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THE SPATIAL PATTERN OF URBAN POPULATION GROWTH IN JAVA, 1980-1990

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The emergence of fast-growing peri-urban regions and corridors joining large cities has been a feature of rapid urban growth in Asia in the last fifty years. These areas have been characterised by a mixture of urban and rural activities and by strong rural-urban linkages. This paper uses data from the 1980 and 1990 Indonesian Censuses to measure the extent to which this process has been occurring on Java in the intervening decade. It calculates and categorises the absolute and proportional increase in the urban populations of each *kabupaten* in Java, and examines some of the reasons for the emerging patterns. The paper concludes with a discussion of the policy implications of the findings.

The large cities in Asia have been experiencing tremendous physical and population growth for the last five decades. This growth is also evident in the peri-urban regions and corridors connecting large cities — areas which are still predominantly agricultural. It occurs not only because of the development of urban centres, but also through industrial development in these regions themselves. As a result, the latter have a mixture of socioeconomic activities, including agriculture, industries and trade. This process has created very intense rural-urban linkages, and this in turn blurs the rural-urban distinction and makes for distinctive settlement patterns. As Isarankura argues:

These new spatial configurations have various characteristics that differ from the conventional metropolitan regions. They are normally characterized by an intermixture of urban and rural activities (a mix of agriculture and non-agriculture), but with increasingly urban-type interactions (1990, p. 58).

McGee (1990) suggests that this phenomenon is best described as 'a process involving the growth of distinct regions of agricultural and non-agricultural activity characterized by intense interaction of commodities and people'. He maintains that it is 'not the same as rurbanization, a

term never precise in its meaning, which has generally meant some persistence of rural traditions and values in urban settings' (McGee 1987, p. 2).

This spatial process is taking place in many Asian countries, from Indonesia to South Korea, and from Japan to Pakistan (McGee 1987). In Java it is occurring at a rapid pace, especially on the periphery of big cities, for example, in 'Botabek' (an acronym from Bogor-Tangerang-Bekasi), the peripheral area of Jakarta, but also in areas adjoining the regional arterial roads connecting large cities, such as Jakarta-Bandung and Surabaya-Malang.

McGee (1987, p. 3; 1990, p. iv) identifies the following features of these rural-urban areas: first, they have very high population density; second, they are generally but not exclusively wet-rice regions with very small landholdings; third, in these regions there are large cities, such as Calcutta, Shanghai, Bangkok, Guangzhou and Jakarta, which provide employment opportunities for migrants from rural areas and a market for agricultural products; fourth, the regions are invariably characterised by growth of diverse non-agricultural activities, including industries, transport and trade; fifth, there is considerable interaction between rural and urban activities; sixth, land use in these regions is an intense mixture of settlement and economic activity, with agriculture, cottage industry, industrial estates, suburban developments and other uses existing side by side.

To measure the extent to which this process is occurring in Indonesia, macro and micro scale studies are needed to analyse changes in land-use patterns, employment, population growth and mobility, and household economy. This study uses data from the 1980 and 1990 national Census, with the *kabupaten* as the unit of analysis, to examine the spatial pattern of urban population growth in Java between 1980 and 1990, and to determine the extent to which it reflects the macro rural-urban process described by McGee (1987 and 1990).

The study focuses on the increase in the urban population and in the urban proportion of the population during the period 1980-90 in all 82 *kabupaten* in Java: 20 in West Java; 29 in Central Java; 4 in Yogyakarta; and 29 in East Java. It does not analyse urban population change in DKI Jakarta and in the municipalities (*kotamadya*), since in these centres the whole population can be classified as urban.

SOURCE OF DATA

The urban population data used in this study are taken from the results of the 1980 Census (BPS 1981a; 1981b; 1981c; 1981d) and the 1990 Census (BPS 1991). The size of the urban population in both Censuses was determined by classifying localities (*desa*), and thus their entire populations, as 'urban' (*'desa-urban'*) or 'rural' (*'desa-rural'*). Thus an

increase in the urban population of an administrative unit (*kecamatan*, *kabupaten* or *propinsi*) may be a function either of population increase within existing '*desa-urban*' in that unit or of the transfer of some of its *desa* from the '*desa-rural*' to the '*desa-urban*' category, or both.

According to the Central Bureau of Statistics (BPS 1988), a *desa* can be classified as urban if it has:

1. a population density of 5,000 persons per kilometre or above;
2. 25% or fewer agricultural households; and
3. eight or more types of urban facilities (Appendix Table 1).

In reality these criteria are difficult to apply because of inconsistency in results between them. To solve this problem, BPS employs a scoring system (Table 1), in which a locality is assigned a score for each of the criteria (population density, percentage of agricultural households and numbers of urban facilities). It is classified as '*desa-urban*' if it has a total score of 23 or above on the three criteria, and as '*desa-rural*' if it has a score of 17 or less. Those between 17 and 22 are categorised as *meragukan* (unclear), and are rechecked by BPS to determine whether they should be classified as '*desa-urban*' or '*desa-rural*'.

This approach to classifying population has some weaknesses. First, as Rietveld (1988) argues:

The second criterion, percentage of agricultural households, is intended to represent the importance of agriculture ... An agricultural household is defined as a household which makes its living primarily from agriculture (including fishing, forestry and animal husbandry). In practice this definition is not easy to apply, since in most households there is more than one working household member, and they often have multiple jobs ... As a short cut, village officials usually classify a household as agricultural when the 'main job' of the head of the household is in agriculture ...

For the third criterion a list of 16 urban facilities is used, including various types of schools, health services and public transport facilities. The list looks rather arbitrary ... Further, when determining the presence of an urban facility, one sometimes faces evaluation problems concerning the quality of facilities (p. 75-6).

Secondly, some localities classified as 'urban' in the 1990 Census might not have been genuinely 'urban', although they may have had more urban characteristics in 1990 than in 1980.

Thirdly, this approach cannot indicate whether an urban population increase in one administrative unit, such as a *kabupaten*, is

TABLE 1 'Desa-Urban' Criteria Used in the 1980 and 1990 Censuses

Population Density	Percentage of Population Engaged in Agriculture	Number of Urban Facilities	Score
Less than 500	Above 95	-	1
500 - 999	91 - 95	0	2
1,000 - 1,499	86 - 90	1	3
1,500 - 1,999	76 - 85	2	4
2,000 - 2,499	66 - 75	3	5
2,500 - 2,999	56 - 65	4	6
3,000 - 3,499	46 - 65	5	7
3,500 - 3,999	36 - 45	6	8
4,000 - 4,999	26 - 35	7	9
5,000 or above	25 or less	8 or above	10

Source: BPS 1988, p. 3.

TABLE 2 Increase in the Number of 'Desa-Urban' in Java, 1980-86

Province	1980	1986	Increase
Jakarta	201	225	24
West Java	678	1,120	442
Central Java	769	1,042	273
Yogyakarta	181	199	18
East Java	724	1,055	331

Source: BPS 1988.

due to an increase in the number of '*desa-urban*' between 1980 and 1990 or to a population increase in the '*desa-urban*' of the 1980 Census. Gardiner and Oey-Gardiner (1991) maintain that urban population increase in Indonesia is due mainly to changes in village status from '*desa-rural*' to '*desa-urban*'. The data reveal that between 1980 and 1986 there was a tremendous increase in the number of '*desa-urban*' in provinces in Java (Table 2; BPS 1988, p. 10).

Despite these drawbacks, there is no problem of comparability between the characteristics of the urban population in 1980 and those in 1990, because the definition of urban areas — that is, localities classified as '*desa-urban*' — used in the 1990 Census was the same as that used in 1980.

LEVELS OF URBAN POPULATION GROWTH

This study calculates the proportional and absolute increase in the urban population of each *kabupaten*, using urban population data from the 1980 and 1990 Censuses (Appendix Table 2). The average proportional increase during that period was 10.63% (from 25.02% in 1980 to 35.65% in 1990); a cut-off point of 10% is therefore used to categorise the level of increase — a proportional increase of 10% or above is considered 'high', and an increase below this figure is 'low'. However, because many *kabupaten* had an increase of almost 10%, the group whose urban population increased by less than 10% is then divided into two categories: 'moderate' for increases of between 7.5 and 10% and 'low' for those of less than 7.5%.

To characterise the absolute increase in urban population a cut-off point of 135,000, which is the average absolute increase of the 82 *kabupaten* under study, is used. *Kabupaten* with an increase in absolute number of 135,000 or above are considered to have experienced a 'high' increase in urban population during the period 1980-90, and those with less than that figure a 'low' increase.

Based on these cut-off points, there are 25 *kabupaten* having a high proportional increase, and 21 having a high absolute increase in urban population (Table 3). Eight *kabupaten* can be considered 'moderate' in proportional increase (Table 4).

The pattern of proportional increase is basically the same as that of absolute increase: only eight *kabupaten* do not fall into the same category on both indicators — Kuningan, Indramayu and Karawang in West Java; Klaten, Semarang and Batang in Central Java; Situbondo and Mojokerto in East Java. It therefore makes little difference whether proportional or absolute increase is used as the indicator for analysis, since one can act as a surrogate for the other and both will depict the same essential pattern of urban population growth.

TABLE 3 *Kabupaten with a 'High' Proportional and Absolute Increase in Urban Population, 1980-90*

Proportional Increase (%)	Absolute Increase
West Java	
Bogor (25.90)	Bogor (1,285,407)
Bandung (16.43)	Bandung (653,388)
Kuningan (10.38)	Cirebon (377,439)
Cirebon (19.47)	Indramayu (147,635)
Bekasi (38.28)	Karawang (167,673)
Tangerang (40.08)	Bekasi (964,215)
	Tangerang (1,292,675)
Central Java	
Banyumas (11.96)	Banyumas (184,665)
Klaten (10.22)	Sukoharjo (201,597)
Sukoharjo (27.63)	Kudus (191,029)
Kudus (25.58)	Jejara (147,812)
Jejara (16.12)	Pemalang (142,162)
Semarang (10.37)	Tegal (231,490)
Batang (11.01)	Brebes (179,106)
Pemalang (10.03)	
Tegal (16.00)	
Brebes (10.29)	
Yogyakarta	
Bantul (50.28)	Bantul (356,810)
Sleman (35.48)	Sleman (293,255)
East Java	
Kediri (9.91)	Kediri (140,076)
Malang (9.99)	Malang (240,876)
Situbondo (11.45)	Sidoarjo (400,755)
Sidoarjo (28.51)	Jombang (139,549)
Mojokerto (14.88)	Gresik (117,740)
Jombang (12.16)	
Gresik (11.62)	

Source: Appendix Table 2.

TABLE 4 *Kabupaten with a 'Moderate' Increase in Urban Proportion of Population, 1980-90*

<i>Kabupaten</i>	Proportional Increase (%)
West Java	
Indramayu	9.40
Karawang	8.88
Central Java	
Boyolali	9.77
Karanganyar	8.72
East Java	
Ponorogo	6.36
Tulungagung	8.88
Lumajang	7.90
Nganjuk	7.50

Source: Appendix Table 2.

SPATIAL PATTERN

Figures 1 and 2 reveal that *kabupaten* located near large cities show both a high proportional and a high absolute increase in urban population: this is true of *kabupaten* Tangerang, Bogor, Bekasi and Karawang, which surround DKI Jakarta; *kabupaten* Bandung, adjacent to the city of Bandung; *kabupaten* Bantul and Sleman near Yogyakarta; and *kabupaten* Jombang, Gresik and Sidoarjo, which are close to Surabaya. This pattern is not surprising because economic activities in these *kabupaten* have grown in response to development in neighbouring metropolitan centres. For example, the growth of industrial activity in *kabupaten* Tangerang and Bekasi has been largely supported by urban facilities and infrastructure in DKI Jakarta. In fact, until 1985 Jakarta and its neighbouring *kabupaten*, including *kotamadya* Bogor, produced as much as 31% of national industrial product, mainly from large and

FIGURE 1 Increase in the Urban Proportion of the Population in Kabupaten in Java, 1980-90

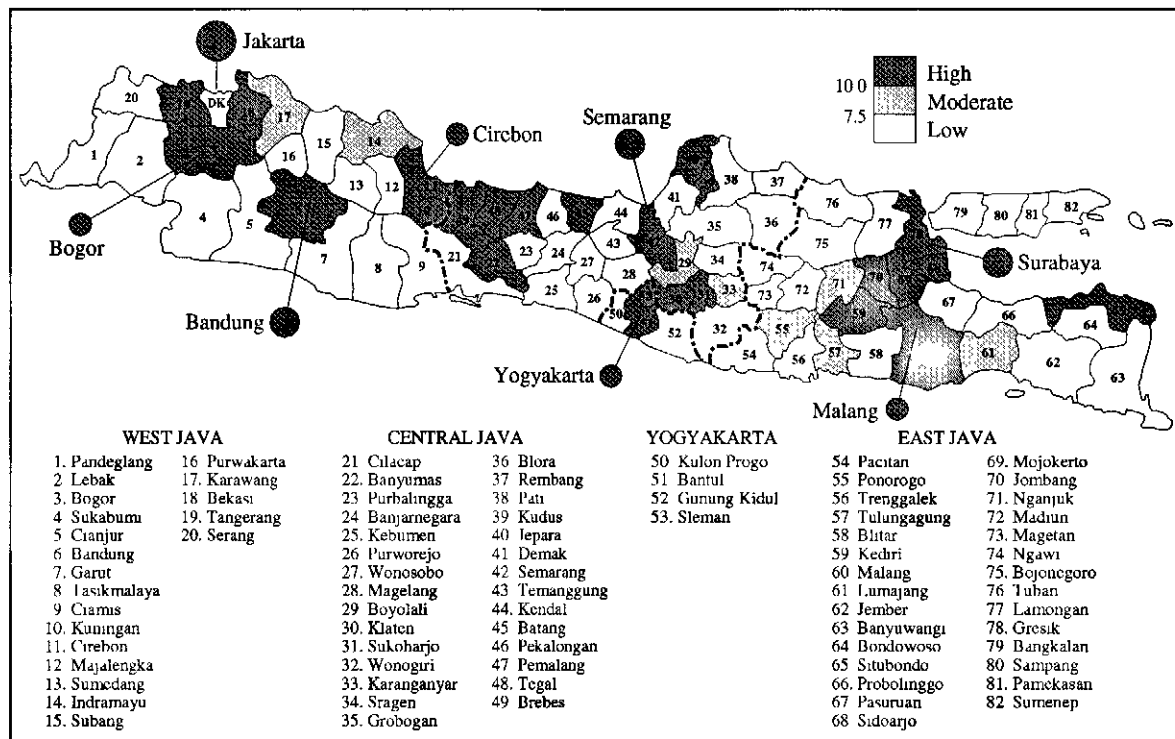
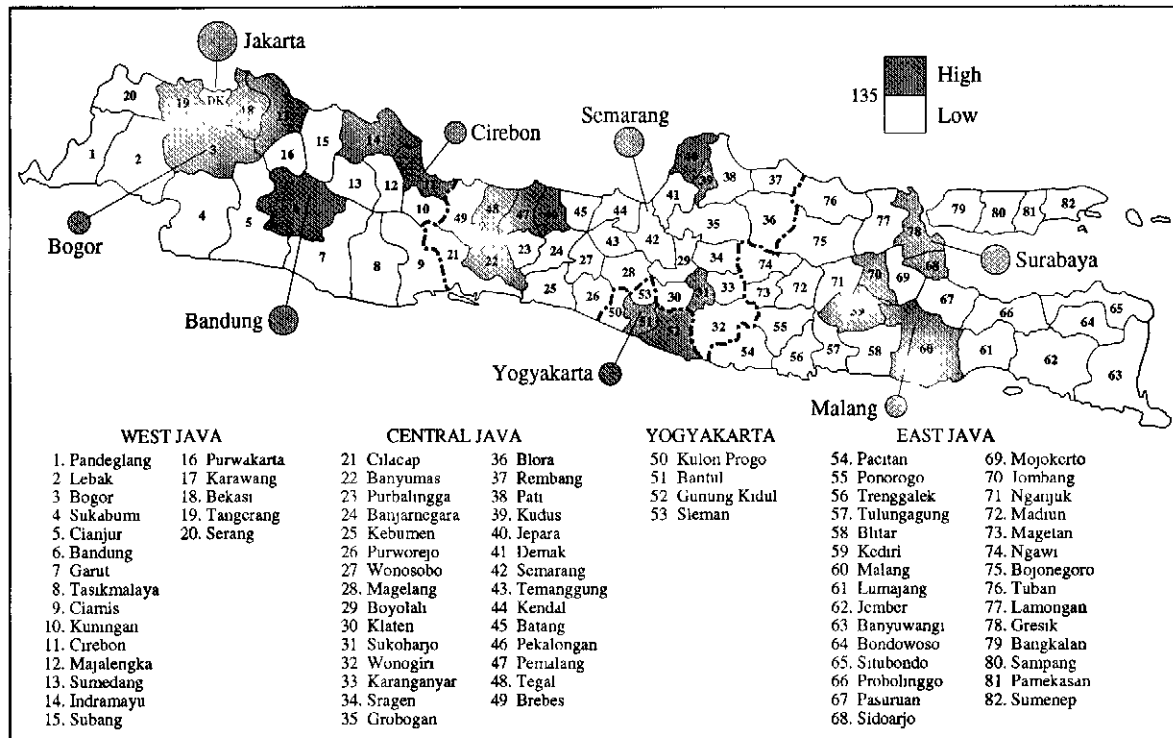


FIGURE 2 *Urban Population Increase in Kabupaten in Java, 1980-90*

medium (non-oil and gas) industries (Hill 1990). Hill (1990, p. 106) maintains that:

... in all three of Java's main cities [Jakarta, Surabaya and Bandung] substantial industrial spillover is evident, much of it driven by high urban land prices.

This factor has tremendously affected land-use change in the *kabupaten* surrounding the main cities. During the last decade, especially in Jakarta, a substantial area of prime agricultural land has been converted into industrial and large-scale residential areas including new towns (Douglass 1989; Firman 1989). A rough estimate indicates that in *kabupaten* Bogor, which borders DKI Jakarta, approximately 2,000 of the 23,000 hectares of *sawah* that existed in 1986 have now been converted to industrial and residential areas. Likewise, during the last five years *kabupaten* Bekasi has lost about 200 hectares of prime agricultural land per year through conversion to non-agricultural uses (*Media Indonesia*, 29 September 1991).

The growing concentration of socioeconomic activities in DKI Jakarta and its surrounding areas has attracted substantial numbers of people, particularly from rural areas, into this metropolitan region. All *kabupaten* surrounding DKI Jakarta are experiencing rapid population growth. Between 1980 and 1990 the population of *kabupaten* Bogor increased by 4.1% per year, and that of Bekasi and Karawang by 6.2 and 6.1% respectively (BPS 1991).

Rather surprisingly, the urban population increase in *kabupaten* Sleman and Bantul has been quite high, in fact, among the highest of all the *kabupaten* in Java. According to Oey-Gardiner (1991) this is because between 1980 and 1990 the number of '*desa-urban*' in Bantul increased from seven to thirty, and in Sleman from eight to thirty-two. This tremendous growth is probably due to spillover effects from Yogyakarta, which has grown as a centre of tourism and education.

Some *kabupaten* which are centres of industry have also experienced a high proportional increase in urban population. This is particularly true for *kabupaten* Kudus and Kediri, which are the old centres of the *kretek* cigarette industry in Java.

Although the pattern is not entirely clear, urban population growth during the period 1980-90 has created a growing corridor along the north coast of Java, extending from Jakarta to Semarang through Cirebon. Similar growth is occurring in the corridors of Jakarta-Bogor, Surabaya-Malang and Semarang-Yogyakarta (Figure 1).

Another feature that can be noted is the disparity between the north and south coasts of Java. Figure 1 shows that most *kabupaten* with a high or moderate increase in the proportion of urban population are located on the north coast, and only a few of them (Bantul, Tulung Agung, Malang and Lumajang) on the south coast. This pattern is not

surprising, because many economic activities, especially industry, trade and services, which act as engines for regional economic growth, are concentrated on the north coast, particularly in large cities like Jakarta, Cirebon, Semarang and Surabaya.

The spatial features of urban population growth in Java discussed above confirm McGee's hypotheses (1988; 1989; 1990; 1991) regarding the new phenomenon of settlement transition in Asia, especially in regions with high population density such as Taiwan and Java. However, this study has identified the spatial pattern of urban growth in only general terms; further empirical studies are needed to examine the extent to which it is reflected in change in land-use patterns, employment structures, population mobility, household economy, transportation systems and many other areas.

PLANNING AND POLICY IMPLICATIONS

The spatial urban development pattern discussed above underlines the importance of integrated development of large cities with their surrounding *kabupaten*. In other words, Metropolitan Development Approaches (Firman 1989) are needed to cope with problems of urban and regional development in Java. These approaches should include the development of settlement systems, industrial estates, land-use and environment planning, and the management of urban and regional development as a whole. On the other hand, rural and agricultural development also remains a pressing issue, and must therefore be addressed in any regional development plan in Java. One of Java's current agricultural development problems is reflected in the intensive conversion of prime agricultural land into industrial and residential areas, especially in the 'Botabek' area.

Physical development plans for the corridors are needed, since these areas can be developed to alleviate over-concentration of socioeconomic activities in large cities such as Jakarta, Surabaya, Bandung, and Semarang. The growing corridors in Java reflect interaction between urban and rural activities; urban and rural development in Java should be integrated to enhance rural-urban linkages at the regional level. Jones (1984, p. 153), in his study on links between urbanisation and sectoral shifts in employment on Java, argues that:

It is important here to avoid a strict rural-urban dichotomy and to stress instead regional aspects of employment transformation. Human settlements, after all, represent a continuum from rural to small urban to large urban, and the degree of integration of rural economic activities with those in nearby small towns and larger cities can vary greatly from region to region. The objectives should be to develop more harmonious rural-urban

linkages at the regional level, with the aim of an integrated economy where income and employment growth in rural areas and neighbouring towns are mutually supportive and the benefits are not 'creamed off' by a few metropolitan areas.

McGee (1988, 1989 and 1990) maintains that from the standpoint of development policy, corridor regions are 'invisible' in that the legislation and regulations for urban physical development generally employed by municipalities (*kotamadya*) cannot be enforced in the corridor regions, most of which are under the jurisdiction of *kabupaten* whose physical development related regulations are intended largely to serve rural and agricultural development. Nevertheless, such regions should be treated as urban, since their physical features are more 'urban' than 'rural' in character. This implies that the institutional capacities of *kabupaten* governments in Java should be strengthened to handle urban development problems in the corridor regions (Firman 1991; Cheema 1991).

REFERENCES

- BPS (1981a), *Penduduk Propinsi Jawa Barat: Hasil Sensus Penduduk 1980*, Seri S No. 12, Jakarta.
- (1981b), *Penduduk Propinsi Jawa Tengah: Hasil Sensus Penduduk 1980*, Seri S No. 13, Jakarta.
- (1981c), *Penduduk Propinsi DI Yogyakarta: Hasil Sensus Penduduk*, Seri S No. 14, Jakarta.
- (1981d), *Penduduk Propinsi Jawa Timur: Hasil Sensus Penduduk*, Seri S No. 15, Jakarta.
- (1988), *Klasifikasi Urban-Rural Berdasarkan PODES-SE '86*, Jakarta.
- (1991), *Penduduk Indonesia: Hasil Sensus Penduduk 1990*, Jakarta.
- Cheema, S. (1991), 'The Extended Metropolis in Asia: Implications for Urban Management', in N. Ginsburg, B. Koppel, and T.G. McGee (eds), *The Extended Metropolis: Settlement Transition in Asia*, University of Hawaii Press, Honolulu, pp. 71-88.
- Douglass, M. (1989), 'The Environmental Sustainability of Development: Coordination, Incentives and Political Will in Land Use Planning for the Jakarta Metropolis', *Third World Planning Review* 11 (2), pp. 211-38
- Firman, T. (1989), 'Pembangunan Kota-Kota Baru di Wilayah Metropolitan Jabotabek', *Prisma* 18 (6), pp. 49-60.
- (1991), 'Penataan Koridor AntarKota', *Kompas*, 11 January.
- Gardiner P., and M. Oey-Gardiner (1991), 'Pertumbuhan dan Perluasan Kota di Indonesia', *Kompas*, 7 May.
- Hill, H. (1990), 'Indonesia's Industrial Transformation: Part I', *Bulletin of Indonesian Economic Studies* 26 (2), pp. 79-120.
- Isarankura, W. (1990), 'Emerging Urban-Rural Linkages: The Bangkok Metropolitan Region', *Regional Development Dialogue* 11 (2), pp. 56-84.
- Jones, G.W. (1984), 'Links Between Urbanization and Sectoral Shifts in Employment in Java', *Bulletin of Indonesian Economic Studies* 20 (3), pp. 120-57.
- McGee, T. (1987), 'Urbanisasi or Kotadesasi: The Emergence of New Regions of Economic Interaction in Asia', Unpublished paper, Environment and Policy Institute, Honolulu.

- (1988), 'Conference on the Extended Metropolis in Asia: An Outline of Issues', Unpublished paper, Environment and Policy Institute, Honolulu.
- (1989), 'The Emergence of the Extended Metropolis in Asia: Expanding a Hypothesis', Institute of Asian Research, University of British Columbia, Vancouver.
- (1990), 'Guest Editor's Introduction', *Regional Development Dialogue* 11 (2), pp. iii-ix.
- (1991), 'The Emergence of Desakota Regions in Asia: Expanding a Hypothesis', in N. Ginsburg, B. Koppel and T.G. McGee (eds), *The Extended Metropolis: Settlement Transition in Asia*, University of Hawaii Press, Honolulu, pp. 3-26.
- Oey-Gardiner, M. (1991), 'Transformasi Sawah Menjadi Industri', *Tempo*, 27 April.
- Rietveld, P. (1988), 'Urban Development Patterns in Indonesia', *Bulletin of Indonesian Economic Studies* 24 (1), pp. 73-95.

APPENDIX TABLE 1 *Types of Facilities Used as Criteria for Classification as 'Desa-Urban' in the 1990 Census*

Facility
1. Primary school or equivalent
2. Junior high school or equivalent
3. Senior high-school or equivalent
4. Cinema
5. Hospital
6. Maternity hospital/Mother-child hospital
7. Primary health care centre/clinic
8. Road that can be used by three- or four-wheeled motorised vehicle
9. Telephones/Post-office/Post-office agency
10. Market with buildings
11. Shopping centre
12. Bank
13. Factory
14. Restaurant
15. Public electricity
16. Party-equipment renting service

Source: BPS 1988.

APPENDIX TABLE 2 *Urban Population in Kabupaten in Java, 1980 and 1990*

<i>Kabupaten</i>	1980	%	1990	%	<u>Increase 1980-90</u>	
	(1)	(2)	(3)	(4)	Absolute (3)-(1)	% (4)-(2)
I. West Java						
1. Pandeglang	47,261	6.80	57,491	6.70	10,230	-0.10
2. Lebak	25,869	3.78	59,143	6.77	33,274	2.99
3. Bogor	638,039	25.58	1,923,446	51.48	1,285,407	25.90
4. Sukabumi	214,472	14.13	333,776	18.05	119,304	3.92
5. Cianjur	189,188	13.63	241,839	14.55	52,651	0.92
6. Bandung	638,485	23.92	1,291,873	40.35	653,388	16.43
7. Garut	196,902	13.27	269,859	15.43	72,957	2.16
8. Tasikmalaya	247,506	15.53	370,670	20.42	123,164	4.89
9. Ciamis	88,398	6.46	140,419	9.50	52,021	3.04
10. Kuningan	52,956	6.75	152,868	17.13	99,912	10.38
11. Cirebon	236,414	17.75	613,853	37.22	377,439	19.47
12. Majalengka	101,571	11.31	181,003	17.54	79,432	6.23
13. Sumedang	73,998	10.22	113,321	13.62	39,323	3.40
14. Indramayu	72,687	5.87	220,322	15.27	147,635	9.40
15. Subang	108,349	10.17	169,270	14.03	60,921	3.86
16. Purwakarta	78,746	17.19	125,712	22.32	46,966	5.13
17. Karawang	171,478	13.86	339,151	22.74	167,673	8.88
18. Bekasi	188,668	16.50	1,152,883	54.78	964,215	38.28
19. Tangerang	228,162	14.92	1,520,837	55.00	1,292,675	40.08
20. Serang	139,984	12.62	269,096	18.30	129,112	5.68
II. Central Java						
21. Cilacap	231,505	17.36	307,435	20.67	75,930	3.31
22. Banyumas	232,043	18.94	416,708	30.90	184,665	11.96
23. Purbalingga	58,006	8.70	74,595	10.18	16,589	1.48
24. Banjarnegara	41,887	6.19	66,563	8.62	24,676	2.43
25. Kebumen	94,323	9.14	135,365	12.08	41,042	2.94
26. Purworejo	67,035	9.61	98,461	14.05	31,426	4.44
27. Wonosobo	49,334	8.23	68,269	10.26	18,935	2.03
28. Magelang	98,104	10.49	167,842	16.52	69,738	6.03
29. Boyolali	42,623	5.45	128,460	15.22	85,837	9.77
30. Klaten	268,807	25.21	384,885	35.43	116,078	10.22
31. Sukoharjo	122,554	20.55	324,151	48.18	201,597	27.63
32. Wonogiri	36,607	3.91	108,790	11.34	72,183	7.43
33. Karanganyar	76,178	12.60	148,830	21.32	72,652	8.72
34. Sragen	64,101	8.45	70,476	8.54	6,375	0.09
35. Grobogan	40,063	3.95	122,805	10.70	82,742	6.75
36. Blora	93,773	13.46	127,268	16.59	33,495	3.13
37. Rembang	49,676	11.23	92,175	17.95	42,499	6.72
38. Pati	97,595	10.00	175,210	16.47	77,615	6.47
39. Kudus	167,193	31.17	358,222	56.75	191,029	25.58
40. Jepara	79,145	11.30	226,957	27.42	147,812	16.12
41. Demak	26,329	3.91	92,227	11.21	65,898	7.30
42. Semarang	52,565	7.44	139,997	17.81	87,432	10.37
43. Temanggung	56,904	10.23	72,311	11.72	15,407	1.49
44. Kendal	99,477	14.17	165,606	20.72	66,129	6.55
45. Batang	79,281	14.95	153,580	25.96	74,299	11.01
46. Pekalongan	137,432	21.09	190,093	27.16	52,661	6.07
47. Pemaslang	170,481	18.03	312,643	28.06	142,162	10.03
48. Tegal	262,496	23.86	493,986	39.86	231,490	16.00
49. Brebes	109,968	8.70	289,074	18.99	179,106	10.29

APPENDIX TABLE 2 (cont.) *Urban Population in Kabupaten in Java, 1980 and 1990*

<i>Kabupaten</i>	1980	%	1990	%	<i>Increase 1980-90</i>	
	(1)	(2)	(3)	(4)	<i>Absolute</i> (3)-(1)	<i>%</i> (4)-(2)
III. Yogyakarta						
50. Kulon Progo	18,255	4.80	31,141	8.36	12,886	3.56
51. Bantul	64,975	10.24	421,785	60.52	356,810	50.28
52. Gunung Kidul	21,386	3.24	28,130	4.32	6,744	1.08
53. Sleman	107,686	15.90	400,941	51.38	293,255	35.48
IV. East Java						
54. Pacitan	14,180	2.97	14,657	2.92	477	-0.05
55. Ponorogo	55,523	7.08	112,506	13.44	56,983	6.36
56. Trenggalek	29,321	5.19	40,295	6.46	10,974	1.27
57. Tulungagung	141,093	16.93	229,709	25.81	88,616	8.88
58. Blitar	74,249	7.16	152,154	14.55	77,905	7.39
59. Kediri	79,565	6.44	219,641	16.35	140,076	9.91
60. Malang	194,069	9.49	434,945	19.48	240,876	9.99
61. Lumajang	98,474	11.26	177,179	19.16	78,705	7.90
62. Jember	329,033	17.49	428,495	20.77	99,462	3.28
63. Banyuwangi	366,564	25.80	345,757	23.76	-20,807	-2.04
64. Bondowoso	49,423	8.07	74,071	11.27	24,648	3.20
65. Situbondo	100,663	19.18	175,755	30.63	75,092	11.45
66. Probolinggo	59,525	6.87	106,245	11.59	46,720	4.72
67. Pasuruan	165,038	15.95	256,622	21.72	91,584	5.77
68. Sidoarjo	185,352	21.71	586,107	50.22	400,755	28.51
69. Mojokerto	47,840	6.78	170,483	21.66	122,643	14.88
70. Jombang	105,795	11.23	245,344	23.39	139,549	12.16
71. Nganjuk	87,826	9.95	164,938	17.45	77,112	7.50
72. Madiun	56,259	8.78	76,752	12.10	20,493	3.32
73. Magetan	49,747	8.17	56,274	8.97	6,527	0.80
74. Ngawi	20,887	2.71	37,731	4.71	16,844	2.00
75. Bojonegoro	83,542	8.36	114,959	10.41	31,417	2.05
76. Tuban	64,389	7.38	109,979	11.24	45,590	3.86
77. Lamongan	89,998	8.57	103,435	9.05	13,437	0.48
78. Gresik	103,440	14.20	221,180	25.82	117,740	11.62
79. Bangkalan	69,304	10.07	109,546	14.59	40,242	4.52
80. Sampang	42,766	7.07	62,707	8.91	19,941	1.84
81. Pamekasan	42,846	7.95	62,010	9.87	19,164	1.92
82. Sumenep	53,981	6.31	90,838	9.73	36,857	3.42

Source: Calculated from BPS 1981a; 1981b; 1981c; 1981d; 1991.