

Impacts of the new Indonesian mining regulations

Marianne Topstad and Beate Karlsen

Supervisor

Stein Kristiansen

This master's thesis is carried out as a part of the education at the University of Agder and is therefore approved as a part of this education. However, this does not imply that the University answers for the methods that are used or the conclusions that are drawn.

University of Agder, 2015

School of Business and Law

FOREWORD

With this thesis, we mark the ending of our MSc Business Administration program at the University of Agder, Norway. The thesis represents 30 credits and is a mandatory part of the program.

The basis of our study was created after an interesting conversation with our supervisor Stein Kristiansen, where we chose to write out thesis on the subject concerning governmental policies, with focus on the newly implemented mining regulations and their powerful influence on economic development and international trade.

Our motivation grew as our knowledge on the subject increased and the research has provided us with a deeper understanding of the many factors involved in the economic and political development of Indonesia and the crucial necessity of a stable and democratic government.

We would like to direct our gratitude to our supervisor for his guidance, involvement and extensive knowledge throughout this semester.

Furthermore, we would like to thank our family and friends for their personal sacrifices, encouraging words and endless support in regards to the writing of this thesis. Moreover, a special thanks to Bhairav Patel for his constructive feedback and help in this process.

ABSTRACT

Throughout history, there have been constant debates on whether the concept of free trade or government intervention is the best tool to achieve economic development. The Indonesian government, however, has oscillated between the two as a way of counteracting the undesired consequences of following one of the two concepts.

Through intervention the Indonesian government limited export of raw minerals in January 2014 with hopes of developing the Indonesian processing industry and this thesis wishes to explore the possible impacts of the regulations. By directing our focus on Indonesia's political and economic history, quantitative data on relevant areas, theoretical framework on the concepts of 'free trade', 'government intervention', 'new institutional economics' and 'path dependence' we have reached the conclusion that the new Indonesian mining regulations have economic impacts on both national and organizational levels.

TABLE OF CONTENTS

- 1. INTRODUCTION..... 1
 - 1.2 Research questions 2
 - 1.3 Method 2
 - 1.4 Structure of the thesis 3
- 2. THE REPUBLIC OF INDONESIA 4
 - 2.1 Facts 4
 - 2.2 International trade 5
 - 2.3 Politics and economy – a historical recap from 1945 – 2015 6
- 3. MINING..... 16
 - 3.1 Global Mining 16
 - 3.2 Indonesian mining 17
 - 3.2.1 Economy and investment 17
 - 3.2.2 The importance of the Indonesian mining industry 19
 - 3.3 Minerals..... 20
 - 3.3.1 Copper 21
 - 3.3.2 Nickel 22
- 4. CHANGES IN MINING POLICIES 24
- 5. THEORY AND PREVIOUS EMPIRICAL FINDINGS 32
 - 5.1 Free trade..... 32
 - 5.2 Government trade intervention..... 36
 - 5.3 Free trade and government intervention in Indonesia 40
 - Indonesian forest industry – A comparative example of government intervention 42
 - 5.4 New Institutional Economics and Path Dependence..... 44
 - 5.4.1 New Institutional Economic and Path Dependence in the context of Indonesia 46
- 6 RESEARCH METHODOLOGY 49

6.1 Research methods.....	49
6.1 Collection of data	50
6.2 Validity and Reliability	51
7. EMPIRICAL FINDINGS.....	52
7.1 Employment	52
7.2 Production of minerals in Indonesia.....	56
7.3 Indonesian mineral export.....	62
7.3.1 Value of Indonesian mining export.....	62
7.3.2 Volume of Indonesian mining export.....	64
7.4 Gross Domestic Product at current market prices	67
7.5 Direct capital investment by sector	69
7.5.1 Domestic direct investment	69
7.5.2 Foreign direct investment.....	71
7.6 Commodity prices	74
7.7 Prices of concentrate/ore and processed minerals.....	75
8. CASE STUDY	76
8.1 PT Newmont Nusa Tenggara	76
9. CONCLUSIONS	79
REFERENCE LIST.....	80
APPENDIX 1 – Minimum processing and refining requirements.....	89
APPENDIX 2 – Employment	93
APPENDIX 3 – Production of minerals in Indonesia.....	94
APPENDIX 4 - Indonesian mineral export.....	95
APPENDIX 5 – Gross Domestic Product at current market prices	96
APPENDIX 6 - Direct Capital Investment by sector	97
APPENDIX 7 – Commodity prices	98
APPENDIX 8 – Value of concentrate/ore and processed minerals	99

LIST OF FIGURES

The numbers of the figures reflects the chapter were they can be found.

Figure 2.1: “Indonesian export, 2000-2015”

Figure 2.2: “Indonesian import, 2000-2015”

Figure 3.1: “World mining production 1984 - 2013 by continents (without construction minerals, in Million mt)”

Figure 3.2: “20 largest producer countries 2013 (without construction minerals, in Million mt)”

Figure 4.1: “Export duty on mineral concentrates as per of MoF Reg. 6/2014”

Figure 5.1: “The Theory of Absolute Advantage”

Figure 5.2: “The theory of comparative advantage”

Figure 5.3: “Infant Industry Argument”

Figure 7.1: “Employment within the Indonesian mining and quarrying sector, 2009-2014”

Figure 7.2: “Employment within the Indonesian mining and quarrying sector, 2013-2014”

Figure 7.3: “Mining and quarrying in % of total employment, 2009-2014”

Figure 7.4: “Mining and quarrying in % of total employment, 2009-2014”

Figure 7.5: “Indonesian copper production, 2006-2014”

Figure 7.6: “Indonesian copper production in percentage of total world production, 2006-2014”

Figure 7.7: “Indonesian nickel production, 2006-2014”

Figure 7.8: “Indonesian nickel production in percentage of total world production, 2006-2014”

Figure 7.9: “Indonesian tin production, 2006-2014”

Figure 7.10: “Indonesian tin production in percentage of total world production, 2006-2014”

Figure 7.11: “Value of Indonesian mining export, 2007-2014”

Figure 7.12: “Value of mining export in % of total Indonesian export, 2007-2014”

Figure 7.12 “Value of total Indonesian nickel export, 2007-2014”

Figure 7.13: “Value of total Indonesian copper export, 2007-2014”

Figure 7.15: “Volume of Indonesian mining export, 2007-2014”

Figure 7.16: “Volume of total Indonesian nickel export, 2007-2014”

Figure 7.17: “Volume of total Indonesian copper export (thousand metric ton), 2008-2014”

Figure 7.18: “Non-oil and gas mining’s contribution to total GDP at current market prices, 2003-2014”

Figure 7.19: “Non-oil and gas mining in percentage of total Indonesian GDP (at current market prices), 2003-2014”

Figure 7.20: “Domestic direct investment in Indonesian mining sector, 2006-2014”

Figure 7.21: “Domestic direct investment in Indonesian mining sector in percentage of total Indonesian domestic direct investment, 2006-2014”

Figure 7.22: “Foreign direct investment in Indonesian mining sector, 2006-2014”

Figure 7.23: “Foreign direct investment in Indonesian mining sector in percentage of total foreign direct investment, 2006-2014”

Figure 7.24: “Nominal price index of metal, 2009-2016”

LIST OF TABLES

The number of the tables reflects the appendixes where they can be found.

Table 1.1: “Minimum processing and refining requirements prior to export”

Table 2.1: “Employment within the Indonesian mining and quarrying sector, 2009-2014”

Table 2.2: “Employment within the Indonesian mining and quarrying sector, 2013-2014”

Table 3.1: “Volume of Indonesian copper production (thousand metric ton), 2006-2014”

Table 3.2: “Volume of Indonesian nickel production (thousand metric ton), 2006-2014”

Table 3.3: “Volume of Indonesian tin production (thousand metric ton), 2006-2014”

Table 4.1: “Value of Indonesian mining export (thousand USD), 2007-2014”

Table 4.2: “Volume of Indonesian mining export (thousand metric ton), 2007-2014”

Table 5.1: “Gross Domestic Product at current market prices by industrial origin (Billion Rupiah) 2003-2014”

Table 6.1: “Domestic direct investment by sector in Indonesia (billion rupiah), 2006-2014”

Table 6.2: “Foreign direct investment by sector in Indonesia (million USD), 2006-2014”

Table 7.1: “Nominal price index of metal, 2009-2016”

Table 8.1: “Value of refined copper and copper concentrate, 29.05.2014”

LIST OF ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
COW	Contract of Work
CCOW	Coal Contract of Work
CIA	Central Intelligence Agency
CNN	Cable News Network
DDI	Domestic Direct Investment
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GOI	Government of Indonesia
GR	Government Regulation
ICMM	International Council of Mining and Metals
IMF	International Monetary Fund
INSG	International Nickel Study Group
IPR	Peoples Mining Permit (Indonesian translation?)
IUP	Mining Permit (Indonesian translation?)
IUPK	Special Mining Business Permit (Indonesian translation?)
KPK	'Komisi Pemberantasan Korupsi' / Corruption Eradication Commission
MoEMR	Minister of Energy and Mineral Recourses
MoEMRR	Minister of Energy and Mineral Recourses Regulation
NIE	New Institutional Economics
PKI	' <i>Partai Komunis Indonesia</i> ' / Indonesian Communist Party
PNI	' <i>Partai Nasional Indonesia</i> ' / Indonesian Nationalist Party
PTNNT	PT Newmont Nusa Tenggara
PWC	PricewaterhouseCoopers
UN	United Nations
USD	United States Dollar
USGS	U.S. Geological Survey
WB	World Bank

1. INTRODUCTION

January 2014 the Indonesian government issued Governmental Regulation No. 1/2014. The intention of the regulation was to ban all export on raw minerals as an enforcement of Law No. 4/2009, however last minute changes were made and a total ban was postponed until 2017 with two implementing regulations being issued.

In short, the regulations states that from January 2014 there will be restrictions regarding export of minerals from Indonesian mines. As will be explained more thoroughly in chapter 4, the minerals are separated into two different groups. One group can be exported as concentrates until 2017, with the provisions that the company pays export duties that will grow continuously over the next three years. The other group of minerals have to be processed and refined at a higher minimum level domestically, before they can be exported. According to the regulations, companies are expected to commit to the construction of refining facilities to further process and refine the minerals after 2017, and that foreign investors will divest part of their shares within a given time limit (Government of Indonesia, 2014) (Winzenried & Adhitya, 2014a).

What motivated the Indonesian government, amongst other things, was the unlocking of the additional value that lies within the development of a processing industry as well as achieving economic development within the regions (Government of Indonesia, 2014).

The focus of the thesis will be on how these regulations might have affected the Indonesian economy. In order to answer this question we have looked at political and economic development seen in comparison with various theoretical models that will provide a better understanding of the topic as well as a more profound understanding of Indonesia as a country.

1.2 Research questions

Even though the Indonesian Government was motivated by the possibility to expand the processing industry and enhance the value it added, it is often the case that government intervention may cause a different outcome than what was expected. Based on this, and our curiosity regarding the topic, we have chosen the following research question:

“What are the short and medium term effects on the Indonesian economy induced by the new government regulations limiting exportation of raw material from the mining industry?”

In order to answer this research question we have chosen six sub-questions that we believe represent areas where these impacts may be visualized:

Sub-question 1: What are the impacts of the new mining regulations on Indonesian employment?

Sub-question 2: What are the impacts of the new mining regulations on Indonesian mineral production?

Sub-question 3: What are the impacts of the new mining regulations on Indonesian mineral export?

Sub-question 4: What are the impacts of the new mining regulations on Indonesian GDP?

Sub-question 5: What are the impacts of the new mining regulations on direct capital investment in Indonesia?

1.3 Method

In order to answer the questions above we have chosen a qualitative approach that includes analyzing statistics and documents from both Indonesian and foreign sources as well as conducting a case study in order to get a better understanding of what impacts the regulations might have.

1.4 Structure of the thesis

Following will be a short presentation of the different chapters that make up our thesis.

Chapter 2 briefly highlights different aspects of Indonesia as a country, as well as a more thorough introduction to political and economic changes after 1945.

Chapter 3 gives an introduction to mining and the sector's importance both globally and to Indonesia. There will also be a brief presentation on two minerals highly important to Indonesian export.

Chapter 4 provides a brief summary of the Indonesian mining legislations from 1945-2014 relevant for this thesis, as well as exemptions made after the mining regulation was implemented January, 2014.

Chapter 5 presents the theoretical framework as well as previous empirical findings, which will be used to draw parallels to political and economic development in Indonesia.

Chapter 6 addresses the different research methods used in order to conduct this thesis.

Chapter 7 presents various statistics regarding the different areas that may be affected by the newly implemented mining regulations. Each sub-chapter is followed by a short conclusion with regards to our sub-questions presented above.

Chapter 8 includes two case studies in order provide a more nuanced understanding of how the mining regulation have affected industries on organizational level.

Chapter 9 provides a conclusion of the findings and answers the main research question.

2. THE REPUBLIC OF INDONESIA



Picture 2.1: “Map of Indonesia” (Geographia, s.a)

This chapter will, in brief, highlight different aspects regarding Indonesia as a country, as well as a more thorough introduction to political and economic changes after the declaration of Independence in 1945, which to some extent may have influenced the country’s development.

2.1 Facts

Indonesia is a democratic republic located in the southeast of Asia, bordering Malaysia in the north and East-Timor and Papua New Guinea in the east. With its roughly 250 million people, Indonesia is the fourth most populous country in the world after China, India and the US (CIA, 2015b).

Only around 6000 of the more than 17000 islands in Indonesia are inhabited, and some of the largest islands are Sumatra, Java, Kalimantan, Papua and Sulawesi (CIA, 2015a). Despite the fact that Java only makes up 7% of Indonesian land, it is the location of the capital Jakarta, and the home to almost 60 % of the population (Encyclopedia of the Nations, 2015).

The largest main sectors are industry, service and agriculture, and according to the World Bank they contributed with 45.7 %, 39.9 % and 14.4 % respectively to total GDP in 2013 (World Bank Group, 2015c, 2015d, 2015e). Mining and manufacturing are amongst the largest ‘industries’, and have both contributed greatly to the country’s economy since the 1970s, mainly due to the country’s abundance of natural resources (Indonesia-Investments, s.a. a).

In August 2014, the Indonesian work force consisted of over 114.6 million people. Out of them, almost 34 % worked within ‘agriculture, forestry, hunting and fishing’, 22 % within ‘wholesale

trade, retail trade, restaurants and hotels’ and about 1.3 % within ‘mining and quarrying’ (numbers from Aug 2014) (Statistics Indonesia, 2015a).

At the same time approximately 6.1 % of the total labor force was unemployed, a number which has declined gradually from 10.3 % in 2006 (IMF, 2015; Statistics Indonesia, 2015b). However, every year, graduates enter the country’s labor force, turning unemployment amongst youth into a major problem for the Indonesian government (Indonesia-Investments, s.a. b).

2.2 International trade

In 2013 Indonesia was ranked as the ninth largest exporter amongst Asian countries, and the 29th largest worldwide (CIA, 2015a; Workman, 2015).

According to Bank Indonesia, Indonesia’s top five export partners (in January 2015) were; China, Japan, United States, India and Singapore, and the country’s top five import partners were; China, Singapore, Japan, South Korea and Malaysia (Bank Indonesia, 2015e, 2015f).

Amongst the products Indonesia exports are; oil, gas, rubber, electrical appliances, plywood, coal and of course minerals like tin, bauxite, copper and nickel. Examples of imported products are; machinery, equipment, fuels and chemicals (CIA, 2015a).

Below is a presentation of Indonesian imports and exports, represented in million USD, from 2000 to 2015, by Trading Economics:



Figure 2.1: “Indonesian export, 2000-2015” (Trading Economics, 2015a)



Figure 2.2: “Indonesian import, 2000-2015” (Trading Economics, 2015b)

After a severe setback in both import and export around 2009, Indonesian trade increased dramatically towards a peak in 2011. Import started slowing down in mid 2013, and has been facing a slight decline ever since. Exports on the other hand have had a larger decline, which started in mid 2011. These changes led to value of Indonesian import exceeding exports for the first time in 2012 (Indonesia-Investments, 2013).

In January 2015 however, Indonesian export exceeded import by 709.4 million US\$. Even so, exports dropped 8.09 % from January the year before and imports dropped as much as 15.6 %, this was caused to some extent by the drop in global oil prices as oil is one of Indonesia’s top import commodities (Indonesia-Investments, 2015b).

2.3 Politics and economy – a historical recap from 1945 – 2015

Indonesia is a unitary state, where the power lies with the central government and the President. After decades with authoritarian regimes, Indonesian has finally become a democratic republic with great economic potential. In spite of a slight decline in economic growth after 2012 (FITA, 2015), the country is still Southeast Asia’s largest economy and amongst the 20 largest worldwide (CIA, 2015a; Trading Economics, 2015c).

When it comes to understanding how and why a country, as well as industries, have developed, the answers may often be seen in the context of various theoretical models. In this case, we have taken a closer look at the theory of New Institutional Economics, Douglas North’s work in regards to path dependence, and John Stuarts Mill’s and more recent economists’ like Paul Krugman’s work regarding the Infant Industry Argument. The infant industry argument shortly

states that for any given industry to be able to develop, they often have to be sheltered for a short period, before they are able to compete in the open market. The theory of New Institutional Economics explains how economies develop through the use of institutions. At the same time development is ‘path dependent’, every step is influenced by the past.

Historical events shape a country’s future, and may therefore often explain the current situation. In this sub-chapter, we will look at development within Indonesian politics, as well as economic changes after 1945, and in chapter 5 we will see how the different theories mentioned can be used to explain Indonesian development, or a lack thereof.

The ‘Old Order’ of Sukarno

Indonesia was a Dutch colony for several centuries until Japan invaded the country in 1942. After three years of Japanese ruling, Indonesia finally declared independence on August 17, 1945 (Indonesia-Investments, s.a. c). In spite of opposition from the Dutch, who fought hard to regain power during the next four years, Sukarno, leader of the *Indonesian Nationalist Party* (PNI), and the one to declare the country’s independence, was inaugurated as Indonesia’s first president in 1949. His precedency lasted until 1966 (Indonesia-Investments, s.a. d).

Since both the Dutch and Japanese had ruled Indonesia in favor of their own best interests, the Indonesian economy was in a poor state when the country finally became independent. According to Van der Eng (2002), national income declined by more than 50 % just between 1941 and 1949, mostly due to Japanese intervention in Indonesian trade.

Sukarno’s precedency was influenced by many different ideologies, making the country even more unstable and difficult to lead. The most significant ideologies were religion (mainly Islam), communism (e.g. the communist party PKI who gained many followers during this period) and nationalism (e.g. PNI fighting for Indonesian independence), all with different points of views in regards to the governing of Indonesia (Indonesia-Investments, s.a. d).

In an effort to unite the many different ideologies influencing this period, Sukarno presented the ‘Pancasila philosophy’ in 1945, a philosophy consisting of five different principals “*that would become the foundation of the Indonesian state* (Indonesia-Investments, s.a. d):

1. *Belief in one supreme God*
2. *Justice and civility among peoples*
3. *Unity of Indonesia*
4. *Democracy through deliberation and consensus among representatives*
5. *Social justice for all the people of Indonesia”*

The different ideologies also influenced the first democratic parliament election in 1955, as it lead to all parties receiving approximately the same amount of votes. Instead of one leading party, they all had to collaborate, which consequently inhibited the country’s development (Indonesia-Investments, s.a. d).

Sukarno came up with a solution he called “Guided Democracy”, a “*return to the 1945 Constitution which foresaw a strong presidency with authoritarian tendencies*” (Indonesia-Investments, s.a. d). By following this solution, he replaced all parliament members and increased the army’s political role. However to make sure the army did not gain too much control, he allied with PKI (Indonesia-Investments, s.a. d).

After the application of Guided Democracy, Sukarno’s precedency became highly anti-Western. He gained control over New Guinea, acted hostile towards Malaysia and by breaking ties with the World Bank, IMF and UN he negatively affected the amount of foreign aid that was received (Indonesia-Investments, s.a. d). This, together with hyperinflation due to extensive printing of rupiah, made the Indonesian economy even worse (Indonesia-Investments, s.a. f).

The tension existing between religious groups, communists, nationalists and the army, increased during the last years of Sukarno’s precedency. It all ended in the slaughter of hundreds of thousands communists after PKI was blamed for the killing of a group of generals and lieutenants who allegedly were planning a military coup against Sukarno. However, neither the coup, nor that the PKI killed them, were ever proved (Indonesia-Investments, s.a. d).

After the killings, General Suharto, who blamed the coup on PKI, became the army’s leader. Throughout the two following years, Suharto gained more and more control, and slowly outpowered Sukarno (Indonesia-Investments, s.a. d).

The ‘New Order’ of Suharto

Suharto was officially initiated as Indonesia’s second president in 1968. He remained president until 1998, a period more commonly known as the ‘New Order’.

One of the reasons why Suharto ruled as long as he did, was his manipulation of the political system. He did this through centralizing political power, suggesting that existing political parties merge and founding ‘Golkar’, Suharto’s own party, consisting of various ‘functional groups’, formed in order to hinder the public from forming their own political parties (Indonesia-Investments, s.a. e). Golkar is still a functioning party today.

Government policy during Suharto’s precedency was greatly influenced by two opposing groups; the technocrats favoring free trade and open markets and the technologists encouraging protectionism and governmental intervention. Both groups acted as Suharto’s advisors, however, whilst the technocrats were highly influential from the start, influence from the technologists was quite minimal until the 90s, when B.J Habibie, leading technologist, and close friend of Suharto, gained more political control. This led to many of Suharto’s economic advisors and Ministers being replaced by technologists (Wie, 2002) (Takashi, 2006).

Suharto switched between the two approaches according to how the economy developed and what he saw best fit. When the economy was growing, governmental intervention was high, but when economy was declining, markets became more open and free in order to improve economic development. (Takashi, 2006).

Suharto started his precedency by banning PKI and expanding the army’s role in politics. In contrast to Sukarno who focused on politics, Suharto’s main focus was on economic development (Wie, 2002).

His precedency can therefore be divided into three different phases, “*each characterized by specific economic challenges, policies and performance* (Wie, 2002);

- *1966-1973: Stabilization, rehabilitation, partial liberalization and economic recovery;*
- *1974-1982: oil booms, rapid economic growth and increasing government intervention;*
- *1983-1996: post-oil boom, deregulation, renewed liberalization and rapid export export-led growth”*

To put an end to the economic problems caused by the previous government, Suharto sought help from five economists at the University of Indonesia. They became part of Suharto's 'Team of Experts in the Field of Economics and Finance', which was the origin of 'economic technocrats', or the 'Berkeley Mafia', given that many of its member had graduated in economics at The University of California, located in Berkeley (Wie, 2002).

Suharto gave the technocrats full permission to do as they best saw fit in regards to economic development, as well as the task of outlining the 'Program for Stabilization and Rehabilitation'. A program meant to guide Indonesia towards a recovered economy, improved infrastructure, agriculture and food production. In addition to stabilization and rehabilitation there was focus on development, and over the two next years they made detailed plans in how to achieve this. Among the solutions were deregulation and a more open politic in regards to foreign investment (Subroto, 1998) (Wie, 2002).

Through policies proposed by the technocrats, led by Professor Widjojo Nitisastro, the Suharto government managed to reduce hyperinflation triggered by Sukarno, hence stabilize as well as develop the Indonesian economy. In fact, from 1966 to 1970, inflation was reduced from 636 percent to 9 percent (Wie, 2002). During Suharto's precedency Indonesia actually went from being one of the largest underperforming economies in Southeast Asia, to turn into a 'Newly Industrializing Economy' (Wie, 2002). This is why Indonesia was recognized as part of what the World Bank called the East Asian Miracle, where East Asian economies grew more rapidly between 1965 and 1990 than the rest of the world (World Bank, 1993). During this period total GDP grew by 6-8 percent annually, with all three key sectors (agriculture, industry and service) growing continuously. Manufacturing also increased rapidly, changing Indonesia from an agricultural country to the industrialized country it is today. In fact, agricultural contribution to the country's GDP in 1996 was reduced to almost a third of what it was 30 years prior (Wie, 2002).

During the first economic period of Suharto's precedency, previous broken ties with the West, as well as Malaysia were restored and relations with the World Bank, IMF and the UN were reestablished, creating a more open and free economy. By doing this, Indonesia regained its place in the world economy, and started receiving international support, essential for economic development (Indonesia-Investments, s.a. e).

Shortly after, 'Foreign Investment Law (1967)' and 'Domestic Investment Law (1968)' were implemented (Indonesia-Investments, s.a. f), making it possible to better exploit the country's

natural resources, given that foreign investment meant larger investments within the different sectors. In fact foreign direct investment increased from 83 million, to 271 million in 1972 (James & Stephenson, 1993, as cited in Wie, 2002).

In 1967 a new basic mining law was also implemented (Law No. 11/1967), and together the three laws opened up the Indonesian mining sector for increased investments (for further information see chapter 4).

Even though foreign investments did wonders for the Indonesian economy, the people were questioning Suharto's politics. They felt that too many opportunities favored foreign investors, including the ethnic Chinese, who by now controlled a large share of the Indonesian economy. This led to huge demonstrations and riots in the beginning of the second period mentioned, which resulted in increased intervention by the Indonesian government, including amongst others; closure of several newspapers and restrictions in regards to foreign investment (Indonesia-Investments, s.a. e). Foreign investors could from 1974 only invest in 'joint ventures' with maximum ownership being 80 %, or 95 if the company dealt with exports. However, within 20 years they had to divest 51 % of their shares (Pangestu & Azis, 1994).

Despite this the Indonesian economy continued to grow during the second period by an average of 7.7 %, and at no less than 5 % each year (Hill, 1996). Both oil booms occurring in the 70s also contributed greatly to the economic growth, especially with regards to export revenues and increased taxes from foreign oil companies. Growing revenues opened up for public investment opportunities and increased imports, resulting in an expanding manufacturing sector (Indonesia-Investments, s.a. f).

In spite of economic development experienced during Suharto's presidency, Suharto's New Order was "*a military-backed authoritarian regime that did not respect human rights*" (Indonesia-Investments, s.a. f). The government was permeated with 'corruption, collusion and nepotism', favoring the ones closest to Suharto. This led to uprisings amongst the public, especially those with higher education, resulting in even further restrictions.

The third period during Suharto's presidency was highly influenced by declining oil prices. While economic growth deteriorated, Indonesia's foreign debt increased. In order to stabilize the situation, Indonesia had to devalue their currency, as well as increased taxes on non-oil commodities. Up to this point, Indonesia's main export commodity had been oil, but now the focus had to be redirected towards the private sector and a more competitive export market (Indonesia-Investments, s.a. f).

This led to deregulations, favoring private investments, and removal of import duties for firms exporting more than 85 % of total production. Policies also changed in favor of foreign investment, especially in exporting companies, as the previous regulations mentioned had caused uncertainty amongst the investors with regards to the control of their own companies (Wie, 2002). However, now, foreign investors were given the choice between holding 95 percent in a joint venture, or 100 percent, but having to divest part of the shares within the first 15 years (with 1 percent being enough) (Pangestu & Azis, 1994). In addition, the financial sector expanded, due to more open policies with regards to the establishment of both domestic- and foreign private owned banks. (Indonesia-Investments, s.a. f). These changes led to rapid growth once again, and by late 1980s, GDP growth had reached 9 % (Wie, 2002).

Many of the changes implemented by Suharto, were key factors as to why Indonesia was hit particularly hard during the Asian financial crisis in 1997/1998. Both corruption and deregulations made the country vulnerable, and with banks being established everywhere, no one seemed to be able to control the financial flow in the country (Indonesia-Investments, s.a. f). However, what started as an economic crisis, quickly turned out to become both a social and political catastrophe for Indonesia. (Indonesia-Investments, s.a. e).

Asian Financial Crisis

The Asian financial crisis began in Thailand, July 1997, and shortly after spread to most parts of Asia (Indonesia-Investments, s.a. h). Over the next six months, the value of rupiah fell by almost 80 %, and even though the IMF tried to help with substantial loans, the economic crisis was a reality. Suharto's policies and favoring of friends and family, as well as his lack of control and interest in easing the situation, turned the economic crisis into a political crisis as well (Indonesia-Investments, s.a. h) (Wie, 2002).

During this period, annual GDP growth decreased from 8 percent in 1996 to -13.6 percent in 1998, and annual inflation rate increased by over 50 %. The Indonesian mining and quarrying sector was also affected, with contribution to GDP decreasing from 7.1 percent in 1996 to -4.2 % in 1998 (Hill, 1996).

As mentioned, this also became a social crisis for Indonesia. This was a result of increased poverty, employees losing their jobs, and Suharto, after demands from the IMF, reducing fuel subsidies. However, Suharto, instead of a gradual reduction, removed them all together which resulted in several riots, where, in the end more than a thousand people were killed. Suharto

could no longer use economic growth as a reason to maintain the support and had no other choice than to resign (Indonesia-Investments, s.a. h) (Wie, 2002).

Democracy – a reforming Indonesia

On May 21, 1998, one of the leading technologists, and vice president during Suharto's last months as president, Bacharuddin Jusuf Habibie took over as Indonesia's third president (Indonesia-Investments, s.a. g).

Together with the economic technocrats, Habibie managed to change the critical situation, and with IMF once more helping Indonesia, the economy slowly started to recover. Inflation was reduced and export of non-oil commodities increased (Indonesia-Investments, s.a. h).

This was the beginning of the Indonesian 'Reformation', a period which to some extent reflected the changes the public wanted, and desperately needed. The fact that Habibie knew Suharto well made the public highly skeptical and Habibie had no other choice than to go through with the economic changes desired by the people (Indonesia-Investments, s.a. g).

The reformation was a period influenced by a more open, liberal and democratic methodology where political power was decentralized in order to strengthen the political power in the different regions. In addition, the presidency was limited to a maximum of two terms, each no longer than five years (Indonesia-Investments, s.a. g).

However, as power was decentralized, corruption became an increasing problem due to regional elites exploiting their power. This especially affected the forest industry, with a large number of permits being sold illegally. (Indonesia-Investments, s.a. g).

During Habibie's presidency, violence and killings became a huge problem in different regions causing a setback in foreign investment and development of Indonesian economy. What led to the end of Habibie's presidency was lack of control after East Timor, with support from Habibie, voted for independence. The situation ended with the army killing over thousand people in East-Timor due to disagreements. Habibie's involvement in a major corruption scandal with Bank Bali served to hasten his downfall (Indonesia-Investments, s.a. g).

In 1999, Abdurrahman Wahid, founder of the *Partai Kebangkitan Bangsa* (PKB), was elected president, in Indonesia's first democratic election since 1955. Sukarno's daughter, Megawati Sukarnoputri, founder of *Partai Demokrasi Indonesia Perjuangan* (PDI-P), became the country's vice president. Wahid's rule lasted only two years for after firing several ministers because of involvement in corruption, Wahid was himself accused for corruption. This led to

his forced resignation, with Megawati being inaugurated as Indonesia's new president (Indonesia-Investments, s.a. g).

Megawati's popularity came from her being Sukarno's daughter and not because of her politics. Her precedency lasted until 2004, during which she did not do much of the work herself, as reforms initiated two years prior, became effective during this period. The reforms increased the democratic power of the people and reduced the potential for a return to an authoritarian regime. In the parliamentary election in 2004 it became clear that Megawati had lost support, due to her nonexistent leadership and with corruption growing continuously in the country. After resigning from his position as 'Coordinating Minister of Political and Security Affairs', Susilo Bambang Yudhoyono from the Democratic Party (PD), was elected President (Indonesia-Investments, s.a. g).

Yudhoyono introduced the 'New Paradigm', which meant that the army could no longer influence the country's politics. What made Yudhoyono popular was the fight against corruption, and the hiring of non-political academics (Indonesia-Investments, s.a. g).

He was a man with high aspirations with regards to economic development, reducing corruption and terrorism and supporting human rights and democracy (Indonesia-Investments, s.a. g). However, Indonesia is not an easy country to change, largely due to 'path dependence' further described in chapter 5.4.

Nevertheless, during his precedency the country experienced increased GDP, decline in foreign debt and improvement in foreign-exchange reserves, which were all part of how Indonesia remained stable all through the global financial crisis in late 2000s (Indonesia-Investments, s.a. g). Of course, the economic foundation built after the Asian financial crisis, also played a major role in how the country tackled a new crisis (Indonesia-Investments, s.a. h).

Yudhoyono was reelected for a second period in 2009, partly because of his work against corruption and poverty, as well as reduction in fuel and food prices. However, in spite of economic development, public support started decreasing. Promises made in the campaign in regards to corruption were no longer met, and very soon members of the government, as well as the PD was associated with corruption scandals (Indonesia-Investments, s.a. g).

The present

October 20, 2014, Joko Widodo, was inaugurated as Indonesia's 7th President, and most importantly with regards to Indonesian development, he was the first president with no ties to former political elites originating from Suharto's 'New Order' regime. However, being the "outsider" he also attracted many enemies, especially in the opposing candidate, General Prabowo Subianto. Concerns were early made in regards to whether Widodo was able to implement changes mentioned in his campaign, or not. (Indonesia-Investments, 2014a)

In an interview with CNN, the Indonesian President talks about how on January 1, 2015, fuel subsidy was cut, a decision that saved the government almost 230 trillion rupiahs, approximately US\$ 18 billion. There has been little reaction to the decision, most likely due to the global decline in oil prices. The capital saved is according to the President, used on more productive areas like infrastructure, education, health, irrigation, seeds and fertilizers for the farmers, equipment to for fishermen, and working capital to small and micro enterprises in the villages (CNN, March 4, 2015).

The Indonesian GDP per capita has also grown rapidly over the years. However, this is a problematic indicator to use when measuring welfare within the country due to the major differences between the rich and poor. According to Indonesia Investment, "*the 40 richest Indonesians account for 10.3 percent of GDP, which is the same amount as the combined wealth of the 60 million poorest Indonesians*" (Indonesia-Investments, s.a. i). If this trend continues Indonesia will have an even bigger problem fighting poverty, than they already have.

3. MINING

3.1 Global Mining

According to Statistics Indonesia, mining is “an economic activity to extract and prepare for further processing of mineral in solid, liquid and gas form. Mining activities are done either above (open mining) or under the ground (closed mining) including quarrying, scratching and mining of minerals solid, liquid or gas form. Products of those are such as crude oil and natural gas, coal, iron sand, tin concentrate, nickel ore, bauxite, copper concentrate, gold, silver, and manganese” (Statistics Indonesia, 2015c)

Mining has, to some degree, existed for thousands of years, and started in many areas with the usage of flint, a type of mineral that could easily be made into weapons and equipment.

Extraction of minerals and the process of mining is the very beginning of the supply chain for almost all products produced and minerals extracted through mining are used in the production of everything from staplers to skyscrapers. Today, mining has grown into a massive industry, giving millions of people a place to work and countries rich in natural resources a huge advantage in the world market. The importance of mining must therefore not be underestimated.

In fact, in 2012, exports of minerals accounted for more than 25 percent of total export in as much as 38 nations, with approximately ¾ of them being developing countries (ICMM, 2014), and the following year total production of minerals worldwide were approximately 17 billion metric tons (excluding bauxite) (Reichl, Schatz, & Zsak, 2015)

The figure presented below shows global mining production in million metric ton from 1984 to 2012. Here we can see that Asia and Oceania have almost doubled its production since 2000.

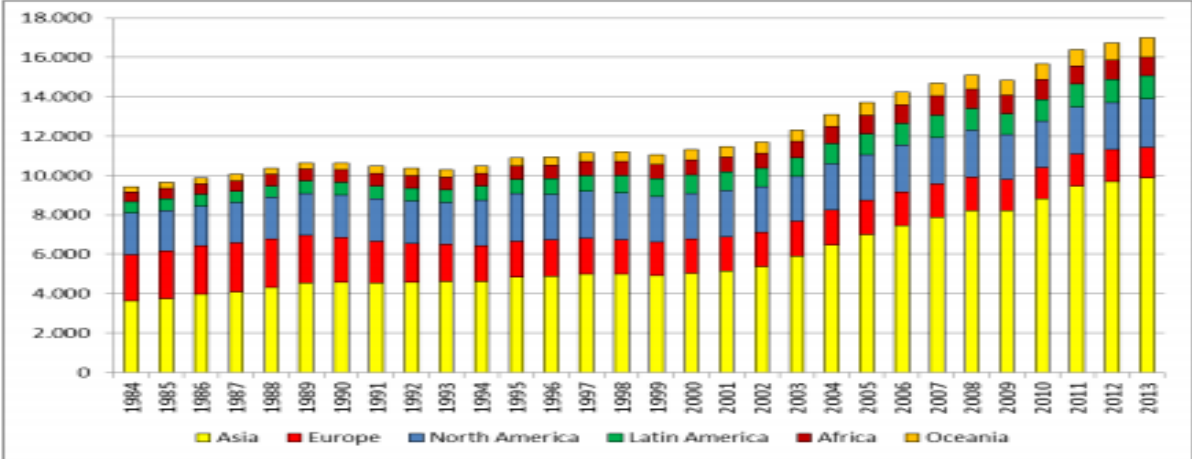


Figure 3.1: “World mining production 1984 - 2013 by continents (without construction minerals, in Million mt)” (Reichl et al., 2015, p. 19)

The value of worldwide production has changed rapidly since 2000. According to the International Council on Mining and Metals production value in 2012 “*was over six times higher than in 2000 and 60 per cent higher than at its 2008 peak*” (“*excluding coal, uranium and quarried products*”) (ICMM, 2014).

An aspect worth keeping in mind is how changes in commodity prices within the mining sector, can lead to huge fluctuations between volume exported and value. An example of this can be seen in figure 7.13 and 7.16 in chapter 7. During the global financial crisis, commodity prices fell drastically, however, they quickly started to increase after the crisis was over. The increase continued until 2011, after which they declined once more (ICMM, 2014). The decline was expected to continue into the near future however recent reports anticipate growth in commodity prices related to mining and metals (figure 7.23, appendix 7) (World Bank Group, 2015a, 2015b)

3.2 Indonesian mining

As mentioned, mining is one of the main sub-sectors within the Indonesian industry and a sector that has contributed greatly to the country’s welfare. Minerals extracted from Indonesian mines are coal, copper, iron, manganese, lead, zinc, ilmenite, titanium, nickel, bauxite, tin, gold, silver and chromium (Winzenried & Adhitya, 2014a).

In 2014, about 10 600 mining permits (IUP) were registered in Indonesia, with the majority being issued to companies extracting nickel and bauxite (Changxin, 2014). However, this does not reflect the number of mining companies, given that one company can hold several permits, one for each mineral (Government of Indonesia, 2009).

In 1967, Freeport-McMoRan was the first company to sign a Contract of Work (CoW), which was the precursor of IUPs (Devi & Prayogo, 2013) (see chapter 4 for further explanation on CoW and IUP). Together with PT Newmont Nusa Tenggara, they are both amongst the country’s largest copper producers.

3.2.1 Economy and investment

According to Indonesia-Investments the Indonesian mining sector has had a central role in regards to the country’s economic development since the 1970s, however it “gained renewed attention - both nationally and internationally - in the mid- and late 2000s when commodity prices rose significantly and when the country had more-or-less recovered from the Asian Crisis”(Indonesia-Investments, s.a. a). In addition a more democratic and decentralized set of policies implemented after Suharto’s resignation have been important for the sector to develop.

The last five years’ mining has accounted for about 5-6 percent of Indonesian GDP (see chapter 8.X), and as shown in the figure below, Indonesia ranked as the 7th largest producer of minerals in 2013, in regards to volume produced;

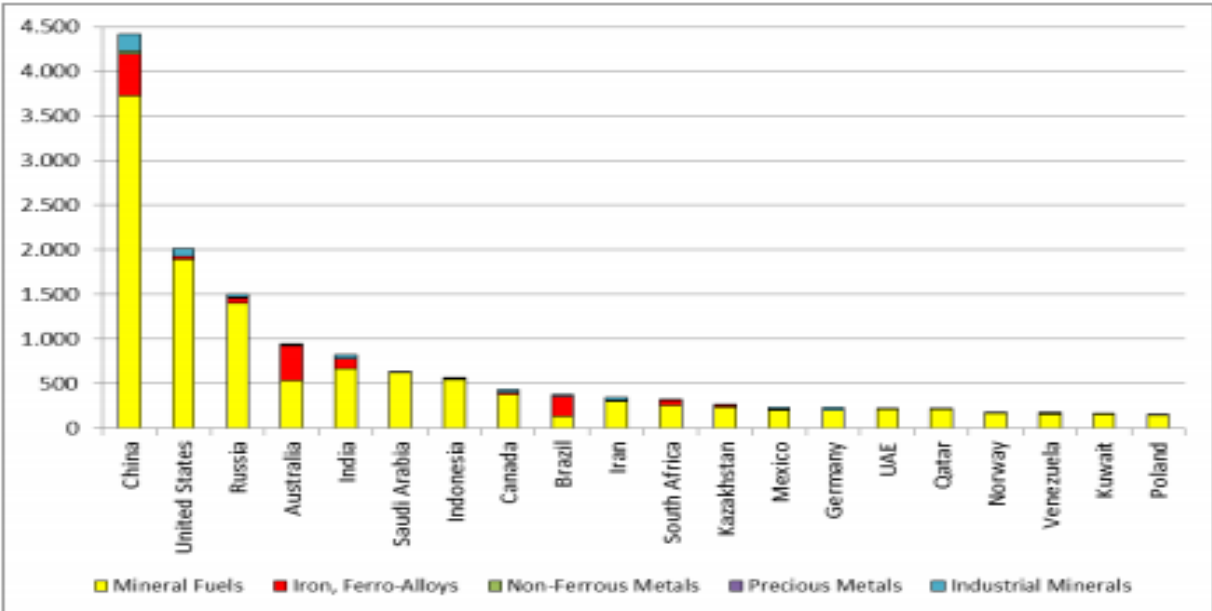


Figure 3.2: “20 largest producer countries 2013 (without construction minerals, in Million mt)” (Reichl et al., 2015, p. 22)

However, the same year they ranked as the 15th largest producer in regards to value. This shows that volume and value of minerals produced, as well as exported do not necessarily correlate. To some extent, the differences may be explained by altering commodity prices. According to MarketLine (2015), the value of the Indonesian mining sector declined by 17.6 percent in 2012, while volume rose by 22.1 percent. This clearly indicates that even though a country increases its production, economic growth might fail to appear.

For a long time the Indonesian mining sector has been a highly favorable sector for both domestic and foreign investments. Though recently there has been a decline in investments (see chapter 7.5). This is mainly due to uncertainty in regards to the new mining regulations which, as mentioned, prohibits foreign investors to own more than 49 % of the company shares after 10 years of production (SSEK, 2012) (for further information regarding mining regulations, see chapter 4).

An annual survey conducted by the Fraser Institute regarding the attractiveness of investments in the mining sector ranked Indonesia as the least attractive place in the world, out of 96 jurisdictions, in 2012 (Wilson, McMahon, Cervantes, & Green, 2013). Indonesia climbed the rankings in both 2013 and 2014, but the improvement potential is still great given that Indonesia only ranked nr.76 out of 122, in 2014 (Jacson & Green, 2015) . An important aspect in regards to the survey is how the rankings consider both mineral- and political potential within the jurisdictions, and this could be why Indonesia experiences low rankings, because even though the mineral potential in the country is great, Indonesian politics intimidates potential investors.

MarketLine (2015) states that Indonesian mineral production is predicted to grow from 2013 to 2018 by 48.3 percent. It remains to be seen if further decline in commodity prices and a complete export ban in 2017, will offset the predicted growth.

3.2.2 The importance of the Indonesian mining industry

The Indonesian mining industry is highly important for the country for a number of reasons other than its economic contribution. In regards to the welfare of the Indonesian people, we have to take into account the many remote areas in Indonesia that have benefitted greatly due to the Indonesian mining industry. The industry has provided infrastructure, electricity, water and employment for the people living there, changes that might not have occurred if it had not been for the mining companies. Also, in many of these remote areas, the mining companies might be the only place offering jobs (PwC Indonesia, 2014). With opportunities like this, the mining sector may also be a positive input in regards to fighting poverty.

In addition, the sector creates huge employment opportunities for the people. According to ICMM, *“each mining-generated job can lead to creation of 3–5 additional jobs outside the mining sector”* (ICMM, 2014, p. 3). Mining also provides ‘induced employment’; which are jobs created by the purchasing power of employees within the mining sector (ICMM, 2014). This is a highly important effect of the mining sector, especially in the more remote areas of Indonesia, where jobs can be hard to find.

ICMM has also developed the “*Mining Contribution Index (MCI)*”, an index ranking 214 countries with regards to the significance of their mining sector. In 2012 Indonesia ranked as nr 27, which is 23 places up from 2010 (ICMM, 2012; ICMM, 2014). Even though ranking countries with regards to the importance of their mining sector may be difficult, the index is still a great indication of what is previous mentioned about the importance of the Indonesian mining sector.

3.3 Minerals

As mentioned, the new mining regulations divides minerals extracted in Indonesia into two different groups, based on a minimum level of processing and refining before exportation.

According to the regulation, copper, iron, manganese, lead, zinc, ilmenite and titanium can be exported as concentrates, while the other group consisting of nickel, bauxite, tin, gold, silver and chromium must be further refined and processed at a much higher level than the first group. Purity level required was defined in Minister of Finance (MoF) Regulation No. 6/2014, and will be presented in chapter 7 (and appendix 1).

When extracting minerals, the miners typically extract ore, which is “*a natural aggregation of one or more minerals that can be mined, processed, and sold at a profit*” (Encyclopaedia Britannica, 2015b). Ore usually contains extremely low amounts of the mineral in question. After extraction, the ore is processed into concentrate, before being sold or shipped to a smelting facility/refinery where it is processed even further.

An example of this can be given with regards to copper, where ore normally consists of 0.5 to 5 % copper (Nussir, 2012a), concentrate normally lies between 24% to 40% (Nussir, 2012b) and further processed and refined copper can have a purity level up to 99.99% (Nussir, 2012c).

The price differences between the different purity levels when selling are huge, of course, and is also one of the main reasons why the Indonesian government hopes to benefit from expanding their processing industry. An example of the price differences and hence the value that lies within expansion of the processing industry will be provided in chapter 7.7 and appendix 8.

In the two following sub-chapters we will present two different minerals, nickel and copper.

When we discuss the consequences of the new mining regulations, we will use these two as examples, but we will also take into account the impact on total production and exportation of minerals as well.

3.3.1 Copper



Picture 3.1: “Copper ” (Element Materials Technology, 2015)

Copper was the first metal to ever be discovered and has been used by humans for over 10 000 years (ICA Ltd, s.a.). The metal is both ductile and malleable, as well as a great heat- and electricity conductor (Encyclopaedia Britannica, 2015a). This, in addition to copper being highly recyclable, makes it an important metal, especially within the building industry (Copper Development Ass., 2015a).

The use of copper is included in areas like; *“heating, cooling and refrigeration, electrical wiring, electronics, power generation and transmission”* (Copper Development Ass., 2015b). Copper can also be used in *“cooking pots and pans, pipes and tubes, automobile radiators, and [...] as a pigment and preservative for paper, paint, textiles, and wood”* (Cavette, 2015).

There are approximately 15 different types of copper ores extracted from about 40 different countries worldwide (Cavette, 2015), and the two most basic types are *“sulfide ores and oxide ores. Each type of ore requires different extractive and processing techniques.* (Copper Development Ass., 2015b).

The different copper ores can be extracted from both under and above ground, with the latter being the most common approach (Copper Development Ass., 2015b). After extraction, the copper ore are refined and processed in order to purify the mineral. (European Copper Institute, 2015).

Since copper is rather soft, it is often alloyed, mixed, with other minerals to become more solid and durable. The two most common are brass and bronze, however there exists roughly 570 different types of copper alloys (Copper Development Ass., 2015a) (Jefferson Lab, s.a.).

In 2013, approximately 18.3 million metric ton copper was extracted worldwide according to U.S. Geological Survey (2015d), and annual growth regarding copper production has been about 3 % the last century (Mitchell, 2013). In 2014, Chile produced a total of about 5.7 million metric ton copper, which is more than what the four other leading countries, China, Peru, United States and Congo produced combined (Statista, 2015a), and approximately 1/3 of the total amount extracted worldwide (Jamasmie, 2013).

Even though world production of copper is growing, Copper Development Association states that only 13.6 % of the world's resources of copper have been extracted, and it is anticipated that about seven trillion pounds copper still remains (Copper Development Ass., 2015c).

A more thorough presentation of production and export of copper within the Indonesian mining sector, will be presented under empirical findings in chapter 7.2 and 7.3.

3.3.2 Nickel



Picture 3.2: “Nickel” (Burgess, 2011)

Pure nickel was acknowledged as an element in the periodic table in 1751, however its alloys, is traced all the way back to 1500 BC (Bell, 2015).

Nickel is described as “a naturally occurring, lustrous, silvery-white metallic element. It is the fifth most common element on earth and occurs extensively in the earth's crust. However, most of the nickel is inaccessible in the core of the earth” (Nickel Institute, s.a. a).

The mineral is known for being robust and corrosion resistant, and is why it is often mixed with other metals, as alloys, to make them stronger. In addition, nickel is highly malleable and ductile, qualities that makes it possible for the alloys containing nickel to be used for products like tubes and wires (Bell, 2015).

The Nickel Institute states that nickel can be found in more than 300 000 different products, and in approximately 3 000 different alloys (Nickel Institute, s.a. a, s.a. b). It is most commonly used in alloy with chromium and iron *“to produce stainless and heat-resisting steels. These are used for pots and pans, kitchen sinks etc, as well in buildings, food processing equipment, medical equipment and chemical plants.”*(Nickel Institute, s.a. b). In fact, almost 65 percent of all nickel extracted is used in the production of ‘stainless steel’ (Nickel Institute, s.a. a).

There are approximately 20 different countries worldwide that extracts nickel, and around 25 countries that has specialized in the refining and processing of nickel (International Nickel Study Group, 2015), and in 2013 there was extracted approximately 2.63 million metric ton nickel worldwide according to the U.S Geological Survey (2015d).

The five largest nickel-producing countries in 2014 were the Philippines, Russia, Indonesia, Canada and Australia. The Philippines has produces almost twice as much as the other countries the last three years. Apart from 2013 when Indonesia had a massive production growth. However, this was expected to decline again in 2014 (Statista, 2015b).

Each year over 500 000 metric ton of nickel is extracted from mines all over the world. In addition, approximately eight billion ton is assumed to have been absorbed at sea (Lenntech, 2015).

A more thorough numerical presentation of production and export of nickel within the Indonesian mining sector, will be presented under empirical findings in chapter 7.2 and 7.3.

4. CHANGES IN MINING POLICIES

The following is a summary of laws and regulations regarding the Indonesian mining industry. We do not include all aspects of them, but rather the ones most important for our thesis.

We have chosen to include several laws and regulations implemented prior to 2014, in order to achieve a wider understanding of the changes in the Indonesian mining sector. We regard this overview as a necessary prerequisite to better understand the empirical data presented in chapter 7, given that the changes implemented in 2014 was notified through Law No. 4/2009.

Given that the legislations are originally written in Indonesian, translations are often hard to find. We have therefore based parts of this chapter on unofficial translations or other sources regarding the legislations.

The laws and regulations will be presented in the same order as implemented, beginning with the Constitution.

1945: The Constitution

Regarding mineral resources Article 33.3 in the Indonesian constitution states: *«the land, the waters and the natural resources within shall be under the power of the State and shall be used to the greatest benefit of the people»* (Government of Indonesia, 1945).

1967: Law No. 1/1967 concerning foreign investment and Mining Law No. 11/1967 on the Basic Provisions of Mining

These two laws opened up the Indonesian mining sector for foreign investment through the implementation of ‘*kontrak karya*’ (work contracts) (Government of Indonesia, 1967a), which was the beginning of the Contract of Work (CoW) system used in Indonesia until mid 90s (O’Callaghan, 2010).

The two different contracts foreign investors could enter into was Contract of Work (CoW) and Coal Contract of Work (CCoW) (Widyawan & Partners, 2008).

The terms stated in the CoW was at first highly favorable for the companies, and were meant *“to provide assurance and stability to encourage significant, long-term investments”* (PT Newmont Nusa Tenggara, 2014b).

One of the most favorable aspects were the ‘Lex Specialis’ clause which protected companies from future changes in government policy. Since then there have been seven different generations of CoWs, each a bit more favorable for Indonesia. The most damaging change for foreign investors was the removal of the ‘Lex Specialis’ clause in the 6th generation CoW, which lead to increased uncertainty and risk with regards to future changes. The last CoW was signed in 2007 (O’Callaghan, 2010).

2009: Law No.4/2009 – Law on Mineral and Coal Mining

This law replaced the previous contract system with a new mining permit system, and was intended to be more in line with the original intentions mentioned in Article 33.3 in the Constitution.

The law mentions three different types of permit available to mining companies (article 35 and 36) (Government of Indonesia, 2009):

- Mining Permit (IUP) – available to both local and foreign mining companies. There are two different types, one for exploration and one for production.
- Special Mining Business Permit (IUPK) – for mining companies who wish to explore and mine on state reserves
- Peoples Mining Permits (IPR) – for small mining projects

Some aspects of the new law:

- Minerals shall be processed in Indonesia:
 - Article 103 (1) : “ *The holders of IUP and IUPK for operational production shall process and purify output of the domestic mining*” (Government of Indonesia, 2009)
- Total foreign ownership is permitted, but only for 5 years:
 - Article 112: “*After 5 (five) years of production, corporate bodies as the holders of IUP and IUPK whose shares are owned by foreign parties shall divest their shares to the Government, regional government, state-owned company, regional government-owned company or national private company*” (Government of Indonesia, 2009)
- Article 169 a) and b): The law states that existing CoWs/CCoWs shall remain valid until the contract expires and should “*be adjusted to this Law no later than 1 year*

after this Law is promulgated, except on state receipts” (Government of Indonesia, 2009)

- Article 170: *“The holders of contract of work as referred to in Article 169 that have been engaged in production shall conduct purification as referred to in article 103 paragraph (1) no later than 5 years after this Law has been promulgated” (Government of Indonesia, 2009)*

The law lacks details and refers to government regulation that should be implemented the following year (article 174) (Government of Indonesia, 2009).

2010: Government Regulation No. 23/2010. Regarding the Implementation of Mineral and Coal Business Activity. Amendment to Law 4/2009.

The regulation stipulates among other:

- Amendment to Article 103, Law 4/2009: about domestic processing:
 - *“The Mineral Production Operation IUP/IUPK holder is (i) obliged to carry out the processing and refining of minerals in Indonesia, whether directly or through cooperation with another party [...]and (ii) prohibited from exporting the minerals, whether directly or through cooperation with any other party [...]prior to the local processing and refining taking place” (Sullivan, 2013b, p. 102)*
- Amendment to Article 112, Law 4/2009: About foreign ownership:
 - After 5 years of production, foreign mining companies must ensure that Indonesian parties own at least 20 % of the company shares. The shares must be offered primarily to *the Indonesian Government (GOI)*. *If the GOI is not interested then the shares must be offered to the Regional Government, and so on in the following order; state-owned company, regional government-owned company or national private company” (Sullivan, 2013b, p. 103).* The regulation also states, *“If the payment obligation in respect of Divestiture Shares cannot be met, the Divestiture Shares must be re-offered in the next year” (Sullivan, 2013b, p. 104).*

2012: Minister of Energy and Mineral Resources (MoEMR) Regulation No. 7/2012 Regarding improvement of added value of minerals through mineral processing and purification activities.

The regulation specifies the following minerals that should be added value:

- Copper, Gold, Silver, Lead, Tin and Zinc, Chromium, Molybdenum, Platinum group metals, Bauxite, Iron ore, Iron sands, Nickel and/or Cobalt, Manganese and Antimony.
- These minerals *“must be processed and refined [domestically] in accordance with the minimum processing and refining specifications set out in the Appendices to MoEMRR 7/2012”* (Sullivan, 2013b, p. 179).

The regulations specifies details in regards to export of the minerals. Some of the specifications are:

- *“Holders of Production Operation IUPs for metal minerals, [...]and IPRs, which were issued prior to MoEMRR 7/2012, are prohibited from exporting unprocessed mineral products not later than three months from the date of enactment of MoEMRR 7/2012”* (Sullivan, 2013b, pp. 184-185).
- *“Holders of Exploration IUPs for metal minerals, [...], and CoWs in the exploration stage and/or feasibility study stage, which have prepared a feasibility study prior to the enactment of MoEMRR 7/2012, are obliged to adjust their plans/studies so as to ensure compliance with the minimum processing and/or refining specifications, in Appendixes I, II, and III to MoEMRR 7/2012, not later than three years from the date of enactment of MoEMRR 7/2012”* (Sullivan, 2013b, p. 185).
- *“Holders of CoWs that have carried out production activities prior to the date of enactment of MoEMRR 7/2012 are obliged to carry out adjustments to ensure compliance with the minimum processing and refining specifications in Appendix I to MoEMRR 7/2012 not later than five years after the date of the enactment of the 2009 Mining Law* (Sullivan, 2013b, p. 187).

Appendixes mentioned in this regulation are to be found in *‘Mining Law & Regulatory Practice in Indonesia, a primary reference source’* by B. Sullivan et al (2013b). Given that new specifications were given in 2014, we chose not to include the ones from 2012 in this thesis.

**2012: Minister of Energy and Mineral Resources (MoEMR) Regulation No. 11/2012
Amendment to MoEMRR No. 7/2012.**

Presents Article 21 a, which substitutes changes made in MoEMRR 7/2012 and state “*that IUP/IPR holders may export unprocessed mining products so long as they first obtain a recommendation from MoEMR*”. They also have to “*submit a plan showing how they will, themselves or through cooperation with third parties, be in a position to carry out domestic processing and refining come 2014*” (Sullivan, 2013a).

**2012: Government regulation No. 24/2012 – (February 21, 2012)
Regarding Mining Enterprise Activities, First amendment to Government
Regulation No. 23/2010.**

Amendment to Article 97 in GR 23/2010: “*The holder of IUP and IUPK in the framework of foreign capital investment, within 5 years of production, must divest its shares gradually*” (SSEK, 2012) (in percentage of total shares), in the following order:

- After six years – minimum 20 %
- After seven years – minimum 30 %
- After eight years – minimum 37 %
- After nine years – minimum 44 %
- After ten years – minimum 51 %

The shares should still be divested to Indonesian parties in the order mentioned in GR 23/2010.

The regulation only mentions IUP and IUPK holders, and not CoW/CCoW holder, but as Law No. 4/2009 stated, existing CoW/CCoW should be adjusted according to the Law within one year of implementation.

2014: Government Regulation No. 1/2014 (January 11, 2014)

Second amendment to Government Regulation No. 23/2010

This regulation is an amendment to GR 23/2010 as well as Law No. 4/2009 and given that the five year deadline specified in 2009 had expired the regulation states that all minerals must be processed and refined domestically before exportation (Winzenried & Adhitya, 2014a). However, changes were made just before implementation due to pressure from local miners (Global Business Guide Indonesia, 2014). The two following regulations were therefore issued in order to ease GR No. 1/2014 and total export ban on raw minerals was postponed until 2017.

2014: Minister of Energy and Mineral Resources (MoEMR) Regulation No. 1/2014 (January 11, 2014). Regarding the level of processing or refining which must be met prior to export. Implementing regulations to GR No. 1/2014

Instead of demanding that all minerals must be processed and refined before exportation, this regulation divides the minerals into two different groups:

- 1: copper, iron ore, manganese, lead, zinc, ilmenite and titanium
- 2: nickel, bauxite, tin, gold, silver and chromium

The first group of minerals can be exported as concentrates until January 11, 2017, at a lower minimum processing level than first anticipated, on the condition that the company can show plans for the construction of refining facilities. The exportation is however subject to a high export duty that will increase over the next three years (Government of Indonesia, 2014).

The second group of minerals do not have any export duty, however they must be processed and refined at a higher minimum level, before exportation (Government of Indonesia, 2014), presented in the regulation below.

2014: Minister of Finance (MoF) Regulation No. 6/2014

Implementing regulations to GR No. 1/2014

This regulation specifies the minimum level required for processing of minerals prior to exportation, and rates of export duties (Global Business Guide Indonesia, 2014).

The rates of export duty, and minimum processing level on the first group of minerals mentioned above are:

Mineral	Export Duty Tariff					
	2014		2015		2016	
	Sem. 1	Sem. 2	Sem. 1	Sem. 2	Sem. 1	Sem. 2
Copper concentrate (> = 15% Cu)	25%	25%	35%	40%	50%	60%
Iron concentrate (> = 62% Fe)	20%	20%	30%	40%	50%	60%
Iron concentrate (> = 51% Fe and Al ₂ O ₃ + SiO ₂ > = 10%)	20%	20%	30%	40%	50%	60%
Manganese concentrate (> = 49% Mn)	20%	20%	30%	40%	50%	60%
Lead concentrate (> = 57% Pb)	20%	20%	30%	40%	50%	60%
Zinc concentrate (> = 52% Zn)	20%	20%	30%	40%	50%	60%
Ilmenite concentrate (> = 58% iron sand and 56% pellet)	20%	20%	30%	40%	50%	60%
Titanium concentrate (> = 58% iron sand and > = 56% pellet)	20%	20%	30%	40%	50%	60%

Figure 4.1: “Export duty on mineral concentrates as per of MoF Reg. 6/2014”

(Global Business Guide Indonesia, 2014)

The second group have to be processed a much higher minimum level, equal to, or above, 90 % purity (Appendix 1) (Winzenried & Adhitya, 2014a).

Post implementation

Initially the Indonesian government announced that a complete ban on export of mineral ore and concentrates would be implemented in 2017. Since then the government has stated that a delay in this ban is up for consideration given the lack of progress in building new processing facilities (Indonesia-Investments, 2015c).

Exemptions were made as early as mid 2014 on copper exportation, with the country's two largest copper producers, Freeport-McMoRan and Newmont Mining Corp, pressuring the government into making changes. The two companies, as well as other copper producers, have been allowed to export copper concentrates after committing to the building of smelters and paying a revised export duty of 7.5 percent on copper concentrates, a rate that will be reduced in accordance with the degree of completion of smelters (Supriatna, 2014).

Discussion have taken place as to whether similar exemptions should be given to bauxite producers who have completed 30 % of the building process of their smelters, due to the lack of progress in the building of bauxite smelters. By permitting export of bauxite concentrate the producers will be able to invest more money into smelters. Speculations as to whether a ban on nickel shall be eased has also been made (Indonesia-Investments, 2015c), but according to Said Didu, at 'the Ministry of Energy and Mineral Resources' there is no need for such an ease given the progress in building of nickel smelters (Ifrany, 2015).

Additional considerations as to why the government is seeking to ease regulations is that the increase in exports will help reduce the country's current account deficit which has placed pressure on the value of the Rupiah (Indonesia-Investments, 2015c). When the regulation was implemented exports had already started to deteriorate due to a decline in global demand, and with the implementation of GR 1/2014 exports dropped drastically (see chapter 7.3) increasing the current account deficit even further (van der Schaar, 2013).

5. THEORY AND PREVIOUS EMPIRICAL FINDINGS

5.1 Free trade

Free trade is an international policy related to the trading of goods and services, free from governmental restrictions such as quotas, duties and licensing, as well as bans on imports and exports. *“The proposition that freedom of trade is on the whole economically more beneficial than protection is one of the most fundamental propositions economic theory has to offer for the guidance of economic policy”* (Johnson, 1971, p. 187).

For hundreds of years, economists, academics and others have argued about the advantages regarding free trade and its place in economic policy. The concept is based on theory from the classical economists but the idea is much older (Irwin, 1996). Most economists advocate free trade and believe that the world as a whole benefits from international trade. At the same time, nearly all countries have restrictions related to some of their traded goods (Irwin, 2009).

In this sub-chapter, we direct our focus on the great contributors to the concept of free trade, and the development of which it has undergone alongside history.

Adam Smith

Adam Smith published his most famous work, “The wealth of the nations”, in 1776. Although it was mostly based on previous publications, the doctrine was, unlike the others, considered both complete and consistent. *“Smith achieved what others before him had failed to do: present a systematic, coherent framework for thinking about the economics of trade policy”* (Irwin, 1996, p. 75) and his book intended to explain that changes were necessary in the general view on international trade. During the English mercantilism, from 1500-1750, little had changed and, as he pointed out, the mercantilists were only interested in balancing trade in their favor (Skousen, 2006), reporting that *“the encouragement of exportation, and the discouragement of importation, are the two great engines by which the mercantilist system proposes to enrich every country”* (Smith, 2001, p. 852).

Mercantilism represent an opposing theory to those presented by Adam Smith and the classical economists. *“The liberals wanted the functions of economic organization performed by a market which was as free as possible, and the mercantilists believed the functions would be performed better if the market were controlled in certain ways”* (Grampp, 1952, p. 467). The

mercantilism demanded a high degree of governmental intervention on trade and economy in order to achieve power, and is well known for its high import tariffs (Grampp, 1952).

A dominating part of Smith’s work is based on the theory of absolute advantage. Capital, labor and land are resources that all countries possess, and which play a vital role in the making of goods. However, the efficiency in production of goods differ greatly and “according to Smith, countries should specialize in the production of goods for which they have an absolute advantage and then trade these for goods produced by other countries” (C. W. L. Hill, 2011, p. 163).

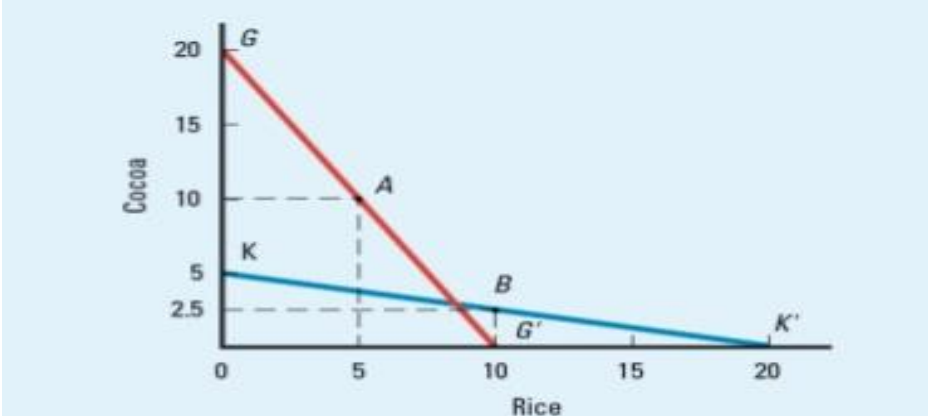


Figure 5.1: “The Theory of Absolute Advantage” (C. W. L. Hill, 2011, p. 164), all numbers in ton

- G: Ghana production of cocoa only
- G’: Ghana production of rice only
- A: Ghana production of both cocoa and rice
- K: South Korean production of cocoa only
- K’: South Korean production of rice only
- B: South Korean production of both cocoa and rice

As shown in figure 5.1, we address the theory of absolute advantage, illustrated with examples of Ghana and South Korea. Both countries have equal resources at their disposal, and, with these, they can produce rice and cocoa, exclusively or combined. The differentiating facts in this example, is that Ghana is more efficient in the production of cocoa and South Korea is more efficient in the production of rice. Keeping these assumptions in mind, Ghana and South Korea can produce one product exclusively, or a combination of the two. The ‘possibility frontier’ represents the possible production volume of each good for both countries. If the two countries decide to specialize its production, it will result in 20 tons of cocoa and 20 tons of rice. However, if they decide to produce equal amounts of both goods, the total amount of cocoa produced will only reach 12.5 tons, and the amount of rice will total 15 tons. This is because of

required inputs that differ within the two countries. The essence of this argument is that goods that are cheaper to import should not be produced domestically. In addition, by exploiting absolute advantage, all parts benefit from trade (C. W. L. Hill, 2011).

David Ricardo

“Comparative advantage is not just an idea both simple and profound; it is an idea that conflicts directly with both stubborn popular prejudice and powerful interests. This combination makes the defense of free trade as close to a sacred tenet as any idea in economics” (Krugman, 1987, p. 131).

The model of comparative advantage is a further development of Adam Smith’s theory of absolute advantage and aims to explain a situation where a country is more efficient in the production of both goods and how this advantage affects international trade (Hollander, 1979). Smith explored how total consumption of goods decreases if a country is to produce a good for which it does not have an absolute advantage. The theory of comparative advantage shows that this is a misconception and even if you have absolute advantage in the production of both goods, it may be rational to import the good that is produced in the less efficient manner (C. W. L. Hill, 2011)(Ricardo, 1967).

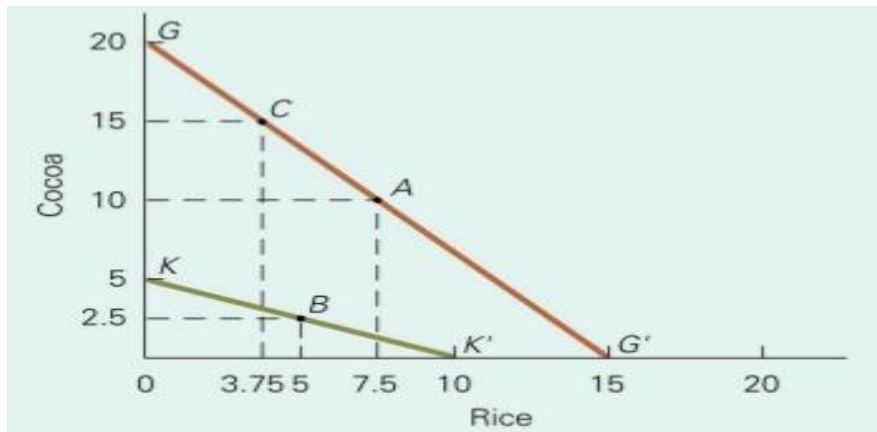


Figure 5.2: “The theory of comparative advantage” (C. W. L. Hill, 2011, p. 166), all numbers in ton

- G: Ghana production of cocoa only
- G': Ghana production of rice only
- C: Ghana production of 75% cocoa and 25% rice
- A: Ghana production of both cocoa and rice
- K: South Korea production of cocoa only
- K': South Korea production of rice only
- B: South Korea production of both cocoa and rice

In figure 5.2, Ghana is most efficient in the production of both cocoa and rice. However, the model shows that output is highest when Ghana only produces cocoa and South Korea only produces rice. Opposed to any other allocation of production, this is the most beneficial outcome for both countries, even though Ghana has absolute advantage in the production of both goods. The baseline of this theory is that international free trade benefits all parties in terms of increased consumption and economic gains and is also applicable to countries with no comparative advantage (C. W. L. Hill, 2011). The model, however, builds on certain simple assumptions, such as:

- 1) International factor immobility, e.g. no international capital flows
- 2) Full factor utilization, e.g. no unemployment

Heckscher-Ohlin

Eli Heckscher and Bertil Ohlin developed the Heckscher-Ohlin model, which has become highly influential in modern economic trade theory. Based on Ricardo's theory of comparative advantage, they extracted their thesis on how international trade compensates for the irregular distribution of resources. From a one-factor to a two-factor model (Leamer, 1995).

As opposed to Ricardo's theory where productivity of labor is the essence of comparative advantage, Heckscher and Ohlin argue national factor endowments as the superior cause. Labor, capital and land are necessities in the production of goods and services are a country's relative endowment of these resources and the amount thereof, is crucial in determining costs of production. Naturally, countries specialize in the production of goods that require large amounts of their abundant resources. These goods are exported and products that are made from resources, which the country lack in abundance, are imported. This model is an attempt to describe production and international trade, as we perceive it, with less simple assumptions (C. W. L. Hill, 2011).

5.2 Government trade intervention

John Stuart Mill

In certain situations, the theory of free trade is not economically applicable. John Stuart Mill and his Infant Industry argument is an example of such, and is perhaps the strongest argument against free trade (Irwin, 1996). The argument builds on Alexander Hamilton's previous works, and relates to the protection of infant industries towards international competition. A security is created to protect the infant economy until it has reached the necessary economies of scale to compete internationally (Melitz, 2005).

In several developing countries, we find an abundance of resources. The potential gains from these are many and can in fact result in a comparative advantage if circumstances allow the industry to grow and develop without intense and harsh competition from existing industries. To achieve all possible gains from this abundance, governmental trade intervention is required to impose restrictions on import and increase tariffs until the infant has gained the required strength to manage on its own. Mill stressed the importance of the protection to be temporary,

and that the industry had to become sustainable after a certain amount of time. Charles Francis Bastable later added that the cost of protection was not to exceed the benefit, and these presumptions are now known as the Mill-Bastable Test (Melitz, 2005).

Several countries, both developing and developed, have used Mill’s argument in order to justify protection of their industries, in contradiction to tenets of the theory, many of these are in need of infinite protection, unable to ever survive on the world market (C. W. L. Hill, 2011).

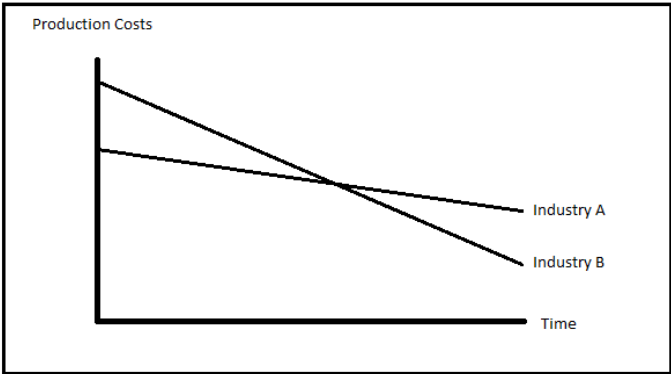


Figure 5.3: “Infant Industry Argument”

Industry A represents an established industry in a developed country, and industry B represents an infant industry in a developing country. In the beginning, we see that the production costs are much higher in industry B. However, with time, when the infant has time to develop, the production costs decrease giving industry B competitive advantage over industry A. This is the basic idea of the infant industry theorem, but it is important to make sure that the future gains exceed the costs of the introduction phase, and that institutions do not interfere in this phase.

Governmental trade intervention can take place in many forms. Industrial policies are tools that governments implement in order to help national manufacturing sectors to grow and develop, and contains similar elements found in trade interventions (Falck, Gollier, & Woessmann, 2011). Industrial policies are many and differ in every situation and in every country. They come in many forms from neoliberal methods to the creation of national champions. “*What constitutes a “national champion” is legitimately debatable. We take “national” to mean headquartered in the country and “champion” to mean a top-ten provider of jobs in the country*”. (Falck et al., 2011, p. 59) They acknowledge that this definition may not be applicable in every situation, but the basic idea is that governments create a national champion, giving it special treatment

with regards national competition and at the same time allow it to control a major part of the domestic labor market and economy (Falck et al., 2011).

“Neoliberalism suggests that governments reduce deficit spending, limit subsidies, reform tax law to broaden the tax base, remove fixed exchange rates, open up markets to trade by limiting protectionism, privatize state-run businesses, allow private property and back deregulation”, and “The use of the term "liberal" in economics is different from its use in politics. Liberalism in economics refers to "freeing up" the economy by removing barriers and restrictions to what actors can do. Neoliberalism's policies seek to create a laissez-faire atmosphere for economic development” (Neoliberalism, 2015).

There are disagreements amongst politicians as to whether governmental interventions create incentives for inefficient production, or whether a complete free trade policy is a route to disaster (Falck et al., 2011). Implementation of industrial policies are often due to failures in the market and an attempt to fix these imperfections. Most researchers do not support this kind of intervention and arguments supporting the absence of industrial policies are often based on neo-classical theory; stating that governmental intervention should stay at a minimum and that the market should function on its own. Additionally, when markets are imperfect, there is no evidence to support that governments are better able to facilitate these situations and in addition, the costs of doing so will most likely exceed the benefits. Markets will eventually reach a steady state when allowed to function freely, without corruption or empty use of resources (Di Maio, 2006). However, free trade is accused of favoring the already advanced and well-endowed industrial countries, making it difficult for developing countries to build industrial industries and, in reality, making industrial and economical inequalities even larger (Meier, 1976).

Arguments in favor of government interventions relate to the protection of domestic interests and increased wealth. They use a blend of economic and political purposes to achieve higher national economic gains, often using different trade policies: **Tariffs** are a certain tax applied to imports and exports, applied at a fixed rate or as a part based on total value. Usually, countries apply tariffs on imported goods, resulting in increased sales prices, governmental revenue whilst at the same time protecting domestic organizations. **Antidumping policies** are implemented when foreign producers sell their goods on international markets at a price lower than their production costs or at less than a fair value. The difference between production cost and fair value is that the latter includes a profit. Some companies boost large productions and subsidized prices at home with the intention to sell excess goods internationally at a lower price

in order to get rid of competition. When competition is eliminated, prices increase. The Commerce Department can apply up to five years of countervailing duties in the form of tariffs to the companies who perform such an aggressive sales strategy. **Administrative policies** are used to increase exports and limit imports through bureaucratic instructions, which is time consuming, and challenging to overcome. **Import quotas** are certain licenses issued to firms and private individuals, which determine the amount of a specific product approved for import. **Subsidies** are a government's way of helping domestic firms gain corporate strength against foreign competition and increase market shares with e.g. fresh capital, tax breaks, and lucrative loans and cash grants. First-mover advantage and the achievement of leading positions in oligopolistic markets are situations in which subsidies are advocated, as the potential economic gains are large. **Local content requirements** force a certain portion of the value or physical term of the good to be produced by a domestic company. This requirement protects domestic industries and labor, and is a global phenomenon (C. W. L. Hill, 2011).

Many of the factors mentioned above lead to increasing governmental revenue and the protection of domestic companies from international competition. The cost, however, is passed on to consumers, who will have to pay a higher price for imported goods subjected to import restrictions and tariffs. As supply may be limited, the cost of domestic products will increase as well and implementation of trade policies can lead to the promotion of inefficient production and slow economic growth (C. W. L. Hill, 2011).

As the world has evolved significantly during the last 200 years, many of the prerequisites in free trade theory is no longer applicable. New forces of imperfect competition and economies of scale are dominating the market, and two strong arguments towards governmental intervention have risen from these observations. 'External economies' is related to the protection of industries that "*yield positive external economies*" (Krugman, 1987, p. 137) and 'Strategic trade policy' is related to oligopolistic markets and the argument encourage the use of trade policies to increase domestic welfare by shifting profits from foreign to domestic companies (Krugman, 1987).

5.3 Free trade and government intervention in Indonesia

Technocrats and technologist

After Soeharto became president, two major, but opposing, groups of economic advisors emerged within the Indonesian government. The technocrats believed in the concept of free trade, that the markets owned the forces to achieve equilibrium, and limited governmental intervention. As Indonesia has a large labor force, they encouraged industries that exploited this abundance over the more capital-intensive activities in which Indonesia did not have the necessary means and ability to perform efficiently (H. Hill & Wie, 1998). The counterpart was presented by the technologists or nationalists. They were advocates of an extensive governmental intervention policy and protection of domestic industries in order to enhance the development of national initiatives (H. Hill & Wie, 1998)

Former president Bacharuddin Jusuf Habibie is a well-known and highly influential advocate for the technologist's beliefs. He suggested that Indonesia should shift its attention from the theory of simple focused comparative advantage related to the abundance of land and labor, into development of technology and improvement of human resources and advanced labor skills. Furthermore, he believed that Indonesia should focus on a new comparative advantage based on value-added technology, and that market forces were unable to direct Indonesia towards a stronger economy and industrial growth and efficiency without the use of strong governmental intervention (McLeod, 1993).

While the technocrats were highly influenced by Adam Smith and David Ricardo, sharing many of the same beliefs and opinions on how an efficient trading system should function, the technologists were more directed towards the mercantilist system and the ideas behind the infant industry argument.

Indonesian development

In developing countries, we find many of the same economic and political characteristics; primary producers of raw materials, a high degree of poverty, economic inequality, lack of education, instabilit, and a weak democratic system. These are all factors that may have large impacts on the economic development and the lack thereof (Meier, 1976).

As mentioned in chapter 2, Indonesia has experienced large economic and political changes since the reign of President Sukarno, and many of the characteristics mentioned above do no

longer apply. Their abundance of cheap labor and natural resources are factors that can give the country comparative advantage within several different sectors and have high economic potential. Despite these facts, Indonesia's lack of technological development and limited production of manufactured goods and processed materials is making them miss the large economic gains related to value added industries. Instead, the country's main export source is restricted to a majority of unprocessed materials and labor-intensive products. This is quite the contrary to many of its fellow Asian countries, who have invested heavily in the development of industrial sectors.

The newly implemented mining regulations are a possible turning point in Indonesian history. The idea behind it is to make sure that the potentially high value-add related to the processing of Indonesian mining products should be extracted domestically. The restrictions on exports and the forcing of mining companies into building processing plants and smelters in Indonesia, is a strong governmental intervention in which the country has received much negative feedback. These restrictions resemble many of the similar elements of 'local content requirements' and the protection of an 'infant industry'.

For the changes behind this idea to take place, Indonesia is in great need of capital, knowledge and technology. These are all rather scarce factors and the country is dependent on both domestic and foreign investors in order to make this happen. In the beginning of this process, cost of production will most likely be quite high as the industry needs time to develop. With time and because of cheap labor, easy access to minerals and increased efficiency, the cost of production will decrease and perhaps reach a production cost below that of international competitors. If such a scenario is to come true, Indonesia will achieve comparative advantage in a highly value added industry. In addition, it will create jobs, capital, knowledge etc.

With reference to chapter 7, we define the main export commodities by total exportation value. In the mining industry, total mineral exports vary between one and five percent of total Indonesian export. An important aspect related to this is that Indonesia primarily exports unprocessed ores that have significantly less value than processed minerals. When the country has completed their restructurings within the mining industry, and the high value-added processing industry is developed, it is highly expected that mineral exportation will rise to become one of the main export commodities in Indonesia. This will raise revenue and increase national welfare and income per capita significantly.

Economic and technological developments have been a common denominator in most western and many Asian countries during most of the twentieth century. Indonesia, on the other hand, has not been able to achieve its many possibilities despite the abundance of several valuable resources. A plausible explanation for this is the numerous political and economic adjustments, highly corrupt leaders and inefficient governance that Indonesia has experienced during most of the previous century. Because of these factors, the country has raised increasing doubts whether the markets has the ability to lead Indonesia towards the same technological advance and the preceding economic gains without the use of government interventions. Throughout history, Indonesia has shifted between the two governmental ideologies but the technocratic viewpoints seem to have been the most prominent, indicating advocacy towards the theory of free trade (H. Hill & Wie, 1998). However, free trade is not always the best path to economic development and in order to justify excessive governmental interventions, strong development and economic factors should exist to underline the importance of such actions (Meier, 1976).

Indonesian forest industry – A comparative example of government intervention

After the technocrats developed their ‘Program for stabilization and rehabilitation’ in the mid-1960s, the Indonesian market became more open to private investments. As Indonesia has abundant forest providing large economic opportunities, the number of companies within the forest industry grew from 25 to 561 over the following two decades. Production of log and exports increased rapidly and in an attempt to increase value added industries, labor and provincial activity the Indonesian government announced in 1979 that all privately held companies within this sector were to build a processing plant for raw wood within a period of six years. This regulation ended in a complete ban on log exportation in 1985 (*Guritno & Murao, 1999*).

The following years, Indonesian forest industry was blooming. From 1979 to 1988 the production volume of plywood increased from 624 000 m³ to over 7 700 000 m³ (FAO, 1992), turning Indonesia into the largest exporter of plywood worldwide (*Guritno & Murao, 1999*). The government’s main motives for the intervention were accomplished but mid-90s, the country was facing a new challenge; a shortage in the supply of logs, complemented by an increase in illegal logging, deforestation and exportation (*guritno & Murao, 1998*)

The ban on export was replaced with export taxes of 200 % on logs in 1992 in an attempt to overcome the illegalities.(FAO, 1992) However, after the country reached out to the IMF for a bailout package to restore the scarce economy after the Asian financial crisis, they were requested to reduce these taxes to the amount of 10 percent with the goal of earning hard currency through foreign sales. Again, this resulted in the substantial increase in exports and massive illegal logging, leading to a reimplementaion of export ban in 2001 and followed by a mandatory certification for all exporters of wood that aimed to “*ensure the legality of traded timber*” (Yulisman, 2013).

In 2013, the Forestry Ministry proposed to allow exportation of logs by companies with certifications mentioned above. The export ban has led market prices of log far below fair value, and subsequently weakening the entire industry. This proposal has met large protests and the dominating opinion is that the current set of regulations is not strong enough to stop illegal logging. Additionally, the lack of oversight, corruption and weak enforcement of the rules will only increase illegal activity and exportation can become a threat to the domestic processing industry, as the markets abroad are more lucrative (Yulisman, 2013).

The case above contains many of the same elements as we find in the Indonesian mining industry and the motivations behind the newly implemented mining regulations. Additionally, we observe the many challenges and side effect related to regulation and deregulation in an attempt to increase domestic welfare and development. The complete ban on log exports reduced the potential market from global to domestic and subsequently gave incentives to process wood in order to extract the maximum amount of profit. Additionally, the resulted decrease in local prices for logs encouraged illegal logging for the purpose of exportation. Although the restrictions achieved its originally intended purpose, the side effects are many and damaging. The result of reduced intervention as required by the IMF bailout package returned the industry to the time prior to the original regulations. Foreign markets willing to pay a high price for logs increased exports and drove the increase in illegal activities. We believe the massive exportation of logs reduced the amount of domestic value added processing, which lowered governmental revenues.

As mentioned previously, Indonesian politics have shown a tendency to correct undesired behaviors by implementing a strong degree of governmental intervention, or the absolute opposite. The mandatory certification may have been an attempt to encourage foreign markets to support legal trade and condemn illegitimate activities. However, as mentioned in the latter

part of our case, the main problem may not necessarily have been the degree of governmental intervention, but simply weak regulations and lack of control that encourage corruption and illegal activities.

Throughout this chapter, we have discussed Indonesian development through several political and economic changes. We have come to understand that the country's industrial development and following gains may require the use of government intervention, but just as important is the need for an effective institutional framework.. "*The structure of the system defines the manner in which it functions*" (Meier, 1976, p. 692), and the only way to release oneself from underdevelopment is to change the structure of the institutions that contributes to its consistence (Meier, 1976).

5.4 New Institutional Economics and Path Dependence

As mentioned in chapter 2, there are different theories that might help us better understand economic development occurring within Indonesia the last century. In this sub-chapter, we will focus on New Institutional Economics (NIE), Douglass North's work on 'path dependence' and how institutions may have had a negative impact on the economic development in Indonesia.

"New Institutional Economics is an attempt to incorporate a theory of institutions into economics"(North, 1995, p. 17), and because institutions exist everywhere, the theory of NIE can be applied to all economies.

Through the theory of NIE, North explains why, and how, economic development is achieved through the use of institutions. According to North, institutions are; "*the rules of the game of a society, or, more formally, are the humanly devised constraints that structure human interaction. They are composed of formal rules (statute law, common law, regulations), informal constraints (conventions, norms of behavior and self-imposed codes of conduct), and the enforcement characteristics of both*" (North, 1995, p. 23). Organizations on the other hand "*are the players: groups of individuals bound by a common purpose to achieve objectives*"(North, 1995, p. 23).

Throughout history, different institutions have influenced the Indonesian economy and changes within these institutions have led to an increase in economic development. However, the changes have been incremental and partly hindered by an authoritarian regime.

Dutch colonization, authoritarian and corrupt leaders and lack of democracy have made a significant impact on Indonesia's economy, and this is why 'path dependence' may have played a major role in forming and limiting the economic development of Indonesia.

'Path dependence' is a term used to describe the powerful influence of the past on the present and future development, and according to North; "*Path dependence is a way to narrow conceptually the choice set and link decision making through time. It is not a story of inevitability in which the past neatly predicts the future*" (North, 1990, pp. 98-99).

In his book "*Understanding the Process of Economic Change*", North writes; "*We have now come to understand enough about institutions to be able to pinpoint the sources of poor performance. They have their origins in path dependence*"(North, 2005, p. 156). Mary M. Shirley also states that "*Increasingly research has shown that weak, missing or perverse institutions are the roots of underdevelopment*" (Shirley, 2008, p. 611). Therefore, as mentioned in chapter 5.3 each country needs a functioning institutional framework, supporting economic development, in order to achieve progress.

An important aspect with regards to economic development is interaction between institutions and organizations. Without interaction, profit may not be made by companies and nations might find it difficult to take their place in the world market over the long run. As North, and NIE suggests; changes in institutions is what leads to economic development (North, 1995). However, it is important to remember that changes often are a result of human intervention, where the people who are interfering might not have the best interest of the country's economy in mind.

North states that; "*The dominant beliefs – those of political and economic entrepreneurs in a position to make policies – produce over time an elaborate structure of institutions – both formal rules and informal norms – that determines economic/political performance*" (North, 2008, p. 25). He also explains how the choices made by the entrepreneurs may hinder further changes, and how the "*resultant path dependence typically makes changes incremental*" (North, 2008, p. 25).

5.4.1 New Institutional Economic and Path Dependence in the context of Indonesia

Indonesia has undergone radical changes throughout its history. From the Dutch colonization beginning in the late 16th century, to Japanese control during WWII, to the declaration of independence in 1945, several years with authoritarian and corrupt regime led by Suharto and Sukarno, and now finally towards a more democratic, liberal and less corrupt era. With this in mind, it is easy to understand that institutions meant to enhance economic development were in some ways influenced by the leaders' elite interests and therefore less beneficial for the country's economy.

When changes occur, the existing institutions, both formal and informal, will no longer 'fit' the new surroundings. In situations like these 'path dependence' becomes highly relevant given the difficulties in changing institutions already established. North (1990) argues that institutions are stable for most of the time, only altered by force or uprisings, and path dependence is what keeps them stable. Shirley (2008) further claims that institutions suddenly altered will in the end return to their original state if norms, beliefs etc. do not change accordingly. This might be one of the reasons why it has been difficult for Indonesia to break free from path dependence.

For instance, during the Dutch colonization, Indonesia was introduced to a Western way of thinking, as the country was built according to European standards. The Dutch implemented institutions, taxes, trading systems, legal systems and governmental systems, all favoring the Dutch, instead of Indonesia as an independent nation. When the Japanese seized control in 1942 they continued to develop the country, however, with slightly more consideration to a future independent Indonesia.

North believes that colonists mirrors the institutions implemented in their own country (North, 1990), while Shirley states that *"Path dependence and the stickiness of beliefs and norms explain why underdevelopment cannot be overcome by simply importing institutions that were successful in other countries"* (Shirley, 2008, p. 629).

When Indonesia finally gained independence in 1945, the institutions implemented by the Dutch and the Japanese did not benefit an independent Indonesia. Nor were they in line with the informal constraints implemented amongst locals. The same is said to apply after Suharto's new order regime ended, when the government altered their focus towards democracy and economic development, partly through the alteration of formal institutions. However, *"what is accomplished in the institutions' formal level will not bear fruit if informal constraints do not*

support their functioning. Thus if the formal law changes, individuals must acquire new normative expectations and must learn new ways of handling these normative expectation” (Engel, 2008 as cited in Spranz, Lenger, & Goldschmidt, 2012, p. 477). This supports the opinions of North and Shirley previously mentioned.

Without a connection between the formal and informal institutions, economic development will be difficult to achieve. In the context of Indonesia the past dictates the future, making it difficult for any new leader to change the current path. In addition, when formal rules are altered for personal interest, as often happens in corrupt countries, there are even less chances of the informal constraints to change according to the formal institutions.

Spranz et al. (2012) also stresses the importance of cultural understanding in regards to economic development and the significance of interaction between formal and informal institutions. It is therefore important to get an understanding of the country’s culture and how it may influence the formal institutions. *“Culture is the ongoing interplay between formal rules and informal constraints that emerges in the historical development of every society and must be learned (and reflected) by every individual in the course of his or her socialization”* (Spranz et al., 2012, p. 462).

With Indonesian culture being as diverse as it is, pulling in several different directions in regards to religion, ideologies etc., this may to some extent, influence institutions in a negative manner.

Corruption has been, and still is, a major problem in Indonesia, and may be one of the main reasons why economic development has been slow. When highly respected leaders of governmental institutions are corrupt it is not just the rules and norms that have to be changed but also the entire mentality within the country.

In 2003, the Corruption Eradication Commission (KPK) was established in order to overcome the problem of corruption in the country. Even though Indonesia has a long way to go in order to stop corruption completely, the numbers are finally heading in the right direction. The Corruption Perception Index ranks countries on a scale from 0 to 10 (0 to 100 in 2014), where 0 = highly corrupt and 10 (100) = no corruption. In 2003, when the KPK was established, Indonesia scored 1.9 out of 10. In 2010 they scored 2.8, and in 2014, they scored 34 (or 3.4 in order to compare) (Transparency International, 2003, 2010, 2014).

For Indonesia to be able to escape the problem of path dependence and achieve economic development it must attain connections between the formal and informal institutions, and

between the institutions and organizations. Making them all favor economic development and democracy.

Indonesian economic development has been incremental and path dependent. However, Indonesia is now one of the most up and coming Asian countries, with GDP growing continuously (Appendix 5, table 5.1). In addition, with Joko Widodo as the first president to break with former political regimes, it seems like the institutions are changing, and possibly reducing the dependence on an authoritarian path.

6 RESEARCH METHODOLOGY

As explained in the introduction, we aim to answer how the newly implemented mining regulations have impacted Indonesian economy. In order to achieve this we have collected and analyzed various data which has provided us with a nuanced understanding of the current situation, as well as historical events leading up to this.

This chapter provides a short introduction of different research methods used to answer our research question, as well as a discussion on validity and reliability concerning the data collected.

6.1 Research methods

Methods of research are classified as either quantitative or qualitative depending on what data collection methods are used and what the purpose of the research is. According to Yin (2014), the research method should be based on the research question and to what extent the method can be used to answer the phenomenon being studied.

Quantitative research methods explore “*research objectives through empirical assessments that involve numerical measurements and analysis approaches*” (Zikmund, Babin, Carr, & Griffin, 2013, p. 134). The research is often based on large samples enabling the result to be generalized to a much greater extent given its objective approach (Zikmund et al., 2013).

Qualitative research on the other hand is often meant to describe a situation and is based on smaller samples often colored by the subjective opinions of the researcher. Normal approaches to collecting data are interviews, observations or content analysis. The research explores “*objectives through techniques that allow the researcher to provide elaborate interpretations of market phenomena*” (Zikmund et al., 2013, p. 132).

A research study can be exploratory, descriptive and causal depending on what the purpose of the study is. *Exploratory* research is a method of clarifying data and discovering possibilities. It does not aim to provide an absolute truth, but serve as a basis for additional research that, combined, may present findings that are more conclusive (Zikmund et al., 2013). *Descriptive* research requires a substantial knowledge on the studied topic and is more easily conducted with the use of research questions. It seeks to define characteristics and “*to “paint a picture” of a given situation by addressing who, what, when and how questions*” (Zikmund et al., 2013, p. 53), while *causal* research “*seeks to identify cause-and-effect relationships*” (Zikmund et al., 2013, pp. 54-55).

In this thesis we have used qualitative research methods; exploratory research has laid the foundation of our thesis and let us take a further descriptive approach in order to answer our main research question. Our research contains large amounts of numerical data, but is still considered as qualitative based on the essence of the thesis and what it aims to discover.

Given our intentions to describe how the regulations may have affected the Indonesian economy we have also conducted a case study to provide an example on the impacts at a corporate level.

A case study is a “documented history of a particular person, group, organization or event. Typically, a case study may describe the events of a specific company as it faces an important decision or situation” (Zikmund et al., 2013, p. 139). A case study is often used to compliment additional qualitative methods (Zikmund et al., 2013), as done in this thesis.

6.1 Collection of data

Data used in this thesis is based on publicly available information and includes a wide variety of documents and data.

When it comes to collecting data, we have based our research on both primary and secondary sources (Jacobsen, 2005). Primary sources have been governmental documents, macroeconomic data, press statements, annual reports, and official websites. Secondary sources have been articles, books, formal studies, newspapers, webpages etc. A weakness by using secondary data is that it may not always be completely applicable to the chosen research question, given that it is often constructed for a different purpose (Zikmund et al., 2013).

The macroeconomic data is primarily retrieved from official Indonesian sources, accompanied with foreign official statistics when needed. Our main target during the collection of macroeconomic data have been consistency, and we have focused on the use of a small amount of sources that we presume to be the most reliable.

6.2 Validity and Reliability

According to Zikmund et.al (2013, p. 303) “*Good measures should be both consistent and accurate*” and when conducting research it is therefore important to consider validity and reliability of the findings.

Validity can be established through several different approaches and indicates “*the accuracy of a measure or the extent to which a score truthfully represents a concept. In other words, are we measuring what we think we are measuring?*” (Zikmund et al., 2013, p. 303).

When searching for information we have sometimes needed to be uncritical concerning some of the sources used. We are aware that this might have affected the outcome of the thesis and especially when answering the sub-questions. With the use of empirical data, we provide a numeric understanding of different areas of the economy that is likely to have been affected by the mining regulations. We acknowledge that the intervention may have impacts on other areas as well, but by basing our analysis on quantitative data, we are able to provide a more direct understanding of our findings. It is important to bear in mind that the data we have used may not always provide the exact thing that we aim to research and this could possibly affect the validity of our findings. An example of this is found in appendix 2, where employment includes both the mining and quarrying sector without the possibility of separating the two. Furthermore, it is always the possibility of the statistics being incomplete, but this is hard to verify. Additionally, we have based our research on the use of newspaper articles and other websites which may lack the use of critical journalism and reliable sources. We have taken these assumptions in mind throughout the thesis and when possible applied the use of triangulation.

Reliability indicates the consistency of a measure, “*Demonstrating that the operations of a study – such as the data collection procedures – can be repeated with the same results*” (Yin, 2014, p. 46).

Given that we have based our research on a fair amount of publicly available data and economic theories, we believe that this thesis can be considered quite reliable. However, as the mining regulations were implemented shortly prior to this research and our data to some extent are based on estimated and preliminary data, we acknowledge that a future research will be most likely reach a similar conclusion but perhaps a more reliable one.

7. EMPIRICAL FINDINGS

This chapter presents various statistics regarding the different areas that may be affected due to the newly implemented Indonesian mining regulations.

We have decided to study employment, production, export, GDP and domestic and foreign investments in the Indonesian mining sector. At the end of these sub-chapters, we provide conclusions to our sub-questions mentioned in chapter 1.

Although we have based most of our research on publicly available statistics, there will always be possibilities of errors which was presented in chapter 6.

7.1 Employment

The figures presented in this sub-chapter are based on tables presented in Appendix 2, and shows employment within the Indonesian mining and quarrying sector. We have not been able to separate the two and therefore consider them as one.

Figure 7.1 and 7.3 are based on an average of semiannual statistics on employment from 2009 to 2014 and figure 7.2 and 7.4 are based on quarterly reports from 2013 and 2014¹.

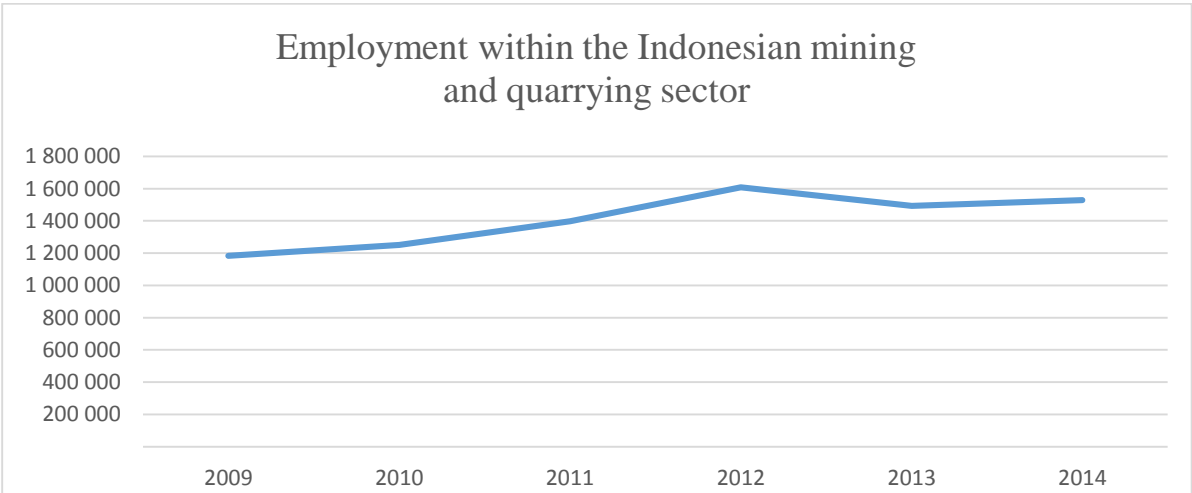


Figure 7.1: “Employment within the Indonesian mining and quarrying sector, 2009-2014”
(Statistics Indonesia, 2015a)

¹ The quarterly reports from 2013 and 2014 shows slightly different employment numbers than what is presented by Statistics Indonesia the coinciding months. Given that Statistics Indonesia are the source in both cases, we have chosen to use the reports to get a better understanding of the changes occurring in 2014.

We have chosen to present numbers from 2009 and onwards, given the implementation of Law No. 4/2009. Prior to this there were only minor changes (Statistics Indonesia, 2015a). As can be seen in both figure 7.1 and table 2.1 in appendix 2, employment within the sector increased gradually until 2012, and except from a slight decrease in 2013 it looks like employment is continuing an upwards trend. However, by using quarterly reports from 2013 and 2014 we can see that employment has decreased since November 2013 (figure 7.2 and appendix 2).

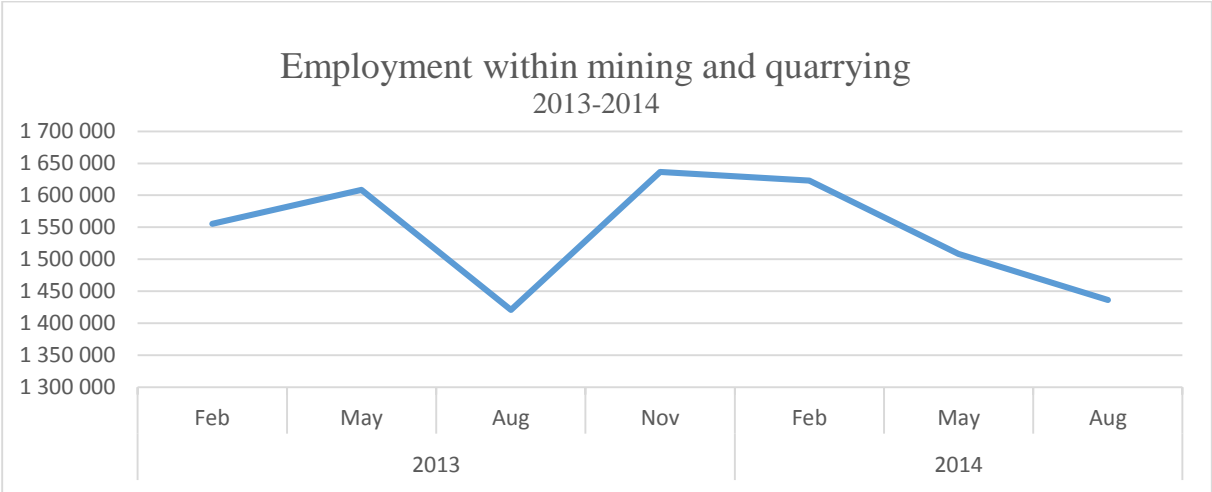


Figure 7.2: “Employment within the Indonesian mining and quarrying sector, 2013-2014”
 (Statistics Indonesia, 2015a, 2015g)

The tables presented in appendix 2, also include employment within the mining and quarrying sector in percentage of total Indonesian employment. The accompanying graphs are presented below:

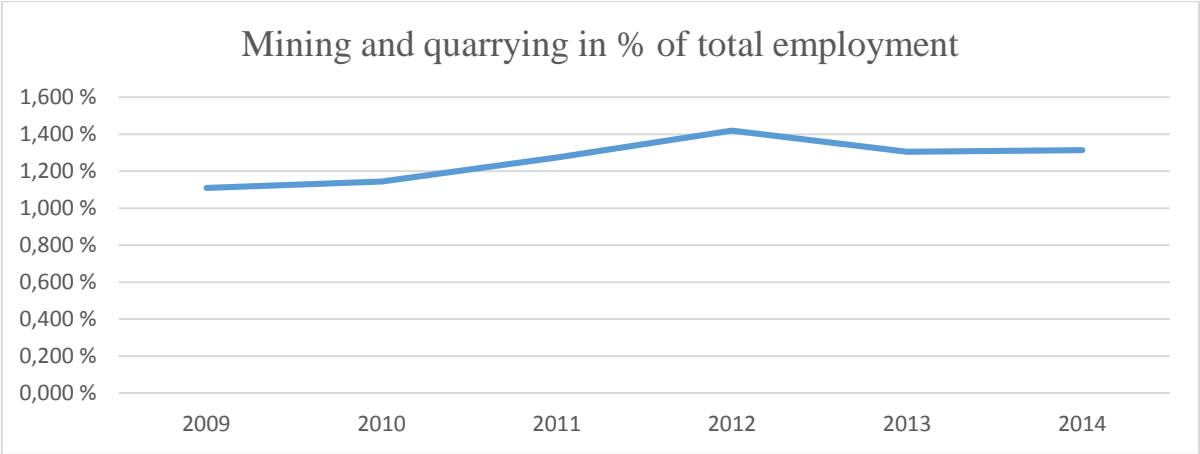


Figure 7.3: “Mining and quarrying in % of total employment, 2009-2014” (Statistics Indonesia, 2015a)

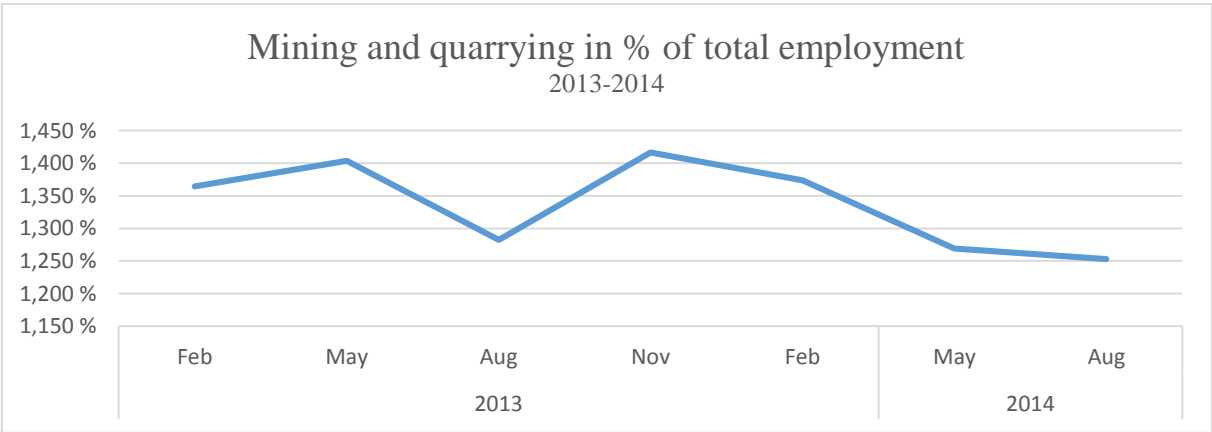


Figure 7.4: “Mining and quarrying in % of total employment, 2009-2014” (Statistics Indonesia, 2015a, 2015g)

Figure 7.3 and 7.4 clearly show that prior to 2012 employment within the sector grew more rapidly than total employment. In 2013 this changed and employment within the sector has declined slightly as a share of total employment.

What are the impacts of the new mining regulations on Indonesian employment?

In spite of expectations of increased job opportunities after implementing the new mining regulation, the number of employees declined by more than 200 000 from November 2013 to August 2014 (see figure 2.2 , appendix 2).

Even though we cannot directly associate the changes presented by Statistics Indonesia with the new mining regulations or verify their reliability, there are other sources which also report that several thousand mining workers lost their jobs after the new regulations were implemented (see e.g.: Changxin, 2014; Maierbrugger, 2014). According to the Gulf Times (2014) “*Juan Forty Silalahi, spokesman for the National Mining Workers Solidarity lobby group*” stated that over 570 000 workers lost their jobs in the beginning of 2014, due to the export ban. Such high numbers could also be an indication that there are more people working within the mining sector than what is officially registered by Statistics Indonesia. This could include illegal workers, but also workers who are not directly employed within the sector, but hired by the ones who are (PwC Indonesia, 2013).

Consequently, we can conclude that changes have occurred and that the changes most likely are an effect of the implemented mining regulations. But whether this is a temporary fluctuation that will change as soon as Indonesia have properly established their processing industry, or a long-term effect, remains to be seen.

7.2 Production of minerals in Indonesia

The figures presented in this sub chapter show Indonesian production of copper, nickel and tin and the Indonesian production in percentage of total world production. The figures are based on tables presented in appendix 3.

The numbers for 2014 are estimates. We acknowledge that these estimates may have been colored by the expectations that new mining regulations would be implemented in Indonesia

Copper

e – Estimated numbers

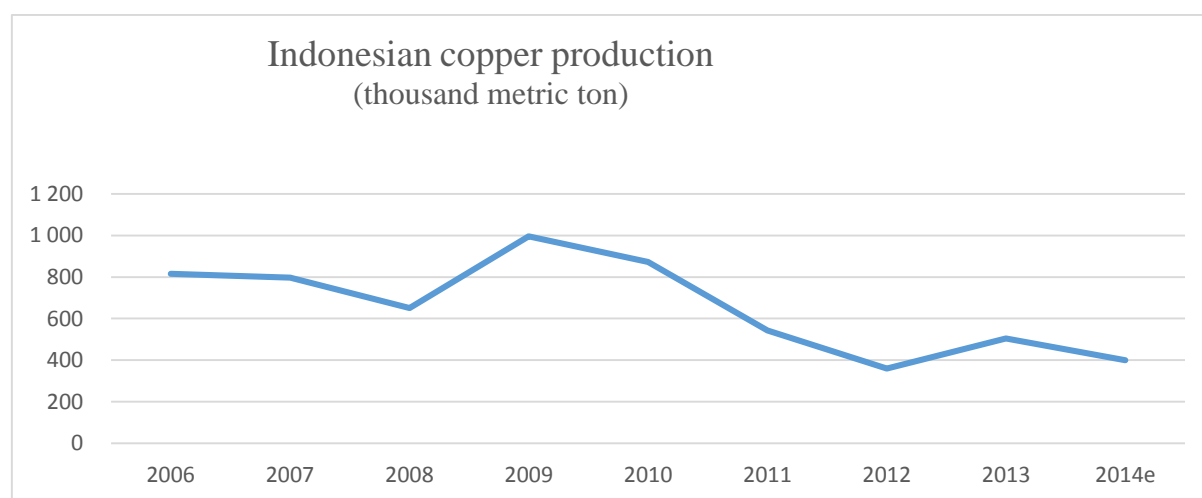


Figure 7.5: “Indonesian copper production, 2006-2014” (U.S. Geological Survey, 2015a)

From 1999-2005, there were large fluctuations in Indonesian copper productions. The country, however, remained amongst the top five producers in the world throughout this period. The highest production rate was reached in 2002 and apart from a peak in 2009; the production has declined since then (U.S. Geological Survey, 2015a).

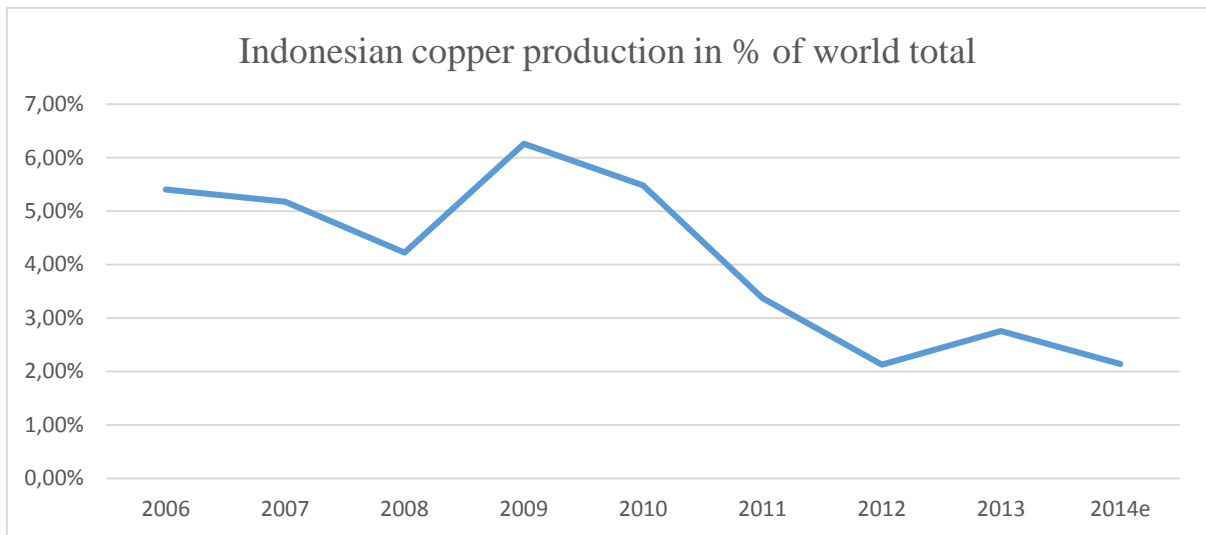


Figure 7.6: “Indonesian copper production in percentage of total world production, 2006-2014”
(U.S. Geological Survey, 2015a)

The total world production of copper has increased steadily since 2002. Appendix 3, table 3.1 reveals that during the global financial crisis Indonesian copper production declined but the world production seems to have been unaffected in regards to volume produced. This may indicate a continuously rising demand for copper worldwide (U.S. Geological Survey, 2015a). Indonesia, with its abundance of copper minerals, could benefit greatly from this but instead their contribution to the world market has declined making them the 13th largest producer of copper in 2013.

Nickel

e - estimated numbers

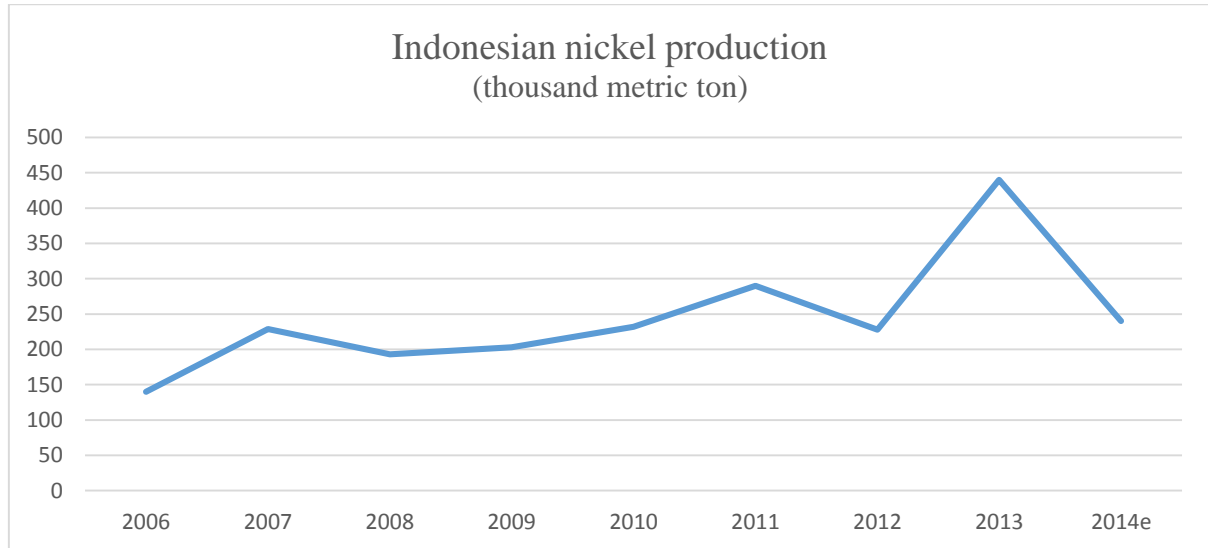


Figure 7.7: “Indonesian nickel production, 2006-2014” (U.S. Geological Survey, 2015b)

As shown in appendix 3, table 3.2, Indonesian nickel production has experienced constant fluctuations over several years though the overall long term trend shows an increase in production. Throughout this time, Indonesia ranked as the fourth producer of nickel worldwide reaching its highest production in 2013. This observation supports the statement earlier mentioned, on Indonesia’s renewed focus on mining after the recession.

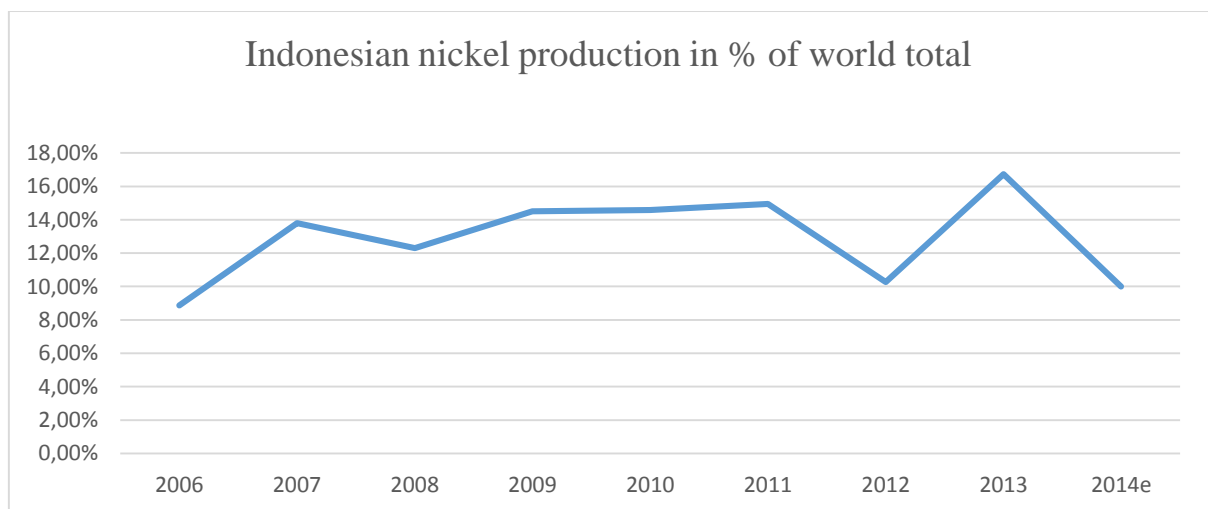


Figure 7.8: “Indonesian nickel production in percentage of total world production, 2006-2014” (U.S. Geological Survey, 2015b)

Apart from 2008 and 2009, total world production has increased steadily throughout the period and significantly after the financial crisis. In 2013 total world production reached 2,630 thousand metric ton and Indonesia has provided the world market with increasingly larger amounts of nickel, accounting for 16.73% of total production in 2013.

Tin

e – estimated numbers

Indonesia experienced a positive development in the production of tin up until 2007. After reaching above 100 thousand metric ton, production decreased rather heavily in 2008 (U.S. Geological Survey, 2015c).

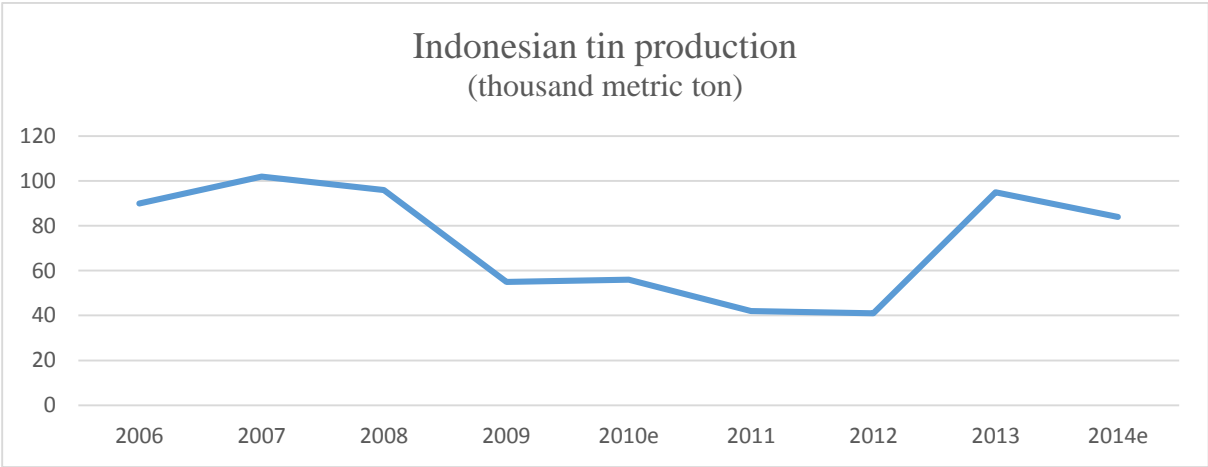


Figure 7.9: “Indonesian tin production, 2006-2014” (U.S. Geological Survey, 2015c)

With reference to appendix 3, table 3.3, the rapid reduction did not end until 2013 when production took a leap and changed from 41 thousand metric ton in 2012 to 95 thousand metric ton in 2013. A total increase of 131.7%, which lead the country a step towards it former 2007 top production volume.

The world total production has shifted constantly from 1999 until present; however, we see the same fluctuations and results as that of Indonesia, without being able to determine the reason for this (U.S. Geological Survey, 2015c).

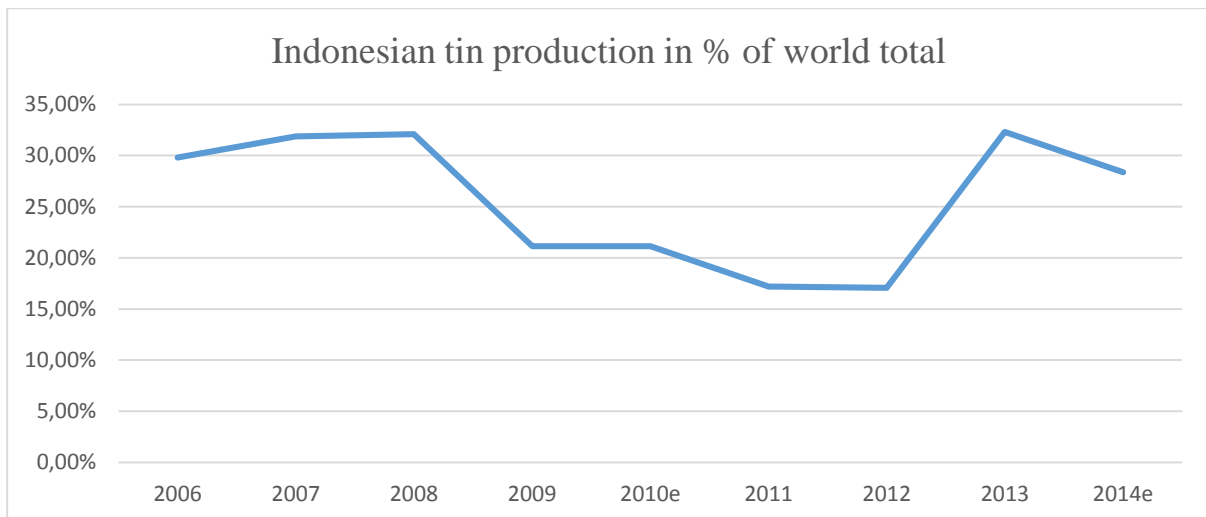


Figure 7.10: “Indonesian tin production in percentage of total world production, 2006-2014”
(U.S. Geological Survey, 2015c)

Notwithstanding the many years of large fluctuations, Indonesia produced between 17% and 34% of world total and is on average ranked as the second largest producer after China. The two countries combined make up the vast majority of total world production, and are by far the biggest producers worldwide (U.S. Geological Survey, 2015c).

What are the impacts of the new mining regulations on Indonesian mineral production?

Because the numbers for 2014 are estimations, it is difficult to predict the impacts of the mining regulations concerning production for this year. A common denominator however is that all three minerals experienced a rapid increase in production from 2012 to 2013. A possible reason for this may be that during these years the implementation of the 2014 law was announced and there was a perception that there would be incentives for increasing production and exports, and the incentives for increasing production and exportation is presumed to have been many.

PT Newmont Nusa Tenggara, one of the biggest copper producers in Indonesia stopped production for nearly two months due to a lack of storage capacity because of the ban on exports (The Jakarta Post, 2014). It is reasonable to assume that this might have been the case for several other mining corporations and that the estimated decline in production for 2014 is a reasonable adjustment. The reduced amount of mining export shown in figure 7.15 may help support these assumptions.

7.3 Indonesian mineral export

In this sub-chapter, we present mineral export in both volume and value from 2007 to 2014. In addition to graphs based on numbers for the whole mining sector, we will present graphs representing export of copper ore and nickel ore as well. The tables we have used to make the graphs are to be found in Appendix 4. In addition to nickel, copper and bauxite, the table also includes ‘other mining products’. We have not been able to determine what Bank Indonesia includes in this term but we assume that it includes the rest of the minerals presented in MoEMRR 1/2014 (see chapter 4), and we know for a fact that it excluded coal and granite (Bank Indonesia, 2015c) (Bank Indonesia, 2015d).

7.3.1 Value of Indonesian mining export



Figure 7.11: “Value of Indonesian mining export, 2007-2014” (Bank Indonesia, 2015b, 2015c)

Prior to 2007, Indonesian mining sector experienced a slight increase in export value (Bank Indonesia, 2015c). However, the trend temporarily changed, and as shown in figure 7.11 there was a major decline in value in 2008 most likely due to the global financial crisis. But even though the total value of export declined there were still minerals that increased in export value. For instance bauxite, which increased in exports by 90 % from 2007 to 2008 while total export value decreased by almost 35 % (see table 4.1, appendix 4).

After the financial crisis, both commodity prices and the value of export started to increase, which supports the statement made in chapter 3 about the mining sector gaining renewed interest after the country had recovered from the crisis. In 2010 however, value started

decreasing (see figure 7.11) and apart from a short increase in 2012, it looks like the value of export continues to decrease. This does not necessarily mean that Indonesia exported less. Statistics shows that *volume* of mining export has had a continuous increase from 2005 to 2013 (see figure 7.15) (Bank Indonesia, 2015d), indicating that decrease in value is mainly due to lower commodity prices (see **chapter 7.6**) see and not declining export volume.



Figure 7.12: “Value of mining export in % of total Indonesian export, 2007-2014” (Bank Indonesia, 2015b, 2015c)

Figure 7.12 shows value of mining export in percentage of total Indonesian export. The graph fluctuates but in general value of mineral export have had a lower growth rate in comparison to total export, which may be connected to declining commodity prices and implementation of the new Indonesian mining regulations, as well as Law No. 4/2009 announcing the changes to come.

Value of Indonesian nickel export

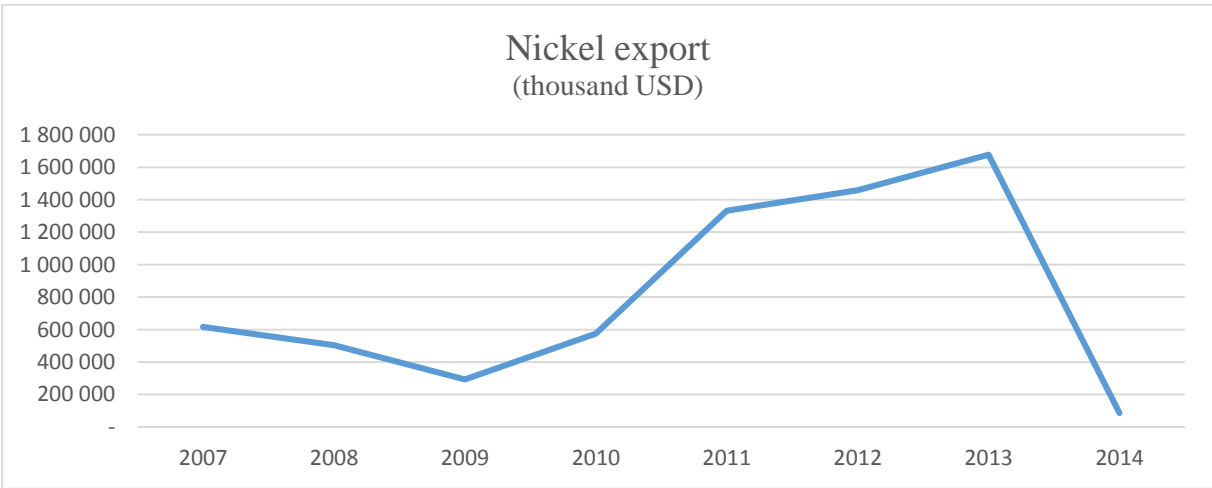


Figure 7.13 “Value of total Indonesian nickel export, 2007-2014” (Bank Indonesia, 2015b, 2015c)

As shown in figure 7.13 value of Indonesian nickel export declined from 2007 to 2009. Given that exported *volume* of nickel increased slightly during this period (see figure 7.16), it is safe

to conclude that drop in value is a consequence of declining commodity prices during the global financial crisis. After 2009, the value increased rapidly before it slowed down and decreased massively in 2014.

Value of Indonesian copper export

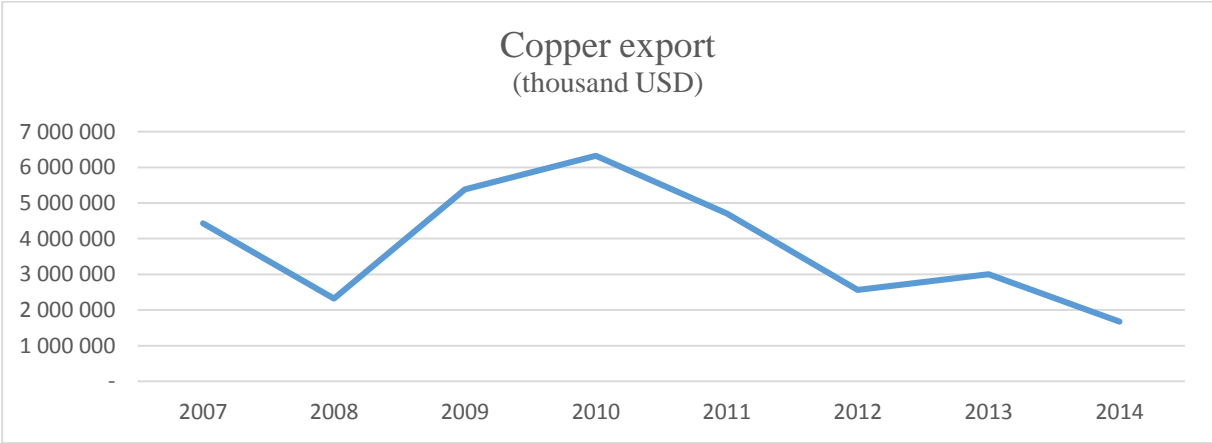


Figure 7.14: “Value of total Indonesian copper export, 2007-2014” (Bank Indonesia, 2015b, 2015c)

As seen in figure 7.14, value of copper export declined massively in 2008, peaked in 2010, and have declined continuously ever since. In contradiction to nickel, which had declining value and increasing volume, copper value and volume has been much more in sync (see fig. 7.16), indicating that commodity prices on nickel might have been much lower than copper.

7.3.2 Volume of Indonesian mining export

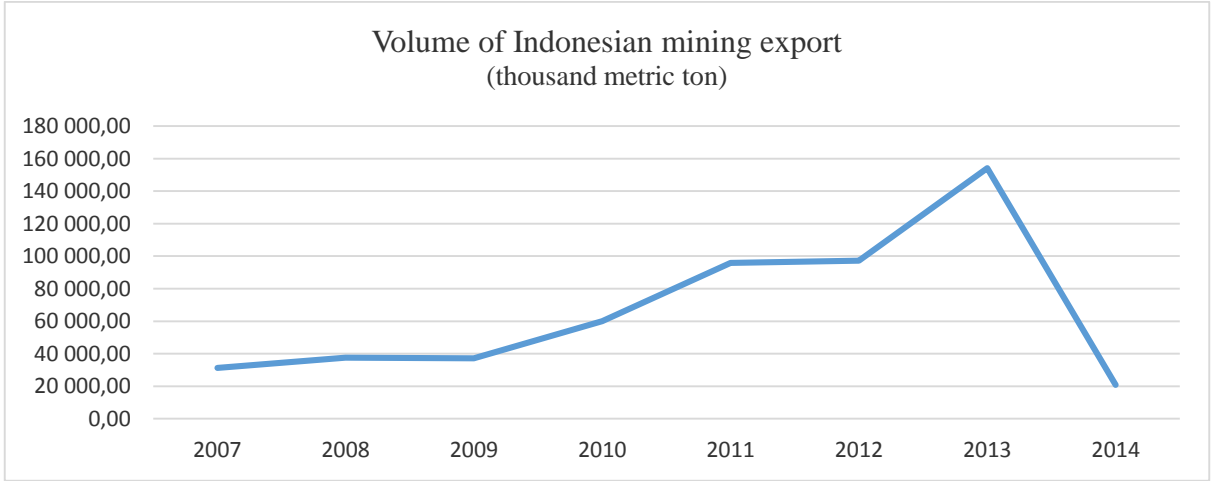


Figure 7.15: “Volume of Indonesian mining export, 2007-2014” (Bank Indonesia, 2015d)

In contradiction to the value of mining export, export volume has not been affected by variations

in commodity prices. Hence, this overview gives a more accurate presentation of changes in the Indonesian mining export.

Prior to 2009, there were only a minor increase in volume, however, after the global financial crisis export volume started to increase rapidly (Bank Indonesia, 2015d), which, as with volume, verifies what was mentioned with regards to increased attention to the sector. Figure 7.15 reveals a massive decline in 2014, which may be a result of the implemented mining regulations. We will discuss this matter further while answering sub-question 3 in the end of this chapter.

Same as with value, there are also here differences in total volume exported, and volume exported of the various minerals. For instance, between 2010 and 2011 total export increased by 60 %, while copper export decreased by almost 40 %, and nickel increased by more than 100 % (see table 4.2 in appendix 4).

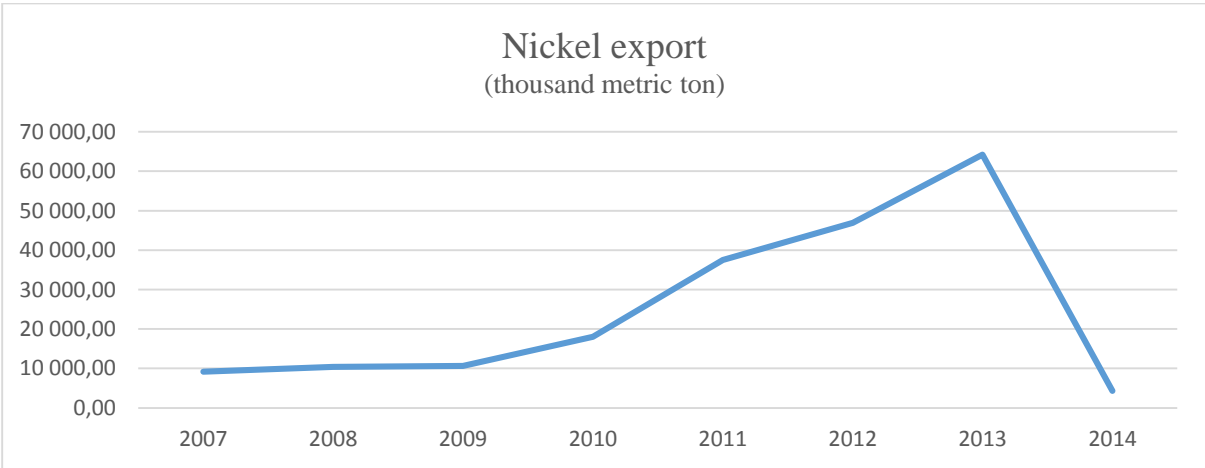


Figure 7.16: “Volume of total Indonesian nickel export, 2007-2014” (Bank Indonesia, 2015d)

The volume of nickel export has increased since early 2000s (Statistics Indonesia, 2015h). After 2009 it started to grow more rapidly, and from 2009 to 2013 export volume of nickel grew with more than 600 % (see table 4.2 in Appendix 4) turning Indonesia in to one of the largest nickel exporters worldwide (Jensen, 2014). However, in 2014 it looks like Indonesia experienced a major decline in volume of exported nickel (figure 7.16), a matter which I will discuss further in the end of this sub-chapter.

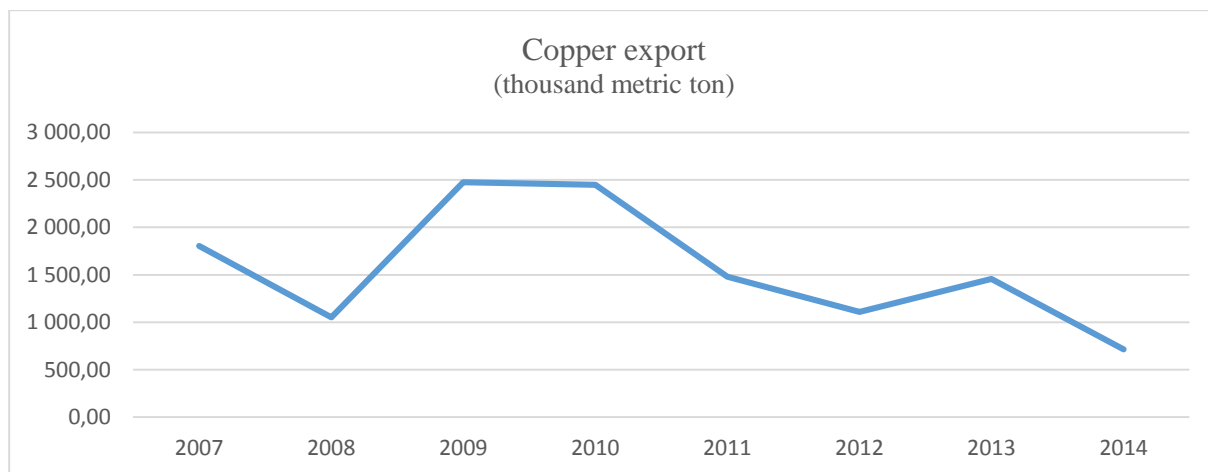


Figure 7.17: “Volume of total Indonesian copper export (thousand metric ton), 2008-2014” (Bank Indonesia, 2015d)

Volume of copper export has been gradually declining since early 2000, with only a slight increase pre and post the global financial crisis (Statistics Indonesia, 2015e). This coincides with declining value of copper exports shown above and declining copper production (see figure 7.5) but it is completely opposite of trends in volume of nickel exports.

What are the impacts of the new mining regulations on Indonesian mineral export?

As can be seen in this chapter there is an overall trend of declining export in 2014 both with regards to volume and value. An important aspect in regards to this is that neither Bank Indonesia nor Statistics Indonesia have presented numbers on nickel and copper exportation for all months in 2014. Whether this is due to full stop in exports, or lack of relevant data, has been difficult to verify. But, according to Reuters, both Freeport-McMoRan Inc. and Newmont Mining Corp ceased copper exports of both ore and concentrate after the regulation was implemented due to what they regarded as contract violations (Taylor & Burton, 2014). After more than six months of disputes with the GOI both companies agreed upon on new terms as mentioned in chapter 4 and resumed export. Given that the two companies represents almost all of Indonesia’s copper export and that nickel was subject to a total export ban on raw minerals, it is very likely that the decline in copper and nickel export presented above is realistic.

A decline in mineral export, mainly caused by the ban of raw mineral exportation, was verified by Statistics Indonesia who in August 2014 could announce a 27 percent decline in the

Indonesian export of minerals during the first six months of 2014 (Supriatna, 2014). This supports data presented above.

An important aspect to consider is the fact that while Bank Indonesia's numbers only include export of ore, Statistics Indonesia's presents almost identical numbers which includes both ore and concentrates (Statistics Indonesia, 2015d). If this is to have an effect it of course depends on the purity levels on the concentrates, but Statistics Indonesia gives no information about this. This shows how important it is not to always rely on data found online, but given the similarity in the numbers presented by the two, statistics still shows a decline in export in 2014. Even though we cannot directly associate the changes in statistics to the implementation of the new mining regulations, the fact that several companies have stated that their export has dropped due to the implementation, gives us a reason to conclude that the mining regulations have impacted, and still are impacting the Indonesian mining sector.

7.4 Gross Domestic Product at current market prices

The figures presented below are based on table 6.1 in Appendix 5, and shows non-oil and gas mining's contribution to Indonesian GDP at current market prices from 2003 to 2014. Numbers for 2013 and 2014 are preliminary and may not give a complete picture on development of GDP the two years.

'Non-oil and gas mining' is a subcategory of 'mining and quarrying'. In addition 'mining and quarrying' includes 'oil & gas mining' and 'quarrying' (Statistics Indonesia, 2015f) (Appendix 5).

We have not been able to verify what Statistics Indonesia includes in 'non-oil and gas mining' but is likely to assume that coal, in addition to the minerals mentioned in MoEMRR No. 1/2014, are included. Given that coal is a major export commodity in Indonesia this may tamper the findings we have made.

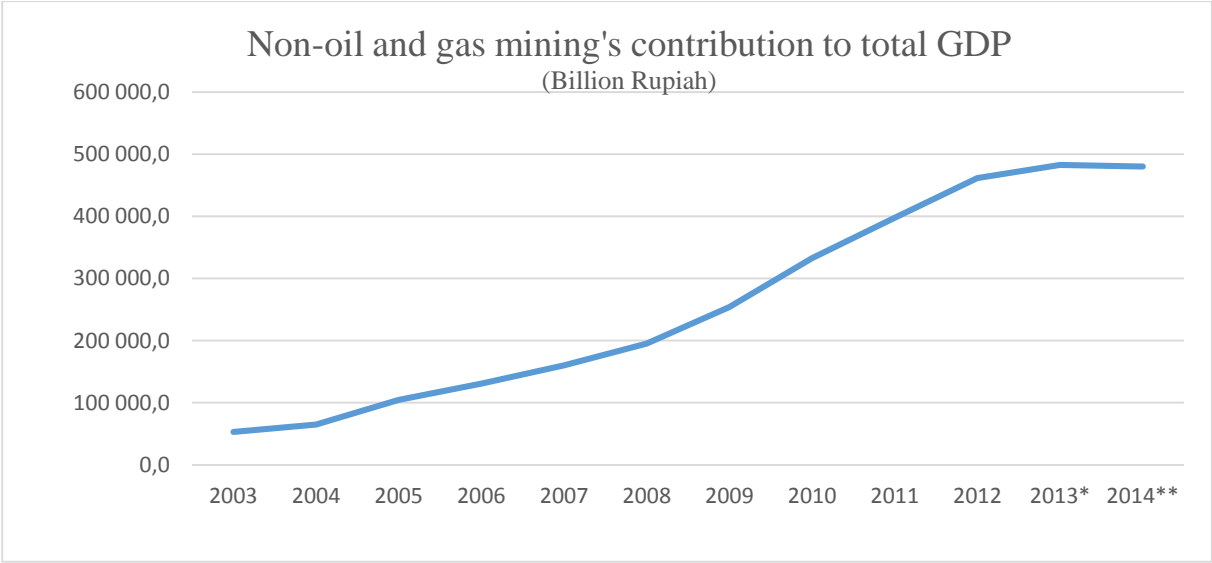


Figure 7.18: “Non-oil and gas mining’s contribution to total GDP at current market prices, 2003-2014” (Statistics Indonesia, 2015f)

As can be seen in figure 7.18 (and table 5.1 in Appendix 5), the contribution from non-oil and gas mining to Indonesian GDP has increased continuously since early 2000s, but from 2013 it slowed down, and in 2014 statistics reveals a slight decline. This can be seen more easily in figure 7.19, where we have presented GDP contribution from non-oil and gas mining in percentage of total GDP.

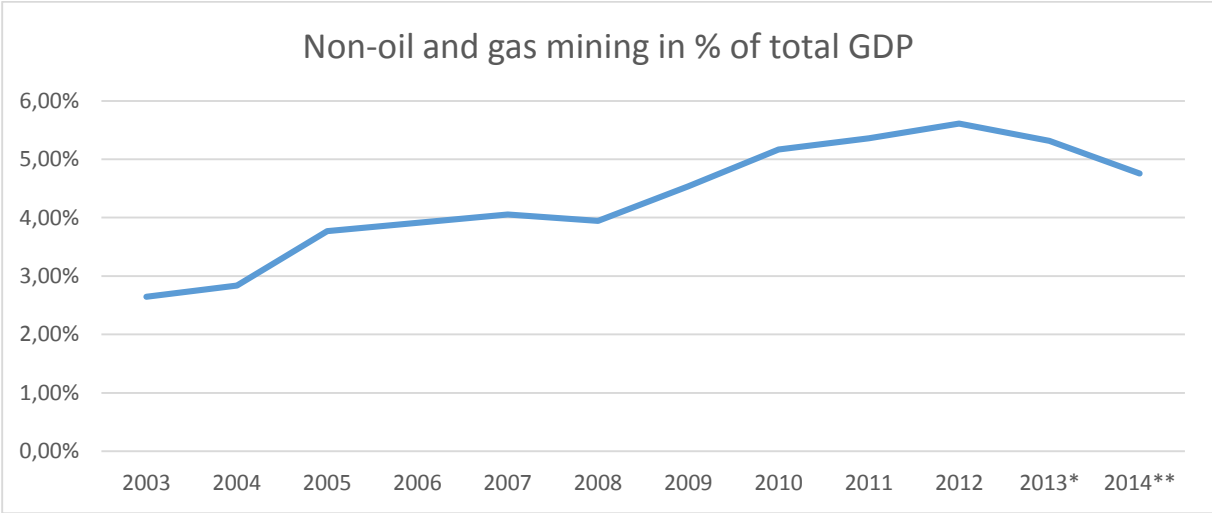


Figure 7.19: “Non-oil and gas mining in percentage of total Indonesian GDP (at current market prices), 2003-2014” (Statistics Indonesia, 2015f)

Here we see that the contribution from the non-oil and gas mining sector has had a higher growth rate than total GDP up until 2012, after which total GDP increased more in comparison

to contribution from non-oil and gas mining. If these changes can be related to the implementation of the new mining regulations will be shortly discussed an answer to sub-question four right below.

What are the impacts of the new mining regulations on Indonesian GDP?

Based on graphs presented above we can conclude that there has been a slight decline in GDP contribution from non-oil and gas mining, but as can be seen in Appendix 6 the decline is only 0.57 percent. Given that we are not sure what industries the sector includes, we can not directly associate these changes to the mining sector, or to the regulations.

However, a decline is a big change from the increase the sector has experienced up until 2012/2013, and while contribution from ‘non-oil and gas mining’ decreased, contribution from ‘mining and quarrying’ increased by 3.16 percent and as did total Indonesian GDP by 11 percent.

This indicates that changes have occurred, but based on statistics presented we are not able to conclude how the regulations might have had an impact on Indonesian GDP.

7.5 Direct capital investment by sector

This sub-chapter is based on the tables presented in appendix 6, and contains graphs on domestic direct investment and foreign direct investment for the different sectors in Indonesia.

Investments regarding processing plants and smelters are included in the secondary sector but we have not been able to retrieve the necessary information and documentation in determining the correct sub sector. This limitation will direct our focus towards the mining sector, accompanied with assumptions regarding investments in the processing plants and smelters when plausible.

7.5.1 Domestic direct investment

As shown in appendix 6, table 6.1, the primary sector experienced a large increase in DDI from 2008 to 2013 with a total gain of 1,463% in this period. However, when we direct our focus on the mining sector over the same period, the total increase is reaching 3,614%, indicating substantial economic potential for domestic investment.

We have not been able to gather information on DDI within the secondary and tertiary sector prior to 2010, because of this, our observations are rather limited in time, but we see some of the same characteristics in the secondary sector as in the primary. From 2010-2014, the total increase in DDI represent a percentage of almost 200 which is not nearly as much as the primary sector, but still a considerable amount.

The tertiary sector did not experience any significant change with respect to DDI before 2013, when the amount of DDI received changed from 21,924 billion rupiah in 2012 to 80,571 billion rupiah in 2014. A total increase of 368%.

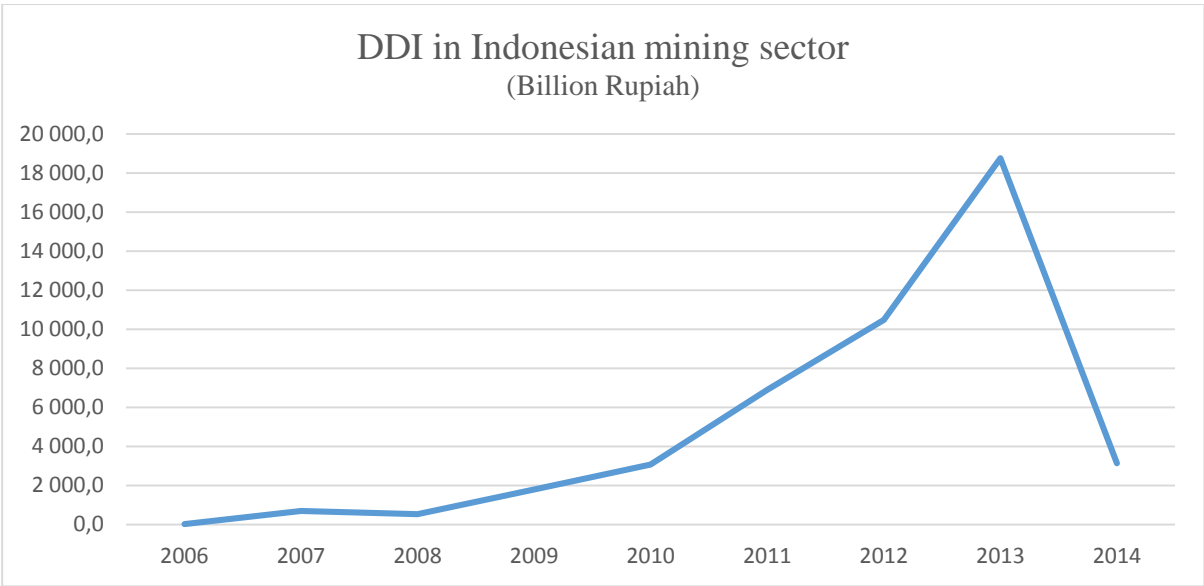


Figure 7.20: “Domestic direct investment in Indonesian mining sector, 2006-2014”
 (Indonesia Investment Coordination Board, 2015b; Statistics Indonesia, 2015j)

Indonesia experienced little change in domestic direct investment, both within the mining sector and in total, up until 2008 when DDI started to increase rapidly (Statistics Indonesia, 2015j). As mentioned above the increase within the mining sector rose significantly reaching a maximum in 2013. This may be seen in context with the similarly large increases in the production and export of minerals after 2008.

As we can see from appendix 6 the primary sector is the only sector with a decrease in total DDI in 2014. The decrease is a result of reduced investments in the mining sector alone. Whereas as the other industries in the primary sector received increasing investments the

mining industry received a total of 15621.5 billion rupiah and a percentage of 83% less than the previous year (Indonesia Investment Coordination Board, 2015b).

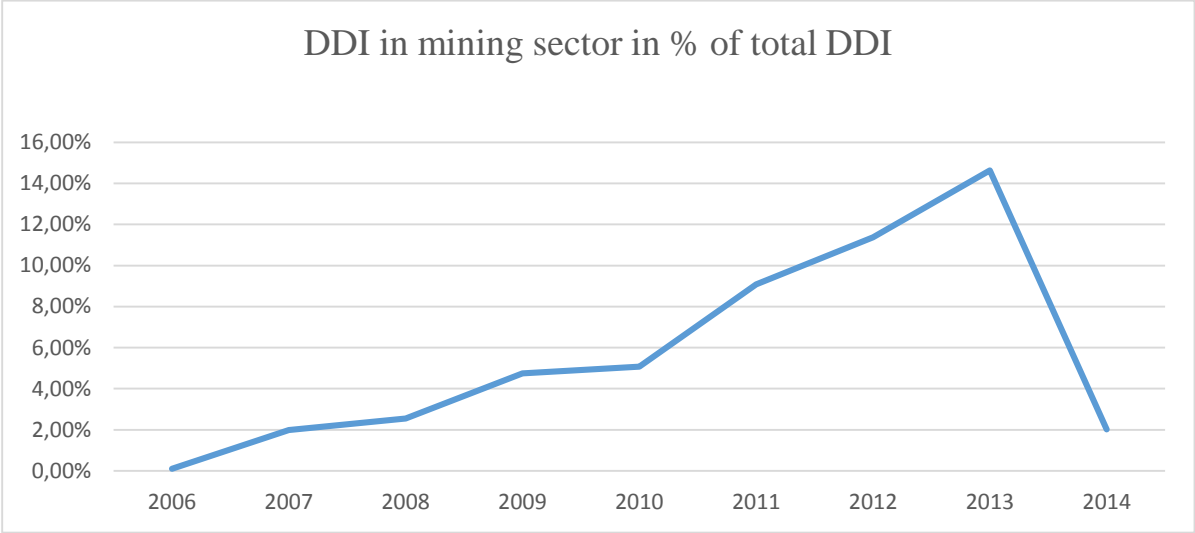


Figure 7.21: “Domestic direct investment in Indonesian mining sector in percentage of total Indonesian domestic direct investment, 2006-2014”
(Indonesia Investment Coordination Board, 2015b; Statistics Indonesia, 2015j)

Although all sectors have received larger amount of capital, the mining industry has received more than the average increase in all sectors combined. With a development reaching from 0.1% in 2006, the mining sector received a total of 14.64% of the total DDI in 2013.

7.5.2 Foreign direct investment

According to appendix 6, table 6.2, the Indonesian primary sector has received stabile contributions of FDI up until 2010, when the gains started to increase rapidly. The growth has persisted but the mining industry was affected with a decrease in 2014 the only one amongst all receivers within the primary sector.

The secondary sector increased from 2010-2013 and experienced a decrease in 2014. Out of all three sectors, the tertiary is by far the one with the highest increase in foreign capital received. From 2010-2013, they experienced a total increase of 475% with respects to FDI.

The tertiary sector has remained rather stable with regards to FDI, varying between 6,300 and 9,850 million USD since 2010.

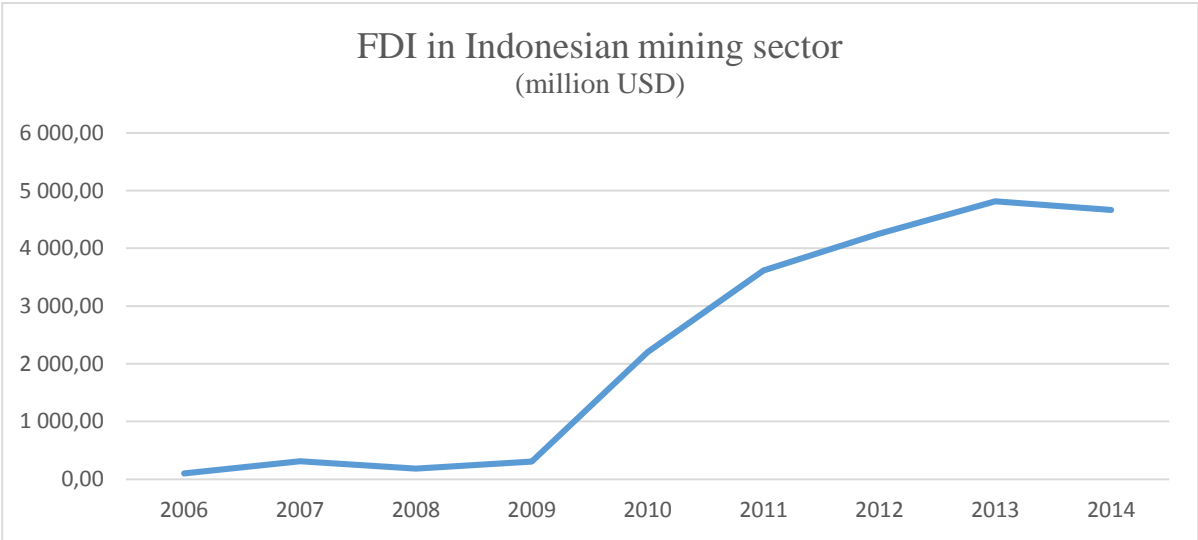


Figure 7.22: “Foreign direct investment in Indonesian mining sector, 2006-2014”
(Indonesia Investment Coordination Board, 2015a; Statistics Indonesia, 2015i)

Although the primary sector have experienced an increase in FDI since 2008 the mining sector reduced its foreign direct investment by 3% in 2014: the only sector in the primary division to experience a fall (Indonesia Investment Coordination Board, 2015a). Even so, the vast majority of FDI in the primary sector is attributed to the mining industry. In 2006, they received 18.48%, a share that grew significantly, earning them a total of 74.42% in 2013 and 66.72% in 2014.



Figure 7.23: “Foreign direct investment in Indonesian mining sector in percentage of total foreign direct investment, 2006-2014”
(Indonesia Investment Coordination Board, 2015a; Statistics Indonesia, 2015i)

Based on appendix 6, table 6.2, we observe that up until 2009, the mining sector received between 1 and 3 percent of total FDI. After this point, there were large transitions, and the sector has for the last five years received between 13.57 and 18.58 percent. The maximum amount of FDI in the mining sector in percent of total was reached in 2011 and has been followed by a small decline.

What are the impact of the new mining regulations on direct capital investment?

We acknowledge that the mining regulations may have had impacts on both domestic and foreign direct investment. We observe some similarities between the two, but also differences.

The increase in DDI towards the mining sector began in 2008. The amount of capital provided grew proportionally with time and the sector received an increasing amount of the total DDI. In 2013, a sudden drop occurred and the mining industry received only a fraction of the capital received the year before. The sudden drop in DDI after 2013 may be a consequence of a change in focus after the legislation was introduced in January 2014, as the government had to pay more attention to its implementation and its effect on foreign investors

The amount of FDI directed towards the mining sector started to increase in 2009, but in contrast to that of DDI, the increase started rapidly and was gradually reduced as time went by,

decreasing in 2013. In percentage terms, the mining sector received less FDI from 2011. This development may indicate that investments in the Indonesian mining sector was perceived less attractive as the information regarding the new regulations became clearer both in 2009 and in 2012. Another possible explanation is a transfer of investments from the primary to the secondary sector. Because of the governmental demand relating to the building and processing of minerals before allowing them to be exported out of the country the demand for capital directed towards the secondary sector became higher. It is reasonable to assume that this may have influenced the amount of capital in the primary sector.

7.6 Commodity prices

Fluctuations in commodity prices may often provide an explanation to why value of export as well as a country’s GDP declines. The following graph is based on numbers presented in Appendix 8. We have used The World Banks rapport on Commodity Market Outlook issued in April 2014 and April 2015.

The metals referred to in these rapports include Aluminum, Copper, Iron Ore, Lead, Nickel, Tin and Zinc. Even though Indonesia has up to 2014 mostly exported raw minerals, we believe this overview gives an overall outlook of the market, and the changes in commodity prices.

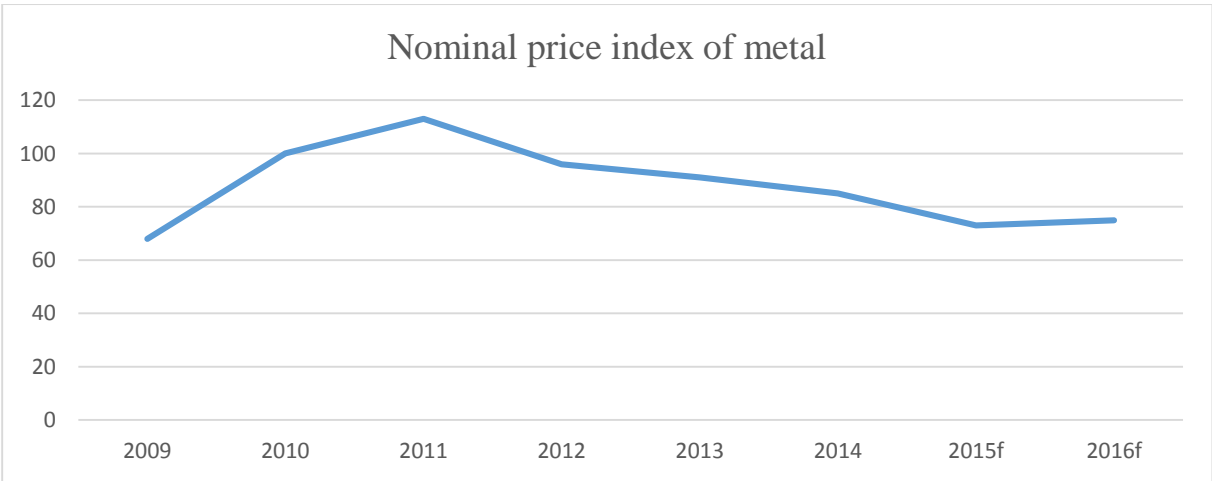


Figure 7.24: “Nominal price index of metal, 2009-2016” (World Bank, 2014) (World Bank Group, 2015a)

f = forecast

As figure 7.24 clearly shows, commodity prices of metal increased after the global financial crisis, before it slowed down and started declining in 2011. This can be an explanation of why export value has decreased between 2010 and 2012, whilst export volume has increased the same period (7.11 and 7.15). The graph also reveals how commodity prices are expected to grow from 2015.

7.7 Prices of concentrate/ore and processed minerals

This sub-chapter do not have particular relevance to our research questions but is important in the discussion of national gains in changing exports from raw minerals and concentrates to processed minerals.

Our findings in this sub-chapter are based on appendix 8, sub-chapter 8-1 to 8.3, that shows the large differences between the values of ore, concentrate and refined minerals. The tables show the high value added opportunities within the processing industry and we have made our findings based on market prices of copper, nickel and manganese from the Shanghai Metals Market on May 29, 2015. The market prices are converted from Chinese Yuan Renminbi to USD, using the same day's exchange rate from Oanda.com. The tables provide a clear and positive Indication of the economic gains for value added industries as an increase in mineral purity exponentially increases the value of the product

The result of our findings, support the statement made by the Indonesian government with regards to the large economic possibilities in connection with domestic processing of minerals. The increase in value can enlarge export taxes, increase employment and human resources skills, improve infrastructure in areas where the smelters and processing plants are build, as well as other positive external effects.

It is important to stress that Indonesia must be able to provide an efficient industry and supporting government institutions, so that the they are able to fully take advantage of the many opportunities that the building of these industries may be able to offer.

8. CASE STUDY

In addition to empirical data, we have included a case study in order provide a more nuanced understanding of how mining regulations have affected industries at an organizational level. We have chosen to conduct a study on one of the largest copper producers in Indonesia.

8.1 PT Newmont Nusa Tenggara

“PT Newmont Nusa Tenggara (PTNNT) is a joint venture company that is owned by Nusa Tenggara Partnership B.V, PT Multi Daerah Bersaing (PTMDB), PT Pukuafu Indah and PT Indonesia Masbaga Investama. [...] Batu Hijau is a copper-gold mine located in the south west region of the Island of Sumbawa” (PT Newmont Nusa Tenggara, 2012a). The Dutch company, PT Nusa Tenggara Partnership B.V is the major shareholder and owns 56 % of PTNNT (PT Newmont Nusa Tenggara, 2012d).



(PT Newmont Nusa Tenggara, 2012a) Navn på bilde er «Pit, Batu Hijau»

Following two decades of exploration, analysis, studies and construction, the company reached profitable production on March 1, 2000, and “*at the current production rate, Batu Hijau's mine life is expected to continue until 2023*” (PT Newmont Nusa Tenggara, 2012b). Batu Hijau is an open-pit mine and a porphyry copper deposit that also contains silver and gold in small amounts. The minerals undergo a great deal of processing before the final product can be extracted and the concentration of ore in the porphyry deposits are low. For example for every ton of processed ore, the company extract, on average, copper of 4.87 kg and gold of 0.37 gram. (PT Newmont Nusa Tenggara, 2012c)

Approximately 8000 contractors and workers make up the mine in Batu Hijau and the local province contributes roughly 64% of this workforce. The company's 'corporate social responsibility programs' aim to increasing skills, knowledge, employment, business development and overall economy to the local province (PT Newmont Nusa Tenggara, 2012b), and contributes, on average, 50 billion rupiah per year "*to improve the quality of life and the prosperity of communities around the mine*" (PT Newmont Nusa Tenggara, 2014b). By the Contract of Work agreement, PTNNT is obliged to pay non-taxes, taxes and royalties to the Indonesian Government. The provisions are large amounting to trillions of rupiah. 80% of the royalties, however, are transferred back to the provinces (PT Newmont Nusa Tenggara, 2012b).

After the implementation of the new Indonesian mining regulation on January 12 2014, the shipment of copper concentrates were subject to taxation (see chapter 4). PTNNT opposed to this regulation, and halted exports from the mine in Batu Hijau. Continued production and no shipment soon led to shortages in available storing facilities, forcing PTNNT to pause operations whilst the company waited for clarifications relating to the government's export regulations, and the conditions concerning new export permits. (The Jakarta Post, 2014).

In the last part of June 2014, PTNNT and its major shareholder filed an 'appeal for arbitration' against Indonesia at the International Center for Settlement of Investment Disputes (ICSID) (International Center for Settlement of Investment Disputes, 2014). The Indonesia-Netherlands Bilateral Investment Treaty (BIT) found the ban on export related to unprocessed minerals as inconsistent as well as a violation against the existing Contract of Work (CoW) (Amin & Cahyafitri, 2014). The background for this arbitration was announced in a press release on July 1, where PTNNT explained the effort they had spent on convincing the Indonesian government to change its ban on ore export stressing the economic hardship on the entire organization and its stakeholders (PT Newmont Nusa Tenggara, 2014a).

On August 25, the arbitration was discontinued (International Center for Settlement of Investment Disputes, 2014), and a memorandum of Understanding was created to resolve some of the disagreements related to the new regulations and the existing CoW. By signing the MoU, PTNNT agreed to form a cooperation with PT Freeport Indonesia with the intent of building and developing a smelter (PT Newmont Nusa Tenggara, 2014b). Additionally they had to "*provide a \$25 million assurance bond to demonstrate its support for smelter development, and pay royalties of 4 percent for copper, 3.75 percent for gold, and 3.25 percent for silver, and*

pay a nominal dead rent per hectare” (PT Newmont Nusa Tenggara, 2014b). Moreover, the duty on exports of copper concentrate was revised to 7.5%, but will decrease to 5% when the construction of smelters exceeds 7.5% and 0% when development exceeds 30% (Forbes, 2014).

PTNNT resumed the export of copper concentrates in late September after receiving updated permits on exports with a duration of six months. Approximately 3200 workers were laid off after the halt in production and affected the entire local economy, but this resumption led to a renewed stabilization in the surrounding areas as (Adiguna, 2014; PT Newmont Nusa Tenggara, 2014b)

Future prospects

PTNNT supports the Indonesian government’s motivation for developing domestic processing industries, and they have for many years supplied the country’s only copper smelter with the maximum amount of copper it has the capacity to process. Additionally they have formed an agreement with two domestic companies with plans on building copper smelters. (PT Newmont Nusa Tenggara, 2014b).

From 2013 to 2014, the production of copper in the Batu Hijau mine reduced from 161 to 156 million pounds and sales reduced from 466 to 393 million dollars. However, remaining reserves of copper totaled 3.3 million pounds in 2014 revealing the large economic potential left in Batu Hijau (Newmont Mining Corporation, 2015).

The prospects for 2015 are looking bright, even though the company is aware of the risks in relations to the political conditions in Indonesia, production of copper increased from 21 to 49 thousand ton per 31 March 2015 compared to the same period in 2014 (Newmont Mining Corporation, 2015b). After providing documents assuring that PTNNT and PT Freeport Indonesia (PTFI) were to build a smelter with full operations by 2017, PTNNT was granted a renewed six-month permit on exportation of copper concentrates March 18 2015. The new smelter will hold a capacity of two million ton and become the primary smelter facility for the mine in Batu Hijau. (Sandi, 2015)

9. CONCLUSIONS

Through the findings in chapter 7, we have reached the conclusion that the new Indonesian mining regulations have affected areas within the Indonesian economy and mostly in a negative manner. We believe this to be the short-term effects of the implemented regulations, however, given that the regulations were implemented shortly prior to this study and that some of our quantitative data are estimations, we cannot directly associate all the changes to the implementation.

The medium-term effects on the Indonesian economy we believe to be represented by a continuously decrease in mineral export and complimenting export revenues. However, as some refining facilities are anticipated to be completed by 2017, there may be signs of growth in exports revenues around this time due to the related value added of processed minerals.

An effect of the implementation that we have not discussed any further, and perhaps should, is the development of the processing industry. Several sources state that there has been industrial progress and the government has made exemptions on the restrictions on copper export in order for the companies to provide funds for the investment of plants. A developed processing industry would have a major effect on the Indonesian economy given the huge values that lies within export of processed minerals. Even though there has been signs of development, the Indonesian government has stated that a delay in total export ban is up for consideration given the lack of progress concerning processing facilities. This indicates how the implementation might continue to have a negative effect on the country's economy.

With concerns to FDI in the mining sector, we have found no indications for any rapid future changes. Investors are still feeling insecure towards the uncertainty in regards to the mining permits, which might suggest that FDI will experience a slight decline.

It is important to bear in mind that we base this conclusion on the empirical findings in chapter 7. Given the short amount of time between the implementation of the Indonesian mining regulations and this research, it is possible that the impacts has not yet revealed itself in the quantitative data we have chosen, providing us with the inability to discover possible effects.

REFERENCE LIST

- Adiguna, J. (2014, 16.06). Locals feeling squeeze after mining shutdown. *The Jakarta Post*, p. 14. Retrieved from <http://www.thejakartapost.com/news/2014/06/16/locals-feeling-squeeze-after-mining-shutdown.html>
- Amin, K., & Cahyafitri, R. (2014, 02.07.2014). Newmont files for international arbitration on ore export ban *The Jakarta Post*. Retrieved from <http://www.thejakartapost.com/news/2014/07/02/newmont-files-international-arbitration-ore-export-ban.html>
- Bank Indonesia. (2015b). V.10. Value of export by commodity (thousands of USD), 2005-2015. from <http://www.bi.go.id/en/statistik/seki/terkini/eksternal/Contents/Default.aspx>
- Bank Indonesia. (2015c). V.13. Value of non-oil and gas export by commodity (Thousands of USD), 2005-2015. Retrieved 28.04, 2015, from <http://www.bi.go.id/en/statistik/seki/terkini/eksternal/Contents/Default.aspx>
- Bank Indonesia. (2015d). V.14. Volume of non-oil and gas export by commodity (Thousands of ton), 2005-2015. from <http://www.bi.go.id/en/statistik/seki/terkini/eksternal/Contents/Default.aspx>
- Bank Indonesia. (2015e). V.11. Value of export by country of destination (Thousands of USD), 2010-2015. Retrieved 16.03, 2015, from http://www.bi.go.id/seki/tabel/TABEL5_11.pdf
- Bank Indonesia. (2015f). V.20. Value of import by country of origin (Thousands of USD), 2010-2015. Retrieved 16.03, 2015, from http://www.bi.go.id/seki/tabel/TABEL5_20.pdf
- Bell, T. (2015). Metal profile: Nickel. Retrieved 10.03, 2015, from <http://metals.about.com/od/properties/a/Metal-Profile-Nickel.htm>
- Burgess, L. (2011). Nickel [picture]. from <http://www.wealthdaily.com/articles/nickel-prices-to-drop/3124>
- Cavette, C. (2015). Copper. Retrieved 08.04, 2015, from <http://www.madehow.com/Volume-4/Copper.html>
- Changxin, L. (2014). Indonesian nickel, bauxite miners hit most by export ban. Retrieved 18.04, 2015, from <http://www.asean-cn.org/Item/9716.aspx>
- CIA (Central Intelligence Agency). (2015a). The World Factbook: East & Southeast Asia: Indonesia. Retrieved 15.01, 2015, from <https://www.cia.gov/library/publications/the-world-factbook/geos/id.html>
- CIA (Central Intelligence Agency). (2015b). The World Factbook: World. Retrieved 05.05, 2015, from <https://www.cia.gov/library/publications/the-world-factbook/geos/id.html>
- CNN. (March 4, 2015). After 100 days, Indonesia's President is tested but still goes to the people. [interview]. Retrieved from: <http://edition.cnn.com/2015/01/26/asia/indonesia-president-joko-widodo-interview/>
- Copper Development Ass. (2015a). Copper facts. Retrieved 08.04, 2015, from <http://www.copper.org/education/c-facts/>
- Copper Development Ass. (2015b). Copper - From beginning to end. Retrieved 08.04, 2015, from <http://www.copper.org/education/copper-production/>
- Copper Development Ass. (2015c). Copper is.... Retrieved 08.04, 2015, from <http://www.copper.org/education/copper-is/pdf/Copper-is-brochure-enus.pdf>
- Devi, B., & Prayogo, D. (2013). *Action Research Report - Mining and development in Indonesia: An overview of the regulatory framework and policies* Retrieved from

<http://im4dc.org/wp-content/uploads/2013/09/Mining-and-Development-in-Indonesia.pdf>

- Di Maio, M. (2006). *Four essays on uncertainty, trade integration and government intervention*. (Doctor of Philosophy in Economics , University of Siena). Retrieved from http://www.deps.unisi.it/sites/st02/files/allegatiparagrafo/12-12-2013/di_maio_-_phd_thesis_0.pdf
- Element Materials Technology. (2015). Copper [picture]. from <http://www.element.com/materials-index/copper---cu>
- Encyclopaedia Britannica. (2015a). *Copper (Cu)* Retrieved from <http://academic.eb.com/EBchecked/topic/136683/copper-Cu/>
- Encyclopaedia Britannica. (2015b). *Ore* Retrieved from <http://academic.eb.com/EBchecked/topic/431610/ore>
- Encyclopedia of the Nations. (2015). *Indonesia - Population* Retrieved from <http://www.nationsencyclopedia.com/Asia-and-Oceania/Indonesia-POPULATION.html>
- European Copper Institute. (2015). Chemistry – Extracting Copper (11-14 years). Retrieved 21.04, 2015, from <http://copperalliance.eu/education-and-careers/educational-programmes/chemistry-extracting-copper>
- Falck, O., Gollier, C., & Woessmann, L. (2011). *Industrial Policy for National Champions*. Cambridge, MA, USA: MIT Press.
- FAO. (1992). *FAO Yearbook of forest products 1990* Retrieved from <http://www.fao.org/docrep/014/T0525T/t0525t00.pdf>
- FITA (The Federation of International Trade Associations). (2015). Indonesia: Economic and Political Outline. Retrieved 24.04, 2015, from <http://fita.org/countries/indonesia.htm>
- Forbes. (2014, 09.09.2014). Newmont To Resume Normal Operations In Indonesia As Standoff With Government Ends. *Forbes*. Retrieved from <http://www.forbes.com/sites/greatspeculations/2014/09/09/newmont-to-resume-normal-operations-in-indonesia-as-standoff-with-government-ends/>
- Geographia. (s.a). Map of Indonesia [picture]. from <http://www.geographia.com/indonesia/>
- Global Business Guide Indonesia. (2014). The Question Of Indonesia's Unprocessed Ore Export Ban – Updated. Retrieved 15.01, 2015, from http://www.gbgingonesia.com/en/main/business_updates/2014/upd_the_question_of_indonesia_s_unprocessed_ore_export_ban.php
- Government of Indonesia. (1945). *The 1945 Constitution of the Republic of Indonesia (unofficial translation)*. Retrieved from http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---ilo_aids/documents/legaldocument/wcms_174556.pdf.
- Government of Indonesia. (1967a). *Law No. 1/1967 concerning foreign investment (unofficial translation)*. Retrieved from <http://www.flevin.com/id/lgso/translations/Laws/Law%20No.%201%20of%201967%20on%20Foreign%20Investment%20%28BI%29.pdf>.
- Government of Indonesia. (2009). *Law No. 4/2009 on Mineral and Coal mining*. Retrieved from <http://faolex.fao.org/docs/pdf/ins85947.pdf>.
- Government of Indonesia. (2014). *Regulation of the Minister of Energy and Mineral Resources Number 1 Year 2014 - The upgrading of added value of minerals through mineral processing and refinery in the country*. Retrieved from <http://faolex.fao.org/docs/pdf/ins137694.pdf>.

- Gulf Times. (2014, 22.02). 570,000 people lose jobs as Indonesia bans ore exports. *Gulf Times*. Retrieved from <http://www.gulf-times.com/business/191/details/382200/570,000-people-lose-jobs-as-indonesia-bans-ore-exports>
- Grampp, W. D. (1952). The Liberal Elements in English Mercantilism. *The Quarterly Journal of Economics*, 66(4), 465-501. doi: 10.2307/1882100
- Guritno, A. D., & Murao, K. (1999). The observation of log export banning policy in Indonesia: Conditions, problems, and alternative solutions. *Journal of Forest Research*, 4(2), 79-85.
- Hill, H. (1996). *The Indonesian Economy*. Cambridge, UK: Cambridge University Press.
- Hill, C. W. L. (2011). *International business : competing in the global marketplace* (8 ed.). New York: McGraw-Hill/Irwin.
- Hill, H., & Wie, T. K. (1998). *Indonesia's Technological Challenge*. Singapore: Institute of Southeast Asian Studies.
- Hollander, S. (1979). *The economics of David Ricardo*. Buffalo: The University of Toronto Press.
- ICA Ltd. (s.a.). History of Copper. Retrieved 07.04, 2015, from <http://copperalliance.org/history-of-copper/>
- ICMM (International Council on Mining & Metals). (2012). *The role of mining in national economics : Mining's contribution to sustainable development*, Retrieved from <https://www.icmm.com/document/4440>
- ICMM (International Council on Mining & Metals). (2014). *The role of mining in national economics (2nd edition): Mining's contribution to sustainable development*, Retrieved from <http://www.icmm.com/document/8264>
- Ifrany, R. (2015, 24.03). Government to ease moratorium on aluminum ore exports. *Tempo*. Retrieved from <http://en.tempo.co/read/news/2015/03/24/056652389/Government-to-Ease-Moratorium-on-Aluminum-Ore-Exports>
- IMF (International Monetary Fund). (2015). *World Economic Outlook April 2015 Uneven Growth - Short- and Long-Term Factors* Retrieved from <http://www.imf.org/external/pubs/ft/weo/2015/01/pdf/text.pdf>
- Indonesia Investment Coordination Board. (2015a). Statistic of foreign direct investment realization based on capital investment activity report by sector, Q1 – 2015. from <http://www.bkpm.go.id/contents/p16/statistics/17#.VTZzpzZWH4g>
- Indonesia Investment Coordination Board. (2015b). Statistic of domestic direct investment realization based on capital investment activity report by sector, Q1 - 2015. from <http://www.bkpm.go.id/contents/p16/statistics/17#yr2012>
- Indonesia-Investments. (2013). Increased Imports and Declined Exports Result in Indonesia's Trade Deficit. Retrieved 18.01, 2015, from <http://www.indonesia-investments.com/news/todays-headlines/increased-imports-and-declined-exports-result-in-indonesias-trade-deficit/item458>
- Indonesia-Investments. (2014a). Joko 'Jokowi' Widodo becomes Indonesia's 7th president today. Retrieved 06.03, 2015, from <http://www.indonesia-investments.com/news/todays-headlines/joko-jokowi-widodo-becomes-indonesia-s-7th-president-today/item2539>
- Indonesia-Investments. (2015b). Trade Balance Indonesia: Import and export fall in January 2015. Retrieved 01.03, 2015, from <http://www.indonesia->

- [investments.com/news/todays-headlines/trade-balance-indonesia-import-and-export-fall-in-january-2015/item5309](http://www.indonesia-investments.com/news/todays-headlines/trade-balance-indonesia-import-and-export-fall-in-january-2015/item5309)
- Indonesia-Investments. (2015c). Indonesia opens room for bauxite export, nickel ore to follow? Retrieved 15.04, 2015, from <http://www.indonesia-investments.com/news/todays-headlines/indonesia-opens-room-for-bauxite-export-nickel-ore-to-follow/item5415>
- Indonesia-Investments. (s.a. a). Industrial sector of Indonesia. Retrieved 09.03, 2015, from <http://www.indonesia-investments.com/culture/economy/general-economic-outline/industry/item379>
- Indonesia-Investments. (s.a. b). Unemployment in Indonesia. Retrieved 15.01, 2015, from <http://www.indonesia-investments.com/finance/macroeconomic-indicators/unemployment/item255>
- Indonesia-Investments. (s.a. c). Colonial period of Indonesia. Retrieved 23.03, 2015, from <http://www.indonesia-investments.com/culture/politics/colonial-history/item178>
- Indonesia-Investments. (s.a. d). Soekarno's Old Order: the birth of Indonesia. Retrieved 23.03, 2015, from <http://www.indonesia-investments.com/culture/politics/soekarno-old-order/item179>
- Indonesia-Investments. (s.a. e). Suharto's New Order: Development of Indonesia under authoritarian rule. Retrieved 23.03, 2015, from <http://www.indonesia-investments.com/culture/politics/suharto-new-order/item180>
- Indonesia-Investments. (s.a. f). New Order miracle of Suharto's Indonesia. Retrieved 23.03, 2015, from <http://www.indonesia-investments.com/culture/economy/new-order-miracle/item247>
- Indonesia-Investments. (s.a. g). Reformation; New challenges and changes for Indonesia. Retrieved 23.03, 2015, from <http://www.indonesia-investments.com/culture/politics/reformation/item181>
- Indonesia-Investments. (s.a. h). Asian Financial Crisis in Indonesia. Retrieved 23.03, 2015, from <http://www.indonesia-investments.com/culture/economy/asian-financial-crisis/item246>
- Indonesia-Investments. (s.a. i). Gross Domestic Product of Indonesia. Retrieved 28.03, 2015, from <http://www.indonesia-investments.com/finance/macroeconomic-indicators/gross-domestic-product-of-indonesia/item253>
- International Nickel Study Group. (2015). What is nickel? Retrieved 22.04, 2015, from <http://www.insg.org/whatnickel.aspx>
- International Center for Settlement of Investment Disputes. (2014). *ICSID CASE NO. ARB/14/15* Retrieved from https://icsid.worldbank.org/ICSID/FrontServlet?requestType=CasesRH&actionVal=showDoc&docId=DC4812_En&caseId=C3605
- Irwin, D. A. (1996). *Against the Tide*. Princeton, New Jersey: Princeton University Press.
- Irwin, D. A. (2009). *Free trade under fire*. Princeton: Princeton university Press.
- Jacobsen, D. I. (2005). *Hvordan gjennomføre undersøkelser: Innføring i samfunnsvitenskapelig metode*. Kristiansand, Norway: Høyskoleforlaget AS.
- Jacson, T., & Green, K. P. (2015). *Fraser Institute annual survey of mining companies 2014* Retrieved from <http://www.fraserinstitute.org/uploadedFiles/fraser-ca/Content/research-news/research/publications/survey-of-mining-companies-2014.pdf>
- Jamasmie, C. (2013). Chile is the world's 3rd largest copper mining investment destination. Retrieved 09.04, 2015, from <http://www.mining.com/chile-is-the-worlds-3rd-largest-copper-mining-investment-destination-63163/>

- James, W. E., & Stephenson, S. M. (1993). *Indonesia's experience with economic policy reform: Reversing the conventional wisdom about sequencing [Discussing paper]*. Jakarta.
- Jefferson Lab. (s.a.). The element copper. Retrieved 08.04, 2015, from <http://education.jlab.org/itselemental/ele029.html>
- Jensen, F. (2014, 11.08). REFILE-Indonesia ban on nickel ore, bauxite exports to stay - officials. *Reuters*. Retrieved from <http://www.reuters.com/article/2014/08/11/indonesia-metals-exports-idUSL4N0QE47120140811>
- Johnson, H. G. (1971). *Aspects of the Theory of Tariffs*. Cambridge: Harvard University Press.
- Krugman, P. R. (1987). Is Free Trade Passé? *Journal of Economic Perspectives*, 1(2), 131-144.
- Leamer, E. E. (1995). Heckscher - Ohlin model in theory and practice. *Princeton studies in international finance*, (77). <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.360.2056&rep=rep1&type=pdf>
- Lenntech. (2015). Nickel - Ni. Retrieved 10.03, 2015, from <http://www.lenntech.com/periodic/elements/ni.htm>
- Maierbrugger, A. (2014). Indonesia ore export ban: 570,000 lose jobs. Retrieved 18.04, 2015, from <http://incept.co/ShowArticle.php?ID=5634>
- MarketLine. (2015). *MarketLine Industry Profile: Metals & mining in Indonesia* Retrieved from <http://advantage.marketline.com/Product?pid=MLIP1568-0018>
- McLeod, R. H. (1993). Survey of Recent developments. *Bulletin of Indonesian Economic Studies*, 29(2), 3-42. doi: 10.1080/00074919312331336381
- Meier, G. M. (1976). *Leading Issues in Economic Development* (3 ed.). New York: Oxford University Press.
- Melitz, M. J. (2005). When and how should infant industries be protected? *Journal of International Economics*, 66(1), 177-196. doi: <http://dx.doi.org/10.1016/j.jinteco.2004.07.001>
- Mitchell, C. (2013). The world's biggest copper producers. Retrieved 08.04, 08.04, from <http://commodityhq.com/2013/the-worlds-biggest-copper-producers/>
- Newmont Mining Corporation. (2015). *Annual report 2014* Retrieved from http://www.newmont.com/files/doc_financials/quarterly/2014/NEM10K.pdf
- Newmont Mining Corporation. (2015b). 2015 Operating and financial outlook. http://www.newmont.com/files/doc_financials/quarterly/2015/2015-Operating-and-Financial-Outlook_v001_x7r7yj.pdf
- Neoliberalism. (2015). *Investopedia* Retrieved from <http://www.investopedia.com/terms/n/neoliberalism.asp>
- Nickel Institute. (s.a. a). Nickel metal - The facts. Retrieved 10.03, 2015, from <http://www.nickelinstitute.org/NickelUseInSociety/AboutNickel/NickelMetaltheFacts.aspx>
- Nickel Institute. (s.a. b). Where & why nickel is used. Retrieved 10.03, 2015, from <http://www.nickelinstitute.org/NickelUseInSociety/AboutNickel/WhereWhyNickelIsUsed.aspx>
- North, D. C. (1990). *Institutions, institutional change and economic performance*. Cambridge: Cambridge University Press.

- North, D. C. (1995). The New Institutional Economics and third world development. In J. Harriss, J. Hunter, & C. M. Lewis (Eds.), *The New Institutional Economics and Third World Development* (pp. 360). London, UK: Routledge.
- North, D. C. (2005). *Understanding the process of economic change*. Princeton, N.J: Princeton University Press.
- North, D. C. (2008). Institutions and the performance of economies over time. In C. Ménard & M. M. Shirley (Eds.), *Handbook of New Institutional Economics* (pp. 21-30). Berlin/Heidelberg, Netherland: Springer.
- Nussir. (2012a). Mineral Processing. Retrieved 25.03, 2015, from http://www.nussir.no/en_copper_process.php
- Nussir. (2012b). Copper markets. Retrieved 25.03, 2015, from http://www.nussir.no/en_copper_market.php
- Nussir. (2012c). Smelting and refining. Retrieved 25.03, 2015, from http://www.nussir.no/en_copper_smelt.php
- OCallaghan, T. (2010). Patience is a virtue: Problems of regulatory governance in the Indonesian mining sector. *Resources Policy*, 35(3), 218-225.
- Pangestu, M., & Azis, I. J. (1994). Survey of recent developments. *Bulletin of Indonesian Economic Studies*, 30(2), 3-47. doi: 10.1080/00074919412331336587
- PT Newmont Nusa Tenggara. (2012a). Company at a glance. Retrieved 06.04.2015, 2015, from <http://www.ptnnt.co.id/company-at-a-glance.aspx>
- PT Newmont Nusa Tenggara. (2012b). History. Retrieved 06.04.2015, 2015, from <http://www.ptnnt.co.id/history.aspx>
- PT Newmont Nusa Tenggara. (2012c). Operation. Retrieved 06.04, 2015, from <http://www.ptnnt.co.id/operation.aspx>
- PT Newmont Nusa Tenggara. (2012d). Shareholders. Retrieved 11.04, 2015, from <http://www.ptnnt.co.id/shareholders.aspx>
- PT Newmont Nusa Tenggara. (2014a). Arbitration Filed Over Export Restrictions in Indonesia [Press release]. Retrieved from <http://www.newmont.com/newsroom/default.aspx>
- PT Newmont Nusa Tenggara. (2014b). PTNNT Receive Export Permit, Shipments Expected to Resume This Week [Press release]. Retrieved from <http://www.ptnnt.co.id/ptnnt-receives-export-permit-shipments-expected-to-resume-this-week.aspx>
- PwC Indonesia. (2013). *mineIndonesia 2013; 11th annual review of trends in the Indonesian mining industry* Retrieved from <http://www.pwc.com/id/en/publications/assets/mineindonesia-2013.pdf>
- PwC Indonesia. (2014). *Investment and taxation guide: Mining in Indonesia* Retrieved from <http://www.pwc.com/id/en/publications/assets/mining-investment-taxation-guide-2014.pdf>
- Reichl, C., Schatz, M., & Zsak, G. (2015). *World Mining Data 2015* Vol. 30. Retrieved from <http://www.wmc.org.pl/sites/default/files/WMD2015.pdf>
- Ricardo, D. (1967). *The Principles of Political Economy and Taxation*. Homewood, IL: Irwin.
- Sandi, P. A. (2015, 19.03). Newmont gets export permit recommendation. *Tempo*. Retrieved from <http://en.tempo.co/read/news/2015/03/19/056651308/Newmont-Gets-Export-Permit-Recommendation->
- Shanghai Metals Market. (2015a). refined copper & concentrates. Retrieved 29.05, 2015a, from <http://www.metal.com/metals/copper>
- Shanghai Metals Market. (2015b). refined nickel. Retrieved 29.05, 2015, from <http://www.metal.com/metals/nickel>

- Shanghai Metals Market. (2015c). nickel ore. Retrieved 29.05, 2015, from <http://www.metal.com/metals/nickel>
- Shanghai Metals Market. (2015d). emm (refined manganese). Retrieved 29.05, 2015, from <http://www.metal.com/metals/manganese>
- Shanghai Metals Market. (2015e). manganese ore. Retrieved 29.05, 2015, from <http://www.metal.com/metals/manganese>
- Shirley, M. M. (2008). Institutions and Development. In C. Ménard & M. M. Shirley (Eds.), *Handbook of New Institutional Economics* (pp. 611-638). Berlin/Heidelberg, Netherland: Springer.
- Skousen, M. (2006). *Big Three in Economics : Adam Smith, Karl Marx, and John Maynard Keynes*. Armonk, NY, USA: M.E. Sharpe, Inc.
- Smith, A. (2001). *Wealth of Nations*. London, GBR: ElecBook.
- Spranz, R., Lenger, A., & Goldschmidt, N. (2012). The relation between institutional and cultural factors in economic development: The case of indonesia. *Journal of Institutional Economics*, 8(4), 459-488. Retrieved from doi:<http://dx.doi.org/10.1017/S1744137412000124>
- SSEK. (2012). Government Regulation No. 24 of 2012 regarding implementation of mineral and coal mining business activities (unofficial translation by SSEK). Retrieved 14.01, 2015, from <http://blog.ssek.com/index.php/2012/03/new-indonesian-mining-regulation-on-foreign-ownership/>
- Statista. (2015a). Major countries in copper mine production worldwide from 2010 to 2014 (in 1000 metric tons). Retrieved 08.04, 2015, from <http://www.statista.com/statistics/264626/copper-production-by-country/>
- Statista. (2015b). Major countries in worldwide nickel mine production from 2010 to 2014 (in metric tons). Retrieved 08.04, 2015, from <http://www.statista.com/statistics/264642/nickel-mine-production-by-country/>
- Statistics Indonesia. (2015a). Population 15 Years of Age and Over Who Worked by Main Industry, 2004 - 2014. Retrieved 05.04, 2015, from <http://bps.go.id/linkTabelStatis/view/id/970>
- Statistics Indonesia. (2015b). Unemployment Rate of Selected Countries (percent), 2004-2013. Retrieved 07.04, 2015, from <http://www.bps.go.id/linkTabelStatis/view/id/983>
- Statistics Indonesia. (2015c). Mining. Retrieved 14.04, 2015, from <http://www.bps.go.id/Subjek/view/id/10#subjekViewTab1|accordion-daftar-subjek3>
- Statistics Indonesia. (2015d). Tabel Ekspor Menurut Komoditi, Tahun 2014. Retrieved 05.04, 2015, from http://www.bps.go.id/all_newtemplate.php
- Statistics Indonesia. (2015e). Export of Copper Ore by Major Countries of Destination, 2002-2013. Retrieved 05.04, 2015, from <http://www.bps.go.id/linkTabelStatis/view/id/1032>
- Statistics Indonesia. (2015f). Gross Domestic Product at Current Market Prices By Industrial Origin (Billion Rupiahs), 2000-2014. Retrieved 05.04, 2015, from <http://www.bps.go.id/linkTabelStatis/view/id/1199>
- Statistics Indonesia. (2015g). *Labor Force Situation in Indonesia* Retrieved from <http://www.ilo.org/public/libdoc/igo/P/76333/?C=N;O=A>
- Statistics Indonesia. (2015h). Export of Nickel Ore by Major Countries of Destination, 2002-2013. Retrieved 05.04, 2015, from <http://www.bps.go.id/linkTabelStatis/view/id/1033>
- Statistics Indonesia. (2015i). Foreign Direct Investment Realization by Economic Sector 1) (million US\$), 2000-2013. from <http://www.bps.go.id/linkTabelStatis/view/id/1318>

- Statistics Indonesia. (2015j). Domestic Direct Investment Realization by Economic Sector 1) (billion rupiahs), 2000-2013. from <http://www.bps.go.id/linkTabelStatis/view/id/1317>
- Subroto. (1998). Recollections of my Career. *Bulletin of Indonesian Economic Studies*, 34(2), 67-92. doi: 10.1080/00074919812331337340
- Sullivan, B. (2013a). Indonesia's mining regulatory regime - export ban revisited. Retrieved from: <http://www.afgventuregroup.com/dispatches/wp-content/uploads/13WAS013-03-Coal-Asia-Mining-Industry-Regulation-in-Indonesia-Export-Ban-Revisited-Article.pdf>
- Sullivan, B. (2013b). *Mining Law & Regulatory Practice in Indonesia: A Primary Reference Source*. Singapore: Singapore: Wiley.
- Supriatna, Y. (2014, 04.08). UPDATE 1-Freeport Indonesia says to resume copper concentrate exports by Wednesday. *Reuters*. Retrieved from <http://www.reuters.com/article/2014/08/04/indonesia-mining-freeport-idUSL4N0QA14F20140804>
- Takashi, S. (2006). Technocracy in Indonesia: A preliminary analysis *RIETI Discussion Paper Series*, (06-E-008). Retrieved from: <http://www.rieti.go.jp/jp/publications/dp/06e008.pdf>
- Taylor, M., & Burton, M. (2014, 30.09). UPDATE 1-Newmont Indonesia restarts copper exports; supply overhang looms. *Reuters*. Retrieved from <http://www.reuters.com/article/2014/09/30/indonesia-newmont-mining-exports-idUSL3N0RV1VI20140930>
- The Jakarta Post. (2014, 04.06.2014). Newmont stops production pending export clarity. *The Jakarta Post*. Retrieved from <http://www.thejakartapost.com/news/2014/06/04/newmont-stops-production-pending-export-clarity.html>
- Trading Economics. (2015a). Indonesia Exports 1960-2015. Retrieved 14.03, 2015, from <http://www.tradingeconomics.com/indonesia/exports>
- Trading Economics. (2015b). Indonesia Imports 1959-2015. Retrieved 14.03, 2015, from <http://www.tradingeconomics.com/indonesia/imports>
- Trading Economics. (2015c). IndIndonesia GDP Annual Growth Rate 2000-2015. Retrieved 19.04, 2015, from <http://www.tradingeconomics.com/indonesia/gdp-growth-annual>
- Transparency International. (2003). Corruption Perceptions Index 2003. Retrieved 16.04, 2015, from http://www.transparency.org/research/cpi/cpi_2003/0/
- Transparency International. (2010). Corruption Perceptions Index 2010. Retrieved 16.04, 2015, from <http://www.transparency.org/cpi2010/results>
- Transparency International. (2014). Corruption Perceptions Index 2014: Results. Retrieved 16.04, 2015, from <http://www.transparency.org/cpi2014/results>
- U.S. Geological Survey. (2015a). Mineral Commodity Summaries. from <http://minerals.usgs.gov/minerals/pubs/commodity/copper/>
- U.S. Geological Survey. (2015b). Mineral Commodity Summaries. from <http://minerals.usgs.gov/minerals/pubs/commodity/nickel/>
- U.S. Geological Survey. (2015c). Mineral Commodity Summaries. Retrieved 03.05, 2015c, from <http://minerals.usgs.gov/minerals/pubs/commodity/tin/>
- U.S. Geological Survey. (2015d). *Mineral Commodity Summaries 2015c* (pp. 196). Retrieved from <http://minerals.usgs.gov/minerals/pubs/mcs/2015/mcs2015.pdf>

- Van der Eng, P. (2002). Indonesia's growth performance in the twentieth century. In A. Maddison, D. S. Prasada Rao, & W. F. Shepherd (Eds.), *The Asian economies in the twentieth century* (pp. 143-179). Cheltenham: Edward Elgar.
- van der Schaar, R. M. A. (2013). Indonesia's Widening Trade Deficit and Increasing Inflation Pressure the Rupiah. Retrieved 18.01, 2015, from <http://www.indonesia-investments.com/news/news-columns/indonesias-widening-trade-deficit-and-increasing-inflation-pressure-the-rupiah/item624?searchstring=global%20demand>
- Widyawan & Partners. (2008). Focus: Indonesia – December 2008 - New Indonesian mining law. Retrieved 22.01, 2015, from <http://www.wnplaw.com/english/pubs/mining.htm>
- Wie, T. K. (2002). The Soeharto era and after: stability, development and crisis, 1966-2000. In H. Dick, V. J. H. Houben, J. T. Lindblad, & T. K. Wie (Eds.), *The Emergence of a national Economy - An Economic history of Indonesia, 1800-2000* (pp. 194-243). Crows Nest, NSW: Allen & Unwin.
- Wilson, A., McMahon, F., Cervantes, M., & Green, K. P. (2013). *Fraser Institute Annual Survey of Mining Companies 2012/2013* K. McCahon (Ed.) Retrieved from <http://www.fraserinstitute.org/uploadedFiles/fraser-ca/Content/research-news/research/publications/mining-survey-2012-2013.pdf>
- Winzenried, S., & Adhitya, F. (2014a). *Energy, Utilities & Mining NewsFlash: Export ban on unprocessed minerals effective 12 January 2014 - three-year reprieve for some, but uncertainty remains* Vol. 50. U. M. G. Global Energy (Ed.) Retrieved from http://www.pwc.com/id/en/energy-utilities-mining-newsflash/assets/eumnewsflash_50.pdf
- Workman, D. (2015). Top Asian Export Countries. Retrieved 03.03, 2015, from <http://www.worldstopexports.com/top-asian-export-countries/699>
- World Bank. (1993). *The East Asian miracle : economic growth and public policy*. Oxford: Published for the World Bank by Oxford University Press.
- World Bank. (2014). *Commodity Markets Outlook: April 2014* Retrieved from <https://openknowledge.worldbank.org/bitstream/handle/10986/18377/877280WP0Box380s0Outlook0April02014.pdf?sequence=1>
- World Bank Group. (2015a). *Commodity Markets Outlook: January 2015* Retrieved from http://www.worldbank.org/content/dam/Worldbank/GEP/GEPcommodities/GEP2015a_commodity_Jan2015.pdf
- World Bank Group. (2015b). *Commodity Markets Outlook: April2015* Retrieved from http://www.worldbank.org/content/dam/Worldbank/GEP/GEPcommodities/GEP2015b_commodity_Apr2015.pdf
- World Bank Group. (2015c). Agriculture, value added (% of GDP). Retrieved 08.01, 2015, from <http://data.worldbank.org/indicator/NV.AGR.TOTL.ZS>
- World Bank Group. (2015d). Industry, value added (% of GDP). Retrieved 08.01, 2015, from <http://data.worldbank.org/indicator/NV.IND.TOTL.ZS>
- World Bank Group. (2015e). Services, etc., value added (% of GDP). Retrieved 08.01, 2015, from <http://data.worldbank.org/indicator/NV.SRV.TETC.ZS>
- Yin, R. K. (2014). *Case study research : design and methods* (5th ed.). Los Angeles, Calif: SAGE.
- Yulisman, L. (2013, 16.12.2013). Govt plan to lift ban on log exports questioned. *The Jakarta Post*, p. 5. Retrieved from <http://www.thejakartapost.com/news/2013/12/16/govt-plan-lift-ban-log-exports-questioned.html>
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2013). *Business research methods* (9th ed. ed.). Australia: South-Western Cengage learning.

APPENDIX 1 – Minimum processing and refining requirements

Table 1.1: “Minimum processing and refining requirements prior to export”

No	Commodity		Processing and/or Refining	Products	Minimum Limit
	Ore	Mineral			
1.	Copper (smelting process)	a. Chalcopyrite b. Borite c. Cuprite d. Covellite	Processing	Copper Concentrates	≥15% Cu
			Refining	a. Copper Cathodes	Cu Metal ≥ 99% Cu
				b. Anode Slime	a. Metal Au ≥ 99%; b. Metal Ag ≥ 99%; c. Bullion Pb ≥ 90%; d. Metal Pd ≥ 99%; e. Metal Pt ≥ 99%; f. Metal Se ≥ 99%; g. Metal Tc ≥ 99%; h. PbO ≥ 98%; i. PbO ₂ ≥ 98%; j. SeO ₂ ≥ 98%; and/or k. Rare metals and rare soil (refer to the requirement for rare metal soil for tin).
	c. Telluride Copper	a. Cu Metal ≥ 99%; b. Metal Te ≥ 9%; c. TeO ₂ ≥ 98%; d. Te (OH) ₄ ≥ 98%.			
Copper (leaching process)	a. Chalcopyrite b. Digenit c. Bornite d. Cuprite e. Covellite	Refining	Metal	a. Metal Cu ≥ 99%; b. Metal Ag ≥ 99%; c. Metal Ag ≥ 99%; d. Metal Pd ≥ 99%; e. Metal Pt ≥ 99%; f. Metal Se ≥ 99%; g. Metal Te ≥ 99%; and/or k. Rare metals and rare soil (refer to the requirement for rare metal soil for tin).	

No	Commodity		Processing and/or Refining	Products	Minimum Limit
	Ore	Mineral			
2.	Nickel and/or cobalt (smelting process) a. Saprolite b. Limonite	a. Pentlandite b. Garnierite c. Serpentinite d. Karolite e. Pyrite f. Goethite	Refining	Nickel Matte, Metal Alloys and Nickel Meta	a. Ni Mate $\geq 70\%$ Ni; b. FeNi $\geq 10\%$ Ni; c. Nickel Pig Iron (NPI) $\geq 4\%$ Ni; d. Ni Metal $\geq 93\%$; e. Fe Metal $\geq 93\%$; and/or f. NiO $\geq 70\%$ Ni.
	Nickel and/or cobalt (leaching process) Limonite			Metal, Metal Oxide, Metal Sulfide, mix hydroxide/sulfide precipitate, and hydroxide nickel carbonate	a. Metal Ni $\geq 93\%$; b. Mix Hydroxide precipitate (MHP) $\geq 25\%$ Ni c. Mix sulphide precipitate (MSP) $\geq 45\%$ Ni; d. Hydroxide Nickel Carbonate (HNC) $\geq 40\%$ Ni; e. NiS $\geq 40\%$ Ni; and/or f. Co Metal $\geq 93\%$ g. CoS $\geq 40\%$ Co; h. Metal Cr $\geq 99\%$; i. Cr2O3 $\geq 40\%$; and/or j. MnO2 contains Mn $\geq 15\%$.
	Nickel and/or cobalt (reduction process) a. Saprolit b. Limonit		Refining	Metal Alloys	a. FeNispon (Sponge FeNi) $\geq 4\%$ Ni; b. Luppen FeNi $\geq 4\%$ Ni; and/or c. Nugget FeNi $\geq 4\%$ Ni.
3.	Bauxite	a. Gibbsite b. Diaspora c. Boehmite	Refining	Metal Oxide / Hydroxide and metal	a. Smelter grade alumina $\geq 98\%$ Al2O3 b. Chemical grade alumina $\geq 99\%$ Al2O3 $\geq 99\%$ Al(OH)3 c. Metal Al $\geq 99\%$
4.	Iron ore	a. Hematite b. Magnetite c. Pyrite	Processing	Iron concentrate	$\geq 62\%$ Fe
		Goethite/ laterite	Processing	Iron concentrate laterite	$\geq 51\%$ Fe Rate (Al2O3 + SiO2) $\geq 10\%$
			Refining	Sponge, metal and metal alloys	Sponge iron $\geq 75\%$ Fe Pig iron $\geq 90\%$ Fe; and/or Metal alloys $\geq 88\%$ Fe

No	Commodity		Processing and/or Refining	Products	Minimum Limit
	Ore	Mineral			
5.	Iron sand	a. Titanomagnetit b. Ilmenite	Processing	Iron sand concentrate Pellet	$\geq 58\%$ Fe; and/or $\geq 56\%$ Fe.
			Refining	Metal Slag	a. Sponge iron $\geq 75\%$ Fe; and/or b. Pig iron $\geq 90\%$ Fe; a. $TiO_2 \geq 90\%$; b. $TiCl_4 \geq 98\%$; c. Metal Alloys $\geq 65\%$ Ti d. $V_2O_5 \geq 90\%$ e. Metal Alloys $\geq 65\%$ V; and/or f. Rare metals and rare soil (refer to the requirement for rare metal soil for tin).
6.	Tin	Cassiterite	Processing	By product concentrate zircon, ilmenite and rutile	Refer to the requirements for zircon, ilmenite, rutile in zircon non metal mineral.
				Concentrate monazite and xenotime	a. Metal oxide rare soil (REO) $\geq 99\%$; b. Metal hydroxide rare soil (REOH) $\geq 99\%$; c. Metal rare soil (REO) $\geq 99\%$;
			Refining	Metal	Metal Sn $\geq 99.90\%$
				Slag	a. W $\geq 90\%$ b. $Ta_2O_5 \geq 90\%$ c. $Nb_2O_5 \geq 90\%$ d. $Sb_2O_5 \geq 90\%$
7.	Manganese	a. Pirolusit b. Psilomelan c. Braunit d. Manganit	Processing	Manganese Concentrate	$\geq 49\%$ Mn
			Refining	Metal, Metal alloys and Manganese Chemical	a. Ferro Manganese (FeMn), Mn $\geq 60\%$ b. Silica Manganese (SiMn), Mn $\geq 60\%$ c. Manganese Monoxide (MnO), Mn $\geq 47.5\%$ MnO ₂ $\leq 4\%$; d. Manganese Sulfide (MnSO ₄) $\geq 90\%$; e. Manganese Chloride (MnCl ₂) $\geq 90\%$ f. Manganese Carbonate Synthetic (MnCO ₂) $\geq 90\%$; g. Kalium Per,amhanat (KMnO ₄) $\geq 90\%$; h. Manganese Oxide (Mn ₃ O ₄) $\geq 90\%$; i. Manganese Dioxide Synthetic (MnO ₂) $\geq 98\%$; and/or j. Manganese Sponge (Direct Reduced k. Manganese) MN $\geq 49\%$ MnO ₂ $\leq 4\%$.

No	Commodity		Processing and/or Refining	Products	Minimum Limit
	Ore	Mineral			
8.	Lead and Zinc	a. Galena b. Spalerite c. Smithsonite d. Hemimorphite (calamide)	Processing	Zinc Concentrate	≥ 52% Zn
			Refining	Lead Concentrate	≥ 57% Pb
9.	Gold	a. Native b. Associated minerals	Refining	Metal, Metal oxide/hydroxide	a. Bullion ≥ 90% Pb; b. PbO ≥ 98%; c. Pb(OH)2 ≥ 98%; d. PbO2 ≥ 98%; e. Bullion ≥ 90% Zn; f. ZnO ≥ 98%; g. ZnO2 ≥ 98%; h. Zn (OH)2 ≥ 98%; i. Metal Au ≥ 99%; j. Metal Ag ≥ 99%.
10.	Silver	a. Native b. Associated minerals	Refining	Precious metal	a. Metal Au ≥ 99% b. Metal Au ≥ 99%
11.	Chromium	Chromite	Refining	Metal and alloys	a. Metal Cr ≥ 99% b. Metal Alloys ≥ 60% Cr

Source: (Winzenried & Adhitya, 2014a)

APPENDIX 2 – Employment

Table 2.1: “Employment within the Indonesian mining and quarrying sector, 2009-2014”

MAIN INDUSTRY	2009	2010	2011	2012	2013	2014
<i>Mining and Quarrying</i>	1 183 110	1 251 297	1 397 799	1 609 135	1 492 570	1 529 740
Total employment	106 582 006	109 366 643	109 731 094	113 283 425	114 345 342	116 398 974
M&q in % of total employment	1,110 %	1,144 %	1,274 %	1,420 %	1,305 %	1,314 %

Source: (Statistics Indonesia, 2015a)

Table 2.2: “Employment within the Indonesian mining and quarrying sector, 2013-2014”

MAIN INDUSTRY	2013				2014		
	Feb	May	Aug	Nov	Feb	May	Aug
<i>Mining and Quarrying</i>	1 555 564	1 608 669	1 420 767	1 636 646	1 623 109	1 508 549	1 436 370
Total employment	114 021 189	114 586 184	110 804 041	115 546 781	118 169 922	118 864 477	114 628 026
M&q in % of total employment	1,364 %	1,404 %	1,282 %	1,416 %	1,374 %	1,269 %	1,253 %

Source: (Statistics Indonesia, 2015a) (Statistics Indonesia, 2015g)

APPENDIX 3 – Production of minerals in Indonesia

e – Estimated numbers

Table 3.1: “Volume of Indonesian copper production (thousand metric ton), 2006-2014”

COMMODITY	2006	Δ in %	2007	Δ in %	2008	Δ in %	2009	Δ in %	2010	Δ in %	2011	Δ in %	2012	Δ in %	2013	Δ in %	2014e
Copper																	
<i>Production in Indonesia</i>	816	-2,3 %	797	-18,3 %	651	53,0 %	996	-12,4 %	872	-37,7 %	543	-33,7 %	360	40,0 %	504	-20,6 %	400
<i>Total World Production</i>	15 100	2,0 %	15 400	0,0 %	15 400	3,2 %	15 900	0,0 %	15 900	1,3 %	16 100	5,0 %	16 900	8,3 %	18 300	2,2 %	18 700
<i>World Production Rank</i>	6		6		7		4		5		9		13		10		13
<i>Indonesian production in % of total</i>	5,40 %		5,18 %		4,23 %		6,26 %		5,48 %		3,37 %		2,13 %		2,75 %		2,14 %

Source: (U.S. Geological Survey, 2015a)

Table 3.2: “Volume of Indonesian nickel production (thousand metric ton), 2006-2014”

COMMODITY	2006	Δ in %	2007	Δ in %	2008	Δ in %	2009	Δ in %	2010	Δ in %	2011	Δ in %	2012	Δ in %	2013	Δ in %	2014e
Nickel																	
<i>Production in Indonesia</i>	140	63,6 %	229	-15,7 %	193	5,2 %	203	14,3 %	232	25,0 %	290	-21,4 %	228	93,0 %	440	-45,5 %	240
<i>World Production</i>	1 580	5,1 %	1 660	-5,4 %	1 570	-10,8 %	1 400	13,6 %	1 590	22,0 %	1 940	14,4 %	2 220	18,5 %	2 630	-8,7 %	2 400
<i>World Production Rank</i>	4		3		4		2		2		1		4		2		3
<i>Indonesian production in % of total</i>	8,86 %		13,80 %		12,29 %		14,50 %		14,59 %		14,95 %		10,27 %		16,73 %		10,00 %

Source: (U.S. Geological Survey, 2015b)

Table 3.3: “Volume of Indonesian tin production (thousand metric ton), 2006-2014”

COMMODITY	2006	Δ in %	2007	Δ in %	2008	Δ in %	2009	Δ in %	2010e	Δ in %	2011	Δ in %	2012	Δ in %	2013	Δ in %	2014e
Tin																	
<i>Production in Indonesia</i>	90	13,3 %	102	-5,9 %	96	-42,7 %	55	1,8 %	56	-25,0 %	42	-2,4 %	41	131,7 %	95	-11,6 %	84
<i>World Production</i>	302	6,0 %	320	-6,6 %	299	-13,0 %	260	1,9 %	265	-7,9 %	244	-1,6 %	240	22,5 %	294	0,7 %	296
<i>World Production Rank</i>	2		2		2		2		2		2		2		2		2
<i>Indonesian production in % of total</i>	29,80 %		31,88 %		32,11 %		21,15 %		21,13 %		17,21 %		17,08 %		32,31 %		28,38 %

Source: (U.S. Geological Survey, 2015c)

APPENDIX 4 - Indonesian mineral export

Table 4.1: “Value of Indonesian mining export (thousand USD), 2007-2014”

COMMODITIES	2007	Δ in %	2008	Δ in %	2009	Δ in %	2010	Δ in %	2011	Δ in %	2012	Δ in %	2013	Δ in %	2014
Mining products	5 382 761	-34,77 %	3 510 979	75,11 %	6 148 070	25,12 %	7 692 584	-4,97 %	7 310 421	-30,21 %	5 102 058	29,11 %	6 587 117	-69,32 %	2 020 613
<i>Copper ore</i>	4 428 187	-47,69 %	2 316 366	132,27 %	5 380 287	17,56 %	6 325 227	-25,58 %	4 706 934	-45,48 %	2 565 990	16,90 %	2 999 560	-44,21 %	1 673 548
<i>Nickel ore</i>	615 381	-18,12 %	503 860	-42,14 %	291 554	97,11 %	574 683	131,98 %	1 333 171	9,39 %	1 458 409	15,01 %	1 677 366	-94,88 %	85 913
<i>Bauxite</i>	106 367	90,37 %	202 491	18,55 %	240 056	89,10 %	453 951	68,99 %	767 138	-16,89 %	637 597	106,84 %	1 318 775	-96,38 %	47 742
<i>Other mining products</i>	232 826	109,71 %	488 262	-51,63 %	236 173	43,42 %	338 723	48,55 %	503 179	-12,54 %	440 061	34,39 %	591 415	-63,92 %	213 410
Total non oil and gas export	93 142 172	15,83 %	107 884 879	-8,21 %	99 029 573	22,50 %	121 307 379	26,16 %	153 042 030	-0,83 %	151 775 118	-2,16 %	148 500 805	-1,32 %	146 537 518
Mining in % of total non oil and gas export	5,78 %		3,25 %		6,21 %		6,34 %		4,78 %		3,36 %		4,44 %		1,38 %
Total export	118 014 200	18,30 %	139 606 099	-14,30 %	119 645 743	25,34 %	149 965 836	27,43 %	191 108 701	-1,97 %	187 346 552	-2,81 %	182 089 227	-3,73 %	175 289 586
Mining in % of total export	4,6 %		2,5 %		5,1 %		5,1 %		3,8 %		2,7 %		3,6 %		1,2 %

Source: (Bank Indonesia, 2015b) (Bank Indonesia, 2015c)

Table 4.2: “Volume of Indonesian mining export (thousand metric ton), 2007-2014”

COMMODITIES	2007	Δ in %	2008	Δ in %	2009	Δ in %	2010	Δ in %	2011	Δ in %	2012	Δ in %	2013	Δ in %	2014
Mining products	31 234,00	20,46 %	37 626,00	-1,29 %	37 141,00	61,31 %	59 911,59	60,11 %	95 924,85	1,42 %	97 289,62	58,38 %	154 085,96	-86,43 %	20 908,00
<i>Copper ore</i>	1 805,00	-41,77 %	1 051,00	135,59 %	2 476,00	-1,08 %	2 449,29	-39,57 %	1 480,01	-25,06 %	1 109,06	31,19 %	1 454,94	-50,86 %	715,00
<i>Nickel ore</i>	9 145,00	13,91 %	10 417,00	2,19 %	10 645,00	69,56 %	18 049,58	107,62 %	37 473,93	25,16 %	46 900,91	36,95 %	64 232,38	-93,33 %	4 284,00
<i>Bauxite</i>	11 563,00	34,51 %	15 553,00	-1,86 %	15 264,00	69,75 %	25 910,70	52,96 %	39 633,69	-24,81 %	29 799,16	86,44 %	55 556,89	-96,24 %	2 087,00
<i>Other mining products</i>	8 721,00	21,60 %	10 605,00	-17,44 %	8 756,00	54,20 %	13 502,02	28,40 %	17 337,22	12,36 %	19 480,49	68,59 %	32 841,75	-57,91 %	13 822,00

Source: (Bank Indonesia, 2015d)

APPENDIX 5 – Gross Domestic Product at current market prices

Table 5.1: “Gross Domestic Product at current market prices by industrial origin (Billion Rupiah) 2003-2014”

COMMODITIES	2003	Δ in %	2004	Δ in %	2005	Δ in %	2006	Δ in %	2007	Δ in %	2008	Δ in %
Mining and Quarrying	167 572,3	22,49 %	205 252,0	50,55 %	309 014,1	18,61 %	366 520,8	20,21 %	440 609,6	22,86 %	541 334,3	9,37 %
<i>Non-Oil and Gas Mining</i>	53 313,2	22,15 %	65 122,4	60,62 %	104 599,1	24,97 %	130 716,0	22,61 %	160 267,1	21,85 %	195 286,3	30,19 %
Total Gross Domestic Product	2 013 674,6	14,01 %	2 295 826,2	20,84 %	2 774 281,1	20,36 %	3 339 216,8	18,32 %	3 950 893,2	25,25 %	4 948 688,4	13,29 %
Non-oil and gas mining in % of total GDP	2,65 %		2,84 %		3,77 %		3,91 %		4,06 %		3,95 %	

COMMODITIES	2009	Δ in %	2010	Δ in %	2011	Δ in %	2012	Δ in %	2013*	Δ in %	2014**
Mining and Quarrying	592 060,9	21,56 %	719 710,1	21,85 %	876 983,8	10,89 %	972 458,4	5,54 %	1 026 297,0	3,16 %	1 058 750,2
<i>Non-Oil and Gas Mining</i>	254 242,7	30,97 %	332 970,0	19,42 %	397 629,1	16,10 %	461 651,0	4,59 %	482 823,2	-0,57 %	480 081,2
Total Gross Domestic Product	5 606 203,4	14,99 %	6 446 851,9	15,08 %	7 419 187,1	10,94 %	8 230 925,9	10,40 %	9 087 276,5	11,09 %	10 094 928,9
Non-oil and gas mining in % of total GDP	4,54 %		5,16 %		5,36 %		5,61 %		5,31 %		4,76 %

Source: (Statistics Indonesia, 2015f)

* “Preliminary figures”

** “Very preliminary figures”

APPENDIX 6 - Direct Capital Investment by sector

Table 6.1: “Domestic direct investment by sector in Indonesia (billion rupiah), 2006-2014”

SECTOR	2006	Δ in %	2007	Δ in %	2008	Δ in %	2009	Δ in %	2010	Δ in %	2011	Δ in %	2012	Δ in %	2013	Δ in %	2014
Primary Sector	3599		4377,4		1757,7		4415,9		12 131,4		16 526,3		20 369,1		25 715,5		16 520,6
Mining & Quarrying	21,0	3192 %	691,4	-25 %	519,2	246 %	1 793,9	71 %	3 075,0	124 %	6 899,2	52 %	10 480,9	79 %	18 762,2	-83 %	3 140,7
Secondary Sector									25 612,6		38 533,8		49 888,9		51 171,1		59 034,7
Tertiary Sector									22 882,2		20 940,6		21 924,0		51 263,9		80 571,0
TOTAL	20 788,4		34 878,7		20 363,4		37 799,9		60 626,3		76 000,7		92 182,0		128 150,6		156 126,3
Mining in % of total DDI	0,10 %		1,98 %		2,55 %		4,75 %		5,07 %		9,08 %		11,37 %		14,64 %		2,01 %

Source: (Indonesia Investment Coordination Board, 2015b; Statistics Indonesia, 2015j)

Table 6.2: “Foreign direct investment by sector in Indonesia (million USD), 2006-2014”

SECTOR	2006	Δ in %	2007	Δ in %	2008	Δ in %	2009	Δ in %	2010	Δ in %	2011	Δ in %	2012	Δ in %	2013	Δ in %	2014
Primary Sector	533,00		599,10		335,70		463,00		3 033,90		4 883,17		5 933,07		6 471,84		6 991,27
Mining	98,50	214 %	309,60	-41 %	181,40	68 %	304,50	623 %	2 200,55	64 %	3 619,22	18 %	4 255,45	13 %	4 816,36	-3 %	4 665,11
Secondary Sector									3 337,30		6 789,65		11 769,95		15 858,78		13 019,36
Tertiary Sector									9 843,57		7 801,72		6 861,65		6 286,91		8 519,02
TOTAL	5 977,00		10 341,40		14 871,40		10 815,20		16 214,77		19 474,53		24 564,67		28 617,54		28 529,65
Mining sector in % of total FDI	1,65 %		2,99 %		1,22 %		2,82 %		13,57 %		18,58 %		17,32 %		16,83 %		16,35 %

Source: (Indonesia Investment Coordination Board, 2015a; Statistics Indonesia, 2015i)

APPENDIX 7 – Commodity prices

Table 7.1: “Nominal price index of metal, 2009-2016”

COMMODITY	2009	Δ in %	2010	Δ in %	2011	Δ in %	2012	Δ in %	2013	Δ in %	2014	Δ in %	2015f	Δ in %	2016f
Metals	68	47,06 %	100	13,00 %	113	-15,04 %	96	-5,21 %	91	-6,59 %	85	-14,12 %	73	2,74 %	75

Source: (World Bank, 2014) (World Bank Group, 2015a)

f = forecast

APPENDIX 8 – Value of concentrate/ore and processed minerals

Table 8.1: “Value of refined copper and copper concentrate, 29.05.2014”

Copper	Average prices 29.05.2015	Value in USD
<i>Refined copper = 99.95%</i>	44,450 RMB/mt	7255.01 USD/mt
<i>Copper concentrate ≥ 26%</i>	95 USD/mt	95.00 USD/mt

Source: (Shanghai Metals Market, 2015a)

Table 8.2: “Value of refined nickel and laterite nickel ore, 29.05.2014”

Nickel	Average prices 29.05.2015	Value in USD
<i>Refined nickel ≥ 99.9%</i>	96,900 RMB/mt	15815.80 USD/mt
<i>Laterite nicke ore (1.9-2.0%)</i>	595 RMB/wmt	97.11 USD/wmt
<i>Laterite nicke ore (1.8-1.9%)</i>	525 RMB/wmt	85.69 USD/wmt
<i>Laterite nicke ore (0.9-1.0%)</i>	175 RMB/wmt	28.56 USD/wmt

Source: (Shanghai Metals Market, 2015b, 2015c)

Table 8.3: “Value of refined manganese and manganese ore, 29.05.2014”

Manganese	Average prices 29.05.2015	Value in USD
<i>Refined manganese ≥ 99.7%</i>	10,250 RMB/mt	1672.98 USD/mt
<i>Manganese ore = 46%, lump</i>	25.25 RMB7mtu	4.12 USD/mtu

Source: (Shanghai Metals Market, 2015d, 2015e)

