the more passive role and rely on the years of experience and unique know-how provided by Rio Tinto.

The executive directors board of Oyu-Tolgoi is equally shared between the three parties. The two key executives consist of one Mongolian and one investor from a firm acting as managing

⁶¹ cf. Killing (1983), p.12.

⁶² cf. Killing (1983), p.15.

director. Four Mongolians, three persons from Ivanhoe, one from Rio-Tinto and one from a non-partisan, furthermore, share the board member positions.

3.1.2.3.Motives for Oyu-Tolgoi LLC⁶³

The definition set forth by Killing in 1983 for engaging in a joint venture fits for the building of this organization.

First, there was government insistence. It was clear that Ivanhoe Mines had to cooperate with a Mongolian contribution. As mentioned before, there was a large sentimental and emotional aspect connected to the local people regarding this project. Every governmental decision related to the project Oyu-Tolgoi was observed closely and the expectations of the local people were big for this cooperation.

At the same time, the Mongolians knew that the project was huge and of high-cost, which Mongolians themselves cannot finance alone. Killing defined this point as “too large projects”. Also, the third reason for joining a joint venture, which Killing noted as “Absence of certain skills”, was given here. The Mongolian government or mining industry simply had no knowledge and no know-how as to how to handle such a project. The newest technical standards and highly educated and experienced managers and engineers were also absent. The last point of Killing, “Economies of scale”, fits more to the cooperation between Ivanhoe and Rio-Tinto. Through this joint venture, both companies are reducing their costs regarding risk, marketing and production.

3.1.2.4.Risks of Oyu-Tolgoi LLC

The nature of the commodity sector, which is highly dependent on the market price of the products, is the main risk regarding such projects. As of July 2012, around 5.2 billion USD has been invested in this project, which is an enormous sum.⁶⁴ In respect to that investment, the price of copper must remain stand stabile and high. Otherwise, the danger of falling into financial risk remains high.

⁶³ cf. Killing (1983), p. 6-8.

⁶⁴ Oyu-Tolgoi. <http://www.ot.mn/en/about-us> 18.July.2012

*“The board of joint ventures represent their parents, which could have differences in priorities, direction and perhaps values will emerge. The result can be confusion, frustration, possibly bitterness and a resulting slowness to take decisions”.*⁶⁵

Since this joint venture is represented by three different organizations, it could have exactly such problems on the management level.

Furthermore, it is an international joint venture, which connects completely different cultures to each other, thus, there is an enormous potential for misunderstandings, which will be illustrated precisely in the next section.

3.1.2.5.Cultural differences of Oyu-Tolgoi LLC

It will be a challenging point for international investors to understand Mongolian culture. There exist almost no examples of such cooperation in Mongolia. Thus, many other foreign investors will observe this experience carefully.

Oyu-Tolgoi LLC is in cooperation with the Mongolian government, which means that this joint venture is directly dependent on the country's political situation. Since the contract has been signed between the parties in October 2009, certain political sectors or politicians have voiced feelings of displeasure due to the condition of the contracts. Even the famous political party, (MPRP), which is one of the biggest political parties in the country, discusses openly the possibility of nationalizing the Oyu-Tolgoi LLC.

The political culture of Mongolia is strongly connected to the time of the Soviet Union. Many ruling politicians were active before 1990 in the communistic party and, generally, nearly all the powerful politicians in Mongolia received their education in Russia or in former Soviet countries. Therefore, to cooperate with a British/Australian company, which comes from a long-history of market-oriented countries, is a completely new, undeveloped and uncertain area.

Before the political change in 1990, the people had, on average, a high education level, but during the last 20 years, the country has experienced a deep recession and serious economic problems, thus, the gap between the rich and the poor increased significantly. Consequently, the mean education level decreased, which makes the society weak for

⁶⁵ Killing (1983) p.9

populists. Through the long years of recession, only a few groups of rich people emerged who share the power of the country, making the country non-transparent and providing the grounds for corruption.

On the other side, the observation of cultural differences on the operational level is also very important. Unfortunately, useful scientific studies regarding the Mongolian culture and its differences do not exist. In general, the people have big hopes regarding the living standard, which will be provided by the profits of Oyu-Tolgoi LLC, but at the same time, they also have some distrust for these new foreign partners. It is a society, which could be described as collective. The nomadic way of life has forced the people to act in groups. In addition, the family structure is very different to western society. The family is still the most important point in Mongolian lives. It is normally big and the mother is the main actor. Through a nomadic lifestyle, the women have always held a significant role in the family. Men went several months with the herd and the women had to keep the house. Compared to women in Muslim countries or countries such as China or Korea, Mongolian women have more rights and better social positions⁶⁶.

Indeed it is a completely new way of cooperation. The people have big hopes and the younger generation, especially, is quite open-minded and looking for better chances and opportunities.

3.2 State-owned Enterprise and The Case of Codelco

3.2.1. State-owned Enterprise (SOE)

3.2.1.1. Introduction

During the last decades, there was a wave of privatization throughout the world. Especially with the transition of the former soviet countries, the thematic of state-owned enterprises (SOE) and their efficiency and economic performances compared to privately owned companies became an issue for scientific studies all over the world.

It is not a completely new topic, which we will discuss. In western countries, the SOEs have played an important role since the end of the Second World War. Only in the 1980s did those countries begin to decline their contributions on SOEs.

⁶⁶ “Masculinity vs. Femininity of Mongolia”. *International Business Wiki*.
http://internationalbusiness.wikia.com/wiki/Masculinity_vs._Femininity_of_Mongolia 27.Aug.2012

Today, nearly every country in the world acts in a market-oriented system. Even the neo-liberal way of thinking has established itself in the world economy. The SOE is still an important matter in the economic system of many countries. Governments want to have control over specific essential strategic sectors and, at times, it also became a political instrument in certain areas of the world. Recently, during the economic crisis, many countries had to at least partially participate in some struggling, but important sectors.

3.2.1.2. Definition

There exist different names for such organizations: Government-owned corporation, state-owned enterprise, state-company, government business enterprise or commercial government agency. All of these different names describe an organization, which is partially or fully owned by a government. Since such enterprises differ through different motives and the juridical definition of each country, there does not exist any standard definition. An SOE is normally aimed at making commercial activity profit-oriented and is usually a legal entity.

3.2.1.3. Motives

The history of SOEs is long and differs by each given situation and condition. Thus, it is nearly impossible to find standardized motives for building SOEs. However, Toninelli gave three main reasons for building a SOE.⁶⁷ He argued first that there are political and ideological motives. The examples given by this point are the former soviet countries and also the nationalization programs of western countries after the Second World War.

He furthermore noted as his second point the “social-motives”, which have the aim of guaranteeing full employment and better labour conditions. This social aspect of SOEs was especially broadly used after the Second World War. Bruno Kreisky, the former prime minister of Austria, said once that *“he preferred a budget deficit a few billion to unemployment of a few thousand”*, which highlights the politics of the 60’s and 70’s.⁶⁸ Hence, it also provides governments with a political scope.

According to Toninelli, the third point of building an SOE is for economic reasons.

⁶⁷ cf. Toninelli (2000), p. 5-10.

⁶⁸ Bruno Kreisky quoted in Toninelli (2000), p.7.

Here, one of the most used motives of holding companies as state-owned is to ensure the supply of the country's essential sectors, such as public transportation or post. This reason is to be found nearly everywhere in the world and well known under the name of "natural monopoly". In such sectors, a monopoly firm is producing goods cheaper than privately organized ones.⁶⁹ He argued that the unregulated private companies would exploit the market in such sectors.

The second economic reason given by Toninelli is nationalization policies, which aim to support underdeveloped countries and regions with their economic growth. Kaldor encouraged this point in the following statement:

*"SOE makes its decisions on the basis of long-term considerations, and these are not or cannot profit minded".*⁷⁰

Another broadly used motive is to hold the strategic sectors. The oil industry in western countries is a famous example. In general, the natural-resource-oriented countries still hold these companies as state-owned. (e.g. Oil industry of Saudi Arabia). The recently nationalization of Argentinean oil company YPF through the country's government is also aimed to ensure the strategic sector of the country.

Toninelli further noted the industrial bailout as a third point of economic motives.

Here, countries tried to save some sectors during the economic and financial crisis. These sectors are normally huge and, in respect to employment, highly important. The concern of such intervention is that it could cause social riots. Recently, we could exactly observe such interventions. During the economic crises in the last years, many countries had to take action in their respective finance sectors in order to prevent this system-relevant sector from going bankrupt and, furthermore, to avoid any social disturbances.

The final economic reason for building public enterprises is that such companies are aimed at reducing the price of goods. The goal is to help lower income earners.⁷¹

As we can see now, the motives of building SOEs are different and complex. However, the sectors, where SOEs come into action, are similar from one country to the next.

⁶⁹ cf. Börs (1986), p.27 quoted in Toninelli (2000), p.7.

⁷⁰ Kaldor (1980), p.5 quoted in Toninelli (2000) p.8.

⁷¹ cf. Toninelli, (2000) p.9.

Bös categorized as follows:⁷²

- 1). Public utilities, communications, and transportation
- 2). Basic good industries (coal, oil, atomic energy, steel)
- 3.) Banks, insurance and social security
- 4). Education (public universities) and health (public hospitals).

3.2.1.4. The Performances of State Owned Enterprises

One of the most discussed issues of SOEs is the difference between an SOE and a private corporation (hereafter PC) according to its efficiency. Vining and Boardman researched the efficiency of SOEs and, furthermore, asked whether different ownerships have any positive or negative influences for the companies in a competitive environment.⁷³ These two scholars also analyzed the performances of private, mixed and state-owned enterprises.⁷⁴ While this paper compared the ownership and performances in competitive environments, Bradbury and Hooks analyzed the ownership and performances in a non-competitive environment, which was the Australian electricity sector.⁷⁵ Dewenter and Malatesta went further and compared SOEs and PCs related to their profitability, leverage and labor intensity.⁷⁶

Some authors chose particular countries. While Arocena, P. and Oliveros, D. analyzed the efficiency of SOEs and PCs in Spain, Omran M. concentrated on Egyptian companies. The results of all theses papers differ from each other. Arocena and Oliveras found that the Spanish SOEs have not been very efficient, however, after privatization, these SOEs could increase their efficiency even more.⁷⁷

Omran worked out that the Egyptian SOEs had similar performances like their PC counterparts. He added that Egyptian SOEs could also increase their profitability and efficiency and, furthermore, Omran noted that in a competitive environment, ownership does not matter.⁷⁸ Vining and Boardman had a different opinion. They found in their paper that ownership does matter for both technical and allocative efficiency. Furthermore, these two

⁷² Bös (1986), p.16-19 quoted in Toninelli (2000), p.10.

⁷³ cf. Vining and Boardman (1990), p.205-232.

⁷⁴ cf. Vining and Boardman (1989), p.1-33.

⁷⁵ cf. Bradbury and Hooks (2007).

⁷⁶ cf. Dewenter and Malatesta (2001), p.320-334.

⁷⁷ cf. Arocena and Oliveros (2001), p.8.

⁷⁸ cf. Omran (2004), p.1037-1038.

scholars asserted that mixed as well as state-owned enterprises have significantly worse performances than private enterprises. They further noted that mixed companies are less profitable than state-owned- and private enterprises.

Dewenter and Malatesta confirmed the results of Vining and Boardman. They found that SOEs are significantly less profitable than PCs. They furthermore noted that SOEs tend to maintain bigger employer ratios and, thus, they tend to have larger leverage than the PCs.

We can see now that there are different opinions regarding the performances of SOEs and PCs. However, it has to be mentioned that these papers are made with the data of different countries.

Another interesting point to the discussion of SOEs was contributed by Yair Aharoni. He analyzed so-called “managerial discretion” in SOEs.⁷⁹ Williamson defined the managerial discretion as:

*“The ability of managers to choose and pursue objectives and strategies that differ from those of the owners”.*⁸⁰

Aharoni assumed that the owners of PCs have been mostly interested in having larger profit, while the objectives of SOEs are multiple.

Even the question of who is the principal of a SOE is disputable. The different ministers could have different interests and goals. For example, the finance minister could have more interest on higher dividends, while the minister of labour may have interest on maximizing employment. Such discrepancies cause SOEs to potentially have an absence of clearly defined objectives.⁸¹

Aharoni further argued that the managers of state-owned companies are more constrained than managers of PCs regarding their choices of strategies because of the different interests of certain groups of PCs. The managers of SOEs work under political pressure. Often it is expected that they choose domestic companies as suppliers and, furthermore, they should choose or prefer an SOE as a supplier rather than a PC.

⁷⁹ cf. Aharoni (1981), p.184.

⁸⁰ Williamson (1964), quoted in Aharoni (1981), p.184.

⁸¹ cf. Aharoni, (1981), p.185.

The managers of SOEs also have to support the national interests. Aharoni noted the possible national interests expected from SOEs:

*“to refrain from raising prices in periods of inflation; to invest more during recessions; to borrow abroad in order to avoid balance-of-payments problems; and to act as trust busters by competing against strong private monopolies; to purchase ailing industries; to invest in laggard regions and weak sectors of the economy”.*⁸²

It is clear that all these factors have potential significant influences on the performance of an SOE. Thus, managerial discretion is a very important issue for both managers and governments.

3.2.2. The Case of Codelco

3.2.2.1. Introduction

The history of this company is long and closely related with the history of Chile. Codelco is directly related to national pride and the most important company in the country. It is a company, which reflects the country's various natural wealth. As mentioned in previous sections, the company was nationalized during the time of so-called “Chileanisation of copper” in 1970's. The reason for this step was purely politically and ideologically motivated. The US-owners, who mainly ruled the Chilean copper companies during the period of left-oriented governments, were absolutely a thorn in the side of the country's leader.

The nationalization of the company happened step-by-step. It began under the government of Carlos Ibanez del Campo during 1950's and the process culminated in the 1970's with the government of Allende. Through these steps, Codelco became a 100% state-owned company and the US friendly, right-oriented government of Pinochet could not change the company's entity.

⁸² Aharoni (1981), p. 184.

3.2.2.2.Motives for building Codelco⁸³

The first point of Toninelli, namely the political and ideological reason for building state-owned enterprises, fits perfectly with this situation. It was not that the mines had poor economic results before becoming Codelco, but it was a time where the whole political system of Chile was in transition. Socialism became more and more important throughout the world and also in South America. For the political leaders of that time, the nationalization of Codelco was a question of distribution. The objective of the nationalization was to diminish the private capital and to increase the power of labour. For the leaders of that time, such huge Chilean resource mines had to have the aim to act in the best interest of their own people.

The second reason of Toninelli, which is the “social-motive”, also fits to Codelco’s nationalization. Namely, the mines were important employers and had enormous significance for the country’s social system. Many people worked there and the guarantee of employment and, furthermore, better labour conditions for these workers played also a role. Still today, the workers of Codelco are some of the best-paid labourers in Chile and Codelco as a work place has a very good reputation.

The third point of Toninelli, namely the economical reason, does not fit very well for the nationalization of Codelco. As mentioned before, the company worked economically well and the only point, which fits, is the strategic-motive. The company is not just an important employer in the country - it is also the main contributor to the Chilean public treasury. It is definitely a very strategically important company.

3.2.2.3.The Performance of Codelco

The business of copper in nature depends highly on the price of the metal and, furthermore, with the economic development of the world. It is, therefore, useless to compare companies according to their profitability. First, the companies are normally profitable when the price of copper increases and, second, each mine has different costs to extract the metals. The extraction processes for some mines are easier, thus, cheaper to and some others are more costly. Recently, the unit costs of volume in the copper sector are increasing because the

⁸³ Toninelli (2000), p. 5-10.

companies have to go more and more deeper into the earth coast to find copper, which of course pushes up the unit costs.

Codelco is also such a big company in the copper sector, which makes it difficult to say that the company acts in a competitive environment. It is, moreover, a sector where several huge mines or companies give the direction. In the global scheme of things, the copper market is an oligopolistic one. In Chile, Codelco is nearly a monopoly. Only Escondida, another Chilean private-owned copper company, has a similar size like Codelco. The copper sector is also a sector where the demand for the product was due to the enormous development of China, which was nearly insatiable in the last years. It is, therefore, quite difficult to compare Codelco according to its performance with other privately owned companies.

Surely, the company had enormous development in the last 40 years. The contribution of the company for the Chilean treasury is remarkable since the founding of the company and still today, Codelco has enormous significance for the Chilean government and people.

4 Conclusion

The high importance of copper in everyday life and for the economy was at first not clear to the author. Through writing this paper, the importance of copper for certain sectors and countries became apparent. The entire copper industry experienced a boom time in correlation with positive developments in some areas of the world. However, in the opinion of the author, all these progresses have just one name - China. The tremendous development of the most populous country in the world is common knowledge, but only after the writing of this thesis, did the author fully recognize the real meaning of China for this industry. For many other countries and regions, this metal also has essential significance. The positive development of China has had positive ramifications for many other countries. As the Chinese economy began to grow, it pushed up the economies of other countries.

When the Chinese economy continues to grow in such a way as it has in the last decade it will have a great influence on both the Chilean- and Mongolian economy. These two commodity export-oriented countries depend directly on China. Many other less developed countries from South America, Asia and Africa are hoping that China will maintain its economic progress. If we imagine that one day India, Brazil and Indonesia will have similar developments as China, a very good future for the copper sector is foreseeable. In addition, there are new perspectives for this sector. In an era where every country recognizes environmental problems, the meaning of clean energy and electro mobility is gaining more and more importance. Through the current research, it was stated that a hybrid car motor requires 75 kg of copper and a big wind energy complex requires up to 30 tons of copper. With this knowledge, it is safe to assume that the future demand for copper will not diminish, but rather it will grow even more than in the last decade.

The copper sector is also an area, which has, like other commodity industries, a long and interesting history. The copper organization CIPEC, which should have actually had the same function as OPEC for oil exporting countries, fizzled after just a few years. The nationalization era in Chile and in some African copper exporting countries brought more turbulence than advantages. Additionally, the mining sector, by nature, is constantly confronted with environmental problems. The copper industry needs a lot of groundwater and a finished mine looks like a natural disaster. Also, most of the largest mines in the world are

in countries like Chile, Peru, Indonesia, Zambia, the Democratic Republic of Congo and Mongolia and it would seem that the investing commodity companies, which are mainly from developed countries, have to act with sensitivity. People from these countries are very close to nature and they are extremely cautious of such mines. The locals have many emotions and sentimental feelings for such projects.

Chile had great performances in the last years. A country with a long, interesting and ever changing history found itself only in the 1990's. Before this time, Chile was a victim of different political ideologies and the locals and the economy suffered under socialists as well as under dictator Pinochet. However, the last two decades were a good time for Chile and for its economy. The politics of the country became more and more stable and Chile was able to diversify its economy. However, even though the country managed to be one of the most successful countries in South America, the distribution of wealth is alarming. Historically, the economic power of the country was concentrated within a few big families or groups of people. Thus, the gap between the rich and the poor was continuously increasing. It will be a coming challenge for the Chilean elite to bring equality to the country in order to prevent serious social riots.

The second country chosen for this thesis was Mongolia. This country has tried only for the last few years to develop and diversify its economy. Mongolia, a geographically huge, but economically poor country, has only recently discovered the tremendous natural resources under foot. For the small population - only 2.8 million people - there is a potentially fantastic future ahead. The resources of the country do not only include extensive copper and gold mines, but there are many other resources, including coal, uranium, oil and rare earth metals.

However, there are several challenges, which Mongolia currently faces. The political transition from communistic to democratic seems to be working very well. However, the transition from a communistic economic system to a market-oriented system does not seem to be working smoothly. Many political elite as well as many Mongolians still harbour some doubts about the new market system. The complete geographical and political isolation of the last century, where Mongolia was only cooperating with Russia, is not currently helpful when attempting to open up to other countries. Mongolia and Chile were chosen for this paper because, in the opinion of the author, these countries have very similar economic conditions. Both countries' economies are based on the export of natural resources. The only difference

being that Chile has over 100 years of experience with this sector, while Mongolia has just begun to explore such potential. Thus, Mongolia can learn a lot from Chilean experiences.

Recently, one of the biggest political parties in Mongolia came up with the idea of nationalizing the copper mining company Oyu-Tolgoi LLC, which is the biggest foreign investment in the history of the country. Here, Mongolian politicians can learn from the history of Chilean copper giant Codelco. The nationalization of Codelco caused a long and deep recession for the Chilean economy. After the nationalization of this company, the FDI for the country decreased significantly, which left a huge lack of foreign currency reserve and only after many years did the economy recover from this recession. It is the opinion of the author of this thesis that the economy of Mongolia has a great chance, but such a development requires a stable political system and that is the most challenging point for Mongolia.

In the second part of this thesis, the author compared the Mongolian copper Joint venture Oyu-Tolgoi LLC with the Chilean state-owned copper enterprise Codelco. According to the Joint Venture Oyu-Tolgoi LLC, the most difficult point would be the huge cultural differences between the co-partners. The investing partners, British Australian Rio-Tinto and Canadian Ivanhoe Mines, are cooperating with a country, which has only 20 years of experience operating with democracy and a free-market system. In addition, the Mongolian co-partner of this company is the country's government, which makes the cooperation very dependent on politicians. For the Mongolian government, it is also a new way of cooperating. It is the first time that the Mongolian government has cooperated with western companies, who have extensive experience acting in a free-market. However, even though production has not yet started, Oyu-Tolgoi LLC continues to progress and will start already next year with the extraction of copper.

The case of Codelco is a more difficult one. The nationalization of the company caused a long deep economic recession in Chile, but, in the last decades, it also greatly helped to recover and to diversify the country's economy. The contribution of Codelco for the Chilean public treasury is stunning. However, it is almost impossible to prove that this result is related to the company's state-owned structure.

State-owned enterprise (SOE) was a broad subject for many scholars and economists in the last decades. Here, one of the main subjects is the comparing of efficiency between SOEs and private corporations (PC). The ratio of profitability, leverage and employment of SOEs are the most researched and discussed. However, in relation to the copper industry and mining

companies, it is useless to compare the results of a copper SOE with the results of a copper PC because the nature of this business differs through the different mines. Some mines are easier to operate, thus, copper extraction is cheaper, while others are much more difficult to manage and, thus, more expensive, which influences the results.

At the end, it is the stance of this paper that the copper industry has a good future. When the financial crisis is over and when other countries are able to also catch up economically, the demand for this product will stay high.

Even though Codelco and Oyu-Tolgoi have different characteristics, these two companies are staying in a position of importance in their respective countries.

Abstract in German

Die Kupferindustrie erlebte in den letzten zwei Jahrzehnten eine Blütezeit. Der wirtschaftliche Aufschwung in China verursachte eine stetig steigende Nachfrage nach Kupfer und löste damit eine Preissteigerung in eine noch nie da gewessene Ausmaße aus. Die Verschiebung der wirtschaftlichen Machtverhältnisse in der heutigen Welt zeigt sich auch in der Kupferindustrie wieder. Die Rollenverteilung wird heute neu gemischt und darum musste eine Aktualisierung von der ganzen Branche gemacht werden.

Die wirtschaftliche Aufschwung in China hatte auch positive Einflüsse auf andere Länder. Hier, vor allem profitierten die Rohstoff exportierende Länder wie Chile und Mongolei davon. Beide Länder, mit ihren zwei großen Kupferunternehmen, Codelco (Chile) und Oyu-Tolgoi LLC (Mongolei) spielen wichtige Rollen in der globalen Kupferindustrie. Dennoch sind es zwei komplett unterschiedliche aufgebaute Unternehmen. Nämlich, die chilenische Kupferunternehmen Codelco wird 100% staatlich geführt, während die mongolische Kupferunternehmen Oyu-Tolgoi LLC ein Joint-Venture ist.

In dieser Arbeit wird diese zwei Unternehmen hinsichtlich ihrer Profitabilität und Wettbewerbsfähigkeit verglichen.

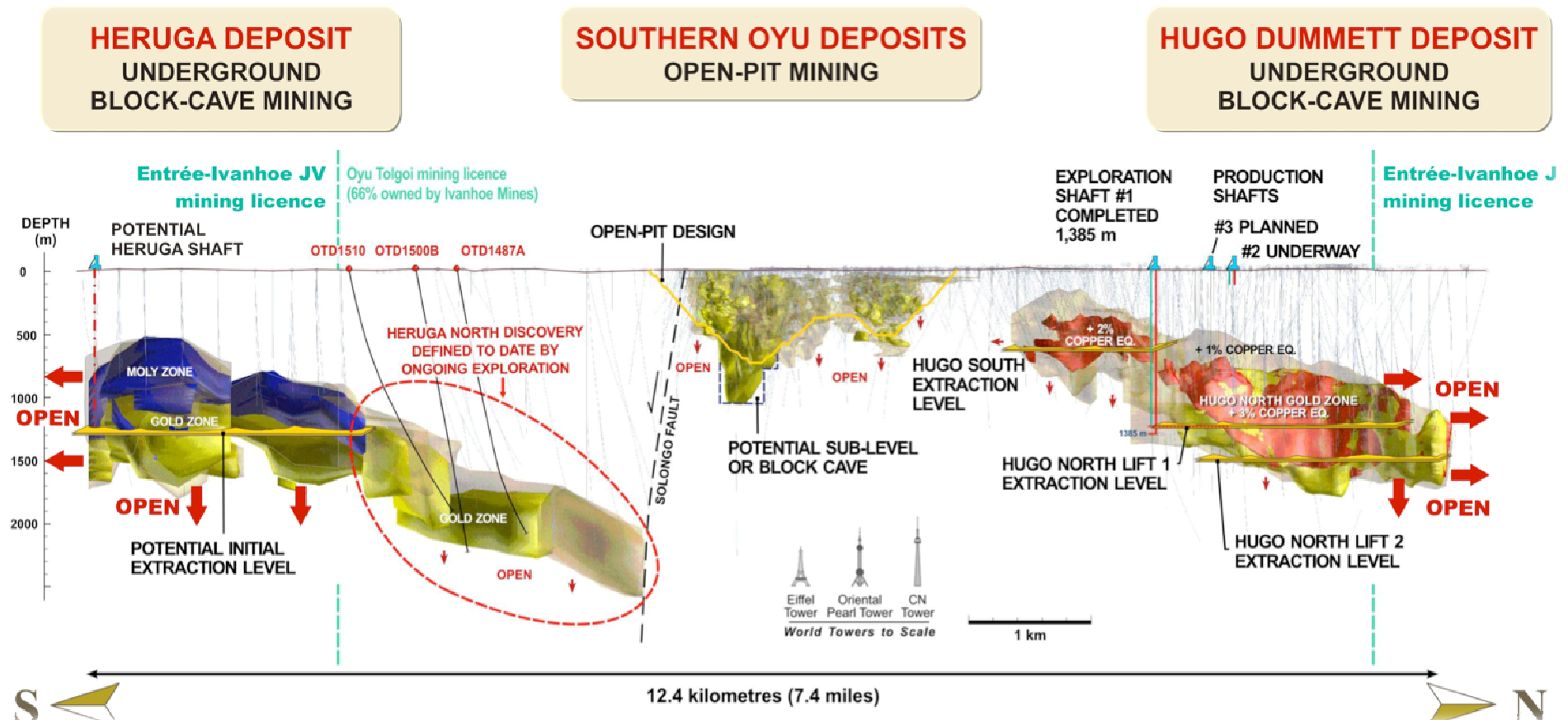
Schlüsselwörter:

Staatsunternehmen, Joint Venture, Kupferindustrie, Codelco, Oyu-Tolgoi LLC,

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Appendix



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