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## **SPATIAL CONCENTRATION OF THE INFORMAL SMALL AND COTTAGE INDUSTRY IN INDONESIA\***

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**ABSTRACT:** *This paper discusses the spatial concentration of the small and cottage industry without legal entity in Indonesia. The study period is 1998-2004 or a period after economic crisis which commonly known as the 'era reformasi' (reformation era). By employing the Herfindahl index, this study found an increase in the spatial concentration of the informal small and cottage industry during this period. It argues that reformation tend to increase the spatial concentration of the informal small and cottage industry. Beside the economic crisis that have suffered urban and Java areas, other possible explanation on the connection between trend of the concentration and the reformation is what commonly known as the cost of formality.*

**Key words:** spatial concentration, small and cottage industry, reformation, Indonesia.

### **INTRODUCTION**

Most of enterprises in Indonesia are not large enterprises but small (enterprises with 5-19 employees) and micro enterprises (enterprises with 0-4 employees). Latest data shows about 99.8% of total establishment in Indonesia are small enterprises. It employs about 91% of total employment in all establishments. Contribution of small enterprises in Indonesia's gross domestic product and investment—in real value—is considerably important, 43% and 22% respectively. However, since domestic market is the main orientation of small enterprises, then its contribution in total export (non-oil) is very small (about 5% in 2006).<sup>1</sup>

About 54% of small establishments are farm-based establishments. However, in term of employment, non-farm enterprises are rather important than small enterprises in agriculture sector. Contribution of small non-farm establishment in total employment of small establishment is about 53%. Recent findings of the World Bank's study are also consistent with the above picture. According to this study, 57% of the working population in Indonesia is employed in non-farm enterprises (World Bank 2006). More over, the study confirmed that most of this non-farm employment is in micro and small enterprises. The Rural Investment Climate Survey (RICS), also conducted by the World Bank, found the vast majority of enterprises are micro or small firms, especially household enterprises. These enterprises contribute to the poverty alleviation. The Bank found households that run non-farm enterprises also tend to have better welfare than those that do not, as indicated by their income.

In summary, data suggests the important role of small and informal enterprises in Indonesia. Hence, it is not surprising that these enterprises have attention in development literatures, even in the knowledge-based economy (Audretsch & Keilbach 2007). Scholars have studied recent development of small enterprises in Indonesia (i.e

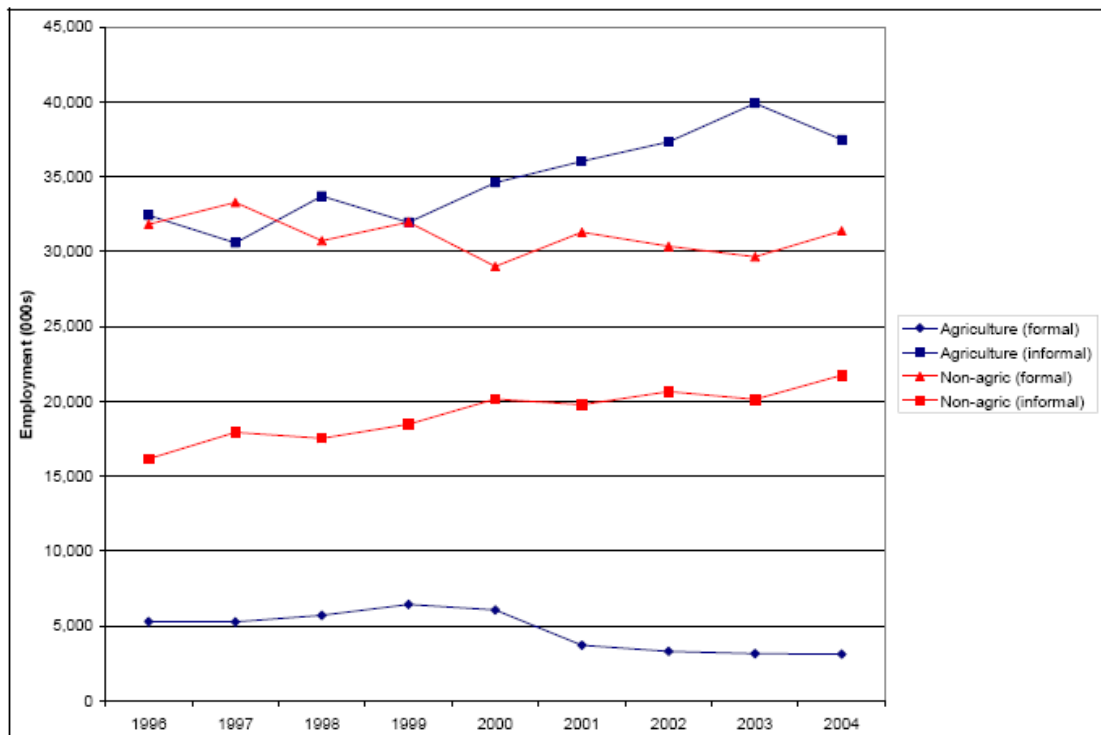
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\* An earlier version of this paper was presented at The Second Annual Max Planck – IISc International Conference on Entrepreneurship, Innovation and Economic Growth, 25-27 October 2007, Indian Institute of Science, Bangalore, India.

<sup>1</sup> Data was taken from <http://www.depkop.go.id>, accessed 4/7/2007.

Berry *et al* 2001, Tambunan 2007). However, the spatial issues of small enterprises remain neglected. This paper addresses this issue by analyzing the spatial concentration of the small and cottage industry, one of the non-farm activities. By focusing on the informal small and cottage industry, perhaps this paper will also be useful in understanding the spatial aspect of Indonesian manufacturing. It is because the previous studies on this topic tend to exclude small industry. For instance, Sjöberg & Sjöholm (2002), which studied concentration of the Indonesian manufacturing sector between 1980 and 1996, do not include small establishments. However, they agree that exclusion of small establishments has some implications for their study, such as it may exaggerate the degree of concentration if small establishments are relatively important in rural areas. They found that in the period when Indonesia substantially liberalized its trade regime, the high spatial concentration in the manufacturing industry still exist and has not decreased. Meanwhile, based on study in the period 1976-1999, Kuncoro (2002a) supports this finding and concludes that trade deregulation and series of implemented deregulation instead have increased the spatial concentration of manufacturing industry in Indonesia.

**Figure 1.**  
**Formal and Informal Employment in Farm and Non-Farm Sectors, 1996-2004**



Source: World Bank's calculation based on Sakernas 1996-2003

Since Indonesian economy has been liberalized during the reformation era after the Asian crisis (Hill & Shiraisi 2007), therefore it could be presumed that there is an increase in the spatial concentration of the informal small and cottage industry. Previous study has indicated that spatial concentration of this small industry between 1996 and 2000 tend to increase although not substantial (Brata 2005). It could also be

accompanied with finding of recent studies on the spatial inequality in Indonesia. For instance, Suryadarma *et al* (2006) found systematic inequality between urban and rural areas.

In order to assess the connection between reformation and spatial concentration, this paper will examine indications of what commonly known in the informal economy literatures as cost of formality, besides the impact of the economic crisis. It is also motivated by several highlights from recent studies on the entrepreneurship. First, small-firms have a close relation with entrepreneurship (Parker 2005, Audretsch & Keilbach 2007). Second, the informal sector may help to create markets, increase financial resources, enhance entrepreneurship, and transform the legal, social, and economic institutions necessary for accumulation (Asea 1996, in Schneider & Klinglmair 2004). Small scale or micro enterprises are labelled as the “upper-tier informal sector”, since it shows a dynamic, productive and lucrative segment in the informal sector (Blunch *et al* 2001). Finally, entrepreneurship capital has a strategic position in the process of economic growth through its threefold impact: facilitating knowledge spillovers, increasing competition, and increasing diversity in a region (Audretsch & Keilbach 2007).

## **DATA**

Data used in this paper was taken from *Badan Pusat Statistik* (BPS), the Indonesian Central Bureau of Statistics. Since 1998, BPS conducted an integrated survey on the small-medium establishments without having legal entity with less than 20 employees, which covers all economic sectors except agriculture. The survey was named as *Survey Usaha Terintegrasi* (Integrated Enterprises Survey or SUSI). Result of this survey was published in *Profil Usaha Kecil dan Menengah Tidak Berbadan Hukum Indonesia* (Profile of Small and Medium Establishments without Legal Entity Indonesia). This paper employs series of this publication since 1998 to 2004.

There is a limitation of this data, in particular-because there is only incomplete data for several provinces. For instance, Indonesia has 33 provinces in 2004, however SUSI 2004 only covered 30 provinces, excluded Riau Islands, West Sulawesi, and West Irian Jaya. The survey did not cover Maluku in 1999 and 2000 either. East Timor is excluded from the data (1998). Since available data only covered 1998 to 2004, then the long-term pattern of the spatial concentration cannot also be indicated precisely.

## **PATTERN OF THE SPATIAL DISTRIBUTION: 1998-2004**

In 1998, number of the informal small and cottage industry was 2.19 million and thus there was 3.5% annual growth. Then, there were 2.67 million establishments in 2004 (Tabel 1). Employments of this informal industry have grown about 3.8% annually in the period between 1998 and 2004. Interestingly, average growth of its gross production was about fourth times larger than both its number and employment. It indicates that employment productivity (gross production/employment ratio) of the informal small and cottage industry have increased significantly. In this period, average rate of growth of its employment productivity was about 11%.

**Table 1.**  
**Small and Cottage Industry Establishment Without Legal Entity**

	1998	1999	2000	2001	2002	2003	2004
NUMBER OF ESTABLISHMENT (million)	2.19	2.51	2.60	2.54	2.73	2.64	2.67
EMPLOYMENT (million)	5.29	6.12	6.29	6.11	6.57	6.36	6.55
GROSS PRODUCTION (Rp 000 billion)	44,10	51,06	57,32	67,09	81,16	86,20	101,63

Between 1998 to 2004, the share of small and cottage industry without legal entity in total small-medium establishment without legal entity was about 17%, in total employment was about 22% and in gross production was about 22% (Table 2). This table also shows an increase in share of this informal sector in the period 1998 to 2002 and then decreased slowly since 2003, except in its production share that increased again in 2004 although still below its share in 1998.

**Table 2.**  
**Share of Small and Cottage Industry in Total Small-Medium Enterprises Without Legal Entity (%)**

	1998	1999	2000	2001	2002	2003	2004
NUMBER OF ESTABLISHMENT	15.56	17.32	17.35	17.31	17.38	16.74	15.58
EMPLOYMENT	20.32	22.89	22.74	22.46	22.60	21.92	21.44
GROSS PRODUCTION	23.79	24.06	22.92	23.20	22.26	17.13	18.92

Table 3 shows the spatial distribution of the informal small and cottage industry at provincial level. Three provinces (West Java, Central Java, and East Java) have a strong domination in the industry. Share of these provinces are about 60% in both employment and gross production. Compared to the medium-large manufacturing, domination of these three provinces in the informal small and cottage industry was rather small. It indicates that this informal small industry is more diverse than the medium-large industry. This finding considers previous study by Kuncoro (2002b) in the case of Java which found that large-medium manufacturing is highly concentrated in Great Jakarta (Jabotabek) and Great Surabaya (in East Java province), meanwhile it indicated that small scale manufacturing is more diverse.

Previous study by Hendersen & Kuncoro (1996) argued that firms tend to locate its facilities in areas in Java with an accumulated knowledge of production. Regarding the tendency of firms to locate in the more developed regions, this finding could be interpreted that informal industry depends less on the economic infrastructure in the regions, compared to the medium-large manufacturing. This interpretation is also supported by the nature of this industry, in which most of it are household based establishments. Explaining the fact that a considerable amount of small scale manufacturing outside Java' metropolitan are concentrated spatially in small cities, Kuncoro (2002b) also indicated the role of transportation infrastructures readiness, which allows linked firms to minimize cost of transportation.

**Table 3.**  
**Spatial Distribution of Small and Cottage Industry Without Legal Entity by Province (%)**

PROVINCE	EMPLOYMENT							GROSS PRODUCTION						
	1998	1999	2000	2001	2002	2003	2004	1998	1999	2000	2001	2002	2003	2004
Nanggro Aceh Darussalam	2.3	1.9	2.5	2.1	1.4	2.1	2.2	3.4	2.1	2.2	1.9	1.3	1.3	1.9
North Sumatera	2.7	2.1	1.7	2.6	2.1	1.8	1.8	4.0	2.9	2.8	6.1	3.8	2.6	2.8
West Sumatera	2.5	2.3	2.4	2.6	2.2	2.3	1.9	4.0	3.6	3.9	2.6	3.5	3.9	2.5
Riau	0.7	0.6	0.8	0.5	0.9	0.7	0.7	1.3	0.9	1.0	1.0	1.7	0.7	1.0
Jambi	0.6	0.5	0.5	0.5	0.3	0.5	0.4	0.6	0.4	0.6	0.6	0.5	0.5	0.8
South Sumatera	1.9	2.1	1.9	1.7	2.2	1.7	1.5	2.0	2.4	1.6	1.2	3.4	2.3	1.4
Bengkulu	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.4	0.3
Lampung	2.9	2.8	2.7	2.6	2.7	2.7	3.0	1.9	1.6	2.5	2.4	1.8	2.1	3.0
Bangka Belitung*							0.1							0.1
Jakarta	2.0	2.6	1.5	1.6	1.6	1.9	1.5	3.7	5.5	3.8	4.4	3.4	4.6	3.1
West Java	15.8	14.1	13.1	16.8	15.6	15.6	14.0	18.9	17.0	12.3	21.7	14.8	18.0	16.7
Central Java	25.7	26.7	27.9	26.7	29.4	26.3	27.3	22.2	23.8	28.6	23.0	26.7	26.2	26.8
Yogyakarta	3.1	3.1	3.3	3.8	3.9	3.0	2.9	2.1	2.3	3.0	3.8	3.7	2.5	2.7
East Java	19.0	20.8	19.9	17.3	18.5	20.1	20.6	18.9	19.9	20.7	16.1	17.7	17.6	19.8
Banten*							1.5							1.7
Bali	2.8	3.2	3.0	2.6	3.0	2.4	2.5	2.5	3.0	3.8	2.3	3.4	2.5	2.5
West Nusa Tenggara	3.0	2.6	4.4	3.4	2.4	2.7	2.7	1.6	2.2	2.8	1.7	1.1	1.8	1.7
East Nusa Tenggara	2.7	2.7	3.1	2.6	2.6	2.8	3.3	0.7	0.6	0.6	0.5	0.6	0.8	0.6
West Kalimantan	1.2	1.3	0.9	1.4	1.2	1.7	1.1	1.4	2.3	1.6	2.2	2.4	1.6	1.9
Central Kalimantan	0.5	0.7	0.4	0.6	0.6	0.5	0.6	1.1	1.4	0.5	0.4	0.6	0.7	0.3
South Kalimantan	1.8	2.2	1.9	2.0	2.0	2.3	2.5	1.5	1.7	1.3	1.2	2.0	1.6	2.0
East Kalimantan	0.4	0.5	0.3	0.4	0.3	0.4	0.4	0.4	0.7	0.6	0.8	0.9	1.0	0.4
North Sulawesi	2.4	2.2	1.9	1.8	1.6	2.5	1.6	1.5	1.4	1.5	1.5	0.7	1.5	1.2
Central Sulawesi	0.8	0.7	0.8	0.9	0.6	0.7	0.8	0.8	0.7	0.4	0.7	0.6	0.6	0.7
South Sulawesi	3.2	2.8	3.7	3.4	3.1	3.4	3.4	4.0	2.5	3.0	2.2	4.3	4.0	2.7
South-East Sulawesi	0.7	0.8	0.8	0.9	0.9	0.7	0.6	0.5	0.6	0.6	0.6	0.6	0.4	0.5
Gorontalo*							0.4							0.2
Maluku	0.5	na	na	0.6	0.2	0.4	0.2	0.4	na	na	0.6	0.3	0.5	0.2
Maluku Utara*							0.2							0.1
Papua	0.4	0.3	0.3	0.3	0.2	0.3	0.3	0.4	0.3	0.2	0.3	0.2	0.2	0.3
<b>TOTAL</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

In order to get a better picture, the Herfindahl index is employed to measure the spatial concentration of the informal small and cottage industry. This index is a sum of square of the province's share in the total small and cottage industry without legal entity. This index indicates the concentration rate of the industry. Higher value of the index means higher concentration in the industry. Previous study by Sjoberg and Sjoholm (2002) also used this index in measuring concentration of manufacturing in Indonesia.

Table 4 shows an increase in the spatial concentration. The Herfindahl index of employment in 1998 was 0.136 and increased to 0.145 in 2004. In term of gross production, the index began at 0.131 in 1998 and increased to 0.147 in the final year. There are two notes on this concentration. First, degree of the spatial concentration of this informal industry was certainly smaller than of the larger industry. For instance, Sjoberg and Sjoholm (2002) found the Herfindahl index of the medium-large

manufacturing was about 0.19 in 1980 and 1991 and increased to about 0.21 in 1996. Since Indonesia has adopted more liberalization after the economic crisis meanwhile the previous studies claimed that liberalization tend to increase the spatial concentration in this country, then the spatial concentration of the medium-large manufacturing in the crisis era could be predicted larger than the pre crisis. Second, the spatial concentration of the informal small and cottage industry tend to become larger than the total concentration of the informal small-medium establishments, which Brata (2005) obtained. In term of employment, the Herfindahl index are 0.119 (1998), 0.126 (1999), and 0.125 (2000). By combining both notes, it is reasonable to say that the spatial distribution of the industry sector of informal small establishments is not like its other sectors, but tend to follow the spatial pattern of the Indonesian manufacturing although at lower degree.

**Table 4.**  
**Spatial Concentration of Small and Cottage Industry Without Legal Entity**  
**(Herfindahl Index, provincial level)**

YEAR	EMPLOYMENT	GROSS PRODUCTION
1998	0.136	0.131
1999	0.143	0.136
2000	0.145	0.150
2001	0.139	0.137
2002	0.153	0.136
2003	0.143	0.142
2004	0.145	0.147

#### **REFORMATION & CONCENTRATION: A POSSIBLE EXPLANATION**

The increase of the Herfindahl index of the informal small and cottage industry as shown in the previous section induced an intriguing question: does the *reformasi* related to this pattern? This section proposes a possible explanation for this question.

Since liberalization is an important policy in the reformation era of Indonesia, then the finding discussed in the previous section indicates that liberalization have spurred the increase of the spatial concentration of the informal small and cottage industry. However, economic liberalization is only one of the series of policies which has been applied in the post crisis Indonesia. For instance, in a recent article, Hill & Shiraisi (2007) pointed out that although ‘Indonesia faced various internal problems such as terrorism, natural disasters and corporate distress, however Indonesia is not in any sense a “failed state”.‘ Politically, Indonesia is now the world’s third largest democracy. Economically, the quick return to prudent macroeconomic management and the maintenance of a broad open economy was claimed as the keys of economic growth after the years of crisis. On the spatial inequality issues, Indonesia also implemented decentralization policy, which have stressed the local level (second tier of territorial administration).

Therefore, although there is a connection between economic liberalization and spatial concentration, however it is not sufficient in addressing the informality issue of establishment. Previous study indicates there are possible explanations for the growing of underground economy in the recent Indonesia (Brata 2004). The first is the crisis or low economic growth. The second is related to the several issues, such as high

corruption rate, law enforcement problems, and bureaucratic cost. The rest of this section will try to discuss both explanations.

***The impact of economic contraction***

Theoretically, the first explanation is related to the dualist school of thought on the informal economy. According to this school of thought, informal economy persists due to a slow rate of economic growth and/or to a faster rate of population growth (Chen 2004). Since the population control in Indonesia was rather successful, then the candidate for dualistic theory is the economic contraction that has emerged since the Asian Crisis in 1997/1998.

A quick survey conducted by the World Bank, the Ford Foundation and BPS found that urban areas and Java have been hardest hit by the crisis (Watterberg *et al* 1999). Following the dualist school, informal sector was the primary cushion for labor force in Java and urban areas during the economic crisis. Figure 2 confirms that provinces in Java, except Jakarta, are provinces that experienced employment growth in the informal small and cottage industry in the period between 1998 and 2004. Rank of rate of employment growth in Java provinces in this period are East Java, Central Java, Yogyakarta, and West Java.

**Figure 2.**  
**Relation between Change of Employment and Change of Share in Employment of The Informal Small and Cottage Industry, 1998-2004**

Change of share in employment, 1998-2004	Change of employment, 1998-2004	
	Decreasing	Increasing
<b>Decreasing</b>	<b>I</b> Maluku Jambi North Sumatera North Sulawesi Jakarta West Sumatera Papua Bengkulu South Sumatera	<b>II</b> South-East Sulawesi <i>West Java</i> West Nusa Tenggara Bali Central Sulawesi West Kalimantan <i>Yogyakarta</i> Nangro Aceh Darussalam
<b>Increasing</b>	<b>IV</b>	<b>III</b> Riau East Kalimantan Central Kalimantan Lampung South Sulawesi South Kalimantan East Nusa Tenggara <i>East Java</i> <i>Central Java</i>



Since Java has a strong domination in the total employment of the industry, then they have affected the spatial distribution of employment. This figure shows that West Java and Yogyakarta province are in the Quadrant II; meanwhile East Java and Central Java are in the Quadrant III. It perhaps indicates that East Java and Central Java more suffered than West Java and Yogyakarta.

This finding reflects that spatial inequality across the region in Indonesia has a serious implication on the spatial distribution of impact of the crisis. Since the spatial concentration of the informal small and medium cottage industry tend to increase in the period after the crisis, then it also indicates that reformation have failed to reduce that spatial inequality. For instance, the coefficient of variation of gross regional domestic product (GDRP) between 2001 and 2004 has increased from 96.5 to 104.86.<sup>2</sup> Previous study also confirms the persistence of systematic inequality between urban and rural areas (Suryadarma *et al* 2006). Moreover, *Indonesia Human Development Report 2004* has also recalled the danger of rising income inequality after the crisis period since the economic growth with more capital-intensive and skill-intensive could leave many of the poor behind (BPS-Bappenas-UNDP Indonesia 2004).

### ***The Impact of High Formality Cost***

The second explanation can be related to what commonly known as cost of formality in the informal economy studies, especially the legalist school of thought (Chen 2004). According to the legalist school, micro-entrepreneurs will continue to produce informally as long as the unreasonable government rules and regulations have stifled private enterprises. In the extreme situation, informal entrepreneur did business informally as a response to high taxation and regulation forced by the government. In other word, high cost of formality tends to increase the informal sector. Other factors that have explained the informal sector is the quality of the public sector services (Schneider & Klinglmair 2004).

Recent studies found that the business climate in Indonesia is still unattractive for investment also for small enterprises. For instance, the RICS survey found that rural non-farm enterprises still faced serious constraints (World Bank 2006). Demands for goods and services, access to formal credit, and road access dominated the list of constraints. Corruption also one of the constraints faced by firms. Meanwhile, decentralization seems to create high cost economy primarily regarding the euphoria of local governments to increase their *Pendapatan Asli Daerah* (local based revenues) along with political and bureaucratic rent seeking (Fitrani *et al* 2005, World Bank 2006, Brata 2007). Hence, it is not surprising since several studies have found that since 2001 decentralization has caused the worst the investment climate in Indonesia

The Bank also found that local taxation has very little impact on rural non-farm enterprises since, as an implication of its informal status, most do not pay taxes. However, the report pointed out that decentralization created a significant nuisance to local business and inhibit the transition from informal to formal enterprises. A recent study based on firm-level surveys found business uncertainty in the post decentralization era and that firms were reluctant to pay bribes (Kuncoro 2006). It is interesting that the average bribe after decentralization was smaller than before decentralization in term of various characteristics (Table 5).<sup>3</sup> This is partly related to the

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<sup>2</sup> These CVs are based on GDRP per capita in constant price (2000).

<sup>3</sup> According to Kuncoro (2006), descriptive statistics from both data sets may not be directly comparable due to the difference in sample coverage.

motivation among local governments to attract investment in more competitive circumstances. Unfortunately, the smaller firms still paid larger bribes relative to their size than the larger ones. For instance, average bribe rate of smaller medium firms in 2001 is 11.6 % of production costs, meanwhile bribe rate of larger firms 8.2. In 2003, bribe rates of small medium firms still larger than larger firms' rate. Moreover, in contrast to 2001, firms in Java paid bribes larger than off-Java in 2003. It indicates that doing business in Java in decentralization era tend to more expensive. As shown in figure 2, all of provinces in Java were in quadrant II and III because experienced positive employment growth. Therefore, increase in the spatial concentration of the informal small and cottage industry perhaps also indicate an increase in the spatial distribution of cost disadvantage across the regions.

**Table 5.**  
**Bribe Rates in the Cost of Doing Business (CODB) Surveys (% of production costs)**

CHARACTERISTICS	MEAN	
	2001	2003
<b>Size (annual revenue):</b>		
Small (< Rp 1 billion)	10.4	3.9
Smaller medium (Rp 1-5 billion)	11.6	4.7
Larger medium (Rp 5-10 billion)	9.6	4.2
Larger (> Rp 10 billion)	8.2	4.0
<b>Location:</b>		
Java	9.9	4.2
Off-Java	11.7	2.6
<b>Firms reporting positive bribes</b>	10.8	4.1

Source: Kuncoro, A., (2006).

This analysis is in line with a study that found the cost disadvantage faced by potential entrants that has declined the entry rate into the medium-large manufacturing Indonesia after the crisis (Narjoko 2007). In this case, higher cost of capital is the most important cost disadvantage, due to the more prudential policy taken in the banking industry, which is also consistent with World Bank (2006) finding on the constraints faced by firms. As the result, entrepreneurs prefer defending informality status of their businesses; meanwhile the new entrepreneurs choose to form informal business rather than formal ones (see also Kuncoro 2006).

## CONCLUSION

This result of this study indicates that there is an increase in the spatial concentration of small and cottage industry in Indonesia during the recent economic crisis. This finding is consistent with the previous studies especially on the medium-large manufacturing industries, which found that liberalization has increased the spatial concentration of manufacturing industries in Indonesia.

In this paper, increase in the spatial concentration is a result of the economic crisis and cost of formality. The finding reflects that spatial inequality across the region in Indonesia has a serious implication on the spatial distribution of impact of the crisis. It means that reformation has also failed to reduce the spatial inequality in Indonesia. Meanwhile, decentralization tends to increase the cost of formality or high cost economy that pushes the entrepreneurs to run their business informally.

Hence, this paper argues that reformation shows an ambiguity. Ideally, all policy changes in Indonesia, such as economic liberalization, democratization and decentralization reduce the inter-regional inequality. However, the finding shows an increase in the informal small and cottage industry after the crisis. It also implies that one of the future research areas is to explain more empirically on the determinant of spatial dynamic of the informal small and cottage industry.\*\*\*

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