# ANALYSIS OF INTER SECTORAL LINKAGES IN SEMARANG REGENCY

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**Abstract**

This research aims to analyzeinter economic sectoral linkages and to arrange the Klassen typology of economic sectors in Semarang Regency. The Klassen typology is composed from the result of the linkage analysis. To construct the analysis, this paper also utulizes the input-output analysis. It finds that service sector has the highest backward linkage while farming sector has the highest forward linkage. Based on the Klassen typology analysis, sectors with the highest backward and forward linkages and has a potential to be the leading sector are farming sector, dan trade, hotel and restaurant sector.

**Keywords**: Backward linkage,forward linkage, Klassen typology
**JEL classification numbers:** R15, O21

**Abstrak**

Penelitian ini bertujuan untuk mengkaji seberapa besar keterkaitan antar sektor ekonomi di Kabupaten Semarang dan memetakan tipologi Klassennya. Tipologi Klasen disusun berdasarkan hasil perhitungan analisis keterkaitannya. Untuk menyusun analisis tersebut, paper ini juga menggunakan analisis input-output. Hasil penelitian menunjukkan bahwa sektor jasa memiliki keterkaitan ke belakang tertinggi dibandingkan dengan sektor lainnya. Sementara itu, sektor pertanian merupakan sektor yang memiliki keterkaitan ke depan tertinggi. Berdasarkan hasil analisis tipologi Klassen, sektor yang memiliki keterkaitan ke depan dan ke belakang yang tinggi dan dapat menjadi sektor unggulan adalah sektor perdagangan, hotel dan sektor restoran.

**Kata kunci**: Keterkaitan ke belakang, keterkaitan ke depan, tipologi Klassen
**JEL classification numbers:** R15, O21

## INTRODUCTION

A good development planning arrangement is vital for regional development. The planning should be based on the problem, basic needs, and potential assets of the region so that the development can be efficient and effective. However, the planning arrangement in some regions is far from the regional basic needs or potential assets. This has made most regional developments failed to achieve their goals.

A development needs important information to make the planning easier to arrange. That is why it needs an efficient method. One of the good methods to apply is the input-output analysis, which can conduct the analysis from various aspects namely sector linkage. Results taken from this analysis can be used as a strong basis in formulating the regional development planning in order to reach the right planning that finally will be able to increase the regional economy.

This research plans to find out how big the backward linkage and the forward linkage are in every economic sector in Semarang Regency and to arrange the Klassen typology of economic sectors in Semarang Regency based on linkage analysis.

Some previous researches have some similarities with this research, such as one by Martono (2008). He examines inter economic sectors and inter-regional linkage in Kedungsepur region using both quantitative and qualitative approaches. These approaches are performed by observing Kedungsepur as a modal region, which each area has different characteristics and relate to each other in accordance with the area specialization. As the effect of the inter-regional linkage in Kedungsepur region, there are flows of goods, services, or people.

The number of such flows will determine the number of inter-regional linkage. In order to reach the objective of this research, an identification of Kedungsepur region is performed including identification of physical characteristic, population and economy. This identification is useful to find out the regional potency that may support the inter-regional interaction of regencies or cities in Kedungsepur region. The second identification is the basic sector, namely any sector having potential compared with the surrounding regions and having comparative leading resources as a determinant factor for the increasing income in a region. Afterwards it identifies the inter-regional linkage in Kedungsepur region through economic and spatial linkage as the unification of the two previous identifications.

This paper uses Location Quotient (LQ) analysis and Input-Output analysis. Based on the analysis result, Industrial Sector plays the most important role because it gives input for other sectors. Farming and Industrial Sectors have the big direct forward linkage, and this indicates the big potential for the industrial improvement of farming product processing in Kedungsepur region. The inter-regional linkage in farming product processing industry may be tied in among Semarang City, Kendal Regency, Semarang Regency and Grobogan Regency. The inter-regional linkage in other business are: (1) the inter-regional linkage in textile industry and product that may be tied in among Semarang Regency, Semarang City and Salatiga City, and (2) the inter-regional linkage in automotive industry and electronic component that may be tied inbetween Semarang City and Kendal Regency.

Another relevant research was performed by Saifuna (2011) using an input output analysis to identify leading sector in Padang Pariaman and their roles in economy in the regency. This research applies forward linkage index analysis (sensitivity), backward linkage index analysis and leading sector analysis (key). The data analysis result shows that a sector having the highest forward linkage index (sensitivity) in 2007 is refining industrial sector with and index of 5.8533. A sector having the highest backward linkage index (spreading power) in 2007 is peanut sector with an index of 18.1477. The leading sectors (key) in Padang Pariaman Regency in 2007 are peanut sector, refining industry, land transportation, big trade and retail, building/construction, other industries, financial institution (bank and other financial institutions), governmental service and defence, cinnamon bark, air transportation, cocoa, coffee, other legumes, individual services and households, other tubers, communication, animal husbandry including fresh milk, woods and other forest products and railway transportation.

Dimas (2010) analyzes the linkage of farming sector towards other sectors in Central Java and analyses out the multiplier output and multiplier export of farming sector. Farming, that notably was a leading sector in Central Java, is not optimally developed because the resource utilization was not maximum. The Input-Output Analysiswas applied to observe the linkage among input and output and multiplier from and for the farming sector. The linkage estimation in was analyzed using Input-Output Table of Central Java in 2008. The classification of 88 sectors was then simplified into 37 sectors by aggregating all sec-

tors outside the farming sector. The result shows that sectors having direct forward linkage are more in quantity than those having direct backward linkage, so that the farming sub-sectors take more roles in their multiplier output. The biggest backward linkage number was Other Foodstuff sub sector with an index of 1,46018 and the biggest forward linkage number was Sugar Cane sub-sector with (38,06591). The biggest multiplier output is Other Foodstuff sub-sector (52,76845). The optimalisation of output and input from Other Foodstuff sub-sector and Sugar Cane sub-sector is able to maximalize the production of other sectors using ouput from that sub-sector as production raw material, besides it also may give impact on the labor absorption for other sub-sectors. This research also observed the impact of output change because of the primary input change, the impact of primary input increase on the fertilizer subsidized in which an increase of 14.1 billions will increase the economy output with 2,912 billion.

In the following, this paper will discuss some important terms. According to-Kassali (2009), a region is a space where an economic activity proceeds and inside the space there are similar characters, among other things are the income per capita, the socio-culture, the geography, and so on. A region in this definition is called homogeneous region. 2) A regions a spatial economy monopolized by one or several economic activites centres. A region in this definition is called modal region. 3) A region is a spatial economy under a certain administration like a province, a regency, or a sub district. Therefore, a region is based on administrative distribution in a country. A region in this definition is called administrative region.

A regional economic development is a process in which the regional government and its society organize the existing resources. In so doing, it forms a partnership system between the regional government and the private sectors to create new fields of works and to stimulate the economic improvement of growth in that area so that the economic activites plot can run smoothly across systems (Fujita, 2007).

Every effort of regional economic development has the main objective to increase the number and the job opportunities for the regional society. In reaching this objective, the regional government and its society have to cooperatively take initiative of the regional development (Rahman, 2008). Therefore, the regional government with its social participation and utilization of the existing resources has to be able to estimate the potential resources needed to design and build the regional economy.

Economic development of a region is based on the utilization of its resources. Regional economic potential that becomes the regional wealth is one of the elements determining the improvement of a region (Getis, 2007).

The inter-subsector and inter-sector linkages in national economic improvement system is a good and appropriate policy programme (Berliant, 2007). However, the implementation needs to consider the real condition and potential of the region considering that there are different characteristics across regions.

A regional development should pay more attention to the leading and characteristics of each region. Various results from the improvement and growth of economic sectors in a region enable this region to get various advantages that can be absorbed in the framework of the implementation process.

Those advantages are: 1) Higher production result of economic sector in forming income. 2) Higher growth and development of economic sector.

Basic economic theories state that the main factor for economic growth of a region is directly related to the demand of goods and services from the other regions. The industrial growth using local resources including the labors and the raw materials for exports will

produce regional wealth and job creation (Behrens, 2007).

The basic economic theory analyzes potential owned by a region as an effort to fulfill its own needs. This basic theory divides the economic structure into two sectors, namely: 1) Leading sector, an economic sector or activity that serves the domestic or foreign market. It shows that there is an activity of exporting goods and services. 2) Non leading sectors, sectors projected to serve domestic market.

The weakness of this model is that it is based on the external demand. Finally it makes high dependence towards the market strength, either nationally or globally. However, this kind of model is very useful to determine the balance between the industries and sectors needed by the society to develop economic stability.

## METHODS

This paper uses both quantitative and qualitative analysis, with the instrument of the famous input-output analysis and the Klassen typology analysis.

### Input-Output Analysis

By using input-output analysis, it can be seen that there are inter-economic sector linkages in a certain area. This analysis is based on the real economic condition, not only based on theoretical approach. The input-output table may describe the transaction flow among the economic agents. Thus, if the production stage of a certain sector changes, the impact towards another sector can be seen.

### Backward Linkage

The direct backward linkage is a column addition of input coefficient matrix/coefficient of technology A. The backward linkage in mathematical formula is:

$$B^{d}{}_{j} = \sum_{i=1}^{n} a_{ij}$$

where $B$ is backward, $d$ is direct, $j$ is column-$j$, $i$ is row-$i$, and $a_{ij}$ is an input coefficient as a matrix element $A$.

The direct and indirect backward effect is a column addition of matrix $(I-A)^{-1}$, or an input contrary matrix or Leontief contrary matrix.

$$B^{d+id}{}_{j} = \sum_{i=1}^{n} \alpha_{ij}$$

where $B$ is backward, $d$ is direct, $id$ is indirect, $j$ is column-$j$, $i$ is row-$i$, and $\alpha_{ij}$ is matrix element $(I-A)^{-1}$. From this formula, the total backward linkage equals to an output multiplication number.

An indirect backward linkage $\left(B^{id}\right)$ can be calculated by subtracting the direct backward linkage from the total backward linkage, as shown by the following equation:

$$B^{id} = B^{d+id} - B^{d}$$

### Forward Linkage

Nijkamp (2007) states that a direct forward linkage is a row addition of output coefficient matrix $\vec{A}$, because this matrix in rows shows the output distribution proportion of a sector to other sectors. The direct forward linkage in a mathematical formula is:

$$F_{i}^{d} = \sum_{j=1}^{n} \vec{a}_{ij}$$

Where $F$ is forward, $d$ is direct, $j$ is column-$j$, $i$ is row-$i$, and $\vec{a}_{ij}$ is an output coefficient as matrix $\vec{A}$.

The direct and indirect forward effect is a row addition of matrix $\left(I-\vec{A}\right)^{-1}$, or output contrary matrix:

$$F^{d+id}{}_{i} = \sum_{j=1}^{n} \vec{\alpha}_{ij}$$

where *F* is forward, *d* is direct, *id* is indirect, *j* is column-*j*, *i* is row-*i*, and $\vec{\alpha}_{ij}$ is matrix element $\left(I-\vec{A}\right)^{-1}$. From this formula, the total forward linkage equals to an input multiplicaiton number.

To get an indirect forward linkage $\left(F^{id}\right)$ is by subtracting the direct forward linkage from the total forward linkage, as shown by the following equation:

$$F^{id} = F^{d+id} - F^{d}$$

**Klassen Typology Analysis**

The Klassen Typology Analysis is used to group the economic sectors based on certain criteria into a group. This research will identify economic sectors into three categories, those are: leading sector, potential sector, and regressive sector. Those belong to the leading sector are those having high backward and forward linkages. Those belong to the potential sector are those having high backward or forward linkage. And those belong to the regressive sector are those having low backward and forward linkage value. This grouping of economic sectors can be seen in the following Klassen typology (Table 1).

**Table 1:** Klassen tipology

| | | Backward linkages | |
|---|---|---|---|
| | | High | Low |
| Forward-linkages | High | Leading Sector | Potential Sector |
| | Low | Potential Sector | Regressive Sector |

## RESULTS

### Backward Linkage

In an economy, a sector needs an input from other sectors to produce its output. If the sector's output increases, it is because the final demand increases, so this sector needs more inputs from the other sectors. In other words, the output increase of the sector pushes the output growth of other sectors. The sector ability pushes the output growth of other sectors through an input demand route called 'backward linkage' of a sector. As an example, the output of the paper industry sector increases because the paper demands from the public increases. The rise of this paper sector output increases its demand to inputs to produce paper, such as wood as the paper basic commodity and an additional BBM (refined fuel oil) to run the paper processing machines. Wood is found from the processing wood plantation sector, while BBM is bought from the petroleum mining and processing sector. This example shows that paper industry sector has backward linkage to the wood plantation sector and the petroleum mining and processing.

Afterwards, in order to fulfill the demand of paper industry on its outputs, wood plantation and petroleum mining and processing sector also need additional input for its productive process that comes from other sectors. For example, wood plantation needs fertilizer from the fertilizer industry and also BBM from the petroleum mining and processing sector. In the mean time, the last sector needs input from other sectors like cement industry and even from its own sector, BBM. Thus the inter-linkage runs among the productive sectors in economy.

The direct linkage of a sector to other sectors as its input supplier like paper industry sector to wood plantation and petroleum processing sectors is called direct backward linkage, while the output increase of wood plantation and petroleum processing in order to fulfill the demand of paper industry sector is called the indirect backward linkage of the paper industry sector. The amount of direct backward linkage and indirect backward linkage is called the total backward linkage. It is an ability of a sector to push the output growth of all productive sectors in economy included the sector itself through an input demand route whether directly or indirectly. The following is the cal-

culating result of the inter-sector backward linkage in Semarang Regency (Table 2).

From the calculating result of inter-sector backward linkage in Semarang Regency, we can see how big the direct linkage and the indirect linkage inter sector in Semarang Regency is. The above table shows that a sector having the biggest direct linkage to other sectors is service sector with 0.2402. This number shows that if one unit of money increases, the output of service sector will increase the input demand directly from any sector in economy with 0.2402 unit of money. To fulfill the demand of service sector, any sector in economy will increase its production. The second-grade sector having the highest direct linkage to another sector is electricity, gas and clean wáter sector with 0.2045. While the third grade is finance, rental and company service sector with 0.1870.

Seen from the inter-sector indirect backward linkage, a sector having the highest indirect backward linkage is electricity, gas and clean wáter sector with 1.0262. This number shows that an increase of one unit of output money of electricity, gas and clean wáter sector will increase its input demand indirectly from economic sector with 1.0262 unit of money. The second grade having indirect backward linkage is trade, hotel and restaurant sector with 1.0197 and the third grade is finance, rental and company service sector with 1.0179.

A total backward linkage is the amount of direct backward linkage and indirect backward linkage. While those having the high total backward linkage are sectors which total backward linkage value are bigger than the whole average total backward linkage. Based on such a criteria, some sectors having the high total backward linkage are farming; mining and digging; electricity, gas and clean wáter; trade, hotel and restaurant; finance, rental and company service; and service sector.

A sector having the highest total backward linkage is service sector with 1.2580. It shows that an output increase of one unit of money of service sector will increase its input demand whether directly or indirectly from any sector in economy with 1.2580 unit of money. To fulfill the demand of service sector, any sector in economy will increase its product with that number.

**Forward Linkage**

Another kind of linkage analysis is forward linkage. It is explained as the growth of economy output grade because of an output increase of productive sector through output demand route. For instance, if the output amount produced by a sector increases, this sector can distribute more output to other sectors to be used as an input by the other ones. The next turn, because the input supply increase comes from the first sector, the other ones will increase the output.

**Table 2:** Calculating Result of Inter-Sector Backward Linkage in Semarang Regency

| Sector | Backward Linkage | | |
|---|---|---|---|
| | Direct | Indirect | Total |
| Farming | 0.1278 | 1.0162 | 1.1440 |
| Mining and Digging | 0.1380 | 1.0173 | 1.1553 |
| Processing Industry | 0.0509 | 1.0070 | 1.0579 |
| Electricity, Gas and Clean Water | 0.2045 | 1.0262 | 1.2307 |
| Building | 0.0356 | 1.0049 | 1.0405 |
| Trade, Hotel and Restaurant | 0.1394 | 1.0197 | 1.1591 |
| Transportation and Communication | 0.0000 | 1.0000 | 1.0000 |
| Finance, Rental & Company Service | 0.1870 | 1.0179 | 1.2049 |
| Services | 0.2402 | 1.0178 | 1.2580 |
| Average | | | 1.1389 |

For instance, the output increase of cotton plantation will increase the output distribution to the yarn spinning industry. Because the input supply increase of cotton comes from the cotton plantation sector, the output of the yarn spinning industry increases too. Then the yarn spinning sector can distribute more input to the textile industry and fashion industry, et cetera.

The effect of output increase created on other sectors because of the output increase of a sector directly like cotton plantation sector to yarn spinning industry, is called direct forward linkage. While the effect of output change, like the output of textile industry sector occurred because of the output change of yarn spinning sector, as an impact of output increase in cotton plantation sector. Thus the output increase of textile industry sector is an indirect impact of output increase in cotton plantation sector. Such an effect is called an indirect forward linkage.

The amount of direct forward linkage and indirect forward linkage is called the total forward linkage. This is an ability of a sector to push the output growth of all productive sectors in economy included the sector itself through output distribution route whether directly or indirectly. The following is a calculating result of inter-sector forward linkage in Semarang Regency (Table 3).

From the calculating result of inter-sector forward linkage in Semarang Regency, it can be seen how big the inter-sector direct linkage and the indirect linkage in Semarang Regency is. From the above table, it can be seen that based on the number criteria of direct forward linkage, farming sector has the highest number of direct forward linkage compared with the other economic sectors. This criteria states that an output increase of one unit of money in farming sector will give bigger impact towards economy rather than those caused by an increase output of one unit of money in every other sector.

The output increase of farming sector makes the product supply as the input of economic sectors increase too, so that those using farm sector products directly as their input will be able to increase their productions. The number 0,0362 means that an output increase of one unit of money in farming sector will increase the economy output with 0,0362 unit of money, through the output increase route of farming sector used as an input by other sectors. While another sectors being the second and third grades having high direct forward linkage are trade, hotel and restaurant sector and transportation and communication sector with 0,0064 and 0,0028.

From the inter-sector forward linkage, some sectors get zero value for their direct forward linkages. Those are mining and digging sector; electricity, gas and clean water sector; and service sector. Zero value shows that the output of those sectors is not utilized directly by other sectors in Semarang Regency.

**Table 3:** Calculating Result of Inter-Sector Forward Linkage in Semarang Regency

| Sector | Forward Linkage | | |
|---|---|---|---|
| | Direct | Indirect | Total |
| Farming | 0.0362 | 1.0007 | 1.0369 |
| Mining and Digging | 0.0000 | 1.0000 | 1.0000 |
| Processing Industry | 0.0018 | 1.0000 | 1.0019 |
| Electricity, Gas and Clean Water | 0.0000 | 1.0000 | 1.0000 |
| Building | 0.0008 | 1.0000 | 1.0008 |
| Trade, Hotel and Restaurant | 0.0064 | 1.0000 | 1.0065 |
| Transportation and Communication | 0.0028 | 1.0000 | 1.0028 |
| Finance, Rental and Company Service | 0.0013 | 1.0000 | 1.0014 |
| Services | 0.0000 | 1.0000 | 1.0000 |
| Average | | | 1.0056 |

It can be seen from the inter-sector indirect forward linkage, a sector having the highest indirect forward linkage is farming. In this criterion, the output increase of one unit of money in farm sector will give bigger impact towards economy compared with an impact caused by the output increase of one unit of money in every other sector.

The output increase of farm sector makes the product supply as an input of economic sectors increase too, so that those using farm sector products indirectly as their input will be able to increase their products. The number 1.0007 shows that an output increase of one unit of money in farm sector will increase the economy output with 1.0007 unit of money, indirectly, through an output increase route in farm sector used as an input by other sector. The indirect forward linkage of other sectors all have the same value, 1.0000, which shows that an output increase of one unit of money will increase the economy output of 1.0000 unit of money, directly or indirectly, through the output increase route used as an input by other sectors.

The total forward linkage is an amount of direct forward linkage and indirect forward linkage (Table 4). Those having the high total forward linkage are sectors which total forward linkage value bigger than the average of total forward linkage as a whole. In accordance with this criterion, those having the high total forward linkage are farming sector and trade, hotel and restaurant sector.

A sector having the highest total forward linkage value is farming. The criterion states that an output increase of one unit of money in farming sector will give more impact towards economic condition rather than the impact caused by an output increase of one unit of money in every other sector.

**Table 4:** Calculating Result of Linkage of each sector in Semarang Regency

| Sector | Total Linkages | |
|---|---|---|
| | Backward | Forward |
| Farming | 1.1440 | 1.0369 |
| Mining and Digging | 1.1553 | 1.0000 |
| Processing Industry | 1.0579 | 1.0019 |
| Electricity, Gas and Clean Water | 1.2307 | 1.0000 |
| Building | 1.0405 | 1.0008 |
| Trade, Hotel and Restaurant | 1.1591 | 1.0065 |
| Transportation and Communication | 1.0000 | 1.0028 |
| Finance, Rental & Company Service | 1.2049 | 1.0014 |
| Services | 1.2580 | 1.0000 |
| Average | 1.1389 | 1.0056 |

**Table 5:** Calculating Result of Klassen Typology

| | | Backward linkages | |
|---|---|---|---|
| | | High | Low |
| Forwardlinkages | High | 1. Farming<br>2. Trade, Hotel &Restaurant | - |
| | Low | 1.Mining & Digging<br>2. Electricity, Gas, & Clean Water<br>3. Financial, Rental & Company Service<br>4. Services | 1. Processing Industry<br>2. Building<br>3. Transportation & Communication |

Because the output in farming sector increases, the product supply as an input for economic sectors will increase too, so those using products of farming sector (directly or indirectly) as their input, will also increase their products. The number 1.0369 on the total forward linkage in farming sector will increase the economy output with 1.0369 unit of money, directly or indirectly, through an output increase route of farming sector used as an input by other sectors.

The second sector having total high forward linkage is trade, hotel and restaurant sector with 1.0065. This number shows that an output increase of one unit of money in trade, hotel and restaurant sector will increase the economy output with 1.0065 unit of money, directly or indirectly, through an output increase route of trade, hotel and restaurant sector used as an input by other sectors.

**Leading Sectors**

In the input-output analysis, a sector is called a leading one if it has the high backward and forward linkages. A sector is called to have high backward linkages if the backward linkage value of this sector is more than the average of the whole backward linkage. While a sector having high forward linkages is a sector which forward linkage value is more than the average of the whole forward linkage. The following is the total calculation of backward linkage and forward linkage between one sector and other sectors in Semarang Regency.

A sector can be called a leading sector if it has high backward and forward. A sector can be called a potential sector if it only has high backward or forward. And a sector can be called a relatively backward sector if it has no high backward or forward.

Based on the data of the Table 5, a Klassen typology of economic sectors in Semarang Regency can be arranged to make easier the classification of those sectors into the leading, potential or backward.

Based on the Klassen typology table above, economic sectors in Semarang Regency can be classified into three groups:

- The leading sectors in Semarang Regency are: farming sector and trade, hotel & restaurant sector.
- The potential sectors in Semarang Regency are: mining and digging sector, electricity, gas & clean water sector, finance and company rental sector, and service sector.
- Relatively backward sectors in Semarang Regency are: processing industrial sector, building sector and transportation & communication sector.

Although Semarang is an industrial agglomeration place (which means that there are many industries in this area), industrial sector is not the leading sector. It is because this sector has no high linkage with the input supplier sector and has no high linkage with the output consumer sector. This shows that eventhough there are many industries in Semarang Regency, the raw material used by the industry (usually from farming sector) is not from Semarang Regency but from other regions. Most consumers of the products of these industries are not sectors existing in Semarang. This shows that the government of Semarang Regency cannot optimally utilize the industrial agglomeration in this regency as one of ways to increase the regional economy.

**CONCLUSION**

From the analysis of inter-sector backward linkages in Semarang Regency, it can be found out that a sector having the biggest direct backward linkage with other sectors are service sector. From the inter-sector indirect backward linkage analysis, the sectors having the highest indirect backward linkage are electricity, gas, and clean water sectors. The sector having the highest total direct or indirect backward linkage is service sector.

Farming sector has inter-sector direct forward linkage and indirect forward linkage; in fact it has the highest number.

This is strengthened by the calculating result of total forward linkage, that the farming sector also has the highest number. From the result it can be concluded that farming is a sector mostly utilized by other sectors as their input.

From the result of Klassen typology analysis, it is found out that the leading sector in Semarang Regency is farming sector and trade, hotel, and restaurant sector. The sectors with potential to be the leading sectors are mining sector; electricity, gas, and clean water sector; finance, rental and company service sector. While those included to backward sectors are industry sector, building sector, and transportation and communication sector.

Worth to be noted is that eventhough Semarang Regency is an industrial agglomeration place (which means that it has many industries), industrial sector is not the leading one. It is because the industrial sector is not highly related to the input supplier sectors and the output consumer sectors. From such a description, it indirectly shows that the local government is not sensitive to any opportunity to increase the economic sectors through industrial agglomeration. That is why the development planning should be rearranged through a planning for each sector based on its potential.

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