Urbanization in Large Developing Countries

China, Indonesia, Brazil, and India

Edited by

Gavin W. Jones
and
Pravin Visaria

CLARENDON PRESS · OXFORD

1997

The Increasing Role of the Urban Non-formal Sector in Indonesia: Employment Analysis within a Multisectoral Framework

IWAN J. AZIS

7 The Increasing Role of the Urban Non-formal Sector in Indonesia: Employment Analysis within a Multisectoral Framework

IWAN J. AZIS

Introduction

The analysis of employment and labour movements often stresses the growth of the urban formal sector *vis-à-vis* the expanding commercial agriculture (farm) sector. Yet, various problems in developing countries more often than not involve issues such as rapid urbanization versus limited expansion of industrial employment, suggesting the potential growth of the less visible non-formal sector in the overall development process. It is in this context that the multisectoral framework approach could be very useful for analysing employment patterns and estimating labour movements.

The multisectoral framework applied in this chapter will specifically disaggregate the Indonesian economy into six types, including the category of the non-formal sector (both urban and rural). The information is taken from the data tapes of Susenas (national economic and social survey) 1982 and 1987.[1] The time-trend analysis should be read with care due to lack of data comparability between Susenas 1982 and 1987. It is for this reason that the cross-sectional analysis for 1982 will be discussed in detail before an attempt is made to obtain some indications from time-series observations.

Following the aforementioned analysis, the phenomenon of industrial location in relation to employment patterns and trends of urban migration is discussed. The observation is based on data tapes of industrial surveys covering the period 1978-81 (designed to support the preceding analysis of Susenas 1982). It is suspected that patterns of industrial location will reinforce flows of migrants to urban areas.

Employment Analysis of Susenas 1982

The classification in the multisectoral framework is based on three types of dualism: rural–urban, formal–non-formal and farm–non-farm. In an environment where equity and poverty eradication are of concern to policy-makers, disaggregation by location, activity and form of organization is necessary. The extent to which differences between sectors tend to persist can be analysed within the framework.

Based on Susenas 1982, the bulk of Indonesia's employment was in the non-formal sector (83.2 per cent), in which the majority (71.9 per cent) worked in rural areas.[2] Of these rural non-formal workers, more than one-quarter were involved in the non-farm sector. Viewed from a regional perspective, Java dominates the number of workers in this activity. With respect to the urban non-formal sector, as expected, Java is also dominant; it accounts for more than 70 per cent of the nation's employment in this category. In fact, four Java provinces (East, West, and Central Java and DKI-Jaya[3]) are the only regions in Indonesia having more than one million urban non-formal workers each (see Table 7.1).

In the formal sector there was also more employment in rural than in urban areas, with most employment in non-farm activities. Again, only the aforementioned Java provinces, except of course DKI-Jaya, had more than one million employed in rural areas. At the same time, each of these had more than two million workers in non-formal, non-farm activity. In terms of earnings per worker, in most of the provinces the urban formal-sector worker earns less than the urban non-formal worker. The exceptions are: Jambi, South Sumatra, Bengkulu, DKI-Jaya, Yogyakarta, and East Kalimantan. Due to the dominance of DKI-Jaya, on average the whole island of Java has higher earnings per employee in the urban formal than in the urban non-formal sector, the opposite of the situation prevailing in other regions (see Table 7.2).

It is important to note, particularly for DKI-Jaya and Yogyakarta, that the lower earnings of urban non-formal workers in the six provinces were recorded in the face of Java's much greater and still-growing employment in this sector. The standard argument of 'the bright lights of the city' and the view that non-formal temporary employment and formal job search are complementary are often used

2 The characteristics of the non-formal sector in Susenas 1982 are determined as follows:

Type of work	Work-status			
	Self-employed	Employers	Employees	Family workers
Professional, technical workers				Non-formal
Management and administrators				Non-formal
Farmers and agricultural workers	Non-formal		Non-formal	Non-formal
Others	Non-formal			Non-formal

For other studies on the non-formal (informal) sector in Indonesia, see Sethuraman 1974; Moir 1978; Van Gelder and Bijlmer, 1989.

3 DKI-Jaya refers to the Jakarta municipality.

1 The Susenas surveys covered rural and urban areas throughout Indonesia, except for parts of Irian Jaya and Timor Timur which were not covered in 1982. The sample size for the 1987 Susenas was approximately 55,000 households.

Table 7.1. Indonesia: Urban and rural employment, by type of activity and province, 1982 (in thousands)

Provinces	Urban Formal	Urban Non-formal	Urban Total	Rural Farm Formal	Rural Farm Non-formal	Rural Farm Total	Rural Non-farm Formal	Rural Non-farm Non-formal	Rural Non-farm Total	Total employment Formal	Total employment Non-formal	Total employment Total	Total labour force Rural	Total labour force Urban	Total labour force Total
Aceh	18	48	66	1	746	748	100	134	234	119	929	1,048	1,008	70	1,078
North Sumatra	219	382	601	5	1,967	1,972	216	305	521	440	2,654	3,094	2,542	644	3,186
West Sumatra	39	78	117	7	833	840	81	224	305	126	1,135	1,262	1,159	126	1,285
Riau	66	100	166	8	367	375	48	81	129	122	548	671	532	185	717
Jambi	23	29	53	4	308	312	37	121	158	64	458	523	480	55	535
South Sumatra	108	245	356	4	1,102	1,106	78	231	309	190	1,578	1,767	1,439	373	1,812
Bengkulu	3	20	23	1	271	272	18	37	55	22	328	350	329	24	354
Lampung	44	118	163	1	1,186	1,187	66	230	296	111	1,534	1,646	1,497	174	1,671
Dki-Jaya	995	1,028	2,023	—	—	—	995	1,028	2,023	995	1,028	2,023	—	2,184	2,184
West Java	648	1,107	1,755	28	4,429	4,457	1,401	2,369	3,770	2,076	7,905	9,981	8,563	1,880	10,443
Central Java	738	1,042	1,780	21	5,569	5,590	1,280	2,537	3,817	2,039	9,148	11,186	9,627	1,851	11,478
Yogyakarta	85	162	246	1	729	730	132	348	480	217	1,238	1,456	1,228	255	1,483
East Java	793	1,273	2,066	39	6,729	6,768	1,321	2,477	3,798	2,153	10,479	12,632	10,803	2,184	12,988
Bali	39	98	137	3	634	637	145	243	388	187	975	1,162	1,030	140	1,170
West Nusa Tenggara	26	96	122	1	685	686	72	295	368	99	1,077	1,176	1,066	125	1,191
East Nusa Tenggara	17	43	60	2	1,009	1,011	22	104	126	41	1,156	1,196	1,141	63	1,204
East Timor	3	7	11	0	5	5	3	5	7	6	17	23	13	11	24
West Kalimantan	46	75	121	0	863	863	36	74	110	82	1,012	1,095	984	126	1,109
Central Kalimantan	7	27	33	0	243	243	39	87	127	47	357	404	384	35	418
South Kalimantan	37	96	133	1	464	465	47	152	199	85	712	797	680	140	819
East Kalimantan	67	82	148	0	214	214	46	54	101	113	350	463	320	156	477
North Sulawesi	36	72	108	2	409	411	62	184	246	100	665	764	674	114	788
Central Sulawesi	9	28	37	2	368	370	29	67	95	39	463	502	468	39	506
South Sulawesi	77	218	295	10	935	945	112	369	480	199	1,522	1,721	1,475	317	1,792
South East Sulawesi	6	18	23	1	252	252	11	66	77	17	336	353	334	24	359
Maluku	12	32	44	1	310	311	26	74	100	39	416	455	420	47	467
Iran Jaya	4	10	14	0	31	31	7	17	24	10	59	69	58	15	72
Indonesia (total)	4,165	6,534	10,701	143	30,658	30,801	5,435	10,885	16,320	9,738	48,079	57,819	48,254	11,357	59,610

Source: Processed from SUSENAS- 1982 data tapes, Central Bureau of Statistics.

Table 7.2. Indonesia: average earnings per worker by industry group, computation of sectoral averages and by five regions, 1982 (Rp. 1000 per month)

Regions	Industry groups[a]	Urban Non-formal[b]	Urban Formal[b]	Rural Non-formal[b]	Rural Formal[b]
Sumatra	Others	60.7	58.8	41.1	41.9
	Agriculture	14.4	0.7	5.5	5.1
	Mining	119.8	145.2	48.7	92.3
	Industry	39.7	60.6	16.9	49.0
	Public utilities	64.5	0.0	78.4	0.0
	Construction	0.0	0.0	0.0	0.0
	Trade/hotel	44.0	56.7	34.3	44.7
	Transport	55.5	58.7	43.5	47.1
	Banking	113.6	77.6	0.0	0.0
	Social Services	64.9	45.5	56.6	37.4
Java	Others	55.8	63.3	36.1	36.5
	Agriculture	12.9	0.0	6.6	6.5
	Mining	0.0	128.3	21.3	28.0
	Industry	31.2	43.6	12.7	24.7
	Public Utilities	70.9	0.0	29.1	0.0
	Construction	0.0	0.0	0.0	0.0
	Trade/hotel	36.1	59.5	23.3	29.3
	Transport	51.3	54.7	38.8	36.8
	Banking	115.9	86.1	0.0	0.0
	Social Services	65.2	37.9	44.0	23.9
Kalimantan	Others	74.0	74.0	84.0	136.4
	Agriculture	6.9	6.9	0.0	0.0
	Mining	128.1	128.1	161.5	16.0
	Industry	50.4	50.4	69.3	42.6
	Public utilities	61.6	0.0	157.0	0.0
	Construction	0.0	0.0	0.0	0.0
	Trade/hotel	48.6	48.6	85.4	2.3
	Transport	60.7	60.7	59.4	65.8
	Banking	114.6	114.6	0.0	0.0
	Social Services	77.7	77.7	53.3	7.7
Sulawesi	Others	99.6	58.1	42.1	42.3
	Agriculture	11.3	0.0	6.6	6.6
	Mining	56.4	65.0	45.6	49.1
	Industry	55.1	51.3	15.1	35.3
	Public utilities	0.0	0.0	0.0	0.0
	Construction	0.0	0.0	0.0	0.0
	Trade/hotel	47.3	50.5	30.7	34.3
	Transport	57.0	51.7	46.8	38.9
	Banking	169.42	0.0	0.0	0.0
	Social Services	69.0	39.9	56.1	28.8

Table 7.2. (cont.)

Regions	Industry groups[a]	Urban		Rural	
		Non-formal[b]	Formal[b]	Non-formal[b]	Formal[b]
Others	Others	53.5	43.3	39.4	51.8
	Agriculture	7.1	4.3	3.7	1.6
	Mining	25.9	25.0	0.0	30.7
	Industry	24.6	45.2	12.2	23.2
	Public utilities	67.7	0.0	0.0	0.0
	Construction	0.0	0.0	0.0	0.0
	Trade/hotel	31.7	67.4	23.5	33.1
	Transport	58.7	52.4	48.7	45.0
	Banking	94.6	0.0	0.0	0.0
	Social Services	68.8	28.9	60.0	28.3
Indonesia	Others	60.8	62.7	38.6	38.5
	Agriculture	12.4	1.4	6.1	5.9
	Mining	0.0	135.2	25.8	42.9
	Industry	34.1	45.9	13.6	28.9
	Public utilities	0.0	0.0	22.1	0.0
	Construction	0.0	0.0	0.0	0.0
	Trade/hotel	38.1	59.9	25.3	31.8
	Transport	52.9	55.4	40.7	39.3
	Banking	117.8	84.4	0.0	0.0
	Social Services	66.2	39.0	48.9	26.1

Notes:
[a] The sectoral definition is based on the following coding system: 11–19 agriculture, 21–9 mining, 31–9 industry, 41–9 public utility (gas, electricity and water), 51–9 construction, 61–9 trade/hotel, 71–9 transport, 81–9 banking, 91–9 social services and 01–09 others. With this classification the data fail to find formal workers registered under public-utility and construction sectors.
[b] Y/E is the average per-worker earnings.
Source: Processed from Susenas 1982 data tapes, Central Bureau of Statistics.

to explain the phenomenon. Another often-cited explanation, especially in relation to rural–urban migration, is the interplay of various non-economic factors in the migrants' decision whether to migrate or not. These arguments seem to weaken the importance of earnings per employee as the key factor in the growing urban non-formal sector in Indonesia. A more detailed analysis, taking into account other possible explanatory variables, needs to be conducted to establish the truth.

Susenas 1982 also reveals that the high earnings of urban non-formal workers occurred mostly in the public-utilities and social-services sectors (Table 7.2). It is therefore to be expected that rural–urban migrants who failed to enter the urban formal sector would make these non-formal sectors their next choice. Contrary to the case of agricultural activity, in the rural industrial sector the average earnings in the formal category are generally higher than in the non-formal category.

Ranked according to the ratio between percentage share of total earnings and share of employment, the urban formal sector was at the top, followed by urban non-formal, rural non-farm formal and non-formal (see Table 7.3). Contrary to the general belief, in the formal and non-formal earning category Java is not in the top rank. This most developed region is surpassed by Sumatra, Kalimantan, and others in terms of its formal-sector earnings, whereas in non-formal activity it is surpassed by Sulawesi. Nevertheless, in all regions the attractiveness of employment in the urban areas, whether formal or non-formal, seems to be supported by higher earnings than in rural areas. Should earnings be the prime indicator or interregional-cum-intersectoral labour movements, the expected flows would be from the farm sector in the rural areas to urban areas, formal or non-formal, or to the rural non-farm formal and non-formal sector. To confirm this observation, however, intertemporal data ought to be used. It should be clear that the approach of matching the trend of earnings with the employment path is essential in the analysis of labour movements especially when data on actual labour movements are non-existent.

Earnings in real terms are often more representative of the true purchasing power, and hence the actual attractiveness of a region or a sector. Table 7.4 displays per-employee real earnings by province and formal–non-formal as well as by urban–rural classification. It is important to observe that regions in Java generally have a narrower gap of earnings between urban and rural, as well as between formal and non-formal, sectors. The highest ratios of urban–rural earnings are found in West Kalimantan, East Nusa Tenggara and North Sulawesi. Interestingly enough, Aceh, a province with major mining and refinery activities, also falls in this category. In fact, Aceh has the highest ratio of earnings in formal to non-formal sectors. This special province, rich in resources, especially natural gas, is ranked at the top in its formal-sector earnings but it is at the very bottom with respect to non-formal earnings. The standard 'enclave development' hypothesis may well be the explanation, since similar cases are also found in East Kalimantan and Riau, Indonesia's two other major oil provinces.

Given the fact that employment is largely in the rural and non-formal sectors, the above patterns indicate that the narrow gap in Java is probably due to the island's relatively high rural and low urban earnings in comparison with other provinces. This is evident from the data in Table 7.4. At any rate, Java's small gap may contribute to the attractiveness of the island, particularly of those provinces with very high non-formal real earnings, ie. DKI-Jaya and West Java.

Factors Affecting Interprovincial Urban Migration

If we confine our analysis of urban migration to interprovincial migration, it is revealed that during 1980–5 more than half the interprovincial migrants to urban areas had indeed chosen DKI-Jaya, followed by West Java (26.2 per cent)[4]. Thus,

[4] The interprovincial migration data are obtained from the 1985 intercensal survey, referring to the population (five years of age and over) who, during the survey, resided in urban areas of the observed

Table 7.3. Indonesia: percentage share of total earnings divided by percentage share of total employment by rural–urban, types of activity and by five main regions, 1982

Region	Urban			Rural							Total earnings		
				Farm			Non-farm						
	Formal	Non-formal	Total	Formal	Non-formal	Total	Formal	Non-formal	Total	Total	Formal	Non-formal	Total
Sumatra	2.99	2.53	2.69	0.27	0.29	0.29	2.42	1.98	2.22	2.22	2.61	0.79	1.00
Java	2.26	2.09	2.16	0.30	0.31	0.31	1.34	1.20	1.25	1.25	1.73	0.82	1.00
Kalimantan	3.26	2.70	2.90	0.22	0.25	0.25	2.15	1.85	1.94	1.94	2.67	0.78	1.00
Sulawesi	2.41	2.58	2.53	0.32	0.32	0.32	1.78	1.68	1.70	1.70	1.95	0.89	1.00
Others	3.25	3.01	3.07	0.11	0.23	0.23	2.61	2.09	2.23	2.23	2.73	0.82	1.00
Indonesia (total)	2.46	2.26	2.34	0.29	0.29	0.29	1.57	1.40	1.47	1.47	1.93	0.81	1.00

Source: Processed from SUSENAS-1982 data tapes, Central Bureau of Statistics.

Table 7.4. Indonesia: real earnings per employed worker by urban–rural, types of activity and by provinces, 1982 (Rp. 1000 per month)

Provinces	Urban (1)	Rural (2)	Urban/ Rural (1)/(2)	Formal (4)	Non-formal (5)	Formal/ non-formal (4)/(5)
Aceh	94.4	17.0	5.5	124.4	12.4	10.0
North Sumatra	79.5	20.7	3.8	73.2	25.3	2.9
West Sumatra	81.2	25.0	3.2	74.7	25.3	3.0
Riau	93.8	32.3	2.9	101.7	35.4	2.9
Jambi	77.3	28.8	2.7	65.8	29.2	2.3
South Sumatra	76.0	20.1	3.8	75.1	25.9	2.9
Bengkulu	63.3	14.3	4.4	50.4	15.4	3.3
Lampung	55.9	12.9	4.3	49.5	14.8	3.3
Dki-Jaya	96.4	—	—	99.3	93.7	1.1
West Java	67.4	37.5	1.8	63.6	37.3	1.7
Central Java	53.5	32.8	1.6	62.0	30.3	2.0
Yogyakarta	55.0	24.8	2.2	57.2	25.1	2.3
East Java	61.7	27.2	2.3	57.6	27.7	2.1
Bali	55.8	21.7	2.6	55.3	20.0	2.8
West Nusa Tenggara	46.5	17.0	2.7	61.3	16.2	3.8
East Nusa Tenggara	68.0	10.5	6.4	58.7	12.6	4.7
East Timor	96.5	n.a.	n.a.	n.a.	n.a.	n.a.
West Kalimantan	80.4	12.5	6.4	82.3	14.9	5.5
Central Kalimantan	81.1	33.6	2.4	86.0	31.2	2.8
South Kalimantan	87.6	30.6	2.9	74.3	36.1	2.1
East Kalimantan	118.9	33.8	3.5	116.8	43.1	2.7
North Sulawesi	93.2	33.0	2.8	77.4	36.1	2.1
Central Sulawesi	70.2	24.8	2.8	62.3	25.2	2.5
South Sulawesi	68.9	23.0	3.0	53.8	27.9	1.9
South East Sulawesi	92.1	16.2	5.7	55.8	19.7	2.8
Maluku	103.1	26.5	3.9	90.8	28.7	3.2
Irian Jaya	119.0	57.6	2.1	100.7	64.5	1.6

Source: Processed from SUSENAS- 1982 data tapes, Central Bureau of Statistics.

despite the importance of other economic and non-economic factors, real earnings still seem to have some weight in explaining interprovincial migration patterns. Another economic factor, as the standard Todaro model has suggested, is the probability of obtaining a job in the region of destination.

Finding a perfect measure of the probability of obtaining a job is extremely difficult. A simple proxy would be the ratio of the numbers in formal employment to the total numbers in the labour force[5]. As expected, Java is ranked first in terms

province and five years before had lived in the province of origin. It should be noted that interprovincial rural–urban migrants are only a fraction of all migrants to urban areas, many of whom migrate within a given province.

[5] Alternative measures for employment opportunity are open unemployment and disguised unemployment. However, given the fact that in the Indonesian case open unemployment does not reflect

of this measure. By province, DKI-Jaya offers the greatest probability. West Java is also ranked in the top five. Two provinces with high probability, East Timor and East Kalimantan, deserve an explanation. In the case of East Timor, the small number in the labour force, and the infancy of its economic development due to the province's newness, result in the relatively small size of non-formal employment, and hence a greater probability ratio. A small labour force characterizes East Kalimantan, a province with the nation's third-lowest population density. In fact, for the same reason, the whole island of Kalimantan has the second-greatest job probability within the five-region classification, with a slightly greater ratio than that of Sumatra (0.1157 compared with 0.1124 (see Table 7.5)).

It is therefore suspected that two economic factors, earnings and job probability, could be essential in the analysis of labour migration. The extent of their roles is yet to be examined. Within the multisectoral framework, the examination could be enriched by the provision of trends in the urban and rural earnings variables as well as in the formal and non-formal earnings classification.

The unexpected minus signs of the coefficient in the regression analysis shown in Table 7.6 suggest that the earnings level in the urban sector is not the prime consideration in the migrants' choice of destination. On the other hand, employment opportunity as measured by formal job-probability seems to affect significantly the migrants' choice of destination. One striking example is the high job-probability in DKI-Jaya and West Java cited earlier, which coincides with the largest flows of migrants coming into these regions. Whichever model is used, the signs of coefficients are normally significant and positive.

Table 7.5. Employment opportunity by five regions, 1982

Region	Employment opportunity index*
Sumatra	0.1124
Java	0.1939
Kalimantan	0.1157
Sulawesi	0.1030
Others	0.0926

* Employment opportunity index = ratio of numbers in formal employment to total numbers in the labour force.

Source: Processed from SUSENAS-1982 and 1987 data tapes, Central Bureau of Statistics.

the true condition or the crux of the problem (only 3% in 1982, see Table 7.1), while disguised unemployment is almost impossible to measure, the above indicator becomes an acceptable choice. The concern as to whether the indicator really reflects the development of a region is not more serious than the problem at the other extreme suffered by the two alternative measures, namely whether they really represent underdevelopment.

Table 7.6. Regression results of interprovincial migration model for Indonesia, 1980–85

Equation number	Independent variables					R²	DW
	Eyurban	Eyrural	Eyformal	Eynformal	EDPP		
1	−1311.3 (−1.6663)				1296100 (7.1263)	0.6799	1.7704
2 (27)			2507.6 (2.3820)		844712 (3.7581)	0.7111	1.2548
(26)			540.9 (0.3798)		1250810 (4.1825)	0.7491	1.2979
3					1207650 (6.7081)	0.6428	1.6344
4 (27)			5189.5 (5.4299)			0.5411	0.6192
(26)			5540.6 (5.5078)			0.5583	0.6106
5 (27)			−731.7 (−1.0614)	3301.7 (2.5610)	763972 (3.2271)	0.7246	1.3882
(26)			−1520.5 (−2.3007)	1209.99 (0.9034)	1285620 (4.676)	0.7978	1.4614
6 (27)	−2134.3 (−3.1578)			3502.2 (3.6796)	844728 (4.4050)	0.7985	1.5887
(26)	−1893.7 (−2.3511)			2767.6 (1.7191)	973245 (3.2685)	0.7995	1.5271

Notes: Figures in parentheses are t-ratios; (26) and (27) refer to the number of regions covered.

The importance of job probability surpasses the role of real earnings. Notice in equation 5 of Table 7.6 that, as in the case of urban earnings, the negative and significant signs of formal real earnings do not indicate the importance of the variable in the migrants' choice. On the contrary, in equation 5 real earnings in the non-formal sector is positive and significant although with a lower degree of confidence compared with the job-probability variable. It could be deduced therefore that, in general, migrants' choice has been more determined by (formal) employment opportunities in the region of destination. The assertion is of course confined to the case of interprovincial urban migration being analysed in this study. But the real earnings of this sector, as well as in urban jobs, do not seem to be very important for their decision. Should migrants fail to enter the formal sector, the non-formal sector appears as the alternative choice. At this point migrants may begin to include earnings in their considerations. Again, this is merely a tentative conclusion and should be confirmed by the analysis of intertemporal data. Further generalization also requires a greater coverage of migrant flows to include within-province migration to urban areas.

The multisectoral framework will be much more useful when the analysis is carried out for different time periods. Susenas data are actually available for different years, but the problem of data comparability is rather serious.

The first obstacle is the unit of observation. The basic unit of Susenas 1987, the latest available so far, is the household, while Susenas 1982 is based on individuals. Consequently, in Susenas 1987 there are no data available on income of each member of the household. The 1982 Susenas covers 60,000 households or 357,062 members[6]. On the other hand, only 208,128 members of 49,317 households are available for the analysis of Susenas 1987. Another source of incompatibility is the survey period. While Susenas 1987 refers to the month of January 1987, Susenas 1982 is based on the September–December period. In addition to these distinctions, perhaps the most serious one for our analysis is the definition of formal–non-formal. Due to data limitation, a special approach to define formal–non-formal sectors in Susenas 1987 data is required. Discriminant analysis has been applied to this task[7].

Having described these problems it is clear that outcomes of the time-series analysis can only provide an indicative trend. Notice in Table 7.7 that the ratio

Table 7.7. Index of ratios between percentage shares of total earnings and employment by rural–urban area and types of activity, 1982 and 1987

| | Urban | | | Rural total | Total (Urban + rural) |
	Non-formal	Formal	Total		
A. Percentage share of total earnings divided by percentage share of total employment					
(a) 1982	2.26	2.46	2.34	0.70	1.00
(b) 1987	1.15	0.95	1.03	0.99	1.00
B. The same as (A) designating urban nonformal = 1					
(a) 1982	1.00	1.09	1.04	0.31	0.44
(b) 1987	1.00	0.83	0.90	0.86	0.87
C. Average annual growth rates of (B), 1982–7	0.00	-5.37	-2.86	22.92	14.47

Note: Total urban + rural set equal to 1

Source: Processed from SUSENAS-1982 and 1987 data tapes, Central Bureau of Statistics.

[6] Originally, there were records for 357,073 members in the data tape, but due to data damage (as indicated by the SAS programme), eleven fewer records could be analysed.

[7] A multivariate analysis of variance (MANOVA) is first used to select some variables capable of distinguishing formal from non-formal sectors. The two selected variables (with F-test = 212.35) appear to be household cost of production (OPER) and household incomes (PPER). By making use of discriminant analysis, the following non-liniar probability functions are then generated:

$$f_t(X) = (2)^{-p/2} \cdot |V_t|^{-1/2} \cdot \exp(-0.5 d_t^2 (2X))$$

between percentage shares of earnings and employment for the urban–non-formal category is set to equal one. This is done to facilitate observation of the changes of each category's position relative to the urban non-formal category. Furthermore, since our emphasis in using the multisectoral framework is particularly on the urban non-formal sector and the distinction between urban and rural, only these categories are shown in Table 7.7.[8]

As indicated in Table 7.7, there has been a tendency for a decline in the position of the urban formal *vis-à-vis* the urban non-formal sector with respect to rates of earnings. While in the early 1980s the urban sector (both formal and non-formal) proved to be an attractive alternative to rural employment, the trend throughout the late 1980s changed somewhat. The development process characterized by a series of reforms, promulgated during the mid-1980s, appears capable of raising earnings per employee in the rural sector relative to those in the urban[9]. This suggests that improvements in rural standards of living combined with slow employment growth in urban areas will probably affect mobility between rural and urban labour markets in such a way that less urban migration is expected. However, at least two conditional factors deserve attention. Although the relative position of rural earnings has markedly improved, the average rate remains lower than that in the urban areas (row A of Table 7.7).[10] Secondly, the assertion regarding the expected trend of urban migration above is based merely on earnings-per-employee data. Other non-monetary factors are ignored. Thus, should the actual number of urban migrants have indeed increased, these ignored factors must have been quite significant in the migrants' decision.

In urban areas, the non-formal sector earnings begin to surpass those of the formal, indicating an increased relative attractiveness of the urban non-formal sector. Such a trend may help to explain the continuing flows of migrants to urban areas. Table 7.7 shows that by 1987 the urban non-formal sector had the highest earnings per employee, even higher than those of the urban formal sector. In fact, earnings per employee in the urban formal sector were also less than rural earnings. This, of course, is very suspicious. Many studies utilizing Susenas data (e.g. Booth 1992) show that the income and expenditure data of the upper income

where t = 0 (for non-formal) and = 1 (for formal),
    X = Vector of household production cost and incomes,
    p = number of group(=2),
    V_t = the tth group's matrix of variance-covariance, and
    d_t^2 = general square distance.
The following criteria are then applied:
    non-formal, if the value of the function –0> that of function –1
    formal, if the value of the function –0< that of function –1

[8] It should be clear to readers that this will not have anything to do with the strength and limitation of the multisectoral framework for employment- and labour-movement analysis.

[9] This observation is consistent with the author's finding on the nation's relative income distribution, indicating a slight improvement during 1980–7.

[10] The stronger improvement of rural workers during the 1980s is supported by the consumption expenditure data of Susenas, in which during 1984–87 the real growth rate of per-capita consumption among the rural poor (lowest 40%) was higher than the rate among the urban poor, i.e. 54% versus 3.1% annually.

group are underestimated. Not only is the sample coverage unrepresentative but more relevant to our case is the fact that income and expenditure answers given by respondents in this category are probably lower than the actual levels.

As indicated earlier, an analysis of time-series data could be expected to provide only rough indications. Many factors have hampered the comparability of data. Before these problems are solved, any attempt to generate a more convincing analysis will not be possible. In the next section we examine patterns of industrial location and the expected consequence on the increasing pull-factor of urban areas.

Patterns of Industrial Location and their Impacts upon Urban Migration

At least until the early 1980s a clear policy on industrial location was practically non-existent.[11] The well-known spatial configuration of the industrial sector is that more than 80 per cent of large and medium industrial establishments are in Java. In terms of value-added production, Java's dominance varies from 98.4 per cent for textile industries to 24.3 per cent for wood-related manufactures. In the small-industry category the variation is from 53.8 per cent (wood-related) to 93.5 per cent (textile). Since the government banned exports of logs in the early 1980s, processed-wood manufactures have grown fast, favouring a Javanese location. In the case of rattan, for example, the concentration has been intensified by a deliberate government decision in the late 1980s to select Java's three largest cities, plus Medan in North Sumatra, as the central locations of the rattan industry.

Quite contrary to expectations, the attractiveness of Java is even greater under the recently adopted external-oriented strategy. Many advantages flow from locating on this most densely-populated island, compensating for the higher cost of transporting raw materials from outer islands. In addition, better port facilities and more developed infrastructures (software and hardware) appear to play crucial roles despite the fact that transportation costs for exports may be more expensive than if they originate in the outer islands.

The relative shipping costs have been recently affected by two events. The November 1988 deregulation, known as Paknov, was basically aimed at easing the flows of commodities to support the national programme of expanding exports of non-oil and gas. Among others, the new policy removes restriction on the use of foreign-owned shipping within the Indonesian territory and allows the national shipping company to determine the route to be serviced. The second event was the increase of fuel prices, which eventually raised costs of practically every mode of transportation. While flows of goods have indeed been increased, both interregionally and overseas, the process of concentration appears to have been reinforced. This is evident, for example, from the trend of exports by region (port of origin) shown in Figs. 7.1 and 7.2

11 This is despite the fact that the concept of *Wilayah Pusat Pertumbuhan Industri* (regional centre of industrial growth) stemming from article 20, Law No. 5, 1984, is designed to optimize industrial location based on available resources and environmental considerations.
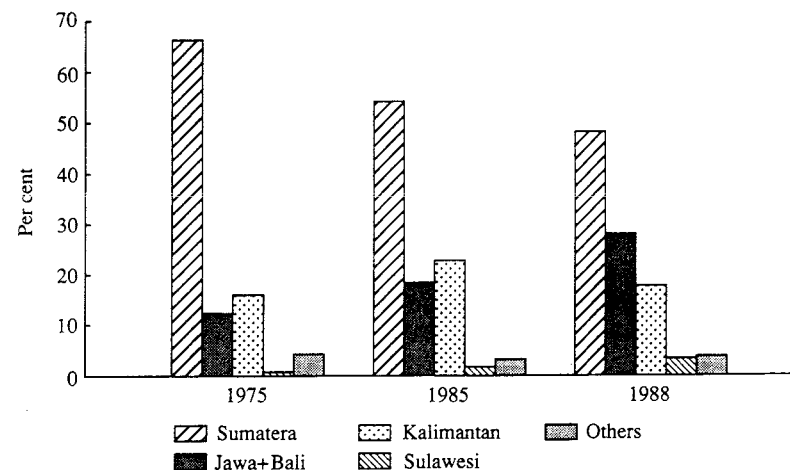
Fig. 7.1. Share of total exports by region, Indonesia, 1975–88
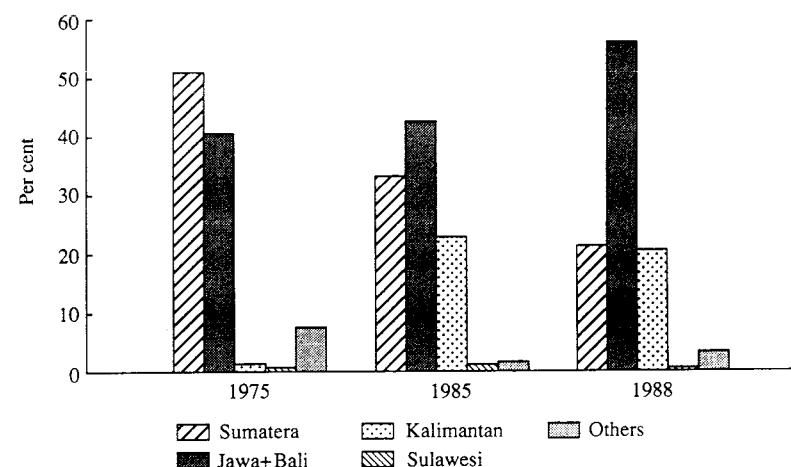

Fig. 7.2. Share of manufacturing exports by region, Indonesia, 1975–88

The recent surge of non-oil and gas exports has been mostly (70 per cent) originated in manufactured products. During the period of deregulation (1985–8) by regional composition Java and Bali are practically dominating the increase (Fig. 7.2). As a result, a similar regional composition of total non-oil and gas is observed (Fig. 7.1).

The increasing concentration in Java–Bali is also evident from the trend of regional 'revealed comparative advantage' (RCA). Many commodities originally directly exported from the outer islands are now exported from Java. Quite a substantial number of them required further processing and many of the processing industries are located in Java. A few examples can be cited. Increasing level of RCA in Java–Bali being accompanied by declining RCA in the outer islands is

noticeable in the following cases: cows and oxen hides (SITC 211110), collection and collection pieces (SITC 8960590) and imitation jewellery plated with other metal (SITC 8972900). Meanwhile, the case in which decreasing RCA level in the outer islands followed by completely new existence of export activities in Java–Bali is found in reservoir tanks and similar containers (SITC 692110).

The absence of an industrial location policy has also had an impact upon the urban–rural configuration. By 1981, for example, about 47 per cent of establishments were in the urban category, a marked increase from the preceding years.[12] Measured by the total number of employed workers, employment in the large and medium manufacturing enterprises increased by 6.9 per cent annually from 1978–81. The annual rate of growth in urban manufacturing appears to have been greater than in rural manufacturing, 7.5 per cent versus 6.2 per cent. The trend was also accompanied by a greater increase in the urban manufactures' per-labour value-added, suggesting a more significant improvement in urban efficiency (see Table 7.8). Indeed, if the ratio of input to output is taken as a proxy for an efficiency measure, improved efficiency in the urban areas was more prevalent than in the rural areas. Efficiency in urban manufacturing improved by 5.6 per cent compared with only 3.2 per cent in rural manufactures. During the same period new manufacturing establishments had mostly chosen urban locations. In 1978 there were 4,196 rural manufacturing establishments, increasing to 4,239 in 1981, an average rate of growth of 0.3 per cent annually. For the same period the number of urban manufacturing establishments increased by 1.2 per cent, from 3,574 to 3,702 units.

The previously cited pattern of growth in numbers of employed workers leads us to suspect that the additional labour in urban manufacturing was due to the

Table 7.8. Indonesia: some indicators of large and medium manufacturing sector, 1978 and 1981 (by year)

	1978		1981	
	Rural	Urban	Rural	Urban
Number of establishments (units)	4,196	3,574	4,239	3,702
Labour (persons)	435,047	388,535	521,376	483,333
Wage/labour (Rp. 00,000)	3.17	5.20	5.88	8.69
Value-added/Labour (Rp. 000)	1,334.74	1,707.86	2,678.33	3,858.72
Labour per establishment (persons) = L/E	103.68	108.71	123.00	130.56
Input per unit of output	0.65	0.75	0.59	0.63

Source: Processed from data tapes on industrial surveys, 1978 and 1981.

[12] The term urban refers to *kotamadya* (municipalities) and *kota administratip* (administrative towns) outside *kotadadya*. Changing definitions of urban–rural during the period of observation may affect the analysis, but the observed trends are likely to persist. Furthermore, the coverage of industrial surveys has only recently improved, affecting data from 1986 onward. Actually, retrospective figures have been generated but their accuracy is still in question. Therefore, industrial data for 1978 and 1981 used in this study are those of non-retrospective series.

greater number of new manufacturing establishments, but this turns out not to be the case. Measured by the number of workers per establishment, hereafter L/E, the growth rate in urban manufacturing reached 6.3 per cent annually while in the rural areas it was only 5.9 per cent. Between 1978 and 1981 no fewer than eight provinces experienced a decline in their rural manufactures' L/E while only four provinces had a decline in their urban manufactures' L/E (Table 7.8). It is also important to note that the L/E in urban manufacturing has always been higher than in rural establishments. At any rate, the greater attractiveness of urban manufactures in comparison to the rural industrial sector is clearly observed. Such a trend could reinforce inflows of migrants, permanent as well as temporary, to urban areas.

Based on the rural–urban classification of large and medium industrial establishments, faster growth of employment in urban areas was supported by higher wage rates. In urban areas the rate was between 1.5 and 1.6 times higher than in rural areas. Thus there was an indication that the restoration of equilibrium in the labour market had been prevented, among other things, by the inflexibility of wage rates in urban manufacturing.

The explanation for wage rigidity in the modern manufacturing sector usually centres around at least three possibilities. First is the workers' resistance to wage cuts *vis-à-vis* a greater preference for firings and layoffs, especially in the absence of their ability to detect whether a firm is accurately representing the demand for its products. The second possibility pertains to impediments to lowering wages. Finally, there is also a possibility that, fearing an efficiency reduction in its workforce, a firm's management would resist wage cuts.[13] In order to better evaluate the extent of these possibilities for Indonesia, further examination is needed, preferably at the firm level, with a rural-urban distinction. Such an approach is crucial in order to avoid erroneous conclusions arising from using aggregate data concerning the role of wages in labour-market adjustment.

The discussion above is aimed at demonstrating the link between patterns of industrial location and the analysis of inter-sectoral labour movements (or, in our case rural-urban manufacturing by province), particularly in the absence of actual data on labour movements. It has been shown that the growth patterns in the large and medium manufacturing sector during the late 1970s and early 1980s tend to support further inflows of migrants to urban areas.

Concluding Remarks

Although many discussions on development patterns in less-developed countries put the emphasis on the growth of the urban formal sector and formal farm activities, the increasing contribution of the non-formal sector suggests that neglecting that sector is likely to distort the overall analysis. During the oil-boom period of

[13] A discussion on these possibilities can be found in Levy and Newman 1989, among others.

the 1970s, the urban formal sector in Indonesia grew substantially. Employment absorption was high but at the same time the urban population grew rapidly due to migration, especially in Java. The size of the urban non-formal sector has consequently shot up, leading to expanding urban non-formal employment, with its corresponding socio-economic repercussions. Such a trend has forced the government to design a series of policies to cope with the problem. Without a good understanding of labour movements between sectors and forms of organization, particularly those pertinent to the non-formal sectors (rural farms, rural non-farms, and urban), policies will probably fail to work effectively. It is along this line of argument that the study is carried out.

Although the emphasis is on the increasing role of the urban non-formal sector, more generally the study represents an attempt to elucidate the factors affecting urban migration, particularly that of the interprovincial category. By using a multisectoral framework, Susenas 1982 data are shown to be capable of supporting useful analysis regarding changes in the relative position of each sector in terms of real earnings and employment. It is revealed from the regression analysis that (formal) employment opportunities appear to play much stronger roles than real earnings in the analysis of interprovincial urban migration. Only when migrants fail to enter the urban formal sector will real earnings in the non-formal sector matter.

The geographical patterns of industrial location also have the potential to reinforce further urbanward migration. Higher average wage rates together with improved efficiency in large- and medium-sized urban manufacturing enterprises increase the attractiveness of urban areas. This is obviously true if we refer to the industrial survey data of 1978–81. In the absence of a clear and concrete industrial location policy, new establishments have mostly chosen urban locations, particularly in Java. It is therefore often suggested that rural industrialization would help reduce the urbanward migration trend.

Data incompatibility is perhaps the most serious obstacle to making the time-series analysis. Although some refinements have been made, only rough conclusions may be drawn. Despite some suspicions about data showing a drastic increase in rural wages per employee, the expansion in numbers of employees in the urban non-formal sector appears to be substantial. The trend also features a fast-increasing ratio of relative wages per employee. In the midst of intensified economic reforms, in which the elasticity of substitution favouring the use of non-labour inputs tends to be greater (through the removal of rigidities in import activities), such a finding raises some doubts. It may be that those of the non-fixed-income group, including the urban non-formal sector, are in a more favoured condition during and after the reforms. But given the data incompatibility, any conclusions on this issue would be decidedly premature.

A quantitative approach using a simultaneous econometric model has been developed by the author. The model basically attempts to relate the central-regional transfer of government funds known as Inpres with the trend of urban migration. The results so far indicate that the strong relation between the two

appears to be transmitted through regional incremental capital stock and infrastructures induced by the transfer. It is therefore not too surprising that the more urban-biased transfer generating further infrastructure development in urban areas would eventually induce greater urban migration. The model is capable of showing such a conclusion.

In the light of the premise that urban migration is a phenomenon not independent of the overall economic policy, a model of this kind would be necessary to enrich and enhance a more comprehensive analysis of urban migration, hence of the urban non-formal sector.