REGIONAL LABOUR MARKETS DURING DEREGULATION IN INDONESIA

Have the Outer Islands Been Left Behind?

By

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Abstract

Indonesian labour markets have undergone a major transformation over the past 30 years, especially on Java since liberalisation gathered pace in the mid 1980s. The paper focuses on regional dimensions of these changes. In contrast to emerging inter-regional disparities in some other countries, it finds that employment structure has changed markedly and real wages risen in most Outer Island provinces since 1987. While wage growth has been more rapid in Java-Bali, labour in the Outer Island provinces has enjoyed large gains from rapid economic growth during the deregulation period. Among Outer Island provinces, Northern Sumatra and the poorer Eastern Island provinces have experienced substantial growth, while the Kalimantan provinces have lagged in manufacturing employment and wages. Labour market outcomes have also been less favourable in land abundant provinces which received large numbers of assisted migrants during the earlier oil boom period. It is concluded that export-led industrialisation concentrated in Java-Bali has contributed to labour market transformation and income growth outside Java-Bali. In addition, improvements in wages and the shift of labour outside agriculture have been supported by continuing government support for infrastructure and human resource development in the Outer Island provinces.

JEL Classification: O15, O16, J22

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I. INTRODUCTION

National economic growth has been rapid in Indonesia for much of the period since Soeharto came to power in 1965-66. One might have expected that economic performance would have varied quite considerably across Indonesia's many provinces - given the physical dispersion of economic activities across a huge archipelago, diversity in resource endowments and the centralised nature of government budgetary controls. Perhaps surprisingly, this was not the case - at least not up to the period when deregulation began in earnest in the mid 1980s.[2]. There is no evidence of a general or systematic pattern of widening disparities in per capita income across regions during the much of the Soeharto period Government policies supported broad based regional development during the period of the oil boom in particular. This was achieved through a complex balancing act involving sizable expenditures dispersed to all regions based on per capita incomes, land area and various indicators of physical and human capital need.

Hill and Weidermans (1989: 53) questioned whether this outcome could be sustained during the period of much greater fiscal austerity and the increasing predominance of private sector activity from the mid 1980s. Foreign and domestic investment in new manufacturing, export-oriented industries has been heavily concentrated on Java. Within Java it has flowed principally to the capital city and environs, and to a lesser extent to the greater Surabaya region in the east of the island. One might expect that increasing regional inequalities to be associated with concentration of new investment

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[1] This paper is a revised version of a paper entitled *Deregulation and Regional Labour Markets in Indonesia: Have the Outer Islands been Left Behind?* presented at a World Bank-Ministry of Manpower conference *Indonesian Workers in the 21st Century* held in Jakarta April 2-4 1996. The author wishes to thank participants at that seminar and Dr. Hal Hill for helpful comments on the earlier draft.

[2] The seminal work on the this subject is Hill (1989) which covers regional economic development in all provinces of Indonesia through to the mid 1980s. The regional disperion in per capita income growth rates was much smaller than in levels of per capita income in the 1970s and 1980s. See also Hill (1992).

in major cities where agglomeration economies are strong - as appears to have been the case in India and China in recent years.[3]

This paper examines the regional labour market consequences of the rapid economic growth and the new economic strategy. It focuses on the period of the deregulation when there appears to have been a significant tightening of national labour markets, after real wages stagnated for much of the 1980s, (Manning, 1994; Rosner, 1995). The paper also examines how more recent developments differed from labour market developemnts during the oil boom and subsequent period of slower economic growth.

Two alternative hypotheses can be advanced regarding the relationship between inter-regional labour market trends, on the one hand, and patterns of economic growth associated with deregulation, on the other. The first, perhaps more plausible scenario is that rapid labour market transition has been primarily experienced on Java - especially in the major areas of non-oil export growth around Jakarta in the west and Surabaya in the east. We would expect the creation of new jobs in manufacturing and associated service sectors to be concentrated in these regions. Both wage growth and employment growth in non-agricultural sectors could be anticipated to have lagged in the Outer Island regions. Many of these - especially in Eastern Indonesia - have not played a major role in the acceleration in growth of manufacturing exports.

A second possibility is that the rapid growth of non-oil exports on Java and in selected Outer Island provinces has provided an impetus for labour market change throughout the archipelago. Inter-regional migration and remittances from workers in the centres of manufacturing growth might have been sufficiently large to stimulate employment growth in non-agricultural jobs and tightening labour markets in most regions outside Java as well. Combined with continued government support and expansion of the dominant agricultural sector, these impulses may have been sufficient to generate a broad-based shift in the balance of labour supply and demand in most regions in Indonesia.

Data Sources. The analysis of economic structure is based on national accounts and regional accounts data collected by the Central Bureau of Statistics in Jakarta and in the provinces. The regional data are less reliable in earlier years and even in later

[3] See Das and Barua (1995) and Jian, Sachs and Warner (1996) for studies of India and China respectively.

years only symptomatic of broad trends.[4] Employment and wage data are taken principally from the

National Labour Force Surveys (SAKERNAS) conducted irregularly before 1986 and then on an annual basis since then. Comparisons of trends for the period 1971-1990 are based on the Population Censuses. Year to year changes in employment monitored collected on an annual basis in the SAKERNAS show quite large fluctuations: they are only useful for examining medium to longer term trends in employment.

The paper starts with an examination of employment and wage growth on a national scale and on Java (compared with the Outer - Islands as a group) over the period 1987-1994. This is followed by an examination of employment and wage change by major sector in various regions of Indonesia: we first deal with longer term trends, and then examine more recent labour market developments. A final section examines inter-regional wage structure.

II. CHANGING NATIONAL ECONOMIC STRUCTURE AND LABOUR MARKETS

Economic growth accelerated in the second half of the 1980s. Indonesia regained overall rates of growth of close to seven per cent, similar to those achieved in the oil boom period of the 1970s (Table 1). Growth rates increased from just over five per cent per annum in the period 1983-1987 to just under seven per cent in 1987-1993, and were slightly higher in the following year.[5] Three points stand out regarding the patterns of growth from 1987 onwards.

(i) Despite the jump in non-oil exports, it was not manufacturing which accounted for the surge in economic growth rates. Although manufacturing growth rates were still very high - around 12 per cent per annum for non-oil manufacturing - they were not significantly different from those achieved in the early 1980s. Rather it was the mainly expansion in the non-traded goods sectors which accelerated.

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[4] Central Bureau of Statistics staff suggest that there is considerable pressure for the regions to report data which are broadly consistent with national trends. The regional accounts data are likely to particularly unreliable for smaller sectors (personal communication, Jakarta, April 1996).

[5] The series was rebased in 1993 and expressed in 1993 prices. The exercise suggests that the contrast in growth rates between may have been even greater the two periods than the above figures imply.

(ii) Government administration grew much less rapidly than in previous periods. This was in contrast to the oil boom and slower growth periods when government administration grew rapidly and made a major contribution to overall growth rates (Sundrum, 1986, 1988).

(iii) The agricultural sector continued to grow steadily at just over three per cent, although its share in total GDP declined more rapidly than in the period of slower economic growth in the early 1980s.

How did these growth rates impact on employment? The most important developments were a marked slow-down in employment in agriculture from around 1990 and an acceleration in the rate of growth in job creation in manufacturing, construction and transport and communications. Employment in all non-agricultural sectors grew strongly in the 1990s except government, community and personal services.

Higher rates of employment growth in non-agricultural sectors are consistent with more rapid rates of output expansion in individual sectors after 1987. They are also consistent with the changing structure of manufacturing in favour of labour-intensive sectors such as garments and footwear.

The apparent sharp decline in agricultural employment growth from around 1990 was unexpected, however. The expansion of job opportunities in agriculture was relatively robust at around two per cent per annum in the 1980s, although rates of growth began to decline in the second half of the decade (Table 2).[6] The National Labour Force Surveys suggest that growth rates were negative - close to two per cent per annum - from 1989-90. Nearly **half** of all new jobs taken up in non-agricultural sectors in the early 1990s represented a shift in employment away from agriculture.

Even more unexpected, agricultural employment fell absolutely in the Outer Islands as well as on Java from around 1990 (Figure 1). The decline in absolute numbers was slight outside Java - compared with a reported three and a half per cent rate of decline

[6] It is not appropriate to compare agricultural employment growth rates in the early 1980s with the second half of the decade owing to different procedures adopted for enumerating female unpaid family workers in the agricultural in the 1985 intercensal population survey. Among males, however, there was a noticeable decline in jobs taken up in agriculture in the second half of the decade.

annually on Java from 1989/90.[7] But this was a marked turnabout in agricultural labour absorption Outside Java compared with the previous decade.[8] The patterns and possible causes of agricultural employment decline outside Java will be discussed further in the analysis of regional labour market change below.

What were the main features of non-agricultural employment growth on a national scale?. Viewed in historical perspective, a major shift had already occurred the distribution of jobs by major sector in the 1980s. The service sector which had been the major non-agricultural sector of employment in the 1970s - and absorbed around one-third of new jobs in the same period - accounted for a much smaller share of new jobs thereafter. This pattern was also apparent in the 1990s. The government sector freeze on new jobs and the slow-down in the rate of expansion of social services played a major role in reducing the role of services in employment creation.

Conversely, manufacturing emerged as the major non-agricultural sector for employment from the mid 1980s - although the share of new jobs created in manufacturing declined compared with the share of jobs created in several other non-agricultural sectors in the 1990s. The rapid rate of growth in manufacturing employment was not only experienced on Java but also outside Java (Table 3).

Consistent with extremely high growth rates in value added in construction - and to a lesser extent in transport and communications - this sector was a major source of new jobs from the 1987. Relative to total employment growth, both these sectors played a far more dominant role on Java than in the Outer Islands.

Thus it is not surprising that real wage growth accelerated in all sectors on a national scale in the 1990s (Table 4). All these developments point to signs of a significant shift in labour market dynamics in Indonesia. The growing non-agricultural sectors appear to have absorbed the backlog of low productivity workers which had put a break on real wage growth in the previous decade. Slower labour supply growth associated with fertility decline in the previous decades was also beginning to impact

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[7] The extent of these trends need to be confirmed from further survey since a significant part of the decline occurred in 1994 when one annual National Labour Force Survey was undertaken, in contrast to quarterly surveys conducted in previous years. The quarterly surveys had shown little seasonal variation in agricultural employment for several years. It therefore seems unlikely that seasonal effects alone can account for the sharp decline in 1994.

[8] According to the Population Census data, agricultural employment grew by over three per cent per annum in the Outer Islands during the 1980s.

on the labour market. Labour force growth rates fell from around three per cent per annum in the 1980s to slightly under 2.5 per cent in the early 1990s.

How widespread were these changes both within and outside Java? We now turn to examine some of the regional dimensions of these national trends. The contrasts in the aggregate employment experience on Java and in the Outer Island regions could be expected to hide substantial regional variations associated with differing rates and patterns of economic growth.

III. REGIONAL PATTERNS OF EMPLOYMENT AND WAGE GROWTH

Historically, there have been major contrasts in labour market structures and developments between Java and the Outer Islands of Indonesia. However, the Outer Islands are a heterogeneous group. They include both resource and land abundant provinces, principally in Sumatra and Kalimantan, as well as several which are relatively densely populated and share some of the labour market characteristics of Java.[9]

To assist analysis of labour market change, the Outer Island provinces (excluding Bali) have been assembled into five groups based on factors relevant to both labour supply and labour demand trends:

(i) Relatively *resource abundant* provinces in Sumatra, Kalimantan and eastern Indonesia
(Aceh and Riau in Sumatra, East and Central Kalimantan, Irian Jaya and Maluku)

(ii) Major *transmigration destination areas* in southern Sumatra
(South Sumatra, Jambi, Bengkulu and Lampung)

(iii) Other *land abundant*, mainly agricultural Outer Island provinces
(West and South Kalimantan, Central and Southeast Sulawesi)

(iv) The *out-migration* provinces of Sumatra (North and West Sumatra)

(v) *Densely populated and/or relatively poor* Outer Island provinces
(North and South Sulawesi, West and East Nusa Tenggara and East Timor)[10]

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[9] See especially Hill 1989.

[10] East Timor is included in this group for the recent period but not for comparisons using the 1971 and 1980 census..

The grouping of provinces is to some extent arbitrary. The characteristics of several provinces overlap across these groups - or indeed almost any grouping one might attempt.

By way of background, a comparison is first made of the developments in these five Outer Island groups with those in Jakarta and the Java provinces and Bali over the period 1971-1990. We turn then more recent patterns of economic growth and labour market change

Economic Structure and Labour Markets 1971-90

Although wage levels were lower, the more densely populated economy of Java-Bali was much more diversified than in most Outer Island regions when rapid economic growth began in the late 1960s. In general, the provinces of Sumatra, Kalimantan, Sulawesi and the eastern islands were similar to many other poorer Third World countries. The share of agriculture in regional gross domestic product (RGDP) was above 50 per cent in most regions. According to a range of other development indicators - literacy, electricity, vehicles and length of roads per capita and per area - the Outer Islands lagged well behind the Java provinces and Bali (Hill, 1989).

Several Outer Island provinces, especially the large province of North Sumatra, stood out among Outer Island provinces according to a range of indicators - the share of RGDP produced outside agriculture, the proportion of relatively educated workers and the level of RGDP per capita. Other exceptions were the resource abundant provinces of Riau and East Kalimantan, the larger provinces of West and South Sumatra, and North Sulawesi. The latter group of provinces were more urbanised, in contrast to many of the less developed provinces where the share of urban population was below ten per cent in 1971.

The two decades from the early 1970s saw convergence in many of these indicators in most Outer Island provinces compared with Java. As we shall see with labour market developments, one is first struck by the similarities rather than the differences in the spread of development. With the exception of Lampung - the major destination of migrants from Java - in no province did the average rate of per capita output growth fall below three per cent (outside oil and mining in the heavily resource dependent provinces). In none was total non-oil RGDP growth less than five per cent per annum, and in the large majority it was slightly above seven per cent per annum

(Table 5).[11] It was generally highest in the resource rich provinces and lower in the densely populated regions of eastern Indonesia and Java. But even in the latter, average (unweighted) aggregate RGDP growth rates were above seven per cent per annum. Compensating natural population growth rates and net-migration meant smaller differences in per capita income growth between these two groups. Population (and labour supply) grew much less rapidly in the more densely populated provinces.

The agricultural share of non-oil RGDP fell in all provinces in the period 1971-90. The centralised distribution of grants to provinces (based mainly on per capita income and land area), and the spread of government services and related infrastructure, contributed to substantial increases in the share of government administration in RGDP in most Outer Island provinces. Undoubtedly this has been one of the great achievements of the New Order government, which saw the regional diffusion of services and infrastructure as critical to the spread of economic development and the maintenance of political stability.

Nevertheless, there were important differences in economic performance between the five groups of Outer Island regions, and these in turn influenced labour force, employment and wage growth.[12] The greatest contrast is between the first group of resource rich provinces and the fifth group of the poorer, more densely populated regions. Not only did total non-oil RGDP rise faster in the former, but the growth in RGPD per capita was also more rapid - despite considerable in-migration. The index of the agricultural share of RGDP relative to all Indonesia rose in both groups, but less quickly in the resource-abundant group of provinces. The manufacturing share rose quite quickly from a small base percentage, compared with the Indonesian share in the resource abundant provinces. These changes brought economic structure much closer to the Java provinces, although labour intensive industries were noticeably absent.

In contrast, the poorer regions of Eastern Indonesia continued to depend heavily on agriculture, and RGDP remained considerably lower than in other provinces. This was especially the case of West and East Nusa Tenggara where the agricultural share of RGDP was still 58 and 68 per cent respectively in 1990, per capita income the lowest and the incidence of poverty was among the highest in Indonesia. Compared with other provinces, the share of government administration rose most rapidly in

[11] See Appendix Table 1 for details on individual provinces.
[12] See Manning (1996: Chapter 7) for details.

these poorer provinces (as an index of the Indonesia-wide share of RGDP). This reflects special government attention, and owed much to central government revenues generated during the oil boom period. But it was also the result of the relative stagnation in other sectors.

In-between these two extremes, there was considerable diversity. Economic structure continued to change in North and West Sumatra, although generally at a lower rate than elsewhere outside Java. The initially very low manufacturing share of RGDP increased substantially in the land abundant regions, as did trade and government administration. In addition, the rise in the non-agricultural share of RGDP was quite rapid, even in the largely agricultural-based transmigration regions of Sumatra.

Labour Supply and Unemployment. Labour force increases were intertwined with these similarities and contrasts in economic change. Growth was very much higher in the most Outer Islands provinces than on Java since in the period 1971-90 (Table 5). Higher birth rates characterised most of the regions outside Java in the early 1970s, and fertility decline lagged well behind Java, although rates had also begun to drop outside Java by the early 1990s.[13]

Inter-regional migration has also been a significant factor affecting different rates of population and labour force growth. This occurred especially during the resources boom period and the peak years of the transmigration program - from the mid 1970s to the mid 1980s. The flows mainly from Java to Lampung in south Sumatra in the 1970s gave way to a more diversified pattern towards the end of the decade. New areas of Sumatra and more land abundant regions of Kalimantan and Sulawesi became major destination areas of the transmigration program (Hugo, Hull, Hull and Jones, 1987: 179-185).[14] The resource rich provinces and relatively small, under-developed provinces in Sumatra recorded particularly high rates of net in-migration.[15]

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[13] See Hugo, Hull, Hull and Jones (1987) and Central Bureau of Statistics (1994).

[14] The peak period of government assisted transmigration was in the Third Five Year Plan period (1979-84) when it is estimated that slightly over 350,000 households or around 1.5 million individuals were resettled outside Java. In this brief five year period more households were shifted outside Java than in any other period in Indonesia's history. The share of transmigrants going to all provinces of Kalimantan, Central and Southeast Sulawesi and Irian Jaya also rose steeply at this time.

[15] Of all provinces, East Kalimantan recorded the most rapid increase in net-migration relative to the size of its population in 1971, mainly related to employment opportunities created by resource booms (first timber and later oil and gas), and supported by movement of households through the transmigration program.

Given some of the above-mentioned differences in economic performance, there was remarkable uniformity in unemployment rates in 1990 (Table 5). Outside Maluku and Irian Jaya where double digit rates were recorded, these ranged between five and nine per cent in most other provinces. Nevertheless, urban unemployment has tended to be higher in the resource rich provinces, in contrast to low rates in Java.[16] It seems likely that high wages in resource-based industries had an impact on inter-regional rates of migration - especially from Java and Sulawesi - to the resource rich provinces and contributed to higher rates of unemployment

The Changing Structure of Employment. What was the impact of economic change and labour force growth on employment? Table 5 shows the change in the shares of employment in major sectors in 1971 and 1990, expressed as an index of growth in Indonesia as a whole. The figures are standardised for different rates of total employment growth in each province.[17]

In 1971, the contrasts in employment between Java and most Outer Island provinces were greatest in agriculture and manufacturing rather than in trade and services. The concentration of employment in agriculture was even greater than RGDP in most Outer Island provinces in 1971 - the share was close to 70 per cent or more in all provinces, and well above 80 per cent in a significant number of provinces.

Conversely, manufacturing provided a tiny fraction of jobs - frequently below five per cent - in most Outer Island provinces. The difference in the share of service sector activities was much smaller between groups of provinces - the services sector provided substantial employment in several of the more developed regions (North West and South Sumatra) and also in some of the poorer Outer Island regions (North and South Sulawesi and West Nusa Tenggara).

Looking at the period 1971-90, the outstanding feature of agricultural employment change was much more rapid growth in the southern Sumatran `transmigration'

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[16] Urban unemployment rates remained high throughout this period, although they did not increase significantly more rapidly than in other provinces. Data for 1976-77 and 1991/92 indicate that unemployment rates were highest in resource rich provinces such as East Kalimantan, Riau and Maluku in both periods.

[17] Higher growth rates in labour force and employment growth in many of the Outer Island regions were reflected in more rapid growth in jobs in all sectors than on Java. But significant contrasts emerge between provinces after the rates of growth in individual sectors are standardised by rates of expansion in total employment in each province.

provinces. Agricultural employment growth was also relatively rapid in the resource rich provinces as well as in the densely populated and poorer provinces. Primarily agricultural based resettlement clearly played a central role in the creation of new jobs in the Southern Sumatran provinces. Employment in agriculture (relative to other sectors) grew much more quickly than in all other regions (see Table 5).[18] In addition to absorbing workers from the region, new jobs created in these regions also helped ease problems of land scarcity in certain parts of Java, principally Central Java from where most of the transmigrants originated.

Patterns of manufacturing employment were quite varied. This reflects the twin effects of manufacturing employment created through exploitation of Indonesia's rich natural resources and jobs created for abundant unskilled labour in labour-intensive industries. Thus, both the resource rich and southern Sumatran provinces recorded relatively rapid growth in manufacturing employment. In both cases, the growth of jobs in manufacturing was faster than in the Java-Bali. The growth in the timber-based and especially plywood industries appears to have played a central role in much of Kalimantan and in Maluku.

Among the other groups of provinces, the extra-ordinarily low share of manufacturing in employment and RGDP in 1971 meant that any growth of medium and small scale industry would have a major impact. Agro-processing industries such as rubber, oil palm and sugar - in addition to the uneven distribution of resource-based industries such as oil refining, fertiliser and cement - all contributed to employment growth in manufacturing (Hill, 1989).

On Java-Bali, the experience of Central Java contrasts with that of its western and eastern neighbours. The index of manufacturing employment growth in Central Java was a little over half (64) that of all Indonesia for the period 1971-90. In contrast, in West and East Java - principally around Jakarta and Surabaya - first industries oriented to the domestic market and later export-oriented manufacturing industries developed in a range of industries such as food processing, chemicals, machinery, garments and wood products.[19]

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[18] Given agricultural value added growth of around 3-5 per cent, this implies a very high elasticity of employment with respect to output growth of close to a 1.0.

[19] The index of manufacturing employment growth was well above the national average in West Java, East Java and Bali (126, 144 and 140 respectively) during the period 1971-90.

One other important contrast between regions is apparent in the ratio of urban relative to rural employment growth. The ratio of urban growth in all sectors was much higher in the Java-Bali provinces compared with almost all Outer Island provinces. This is partly related to much slower expansion of employment in rural Java, as many job seekers found work in urban areas on Java or migrated to the Outer Islands. Outside government administration, employment growth in both formal and informal sectors was also heavily concentrated in the growing towns and cities of Java.[20] Earlier this was in response to pressures on land. Later, new job opportunities were increasingly taken up by more mobile and educated villagers (Manning, 1996).

To sum up, economic development and policy contributed to a more integrated labour market on a provincial basis from 1971-1990. The sharp contrast between densely populated Java and many of the relatively land surplus Outer Island regions was no longer evident by the 1990s. With the partial exception of several poorer Eastern Islands, the share of the work force working outside agriculture and in urban areas had grown quite rapidly across the archipelago. There has been substantial inter-regional migration from land scarce provinces of Java, Sulawesi and Nusa Tenggara to more rapidly growing, resource-abundant regions.

The oil boom was not only a great boon to the national economy in terms of infrastructure and human capital. It also stimulated, non-agricultural employment growth across Indonesia, both directly in services and indirectly in other sectors. The diversified natural resource base across regions contributed to this process. This marks Indonesia apart from several neighbouring countries - such as Thailand - where economic development was highly concentrated in one or a few regions (Hill, 1996). The regional labour market landscape might have been very different had liberalisation and non-oil export growth been the main pillar of economic growth from the early years of the New Order, as it has been in the past decade.

At the same time, patterns of inter-regional economic change contributed to clearly identified contrasts in provincial - and sub-provincial - labour market structure. This was principally related to two factors: contrasting agricultural potential and resource availability, and the recent concentration of manufacturing development close to the capital city. Different legacies of educational achievement and growth in schooling also played a part. The resource-abundant provinces of Sumatra and Kalimantan experienced more rapid growth in manufacturing and industry, than the poorer regions

[20] Rapid urban employment growth in Java-Bali was partly the result of extension of the area classified as urban rather than the movement of people out of rural places.

of Nusa Tenggara and much of Sulawesi which remained heavily dependent on agriculture and services.

Regional Labour Markets in the 1990s

To what extent were these patterns of increasing labour market integration sustained following the period of deregulation in the latter half of the 1980s? Pangestu and Azis (1984) and Azis (1986) in particular highlight the lower incidence of poverty and performance on other development indicators on Java and in the Western part of Indonesia rather than in the East.

We first examine developments according to the seven labour market groups identified above, before turning to a more disaggregated look at employment and wages.

Change by Province Group. We saw above that economic growth was rapid in most provinces and through the period 1971-1990. Higher total RGDP growth in several of the better endowed Outer Island provinces translated into slower per capita income growth. This was largely due to much faster rates population growth - especially in the western part of Indonesia.

Rapid and relatively uniform growth in real RGDP continued across provinces into the 1990s. Growth rates ranged across a relatively narrow band of 5-10 per cent in most provinces in the period 1987-92 (Table 6). It was most rapid in group 3 (`other land abundant' provinces) and slower on Java. But on a per capita basis rates were quite rapid on Java and also in the poorer, densely populated regions in eastern Indonesia.

The time period is too short to draw firm conclusions regarding differing rates of output growth across sectors. However, two patterns appear clear. First, in two of the slowest growing sectors on a national scale - agriculture and government administration - increases in growth were more rapid Outside Java than on Java. Second, manufacturing growth continued to be surprising rapid in most Outer Island groups of provinces during the deregulation period. It was slower in the resource abundant and southern Sumatran groups. But even in these groups, growth rates were still well above five per cent per annum. The Outer Islands did not lag as a group relative to Java in terms of growth in manufacturing output.

What was the impact of these changes on employment and wages? For the period 1987-94, the contrast in employment experience between Java and the Outer Islands was greater than was implied by their respective RGDP growth rates.[21] The absolute decline in employment in the agricultural sector and the substantial rise in manufacturing employment on Java-Bali contrasts with continued labour absorption in agriculture in all of the Outer Island groups.

The share of new jobs created in manufacturing was much higher on Java-Bali than in all the Outer Island groups (Table 7). Whereas close to half all non-agricultural jobs went into manufacturing on Java, the corresponding share was around one-third to one-quarter outside Java.

This pattern is not unexpected. Much of the labour intensive-industry was concentrated on Java. Thus the employment elasticity - growth in employment per (percentage) unit growth in output - could also be expected to be considerably higher.[22] Nevertheless, the differences between Java and the Outer Islands have been striking. They point to the critical role of the relatively labour-intensive industries for labour absorption on Java. The rapid rate of expansion of manufacturing employment - counterbalanced by the fall in agricultural employment - points to a major transformation in the labour market on Java.[23]

Employment growth by major non-agricultural sector was relatively uniform in the Outer Island groups. Services (including construction) took a high share of new jobs, followed by trade and manufacturing. However, agricultural labour absorption varied substantially across province groups. It was higher in the resource and land abundant province groups but surprisingly low in Southern Sumatran provinces of Jambi, Bengkulu, South Sumatra and Lampung.

The reasons for slower rates of both aggregate and agricultural employment growth in the Southern Sumatra provinces - the regions with by far the most rapidly growing

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[21] The RGDP and empoyment data cannot be compared directly because they refer to different time periods. Also, as already noted, the growth rates implied by the employment data need to be interpreted with care, given quite large year to year fluctuations by sector - even on a national scale.

[22] The employment elasticity implied for the manufacturing sector on Java from these figures was around 0.75, well above that recorded for the 1970s and early 1980s (around 0.5).

[23] The rate of decline in agricultural employment may be overstated in the National Labour Force data for 1994. But the decline was so large that it suggests an important transformation was already underway.

total and agricultural work force in the 1970s and 1980s - are not obvious. One possible explanation is that the rapid growth in manufacturing around Jakarta was beginning to influence labour markets in these southern Sumatran provinces. In the region of Lampung, there are appears to have been a reverse flow of migrants back to Java in search of jobs in manufacturing and services around Jakarta. This heralds an important reversal of the huge flows which took place in the other direction in the previous two decades. Rapid manufacturing growth on Java would seem to have begun to have a wider impact on labour markets Outside Java than in the previous two decades.

How did these patterns of employment growth impact on wages? The more rapid growth in manufacturing employment on Java is reflected in wage trends. Wages in all sectors except agriculture grew more rapidly on Java-Bali than in any of the other province groups (Table 8). They grew least rapidly in southern Sumatra and the other land abundant provinces.

The data point to problems experienced in the wake of large scale movement of labour into agriculture in the previous decade in southern Sumatra and land abundant provinces. The table also shows that the poorer densely/populated regions eastern Indonesia recorded relatively high rates of wage growth compared with other provinces, although wage increases appear to have lagged behind those in other provinces in services and `other' sectors. The employment data shown in Table 7 indicate a similar pattern. Manufacturing employment in particular was relatively rapid in the poorer and densely populated provinces. The data do not suggest, in general that these provinces were lagging relative to the rest of Indonesia in terms of employment and wage growth during the 1990s.

Employment and Wages in Key Labour Market Areas. To enable a more disaggregated analysis, the data were broken down for several major centres of manufacturing development. These included the BOTABEK region - covering the three rapidly industrialising districts surrounding Jakarta - Surabaya and surrounding districts, and Medan and other North Sumatra industrial centres.[24] Several other traditional centres of manufacturing employment were also distinguished: Bandung city and district, major Central Java cities (Semarang, Solo, Klaten and Yogyakarta) and the three other major Sumatran cities (Palembang, Padang and Pakanbaru).

[24] The districts surrounding Surabaya include Gresik, Mojokerto and Sidoarjo. Around Medan they incude Pematang Siantar and Asahan.

To what extent was manufacturing employment in the period 1987-94 concentrated around Jakarta in the west and Surabaya in the eastern part of Java? Not nearly as much as might be expected. While the percentage of Indonesian manufacturing employment located in the Surabaya region rose steeply, Greater Jakarta's (Jakarta plus BOTABEK) share remained constant (Table 9). The share of manufacturing employment also fell in both Bandung region and the Central Java cities.

But much of the growth of smaller scale and cottage industry seems to have remained outside the major cities. The share of manufacturing employment increased in West and Central Java outside the major cities. Signs of flourishing small scale industry are evident in the smaller Central Java cities - such as in the north coast cities of Tegal and Kudus (a traditional centre of *kretek* cigarettes) and in the furniture manufacturing centre of Jepara. This appears to mark a significant departure from patterns of slow manufacturing growth in the Java heartland observed in the earlier two decades. Export-oriented industries based around Jakarta and Surabaya may well have forged more intense links with small and medium enterprises in Central Java than the domestic-oriented manfacturing industries which had grown rapidly in the 1970s and 1980s.[25]

Outside Java, manufacturing employment growth was uneven. It was rapid in the Medan region and - surprisingly - in the poorer eastern Indonesian provinces of East and West Nusa Tenggara. But growth in jobs in manufacturing was slower in most other regions. In Kalimantan - the centre of the plywood industry - this can be might be attributed to the effect of bans on export of semi-processed timber imposed in the mid 1980s, and perhaps also the slow-down in plywood exports during the 1990s.

Wage growth to some extent mirrored that of employment. Real hourly wages are estimated to have increased by just over two per cent per annum in manufacturing over the period 1987-1994.[26] The increase was most rapid in West and East Java - especially in the BOTABEK region - relative to average growth in manufacturing wages in Indonesia as a whole (see last column in Table 9). This seems to confirm the

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[25] In addition, the new export-oriented industries in the west and east of Java would not have had backwash effects on traditional low productivity industries in Central Java - one outcome which was a feature of manufacturing growth in the 1970s (Hill, 1980). Continuing quite large wage differentials between the Central Java and both Jakarta and West Java may have also influenced investment growth in the former province.

[26] There appear to be two quite distinct time periods, however: wages grew relatively slowly before 1990 and then accelerated after that.

presence of tighter labour markets in the centres of large and medium scale manufacturing employment.[27] However, the more rapid increases in these regions may also partly represent institutional influences on wages, given the sharp increases in minimum wages and greater efforts at implementation in Jakarta and Surabaya from the early 1990s.

Outside Java-Bali, the pattern of nominal wage growth varied considerably between regions. This partly reflects the conditions of particular industries and regions. One example is the concentration of new jobs in the plywood and new timber processing industries in Kalimantan. Another is the international migration of workers from the islands Lombok and Flores in eastern Indonesia to West and East Malaysia respectively (Hugo, 1993; Manning, 1996: Chapter 4). In this latter case, out-migration probably had a powerful direct impact of on local labour markets. In addition, the inflow of remittances stimulated growth in the local construction and transport industries.

To what extent did this growth in manufacturing employment and wages influence labour developments in the agricultural sector? As already noted, negative rates of jobs growth in agriculture became evident in Java-Bali in the 1990s. The decline was most marked in West and Central Java (Table 10). The extent of the decline in Central Java (and Yogyakarta) was consistent with rapid nominal wage growth in agriculture in this region. The twin effects of small-scale industry growth and out-migration to the major centres in Central and East Java appear to have begun to exert a powerful impact on real wages in Central Java.[28]

There have been calls for policies which encourage greater decentralisation of investment to this traditionally low wage province. The above patterns suggest that such policies need to be evaluated in the context of broader national labour market developments. Attempts to speed up decentralisation of investment could not be justified if they led to a slower rate of overall growth in manufacturing, and less word opportunities for job seekers from Central Java.

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[27] Relatively slow growth in the Jakarta region is a puzzle. It may be that the more dynamic industries are mostly located outside the borders of the capital. In part, this seems also to represent a process of catching up. Jakarta wages were much higher in 1987 than in all other regions.

[28] Many of the workers in the new manufacturing establishments in the BOTABEK region were from Central Java (White et al., 1992; Jones and Mammas, 1996). It is also worth mentioning that the slow-down in labour force growth - related to demographic factors - has been particularly marked in Central Java and Yogyakarta.

Outside Java, employment growth in agriculture was positive in all regions, except in the poorer provinces of eastern Indonesia. Hourly wage growth was above the national average in North Sumatra and the group of eastern Indonesia islands (NTT, NTB and East Timor). It was below the national average in other groups of provinces. Relatively slow growth of hourly wages again stands out in Kalimantan and raises the questions regarding the extent of the impact of government controls - which have supported the expansion of resource- based industries - on local labour markets.[29]

Thus to conclude, we found much less evidence of widening disparities in employment and wages between the west and east of Indonesia than was expected. Labour market diversification seems to have been remarkably widespread throughout the archipelago. Changes have clearly been most rapid on Java. But they were also quite substantial elsewhere. Similar to patterns described above, real wages have continued to rise more rapidly on Java. But they have done also in all other provinces and especially in the poorer regions of West and East Nusa Tenggara, in contrast to apparently slower growth in wages in these latter two provinces in earlier periods.

[29] Real wage growth was still positive and quite rapid in Kalimantan. One important issue here is the extent to which new job opportunities in industries such as plywood have been taken up by inter-island migrants from Java and Sulawesi rather than by local people.

IV. WAGE DIFFERENTIALS BETWEEN REGIONS

So far the analysis has concentrated on shifts in employment and wages by province group and region in absolute terms and relative to Indonesia as a whole. One important issue is how have wages moved in relative terms across provinces. We examine wage trends and structure over a longer time period first, before turning to the some of the determinants of regional patterns of wage differentials.

Viewed from a longer term perspective, both nominal and real wages (adjusted for inter-regional differences in the cost of living) were significantly higher in Jakarta and the resource-based provinces compared with other provinces in the 1970s.[30] They were close to double those on Java in nominal terms and nearly 50 per cent higher in real terms, after differences in the cost of living are taken into account.[31]

How did these differentials change from the 1970s to the 1990s. After adjusting for differences in the cost of living across provinces, the index of wages in the Java-Bali provinces had risen substantially by the early 1990s (Figure 2). The spread between the highest and lowest wage provinces fell, as did the ratio of wages in the five highest wage to the five lowest wage provinces.

Real wage differentials were smaller between groups of provinces by the early 1990s. The three exceptions were Jakarta, the Sumatran out-migration provinces - where wages remained high - and the densely populated, poorer regions of Eastern Indonesia.[32] In the latter, wages which were already lower than the national average, and fell below those in the Java provinces.[33]

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[30] The rather heterogeneous group of workers in construction, transport and services (outside government) was chosen for regional wage comparisons since employees in these jobs were widely represented across provinces. Ideally we would have liked to compare the earnings of construction workers across provinces. But the sample size of wage workers in this industry was relatively small, and intra-regional variances were frequently very high, especially in 1977.

[31] In real terms, wages were second only to Jakarta in the out-migration provinces of North and West Sumatra, owing largely to the relatively low cost of living in these provinces.

[32] The high wages in the out-migration provinces of Sumatra is puzzling. It may be the consequence of high rates of out-migration of relatively educated workers (in both North and West Sumatra schooling levels for a long time have been quite high by Indonesian standards). Thus, more educated workers moved out for better income opportunities in Jakarta and other major cities and this contributed to a relative scarcity of unskilled workers in these provinces.

[33] This trend appears to have been reversed, however, in recent years (see above).

In general, these trends suggest increasing integration of the national labour market during the latter part of the 1980s and into the 1990s. In almost all provinces, there is a clear tendency for real wages to rise in the 1990s, and these increases seem to have been most marked for provinces where real wages were initially low.

We examined the determinants wage differentials across regions in 1994 with the help of a regression model. The wage variable (the log of hourly earnings) was adjusted for cost of living differences between provinces based on the province wide minimum physical needs index (KFM) for a single worker. Dummy variables were inserted to capture regional effects. These were combined with other personal characteristics (age, sex and education) and work place characteristics (industry) of employees. Only less educated employees (junior high schooling and below) were included in the analysis to help control for skill differentials in the composition of the work force across provinces and industries.

The results of the regression analysis are shown in Table 11. The first regression equation (first two columns) tested for the impact of the regional variables on wages. West Java (outside the BOTABEK and the Bandung regions) was chosen as the reference dummy. The coefficients for most regions were statistically significant, even after we controlled for differences in the cost of living across provinces. Most of the signs were in the right direction. For example, the regression coefficients were positive for Jakarta and BOTABEK, and negative for Central Java and the poorer eastern Indonesia provinces (NTB, NTT and East Timor). However, the overall explanatory power of the model was low ($R^2 = 0.05$).

The coefficients of most regional dummy variables were still significant after we controlled for differences in other characteristics of employees. However, as to be expected, the T-ratios were larger for the age, education and sex dummy variables than for the regional dummies. The R^2 improved considerably (0.30) when these variables were introduced into the equation (see columns 3 and 4 of Table 11). There still appears to be fragmentation of the Indonesian labour market. But regional variables explained only a small part of wage differentials between non-agricultural employees.

V. CONCLUSIONS

We started this paper by asking whether Outer Islands labour market transformation has suffered during the deregulation period. The quite emphatic answer is no. Employment structure changed rapidly outside Java, although wages rose more quickly in the industrial centres on Java from the mid 1980s. There were substantial shifts in employment away from agriculture and wages also grew quickly in most Outer Island provinces, and especially in the poorer eastern island provinces. The rapid shift of labour out of agriculture was by no means restricted to the key centres of manufacturing growth in West and East Java.

In several regions, labour market developments appear to have changed significantly in recent years. The cases of Southern Sumatra and the poorer regions of eastern Indonesia were prime examples. In both groups of provinces, there were obvious signs of excess labour supply during the 1970s and early 1980s. By the 1990s, rising real wage rates and diversification of employment were apparent in both Southern Sumatra and the two Nusa Tenggara provinces.

Several other conclusions relate to the rapid change in the structure of employment and wages outside Java. First, the large majority of new jobs were still concentrated in agriculture, trade and services in the most Outer Island regions in the period 1987-94. Nevertheless, manufacturing employment expanded quite quickly, although the share of total employment created in this sector still remained quite small.

Second, developments on Java appear to have provided a stimulus for labour market change in other regions. Two examples were highlighted in the paper: the decline in labour force growth rates in Southern Sumatra and rising agricultural wage rates in Lampung. The latter province was one of the regions where poverty incidence was highest and in-migration was most rapid in Indonesia during the 1980s. There now appears to have been a reverse flow of workers back to Java in response to manufacturing job opportunities created by the export boom.

The growth in manufacturing employment on Java had other effects. The greater abundance of jobs has meant that there has been less reason for Javanese workers to seek employment in the Outer Islands. The narrowing wage gap with most Outer Island provinces has meant there was less incentive to do so in the mid 1990s.

Third, aside from the stimulus provided by developments in Java-Bali, it was also argued that there were important local factors which stimulated employment in several Outer Island regions. These included manufacturing growth in a selected

number of regions such as North Sumatra, continued diversification of agriculture and international labour migration. The challenge in the next decade will be to maintain the pace of economic change which has stimulated these developments outside Java.

*Qualifications.*A word of caution is warranted in the interpretation of trends outlined in the paper. The above conclusions are preliminary in several respects. First, the sharp decline in agricultural employment on Java derives from one data source, namely the most recent National Labour Force Survey.[34] Evidence of this marked change needs to be corroborated with data from other surveys. Second, the analysis has been conducted at a highly aggregate level. There are still many sub-regional pockets of poverty and labour immobility in Indonesia. Clearly, special programs such as *Inpres Desa Tertinggal* are still needed to help overcome these problems.

Further Research and Policy Issues. Further research is needed to examine local labour market processes and to substantiate some of the tentative conclusions outlined in the paper. Very little is known about the relationship between changing patterns of inter-regional labour mobility and their impact on wages and labour welfare in Indonesia. As labour mobility increases, the impact on changing economic structure and employment patterns on the job opportunities of migrants compared with local, non-migrant workers has become an important social and economic issue. This is particularly true in less developed regions where in-migration both to urban and rural areas has been intense - as in Southern Sumatra, parts of Kalimantan, Maluku, Irian Jaya and East Timor.

Two sets of issues are in urgent need of further investigation in a regional context. The first relate to the apparent accelerated shift out of agriculture in recent years. The second set of issues pertain to the factors driving high rates and new patterns of manufacturing employment growth, especially outside Java. One key question is the extent to which these developments have been increasingly influenced by national or sub-national rather than local structural change. Another is the extent to which different regional labour markets are affected by contrasting stimuli associated with economic growth and policy. Such factors include export-oriented industrial growth, rising agricultural productivity, and inter-regional and international migration.

With regard to specific regions, examples of key issues in need of further investigation include:

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[34] A decline in the absolute numbers employed in agriculture had become apparent by around 1990. But the sharp decline was only observed in 1994.

- Factors contributing to the marked slow-down in agricultural employment in certain regions such as Southern Sumatra, and the apparent dramatic decline in agricultural employment on Java

- The apparent more rapid increase in manufacturing employment and wages in densely populated Central Java than in the period of the oil boom.

- The relatively slow growth in wages and manufacturing employment in Kalimantan in the context of government regulation of the timber and other industries, and the recent decline in exports in the plywood industry

- Factors accounting for the apparent dramatic reversal of employment and wages trends - especially in manufacturing - and their impact on household incomes and welfare in the poorer provinces of West and East Nusa Tenggara

These a just a few of the important regional labour market issues. To examine them satisfactorily, careful thought will need to be given to generating new data sources which enable researchers to draw the link between labour migration and other indicators of labour market performance.[35]

Answers to all these questions have important policy implications. For example: possible efforts needed to support local agriculture and help solve regional employment and poverty problems; further deregulation required to assist employment growth in resource abundant and poorer Outer Island regions; and the role of poverty alleviation programs - such as the *Inpres Desa Tertinggal* (IDT) - for local employment and incomes in regions where many people are moving out, and those left behind are being increasingly supported by remittances.

This is a forbidding but by no means exhaustive list of issues. One thing seems clear. Patterns of regional labour market change are very different in the 1990s than in the earlier years of the New Order. Innovative policies based on new national and regional patterns of development are becoming increasingly necessary for improvements in labour welfare as Indonesia approaches the year 2000.

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[35] Unfortunately, national data sets sources do not provide sufficient information to support analysis of the impact of labour migration on labour markets. Inter-provincial migration data are collected in the censuses and the intercensal surveys but these sources do not collect information on wages. The National Labour Force Survey collects data on wages but not on migration.

REFERENCES

Azis, I. J. (1996) `Eastern Indonesia in the Current Policy Environment', in C. Barlow and J. Hardjono (eds), *Indonesia Assessment 1995: Development in Eastern Indonesia*, Research School of Pacific and Asian Studies, Australian National University, Canberra and Institute of Southeast Asian Studies, Singapore, pp.75-122.

Das, S. K. and A. Barua (1985) `Regional Inequalities, Economic Growth and Liberalisation: A Study of the Indian Economy', *Journal of Development Studies* 32(3), 364-390.

Hill, H. (1980) Choice of Technique in the Indonesian Weaving Industry, PhD Thesis, Australian National University, Canberra.

Hill, H. (1989) *Unity and Diversity: Regional Economic Development in Indonesia since 1980*, Oxford University Press, Singapore.

Hill, H. (1992) `Regional Development in a "Boom and Bust Petroleum Economy": Indonesia since 1970', *Economic Development and Cultural Change*, 40(2), 351-79.

Hill, H. (1995) *Southeast Asia's Emerging Giant: Indonesian Economic Policy and Development Since 1966*, Cambridge University Press, Cambridge.

Hill, H. (1996) Regional Development in Southeast Asia: the Challenges of Sub-National Diversity, unpublished paper, Australian National University, Canberra.

Hill, H. and A. Weidermans (1989) `Regional Development in Indonesia: Patterns and Issues' in H. Hill (ed.) *Unity and Diversity: Regional Economic Development in Indonesia since 1980*, Oxford University Press, Singapore, 3-54.

Hugo, G. (1993) `Indonesian Labour Migration to Malaysia: Trends and Policy Implications', in *Southeast Journal of Social Science*, 27(1), 36-70.

Hugo, G., T. D. Hull, V. J. Hull and G. W. Jones (1987) *The Demographic Dimension in Indonesian Development*, Oxford University Press, Singapore.

Indonesia Central Bureau of Statistics, National Family Planning Coordinating Board and Ministry of Health (1995) *Indonesia: Demographic and Health Survey 1994, Preliminary Report*, Macro International Inc, Jakarta.

Jian, T., J. T. Sachs and A. M. Warner (1996), `Trends in Regional Inequality in China', *NBER Working Paper* No. 5412, New York.

Jones, G. W. and S. G. M. Mamas (1996) `The Changing Employment Structure of the Extended Jakarta Metropolitan Region', *Bulletin of Indonesian Economic Studies*, forthcoming.

Manning, C. (1996) Labour Market Transformation in Indonesia: The Halting Steps of an East Asian Giant, Unpublished manuscript, Canberra.

Pangestu, M. and Azis I. J. (1994) `Survey of Recent Economic Developments', *Bulletin of Indonesian Economic Studies*, 30(2), 3-37.

Rosner, P. L. (1995) Is Indonesia Approaching the Turning Point: Observations on Recent Wage and Employment Trends, unpublished paper, DSPII, Jakarta.

Sundrum, R. M. (1986) `Indonesia's Rapid Economic Growth: 1968-1981', *Bulletin of Indonesian Economic Studies*, 22(3), 40-69.

Sundrum, R. M. (1988) `Indonesia's Slow Economic Growth: 1981-1986', *Bulletin of Indonesian Economic Studies*, 24(1), 37-72.

White, B. *et al.* (1992) `Workshops and Factories: Dynamics of Production Organisation and Employment in West Java's Rural Footwear Industries', Paper presented at the 9th Biennial Conference of the Asian Studies Association, July 6-9 1992.

TABLE 1: ECONOMIC GROWTH RATES BY MAJOR SECTOR, INDONESIA, 1983-1994 (constant prices)

Sector	1983-1987 (1983 Prices)	1987-1993 (1983 Prices)	1993-1994 (1983 Prices)
Agriculture	3.3	3.3	0.3
- Food	2.8	2.5	-2.7
Mining	0.4	2.8	5.3
Manufacturing	13.2	10.5	11.1
- Non-oil and gas	12.0	11.8	12.0
Construction	1.1	11.5	14.7
Trade, hotels and restaurants	5.9	8.1	9.2
Transport and communications	4.8	9l0	7.6
Banking and finance	11.6	11.6	12.3
Services	5.5	4.9	4.0
- Government administration			
All Sectors	5.0	6.7	7.3

Note: The 1993-1994 growth rates are not directly comparable with those for the earlier periods.

SOURCES: CBS, National Accounts, various years.

TABLE 2: DISTRIBUTION OF THE INCREASE IN EMPLOYMENT BY MAJOR SECTOR, INDONESIA 1971-1994 (%)[1]

Sector	Time Periods 1971-80	1980-85	1985-90	1989/90-1993/94[2]
Agriculture	24	34		-48
Non-Agriculture	76	66		148
TOTAL	100	100		100
N (000)	12033	19412		6002
Non-Agriculture				
Services	34	19	15	19
Trade, hotels and restaurants	27	46	18	25
Manufacturing	18	19	34	26
Construction	10	8	12	14
Transport and communications	6	8	10	10
Mining	3	1	4	3
Banking and finance	2	-1	6	2
Electricity, water, etc.	(0.3)	(0.1)	1	1
TOTAL	100	100	100	100
N (000)	9091	5677	7117	8869

[1] Distribution of the total increase in employment in each period by sector of employment. Because of different sampling procedures and data collection method used, growth rates calculated from the Population Censuses cannot be compared directly with those from the National Labour Force Surveys. The data on agricultural employment for 1985 cannot be directly compared with data from the 1980 and 1990 Censuses.

2 Two-year averages to minimize the effects of unexplained annual fluctuations in employment estimates.

SOURCES: CBS, Population Census 1971 (Series C), 1980 and 1990; Intercensal Population Survey 1985; National Labour Force Surveys 1989, 1990, 1993 and 1994.

TABLE 3 GROWTH OF LABOUR FORCE AND EMPLOYMENT, JAVA AND THE OUTER ISLANDS, 1986-1994 (% per annum)

	JAVA		OUTER ISLANDS		INDONESIA	
	1986/7-1993/4	1989/90-1993/4	1986/7-1993/4	1989/90-1993/4	1986/7-1993/4	1989/90-1993/4
I LABOUR FORCE						
Total	1.9	1.7	3.0	2.8	2.3	2.2
Urban	6.0	6.4	9.2	10.8	6.9	7.6
Rural	0.1	-0.4	1.6	0.9	0.7	0.2
II EMPLOYMENT						
Agriculture	-0.9	-3.3	1.6	-0.9	0.3	-1.8
Manufacturing	6.8	5.0	10.4	11.3	7.7	6.7
Construction	n.a.	12.1	n.a.	13.0	n.a.	12.3
Trade	3.2	3.6	5.7	7.4	3.8	4.7
Transport	n.a.	7.8	n.a.	9.8	n.a.	8.4
Finance and Banking	n.a.	6.5	n.a.	10.9	n.a.	7.7
Other Services	n.a.	3.2	n.a.	2.3	n.a.	4.3
All Sectors	1.8	1.3	2.7	2.9	2.2	1.9

Source: CBS SAKERNAS (National Labour Force Survey) 1986, 1987, 1993 and 1994.

TABLE 4: INDICES OF REAL LABOUR EARNINGS OF LESS EDUCATED WORKERS IN SELECTED SECTORS AND LABOUR COSTS IN MANUFACTURING, INDONESIA, 1977-1990 (1983-100)[1]

SECTOR	YEAR				
	1977	1982	1987	1990	1994
I LABOUR EARNINGS[2]					
Agriculture	76	100	105	122	155
Manufacturing	68	100	98	108	130
ALL SECTORS	74	100	100	109	132
II LABOUR COSTS[3]					
All Manufacturing	71	100	114	132	175
Textiles, Clothing and Footwear	74	100	113	152	227

1 All series deflated by the all Indonesia CPI.

2 Earnings of primary school graduates and below as a proxy for unskilled and semi skilled labour.

3 For large and medium establishments, only.

4 No breakdown for these years.

SOURCES: Central Bureau of Statisitics, National Labour Force Surveys 1977,1982 ,1987 and1990; Survey of Medium and Large Manufacturing Establishments, various years.

TABLE 10: AGRICULTURAL EMPLOYMENT AND WAGES BY REGION: INDONESIA 1987-1994

Region	Agricultural Share of Total Employment (%)		Annual Growth Rate in Agricultural Employment (%)	Index of Agric. Wages Growth[2] (Indonesia = 100)
	1987	1994		
West Java	42	27	-1.5	97
Central Java	49	40	-1.8	116
East Java	56	23	-1.1	96
Bali	51	42	-0.8	76
North Sumatra	65	57	0.9	105
Southern Sumatra	69	62	0.5	81
Kalimantan	62	57	2.5	37
Sulawesi	63	60	0.5	61
NTB, NTT & E. Timor	76	65	-0.8	102
Maluku and Irian Jaya	77	72	3.6	*
Indonesia[1]	55	46	-0.3	100 (5.2)[3]

* Sample of wage workers too small.

1 Including Jakarta.

2 Index of average wage earnings per hour of less educated workers employed 25 hours or more in agriculture.

3 Real annual growth in average agricultural earnings per hour (growth in nominal earnings deflated by the Indonesian CPI).

Sources: CBS, National Labour Force Surveys, 1987 and 1994.

TABLE 11: REGRESSION ANALYSIS OF NON-AGRICULTURAL WAGE EARNINGS PER HOUR (log w) BY REGION: LESS EDUCATED WORKERS, INDONESIA, 1994

Variable		B Coefficient	T Ratio	B Coefficient	T Ratio
LOG W = dependent variable (log of COL adjusted hourly wages)					
Region 1	Jakarta	0.042	3.32	0.081	7.42
Region 2	Botabek	0.060	5.96	0.081	9.23
Region 3	Bandung & reg.	-0.086	-0.76*	0.018	1.90*
Region 4	C. Java cities	-0.001	-0.62*	0.023	0.25*
Region 5	Surabaya & other	0.136	14.05	0.185	22.09
Region 6	Other West Java		reference category		
Region 7	Other C. Java	-0.001	-0.13*	0.009	1.47*
Region 8	Other E. Java	0.033	4.01	0.052	7.19
Region 9	Bali	0.016	1.39*	0.035	3.36
Region 10	Medan & reg.	0.180	8.13	0.163	8.56
Region 11	Major Sumatra Cities	0.115	4.97	0.089	4.48
Region 12	Northern Sumatra	0.157	14.69	0.145	15.63
Region 13	Southern Sumatra	0.043	3.98	0.024	2.55
Region 14	Kalimantan	0.117	10.04	0.093	9.05
Region 15	Sulawesi	0.044	3.68	0.018	1.74*
Region 16	NTT, NTB, E. Timor	-0.067	-5.77	-0.075	-7.25
Region 17	Maluku, Irian Jaya	-0.171	-0.61*	-0.056	-2.31
Age 1	15-24		reference category		
Age 2	25-34			0.727	15.49
Age 3	35-49			0.114	22.94
Age 4	50+			0.116	15.60
Sex	Male		reference category		
	Female			-0.157	-31.03
Educ 1	No Schooling		reference category		
Educ 2	< Primary			0.035	3.68
Educ 3	Primary			0.070	7.77
Educ 4	Junior high			0.123	12.89
Ind 1	Food & textiles			-0.078	-12.55
Ind 2	Wood manuf.			-0.045	-5.94
Ind 3	Other manuf.			-0.074	-11.04
Ind 4	Construction		reference category		
Ind 5	Trade			-0.108	-13.35
Ind 6	Transport			-0.027	-3.51
Ind 7	Govern. admin.			0.096	7.69
Ind 8	Comm, Soc. services			-0.134	-18.34
Ind 9	Other services			-0.134	-18.34
Ind 10	Other industries			-0.268	-2.45
Constant	R^2	0.05		0.30	
	SE	0.210		0.197	
	F test	41.08		158.58	
	DF: Regression	16		32	
	Residual	11581		11565	

* Coefficient *not* significant at five per cent level or less.

1 Hourly wages adjusted for cost of living differences between provinces. Regional deflator based on differences in minimum physical needs index (KFM) across provinces.

Source: CBS, National Labour Force Survey, 1994.

TABLE 5: POPULATION, ECONOMIC STRUCTURE AND EMPLOYMENT BY PROVINCE GROUP, INDONESIA 1971 AND 1990

	Province Group/Province				
	Resource Abundant	Southern Sumatra	Other Land Abundant	Sumatran Outmigration	P
1. Population 1990 (million)[1]	13.5	15.6	8.9	14.3	
2. RGDP per capita 1990[2] (Index, Indonesia = 100)	123	85	78	99	
3. Real RGDP Growth 1971-90[3]					
Index (Indonesia = 100)	125	112[4]	111	114	
4. Labour Force Growth 1971-1990[4]					
Index (Indonesia = 100)	126	149	112	88	
5. Net Lifetime Migration Change 1971-90[5]					
% of Population in 1971	17.5	23.9	13.4	-8.0	
6. Urban unemployment rate 1990					
Index (Indonesia = 100)	135	99	126	118	
7. Index of Employment Growth 1971-90 (Index Indonesia = 100)					
Agriculture[8]	126	152	125	109	
Manufacturing	125	125	108	112	
Services	93	99	136	110	
8. Employment Growth 1971-90					
Index (Indonesia = 100)					
Urban	109	85	106	88	
Rural	176	195	130	81	

Notes: Data on RGDP shares are approximate only; data quality does not permit meaningful analysis of growth rates over time. Non-oil RGDP in major oil producing regions and for Indonesia as a whole. Except for row 1, all sub-totals are **unweighted means**. These are preferred because of widely different sizes of provinces within groups and our emphasis on spatial contrasts.

1 Sub-totals refer to total population in each group.

2 Calculated at constant 1983 prices. Based on RGDP growth rates per capita calculated by Hill (1995:Table 11.1) and intercensal population growth rates 1971-90.

3 Rp.000 per annum.

[4] Index of unweighted means = 95 if the small province of Bengkulu (index 163) is excluded.

[5] Net migration rate = In-migrants minus outmigrants divided by total population (expressed as a %). Change in net lifetime migration is one crude estimate of interprovincial population mobility. Lifetime migrant defined as a person living more than six months in a province, other than their province of birth at the time of the census. Sub-total equals total number of net migrants (000) in each group.

[6] Percentage growth rate per annum.

[7] Unemployment rate.

[8] The calculation was carried out in two stages. (i) For each province, employment growth in each sector was standardised by total provincial employment growth (total employment growth in each province = 100). A similar procedure was followed for Indonesia as a whole. (ii) For each province, the resulting index for each sector was then expressed as an index **of the index** for that sector for all Indonesia.

SOURCES: CBS, National Accounts (various years) and Statistical Year Book (various years). Hal Hill (1995). CBS, Population Census 1971 (Series D) and 1990 (Series S2).

TABLE 6: INDEX OF GROWTH IN VALUE ADDED BY SECTOR AND PROVINCE GROUP, INDONESIA 1987-1992[1]

Sector	Province Group				
	Resource Abundant[1]	Other Land Abundant	Sumatran Outmigration	Poor /Densely Populated	Java & Bali
Agriculture	110	151	118	145	38
Manufacturing	85	113	121	119	106
Construction	199	120	89	117	89
Trade	66	96	102	113	103
Transport	87	81	64	121	103
Government Admin.	227	215	173	162	54
All Sectors	100	115	101	104	98

[1]Excludes data for Iman Jaya which indicates implausibly high growth rates across all sectors for several years during the period covered. All data are in 1983 prices.

SOURCE: CBS, Provincial Income Trends 1987-1992.

TABLE 7: DISTRIBUTION OF THE INCREASE IN EMPLOYMENT BY SECTOR AND PROVINCE GROUP, INDONESIA 1987-1994

Sector	Province Group					
	Resource Abundant	Southern Sumatra	Other Land Abundant	Sumatran Outmigration	Poor /Densely Populated	Java & Bali
Agriculture	45	16	37	10	23	-42
Manufacturing	14	23	19	21	22	68
Trade	17	22	20	40	25	37
Other	24	39	24	29	30	37
All Sectors	100	100	100	100	100	100
N (000)	1525	984	812	855	855	5676
Index of Growth in Total Employment (Indonesia = 100)	209	99	180	92	77	83

[1]Growth rate of total employment (% per annum).

SOURCE: CBS, National Labour Force surveys 1987 and 1994.

TABLE 8: INDEX OF NOMINAL WAGE GROWTH AND DIFFERENTIALS BY SECTOR AND PROVINCE GROUP, INDONESIA 1987-1994

	Province Group				
	Resource Abundant	Southern Sumatra	Other Land Abundant	Sumatran Outmigration	Poor Densely/ Populated
Index of nominal wage growth (Indonesia = 100)					
Agriculture[8]	104	89	56	98	102
Manufacturing	81	75	108	103	103
Trade	79	75	73	86	110
Services	107	73	84	93	89
Other[1]	102	92	94	101	85
Index of nominal wage differentials (Resource Abundant = 100)					
Agriculture[8]					
1987	100	68	122	79	64
1994	100	58	65	75	63
Manufacturing					
1987	100	85	78	69	57
1994	100	79	103	87	72
Other[1]					
1987	100	85	97	84	76
1994	100	77	90	83	64

[1] Mainly construction and transport.

SOURCE: CBS, National Labour Force Survey 1987 and 1994.

TABLE 9: GROWTH OF EMPLOYMENT AND WAGES IN ALL SECTORS, NON-AGRICULTURE AND MANUFACTURING, INDONESIA 1987-1994[1]

Region	Index of Employment Growth (Indonesia = 100)		Region's share of All Manuf. Employment		Manu a of Reg
	Total	Non-agriculture	1987	Growth 1987-94[2]	
Jakarta	186	65	8.6	3.2	
Botabek	573	206	4.2	9.4	
Bandung and environs	53	31	6.3	3.7	
Other West Java	260	25	11.6	15.2	
Major C. Java cities	98	55	5.3	3.3	
Surabaya and environs	499	290	4.9	11.4	
Other Central Java	55	76	18.6	21.6	
Other East Java	8	39	15.9	11.1	
Bali	96	84	2.7	1.2	
Medan, Pem. Siantar, Asahan	193	85	0.6	1.8	
Major Sumatran cities[4]	421	158	1.0	0.8	
Northern Sumatra	133	117	4.4	3.9	
Southern Sumatra	99	103	4.2	3.9	
Kalimantan	208	116	3.7	3.4	
Sulawesi	140	70	5.1	1.3	
NTT, NTB, E. Timor	67	147	2.7	3.8	
Maluku, Irian Jaya	265	170	0.2	1.0	
TOTAL	100	100	100	100	
N (000)			5818	5022	
Growth Rate (% p.a.)	2.2	4.7			

* Negative growth rate recorded.

1 The figures are rough orders of magnitude only, owing to instability in employment estimates from the National Labour Force Surveys on an annual basis (due to both sampling and non-sampling errors).

2 Each region's share of the total increase in Indonesian manufacturing employment 1987-1994.

3 Index of growth in mean hourly wage earnings of less educated workers (lower secondary school and below). Covers employees working 25 hours or more in manufacturing.

4 Palembang, Padang and Pakanbaru.

[5] Average *real* annual growth rate in manufacturing wage earnings per hour in Indonesia 1987-1994 (growth in nominal wages deflated by the increase in the Indonesian CPI).

Sources: CBS, National Labour Force Surveys, 1987 and 1994.