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City Network Analysis in Indonesia: An Investigation of the Most Powerful Cities in Indonesia in Terms of Foreign Direct Investment and Competitiveness

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Indonesia

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Summary

In terms of globalization, cities in the world now strongly compete to attract foreign direct investment. There is no more territorial boundaries in the global market and this condition has encouraged cities to create better business atmosphere and be more competitive than others. Indonesia, as a country, unfortunately shows poor performance in competitiveness compared to other South East Asian Nations member such as Malaysia and Singapore.

The aim of this research is to understand the role and power of each big city in Indonesia in terms of attracting foreign direct investment. By assessing each role and power it is expected that the government could formulate better policies to improve each cities'competitiveness based on its potential and strength. It is also important to know each cities' competitors to formulate the best strategy to compete in global

The results showed that Western Indonesia is more attractive for the foreign investors than Eastern Indonesia. More than 90% of total Foreign Direct Investment (FDI) flowed into Western part of Indonesia. The fact that Western Indonesia has better integrated infrastructure availability and its topography have made Western Indonesia performs better in attracting FDI. This phenomenon also proves that Eastern part of Indonesia is still far behind the Western part even though Eastern Indonesia has many potential commodities to explore. It is also found that the difference of degree are very large varied among provinces. Most competitive cities are coming from most competitive provinces which are located mostly in Jawa, Sumatera and Kalimantan.

It is also revealed that human resource capability, infrastructure availability, and banking access are the most important factors to attract investment in Indonesia. It is due to the fact that most investments are high-skill and high-technology based while the cities geographically are difficult to reach. In Eastern Indonesia, these factors became very crucial because most provinces are consists of islands, oceans, or mountainous land such in Papua.

Finally, it is also found that investment in Indonesia so far are not strongly correlated to regional economic and social aspect. Investment has not directly reduced poverty, unemployment, illiteracy and improved income per capita. It is possible because Indonesia has a high discrepancy among rich and poor people, where investments do not trickle down to the poor people.

Keywords: Foreign Direct Investment, globalization, centrality, competitiveness, location quotient

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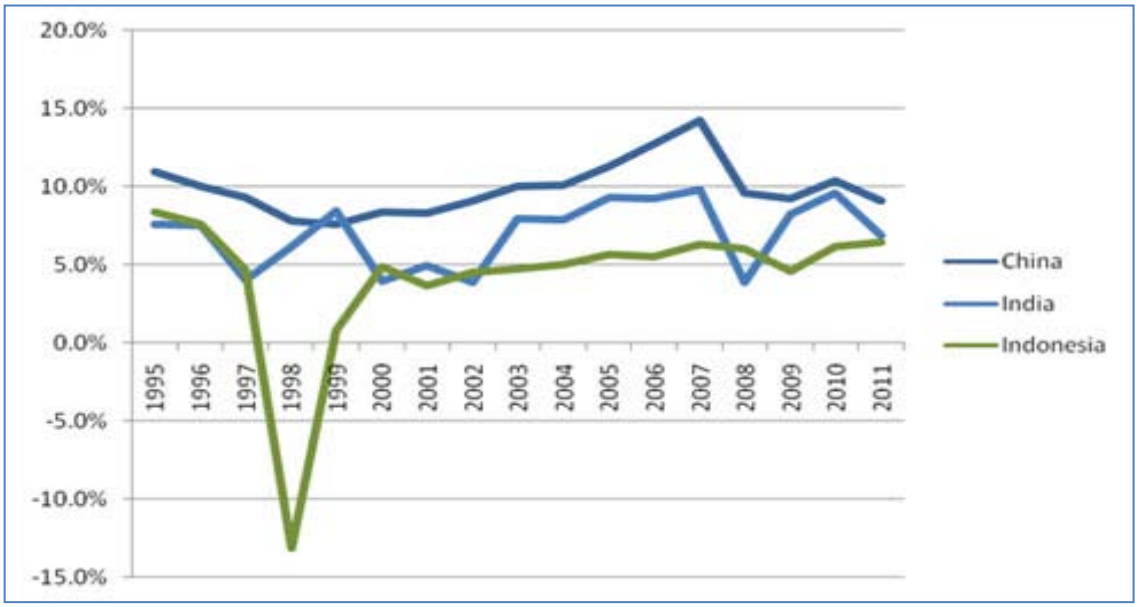
Chapter 1: Introduction

1.1 Research Background

Some predictions put Indonesia as one of the world's top ten economies in 2030. Not only growing fast, Indonesian annual economic growth rate was also stabile around 5% between years 2001 and 2011. Indonesian economic structure has shifted dynamically from the primary sector to secondary sector which is more efficiency-driven. Further, the financial and service sectors are also growing rapidly to satisfy the demands of young people and create more opportunities throughout creative industries. Recently, Indonesia reduces its tendency to directly export all the raw materials and tries to improve the added value through manufacturing industries based on natural resources spread in many provinces. These labor-intensive industries absorb significant number of employees which brings positive impacts for the national economy. It reduces unemployment and increases regional income. Moreover, in certain cities there are initiatives to create exclusive economic zones to accelerate economic growth. Indonesian government provides some privileges to attract foreign investors and build trust. As the result, based on total GDP, Indonesia is now positioned at position 18th among the strongest economies which puts Indonesia as one of the G20 countries.

Figure 1. Growth Rate Indonesia-China-India Period 1995-2011 (%)



In the last decade, political and economic stability in Indonesia are quite impressive, which makes it interesting for foreign investors to invest in both, capital and real market. Foreign Direct Investment in Indonesia has reached the highest record in 2012 with about USD 8, 1 billion. Indonesia has become one of the most attractive countries for investment in the middle of the financial crisis in America and Europe. Based on The United Nations Conference on Trade and Development (UNTCAD), Indonesia is now positioned as 4th strongest country for investment growth after China, the United

States and India. It supports economic growth above 6% percent per year. It is also influenced by a national policy by government through the "Master plan of Acceleration and Expansion of Indonesian Economic Development" since 2010. This master plan is expected to absorb USD 400 billion by 2015. It needs USD 100 billion for the first phase.

Some important questions then come up: Is it realistic to achieve a position as one of the strongest economies in the middle of negative issues which are consistently faced by the country such as terrorism, security, human rights, deforestation and many others ? Which sector will be the leader of the national economy in the future? And which cities are quite competitive to compete with other world cities in global markets to support the national economy?

These questions became relevant due to a discrepancy in development among regions, which is still a big issue in Indonesia. It is obvious that some cities develop faster than others. They have a strategic role in regional development as a service nodes, that have ties to the small towns and hinterlands, and also ties with other large cities. Moreover, in terms of globalization, big cities are connected to international markets, to attract global capital and compete in international trade. The more ties a city has, the higher its position will be in urban hierarchy (Friedmann, 1995). A world city would play a role as main producer of goods and services even though it has fewer natural resources than others.

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1.2 Problem Formulation

With all advantages they have, big cities grow more competitive than others. Data showed that the most competitive cities in Indonesia are located in Western Indonesia (Java and Sumatera Island). Although Java is not the biggest island in Indonesia, more than 50 percent of the population lives here. Java also contributes 58 percent of total GDP, while Sumatera contributes almost 25 percent. Positioned in the middle of Indonesia, Java is connected to almost all cities over the country. On the other hand, Sumatera is located in the western part that lies adjacent to other ASEAN countries such as Malaysia, Singapore and Thailand. Sumatera has at least 3 international ports while Java has 2 international ports. Having potential natural resources, Sumatera becomes a target for investment in agriculture and mining sector, while Java becomes an agglomeration of industries and services. Contrary, different conditions arise in Eastern Indonesia. Its topography and lack of infrastructure has caused less contributions to the national economy.

Depending on agriculture and the mining sector, Eastern Indonesia attracts less investment in manufacturing industries than Western Indonesia. Further, since its position in the global market is less strategic than Western Indonesia, it leads to dependency of Java as intermediary for export and import activities. Eastern Indonesia as a region shares less than 20 percent of total GDP Indonesia. Nevertheless, some cities have slightly grown as potential big city such as Lombok (Nusa Tenggara Barat) and Makassar (Sulawesi Selatan/South Sulawesi). Those cities have become a gateway for other cities in Eastern Indonesia. Makassar has been able to be as competitive as

other big cities in Western Indonesia, and Lombok is now popular as a new alternative tourism destination in Eastern Indonesia.

Based on those circumstances, it is important to investigate what is the position of big cities in Indonesia on the regional, national and global level. Is it true that Western Indonesia is more competitive than Eastern Indonesia based on its position and centrality. Moreover, it is also important to assess the relationship between centrality, competitiveness and socio-economic performances; since competitiveness and centrality are expected to drive economic performances and to overcome poverty

What is the position of big cities in Indonesia on the regional, national and global level in terms of centrality and competitiveness?

1.3 Research Context

Foreign Direct Investment has become an important topic discussed in Indonesian economy. The first policy issued by Indonesian government was the " Law of Foreign Investment" in 1967. This policy considers investment plays an important role in development. FDI in Indonesia can no longer be separated from the three main problems of economic, political and legal origin. Government realized that foreign direct investment is able to improve economic activities which lead to an acceleration of economic growth. Foreign direct investment is important to mobilize funds and improve the economic structure. For developing countries, foreign direct investment could help establishing of high-cost and high-technology industries which are impossible to be established by domestic investors. With the provision of infrastructure, the establishment of new industries, and intensified use of resources, and opening new areas, FDI will create employment for people (Alfaro et.all,2003)

Moreover, the transfer of technologies will improve the skills of the local workforce, increase marginal productivity, and will ultimately improve the overall labour wage, which means improving local and state welfare. These circumstances suggest that foreign capital tends to raise productivity, performance and local and national income.

In terms of globalization, cities in the world now compete to attract foreign direct investment. There is no more territorial boundaries in the global market and this condition has encouraged cities to create better business atmosphere and be more competitive than others. Indonesia, as a country, unfortunately shows poor performance in competitiveness compared to other South East Asian Nations member such as Malaysia and Singapore. Based on global competitiveness ranking, Indonesia has position at 144th, which is still far behind from Singapore (1st) and Malaysia (40th). But, based on cash inflow, Indonesia is now one of the favourite destinations for investment. It means that the rank of competitiveness is not the only reason why investors put money to Indonesia. The high potential of natural resources and improvement in technology, which varies among regions, are also important issues for investors. After the implementation of the decentralization system in 1999, Indonesia has become more democratic, and the local governments have become more creative in their development policies to improve local economies and attract investment. However, these local policies are still integrated with the national investment policies.

Based on that new system and regulation, cities in Indonesia are now known globally and compete with each other to attract foreign investors. Relying on their natural

resources, cities try to create a better atmosphere to attract investors through many ways such as developing infrastructures, efficiency on bureaucracy, and improving policy and regulations. Although still lacking low-skill employment and technology, this effort has shown better results in years. Some cities developed better than others and also go global.

This research assesses the FDI condition in Indonesia in terms of competitiveness and centrality after 2007. This is the recovery period for Indonesia after the economic crisis in 1997. In 2007, all macroeconomic indicators showed the better performance of business atmosphere, country risk level, better performance of bank institution and foreign direct investment funds, trust of government has improved though many constraints such as bureaucracy and low of law enforcement are still exist.

1.4 Research Objectives

The aim of this research is to understand the role and power of each big city in Indonesia in terms of attracting foreign direct investment. By assessing each role and power it is expected that the government could formulate better policies to improve each cities'competitiveness based on its potential and strength. It is also important to know each cities' competitors to formulate the best strategy to compete in global markets.

1.5 Research Questions

Research questions for this thesis are:

1.3.1. How far does centrality performance (location factor and in degree) determine competitiveness?

1.3.1.1 Is there any complementarity among cities in Indonesia?

1.3.1.2 Has regional competitiveness occurred within the entire nation?

1.3.1.3 Has regional competitiveness led to global competitiveness for the cities?

1.3.2 What is the position of big cities in Indonesia on the regional, national and global level?

1.3.2.1 Which city is the most powerful and competitive in Indonesia?

1.3.2.2 Is it true that cities in Western Indonesia are more powerful and centralized than cities in Eastern Indonesia?

1.3.2.3 Which sector is the most attractive for investment for each city and region?

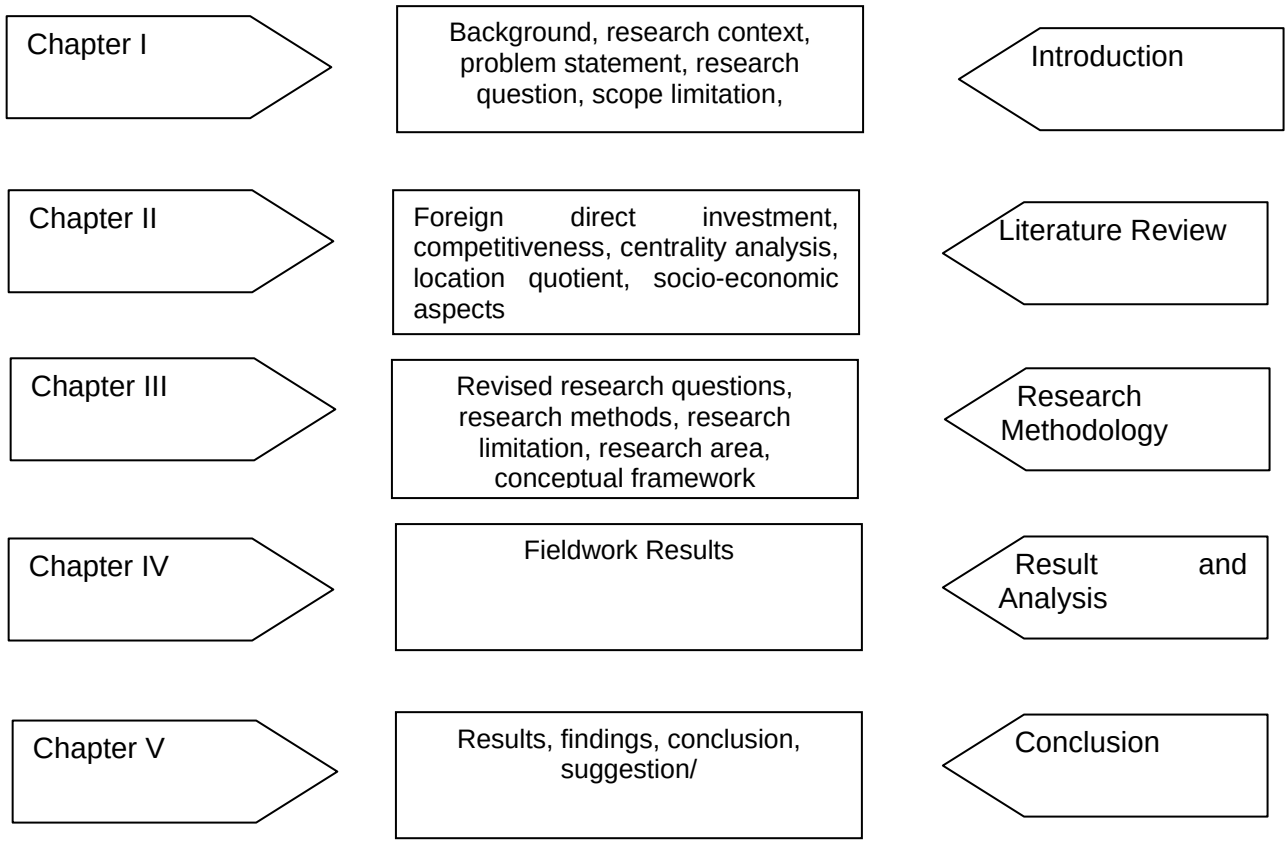
1.6 Significance of the study

Understanding positioning in global markets is important for the city and country to create a proper strategy in the future. Better understanding will lead to better policies. Besides, it is also important for local government in decentralization era to understand city performances to ensure the equality and reduce the disparity. Based on the fact that Western Indonesia ismore developed than Eastern Indonesia and more than 50 percent of GDP contribution was from Java Island, local governments should be more creative and tactical in improving local welfare. Partnership between local and national government to improve cities' performance in global network is important to improve the level of competitiveness of each city.

1.7 Scope and Study Limitation

This study is conducted in Indonesia, focused on city networks and its competitiveness on national, regional and global level. The study looks into the potency of big cities in Indonesia in attracting foreign direct investment, the origin of investors and sectors. For the location factors investigation, the researcher had chosen 37 cities in Indonesia, including 33 capital cities and 4 other strong economies for this research. There are more than 400 cities in Indonesia but due to time constraints this research only examines 37 big cities.

1.8 Structure of the Study



Chapter 2. Literature Review

2.1 Introduction

This research is about centrality, competitiveness and its correlation to the socio economic performance in Indonesia. Centrality analysis focuses on the position of cities on national, regional and global level; while competitiveness analysis focuses on how a city could be attractive for investments. As a new research in Indonesia, I will also explain the concept of, complementarity and cluster economics, since Indonesia geographically has various topographical conditions which probably will influence economic performances and city networks in spatial context.

2.2 World Cities and Centrality Analysis

What is a world city? Hall (1996) described a world city as a place , where "a quite disproportionate part of the world's business is conducted", including the spread of political power. Hall mentioned some important sectors which determined whether a city could be categorized as a world city, namely banking and finance, transport and communication, and the world media.
On the other hand, Friedmann and Wolff argued that there is no imperial city anymore but a city which has network connection and an important position with a large amount of capital to organize the world for efficient profit (Friedmann and Wolff, 1982). The strong point of Friedmann and Wolff is the network of global cities, where without the network of global cities it is impossible to establish the world spanning system. Sassen (2001) argued that a global city, (she used the term global city instead of world city), is specified by implementing global flows (mostly enhancing global telecommunication sector) as it should be a powerful city in the world as the historical named of the term world city should proposed (cf.Hall 1966; Brandel 1992 (1984), both terms recently popular. In short, Sassen (2001) supports Halls' argument that the most important contributors for the global city are producer services such as banking, accounting, insurance and law, which are powerful in directing global funds based on their commanding functions. These specific descriptions by Sassen are now relevant in world city research.

Friedmann (1996) mentioned that world cities are 'basing points 'for global capital which has 2 important impacts or results. First, the world city itself is not (or at least not necessarily) the node of investment although some capital should be required; and second, the world city is a node of control for this capital. Friedmann (1986) determines world cities in the framework of the capitalist system, it includes labor division as a part of them. In one side, this labor division will strongly influence internal development of the city, on the other; it will connect the world cities to other production nodes around the world where the respective form of labor division also happened. This connection among the world cities and other nodes of production has been assessedless, but it is important to determine urbanization processes as other issues besides the main factor that a city is powerful in rank and list of world city research.

Friedmann used a broader defined group of functions to determine world city status than Sassen. Friedmann included the political factors, communication, transport which also influence the urban life; while Sassen get it narrowed to one category of producer service which is referred to a business service by Friedmann namely insurance, banking, financial services, legal services, accounting and professional and real estate's (Sassen 2001). Sassen though that this selection of producer services is highly centralized and concentrated and has more global control capability than other sectors such as manufacturing industries. Therefore, Sassen focused more on the characteristic of producer services which need specialized input to control global networks than manufacturing industries characteristics which dispersed to multiple nodes of production sites.

Friedmann (1986) then came up with three more arguments about world cities. First, he argued that world cities' function to control global network will directly result in labor division: highly-educated, well paid professional on one side and low skilled workers on the other side. Second, world cities will be the main destination for migration whether internal the city and also international labor. Third, the change of jobs in world cities will generate division in space and class, which are also present at regional and global level. These arguments lead to the correlation of labor division and the discrepancy outcome at various levels. In these arguments, Friedmann only divided labor migrants into internal and international.
While Sassen (2001) made it specific that most immigrants come from the serving class in global cities. This made the polarization of labor class become highly connected to the polarization of cities. Means, cities which had more producer services will absorb more labor forces than others.

Sassen then provided a concept how world cities get connected to their peripheries through gateway cities. Since there will be more cities than leading financial centers in the world, in terms of labor division among global cities, they will fulfill gateway functions that connect the investment opportunities to the global tracks of capital. Meanwhile, gateway functions are less important for global flows of capital, their main function will rather be to link two levels of global and local than to provide innovations. Both Sassen and Friedmann suggested that the world cities system is hierarchical. And Friedman stressed that world cities will play important roles differently on regional, national and international level. However, their importance on lower level will be much lower than the function on the higher level. The function in regional level will much lower than the function in international level. Friedmann added that the boundaries among these functions were not defined by the administrative or political area but by the interaction models. And the cities could be ranked based on the economic power they command. And last, the world city system will lead a social class which is described as a share of common economic sectors and specification, common location and nodes which are then commonly called the transnational capitalist class. This class will stronger in entity and play an important role in the global system.

Sassen (2001) in her narrower sectors perspective proposed that world cities functions are: first, as a node of organization commands in the world economy; second, as the key locations for service and finance sectors replacing manufacturing as leadings sectors; third, as a place of production and also innovations which referred to leading industries; and fourth, as a market for innovative products.

Sassen also stressed that global cities have similar internal conditions namely similar income and jobs share, characterized by pattern and growing polarization. Sassen had similar argument with Friedmann where the developed world is becoming the core and others are peripheral areas. Sassen also argued that globalization will lead the new world system with extremely new and different morphology.

Friedmann in 1986 then generated urbanization in terms of globalization which occurred in world city hypothesis, namely:

1. The integration process of a city to the global economy and the role of the city in new spatial division of labor, will be determined for any structural changes occurring within the city.
2. Major cities throughout the world are used by world assets as "basing points 'in territorial organization and implementation of production and markets. Networks or resulting linkage made it feasible to compose major cities into a complex territorial hierarchy
3. The world control roles of major cities are straightly reflected in order and dynamics of sector production and labor
4. Major cities are main nodes for the constellation and accumulation of world capital
5. Major cities are main nodes of destination for huge numbers of internal and international migrants
6. Major cities formation lead into contradictions of industrial capitalism-in territory and class division.
7. Major cities growth results in social costs that are higher than fiscal capacity of the state.

In addition to Friedmann and Sassen, Castells (1996) developed the concept of network society. Castells argued that cities should not be seen as a nodes but as a process in terms of linking places where ideas are exchanged as well as goods and people to shape a city. Castelss moreover used the term 'space of flows 'to explain the view of cities. There are three levels that support and build the space of flows namely: first, building facilities mostly communication technologies, especially the internet, transport networks, airspace, etc. and the third level is built up by the spaces occupied by globalization such as expensive leisure spaces. The second level is the most important one which is defined as economic, cultural and political functions which connect first and second level.

Cities compete with each other and this competition is even stronger in globalization era. It endorses city to be powerful and take a position in a global world. Not only in small scope such as national or regional, but even on the international level. One proper parameter to assess the power of city is its ability to attract investment. The position of the city ais increasingly related to the international flows of investment and trade (Alderson, 2004). Friedmann in 1995 explained that world cities which could

attract investment and control several functions in the global economy will improve their position in the global world. Further Ronald (2011) explained that the importance of a city in the global world really depends on its relationship with other cities and how they interact with each other. This relationship is described in economic activities such as export, import and investment. Alderson (2004) also considered that geographically position is important to determine the importance of a city because globalization has generated a new geography of centrality and slightly erased the previous core or periphery. But Friedmann in 1986 argued that the boundaries of a city are not determined by its administrative or political regulations but through its interaction.

Hymer in 1972 came up with an idea that the structure of the world city system is actually the reflection of multinational firms' structure. Hymer predicted that the structure of the world system would reflect the hierarchies of multinational companies such as the organization of labor among geographical regions which correlated to the vertical division of labor within the firm. It is similar with Friedmanns' explanation in 1986 that the world city is not only about investment and trade but also about social aspects and costs such as urbanization. The world city will attract more migrants, whether it is high-skilled or low-skilled labor to work in companies. It is in line with Sassen's argument in 2001 that complex duality influences processes of urbanization integrated with economic activity. Since Sassen focused on production not on power, she argued that global cities are the cities with an agglomeration of central functions in small sites. But a city is more than companies. The responsibility to cover the social cost of this urbanization is the role of the city not the company. And a city has roles in creating business atmosphere and regulations for companies to invest. Therefore, the argument that the world city is actually a reflection of multinational company hierarchy is not absolutely true.

There are 4 measurements of city network analysis namely out degree, in degree, closeness and betweenness (Alderson and Beckfield, 2004). Out degree and in degree explain all ties among cities about outward and inward investment, while closeness and betweennes explain positioning of the cities itself. Proper assessment approach of those measurements is by using social network analysis (parallel path analysis)

2.3 Competitiveness

It is believed that the city which takes a global power position is the result of the location and the ability of cities to attract investment. It has a close relationship with competitiveness. Competitiveness is the ability of an (urban) economy to attract and maintain firms with stable or rising market shares while maintaining standards of living for those participating in it (Storpers, 1997). The ability of a city to attract investments is affected by various factors such as investment climate, infrastructure availability, capacity of innovation and learning, the business environment, productivity, standard of live / quality of live and top down / sect oral and macro influences. Based on Dunning's OLI paradigm (1993), firms decide to invest abroad considering certainty of the ownership (O) of products or production processes, a location advantage (L) in allocating their plant in a foreign country rather than in their home country, and an advantage gained from internationalizing (I) their foreign activities in fully owned

subsidiaries rather than carrying them out through market transactions (trade) or networked relationships with other firms (licensing and franchising).

City performance in macro economics is very important for the investment to ensure long-term stability and business investment. There is no aim of the investor to invest in places where security is not maintained, high inflation and having a weak regional policy. The second determinant is the company characteristics. A strong and good city is a city with a variety of diverse companies, not only dominated by one or two sectors. Companies that access a variety of markets will strenghten the city. Market segment is also a factor determining the strength of a city. Market segment shows the economic potential that can be exploited by investors. In addition, the enterprise brand and quality indicates whether the city is able to attract large companies to invest. This indicates a high level of confidence in a city.

The third determinant is the business environment. The main principle of economics is to produce with lower cost. Cost is defined from the supply side, including quality and costs of factors of production (labor, land, capital and knowledge), and also the availability of natural resources. Skilled knowledge is demonstrated by the availability of education facilities. Further, social and environment factors such as housing, crime and social cohesion also showed openness to invest in the city. The last factor is the agglomeration effects, where the cities that get together and form the agglomeration will be able to keep production costs so as to attract more investment. This concept is still debated because of global competition in the region not affecting the strength but the city itself.

The fourth determinant is innovation and learning. A thriving city is a city with a high level of innovation and learning. Some factors that may encourage increased innovation and learning is the presence of internal competition, availability of research support and universities, and access to networks (formal institutions, formal networks, informal institutions and networks). Internal competition will encourage the birth of an innovative product. To produce innovative products that require high skill-driven research and university support.

Studies show that government policies on different geographical scales are also greatly affected by the strength and competitiveness of a city. It is identified with the non hierarchical interorganisational relationship (Kickert et all, 1997). It is understandable that the weak strength of a city, is caused by lack of capacity and produced by government policies. In addition, the government has run the marketing function to market the city to attract investment potential. Kunzman (2004) and Goldsmith and Eggers (2004) also argue that the network of government in promoting policies, and institutions, will improve the image of the city to attract investment. It is encouraging two-way relationship between the government and society (business) (Borzel, 1997). Strong networks will allow the city to take advantage of economies of scale and gain competitive advantage collectively. To be surviving, in the sense of ‘new economic geography’, most of the cities and regions competition will lead into urban agglomeration. In regional economies it is applicable because small-sized regions cannot perceive increasing returns to scales as a whole. In this situation, the concept of collaboration becomes important (Nakamura.2007).

Minimizing production costs is a key factor in the concentration of manufacturing in urban areas. This is related to ease of transportation and access to markets and infrastructure facilities. Difficulties to reach areas will lead to high transport costs and lead to higher production costs. In addition, more remote areas will have a tendency of low skill because of limited facilities (Glaeser 1998).
Currently there is a tendency of geographic concentration in order to reduce transportation costs. As a result, formed by agglomeration, industry agglomeration product is diverse. Company or industry will build a factory close to suppliers to reduce productioncosts.
This in turn will increase the competitiveness of the city itself and will be open for jobs and attract high-skilled labor in the context of urbanization. Silicon Valley is the best example of an agglomeration in which various industries gather in one place and encourage high advancement of science and innovation (Glaeser, 1998). Geographical proximity will also facilitate the transmission or transfer of ideas and knowledge, which will bring positive spillovers to the city (Glaeser, et all, 1992).
Jacobs in 1969 and Lucas in 1998 argued that the development of a city is linked to the spread of ideas and innovation. It is equally important to the local competition. Competition and concentration will stimulate innovation and creativity. An empirical study in the United States shows that the city grew because people interact between one another, each spreading the ideas and knowledge. Frequency level of interaction between communities can be measured through the proximity of a city. That is why the city will always be more advanced than rural.

In addition, in order to survive in the global marketplace, the city should know who the real true competitor, as well as the power sector. Cities with the same strength and similar products are real competitors; while the city that does not produce the same product is not a competitor (Wall, 2010). For example, Jakarta as a center of heavy industry and metal goods does not compete with Surabaya which is the center of the food industry. They have a different market. However Semarang and Surabaya must compete with similar products produced . For that, Surabaya must specialize in order to win the competition for Semarang. This can be a diversification of products or improving the policy to attract investment for higher quality of industrial products.

2.4 Correlation of FDI and Economic Growth

Borenztein (1998) explained that Foreign Direct Investment (FDI) has a positive correlation to the economic growth of a country through several paths. Firstly, establishing new factories will improve Gross Domestic Product (GDP), export and employment. It is a direct impact that an increase in export will improve the ability of the country to pay loan and import. Secondly, still on supply side, which is an indirect impact, is that the establishment of new factories will improve internal demand to capital products, raw materials and other inputs. If this intermediate demand is fully satisfied by other domestic sectors, the positive impact of production activities in new factories will flow to domestic sectors. Therefore, there is a multiplier effect of the existence of FDI to aggregate output of receiver.

Thirdly, improving employment opportunities by the new established factories will positively affect demand in domestic economy. Increase of labor opportunities will improve the purchasing power of people which will increase domestic demand. If domestic demand is mostly for the domestic product and not import, it will positively correlate to domestic output. On the other hand, if domestic demand is higher for imported goods, it will have no impact on domestic production and will further cause a deficit in trade balance.

Fourthly, FDI is important for the transfer of technology and other knowledge. This role could be achieved from two ways. First, through local employment who work in multinational company. When the employment moves to domestic companies they will bring the knowledge for local companies. Second, through production linkage or a subcontracting system between multinational company and local companies.

But some researchers emphasize on the conflict between FDI and economic growth. Romer (1993) argued that a transfer of technology would lead to spillover effects for the entire economy. In contrast, Boyd and Smith (1992) predicted that FDI as the existence of trade price, financial and other distortions will endanger resource allocation and slow growth. The company-level in certain countries proved not to boost economic growth and bring spillover effects to domestic economy.

One positive impact of FDI in Indonesia is through high economic growth which also became the highest in South East Asia. One of the main reason is the large domestic market of Indonesia. The large population of Indonesia is a potential market for multinational companies. Not only manufacturing industries, but the wealth in of natural resources is also attractive for FDI.
Investors are coming from neighboring countries such as Singapore, Malaysia, Thailand, and other countries such as United States, China, Australia, Japan and Korea.

Chapter 3: Research Methodology

3.1 Research Area

The research examines foreign direct investment in Indonesia, which has 33 provinces and 502 municipalities. Indonesia consists of 5 main islands namely Sumatera, Jawa, Kalimantan, Sulawesi and Papua. Indonesia has 3 different time zones which are West Indonesia Time, Centre Indonesia Time and East Indonesia time. But mostly, based on geography, Indonesia is divided into west zone and east zone only.

The total population in Indonesia is 237 million of people (2010), which is ranked 4th in the world after China, India, and United States. With a total area about 1.919.569 km2, Indonesia is ranked 15th, of the largest islands countries in the world. Indonesia is categorized as a developing country with income percapita around USD 3500 per year, much lower than its neighbour Singapore which is USD 50.000 per year.

3.2 Revised Research Questions

As stated in the beginning, the research objective of this thesis is: "*What is the position of big cities in Indonesia within regional, national and global level in terms of centrality and competitiveness"*. These research objective correspondents to two major parts which are strongly correlated: centrality and competitiveness. Considering its coverage, I divided the research questions into two parts.

First research question is, "*How far does centrality performance (location factor, in degree) determine competitiveness*? ". This concept is very important to examine because there is a strong correlation between centrality performance and competitiveness. This research question is derived into some specific research questions later to assess the context of competitiveness and centrality in-depth, namely:

"Is there any complementarity among cities in Indonesia?", this question aims to assess the opposite of competitiveness namely complementarity, because cities are not competing each other but also complementing each other to reach economic and development goals.

"*How far do competitiveness and centrality influence socio-economic aspects among the cities?"* , this question aims to assess the correlation between competitiveness and centrality level of the cities with socio-economic performances.

"*Has regional competitiveness occurred within the nation?"* this question aims to assess whether cities have regional competitiveness in order to make the economic process run better among the region instead of the cities.

"*Has regional competitiveness led to global competitiveness for the cities?"*, this question aims to assess whether regional competitiveness which probably occurred among cities would help cities to influence the global market in terms of foreign direct investment.

My second research question is, "*What is the position of big cities in Indonesia within regional, national and global level?"* This question aims to examine positioning of big cities in Indonesia in global markets in terms of foreign direct investment. How is the

performance of each big city in attracting investment and how do they put themselves to the international level. This second research question is divided into some specific research questions namely;

"*Which city is the most powerful and competitive in Indonesia?*" this research question is important in mapping the big cities in Indonesia, which cities are more powerful than others, why, and what kind of strategic developments could be implemented to the cities with low performances.

"*Is it true that cities in Western Indonesia are more powerful and centralized than cities in Eastern Indonesia*?" This question is important to answer the hypothesis that the cities in western Indonesia are more developed and powerful than the cities in Eastern Indonesia.

"Which sector is the most attractive for investment for each city and region "; this question aims to recognize the sectors that attract most investment for each city and region. It is again very important to analyse the competitive advantage of the cities to perform better in the future.

3.3 Research Approach and Data Collection

The research approach for this thesis is a quantitative approach for mapping cities in the context of centrality and competitiveness. Therefore, the result is not only in quantitative aspects but also a map to simplify analysis and decision making. The instruments needed for the analysis are:

Secondary data: Data sources are from FDI Market to identify the origin of investments and sectors, National Investment Board of Indonesia, Central Bank of Indonesia, Central Bureau of Statistics of Indonesia, and Economic Ministry of Indonesia.

3.4 Research Population and Sampling:

Total population of this research is the big cities in Indonesia. And the sampling consists of 33 capital cities plus 5 big cities with strong economies. This coverage is representative enough to answer the research questions for the national level. On the regional level, this total of sample size is representative to describe the regions which are divided to Western-Eastern or for 5 main islands (Sumatera, Jawa, Kalimantan, Sulawesi, Maluku and Papua).

3.5 Validity and Reliability

Validity and reliability are 2 of the main problems conducting research by using secondary data. To ensure validity problems do not appear in this research, I have made sure that concept and construction in time of the research is identical with concept and construction of data resources.

Meanwhile for reliability issues, all the data is collected based on a contract with the institutions of data resources that it will be only used for academic purposes.

3.6 Limitation of Study

This research focuses on centrality and competitiveness based on in degree of foreign direct investment. In degree variables were measured by a quantitative method using UCINET software. The researcher is not able to collect data about out degree level of cities in Indonesia because it is not available. Meanwhile, for closeness and betweenness the researcher used descriptive analysis to support the findings.

3.7 Operationalization : variables, indicators

Variables	Operational Definition
Centrality	The position of the city related to the international flows of investment and trade (Alderson,2004)
Competitiveness	ability of an (urban) economy to attract and maintain firms with stable or rising market shares while maintaining standards of living for those participating in it (Storpers,1997)
Complementarity	Interurban relationship in business and regional development mostly refers to labour division, economic activities and urban functions (Meijers,2006)
In degree	Cities' position in global network based on its activeness of receiving ties from other cities (Alderson and Beckfield,2004)
Out degree	Cities' position in global network based on its activeness of sending ties to other cities (Alderson and Beckfield,2004)
Closeness	Cities' advantage because it stands close to the actors in global network (Alderson and Beckfield,2004)
Betweenness	Cities' advantage because it stands among pair of actors in global network (Alderson and Beckfield,2004)

3.8 Data Analysis Methods

1. Centrality analysis (in degree, out degree, closeness and betweenness)
   Centrality analysis is a tool to assess the power of cities, consisting 4 indicators (in degree, out degree, betweeness and closeness). Considering the lack of data, the researcher only used in degree, closeness and betweenness to support analysis since out degree data was not possible to collect.

2. Regression Analysis (OLS)
   Regression analysis is beneficial to compute simple and multiple linear regressions, statistic association and scatter plot, co linearity analysis, prediction and residual. Linear Regression is used to perform testing of the relationship between a dependent variable (dependent) with one or more independent variables displayed in the form of regression equation. If the dependent variable is associated with only one independent variable, the resulting regression equation is a simple linear regression (linear regression). If the independent variable is greater than one, then the regression equation is a multiple linear regression equation (multiple linear regressions). Types of data suitable for linear regression test, for both dependent and independent variables are the ratio of the data. It is also fit for qualitative data (categories), through assistance of dummy variables.

   The result of regression is an equation in the form of estimates of the observations. The common used symbol Y (Y with a cap) shows the results of such assessment and distinguishes it from Y (Y without a cap) as a result of observation of the population.

   The formula of Regression Analysis is:

   $$Y = a + bX$$

   Y = dependent variable

   X = independent variable

   a = constant value

   b = regression coefficient

   And the formula of Multiple Regression is:

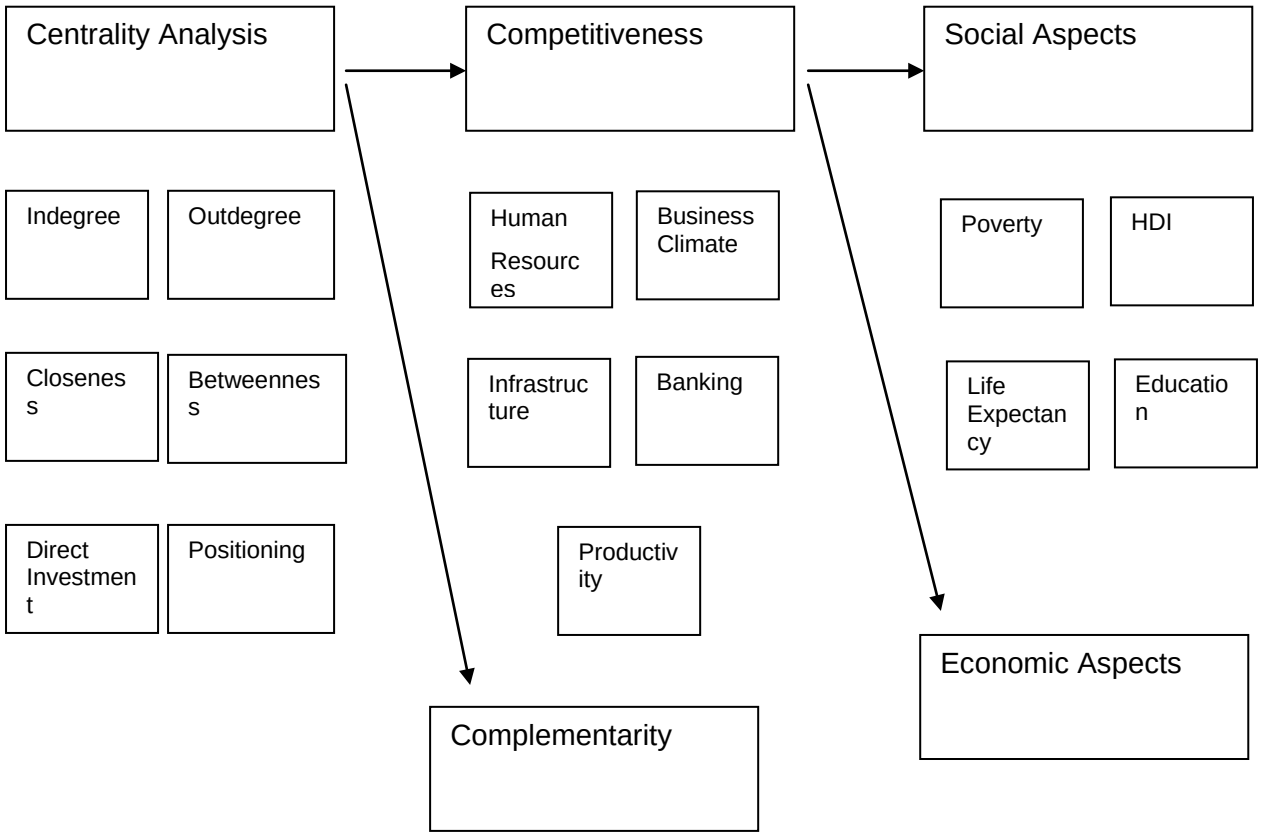
   $$Y = a + bX_1 + cX_2 + ... + kX_n$$

3. Location Quotient

   Location quotient (LQ) is a measurement to assess the advantage of a city compared to other cities within the nation. This method could reveal the leading sectors to attract investment. This is beneficial to formulate a strategy in the future to strengthen the leading sector and to improve other sectors that are not performing well. The formula of LQ is: (X/Y) / (X'/Y'). While X shows the city and Y shows the nation.

If LQ score greater than 1 (LQ>1), it means the sector in city performs better than the sector in nation. Meanwhile if LQ lower than 1 (LQ<1) means sector in city performs worse than sector in nation.

3.9 Conceptual Framework

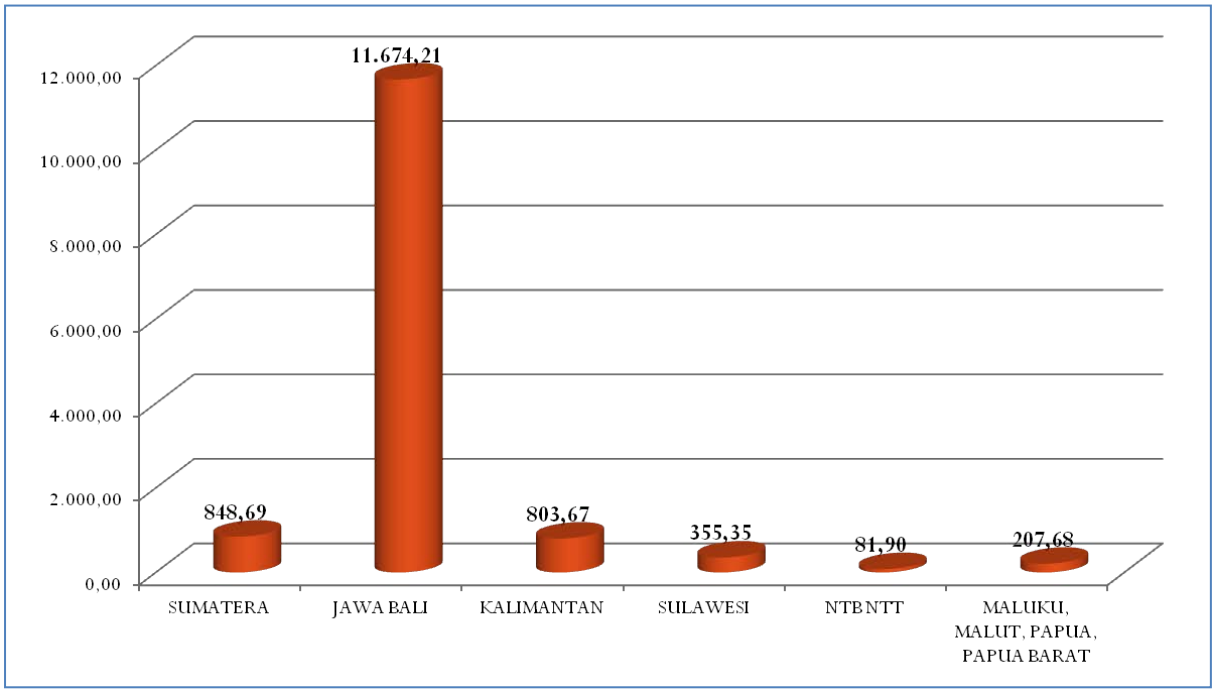


Chapter 4: Research Results and Analysis

4.1 Comparative Advantages

The discrepancy between Western Indonesia and Eastern Indonesia has occurred for a long time. This problem becomes serious because it is not only economic problems but also social and psychological problems. West Indonesia consists of Sumatera, Jawa and part of Kalimantan; while others belong to the Eastern part. Based on economic structure, Western Indonesia contributes more than 70% of total GDP. And as to be seen in infrastructure, Western Indonesia has more established transportation system and facilities. More than 80% of the national population lives in Western part even though based on large area it is only about 40% of total area.

Figure 2. Share of Foreign Direct Investment by Region in Indonesia Period 2008-2010 (Average in Million USD)

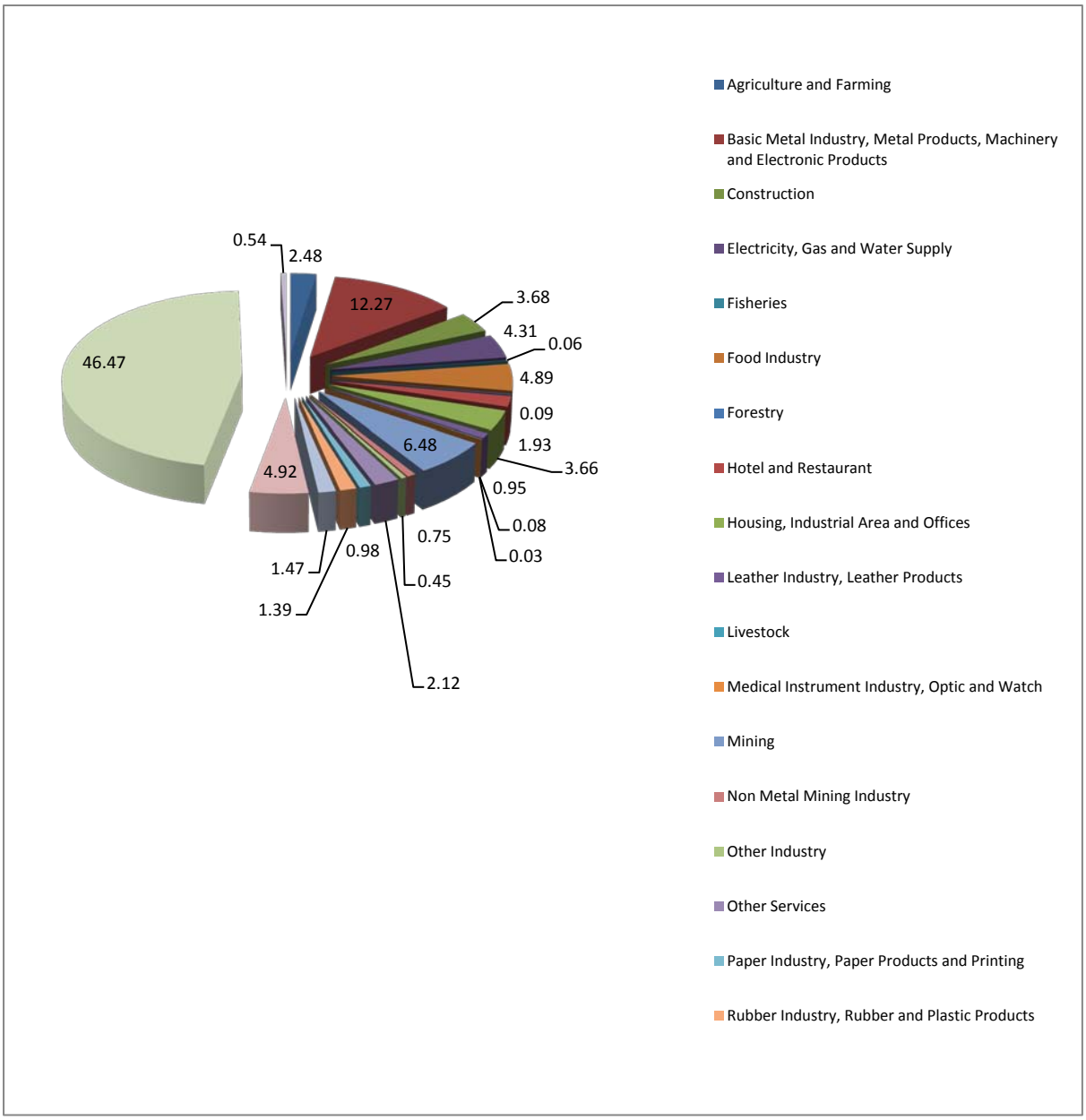


Source: Indonesia Investment Board (revised)

Based on the graph above, it is obvious that Western Indonesia is significantly more attractive for investors since total investment per year is more than USD 12.000 million or more than 90% of total FDI among nation. This condition shows that foreign investors consider the Western part of Indonesia is more stabile, with a higher potential and also more integrated in infrastructure than the Eastern part of Indonesia. This phenomenon also proves that the Eastern part of Indonesia is really far behind the Western part even though the Eastern part has so many potential commodities to explore.

Nusa Tenggara Barat and Nusa Tenggara Timur has become the least attractive region for investment. In one year, this region only receives 81, 80 million USD mostly in mining sector.

Figure 3. Percentage of Each FDI Sectors in Indonesia



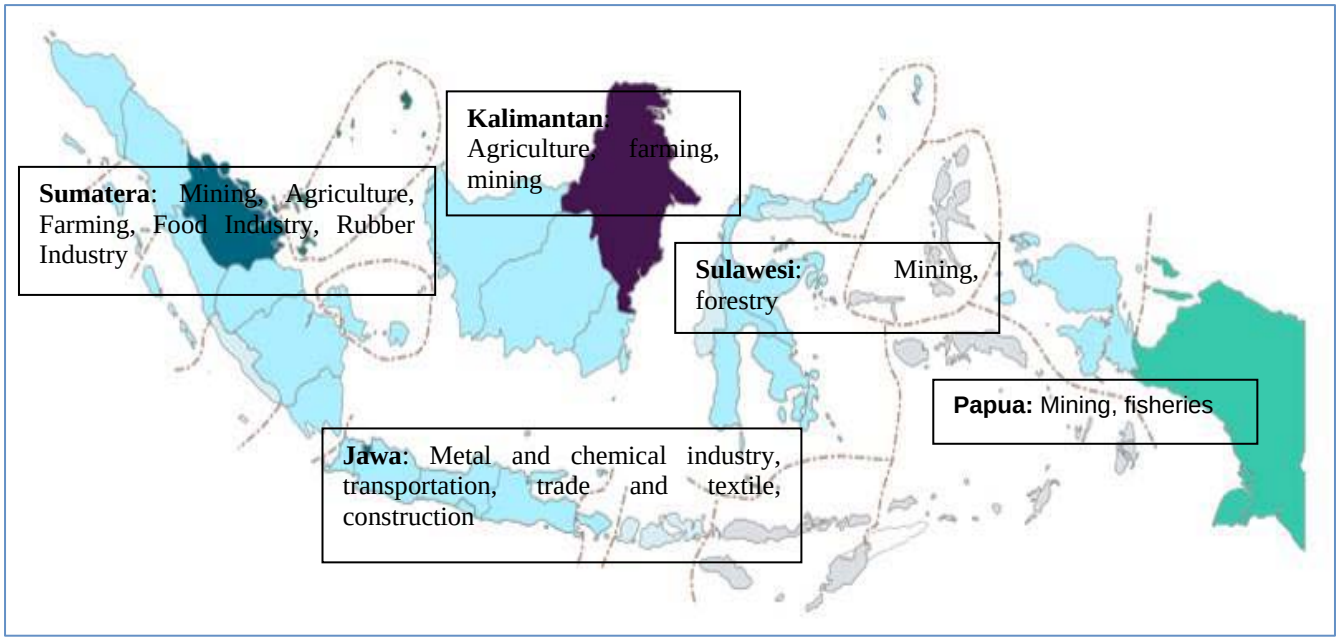
Source: Indonesia Investment Board (data calculated)

There are 22 main sectors that attract Foreign Direct Investment in Indonesia seen on pie chart above. The main sectors that attract most of FDI in period 2008-2010 are Transportation, Warehouse and Telecommunication (46, 67%); Basic metal industry, Metal products, Machinery and Electronic products (12, 27%); Mining (6, 48%); Trade and transportation (4, 92%); and Food industry (4, 89%).

Those five main sectors have attracted 75, 03% of average investment per year about USD 13.734 million, while other sectors cannot significantly attracted foreign investments. Compared with sectors in GDP, those five sectors are also the most significant contributors for the GDP. Another most significant contributor of GDP is Agriculture and farming sector; but assessing the ability of attracting FDI this sector per year is only able to attract 346, 98 million USD per year, or only about 2, 48%.

It shows that foreign investors are more attracted into secondary sectors (industry, trade, transportation) than primary (agriculture, mining) and tertiary sectors (financial, services). This composition is slightly different compared to the overall economic structure of Indonesia where 45% are supported by primary sectors (agriculture, mining). Secondary sectors basically need more capital compared to other sectors. Considering large population and area of Indonesia, this sector became attractive and potential for domestic market.

Figure 4. Map of Competitive Advantages in Indonesia Based on Sectors and Region.



Source: Indonesia Investment Board (data calculated)

Based on geographical location; Sumatera, Kalimantan and Papua are attractive for mining. In fact, those islands have different specialization of mining products. Sumatera is famous for oil, coal and gas; Kalimantan is also famous for oil, coal and gas; Sulawesi is famous for copper, asphalt and other minerals; and Papua is famous for gold. Many international companies invest here such as Shell, Caltex, and Freeport. Total of mining investment per year in average is UDS 905, 03 million or 6, 48% of total investment.

Sumatera is also famous for agriculture and farming sectors; food industry; and rubber industry. Sumatera is the main producer of rice and vegetables. Sumatera also has a large farming of palm oil and rubber plantation. Most international companies are attracted to invest in palm oil and rubber plantations. This is further transformed into rubber industry and food industry. Almost in every province people could find rubber

plantations and rubber industry. Investors consider it is more efficient than doing manufacturing process in other places. For the region itself, this condition has positive impacts to improve economic sectors and welfare. The quality of rubber production in Indonesia is one of the best in the world.

As similar condition is found in Kalimantan, although this island is not really famous for rice and vegetables. Kalimantan is one of the main destination for palm oil and crumb rubber plantation especially for investors from Singapore and Malaysia. It is easy to acquire plantation area from the people because these commodities have a good price and high value added compared into other commodities. It is also easy to find local people to work as a labor because of high compensation or wages offered by companies. And also areal transformation from rice land into palm oil and rubber plantation are common now in Kalimantan. Local people sell their land to the investors or they plant the commodities themselves while expecting higher income than the previous one. In terms of environment and food security, these have become major issues in Kalimantan or Indonesia. Palm oil plantation is believed unfriendly for environment in the long term. Ex-area of palm oil plantation is believed to be unproductive after 20 years. It is dangerous for the ecosystem and food security on local and national level.In Eastern Indonesia: Sulawesi, NTB, NTT, Maluku, Maluku Utara , Papua and Papua Barat; the strongest sectors to attract investment are mining, fisheries and forestry. Eastern Indonesia is rich of mineral mining commodities such as gold, copper, asphalt, and also rich in fisheries products. Besides, the nature is actually also potential for tourism, but lack of infrastructure and transportation have become the main problems to develop the tourism sector.

Figure 5.Map of Oil and Gas Investors in Indonesia

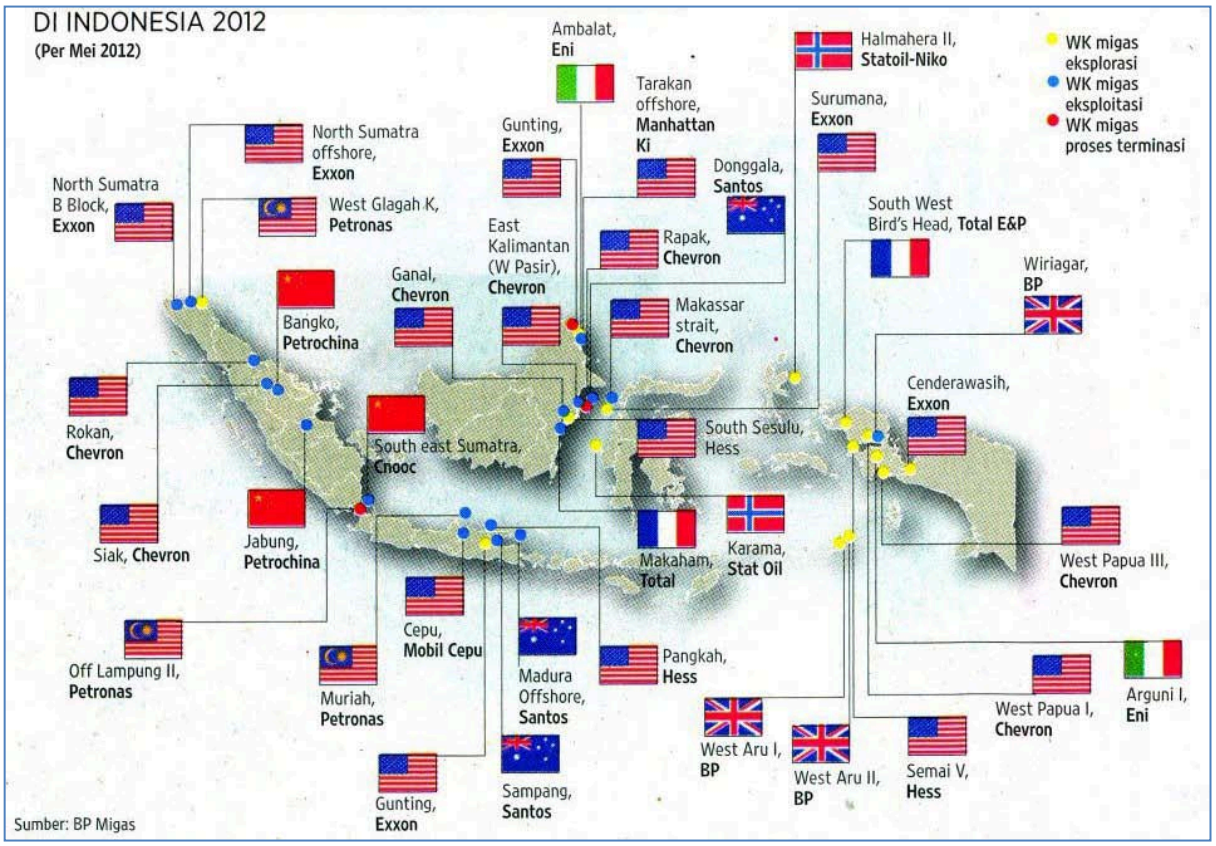


Table 1. Most Competitive Provinces in Indonesia

Province	Degree	Rank	Province	Degree	Rank
Jawa Barat	327	1	Jambi	15	18
DKI Jakarta	279	2	Bali	13	19
Jawa Timur	159	3	Lampung	12	20
Banten	120	4	Sulawesi Tengah	12	21
Sumatera Utara	112	5	Sumatera Barat	12	22
Riau	76	6	Yogyakarta	12	23
Sumatera Selatan	72	7	Kepulauan Bangka Belitung	9	24
Jawa Tengah	66	8	Maluku Utara	8	25
Kalimantan Timur	60	9	Papua Barat	8	26
Kepulauan Riau	60	10	Bengkulu	4	27
Kalimantan Tengah	42	11	Nusa Tenggara Timur	4	28
Kalimantan Barat	36	12	Sulawesi Barat	4	29
Kalimantan Selatan	36	13	Sulawesi Tenggara	4	30
Sulawesi Selatan	36	14	Aceh	1	31
Sulawesi Utara	36	15	Gorontalo	1	32
Papua	24	16	Maluku	1	33
Nusa Tenggara Barat	16	17			

Source: International Investment Data (data calculated)

Each province tries to attract investment more than others. The ability of attracting investment vary depending on factors such as infrastructure, human resources, business climate and others. Based on table 4.2, it is clear that Jawa Barat has become the most competitive province in attracting investment with highest degree (327), followed by DKI Jakarta, Jawa Timur and Banten. The 5th place is Sumatera Utara, the only non-Java province in top-5. Those 5 provinces are more industrialized than other provinces in Indonesia. Other provinces in top 10 are Sumatera Selatan, Kalimantan Timur, Jawa Tengah and Kepulauan Riau. These provinces are also more industrialized and have potential mining sectors. Kalimantan Timur for example, is the richest province in Indonesia (based on GDP Percapita) because of mining sector (oil and gas). Jawa Timur itself is the largest province in Indonesia with a lot of manufacturing industries. Surabaya, the capital of Jawa Timur is known as the second metropolitan city in Indonesia.

From the data above, we could also see that the difference of degree is very large among provinces. Which means that foreign investors tend to rather invest in big provinces than in the small provinces. The lowest attracting investment provinces are: Sulawesi Barat, Sulawesi Tenggara, Aceh, Gorontalo and Maluku. Sulawesi Barat and Gorontalo are 2 newest provinces in Indonesia.

Table 2 Most Competitive Cities in Indonesia

City	Rank	Degree	City	Rank	Degree
Jakarta	1	561	Kotabaru	26	16
Surabaya	2	83	Sukabumi	27	16
Karawang	3	82	Purwakarta	28	16
Bekasi	4	75	Banjarmasin	29	15
Medan	5	75	Bandar Lampung	30	14
Bali	6	66	Lombok	31	13
Batam	7	63	Wajo	32	12
Cilegon	8	56	Madura	33	12
Makassar	9	50	West Jakarta	34	11
Cikarang	10	42	Tayan	35	11
Bogor	11	35	South Kalimantan	36	11
Serang	12	33	South Jakarta	37	10
Halmahera	13	30	Denpasar	38	10
Balikpapan	14	29	Berau	39	10
Pasuruan	15	26	Ketapang	40	9
Semarang	16	25	Merak	41	9
Tuban	17	24	Duri	42	8
Palembang	18	23	Batu	43	8
Gresik	19	23	Belawan	44	8
Bandung	20	23	Bangko	45	8
Indramayu	21	22	Singkang	46	7
Kutai	22	22	Mamasa	47	7
Jambi	23	22	Lhoknga	48	7
Pontianak	24	20	Palu	49	7
Tangerang	25	19	Banggai	50	7

Source: International Investment Data (data calculated)

Most competitive cities in investment are coming from the most competitive provinces. Jakarta is the most competitive city with extremely high degree compared to other cities, followed by Surabaya in which the province-Jawa Timur- is ranked as the 3rd most competitive province in Indonesia. Karawang and Bekasi (3rd and 4th) are in Jawa Barat, which is the 1st most competitive province; and Medan (5th) is in Sumatera Utara (5th most competitive province). In 20 most competitive cities in Indonesia, Jawa Barat (1st) has 5 cities; Jakarta (2nd) has 2 cities; Jawa Timur (3rd) has 4 cities; Banten (4th) has 2 cities and Sumatera Utara (5th) has 2 cities.

Most competitive cities are mostly based on manufacturing industries, oil mining and electricity. For manufacturing industries, Jakarta, Surabaya, Karawang, Bekasi are known as industrial areas producing high-technology products such as electronic products, textiles, assembling, and communications. Labor wages in these areas are also the highest compared to other cities in Indonesia. Based on facilities and infrastructure, these cities have the best quality of electricity, transportation, and banking. Jakarta is the largest metropolitan city in Indonesia while Surabaya put at second place. Further, Bekasi is also known as city satellite of Jakarta where most people live in Bekasi and work in Jakarta or vice versa. It is strongly believed that closeness between Jakarta and Bekasi is positively correlated into the developing of Bekasi to be one of the most competitive cities in Indonesia. Other cities which are relatively close with Jakarta and also became city satellite of this capital city are Cikarang (10th) and Bogor (11th). Supporting infrastructure and access of public transport to support commuting workers have encouraged development of these two cities to be among the most competitive cities in Indonesia.

Other cities in Jawa which became competitive based on manufacturing industries are Cilegon (8th), Serang (12th) and Tangerang (25th). These 3 cities are located in Banten Province, at the north of Jawa, and relatively close to Jakarta. It needs less than 1, 5 hours travel to reach these cities. Most products are basic chemical industries, pharmacy, textiles, clothing, and electronic products.

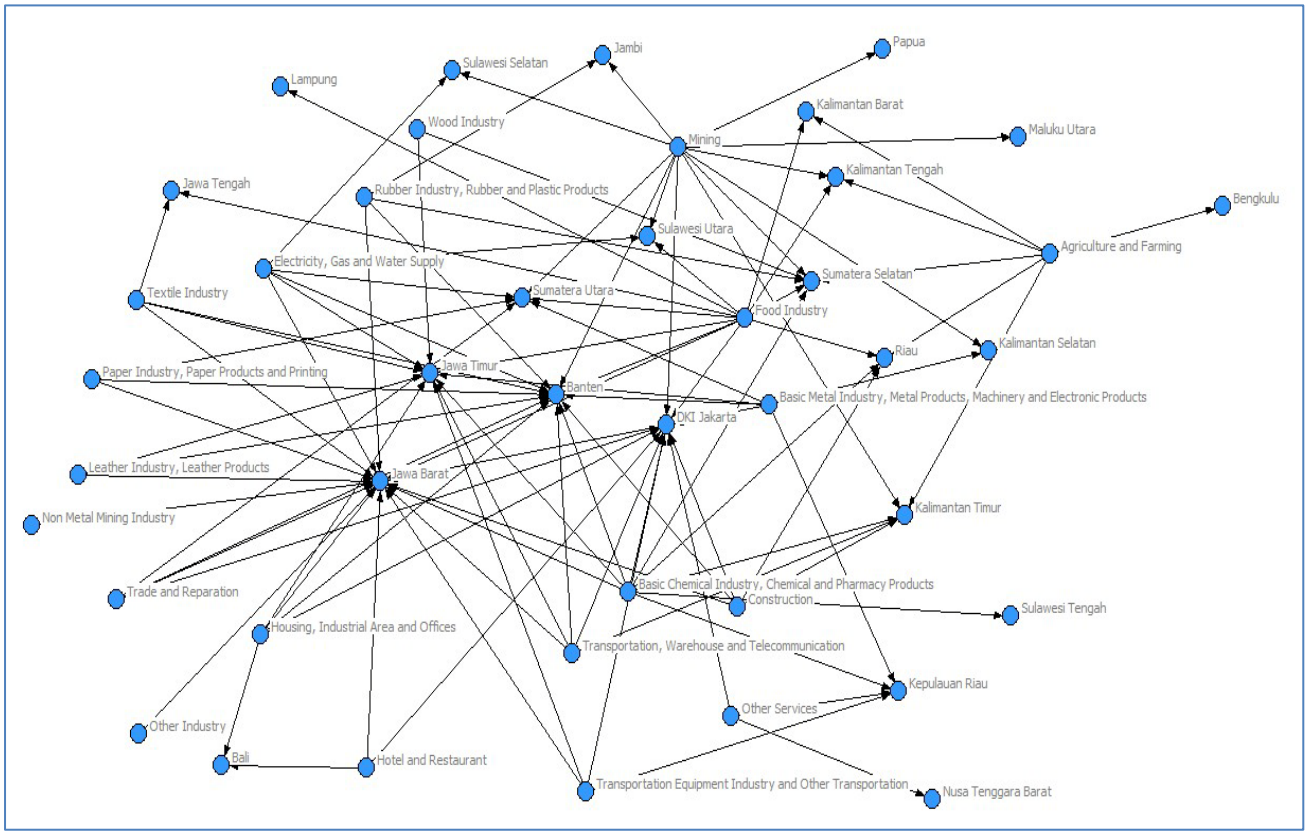
Coal mining, oil, energy empowerment and tourism are other dominant sectors to improve competitiveness of other cities. As the parameter is total of investment, these three sectors are high cost and technology. Medan, Batam, Jambi, Palembang, Bandar Lampung, Lhoknga are located in Sumatera. All these cities are rich of natural resources such as oil, coal, gas, and minerals. Not only being rich of natural resources, these cities are also rich of agricultural products. Batam is the only city with fewer natural resources. As an island located nearby Singapore, only 2 hours by boat, Batam has developed as one of the most important industrial cities in Sumatera. Batam also has become one of the most important cities in Indonesia for international trade (export and import). Growing as another new metropolitan city, Batam is attractive for high-skilled worker and investors.

Kalimantan and Sulawesi dominated most competitive cities rank 25th to 50th. Similarly with Sumatera, Kalimantan is also rich of oil, gas, and coal. Kutai in Kalimantan Timur Province for example, is one of the richest oil producers in Indonesia and gaining highest GDP compared to other cities. While Berau, also in Kalimantan Timur, is the one of the highest coal produces. Kalimantan has grown up as one of the most attractive region for investment although it lacks of infrastructure and facilities.

Banjarmasin in South Kalimantan became a trade city and attractive for investment in energy, similar to most competitive cities in Sulawesi. Makasar (South Kalimantan) is attractive not only for oil mining but also energy empowering. Makasar has grown as biggest city in region. Located at the southern Sulawesi, Makasar has established better infrastructure to be a port city.

4.2 Network Analysis

Figure 6. Network By Sectors and Provinces



Source: Indonesian Investment Board (data calculated)

Network analysis is used to assess the relationship and competition among province, cities and sectors. This analysis helps the government to analyze which sector is attracted most and which city attracts the same sectors therefore enabling government to create certain policy to win the competition.

Based on figure 5, which describes competition among provinces in Indonesia, it is obvious that 4 strongest provinces (Jakarta, Jawa Barat, Banten, Jawa Timur) are strongly competing in many sectors namely: basic chemical industry, pharmacy, mining, transportation, warehouse, communication, basic metal industry, housing, industrial area and offices.

Jakarta is also strongly competing with Sumatera Utara, Kalimantan Tengah, Kalimantan Barat and Riau in food industry sector. While in certain sectors namely agriculture, leather industry, paper industry, and rubber industry, Jakarta is less competitive.

By sectors, the most competitive region for agriculture and farming is Kalimantan. There are 3 provinces in Kalimantan namely Kalimantan Selatan, Kalimantan Tengah, and Kalimantan Barat compete each other. Sumatera has one representative namely Bengkulu for this sector. Kalimantan Tengah and Kalimantan Barat are also competitive for food industry sector. These provinces also have to compete with the 4 strongest cities in Jawa and also Sulawesi Utara (Sulawesi) and Riau (Sumatera).

Most competitive provinces for electricity sectors are still 4 provinces in Jawa, Sulawesi Barat and Sumatera Utara. Sulawesi Barat is one of the youngest provinces in Indonesia, located in between 2 provinces namely Sulawesi Selatan and Sulawesi Tengah. It is strategic position for investment. Meanwhile Sumatera Utara is located between Aceh and Riau, also strategic considering its large area and total population.

One of the most interesting sectors is mining sector which is strongly competitive in every region in Indonesia, including Maluku Utara and Papua. Some provinces from Sumatera and Kalimantan are strongly competing namely Jambi, Sumatera Selatan, Kalimantan Timur and Kalimantan Selatan. Other provinces are Sulawesi Utara, Maluku Utara, Papua and 2 provinces in Jawa (Banten and Jakarta).

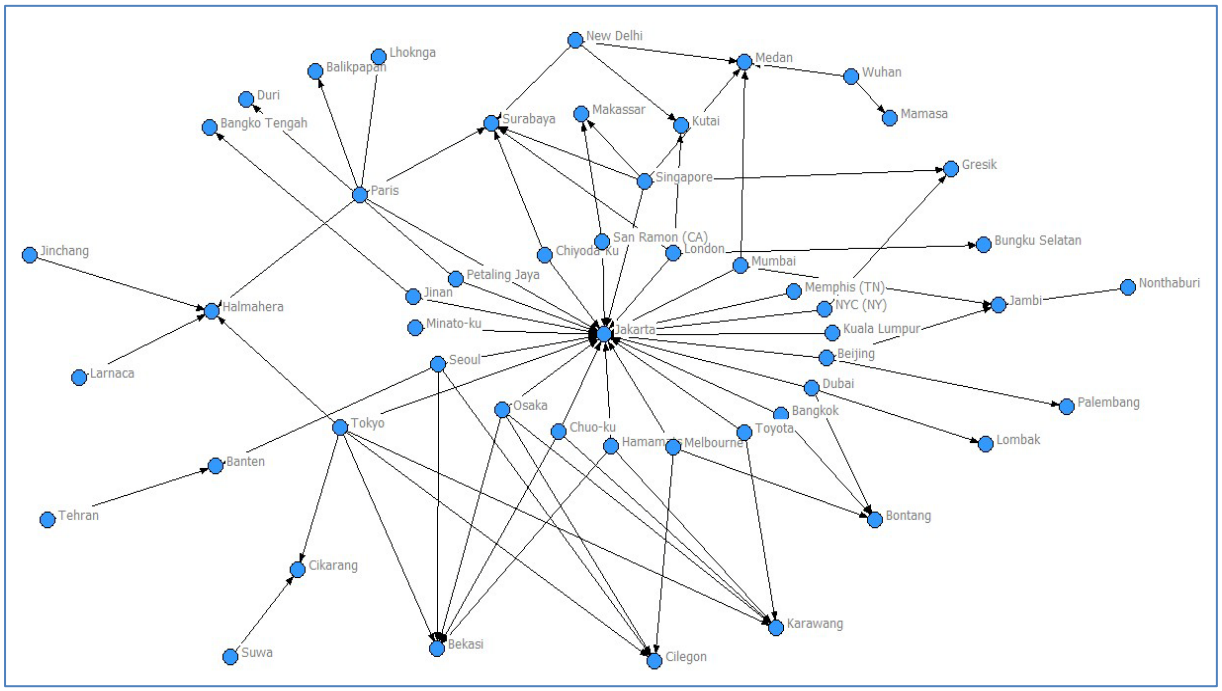
As for paper industry, there are only 2 provinces competing namely Banten and Jawa Barat, which are also closely located. These 2 provinces are also competed in textile industry with Jawa Tengah and Jawa Timur. Jawa Barat is famous as the fashion center in Indonesia with outstanding growth of factory outlet in Bandung.

Table 3. FDI Sectors and Provinces

Sectors	Provinces
Agriculture and farming	Bengkulu, Kalimantan Selatan, Kalimantan Tengah,Kalimantan Barat
Basic metal industries, machinery, electronic products	Jakarta, Banten, Jawa Barat, Jawa Timur, Jawa Barat, Sumatera Utara, Kepulauan Riau
Basic chemical industry, pharmacy	Jakarta, Banten, Jawa Barat, Jawa Timur, Jawa Barat, Sulawesi Tengah
Food industry	Jakarta, Banten, Jawa Barat, Jawa Timur, Jawa Barat, Sumatera Utara, Sulawesi Utara, Kalimantan Tengah, Kalimantan Barat, Riau
Electricity	Jakarta, Banten, Jawa Barat, Jawa Timur, Jawa Barat, Sulawesi Selatan, Sumatera Utara
Hotel and restaurant	Jakarta, Jawa Barat, Bali
Housing, industrial area and ofices	Jakarta, Banten, Jawa Barat, Jawa Timur, Jawa Barat
Leather industry	Jawa Timur, Jawa Barat, Banten
Mining	Jambi, Sumatera Selatan, Jakarta, Papua, Kalimantan Timur, Kalimantan Selatan, Banten, Sulawesi Utara, Maluku Utara
Other services	NTB

Paper industry	Banten, Jawa Barat
Rubber industry	Jambi, Sumatera Selatan, Banten
Textile industry	Jawa Tengah, Jawa Timur, Banten, Jawa Barat
Trade and reparation	Jakarta, Banten, Jawa Barat, Jawa Timur, Jawa Barat
Transportation, warehouse and telecommunication	Jakarta, Banten, Jawa Barat, Jawa Timur, Jawa Barat, Kalimantan Timur

Figure 7. Network by Cities



Source: FDI Market (data calculated)

Based on Figure 7, Jakarta has become the most powerful city in Indonesia in attracting investment. Jakarta is the most famous city in global market and received ties from all over the world. Compared to other cities in Indonesia, Jakarta provides better facilities for headquarters of multinational companies, completed by international atmosphere.

Jakarta is interesting for 20 major investor cities in the world (figure 8), except New Delhi (15^{th}). Jakarta is also competing with its city satellite, Bekasi to receive investment from Tokyo (3^{rd}) and Seoul (2^{nd}). Tokyo and Seoul are 2 cities with major investment in basic metal industry, machinery and communication.

In Sumatera, Jambi and Sumatra Selatan are strongly competing for investors from Beijing (5^{th}) (Petro china). Sumatera Selatan has better infrastructure and facilities than Jambi while Jambi has more potential oil and gas resources than Sumatera Selatan. Quite interesting that Medan is interesting for 2 cities in India namely Mumbai (14^{th})

and New Delhi (15th). Both cities invest in manufacturing industries. Besides, Medan also competes with Mamasa (Sulawesi Barat) in attracting investment from Wuhan (China) in energy sectors.

Based on Table 4, Paris is the top city investing in Indonesia. Paris invests in trade, retail, and mining sectors. Trade and retail are mostly located in Jakarta, and mining sector in Kalimantan (oil). Seoul positioned at second with investment in basic chemical industry, machinery and communication, while Tokyo positioned third with major investment in transportation sector (vehicle assembly). Other cities invest mostly in mining sector. And it's interesting to see Bonn (Germany) positioned at 13th through its postal service and Taipei (Taiwan) positioned at 18th with its investment in telecommunication.

Singapore, Bangkok, and Kuala Lumpur, Indonesian neighbors in South East Asia, also became the most powerful cities investing to Indonesia. These cities invest mostly in agriculture sectors in Sumatera and Kalimantan, financial services and tourism. Singapore and Kuala Lumpur are also included as the most competitive cities in the world. Singapore is also known as the biggest international port after Shanghai (China). These circumstances could bring positive impacts for Indonesia in order to promote Indonesian products go global. While Bangkok, invests in tourism sector and known as one of the favorite tourism destination in the world. It could improve tourism sector in Indonesia through partnership. Bangkok also invests in cement industry through some of these companies.

Table 4. Top 20 Major Cities of Inward Investments

1. Paris	11. Osaka
2. Seoul	12. Hongkong
3. Tokyo	13. Bonn
4. Singapore	14. Mumbai
5. Beijing	15. New Delhi
6. Sydney	16. Bangkok
7. London	17. California
8. New York	18. Taipei
9. Melbourne	19. Kuala Lumpur
10. Dubai	20. Kobe

Table 5. Main Sectors in Sumatera

Province	Total (million USD)	Ranking	Main Sector						
Aceh	1,65	31	Mining	Rubber Industry, Rubber and Plastic Products					
Sumut	149,37	5	Mining	Food Industry	Trade and Reparation	Paper Industry, Paper Products and Printing	Basic Metal Industry, Metal Products, Machinery and Electronic Products	Trade and Reparation	Electricity, Gas and Water Supply
Sumbar	12,08	22	Agriculture and Farming	Other Services	Trade and Reparation				
Riau	266,37	6	Mining	Basic Chemical Industry, Chemical and Pharmacy Products	Construction	Food Industry	Trade and Reparation	Agriculture and Farming	Electricity, Gas and Water Supply
Jambi	37,93	18	Mining	Rubber Industry, Rubber and Plastic Products	Wood Industry	Agriculture and Farming			
Sumsel	119,24	7	Mining	Rubber Industry, Rubber and Plastic Products	Agriculture and Farming	Wood Industry	Basic Chemical Industry, Chemical and Pharmacy Products	Wood Industry	Food Industry
Bengkulu	13,05	27	Agriculture and Farming						
Lampung	43,46	20	Food Industry	Electricity, Gas and Water Supply	Food Industry				
Babel	15,37	24	Agriculture and Farming	Food Industry					
Kepulauan Riau	190,16	10	Basic Metal Industry, Metal Products, Machinery and Electronic Products	Other Services	Transportation Equipment Industry and Other Transportation				

Source: Indonesia Investment Board (data calculated)

Based on the table above, there is strong competitiveness among provinces in Sumatera. It is caused by similarity of commodities produced within the region. Basically, most provinces relied on mining and agriculture sectors. Sumatera is known as a fertile land and rich of coal and oil. Based on the table above, it is also found that provinces with high score on the national level have more various sectors attracting investment.

Sumatera Utara as the highest rank in Sumatera, has 7 main sectors which have higher competitive advantage in national level as much as Riau and Sumatera. But based on total investment, Riau is still higher than Sumatera Utara. Those 3 provinces are the biggest provinces in Sumatera in terms of economic scale, not only investment.

Sumatera Utara, Riau and Sumatra Selatan compete in mining, food industry and electricity. Based on its positioning, Riau has more advantage since positioned in the centre of Sumatera. Meanwhile, Sumatra Utara and Sumatera Selatan have better infrastructure and larger area and population. These factors could determine investment flow to these provinces.

Kepulauan Riau which is the newest province in Sumatera as also Kepulauan Bangka Belitung has also high rank in national competitiveness. Positioned at 10^{th}, Kepulauan Riau has 3 major sectors namely basic metal industry and electronic products, financial services and transportation.

On the other hand, other provinces in Sumatera have low rank in national, below 20^{th}, with only 1-4 main sectors for investment. And the lowest rank is mostly in Southern Sumatera except Aceh and Sumatera Barat.

There are 2 provinces which have basic chemical industry as one of the main sectors: Riau and Kepulauan Riau. These 2 provinces are known as oil regions and for manufacturing considering its position which is close to Singapore and Malaysia. It encourages economic activities in manufacturing. These 2 provinces are also known as the main trade areas in Sumatera and some provinces export their products through Kepulauan Riau, not Jawa.

Table 6. Main Sectors in Java

Province	Total (million USD)	Ranking	Main Sector					
DKI	7.289,37	2	Transportation, Warehouse and Telecommunication	Basic Metal Industry, Metal Products, Machinery and Electronic Products	Food Industry	Trade and Reparation	Housing, Industrial Area and Offices	Construction
Jabar	2.059,50	1	Transportation Equipment Industry and Other Transportation	Basic Metal Industry, Metal Products, Machinery and Electronic Products	Electricity, Gas and Water Supply	Rubber Industry, Rubber and Plastic Products	Construction	Non Metal Mining Industry
Jateng	92,51	8	Mining	Food Industry	Textile Industry	Wood Industry	Basic Chemical Industry, Chemical and Pharmacy Products	
Jogja	9,89	23	Trade and Reparation	Hotel and Restaurant				
Jatim	882,89	3	Electricity, Gas and Water Supply	Basic Chemical Industry, Chemical and Pharmacy Products	Food Industry	Transportation Equipment Industry and Other Transportation	Housing, Industrial Area and Offices	Wood Industry
Banten	1.144,64	4	Basic Chemical Industry, Chemical and Pharmacy Products	Housing, Industrial Area and Offices	Construction	Transportation, Warehouse and Telecommunication	Paper Industry, Paper Products and Printing	Electricity, Gas and Water Supply
Bali	195,41	19	Hotel and Restaurant	Housing, Industrial Area and Offices	Other Services			

Source: Indonesia Investment Board (data calculated)

Jakarta is the leader in Jawa region with total investment about USD 7.289,37 million. Followed by Jawa Barat,Banten and Jawa Timur. Jawa Barat and Banten are the closest provinces to Jakarta. These 3 provinces attract investments in similar sectors. Jakarta and Jawa Barat have competed in transportation industries as the main one while Banten has basic chemical industry as the main sector.

Overall, most provinces in Java compete with each other for manufacturing industries sector, trade and transportation, construction and also hotels and restaurants. 4 out of 7 provinces in Jawa are included as top 5 most powerful to attract investment and 5 out of 7 are included as the top 10.

Based on GDP, Jawa contributed almost more than 70% of total GDP; and in terms of FDI, Jawa contributed 83,55% of total per year. Manufacturing industries, construction, communication and trade, are sectors which need a good infrastructure and business climate stabilization. Moreover, local policies also become very important to attract investors.

Jawa Tengah and Jogjakarta are the least attractive provinces for investments. These provinces economies are basically also based on industrial sectors but in smaller scale compared to other provinces in Jawa. Jogjakarta itself is mostly known as a cultural and tourism city. Meanwhile Jawa Tengah is famous with the wood furniture industries which is mostly owned by local people. Jawa Tengah is also potential for oil exploration.

Table 7. Main Sectors in Kalimantan

Province	Total (million USD)	Ranking	Main Sector				
Kalbar	79,33	12	Agriculture and Farming				
Kalteng	204,73	11	Agriculture and Farming	Mining	Food Industry		
Kalsel	124,73	13	Mining	Basic Metal Industry, Metal Products, Machinery and Electronic Products	Electricity, Gas and Water Supply	Transportation, Warehouse and Telecommunication	Agriculture and Farming
Kaltim	394,88	9	Mining	Basic Chemical Industry, Chemical and Pharmacy Products	Transportation, Warehouse and Telecommunication	Agriculture and Farming	

Source: Indonesia Investment Board (data calculated)

Kalimantan performs quite well in attracting FDI using degree ranking as indicator. Even though there are only few main sectors in this region, they attract quite big amount of investment. In Kalimantan Barat and Kalimantan Tengah, the agricultural

sector become the strongest one while in Kalimantan Selatan and Kalimantan Timur, the mining sector become the strongest one. Kalimantan Timur is the highest rank among others and it attracts about 394, 88 million USD per year in period 2008-2010. Followed by Kalimantan Tengah and Kalimantan Selatan.

Kalimantan Timor produces oil, gas and coal; while Kalimantan Selatan produces minerals. Kalimantan Barat and Kalimantan Tengah produce agriculture products such as crumb rubber and palm oil.

Table 8. Main Sectors in Sulawesi

Province	Total (million USD)	Ranking	Main Sector		
Sulawesi Utara	106,65	15	Mining	Food Industry	Electricity, Gas and Water Supply
Sulawesi Tengah	47,76	21	Basic Chemical Industry, Chemical and Pharmacy Products	Mining	
Sulawesi Selatan	182,20	14	Mining	Electricity, Gas and Water Supply	Agriculture and Farming
Sultra	6,03	30	Mining		
Gorontalo	0,26	32	Mining		
Sulbar	12,45	29	Forestry		

Source: Indonesia Investment Board (data calculated)

Sulawesi region doesn't attract significant investment compared to other regions in Indonesia. The major sector for this region is the mining sector with products such as gold, copper and asphalt. Sulawesi Selatan is the province with the highest rank in attracting investment. As the one of metropolitan city in Indonesia, Makassar, Sulawesi Selatan has 3 main sectors attracting investment: mining, electricity, gas and water supply, and farming. Sulawesi Selatan not only became the most competitive city, it also attracted highest investment through 3 sectors namely mining, electricity, agriculture and farming.

While 3 smallest provinces: Sulawesi Tenggara. Gorontalo and Sulawesi Barat are only attracting mining and forestry as the main sectors. Based on table above it is clear that Sulawesi is not really attractive for foreign investors.

Table 9. Main Sectors in NTB, NTT, Maluku, Maluku Utara and Papua

Province	Total (million USD)	Ranking	Main Sector		
NTB	78,68	17	Other Services	Hotel and Restaurant	Basic Chemical Industry, Chemical and Pharmacy Products
NTT	3,21	28	Fisheries	Mining	
Maluku	0,96	33	Fisheries		
Maluku Utara	83,97	25	Mining		
Papua Barat	6,37	26	Fisheries	Agriculture and Farming	
Papua	116,38	16	Mining	Wood Industry	

Source: Indonesia Investment Board (data calculated)

NTB, NTT, Maluku, Maluku Utara, Papua Barat and Papua are the provinces in Western Indonesia which absorbed only 4.15 percent of total investment. Papua received most from mining sectors with gold and copper as the main products. While other provinces received much less. Maluku is noticed as the lowest rank in national level even in the past; Maluku was the most potential area for spices.

4.3 Location Quotient

Location Quotient is a tool to examine the most potential sector in certain area. By comparing local share into higher level, a sector could be noted as a leading sector if LQ>1, which means it performs better than higher level performance. After examination, there are 2 strategies that could be taken by government. First, maintaining the leading sector to improve competitiveness; and second, improving weaker sectors which perform under expectations. This research examines LQ for each province in terms of attracting foreign direct investment.

First step in assessing LQ test is to calculate weighted score for each sectors as follows.

Table 10. Weighted Score for LQ Sectors

Sectors	Weighted Score
Agriculture and Farming	2,48
Basic Metal Industry, Metal Products, Machinery and Electronic Products	12,27
Construction	3,68

Electricity, Gas and Water Supply	4,31
Fisheries	0,06
Food Industry	4,89
Forestry	0,09
Hotel and Restaurant	1,93
Housing, Industrial Area and Offices	3,66
Leather Industry, Leather Products	0,95
Livestock	0,08
Medical Instrument Industry, Optic and Watch	0,03
Mining	6,48
Non Metal Mining Industry	0,75
Other Industry	0,45
Other Services	2,12
Paper Industry, Paper Products and Printing	0,98
Rubber Industry, Rubber and Plastic Products	1,39
Textile Industry	1,47
Trade and Reparation	4,92
Transportation, Warehouse and Telecommunication	46,47
Wood Industry	0,54

Source: Indonesia Investment Board (data calculated)

4.3.1 Location Quotient: Aceh Province

Economic structure of Aceh in 2008-2010 was dominated by agricultural sector (29%), and it increases every year. As the second major sector was trade, hotel and restaurant around 13-16%. Aceh has comparative advantage in agricultural commodities on crumb rubber, cacao, coffee and palm oil. Aceh also had good performance in fisheries.

In terms of attracting FDI, Aceh has advantage in mining sector and rubber industry sector. Aceh produces gas, oil, and rubber products which are also exported. Other export commodities are fertilizers, fisheries products, and chemical products.

Table 11. Location Quotient : Aceh

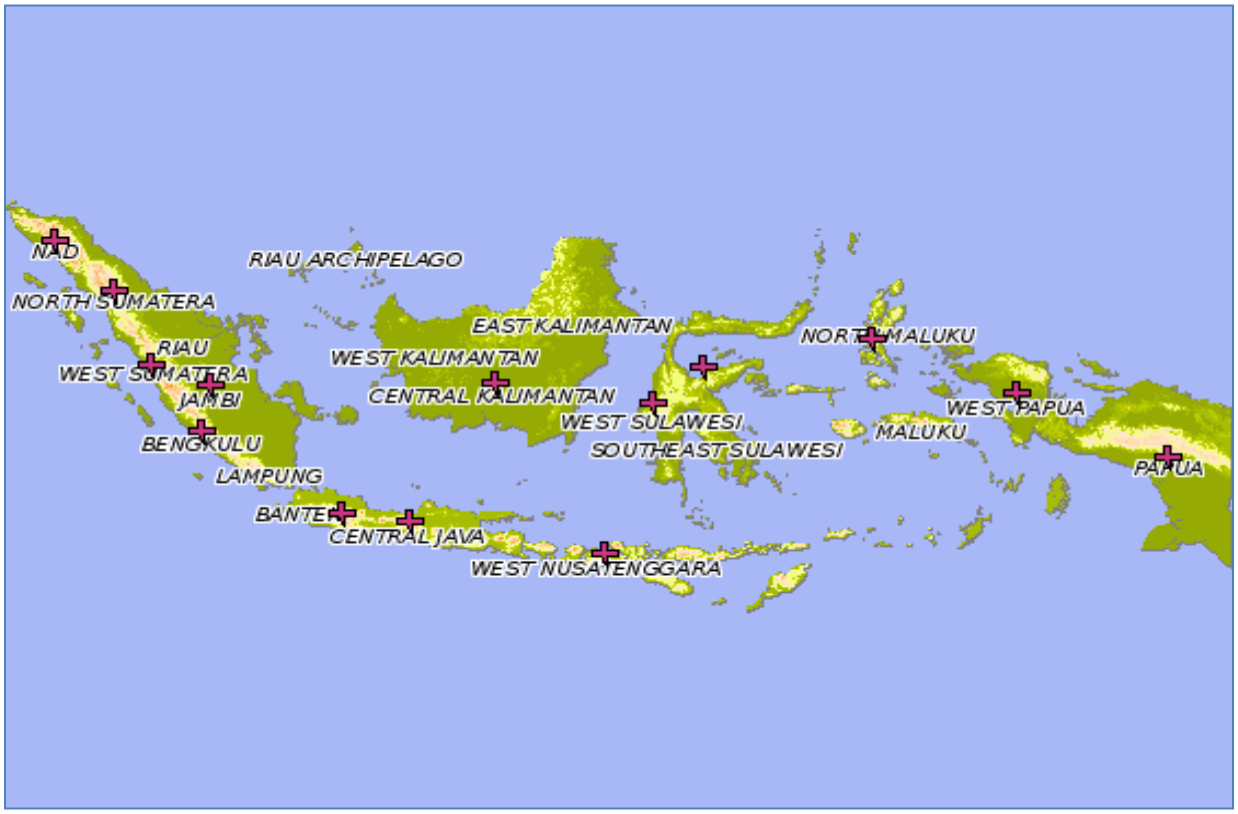
Sectors	LQ	Country Origin
Agriculture and Farming	0.88	Netherlands, Few Countries
Food Industry	0,64	Few Countries
Forestry	0,09	Netherlands, Few Countries
Mining	**10,27**	England, Hongkong, Canada, Malaysia
Other Services	0,85	Netherlands, Few Countries
Rubber Industry, Rubber and Plastic Products	**11,64**	Cayman Islands
Trade and Reparation	1,62	Australia, Malaysia, Few Countries

Source: Indonesia Investment Board (data calculated)

Aceh competitors in mining sector (oil and gas) in Sumatera are Riau, Jambi, Sumatera Selatan and Kepulauan Riau. One of the cities, Lhoknga, is positioned at 48th most competitive city in Indonesia.

This figure is a map of Aceh competitors in nation.

Figure 8. Map of Oil Producers in Indonesia



4.3.2. Location Quotient: Sumatera Utara

Table 12. Location Quotient: Sumatera Utara

Sectors	LQ	Countries Origin
Agriculture and Farming	**1.61**	Few Countries, England, Malaysia, Netherlands, Mauritania, British Virgin Islands
Basic Chemical Industry, Chemical and Pharmacy Products	0.94	Germany
Construction	**1.21**	Malaysia, South Korea, Germany
Electricity, Gas and Water Supply	**1.35**	Few Countries, Singapore, Malaysia, England
Food Industry	**3.48**	Singapore, Few Countries, Malaysia, Taiwan, England, US, Cayman Islands
Hotel and Restaurant	**4.55**	British Virgin Islands, US, Singapore, Malaysia, France
Housing, Industrial Area and Offices	**1.24**	Singapore, British Virgin Islands, Hongkong, Malaysia
Leather Industry, Leather Products	0.55	Switzerland
Mining	**2.17**	Australia, Few Countries
Non Metal Mining Industry	**1.50**	England
Other Industry	**1.26**	Malaysia
Other Services	**1.33**	British Virgin Islands
Paper Industry, Paper Products and Printing	**8.31**	Singapore
Rubber Industry, Rubber and Plastic Products	0.78	Hongkong
Trade and Reparation	**3.79**	British Virgin Islands
Wood Industry	0.58	Few Countries

Source: Indonesia Investment Board (data calculated)

Economic structure of Sumatera Utara is dominated by industrial sector about 23%, agriculture sector about 22%, and hotel and restaurant about 19%. Main agriculture commodities are palm oil, crumb rubber, coffee, and cacao. Sumatera Utara is also famous for its tourism potential and has become one of the main destinations in Sumatera. Sumatera Utara has Lake Toba, which is the largest mountainous lake in Asia.

In terms of FDI, as one of the most competitive provinces, Sumatera Utara has Medan (the capital city) at 5^{th} rank of most competitive cities in Indonesia and Belawan at 44^{th} . Sumatera Utara has 11 competitive sectors in national level namely: paper industry,

hotel and restaurant, trade and reparation, food industry, mining, agriculture, electricity, housing, non metal mining industry, other industry and services. In addition, there are also some countries investing for various sectors such as: England, Malaysia and Singapore. These 3 countries invest in more than one sector in Sumatera Utara. This impressive tendency shows the attractiveness and competitiveness of this province in global market. To support investment, Sumatera Utara has developed more infrastructures such as 9 airports (local and international); 5 sea ports and 3 industrial areas.

As the result also, Sumatera Utara has exported potential commodities such as iron goods, mechanical equipment, electrical material, mineral fuel and iron steel.

The competitors of Sumatera Utara on mining sector are Aceh, Jambi, Sumatera Selatan and Riau; while on food industry sector are Lampung and Sumatera Selatan; trade and reparation sector : Sumatera Barat.; and on basic metal industry and electricity are Riau and Kepulauan Riau.

4.3.3 Location Quotient: Sumatera Barat

Table 13. Location Quotient: Sumatera Utara

Sectors	LQ	Country Origin
Agriculture and Farming	**7,95**	Malaysia
Other Services	**5,72**	Malaysia
Trade and Reparation	**2,41**	Few Countries
Food Industry	0,81	Netherlands
Mining.	0,19	Few Countries
Trade and Reparation	0,22	India

Source: Indonesia Investment Board (data calculated)

Sumatera Barat is potential for tourism sector, meanwhile its economic structure is mostly based on agriculture sector. Major agriculture commodities of this province are cacao, crumb rubber and palm; major mining products are coal and cement; and fisheries.

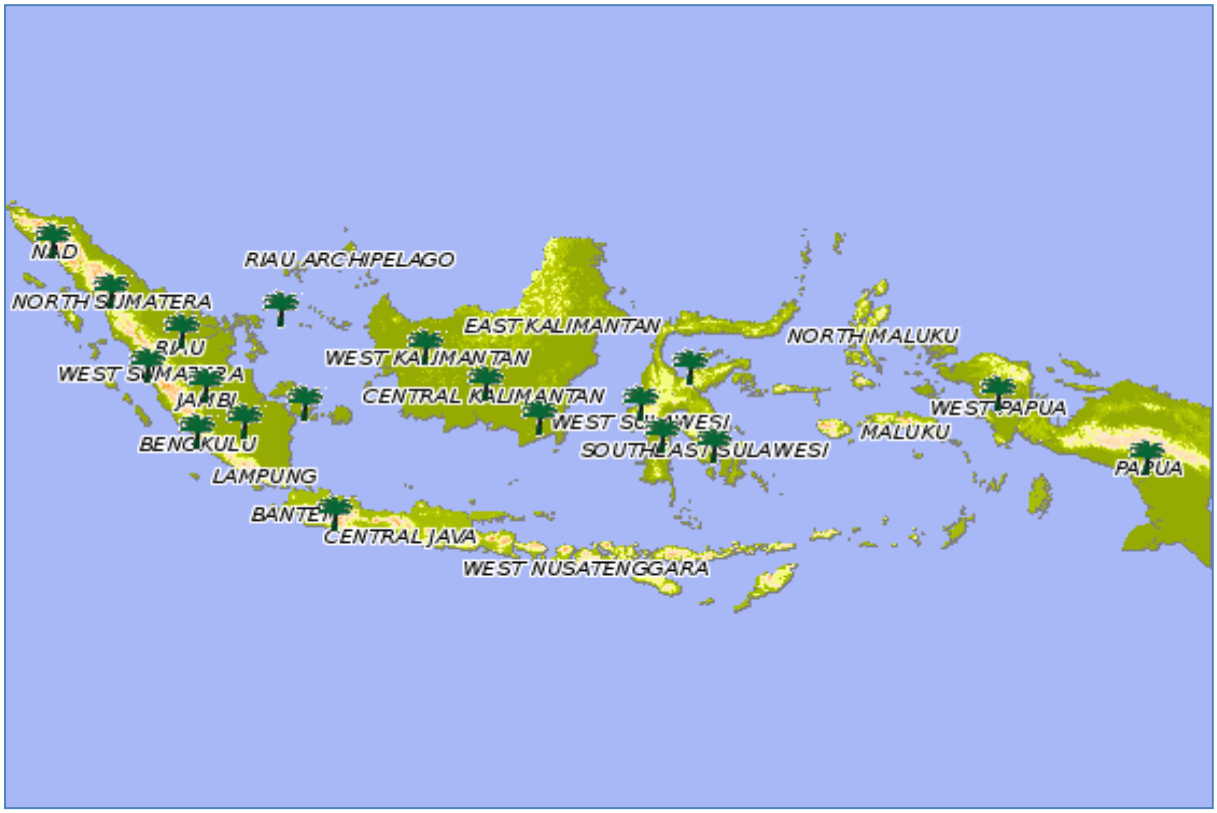
In terms of FDI,the leading sectors for Sumatera Barat are agriculture and farming sector, trade and reparation sector and services. Sumatera Barat has exported cement, chocolate products, coal, crumb rubber and also palm oil. Most investors are from Malaysia.

To support economic and export import activities, Sumatera Barat has 8 sea port which is one of its seaport is famous among population in Indonesia. Its name is Teluk Bayur seaport. Sumatera Barat also has 3 airports; which is one of them is international airport, and it significantly improves trade activities and tourism. Sumatera Barat is quite famous for tourist from Malaysia and Singapore.

The regional competitors on agriculture and farming sector are Bengkulu, Jambi, and Bangka Belitung; while competitors on tourism are Kepulauan Riau, and Sumatera Utara; and competitor on trade sector is also Sumatera Utara.

Other competitors for palm oil in Indonesia are shown in this figure:

Figure 9. Map of Palm Oil Producers in Indonesia



4.3.4 Location Quotient: Riau

Table 14. Location Quotient: Riau

Sectors	LQ	Country Origin
Agriculture and Farming	**1.22**	Singapore, British Virgin Islands, Malaysia, Mauritania, Few Countries
Basic Chemical Industry, Chemical and Pharmacy Products	**4.35**	Singapore, Nepal, Malaysia, Few Countries
Construction	**2.76**	England, Australia
Electricity, Gas and Water Supply	0.49	Mauritania
Food Industry	**3.60**	Malaysia, England, Mauritania, Singapore
Hotel and Restaurant	0.11	Singapore
Housing, Industrial Area and Offices	0.21	Singapore

Mining	**1,11**	Few Countries
Other Services	0.02	China
Paper Industry, Paper Products and Printing	0.91	Few Countries
Trade and Reparation	0.82	Singapore
Transportation, Warehouse and Telecommunication	0.5	Singapore

Source: Indonesia Investment Board (data calculated)

Riau has strategic position in regional and international trade path of ASEAN. Geographically, Riau has connected Hindian Ocean, South China Sea and Pacific Ocean. Main agriculture commodities from this province are crumb rubber, palm oil, cacao and coffee. In addition, Riau is also rich of oil, gas and coal.

In terms of FDI, Riau has 4 main competitive sectors namely: basic chemical industry, food industry, construction, and agriculture and farming. Most investors are come from neighboring country namely Singapore and Malaysia. Other investors are England and Mauritania. Riau has exported oil and gas, coal, rubber, palm oil, palm kernel oil, and processed fish. One of the cities, Duri, is ranked 42nd at the 50 most competitive cities in Indonesia. To support it's economic and investment, Riau has 4 sea ports and 2 airports.

4.3.5 Location Quotient: Jambi

Table 15. Location Quotient: Jambi

Sectors	LQ	Country Origin
Agriculture and Farming	**4.00**	Mauritania
Food Industry	**1.25**	Mauritania
Mining	**4.84**	British Virgin Islands, China, England, India, South Korea
Rubber Industry, Rubber and Plastic Products	**21.8**	Japan
Trade and Reparation	0.02	Singapore
Wood Industry	**36.4**	Singapore

Source: Indonesia Investment Board (data calculated)

Economic structure of Jambi is mostly supported by agriculture (40%), trade (17%) and mining (16%). Main export commodities are crumb rubber, palm oil, oil, gas and coal. In terms of FDI, Jambi has 5 leading sectors where most investors are from China, India, Singapore, South Korea and Mauritania. Jambi is very competitive on rubber industry and wood industry. To support its economy and investment, Jambi has 3 airports and 14 seaports. There are two cities in Jambi have positioned as most competitive cities namely Jambi (23rd) and Bangko (45th).

4.3.6 Location Quotient: Sumatera Selatan

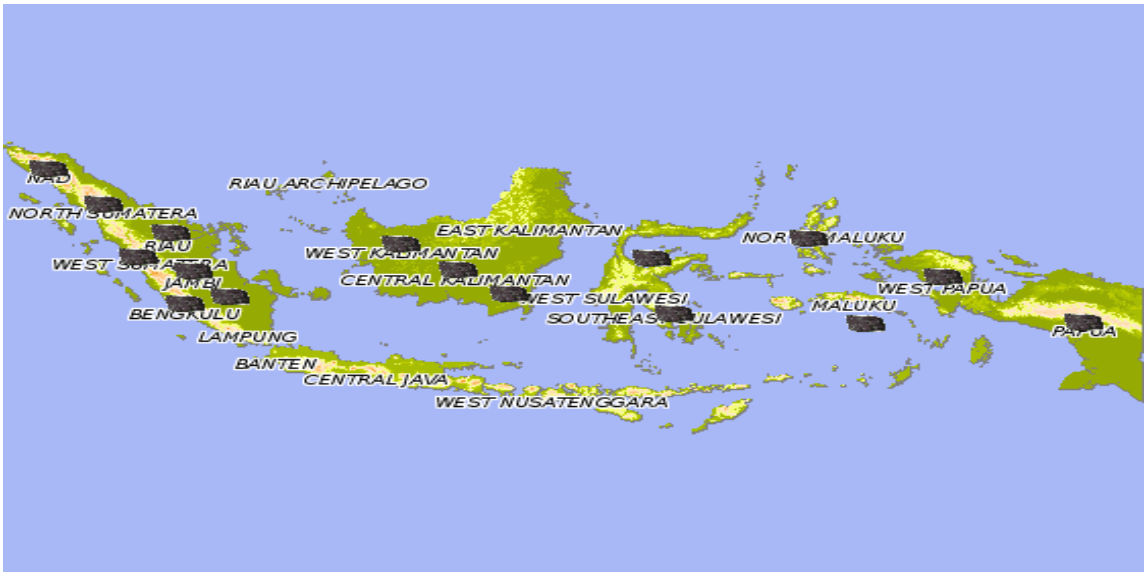
Table 16. Location Quotient : Sumatera Selatan

Sectors	LQ	Country Origin
Agriculture and Farming	**6.36**	Malaysia, Singapore, England, US
Basic Chemical Industry, Chemical and Pharmacy Products	0.88	South Korea, Malaysia, China, Qatar
Electricity, Gas and Water Supply	0.01	Singapore
Food Industry	**3.2**	England, Malaysia US, Singapore,
Hotel and Restaurant	0.04	France
Mining	**3.22**	Australia, Dominica, England, UEA
Rubber Industry, Rubber and Plastic Products	**13.9**	Malaysia, Japan, England, Thailand
Trade and Reparation	0.02	France, Malaysia, China, Singapore
Wood Industry	**28.3**	Malaysia, Singapore, England

Source: Indonesia Investment Board (data calculated

Sumatera Selatan has 5 leading sectors in terms of FDI namely agriculture and farming, food industry, mining, rubber industry, and wood industry. Palembang, the capital city of Sumatera Selatan is ranked at 18th most competitive city in Indonesia. Most sectors produce the export commodities such as petroleum material and other fuels, rubber and rubber material, wood, chemical products, palm oil, and vegetables fat. Most investors are from Malaysia, Singapore, United States and England. Sumatera Selatan is recently also became one of the biggest coal producer in Sumatera. The competitors in region are Jambi, Riau, Sumatera Utara and Bengkulu; and in nation are Kalimantan Timur, Kalimantan Tengah, and West Sulawesi.

Figure 10 . Map of Coal Producers in Indonesia



4.3.7 Location Quotient: Bengkulu

Table 17. Location Quotient : Bengkulu

Sectors	LQ	Country Origin
Agriculture and Farming	**2.6**	England
Food Industry	**1.87**	England
Mining	0.03	Hongkong, Netherlands, India, England

Source: Indonesia Investment Board (data calculated)

Bengkulu is one of the lowest economies provinces in Indonesia. In terms of FDI, Bengkulu has 2 leading sectors namely agriculture and farming sector, and food industry. Main investors are from England. Bengkulu is potential for coal mining, but is less competitive compared to other provinces such as Sumatera Selatan and Jambi. The main export commodities of Bengkulu are cacao, palm oil and rubber.

4.3.8 Location Quotient: Lampung

Table 17. Location Quotient : Lampung

Sectors	LQ	Country Origin
Agriculture and Farming	**1.44**	Malaysia
Basic Chemical Industry, Chemical and Pharmacy Products	0.02	Singapore, Malaysia
Construction	0.03	Malaysia
Electricity, Gas and Water Supply	**3.81**	England
Fisheries	0.01	Hongkong
Food Industry	**15.6**	China, England, Taiwan, Singapore, Japan, Netherlands
Hotel and Restaurant	0.02	Singapore, Malaysia
Livestock	0.01	Tanzania
Mining	0.03	Singapore, England
Trade and Reparation	0.08	China

Source: Indonesia Investment Board (data calculated)

Economic structure of Lampung is dominated by agriculture (39%), industry (14%) and trade (16%). Main commodities of Lampung are crumb rubber, palm oil, palm, cacao, and pepper. Lampung is also potential for fisheries product. In terms of FDI, Lampung has 3 leading sectors namely: agriculture and farming sector, electricity and trade. Lampung is located at the south of Sumatera and known as the gate of Sumatera. Lampung has 3 airports and 6 seaports; one of them is Merak Sea Port, one of the busiest seaports in Indonesia. To support economic activities, Lampung has 1 industrial area namely Lampung Sentosa Industrial Estate.

4.3.9 Location Quotient: Bangka Belitung

Table 18. Location Quotient : Bangka Belitung

Sectors	LQ	Country Origin
Agriculture and Farming	**17.5**	Mauritania, Malaysia, England, Singapore, South Korea
Basic Metal Industry, Metal Products, Machinery and Electronic Products	0.01	Singapore
Food Industry	**9.98**	Mauritania, Malaysia, Singapore
Livestock	0.13	Malaysia
Mining	0.02	Singapore
Trade and Reparation	0.17	South Korea
Transportation, Warehouse and Telecommunication	0.11	Thailand

Source: Indonesia Investment Board (data calculated)

Economic structure of Bangka Belitung is dominated by agriculture sector (24.8%), processing sector (23%) and trading sector (20%). The main commodities of agriculture sector are pepper, cassava and corn; while the main commodities of processing sector was oil and gas. The main contribution of trading sector is large trading and retail, followed by hotel and restaurant.

Bangka Belitung is now became one of the most famous tourism destination in Indonesia. To support the economics' activity, Bangka Belitung has 2 airports and 14 sea ports. Bangka Belitung also has 7 industrial areas.

Most investors are from Malaysia, Mauritania, England, Singapore and South Korea.

4.3.10 Location Quotient: Kepulauan Riau

Table 19. Location Quotient : Kepulauan Riau

Sectors	LQ	Country Origin
Agriculture and Farming	0.11	Malaysia
Basic Chemical Industry, Chemical and Pharmacy Products	**4.33**	Singapore, US, Singapore, Japan, Malaysia, Italy, China, Germany, etc
Construction	0.18	
Food Industry	0.34	China
Hotel and Restaurant	**1.34**	South Korea, US
Housing, Industrial Area and Offices	0.43	South Korea, Malaysia
Leather Industry, Leather Products	0.23	Australia
Medical Instrument Industry, Optic and Watch	0.12	
Mining	0.31	England
Other Industry	0.2	Few Countries
Other Services	**9.08**	Thailand, Singapore, NZ, US, Australia, France, Netherlands
Paper Industry, Paper Products and Printing	0.26	Malaysia
Rubber Industry, Rubber and Plastic Products	**2.07**	Singapore, Malaysia, Taiwan
Textile Industry	0.2	
Trade and Reparation	0.42	Few Countries, US, Malaysia, Australia
Transportation Equipment Industry and Other Transportation	0.29	Singapore

Source: Indonesia Investment Board (data calculated)

Kepulauan Riau, as one of the latest provinces in Indonesia, has a high competitive rank in national level(10^{th}). Being rich of oil and gas, Kepulauan Riau is also potential in manufacturing industries, trade, and services. Kepulauan Riau has 4 leading sectors in terms of FDI namely basic chemical industry, hotel and restaurant, rubber industry and services. Most investors are from Singapore, Malaysia, Taiwan, Thailand, United States, Australia, South Korea, China and Germany. One of the cities, Batam, is ranked 7^{th} of the most competitive cities in Indonesia.

Kepulauan Riau with its potential should improve other sectors such as transportation, considering its strategic position within region and nation.

4.3.11 Location Quotient: DKI Jakarta

Table 20. Location Quotient : DKI Jakarta

Sectors	LQ	Country Origins
Agriculture and Farming	0.05	Singapore
Basic Metal Industry, Metal Products, Machinery and Electronic Products	0.12	Switzerland, Hongkong, Singapore, Netherlands, Japan, Malaysia, India, Germany, Australia, England, US, China
Construction	**1.05**	Singapore, South Korea, Malaysia, Taiwan, Australia, Netherlands, France, England
Electricity, Gas and Water Supply	0.01	Singapore, US, Dominica, Australia, China
Food Industry	0.16	Germany, Singapore, Australia, Netherlands, Canada, US, South Korea
Hotel and Restaurant	0.32	Singapore, South Korea, US, Netherlands, France, Malaysia, Japan, Hongkong, Singapore, Malaysia, South Korea, Netherlands, Japan
Housing, Industrial Area and Offices	0.66	Singapore, Malaysia, South Korea, Netherland, Japan, England, Taiwan
Mining	0.14	South Korea, UEA, Singapore, Malaysia, US, China, India, Australia, Japan, Switzerland
Paper Industry, Paper Products and Printing	0.01	Norway
Rubber Industry, Rubber and Plastic Products	0.23	Malaysia, England
Textile Industry	**6.38**	Japan, South Korea, Malaysia, India, Taiwan
Trade and Reparation	**1.29**	Singapore, US, Japan, Malaysia, Netherlands, Mauritania, South Korea, France France, Germany, China
Transportation Equipment Industry and Other Transportation	**1.74**	Japan, Malaysia, Singapore, Sweden, New Zealand, Singapore, Netherlands, South Korea
Wood Industry	0.45	Australia

Source: Indonesia Investment Board (data calculated)

Jakarta as the second most powerful and competitive province, only have 4 leadings sectors namely construction, textile industry, trade and reparation, and transportation. Main investors are Singapore, Malaysia, Netherlands, Japan, France, China, and United States. Although attractive for almost all sectors, but number of leading sectors is fewer than other competitors. It is possibly caused by the total investment in Jakarta is much higher approaching the total investment of Indonesia. Therefore, sector's performance in Jakarta is almost similar with sector's performance in national level.

This funding also proves that Jakarta is leading in infrastructure and facilities. Construction, trade and transportation sectors are categorized as high-cost and high technology sectors which support economic activities. These leadings sectors will support other sectors to perform better in attracting investment. In fact , Jakarta still grows and develops, which is attractive for foreign investors to participate.

Compared to Jakarta's strong competitors in Jawa region (Banten, Jawa Barat and Jawa Timur), Jakarta has the fewest leading sectors to attract investment. Other provinces in region are leading in other industries, hotel and restaurant which absorb more labor forces. Probably it is caused by the high wage of labor in Jakarta which force investors to find other provinces to reduce production costs.

4.3.12 Location Quotient: Jawa Barat

Table 21. Location Quotient : Jawa Barat

Sectors	LQ	Country Origins
Agriculture and Farming	0.88	Netherlands, Singapore, China, South Korea, Panama
Basic Metal Industry, Metal Products, Machinery and Electronic Products	**2.17**	Cayman Islands, Netherlands, Germany, Singapore, US, South Korea, Taiwan, Switzerland, Hongkong, Malaysia
Construction	0.2	Malaysia, Australia
Electricity, Gas and Water Supply	**1.78**	United States, China
Food Industry	**1.06**	Singapore, Philippines, Japan, England, France, Netherland, Switzerland, Turkey
Hotel and Restaurant	0.4	United States, Singapore, France, South Korea
Housing, Industrial Area and Offices	0.31	England, Hongkong, France, South Korea, Japan
Leather Industry, Leather Products	**2.36**	Italy, Japan
Livestock	0.17	Japan, South Korea, Malaysia, US
Non Metal Mining Industry	**5.82**	Germany, Taiwan, England, Japan, Hongkong
Paper Industry, Paper Products and Printing	**3.62**	Singapore, Japan, Taiwan, China, South Korea, Malaysia, England, Germany
Rubber Industry, Rubber and Plastic Products	**4.50**	Singapore, Japan, South Korea, Hongkong, Australia, Taiwan, Malaysia
Textile Industry	**5.12**	South Korea, Japan, England, Singapore, Belgium, Malaysia, India, Taiwan, US
Trade and Reparation	**1.10**	Singapore, France, Mauritania, Netherlands, US, Malaysia, Germany, Taiwan, India
Transportation Equipment Industry and Other Transportation	0.48	Japan, Germany, Singapore, Malaysia, India, England, Taiwan, South Korea
Wood Industry	0.17	South Korea

Source: Indonesia Investment Board (data calculated)

Jawa Barat is the most populated province in Indonesia. Economic structure of Jawa Barat is dominated by agriculture and industries. Some cities in Jawa Barat are satellite cities for Jakarta such as Bekasi, Cikarang, Cibinong and Bogor. Those cities are

attractive and competititve for manufacturing industries. Jawa Barat as the most powerful and competitive province in Indonesia has 9 leading sectors namely basic metal industry, machinery, electricity, food industry, leather industry, non metal mining industry, rubber industry, textile industry, trade and reparation. Main investors are from Germany, Singapore, China, South Korea, United States, Taiwan, England and France. Jaw Barat as the most powerful province has 8 cities in top 20 most competitive cities in Indonesia namely: Karawang, Bekasi, Cikarang, Bogor, Bandung, Indramayu, Sukabumi and Purwakarta.

Considering its advantages, Jawa Barat should improve its performance in weaker competitive sectors such as agriculture, house and restaurant, and transportation. Further, Jawa Barat is potential for tourism and has become one of the most favourite places to visit by local and international tourists. To support its economic activities, Jawa Barat has one airport and 2 seaports. Jawa Barat also has 20 industrial areas spreaded in few cities.

4.3.13 Location Quotient: Jawa Tengah

Table 22. Location Quotient : Jawa Tengah

Sectors	LQ	Country of Origin
Agriculture and Farming	0.02	Panama, Australia
Basic Chemical Industry, Chemical and Pharmacy Products	0.59	South Korea, Hongkong, Japan, Saudi Arabia, England, Japan, China, Taiwan
Electricity, Gas and Water Supply	**1.47**	Japan, South Korea, Finland
Food Industry	**6.84**	Netherlands, England, Singapore, US, Japan, South Korea
Hotel and Restaurant	0.2	United States, England, South Korea, France, Italy, Singapore
Housing, Industrial Area and Offices	0.04	Singapore
Paper Industry, Paper Products and Printing	0.15	South Korea
Rubber Industry, Rubber and Plastic Products	0.92	South Korea, India
Textile Industry	**10.9**	British Virgin Islands, South Korea, China, India, Singapore, Malaysia
Trade and Reparation	**1.73**	Taiwan, Denmark, China, Germany, US
Wood Industry	**7.4**	Singapore, South Korea, Pakistan

Source: Indonesia Investment Board (data calculated)

Jawa Tengah is an agricultural province with tourism potential. Borobudur temple which is the largest Buddhist temple in the world is located at Magelang, Jawa Tengah. In some cities, Jawa Tengah also has oil and gas exploration. Capital of Jawa Tengah, Semarang, positioned at 16th most competitive cities in Indonesia. Jawa Tengah has 5 leading sectors namely electricity and water supply, food industry, textile industry,

trade and wood industry. Main investor's origin is China, India, Malaysia, Netherlands and Japan.

Jawa Tengah is the centre of tobacco and cigarettes industry. There are only 4 provinces to produce tobacco in Indonesia and Jawa Tengah is the largest one. It is important for Jawa Tengah to improve the competitiveness of agriculture sector, and also tourism sector in the future. To support economic activities, Jawa Tengah has 4 airports, 2 seaports and 3 industrial areas.

Figure 11. Map of Tobacco Producers in Indonesia

4.3.14 Location Quotient: Jogjakarta

Table 23. Location Quotient : Jogjakarta

Sectors	LQ	Country of Origin
Agriculture and Farming	**2,37**	Japan
Basic Chemical Industry, Chemical and Pharmacy Products	0,35	Singapore, Netherlands,
Food Industry	**1,43**	Netherlands
Hotel and Restaurant	**15,15**	US, India, France
Leather Industry, Leather Products	0,9	South Korea
Other Industry	0,75	Netherlands, South Korea, US, Belgium
Other Services	0,64	Australia, India, Germany, England, Japan, Oman

Textile Industry	0,54	South Korea, France, Japan
Trade and Reparation	0,56	Australia, Germany, Belgium

Source: Indonesia Investment Board (data calculated)

Jogjakarta is the agriculture and cultural province with many natural tourism objects. Jogjakarta is also known as center of education. Some of the best universities in Indonesia are located in Jogjakarta. In terms of FDI, Jogjakarta has 3 leading sectors namely agriculture, food industry, hotel and restaurant. Main investor's origin is United States, France, India and Japan.

As the center of education, it is actually an advantage for Jogjakarta to have high-skill workers. But the fact that students leave Jogjakarta after their study and look for job in other cities make it difficult for industry sector of Jogjakarta.

4.3.15 Location Quotient: Jawa Timur

Table 24. Location Quotient : Jawa Timur

Sectors	LQ	Country of Origin
Basic Chemical Industry, Chemical and Pharmacy Products	**2.00**	South Korea, Singapore, Japan, Netherland, Hongkong, US, Malaysia, Taiwan, Singapore, Hongkong
Construction	0.17	Singapore
Electricity, Gas and Water Supply	**8.42**	Singapore, Australia
Food Industry	**4.29**	British Virgin Islands, Japan, Switzerland, Netherlands, Singapore, US, South Korea, Belgium, England, Taiwan, China, France, Malaysia
Hotel and Restaurant	0.29	United States, France, South Korea
Housing, Industrial Area and Offices	0.67	Singapore, France
Leather Industry, Leather Products	**15.02**	Taiwan, South Korea, Malaysia, France
Other Industry	**7.28**	United States, Germany, Japan, Singapore, South Korea
Paper Industry, Paper Products and Printing	**2.96**	Taiwan, Hongkong, China
Rubber Industry, Rubber and Plastic Products	**5.23**	Singapore,, Taiwan, Malaysia, South Korea
Textile Industry	**12.9**	Few Countries, Japan, Mauritius, South Korea
Trade and Reparation	0.88	France, Singapore, Japan, South Korea, Taiwan, Netherlands, Australia, India, Hongkong. Germany
Transportation Equipment Industry and Other Transportation	0.13	Japan, Singapore, Sweden, England, Singapore

Source: Indonesia Investment Board (data calculated)

Economic structure of Jawa Timur is dominated by agriculture sector (15.65 %), processing (25.96 %) and trading (29.91 %). Main agriculture commodities of Jawa Timur are paddy, coffee, coconut, cloves, rubber and soybean. In terms of FDI, Jawa Timur has 8 leading sectors namely basic chemical industry, electricity, food industry, leather industry, paper industry, rubber industry and textile industry. Jawa Timur has strategic location for industries because its position in the centre of Indonesia with high access to other cities in other regions such as Kalimantan, Sulawesi and East Indonesia.

Jawa Timur has 5 cities in top 50 most competitive cities in Indonesia, namely Surabaya (2nd), Pasuruan (15th), Tuban (17th), Gresik (19th) and Madura (32nd). Compete with other provinces in Jawa region, Jawa Timur has export its major commodities such as textile products, rubber products, copper and other chemical products. To support its economic activities, Jawa Timur has 6 airports and 14 seaports.

Figure 12. Map of Copper Product Producers in Indonesia

4.3.16 Location Quotient: Banten

Table 25. Location Quotient : Banten

Sectors	LQ	Country Origins
Basic Chemical Industry, Chemical and Pharmacy Products	**3.08**	Switzerland, Singapore, Japan, US, Malaysia, South Korea, Norway, Hongkong, Brazil, Taiwan, England
Construction	**2.07**	Netherlands, Malaysia, South Korea
Electricity, Gas and Water Supply	**1.07**	Singapore, US, England
Food Industry	**1.05**	Singapore, Thailand, China, Turkey, US, Taiwan, South Korea, Australia, Switzerland, Malaysia, England
Hotel and Restaurant	0.45	British Virgin Islands, England, US, France, Japan
Housing, Industrial Area and Offices	**6.37**	British Virgin Islands, Singapore, Malaysia, South Korea
Leather Industry, Leather Products	**6.43**	South Korea, Singapore, Hongkong, Mauritius, Taiwan, Italy
Mining	0.442	Singapore, US, China, UEA, Germany

Paper Industry, Paper Products and Printing	**4.38**	Taiwan, South Korea, Japan
Rubber Industry, Rubber and Plastic Products	0.34	England, South Korea, Japan, China, Singapore, Australia, Germany, Taiwan, West Samoa
Textile Industry	0.67	England, Japan, Taiwan, Malaysia, Hongkong, China, Singapore
Trade and Reparation	0.39	South Korea, France, Singapore, Australia, Malaysia, Germany, Switzerland, Japan, England, Thailand, Taiwan, Hongkong
Transportation Equipment Industry and Other Transportation	0.04	Taiwan, Malaysia, Mauritius, Singapore, Hongkong

Source: Indonesia Investment Board (data calculated)

Economic sector of Banten is dominated by industry (44%), trade (21%) and transportation (10%). As a new province in Indonesia, Banten has become one of the most competitive provinces in Indonesia; compete with Jakarta, Jawa Barat and Jawa Timur. In terms of FDI, Banten has 7 leading sectors, better than Jakarta. Those 7 sectors are basic chemical industry, construction, electricity, food industry, housing, industrial areas, leather industry and paper industry. Main investor's origin is United States, Japan, South Korea, Switzerland and Germany.

Banten has 3 cities in most competitive cities in Indonesia namely Cilegon (8^{th}), Serang (12^{th}) and Tangerang (25^{th}). Supported by 8 sea ports and 18 industrial areas, Banten has exported commodities such as iron and steel products, chemical and pharmacy products, mineral oil and its distillation products, furniture and rubber materials.

In the future, based on its location and position, Banten should improve its competitiveness on trade and transportation sectors.

4.3.17 Location Quotient: Bali

Table 26. Location Quotient : Bali

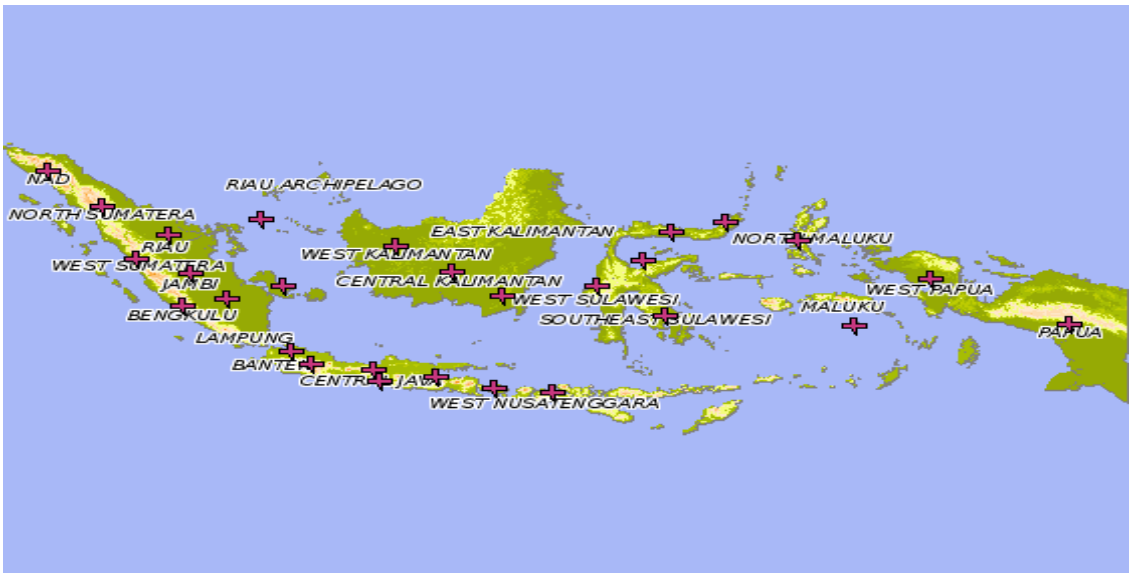
Sectors	LQ	Country of Origin
Agriculture and Farming	0.01	Hongkong
Basic Chemical Industry, Chemical and Pharmacy Products	0.02	Sweden, Hongkong, Canada
Construction	0.07	Singapore, Japan
Electricity, Gas and Water Supply	0.31	Singapore, Malaysia
Food Industry	0.11	Australia, Italy, Malaysia, Japan, US, Singapore
Hotel and Restaurant	**43.03**	England, Singapore, Japan, US, South Korea, Australia, Germany, Hongkong, Czech, France, Netherlands
Housing, Industrial Area and Offices	0.54	Netherlands, Spain, Slovakia, Australia, Greece

Source: Indonesia Investment Board (data calculated)

Economic structure of Bali is dominated by trade sector (32%), services (14%) and agriculture (13%). Main agriculture commodities are coconut and coffee. Having known as the most famous tourism destination in Indonesia, Bali is attractive for investors from many countries. Main investor's origin is England, United States, Singapore, Japan, Australia, Germany and Hongkong. Hotel and Restaurant sector is the leading sector for FDI in Bali. Many resorts and hotels are now owned by foreigners.

Bali is also known by its creative industry sector. Some products such as bamboo crafts, furniture crafts, silver jewelry and other wooden crafts are became major export commodities of Bali. These hand-made products mostly produced by households to improve the income. In the future, it is possible for Bali to improve this sector to attract investors because these products are known by its beauty and the quality. To support it economic activities and investment, Bali has 2 airports and 10 sea ports.

Figure 13 . Map of Natural Tourism Potential in Indonesia



4.3.18 Location Quotient: Nusa Tenggara Barat

Table 27. Location Quotient : Nusa Tenggara Barat

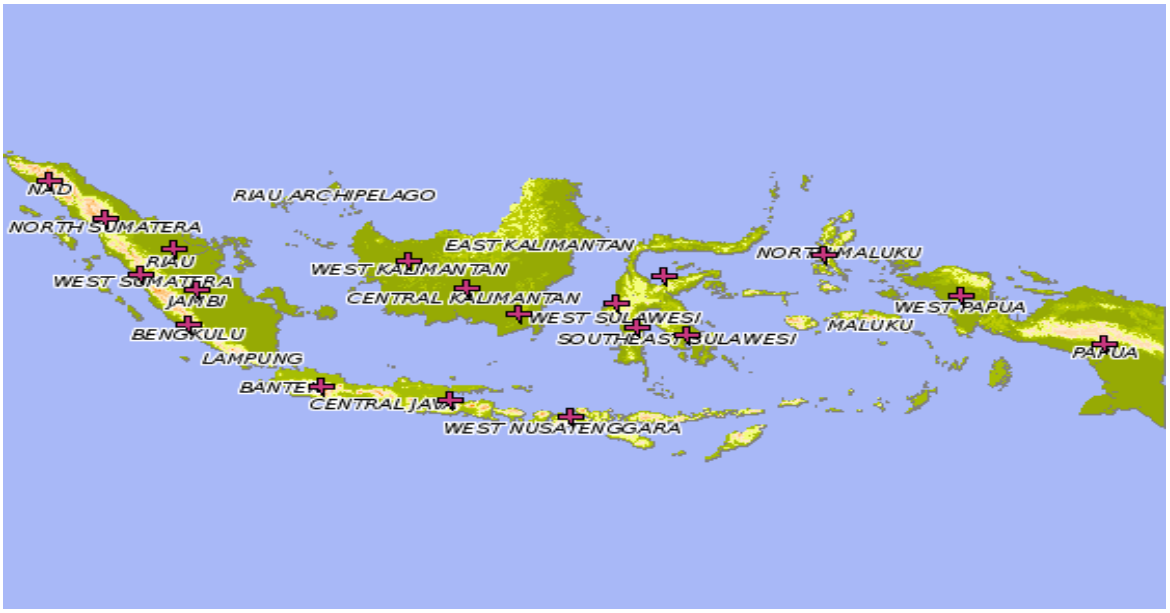
Sectors	LQ	Country of Origin
Basic Chemical Industry, Chemical and Pharmacy Products	0.03	South Korea
Fisheries	0.28	South Korea, Japan
Other Services	**4.01**	Australia, England, Canada, Sweden, Italy , France, Austria, Netherlands
Hotel and Restaurant	0.02	Russia, South Korea, Italy, Austria, Slovakia, Germany, India
Mining	0.03	Malaysia, Singapore
Trade and Reparation	0.15	Singapore, Italy, England, Mauritius, Netherlands
Transportation Equipment Industry and Other Transportation	0.15	New Zealand

Source: Indonesia Investment Board (data calculated)

Economic structure of Nusa Tenggara Barat is dominated by agriculture (26%), industry (5%) and trade (15%). Nusa Tenggara Barat is also one of the main tobacco producers in Indonesia. Other sectors which improve rapidly in Nusa Tenggara Barat recently are tourism, hotel and restaurant. Nusa Tenggara Barat. This sector has become the leading sector for FDI of Nusa Tenggara Barat. The capital city of Nusa Tenggara Barat, Lombok, has ranked 31st of the most competitive cities in Indonesia. Lombok is now became one of tourism destination by its natural objects such as beach and islands.

Main investor's origin is from Australia, England Canada, Sweden, Italy and France. In the future, Nusa Tenggara Barat could improve its mining's sector considering its potential that Nusa Tenggara Barat also produces gold and copper.

Figure 14. Map of Gold Producers in Indonesia



4.3.19 Location Quotient: Nusa Tenggara Timur

Table 28. Location Quotient : Nusa Tenggara Timur

Sectors	LQ	Country of Origin
Fisheries	**8,06**	Japan
Food Industry	0.03	Japan
Hotel and Restaurant	0.04	France
Mining	0.17	South Korea
Other Services	0.02	Taiwan
Trade and Reparation	0.4	India, South Korea

Source: Indonesia Investment Board (data calculated)

Nusa Tenggara Timur is the lowest economies province in Indonesia. Economic structure of Nusa Tenggara Timur is dominated by agriculture (39%), trade (17%) and industry (1, 5%). Most population rely on fisheries for living. This sector has also become the only leading sector for FDI. Investor's origin is from Japan. These fisheries products are also exported. Other export commodities of Nusa Tenggara Timur are ceramic products, mineral fuels, and salts.

Nusa Tenggara Timur topography mostly consists of island and oceans. One of the most famous islands is Komodo Island where Komodo, one of the biggest reptiles in the world exists. In the future, Nusa Tenggara Timur should be able to improve its tourism sector because of this potential. Moreover, Nusa Tenggara Timur has also many natural objects. The problem is lack of infrastructure and transportation.

4.3.20 Location Quotient: Kalimantan Barat

Table 29. Location Quotient : Kalimantan Barat

Sectors	LQ	Country of Origin
Agriculture and Farming	**9.35**	Singapore, Thailand, Malaysia
Construction	0.24	Malaysia
Food Industry	**2.62**	British Virgin Islands, South Korea, Singapore
Hotel and Restaurant	0.18	Singapore
Mining	0.34	China
Trade and Reparation	0.18	Malaysia, South Korea

Source: Indonesia Investment Board (data calculated)

Economic structure of Kalimantan Barat is dominated by agriculture sector (25%), industry (17%) and trade (16%). Located in the boundaries of Indonesia-Malaysia, Kalimantan Barat has 2 leading sectors in attracting FDI which mostly comes from Singapore, Malaysia and Thailand and South Korea. Pontianak, the capital city of Kalimantan Barat is ranked 24th of most competitive city in Indonesia. Other city are Ketapang (40th) and Singkang, ranked 47th. The main commodities of West Kalimantan are crumb rubber and palm oil. These products are also exported. For palm oil products, Kalimantan Barat should compete with Kalimantan Tengah, Kalimantan Selatan, Aceh, Sumatera Utara, Bengkulu, Jambi, Sulawesi Tengah, and Sulawesi Selatan. Other advantages products of Kalimantan Barat are mining products in mineral such as bauxite, granite, kaolin and mangan. The investors are from China.

To support its activities, Kalimantan Barat has 7 airports and 6 sea ports.

4.3.21 Location Quotient: Kalimantan Tengah

Table 30. Location Quotient : Kalimantan Tengah

Sectors	LQ	Country of Origin
Agriculture and Farming	**21.76**	Singapore, Malaysia, England
Basic Chemical Industry, Chemical and Pharmacy Products	0.19	Malaysia
Construction	0.22	India, Malaysia
Food Industry	**4.25**	Mauritius, England, Singapore, Malaysia, South Korea
Hotel and Restaurant	0.46	Singapore
Mining	**3.47**	Australia, Philippine, Hongkong, North America, Switzerland, Malaysia, Singapore
Wood Industry	**2.06**	Hongkong

Source: Indonesia Investment Board (data calculated)

Economic sector of Kalimantan Tengah is dominated by agriculture (32%), industry (78%) and trade (18, 42%). In terms of FDI, Kalimantan Tengah has 4 leading sectors namely agriculture and farming, food industry, mining, and wood industry. Main investor's origin is from Singapore, Malaysia, England, South Korea, Hongkong and Australia. Main products are crumb rubber and palm oil. While in mining sector, Kalimantan Tengah produces coal and oil. Two cities, Balikpapan and Tayan, ranked 14^{th} and 35^{th} of the most competitive cities in Indonesia.

As for export commodities, Kalimantan Tengah major commodities are palm oil, crumb rubber, palm fat acid and plywood.

To support its economic activities, Kalimantan Tengah has 8 airports, 9 seaports and 2 industrial areas.

4.3.22 Location Quotient: Kalimantan Selatan

Table 31. Location Quotient : Kalimantan Selatan

Sectors	LQ	Country of Origin
Agriculture and Farming	0.21	Bahamas, Malaysia, Japan
Basic Metal Industry, Metal Products, Machinery and Electronic Products	0.84	Singapore
Electricity, Gas and Water Supply	**1.41**	Singapore
Fisheries	0.02	United States
Food Industry	0.16	Malaysia, Singapore

Mining	**10.2**	Singapore, South Korea, Netherlands, Canada, Japan, China, Malaysia, Thailand
Transportation, Warehouse and Telecommunication	0.11	Australia

Source: Indonesia Investment Board (data calculated)

Economic structure of Kalimantan Selatan is dominated by agriculture (29%), industry (12%) and trade (17%). Main commodities are coconut, oil palm, and fisheries product. Kalimantan Selatan has 2 leading sector namely electricity and mining. Kalimantan Selatan is potential of mineral and non metal mining. The capital city, Banjarmasin, is ranked 29th of the most competitive city and other city, Kotabaru, is ranked 26th. Main investor's origin is from Singapore, South Korea, Netherlands, and Canada. To support its economic activities, Kalimantan Selatan has 3 airports and 4 seaports.

4.3.23 Location Quotient: Kalimantan Timur

Table 32. Location Quotient : Kalimantan Timur

Sectors	LQ	Country of Origin
Agriculture and Farming	**6.37**	Singapore, England, Hongkong, Mauritius, Japan, Cayman Islands
Basic Metal Industry, Metal Products, Machinery and Electronic Products	**1.30**	Australia, Singapore, Hongkong
Construction	**1.45**	Mauritius, India, Singapore
Food Industry	0.12	United States, Malaysia, England, China
Hotel and Restaurant	0.31	United States, Netherlands
Mining	**8.70**	United States, Singapore, South Korea, China, India, Malaysia, Netherlands, Poland, England, Australia
Trade and Reparation	0.45	South Korea, UEA, Malaysia, Singapore, Australia, India, Thailand, France
Transportation Equipment Industry and Other Transportation	0.08	Singapore, Italy, Australia

Source: Indonesia Investment Board (data calculated)

Economic structure of Kalimantan Timur is dominated by mining (39%), industry (32%) and trade (8%). Kalimantan Timur is one of the richest provinces in Indonesia. Kalimantan Timur has several exploration areas of oil and gas. Moreover, Kalimantan Timur is also rich of coal. In terms of FDI, Kalimantan Timur has 4 leading sectors namely agriculture, basic metal industry, construction and mining. Major investor's origin is United States, Australia, Singapore, England, Hongkong and China. Major export commodities of Kalimantan Timur are LNG, Petroleum, Coal, Asphalt and Palm Oil. Two cities in Kalimantan Timur are ranked as top 50 most competitive cities in Indonesia namely Kutai (22nd) and Berau (37th)

In the future, Kalimantan Timur should improve its other sectors such as trade and transportation considering its position in the boundary of Indonesia and Brunei Darussalam. To support economic activities, Kalimantan Timur has 3 airports and 3 seaports.

4.3.24 Location Quotient: Sulawesi Utara

Table 33. Location Quotient : Sulawesi Utara

Sectors	LQ	Country of Origin
Agriculture and Farming	0.2	United States
Electricity, Gas and Water Supply	**2.79**	Malaysia
Food Industry	**2.4**	Singapore, Phillipine, United States, Liberia, Japan
Hotel and Restaurant	0.1	Netherlands, England
Mining	**6.87**	Singapore, China

Source: Indonesia Investment Board (data calculated)

Sulawesi Utara is located in the north of Sulawesi Island. Economic structure is dominated by agriculture, fisheries and industry. In terms of FDI, Sulawesi Utara has 3 leading sectors namely Electricity, food industry and mining. Most investor's origin is from China, Singapore, Malaysia and United States. Sulawesi Utara also has potential in tourism sector, especially maritime tourism.

In the future, it is possible for Sulawesi Utara to improve tourism, hotel and restaurant sectors to attract investment.

4.3.25 Location Quotient: Sulawesi Tengah

Table 34. Location Quotient : Sulawesi Tengah

Sectors	LQ	Country of Origin
Agriculture and Farming	0.3	Singapore
Basic Chemical Industry, Chemical and Pharmacy Products	**7.29**	Few Countries
Fisheries	0.02	Few Countries
Food Industry	0.01	Few Countries
Hotel and Restaurant	0.13	Singapore
Mining	**1.18**	Australia, Singapore

Source: Indonesia Investment Board (data calculated)

Economic structure of Sulawesi Tengah is dominated by agriculture, service and trade. Main commodities are crumb rubber, palm oil and forestry products. In terms of FDI,

Sulawesi Tengah has 2 leading sectors namely basic chemical industry and mining. Major investor's origin is from Australia and Singapore.

In the future, it is important for Sulawesi Tengah to improve agriculture sector to attract investment.

4.3.26 Location Quotient: Sulawesi Selatan

Table 35. Location Quotient : Sulawesi Selatan

Sectors	LQ	Country of Origin
Agriculture and Farming	**1.47**	South Korea, Hongkong
Electricity, Gas and Water Supply	**2.61**	Australia, Norway, Netherlands
Food Industry	0.03	South Korea, Taiwan, Singapore, US
Hotel and Restaurant	0.01	United States, Spain, France
Mining	**12.07**	Canada, China, Hongkong
Other Industry	0.23	Japan, US, South Korea, Germany
Trade and Reparation	0.06	South Korea, Malaysia, Netherlands, Japan

Source: Indonesia Investment Board (data calculated)

Economic structure of Sulawesi Selatan is dominated by agriculture (29%) trade (16%) and manufacturing (14%). For agriculture, main commodities are crumb rubber, palm oil and fisheries. While in trade sector, major activities are wholesale and retails considering its strategic position as the gate of Sulawesi Island.

In terms of FDI, Sulawesi Selatan has 3 leadings sectors namely agriculture, electricity and mining. Sulawesi Selatan is one of the gold, nickel and asphalt producers in Indonesia. Those products are also exported. Other export commodities of Sulawesi Selatan are coffee, cacao and fisheries products. The capital city, Makassar, is ranked 9th of the most competitive cities in Indonesia. Other city, Wajo is ranked 32nd.

To support economic activities and investment, Sulawesi Selatan has 3 airports and 5 seaports. In the future, Sulawesi Selatan should improve tourism and trade sector to be other leading sectors for investment considering its location and natural tourism objects.

4.3.27 Location Quotient: Sulawesi Tenggara

Table 36. Location Quotient : Sulawesi Tenggara

Sectors	LQ	country of origin
Basic Metal Industry, Metal Products, Machinery and Electronic Products	0.01	South Korea, India
Fisheries	0.01	Few Countries
Mining	**13.4**	China, Singapore, Netherlands, South Korea, Australia
Wood Industry	0.27	South Korea, Taiwan

Source: Indonesia Investment Board (data calculated)

Economic sector of Sulawesi Tenggara is similar with other provinces in Sulawesi namely dominated by agriculture (38%), industry (8%) and trade (15%). Sulawesi Tenggara is potential of fisheries, cocoa, coconut and pepper. These are also exported. In terms of FDI, Sulawesi Tenggara less attractive for investor and only has one leading sector namely mining. Sulawesi Tenggara is exporter of Nickel. Country of origin of the investors is China, Singapore, Netherlands and Australia.

4.3.28 Location Quotient: Sulawesi Barat

Table 37. Location Quotient : Sulawesi Barat

Sectors	LQ	Country of Origin
Forestry	**10.52**	South Korea
Trade and Reparation	0.13	South Korea
Basic Chemical Industry, Chemical and Pharmacy Products	0.04	South Korea

Source: Indonesia Investment Board (data calculated)

Sulawesi Barat is one of the newest provinces in Indonesia. In terms of FDI, Sulawesi Barat has one leading sector namely forestry, which investors origin from South Korea. The capital city, Mamasa, is ranked 47th of the most competitive city in Indonesia.

4.3.29 Location Quotient: Maluku

Table 38. Location Quotient : Maluku

Sectors	LQ	Country of Origin
Fisheries	**9.9**	Thailand
Hotel and Restaurant	**3.1**	United States
Food Industry	**3.7**	Thailand
Mining	0.21	Australia

Source: Indonesia Investment Board (data calculated)

Economic structure of Maluku is dominated by agriculture (31, 95%), industry (25%) and trade (25). Maluku is potential of fisheries products which are also became one of the main export commodities. Other main commodities are coca, coconut, cloves and pepper.

In terms of FDI, Maluku has 3 leading sectors namely fisheries, hotel and restaurant and food industry. Major investors are from Thailand and United States.

4.3.30 Location Quotient: Maluku Utara

Table 39. Location Quotient : Maluku Utara

Sectors	LQ	Country of Origin
Mining	**15.4**	Australia, Singapore, South Korea

Source: Indonesia Investment Board (data calculated)

Maluku Utara only received foreign investment in one sector which performs as a leading sector, namely mining. The products are gold and cobalt. Having 9 airports and 15 seaports, Maluku Utara should explore fisheries and forestry sectors to improve its investment

4.3.31 Location Quotient: Papua Barat

Table 40. Location Quotient : Papua Barat

Sectors	LQ	Country of Origin
Agriculture and Farming	**12,74**	Singapore
Fisheries	**8,22**	Thailand
Hotel and Restaurant	0.06	Switzerland
Mining	**1,86**	Singapore, Netherlands
Other Services	**7,43**	Switzerland, US

Source: Indonesia Investment Board (data calculated)

Papua Barat has 4 leading sectors in FDI namely agriculture and farming, fisheries, mining and other services. Fisheries and livestock's product of Papua Barat are exported. Major investor's origin is Singapore and Thailand. To support its economic activities, Papua Barat has 1 industrial area, 7 airports and 5 seaports. Topography of Papua Barat is mountainous and difficult to explore economic activities.

4.3.32 Location Quotient: Papua

Table 41. Location Quotient : Papua

Sectors	LQ	Country of Origin
Basic Chemical Industry, Chemical and Pharmacy Products	0,09	Singapore
Food Industry	0,39	China, Hongkong, Netherlands
Hotel and Restaurant	0,12	Germany, Hungary
Mining	**13,99**	US, China
Other Services	0,53	Australia
Wood Industry	**9,11**	Hongkong, Taiwan

Source: Indonesia Investment Board (data calculated)

Papua has 2 leading sectors in attracting FDI namely mining and wood industry. Country of origin of the investors is United States, China, Hongkong and Taiwan. To support its economic activities Papua has 21 airports. Papua topography is similar with Papua Barat which is mountainous and difficult to explore for economic activities.

4.4 Location Factors and Regression

This research also aims to assess the location factors that determine a city is attractive for FDI. The aim is also to assess how far the socio economic aspects influence investment and in other way around. The methodology used for this purpose is regression analysis to examine the correlation of FDI and its location factors variables. Further, it is also to generate a linear regression model.

There are 8 variables of location factors to be investigated for regression model namely regional economic condition, human resource condition, business climate, infrastructure, banking, productivity, GDP percapita, and Human Development Index (HDI). First investigation found that data was not normally distributed so it should be transformed into logarithm operation. After transformation procedure, all variables were normally distributed and had no multicolinearity problems.

Based on table 42, correlation of variables to inward investment, there are 6 location factors variables which have significant correlation to the degree of investment namely human resource (0, 809), infrastructure (0, 807), productivity (0,684), banking (0, 622), and GDP percapita (0,407). Meanwhile 2 other variables, business climate and HDI, are not strongly correlated to the degree of investment. It shows that business climate of big cities in Indonesia is not considered as the most important factors to attract investment. It also explains the phenomenon that Indonesia is poorly ranked 144^{th} in global competitiveness but highly ranked 4^{th} in attracting FDI. Investors determines availability of infrastructure, human resource, productivity, and banking as the most important location factors to invest in big cities in Indonesia. These location factors are crucial for production and transporting goods and services. Data also shows that most competitive cities in Indonesia have better infrastructure and higher productivity than others.

In terms of social-economy aspects which are represented by regional economic condition, GDP percapita and Human Development Index (HDI); statistics shows that degree of investment has significant correlation with regional economic and GDP percapita and unsignificant correlation with HDI. Correlation of investment and these 2 economic variables are positive which means investment could improve regional economic and GDP percapita less than 50%. This correlation shows that FDI are not strongly influence economic growth of big cities in Indonesia. It is true, because mostly economic growth in Indonesia are forced by consumption (consumption-driven) not investment-driven. On the other hand, this investigation proves that investment has no strong correlation with social aspects. Investment can not reduce poverty, illiteracy or improve life expectancy of the people.

The linear regression model for degree of investment is:

$Y= -1,02-0,412\ X1+ 0.569\ X2+0.484\ X3$

Where:

Y = degree of investment

X1= regional economic

X2= human resource

X3= infrastructure

There are 3 only most powerful variables to generate a linear regression model for degree of investment.

Chapter 5. Conclusion

5.1. Introduction

This section provides conclusion of the research. This research examines which cities and provinces are the most powerful and competitive in terms of attracting Foreign Direct Investment in Indonesia. Moreover, it also examined the comparative advantages, leading sectors and location factors that determine a city or province considered attractive as investment destination. At the end, it is completed by assessing significance of social-economic aspects into FDI. Recommendations are also presented.

5.2 Conclusion

It is proven that Western Indonesia is much more attractive than Eastern Indonesia in terms of attracting Foreign Direct Investment (FDI). More than 90% of total FDI in Indonesia invested in Western Indonesia. Western Indonesia is considered to provide more potential resources and to be more accessible for foreign investors. The fact that infrastructure and facilities in Western Indonesia are better developed than in Eastern Indonesia is considered the main reasons for higher capital investment in Western Indonesia. Western Indonesia, which consists of Sumatera, Jawa and part of Kalimantan has comparative advantages for each region. Sumatera region has a comparative advantage for mining, agriculture, food industry and rubber industry; Jawa region has a comparative advantage for metal and chemical industry, transportation, trade, textile and construction; and Kalimantan region has a comparative advantage in mining, agriculture and forestry. While Eastern Indonesia has fewer comparative advantages namely mining, forestry and fisheries. Eastern Indonesia is less attractive for industries.

Each province in Western Indonesia strongly competes to be the most attractive and powerful province in Indonesia. Jawa Barat has become the most competitive province in attracting investment with highest degree (327), followed by DKI Jakarta, Jawa Timur and Banten. The 5th place is Sumatera Utara, the only non-Java province in top-5. Those 5 countries are more industrialized than other provinces in Indonesia. Other provinces in top 10 are Sumatera Selatan, Kalimantan Timur, Jawa Tengah and Kepulauan Riau. These provinces are also more industrialized and have potential mining sectors. Kalimantan Timur for example, is the richest province in Indonesia (based on GDP Percapita) because of its mining sector (oil and gas). Jawa Timur itself is the largest province in Indonesia with a lot of manufacturing industries. Surabaya, the capital of Jawa Timur is known as the second metropolitan city in Indonesia.

Most competitive cities in investment are coming from the most competitive provinces. Jakarta is the most competitive city with extremely high degree compared to other cities, followed by Surabaya which the province (Jawa Timur) placed as the 3rd most competitive province in Indonesia. Karawang and Bekasi (3rd and 4th) are in Jawa Barat, which is the most competitive province; and Medan (5th) is in Sumatera Utara

(5th most competitive province). In 20 most competitive cities in Indonesia, Jawa Barat (1st) has 5 cities; Jakarta (2nd) has 2 cities; Jawa Timur (3rd) has 4 cities; Banten (4th) has 2 cities and Sumatera Utara (5th) has 2 cities. Most competitive cities are mostly based on manufacturing industries, oil mining and electricity. For manufacturing industries, Jakarta, Surabaya, Karawang, Bekasi are known as industrial areas producing high-technology products such as electronic products, textiles, assembling, and communications

Based on inward investment, Paris is the top city investing in Indonesia. Paris invests in trade, retail, and mining sectors. Seoul positioned at second with investment in basic chemical industry, machinery and communication, while Tokyo positioned third with major investment in transportation sector (vehicle assembly). Other cities invest mostly in mining sector. Bonn (Germany) positioned at 13th through its postal service and Taipei (Taiwan) positioned at 18th with its investment in telecommunication. Singapore, Bangkok, and Kuala Lumpur, Indonesian neighbors in South East Asia, also became the most powerful cities investing to Indonesia. These cities invest mostly in agriculture sectors in Sumatera, Kalimantan, and also Eastern Indonesia, financial services and tourism. Singapore and Kuala Lumpur are also included as the most competitive cities in the world. Singapore is also known as the biggest international port after Shanghai (China).

Assessing location factors that determine investment on a city, it is revealed that human resource capability, infrastructure availability, and banking access are the most important factors to attract investment in Indonesia. It is caused by most investment are high-skill and high-technology while the location are mostly difficult to be reached. In eastern Indonesia, these factors became very important because most provinces are consists of islands, oceans, or mountainous land such in Papua.

Finally, it is also found that investments so far are not strongly correlated into regional economic and social aspects. Investment cannot directly reduce poverty, unemployment, illiteracy and income per capita. It is possible because Indonesia has a high discrepancy among rich and poor people, where investments do not trickle down to poor people.

5.3 Recommendation

First. based on this research, it is recommended for government to maintain their leading sectors and improving other sectors which are potential but still have LQ score less than 1 (LQ<1). Some sectors are actually correlated but one is improved and one is less competitive. It will bring more advantages for the city if certain correlated sectors could be improved to get better result in attracting investment. Further, it is also recommended to allocate more budgets on providing infrastructures, especially in Eastern Indonesia because infrastructure availability is one of the most important variables to attract investment in Indonesia.

Second, for the FDI actors, it will be beneficial to invest based on comparative advantages of region and the city to maximise profit.

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Annexes

Table 42. Correlation of Variables to Inward Investment

		log_logdegree	log_logregionalecon	log_loghumanresource
log_logdegree	Pearson Correlation	1	,433*	,809**
	Sig. (2-tailed)		,017	,000
log_logregionalecon	Pearson Correlation	,433*	1	,530**
	Sig. (2-tailed)	,017		,001
log_loghumanresource	Pearson Correlation	,809**	,530**	1
	Sig. (2-tailed)	,000	,001	
log_logbusinessclimate	Pearson Correlation	-,086	,181	,098
	Sig. (2-tailed)	,653	,291	,571
log_loginfrastructure	Pearson Correlation	,807**	,529**	,727**
	Sig. (2-tailed)	,000	,001	,000
log_logbanking	Pearson Correlation	,622**	,629**	,800**
	Sig. (2-tailed)	,000	,000	,000
log_logproductivity	Pearson Correlation	,684**	,726**	,380*
	Sig. (2-tailed)	,000	,000	,022
log_loggdpcapita	Pearson Correlation	,470**	,765**	,334*
	Sig. (2-tailed)	,009	,000	,047
log_logHDI	Pearson Correlation	,205	,099	-,021
	Sig. (2-tailed)	,276	,590	,908

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Correlation (2)

Correlations

		log_logbusinessclimate	log_loginfrastructure	log_logbanking
log_logdegree	Pearson Correlation	-,086	,807**	,622**
	Sig. (2-tailed)	,653	,000	,000
log_logregionalecon	Pearson Correlation	,181	,529**	,629**
	Sig. (2-tailed)	,291	,001	,000
log_loghumanresource	Pearson Correlation	,098	,727**	,800**
	Sig. (2-tailed)	,571	,000	,000
log_logbusinessclimate	Pearson Correlation	1	-,165	,135
	Sig. (2-tailed)		,337	,432
log_loginfrastructure	Pearson Correlation	-,165	1	,576**
	Sig. (2-tailed)	,337		,000
log_logbanking	Pearson Correlation	,135	,576**	1
	Sig. (2-tailed)	,432	,000	
log_logproductivity	Pearson Correlation	-,162	,657**	,388*
	Sig. (2-tailed)	,345	,000	,019
log_loggdpcapita	Pearson Correlation	,129	,370*	,424*
	Sig. (2-tailed)	,455	,026	,010
log_logHDI	Pearson Correlation	-,048	,113	,099
	Sig. (2-tailed)	,794	,536	,589

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Correlation (3)

Correlations

		log_logproductivity	log_loggdpcapita	log_logHDI
log_logdegree	Pearson Correlation	,684**	,470**	,205
	Sig. (2-tailed)	,000	,009	,276
log_logregionalecon	Pearson Correlation	,726**	,765**	,099
	Sig. (2-tailed)	,000	,000	,590
log_loghumanresource	Pearson Correlation	,380*	,334*	-,021
	Sig. (2-tailed)	,022	,047	,908
log_logbusinessclimate	Pearson Correlation	-,162	,129	-,048
	Sig. (2-tailed)	,345	,455	,794
log_loginfrastructure	Pearson Correlation	,657**	,370*	,113
	Sig. (2-tailed)	,000	,026	,536
log_logbanking	Pearson Correlation	,388*	,424*	,099
	Sig. (2-tailed)	,019	,010	,589
log_logproductivity	Pearson Correlation	1	,807**	,293
	Sig. (2-tailed)		,000	,104
log_loggdpcapita	Pearson Correlation	,807**	1	,326
	Sig. (2-tailed)	,000		,068
log_logHDI	Pearson Correlation	,293	,326	1
	Sig. (2-tailed)	,104	,068	

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 43. Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,899[a]	,809	,778	,05961	2,056

a. Predictors: (Constant), log_logbanking, log_loginfrastructure, log_logregionalecon, log_loghumanresource

b. Dependent Variable: log_logdegree

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,376	4	,094	26,425	,000[a]
	Residual	,089	25	,004		
	Total	,464	29			

a. Predictors: (Constant), log_logbanking, log_loginfrastructure, log_logregionalecon, log_loghumanresource

b. Dependent Variable: log_logdegree

Table 44. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-,102	,041		-2,484	,020
	log_logregionalecon	-,412	,175	-,310	-2,358	,026
	log_loghumanresource	,569	,156	,596	3,647	,001
	log_loginfrastructure	,484	,117	,522	4,134	,000
	log_logbanking	,042	,103	,064	,410	,685

a. Dependent Variable: log_logdegree

Coefficients[a]

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	log_logregionalecon	,433	-,427	-,206	,444	2,255
	log_loghumanresource	,809	,589	,319	,287	3,488
	log_loginfrastructure	,807	,637	,362	,480	2,083
	log_logbanking	,622	,082	,036	,317	3,156

a. Dependent Variable: log_logdegree

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-,3071	,1830	,0592	,11380	30
Residual	-,13528	,09080	,00000	,05534	30
Std. Predicted Value	-3,219	1,087	,000	1,000	30
Std. Residual	-2,270	1,523	,000	,928	30

a. Dependent Variable: log_logdegree