

# Specialization and Geographic Concentration of East Java Manufacturing Industries

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## **Abstract**

The concentration of spatial economic activities, especially in manufacturing industries has become an interesting phenomenon to be analyzed. In manufacturing industries, spatial concentration is determined by wages, transportation cost, market access, and externalities which relate with localization economies and urbanization economies. The existence of spatial concentration has a relation with industrial specialization which based on industrial structure on that region. The objective of this paper is to describe where the concentration of East Java manufacturing industries is, how the locational distribution of that industries is, and how the relation between the spatial concentration and specialization and industrial structure in East Java is. This paper is using Location Quotient, Herfindahl Index, Elison-Glaeser Index, Krugman regional specialization index and Krugman bilateral index to analyze the data..

*Keyword: Specialization, Concentration, Manufacturing*

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## 1. Introduction

The concentration of production, which is one of the most striking features of the geography of economic activities, is probably also the most direct evidence of the pervasive need for firms to draw benefits from the presence of externalities. Measuring the gains derived from this process is a challenge that a long tradition of geographers and economists has tried to take up. In this purpose, the intensity of regional specialization in particular industries, and, conversely, the level of industrial concentration in particular locations, have been used as complementary evidences for the existence and significance of externalities. Besides, economists focused the debate mostly on disentangling the sources of specialization and concentration processes according to three vectors: natural advantages, *internal* and *external* scale economies.

With this respect, the seminal papers of Ellison and Glaeser (1997, 1999) are the first to isolate the contribution of natural advantages by using a large battery of resources endowment indicators and neutralizing simultaneously for internal increasing returns to scale by the means of their specific plant-based index. On the other hand, many studies focus more particularly on disentangling the role of plants' size with respect to spatially bounded externalities arising from the close proximity of agents, such as Marshallian labor market pooling or technological spillovers, and Jacobian benefits derived from urbanization and diversity. By contrast, studies identifying external benefits coming from non-spatially bounded externalities are quite scarce<sup>2</sup>. However, New Economic Geography (NEG) models, and more particularly those "Market potential" reduced specifications that can be derived from them, over a seducing theoretical background to account for spillovers whose geographical scope overlaps the borders of local markets and, more particularly, for "pecuniary" externalities arising from demand and input-output linkages. This article dedicates therefore to the issue of disentangling the forces driving the concentration and specialization process of activities between three sources: internal, 'localized external' and 'Outside external' sources.

Following the model-based approach of Ellison and Glaeser (1997), we therefore try to shed a new light on the link between concentration, spatial clustering and the size of plants, paying also attention to the causal direction of this relation. Concentration is referred to as a spatial concept of variability that can be measured with the standard

locational Gini or the more sophisticated Ellison and Glaeser index. By contrast, spatial clustering or “agglomeration” is directly concerned with spacialization. Therefore we also use a specialization measure (the Krugman index) to identify some specific similarity-based patterns.

The paper is therefore structure as follows. The next section reviews some conclusions from theories on economic geography and regional economic development. Emphasis is put on interdependence, when it using in this paper. In Section 3 describe theoretical measures of regional specialization and geographic concentration, methodological and data will be used. In Section 4 discussed empirical measures of convergence are discussed along with a new measure that takes into account interaction between regions. Section 5 concludes and proposed direction for further research.

## 2. Theoretical Framework

In the last decade, the influence of regional externalities on local economic growth has been under recurrent investigation. Glaeser *et al.* (1992) were the first to focus on employment growth as a proxy for local economic performance and to study its dynamics at both the city and the sectoral level. The empirical analysis was based on the discrimination between static externalities, associated with cost efficiencies or pecuniary externalities, and dynamic externalities, related to knowledge spillovers. Static externalities are those which affect industry localization, but not growth. Since then, the debate about dynamic externalities has mainly focused on two competing theories: those of Marshall (1920) -Arrow (1962)-Romer (1986) (MAR) and of Jacobs (1969).

**Table 2.1.**  
**SPILOVER CLASSIFICATION**

	Competitive Industry	Monopolistic Industry
Industry Cluster	<b>Porter</b>	<b>MAR</b>
Diverse Industrial Base	<b>Jacob</b>	-

Source: Glaeser et al 1992; Harris dan Kells, 1997

The main difference between these theories concerns the effects of specialization (the degree to which a location specializes in one industry) and diversity (the range of different industries in a location). The MAR framework maintains that most spillovers occur among firms in the same industry. Specialized locations with high levels of industry concentration should experience more innovation and faster growth. In contrast, Jacobs posits that the most important knowledge flows take place across different industries. Jacobs' theory predicts that industries will innovate more and grow faster in locations with greater diversity. Empirical tests addressing this debate have produced conflicting results.

**Table 2.2.**  
**Centripetal and Centrifugal**

Centripetal Forces	Centrifugal Forces
Linkages	Immobile factor
Thick market	Land rent and commuting
Knowledge spillover and other	Congestion and other pure
Pure external economies	Diseconomies

Source: Fujita et al 1999: 346

On the left we show the marshallian trinity of external economies, and on the right we show a somewhat comparable trinity of forces opposing agglomeration. There can be little doubt not only that all of these force operate in the real world, but these all have at least some bearing on almost any real world issue in economic geography. Centripetal is the force that brings industrials go to concentration and centrifugal is the opposite force that makes industrials go to disperse. Agglomeration is happened from equilibrium from those forces.

### 3. Methods

Base on Knarvik et al (2000), the basic unit of analysis is the activity level base measured using the production data, by PDRB (Kuncoro, 2002 a) of sector  $s$  from in country  $I$ , which we shall donate  $GRDP_i^s$  We usually want to work with this expressed

as a share, either of total of industrial activity in the country, city or municipal activity in the industry, which denote by  $GRDP_i$

$$V_i^s = \frac{GRDP_i^s}{GRDP_i} \quad (1)$$

Value of  $V_i^s$  indicates the specialization rate of industry  $s$  in country  $i$  (Aiginger and Hansberg, 2003). With the similar meaning, we can show that:

$$V^s = \frac{GRDP^s}{GRDP} \quad (2)$$

Whereas the  $V^s$  measures the leading sector of east java industry, which specialize and have a competitive base.

$$S_i^s = \frac{GRDP_i^s}{GRDP^s} \quad (3)$$

In other view, Aiginger and Hansberg (2003) argued that spatial concentration can be define as regional share for locational distribution of industries, denotes by  $S_i^s$  that measure a contribution of countries  $i$  for total region in industry  $s$

$$X_i = \frac{GRDP_i}{GRDP} \quad (4)$$

$X_i$  can show municipals or cities  $i$  contribution and spatial distribution for east java manufacturing industries with the values between  $i=(1.....N)$

One of the most-often used measures of specialization is the employment Location Quotient (LQ), also known as the Hoover-Balassa coefficient. With respect to this measure, a particular location is defined as specialized in an industry (for instance manufacturing) if that location's share of employment in the industry exceeds its national share. Complementary to the previous index, one can also define an employment "Industry Quotient" (IQ) along the idea that an industry should be concentrated in a particular location if its share of employment in the location exceeds the corresponding regional share (Lafourcade and Mion, 2003). This measure argued that relative specialization of manufacturing industries, would be happen if local specialization bigger than country level (Kuncoro, 2004).

$$LQ = \frac{V_i^s}{V^s} = \frac{S_i^s}{X_i} \quad (5)$$

If  $V_i^S > V^S$  ;or  $S_i^S > X_i$  ;we can say  $LQ > 1$ ; If  $V_i^S < V^S$  or  $S_i^S < X_i$  ;so, the equation can say:  $LQ < 1$ . The value of  $LQ > 1$ , indicated that industry  $S$  is the leading sector in country  $i$  (bendhavid-Val 1991).

To construct the other measure of specialization we proceed as follows. For each country, we calculate the share of industry  $s$  in that country's total manufacturing output (gross production value). As outlined, we call this variable  $V_i^S$ . Corresponding to this, we can calculate the share of the same industry in the production of all other countries denoted (Krugman, 1991). We can then  $V^S$  measure the difference between the industrial structure of country  $i$  and all other countries by taking the absolute values of the difference between these shares, summed over all industries,

$$K_{SPEC} = \sum_{S=1}^N |V_i^S - V^S| \quad (6)$$

We call this the Krugman specialization index or  $K_{SPEC}$ . It takes value zero if country  $i$  has an industrial structure identical to the rest of the East Java, and takes maximum value two if it has no industries in common with the rest of the East Java (Base from Kim, 1999)

Smaller numbers indicate similarity to the country in the column, and larger numbers indicate greater difference. The industry shares  $V_i^S$  for each country can be compared with the corresponding shares for the rest of the East Java as a whole, or with shares for other individual countries.

$$B_{SPEC} = \sum_{S=1}^N |V_i^S - V_j^S| \quad (7)$$

This measures to make this comparison yields of bilateral differences between the industrial structures of individual countries can be calling bilateral specialization index or  $B_{SPEC}$ . The  $B_{SPEC}$  can be reflecting the similarity or difference of industry structure between country  $i$  with country  $j$ .

The literature on externalities and location is concerned with plants' interaction while labor measures, like the thickness of the market in Marshall (1890) labor pooling idea, are considered as proxies for the externalities arising from plants' proximity. Therefore, if we aim at measuring the strength of these spillover effects, we have to

reconsider our unit of analysis in favor of regions. In order to gain some insight, it is useful to think about workers' distribution over space as the mixture of two distributions:

1. The region size distribution (i.e. the allocation of workers among region).
2. The industry location distribution (i.e. the outcome of industries location choice).

The concentration of workers may thus come from both sources, but spatial externalities matter only in the second distribution. Consider, for example, the two following polar cases. In the first one, there is just one region in industry  $s$ , and it is located in region  $i$ . In the second case, there are now many plants belonging to industry  $s$ , and they are all located in  $i$ . Clearly, the herfindahl indexes would take the same high value in both cases, indicating a strong concentration pattern in industry  $s$ .

$$H^s = \sum_{i=1}^M (S_i^s)^2 \quad (8)$$

However, the nature of this concentration is completely different in the two situations. In the first one, concentration occurs at establishment level. Reasonably associated to factors that are “internal” to a plant or and industry, like increasing returns to scale in production, but, no matter where this plant locates, we will observe a high value of herfindahl index. The second case is, by contrast, characterized by a co-location of different plants in the same place (spatial concentration), and suggests that there are some “external” elements

However, this task can be better accomplished within a more structured framework like the EG region based location model. The approach suggested by Ellison and Glaeser (1997) in order to isolate the effect of spatial concentration, consists in starting from the production-based index:

$$g_{EG} = \sum_{i=1}^M (S_i^s - X_i)^2 \quad (9)$$

the measurement can be call as locations gini, and then neutralize the contribution of industrial concentration by means of an appropriate measure. Importantly, and this is one of their greatest contribution, they have derived this appropriate measure from an explicit and rigorous probabilistic model of plants' location decision. In particular, Ellison and Glaeser (1997) spell out two sources of spatial concentration:

1. Natural advantages.
2. Spillover effects among neighbor plants producing the same kind of goods, i.e. the so be called MAR externalities.

$$G_{EG} = \frac{g_{EG}}{1 - \sum_{i=1}^M (X_i)^2} \quad (10)$$

Coming back to intuition, one of the most appealing way to interpret this model is, as suggested by Ellison and Glaeser themselves, to think about plants as darts to be thrown in space. Imagine a two-stage process in which nature first chooses to weld some of the darts into clusters (representing groups of plants that are sufficiently interdependent that they will always locate together), whereas  $G_{EG}$  reflected the nature of raw concentration, and then each cluster is thrown randomly at the dartboard to choose a location. The importance of spillovers is then captured by the parameter  $\gamma_{EG}$  of plants among which co-location must occur, which can be viewed as the “fraction” of plants among which co-location must occur.

$$\gamma_{EG} = \frac{G_{EG} - H}{1 - H} \quad (11)$$

The equation developed by modify of herfindahl index such as:

$$H = \sum_{i=1}^M \frac{1}{M} (S_i^S)^2 \quad (12)$$

The equation would be analyzing with GRDP data of cities and municipal countries in East Java. Point of brief will be at 1996-2000 periods without 1998 as crises perio. More precisely, the authors propose to describe phenomena between region level with the SWP (satuan wilayah pembangunan) level of manufacturing industry in east java.

## **Empirical Results**

The development of economic is a process when people create an environment, which has an effect to economic indicators such as the level of employment. The environment is the source of planning such as physical environment, rules, and behavior (Blakley, 1989). In the context of regional development planning, the meaning of development planning is not a planning from a region but that is planning for the region,

which can be seen as a planning to develop the public resources in that region and to develop private ability to create the responsible resources. (Kuncoro, M., 2004).

In the context of development in a regional manufacturing industrial, the spatial and regional oriented strategy is the one of key factor in government policy. (Kuncoro, M., 2002). This strategy is based on the localization economies and urbanization economies. It is supported by vertical and horizontal linkages between sectors (JICA, 2004a; Fujita et al, 1999; Fujita and Thiesse, 2002).

The mainframe of this strategy is the location of concentrated economic activities and regional specialization. Those two things are supported by the analysis of relative specialization in aggregate regions or bilateral and the analyses of sectoral spatial concentration include the role of natural advantages from each region. (Ellison and Glaeser, 1997; 1999; Midelfart-Knarvik et al, 2000).

In the previous chapter, spatial concentration will generate benefit from the location proximity such as localization economies and urbanization economies which those two are the push factors to develop agglomeration. Localization economies are related to externalities among the industries and it will generate the Marshall industrial clusters or the industrial districts. In the East Java manufacturing industries context, we will see the industrial districts phenomenon, which is come naturally, and the most general form of this cluster are small and household industries.

On other side, most manufacturing cluster in East Java take a form as an industrial complex cluster which is not come naturally but it is depend on the government or other institutions investment and effort to develop the relationship and the infrastructures. And the last form of industrial spatial concentration is social network cluster. This form can be found among the rural areas and it does contain small and household industries. The main determinant to maintain this form depends on interpersonal relationship, similarity of background or history.

Based on the spatial economic activities, the concentration of East Java manufacturing industries is on the SWP I Gerbangkertosusila, SWP IV Malang-Pasuruan and SWP VII Kediri and its hinterland. The 1996 data shows that 53,78% of big and middle manufacture labor is concentrated on the SWP I. On other side the data shows that

25,75% GDP share from manufacturing sector is come from SWP VII and 12,66% is come from SWP VI.

The manufacture industries on SWP I (Gerbangkertosusila) tend to be dominated by foods, beverages, and tobaccos with 32,6% of contribution. The Location Quotient analysis on 1996 in SWP I from foods, beverages and tobaccos sub sectors shows 0,6323 which means that is not the dominant sub sectors in this region. The effectively of LQ needs a deeper analysis because based on scale, potential of the ISIC 3.1 industry should become dominant industry in SWP I. The argument is supported by data that the contribution level of foods, beverages, and tobaccos sub sector from SWP I is on the second rank, after SWP VII (Kediri and its hinterland). The overall scale level of manufacturing in SWP I could affect the low level of LQ and on the next future the ISIC 3.1 industry in SWP I is still possible to develop.

The overall level of manufacture industries in SWP I could not be separated by the role of Surabaya City as a centre of industry, trade, and service in East Java. The study that has been done by Dick (1993) said that the role of Surabaya as a center of manufacture industry had started since the era of industrial revolution and It had been growing as a centre of industry and also had become the industrialization agent in East Java.

Other concentrations in SWP I have taken place in the Surabaya's hinterlands, Sidoarjo and Gresik. Based on the argument of Glaeser and Khan (2003) about growth and sprawl of urban economic activity, the SWP I concentration has a big chance that it was made from the agglomeration effect of Surabaya City. The spatial concentration of manufacture industrial in Surabaya and the effect of agglomeration from Surabaya city to its hinterland can happen from the presence of agglomeration in order to reduce transport cost and manufactures tend to locate their firm near the biggest local demand to gain market access.(Krugman, 1961). Other argument by Dick (1993 a: 325-343), the amount of population and the role of seaport has made Surabaya City as a potential market and has provided better access to domestic or foreign markets. Those arguments also can support why the foods, beverages, and tobaccos sub sector tend to concentrate around Surabaya City.

Dick's argument has been supported by Ellison and Glaeser (1999). They said that the amount of population as a potential market and the seaport as a support facility were a natural advantages. Fujita and Mori (1996) added that sea ports would lead the growth of city scale and increase the positive externalities from spatial concentration. Those arguments are supported by Porter (1990), he said that demand condition and factor condition (include transportations access and infrastructures) were a determinant of industrial advantage in a region.

Return to The SWP Analysis, like we have said before, foods, beverages, and tobaccos sub sector industry comes from SWP VII (Kediri and its hinterland). Data shows that in 1996 and 1997, more or less than 44% GDP share from foods, beverages, and tobaccos sub sector (ISIC 3.1) has come from SWP VII and has been increasing up to 51 % in 1999 and 2000. That amount is the highest contribution from SWP in East Java and it is 88% from manufacture industrial GDP share in SWP VII. If we see it from LQ analysis, it is shown that this sub sector is a dominant in SWP VII. These evidences reflect the industrial concentration in Kediri city. The dominance of ISIC 3.1 (foods, beverages, and tobaccos sub sector) has a relation with Gudang Garam one of the largest cigarette industries in Indonesia and its dominance is not just economically but also social and other aspects. (Young, 1993; Kuncoro and Sumarno, 2003).

Other location of manufacturing industry concentration is in SWP VI (Malang-Pasuruan). This concentration is dominated by foods, beverages, and tobaccos sub sector with 51,09% of contribution.. The LQ analysis on SWP in 1996 is 0,9909 on ISIC 3.1 and it shows that in this region, this sub sector is not a dominant. But based on Table 1 the contribution of ISIC 3.1 from SWP VI is high enough, it shows 12,54% GDP shares from ISIC 3.1 is concentrated on that region.

East Java has an interesting phenomenon in its SWP especially in SWP I and SWP VI. Those two are the place where the manufacturing industry concentration has taken place and it's called with Surabaya-Malang corridor. In SWP VI, we can see an industrial concentration on from Malang to Pasuruan and in geographical information context it will be seen as a manufacture belt around SWP I and SWP VI. That belt includes other place such as Gresik, Surabaya, Sidoarjo, Pasuruan and Malang; and it has

a connection with highway network, international seaport in Surabaya and international airport in Sidoarjo.

Krugman (1991), based on empirical phenomena, the manufacturing belt arose from the pattern of industrial urbanization economies in specified region. Kuncoro (2002) said that, an urbanization economy which was caused by the effect of agglomeration happened not just in one industry but in many economic aspects in one specified region, this would show up the urban agglomeration phenomenon and it would cause metropolitan region extend. Based on those two arguments, the manufacture belt in Surabaya-Malang corridor is supported by a good transportation network within these cities. This network will increase the industries efficiencies especially in transportation cost.

In order of economic structure transformation, Kotler and Kertajaya (2000) argued the example on Japan economic restructure after 2<sup>nd</sup> world war. They showed that there was a change in economic structure from farming to low cost manufacturing industries. This Japan model is adapted to other countries such as South Korea, Taiwan, Singapore, Malaysia, Thailand, and Indonesia; and this model has created the flying geese phenomenon. The main point from this example is, we must recognize the characteristics of economic structure from the region before we develop the manufacturing sector.

On the SWP, which is has an industrial concentration; tend to have a similar economic structure with the province of East Java. Between the three SWP, SWP VII has a bigger differences because it has a bigger share from foods, beverages, and tobaccos sub sector. Cigarettes industry is a labor-intensive industry, if we compare with ISIC 3.1 share; SWP VII is dominated with cigarettes industry and it means SWP VII has lots of specialized workers in that sub sector. The specialized worker has positive and negative effects. For positive effect, Marshal (1920) argued that the specialized workers would make specialized firm on that region easier to recruit new workers. Porter (1990) added that the specialized workers are a determinant from region competitive advantage. And for the negative side, specialized workers will make industrial transformation in that region become more difficult because that region does not have worker with other skill.

Based on  $K_{SPEC}$  index, Surabaya has two main purposes, as an East Java capital and as a growth center. In overall, Surabaya's manufacturing industry structure is similar with East Java and it will make industrial transformation based on the development strategy become easier to Surabaya or in bigger scope, SWP I. To conduct the industrial transformation process, resources and supporting infrastructures need to be prepared and those process need to pay attention to intra and inter industry trade. (Porter, 1990; 1998a; 1998b). Infrastructures still need additional investment in human capital; research and development; and science and technology support, and in cumulative process, it will improve the growth of manufacturing industry and other sectors (Harvey and Armstrong, 2001)

The same evidence is met in SWP IV's industrial structure. Based on  $K_{SPEC}$  index, Malang city shows a low value, it means that the industrial structure in Malang has a lot of similarity with East Java industrial structure. In order to conduct the industrial transformation, the competition, business, and investment atmosphere is added as extra factors after resources and infrastructures. To support the transformation, East Java needs to develop substantially resources from private sector and it needs an institution and environmental role which could attract private investment in infrastructure sector; refinement of laws and rules; cost-reflective pricing; and provide transparent on privatization or disinvestments process (World Bank, 2003b). Porter supports this argument; he said that a competition, which is supported by good business atmosphere, would create efficiency, productivity, and quality (Porter, 1990; 1998a; 1998b).

On other side, if we make a view from cumulative of Krugman Bilateral Index, SWP I has a different economy structure compare with SWP VII and both regions have its own specialization. But the result will be different if we compare SWP I with SWP VI, those two have a lot of similarities. Other similarity happens in comparison between SWP VI and SWP VII.

Industrial development in one region cannot be separated from the role of other regions. In basically, the role of coordination and partnership should be emphasized on regions that have an agglomeration form, because on agglomeration form region the industry has linkage and dependency between other industries (Barnajee, 2002; Danani, 2000; Landiyanto, 2004). Porter argued that related and supporting between region

industries and condition factors on specified region need to be improved by synergic partnership between inter regional government and related stakeholder in horizontal or vertical partnership under developmental institution (Porter, 1990; 1998a; 1998b).

Based on last analyses about how to decide the main industry sector, a region needs to analyze the power of region itself and other regions that surrounded him in order to give a support to this main industry. This support action can be realized as linkages between industries. The partnership is based on governmental policy UU no. 22/1999 about autonomy region; this policy is about how the cities and municipalities are controlling their regions (World Bank, 2003). But the implementation of autonomy region becomes far from the main goal, to maintain coordination and partnership in order to develop the overall economy, empirically it creates inefficiencies, market distortion, and regional egoistic and rivalry competition. (Kuncoro, 2004; Saad, I., 2003; Usman, 2001).

In order to create partnership of regions, beside how to decide the location and in what structures we also need to analyze about industrial spatial concentration from specialized industry in east java. The data shows that East Java manufacturing industry has a specialization in ISIC 3.1 (foods, beverages, and tobaccos sub sector), ISIC 3.2 (textiles, clothes, and leather sub sector), and ISIC 3.6 (non metal mining sub sector, exclude oil and coal). Those concentrations can be analyzed through Herfindahl Index. In 1996, the SWP based  $H^S$  in ISIC 3.1 shows 0,32 and in 1997 shows a significant incremental 0,36. This means that there is an increasing of diversification on specialized characteristics and increasing in SWP dominance on those industries.

The location of ISIC 3.1 cannot be completely answered by MAR (Marshall-Arrow-Romer) externalities (knowledge spillover) and externalities that caused by natural advantage. This phenomenon is showed by low value from Ellison-Glaeser index ( $\gamma_{EG}$ ) in ISIC 3.1, whereas in SWP level  $\gamma_{EG}$  is increasing from 0,0636 in 1996 to 0,08942 in 1999 (table4.14), and those values does not show the significance of MAR externalities and natural advantage on ISIC 3.1.

The SWP based Herfindahl index from ISIC 3.2 shows value 0,37 in 1997 and it means that the distribution of economic activity from this industry is equally distributed in East Java. Beside the role of similarity of industrial structure, the role of spillover and

natural advantages will also take a part on the development the industrial concentration and partnership between regions. Different with the pattern of ISIC 3.1, the location of ISIC 3.2 in East Java can be influenced by the role of MAR (Marshall-Arrow-Romer) externalities (knowledge spillover) and externalities that caused by natural advantage. This is shown by SWP based Ellison-Glaeser index ( $\gamma_{EG}$ ). It shows value between 0,12-0,14.

The SWP based Herfindahl index from ISIC 3.6 shows value 0,5 and it means that the dist the distribution of economic activity from this industry is not equally distributed in East Java. The location of ISIC 3.6 can also be influenced by the role of MAR externalities and natural advantage because the Ellison-Glaeser index ( $\gamma_{EG}$ ) shows value between 0,10-0,14. The role of knowledge spillover does influence ISIC 3.2 and ISIC 3.6 because those two industries is labor intensive and the knowledge spillover will generate human capital accumulation and it becomes stronger with the presence of learning by doing effect. All those will cause the growth of industries (Romer, 1986; Lucas, 1988).

Its need to be emphasized that the industry mobility has to happen naturally to reduce distortions and inefficiencies, The Government of East Java only involves as a planner, an administrator and the provider of infrastructures to reduce market distortions. As an administrator, the role of government is to organize partnership between municipalities and cities government in order to create an industrial policy (Barnerjee, 2002; Danani, 2000; Landiyanto, 2004; World Bank, 2003a; 2003b).

## **Conclusion**

The concentration of production, which is one of the most striking features of the geography of economic activities, is probably also the most direct evidence of the pervasive need for firms to draw benefits from the presence of externalities. he concentration of East Java manufacturing industries is on the SWP I Gerbangkertosusila, SWP IV Malang-Pasuruan and SWP VII Kediri

East Java has an interesting phenomenon in its SWP especially in SWP I and SWP VI. Those two are the place where the manufacturing industry concentration has taken place and it's called with Surabaya-Malang corridor In other side, SWP I has a

different economy structure compare with SWP VII and both regions have its own specialization.

The data shows that East Java manufacturing industry has a specialization in ISIC 3.1 (foods, beverages, and tobaccos sub sector), ISIC 3.2 (textiles, clothes, and leather sub sector), and ISIC 3.6 (non metal mining sub sector, exclude oil and coal). In particular area, this phenomenon completely answered by MAR (Marshall-Arrow-Romer) externalities (knowledge spillover) and externalities that caused by natural advantage.

The role of knowledge spillover does influence ISIC 3.2 and ISIC 3.6 because those two industries is labor intensive and the knowledge spillover will generate human capital accumulation and it becomes stronger with the presence of learning by doing effect. Its need to be emphasized that the industry mobility has to happen naturally to reduce distortions and inefficiencies, the policy only involves as a planner, an administrator, organizer of relationship, and the provider of infrastructures to reduce market distortions

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