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van der Eng, Pierre
Australian National University

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Pierre van der Eng

School of Management, Marketing & International Business
College of Business and Economics
The Australian National University
Canberra ACT 0200
Australia
Fax: +61 2 6125 8796
E-mail: pierre.vandereng@anu.edu.au

Abstract

This paper investigates whether the 'Kuznets hypothesis', that economic growth from low levels of GDP per capita is initially associated with an increase in income inequality and later followed by a decline in inequality, is supported by evidence for a less-developed country, Indonesia. The paper outlines the relevant features of the process of rapid growth and structural change, in particular industrialisation since the 1960s. It notes the possible consequences of this process for changes in income distribution, and draws on disparate sets of statistical data to trace trends in income inequality in Indonesia. The paper concludes that the evidence for Indonesia suggests an increase in inequality during the 1970s and a subsequent decrease of inequality until 1997. A comparison of the evidence with historical data for the UK and Japan suggests that income inequality in Indonesia was relatively low.

Key words: income inequality; Kuznets hypothesis; Indonesia; economic development
JEL codes: D31; N35; O15; R12

Growth and Inequality: The Case of Indonesia, 1960-1997

1. Introduction

Is there a trade-off between economic growth and income equality? Our understanding of changes in the size distribution of total income owes much to Kuznets' (1955) argument that, from low levels of living, economic growth first increases inequality, before it generates a more even distribution of income. The fundamental engine of this process is the fact that the marginal productivity of labour tends to be higher in the modern (read: industrial) sectors of the economy, which fuels the process of structural change. Each person 'defecting' from the traditional (read: agricultural) sector will increase inequality, until the majority of workers is employed in the modern sector and the marginal productivity of labour starts to even out across economic sectors, thus generating greater income equality.

Extensive debate on the historical consequences of industrialisation for the equality of income and wealth in Western countries indicates that, eventually, sustained growth is accompanied by greater equality (Lindert 2000) But is the historical experience of Western countries replicated by the rapidly developing countries in East Asia, such as Indonesia? Surveys based on data from large numbers of countries are not conclusive (*e.g.* Fields 1994), and the relevance of country case studies has been emphasised (*e.g.* Kanbur 2000). The literature on long-term changes in income distribution in Indonesia is thin. Relevant publications are restricted to relatively short-term changes (*e.g.* Yoneda 1985, Skoufias 2001), focus on measurement technicalities (*e.g.* Asra 2000), or primarily analyse changes in rates of poverty incidence (*e.g.* Tjondronegoro *et al.* 1996). In addition, they all take household expenditure data from Indonesia's National Socio-Economic Survey (*Susenas*) for granted, without due recognition of the shortcomings.

This paper provides an inventory of the available evidence of changes in the distribution of income in Indonesia as a consequence of rapid and sustained industrialisation during almost three decades. The gap in income and wealth between rich and poor is widely said to have increased. In part, this perception fuelled the violence that engulfed the country prior to the parliamentary elections in May 1997, and contributed to the large-scale disorder in May 1998 preceding the abdication of former President Soeharto.

The paper will first outline the relevant features of the process of rapid growth and structural change, in particular industrialisation since the 1960s. Section 3 will assess the possible

consequences of this process for changes in income distribution. Section 4 then discusses the strengths and shortcomings of disparate sets of statistical data available to trace trends in income inequality in Indonesia, and draws inferences from these data. Section 5 compares the evidence with historical data for Japan and the UK.

2. Industrialisation and rapid growth

During the 1950s, employment in manufacturing industry increased in Indonesia, especially in the densely populated core island of Java, as a consequence of import-replacing industrial policies. However, the share of manufacturing output in GDP and the share of industrial employment remained at a lowly 10 percent. High post-war population growth and increasing economic mismanagement in the late-1950s and early 1960s stalled the momentum of industrialisation. Consequently, Indonesia's GDP per capita stagnated at around US$70 during the 1960s. Annual growth of real GDP was 3.2 percent during 1951-1967, while population growth was 2.0 percent per year.

A turning point was 1966, when the later President Soeharto came to power and installed a new government whose first priority was economic stabilisation and reconstruction.[1] Growth of real GDP accelerated to an annual average of 7.1 percent during 1968-1997, considerably higher than population growth of 2.1 percent per year. The process of economic recovery after 1967 was bolstered, rather than triggered by the rapid growth of petroleum exports. Oil production increased after the introduction of production-sharing contracts ended a period of uncertainty about the position of foreign petroleum companies in Indonesia. Production tripled after 1966, and stabilised after 1973 at 500 to 600 barrels per year. Most of it was exported. After 1973, the oil boom was carried by the hike of international oil prices, and later by an extension of energy exports to natural gas.

Indonesia was not a major petroleum producer in the world, but the growth of oil revenues made a considerable difference to its underdeveloped economy. Table 1 shows that revenues from oil and gas exports came to dominate total exports in the 1970s. Production sharing contracts made the state-owned company Pertamina the country's main petroleum exporter after 1966. Pertamina's net profits and the taxes paid by the oil companies boosted the government's coffers. Together

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1. Hill (1996) provides an extensive review of Indonesia's economic development since 1966.

with foreign aid, oil revenues facilitated a dramatic expansion of public outlay. The government was no longer tightly constrained by its budget, while improved export performance enhanced access to overseas funding. Both allowed the pursuit of ambitious but pragmatic development plans, which initially emphasised the rehabilitation and expansion of infrastructure. Public expenditure rose from an average of 10 percent of GDP per year during the 1960s to 20 percent during the 1970s and 23 percent during the 1980s.

The government maintained fiscal prudence by making foreign aid the closing item of the budget, thus avoiding budget deficits. The 'balanced budget' principle also largely underlies the fact that the rate of inflation remained manageable at around 10 percent per year. Controlled inflation and rapidly improving foreign exchange earnings eased foreign exchange policies. The rupiah was devalued soon after 1966, the system of multiple exchange rates was effectively abandoned, and in 1971 Indonesia returned to full convertibility, with the rupiah pegged to the US dollar.

A large part of government expenditure was directed at the development of infrastructure and educational facilities in rural areas, and at agricultural development. Improvement of transport and irrigation facilities, investment in the development and dissemination of superior rice varieties and cheap chemical fertilisers, and protection of rice farmers from erratic price fluctuations in the international rice market, have been the main ingredients in the rapid growth of agricultural production. From being one of the biggest rice importers in the world in the 1960s, Indonesia achieved rice self-sufficiency in 1985 in the face of rapidly growing domestic demand for rice. This Green Revolution was important in absorbing the effects of the fall of oil prices during the 1980s. For instance, unlike other oil-exporting less-developed countries, Indonesia did not have to reserve export earnings for grain imports when revenues from oil exports decreased

Despite rapid economic growth, structural change was sluggish. Figure 1 shows that the share of agriculture in non-mining GDP fell consistently. However, the shares of both the industry and services sectors increased by around 15 percentage points during 1965-1985. Table 2 indicates that labour absorption in services was more prominent than in industry. The main reason is that the government initially chose to continue an inward-looking industrialisation policy, which relied on large-scale and capital-intensive ventures nurtured with protective tariffs. This policy tended to strengthen the position of financially unaccountable state enterprises. Tight market regulations, required to foster these industries, resulted in a significant degree of collusion between administrators and private enterprise and the extension of privileges to well-connected and favoured business groups. Rent seeking indeed generated inefficiencies that impinged on the

growth performance. But during the 1970s growth was so robust that this drawback hardly registered.

The fall of the oil price in the early 1980s, especially in 1986, was a new turning point. Economic growth initially slowed down when international petroleum prices decreased, the country's external terms of trade fell by one-third, and export earnings declined. The government reacted aptly with a series of structural adjustment policies. In response to falling public revenues reduced real public service salaries decreased and shelved development projects, resulting in a drastic reduction of public expenditure. Comprehensive tax reforms followed, inducing a diversification of public revenues away from oil, towards value-added, property and income taxes. Devaluations of the rupiah of close to 30 percent in 1983 and 1986 made non-oil exports more competitive. The government also addressed over-regulation, monopolies and protection in a range of sectors, and started to eradicate the inefficiencies in resource allocation generated during the years of inward-looking industrialisation.

Economic deregulation encouraged private investment. Total gross capital formation rose from 19 percent of total GDP during the 1970s to 26 percent during the 1980s, after which it stabilised at an average of 27 percent in the early 1990s. Most investment was financed domestically, although the flow of net direct foreign investment increased from an annual average of US$200 million during the 1970s to US$325 million during the 1980s and US$2.6 billion in the 1990s. Until 1998, Indonesia benefited from the relocation of companies from Japan and later from Hong Kong, Singapore, Taiwan and South Korea during the 1980s. Much of this investment found its way into industries in which Indonesia had a natural advantage (mining and logging in the Outer Islands) or a comparative advantage (a range of labour-intensive industries, mostly in densely populated Java). The consequence has been a striking increase in the growth of manufacturing output, with an increasingly prominent role for a range of labour-intensive manufactures, such as textiles, footwear, apparel, and consumer electronics in exports. Moreover, as Table 2 indicates, labour absorption in the industrial sector has since increased, and, as Figure 1 shows, industrial growth was such that the share of industry in non-mining GDP exceeded that of agriculture after 1988.

3. Possible consequences of rapid growth for income distribution

Indonesia's process of structural transformation was not merely caused by the gradual development

of a largely autonomous economy driven by only two engines of change: population growth (particularly demographic transition and population movements within Indonesia), and broad changes in labour markets (as far as can be ascertained) as a function of product-demand shifts. It was also subject to incentives provided by the international economy and to economic policies pursued by the Indonesian government. The dramatic shocks of rising and falling energy prices, and of structural adjustment in the mid-1980s must have affected different groups of income earners in dissimilar ways. The impacts of international economy and government policy complicate a straightforward interpretation of changes in income distribution in Indonesia in at least six ways.

(1) The dramatic impact of oil and gas on export revenues initially bolstered the value of the rupiah and impeded the development of other export-oriented economic sectors on the basis of Java's comparative advantage in labour-intensive products, such as manufactures. This was one reason, until the mid-1980s, for the import-replacing stance of industrial policy, and for the focus of industrialisation on heavy, capital-intensive industries, often run by public enterprises and situated in urban areas.[2] There may thus have been a (labour-saving) bias in technological change in manufacturing at a time when the labour force was growing rapidly. Moreover, the demand for labour in manufacturing largely concerned skilled labour, which was in short supply. Consequently, the skill premium and differences in wage rates between manufacturing and the rest of the economy may have increased in the 1970s.

(2) Oil revenues boosted public revenue to the extent that the government could drastically increase discretionary public expenditure. As mentioned above, considerable amounts were spent on, for instance, educational facilities and support of the agricultural sector in the form of input subsidies, particularly in rice agriculture. Increased public outlay on education may have started to reduce the skill premium in the labour market in the 1980s, even though the effort to improve educational facilities was mainly directed towards an across-the-board upgrading of primary and lower secondary education.

Support for the agricultural sector had possibly greater immediate consequences for the process of structural change. There is ample evidence that public expenditure on agricultural development promoted agricultural labour productivity, which may have increased rural wage rates and stemmed the flow of people from rural areas to urban centres in search of work. However, the

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2.   Another reason is that previous inward looking and state-dominated economic policies had nurtured a complex of

Green Revolution primarily benefited rice farmers in the well-irrigated areas of Java and some parts of the Outer Islands, and caused a relative neglect of producers of non-rice crops outside such areas. Still, most new entrants into the labour market were absorbed during the 1970s and 1980s in the agricultural sector, perhaps no longer primarily in rice agriculture but increasingly in the production of a more diverse range of agricultural commodities. Given the scarcity of agricultural land in Java, the agricultural employment that these policies helped to create largely took the form of wage labour and tenant farming, rather than an expansion of new owner-operated farms. This may have advantaged rural landowners, while the creation of additional employment in agriculture may have decreased the inequality in wage income relative to manufacturing.

(3) Most discretionary public investment was for infrastructure development. This is important, considering that the islands of the Indonesian archipelago had historically very different degrees of exchange with the wider national and international economy, which was in part due to the lack of transport facilities. It is therefore not possible to assume that the country has had fully integrated factor and product markets. Despite massive public investment for infrastructure development throughout the country, communications facilities are still underdeveloped compared to the core island of Java in most of the islands outside Java, perhaps with the exception of Bali and parts of Sumatra. Underdeveloped communications can be expected to impede the mobility of production factors and products and thus enhance income inequality, particularly between Java and the rest of the country.

(4) The expansion of economic activity since the mid-1980s was largely driven by investment in industries in which Indonesia had a natural or comparative advantage. Capital-intensive mining and logging operations were mainly established in remote and underpopulated areas in the islands outside Java, where they tended to generate employment in enclaves. Labour-intensive industries have mainly been established in densely populated Java, particularly in urban centres like Jakarta, Bogor, Surabaya and Bandung, to a lesser extent in cities outside Java, such as Medan (North Sumatra) and Batam, Singapore's satellite in Indonesia. Since the mid-1980s, the creation of additional low-wage employment in manufacturing industry may have depressed average wages relative to non-manufacturing employment and may thus have decreased income inequality. On the other hand, we may expect it to have exacerbated income inequality between (a) urban and rural Indonesia, (b) Java and the rest of the country.

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vested interests in bureaucracy and society, which any government would have found very difficult to tackle head-on.

(5) The Indonesian government enforced minimum wage legislation in 1988, which in effect only affected large-scale, incorporated ventures. The legislation could not directly influence wage rates of employees in the informal sector or self-employed workers. The legislation created a two-tier labour market. Still, the impact of the legislation may have been limited. One reason is that minimum wages were initially set at levels well below current wage rates in manufacturing industries. They were significantly increased in 1993, but this took place at a time when the entire labour market started to tighten as a consequence of falling population growth and a sustained rate of employment creation (Manning and Jayasuriya 1996: 36-38).

(6) Over time, employment in agriculture in terms of hours worked may have increased less than employment in terms of workers. Those who were primarily employed in agricultural pursuits may therefore increasingly have combined this with a range of off-farm jobs, including part-time employment in small-scale manufacturing. This could be a major reason why the ratio of Gross Value Added (GVA) per worker outside agriculture and GVA per worker in agriculture increased from an average of 1.7 during the 1960s, to 2.1 during the 1970s, 2.8 during the 1980s and 3.8 during 1990-97.[3] The increasing ratio suggests that the forces 'pulling' labour out of the agricultural sector were substantial. It also reflects the growing differences in capital intensity of production between agriculture and industry. This ratio does not take account of the mitigating impact of off-farm employment that augments the income of farm households from agricultural production (Rietveld 1986; Collier *et al.* 1996).[4]

Other factors are relevant to an interpretation of statistical evidence on changes in income inequality. For instance, Indonesia was most likely not immune to the historically irreversible shift in the functional distribution of income from landed capital to human capital. Given that the last is generally more evenly distributed than land, we would, *ceteris paribus*, expect a long-term trend towards greater equality for this reason alone. Because the human capital tends to be employed outside the agricultural sector, possibly outside the rural areas, it is possible to expect an increasing inequality between urban and rural wages. In addition, knowing that non-agricultural employment is mainly created in Java, we would expect increasing inequality between Java and the rest of the

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3.   Calculated with interpolated data on employment from the population censuses (see Table 2), and GVA in agriculture and in the non-mining sectors of the economy at current prices for 1960-1997 from the national accounts (see Figure 1).

4.   The 1995 inter-census population survey revealed that 64 percent of agricultural households in Indonesia had mixed incomes, while 35 percent earned most of their income from non-agricultural pursuits. In Java, even 90 percent of agricultural households had mixed incomes, while 51 percent earned most of their income outside agricultural sector. *Penduduk Indonesia: Hasil Survei Penduduk antar Sensus 1995, Seri S2.* (Jakarta: BPS, 1996) Table 59.3.

country. Other factors that should ideally be considered in relation to trends in income inequality are: long-term changes in *e.g.* average skills per member of the labour force, labour-market institutions (including the limited role of unions, but mainly minimum wage legislation), and the impact of government fiscal redistribution (through taxes and subsidies). However, little is known about the impact of each throughout the period under observation.[5]

4. Analysing the available data

It is widely acknowledged that all groups in Indonesian society have benefited from the rapid economic growth. Rates of poverty incidence have fallen dramatically (Booth 1993). Still, it is widely believed that the overall distribution of income and wealth in Indonesia became increasingly uneven. This perception is to some extent based on hearsay and on subjective impressions of the blatant contrasts between the opulent lifestyles of the urban rich and the modest lives of the rural poor. It is also sustained by concerns about the prominence of ethnic Chinese in Indonesian business. Some estimates put this minority group, or rather the conglomerates controlled by ethnic Chinese businessmen, in charge of 70 tor 75 percent of 'the economy'. Such estimates were based on the market capitalisation of companies listed on the Jakarta stock exchange (Backman 1995: 40-41). The majority of such companies may indeed have been affiliated with ethnic Chinese business tycoons, but such calculations do not take account of the actual ownership of the shares of these companies. They also do not take account of the value of productive assets used in non-listed ventures. Worse, such calculations confused stock values with income flows. Other estimates suggested that the sales of Chinese-owned listed companies generated 50 percent of GDP (*The Economist*, 9 March 1996). Such an estimate failed to distinguish between gross value and value-added of production.

A complication in assessing these claims is that there are no statistical data on the size distribution of income.[6] Indonesia's Central Bureau of Statistics (BPS) does not generate such data. A major reason is that it does not employ the income approach to approximate national income, but only the output and expenditure approaches. An additional reason is that an important data

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5.   Only the Social Accounting Matrices (see below) provide some indications for benchmark years of the impact of taxation and subsidies on income distribution across 10 main socio-economic categories.

6.   Data in the *World Development Report* profess to indicate the size distribution of income in Indonesia. In fact, these are processed estimates of the distribution of household expenditure, which are by definition biased towards equality (see below).

source, the income tax, still extends to less than 5 percent of all income earners in the labour force, or less than 10 percent of all wage earners. There are also few provisions to estimate forms of income other than wages and salaries liable to income tax. This paper will make do with available data sets.

a. Changes in the size distribution of household expenditure

The first national household budget survey was conducted as part of the National Socio-Economic Survey (*Susenas*) in 1964/65. These surveys have been repeated regularly with ever growing samples of households (from 21,300 in 1964/65 to 65,000 in 1993). However, their aim was to record household expenditure. Only since 1978 do they include income data, albeit that these remained unpublished.[7] The surveys are believed to be biased towards the urban poor. They underestimate household expenditure on food (Surbakti 1995: 61). Non-food expenditure is also underestimated, particularly spending on durables such as televisions and cars. Such factors create a progressively increasing degree of underestimation the higher household expenditure is.[8]

Table 3 shows that the Gini ratios of household expenditure throughout Indonesia have been quite low, except for 1978. The 1978 peak was largely due to a surge in uneven distribution in urban Indonesia, more particularly in Java. The distribution of total expenditure only reveals a significant trend towards greater equality in rural Indonesia since 1978, more particularly in the Outer Islands. In both rural Indonesia and the Outer Islands inequality has indeed become remarkably lower than in urban Indonesia, particularly in Java. This differentiation has emerged from a situation in the 1960s of comparable inequality between urban and rural Indonesia, and between Java and the Outer Islands.

The peak in 1978 may have been a consequence of the policy of import-replacing industrialisation that mainly created gainful employment in urban Java for skilled workers, as mentioned above. This situation was compounded by the rapid development of other sectors, particularly in urban areas, such as the public sector, which also sought to engage highly qualified

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7.   Some authors have been able to use these unpublished data to estimate income inequality, see Figure 2.
8.   The estimation of expenditure on consumer durables relies on the memory of the head of the households regarding spending during the year prior to the survey. For whatever reasons, low-income households tend to be less 'forgetful' than high-income households. On the whole, the degree of underestimation is aptly illustrated by the fact that there has long been a substantial discrepancy between total household expenditure, estimated through *Susenas*, and total private consumption in the Indonesian national accounts, estimated as a residual after other main items of expenditure on GDP were accounted for. (Hill 1996: 195)

workers and put further pressure on the skill premium.

It seems that the situation abated, resulting in a significant decrease in inequality in rural expenditure, as a consequence of the government's commitment to the Green Revolution and massive public investment in rural development. This enhanced the incomes of small rice farmers, and dampened the impact on income distribution of the growth of urban and non-agricultural employment. The fact that the Green Revolution technology had few economies of scale meant that most farmers benefited, which contributed to maintaining equality in rural areas. Moreover, the labour-absorbing nature of the technology created new employment in rural areas, which also furthered equality.

Improvements in average educational attainment are likely to have spurred the decrease in overall inequality in the early 1980s. In the mid-1980s, industry policy changed to an export-oriented stance, which greatly enhanced the expansion of gainful urban employment and kept the inequality of household expenditure at level in urban areas, as Table 3 suggests.

b. Changes in the size distribution of wage income

A second source of data on income distribution is the National Labour Force Survey (*Sakernas*), conducted during 1976-78, once estimated on the basis of *Susenas* returns in 1982, and annually again during 1986-1997. Except for 1976, the data were obtained with four quarterly surveys, each involving samples of 20,000-25,000 households, which have been extrapolated with population census data. *Sakernas* only collected data on wage income. Its income data are therefore restricted to wage labourers and employees, who constituted approximately 28 percent of the labour force in 1986 and 35% in 1997. The data fail to take account of changes in income of the majority of income earners, mostly self-employed in the agricultural sector.[9]

Table 4 shows that the Gini ratios calculated from wage income data were significantly higher than the expenditure data in Table 3, which is to be expected. Table 4 does reveal some similarities with Table 3. One is the relatively high degree of across-the-board inequality in the late-1970s, particularly 1978. Inequality decreased, remained relatively constant during 1986-1990, but fell significantly during the 1990s, albeit with a minor outlier in 1993 due to the rise of minimum

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9.   An additional problem with the *Sakernas* data is that the Gini ratios calculated from the published data have become increasingly sensitive to the average which has to be assumed for the highest income bracket with monthly incomes of Rp.300,000 and more. For that reason, Table 4 contains sections A and B, which present Gini ratios based

wages affecting a section of the wage labourers. The table confirms the differences in inequality between Java and the Outer Islands in the last two columns. They indicate that the overall trend appears to be driven by changes in Java. Table 4 does not show the same differences in inequality between urban and rural areas as Table 3. In fact, inequality among wage earners in urban Indonesia is generally lower than in rural Indonesia.

Table 4 provides additional information on the degree of inequality in and across three main economic sectors. It should be noted that inequality among all wage earners is consistently higher than inequality within each sector, which indicates significant inequality across the three sectors. In the late-1970s and in 1982 inequality was higher in the non-agricultural sectors, compared to agriculture, but since 1986 the degree of inequality among wage earners in the non-agricultural sectors has fallen considerably, well below inequality in agriculture, which stagnated. In conclusion, the fall in inequality among non-agricultural wage earners, particularly in urban Java, appears to have driven the overall trend towards greater equality among wage earners in Indonesia since the late 1970s, for reasons noted above.

c. Changes in the regional distribution of GDP

Indonesia's economic history during the first half of the 20th century was characterised by two countervailing processes. One was an increasing reliance of the economy on exports generated in the Outer Islands. The other was a process of administrative and political centralisation, radiating from the core island of Java. The first trend continued after full independence in 1949 to the extent that in 1955 88 percent of exports, in particular rubber, palm oil and petroleum, originated from the Outer Islands. At the time, Indonesia's foreign exchange policies effectively imposed an additional tax on exports, and export producers in the Outer Islands no longer received international market prices for their produce. Moreover, goods increasingly had to be shipped through ports in Java, which added handling costs. Such centralising tendencies of Jakarta enhanced allegations that import-consuming Java was 'milking' the export-producing Outer Islands, and contributed to the regional secessionist uprisings during 1956-58. These rebellions were subdued with military force and have not been allowed to re-surface until 1999. Still, the extent to which the provinces in the Outer Islands generated foreign exchange and revenues for the national government increased with

on different assumed averages.

the growth of natural resource based industries such as petroleum, natural gas, mining and logging.

Provincial GDP data since the late 1960s have consistently indicated very significant differences in GDP per capita between the provinces which are well endowed with natural resources and those which are densely populated and/or sparsely endowed with natural resources (Hill 1991/92). Table 5 provides some indications of the considerable regional economic differences in Indonesia, with East and West Nusatenggara at the lower end of the scale, while the spin-off from oil production placed East Kalimantan at the higher end.[10]

Table 5 reveals significant regional dynamics. Especially the economies of Riau, South Sumatra, Maluku, Bengkulu, North Sulawesi, Jambi and Southeast Sulawesi have seen a consistent decline relative to the national average, while West Papua, Bali, West Sumatra, and most provinces in Java experienced an improvement relative to the national average. The Gini ratio and the weighted coefficient of variation both indicate that the inequality of regional GDP has slightly increased over time, even though the degree of inequality was still low in 1997. A telling statistic is that the ratio of GDP per capita in the poorest and the richest provinces increased from 5.1 in 1971 to 9.8 in 1997.

This evidence may confirm Williamson's (1965) thesis, which suggests that during a process of economic development the spatial distribution of economic activity first concentrates and then disperses, thus causing the inequality of regional income distribution to first increase, due to the disequilibrating effects of factor mobility. This is congruous with the fact that the degree of infrastructure development in the Outer Islands still lags behind Java. The Williamson thesis predicts that inequality will decrease at a later stage, as equalising forces of factor mobility take effect.

The GDP data in Table 5 exclude value added in oil and gas production, which significantly reduces GDP in the provinces of Aceh, Riau, East Kalimantan and West Papua. The central government benefits most from the revenues these activities generate. It redistributes them in a way that bolsters the poorer provinces, particularly those in Java. The fact that public revenues have in recent decades been channelled into the development of manufacturing industry in Java has articulated the economic dichotomy between Java and the Outer Islands, and has prolonged the existence of the significant interregional inequalities in non-mining GDP per capita (Akita and Lukman 1995).

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10. The ranking is broadly congruent with ranking on the basis of provincial household expenditure data from *Susenas*,

Public pronouncements have favoured budgetary decentralisation, but actions have been cautious. Local governments still have little tax autonomy and centrally established priorities constrain funding from the central government (Ranis and Stewart 1994). In the early 1990s more than 75 percent of the budgets of most provincial governments, plus many projects implemented directly from the centre and many others channelled through district and village governments, were still funded by the central government.[11]

d. Changes in access to land

Whether income inequality in a country can be expected to abate depends to a large extent on the conditions at the starting point, when land and labour are the main sources of income. A skewed pattern of land ownership would generate a skewed income pattern, which only abates when income from capital (including human capital) starts to play a greater role. In the 1950s it was widely believed that access to land in Indonesia was uneven and that a redistribution of agricultural land would be a key to a more even distribution of income and to greater prosperity, particularly in Java. Land reforms were implemented in Indonesia during the troubled 1960s, but not much land was actually redistributed. This was not primarily because of obstruction by landlords, but mainly because there was simply little land to redistribute in Java in an effort to address the extensive poverty problems. Table 6 indicates that the average farm size was only 0.7 ha in Java, compared to 1.7 ha in the Outer Islands.

Controversy about skewed access to land flared up in the 1970s, when it was widely believed that the Green Revolution in rice agriculture primarily benefited large farmers. It seemed that they bought up smaller farms to achieve consolidation of farms, and would use labour-replacing technology, thus exacerbating landlessness, particularly in rural Java. Landlessness indeed increased, but not because of the consolidation of farms. In fact, Table 6 shows that the number of farms increased in Java from 8 million in 1963 to more than 10 million in 1993 and the average farm size decreased from 0.7 to less than 0.6 ha, while the Gini ratio remained relatively constant.[12]

even after correction for price differences across provinces. See *e.g.* Islam and Khan (1986), who used 1976 *Susenas* data.
11.   In April 1995 the Indonesian government proclaimed a policy aimed at increasing regional autonomy, in order to achieve decentralisation of public administration. The law was approved by parliament in 2000. However, the consequences of this policy stance still have to materialise.
12.   Unfortunately the results for 1993 are questionable. They indicate a decrease in the average size of farms in Java due to the dramatic decrease of total farmland in Java relative to 1983, and a slight decrease in the Outer Islands. Moreover, the 1993 totals of arable land are a lot lower than the land use data according to *Luas Tanah/Lahan menurut*

In the Outer Islands there has been a significant trend towards greater equality during 1963-1993, with the Gini ratio decreasing to levels comparable to Java. The total number of farms more than doubled, and average farm size decreased from 1.7 to 1.2 ha.

There were no dramatic changes in tenant farming. In Java the share of farms renting all the land they operated was 6.4% in 1963, 9.5% in 1983 and 7.1% in 1993, while the share of those renting part of their land was 34.6% in 1963, 34.2% in 1983 and 30.4% in 1993. (Van der Eng 1996: 150) These shares were all much lower in the Outer Islands, where a situation of land abundance prevailed in most areas. Hence, on the whole, the degree of tenant farming in Indonesia has been moderate in both historical and international perspective.

Table 6 suggests that a continuous subdivision of farms has taken place in Java, with operators of small plots holding on to their land, rather than selling out to colleagues operating larger farms. This process was possibly furthered by the continued growth of input subsidies, mentioned above. Even though access to land has not become more uneven, Java's agricultural sector has clearly not been able to absorb all of the increase of the labour force. Consequently, the group of rural landless has grown significantly. Many of them became rural wage labourers, but many others must have become self-employed workers. To take account of their plight additional data are required, which are not readily available.

e. Changes in the socio-economic distribution of income

One way to understand the plight of the rural landless, as far as their incomes are concerned, is through a System of Socio-Economic Accounts (generally known as a Social Accounting Matrix, SAM). They reconcile frequently conflicting data collections within a consistent framework and extend the System of National Accounts by and accounting for the distribution of income across major socio-economic groups.[13] In Indonesia, the compilation of the SAM implied a reconciliation of underestimated consumption data from *Susenas* with data from the I-O Tables. The results of the population and agricultural censuses, and the *Sakernas* data were used to achieve a further

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Penggunaannya di Jawa/di Luar Jawa (BPS), which suggest 8.2 million ha of farm land in Java and 17.2 million ha in the Outer Islands.

13. Indonesia's SAMs diverge for that reason from the SAMs generated for OECD countries. For an explanation of Indonesia's 1980 SAM, see Thorbecke and Van der Pluijm (1993: 139-162) or Keuning and Thorbecke (1993). The published data of the 1980 SAM are much more elaborate than the data published in the source used for Table 7, which is why it is not possible to provide more details, such as distribution of income across sectors of employment for all 5 years.

distribution.

The construction of the SAMs involved a detailed break down of total value added (at market prices) from the I-O Tables into five groups of factor income: (1) paid labour income, (2) an imputed value of the labour of self-employed and household workers to estimate unpaid labour income, (3) unincorporated capital income (including remuneration to owners of agricultural land), (4) private domestic and government corporate capital income, and (5) foreign corporate income. Factor income was then allocated as total household income before direct taxes to the 10 types of households in Table 7.[14] The SAMs therefore take account of total income, not just wages.

Table 7 reveals the impact of Indonesia's structural adjustment policies during the 1980s on different socio-economic groups. It shows changes between and within the three main groups of income earners (agriculture, non-agricultural rural and urban). During the 18 years, the population increased by 57 million people. Half of this increase was absorbed by households in gainful employment in urban areas, one-quarter each by households in both agricultural and in rural non-agricultural sectors. Consequently, despite continued growth in the absolute number of people depending on income in the agricultural sector, the overall dependence on income from agriculture decreased from 60 to 50 percent (which clearly does not take off-farm income into account). Given that the share on non-agricultural sectors in the rural areas remained constant, the 'drop-outs' from the non-agricultural sector were absorbed in urban employment. The share of people depending on income from urban employment increased from 17 to 27 percent.

Per capita household incomes are expressed as percentages of the overall average, in the absence of group-specific deflators for the computation of incomes in constant prices. Hence, all per capita incomes may have increased in absolute terms, even though some decreased relative to the national average. On the whole, average income in the agricultural sector increased during 1975-1985, and decreased during 1985-1993, relative to the overall average. Average per capita household income in the urban sector declined significantly relative to the overall average.

Within the agricultural sector, it is appears that labour absorption took place in the form of wage labour and (presumably) the sub-division of small farms. Per capita income of the households of agricultural wage labourers fell considerably relative to the overall average during 1985-1993, but so did the income of farm households operating more than one hectare. Within the rural non-agricultural sector, average incomes at the top end fell considerably relative to the overall average,

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14. The source also provides estimates of household expenditure, which indicate the burden of direct taxation and the

while the income earners at the low end had a mixed experience. On the whole, a significant proportion of income earners moved up from low to high socio-economic status. Within the urban sector, per capita incomes at both the top and the low end decreased, although more people joined the high-income earning households than joined the low-income earners.

Table 7 cannot address the issue of general inequality in the size distribution of income. However, it does reveal complex and dynamic changes in income distribution during the 18 years of rapid economic growth. It does not expose an unequivocal increase in inequality.

5. Historical comparison

Figure 2 shows that, at a similar stage of economic development, the 1930s in Japan and the 1970s in Indonesia, inequality in both countries increased significantly, before it started to decline – in Japan much faster than in Indonesia. However, in both countries income inequality apparently never reached the levels it reached in England at a similar stage of development, i.e. the first half of the 19th century.

This finding underscores Oshima's (1994) suggestion that income inequality in Asia decreased at earlier stages of development (denoted by real GDP per capita) compared to Western countries in a distant past. Oshima suggests that Asian countries could readily obtain production technologies internationally, according to their needs as determined by relative factor prices. Figure 2 suggests that this may have been easier in Indonesia since the 1970s than Japan since the 1930s. In contrast, in 'the West', such as in England in the early 19th century, such technologies had to be developed through painstaking and time-consuming processes, while early steam-powered labour-replacing technologies proved lumpy and in fact inequality-exacerbating. Likewise, it could be argued that access to inequality-reducing education in reaction to an increase in demand for skilled and educated workers has been much easier in Asian countries at earlier stages (denoted by real GDP per capita) than in Western countries in a distant past. Public subsidies have made education increasingly more accessible since the 19th century, even in less-developed countries such as Japan in the past and Indonesia more recently.

6. Conclusion

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rate of saving for each of the 10 types of households.

The available data indicate that the relationship between economic growth, structural change and inequality has not been as straightforward in Indonesia during the last 30 years as the Kuznets curve suggests. The international economy and different government policies also impacted on the development of income distribution. The available data do not support the suggestion that the rich have become richer and the poor poorer. The case of Indonesia demonstrates that rapid economic growth from low levels of living does not necessarily lead to significant increases in inequality, as the Kuznets thesis predicts. Hence, apart from a slight increase in regional inequality supporting the Williamson thesis, the data do not support the suggestion that there has been a trade-off between growth and equality in Indonesia.

The data presented in this paper reveal very dynamic changes in inequality. In particular Tables 3 and 4 both suggest that income distribution has become less uneven since the late 1970s. The paper has argued that the oil boom may have enhanced income inequality in non-agricultural employment in the 1970s. But the effect levelled off, when agricultural policies that used lavish input subsidies to support agricultural incomes started to take effect in the late 1970s. This trend continued when the government had to respond to lower oil prices during the 1980s. The burden of adjustment on the agricultural sector was reduced by exchange rate depreciation, agricultural pricing policies, and some diversification away from rice towards more profitable non-rice crops. Exchange rate depreciation and a range of measures deregulating large non-agricultural sections of the economy encouraged investment in areas sectors where Indonesia had a comparative advantage, thus creating gainful employment, particularly in Java. Moreover, the broad stance of government policy helped shield the poor from the adverse effects of public expenditure reductions. 'Poverty-related' expenditure, such as human resource development, was protected relative to expenditure that was of less direct benefit to the poor, thus helping to prevent inequality from increasing.

This paper touched on several relevant issues. The interpretation provided above should be put to the test in further research which may bring out the exact factors behind the observed changes in inequality, certainly if the premise is that factor markets (particularly the labour market) play a central role in the distribution of income. For instance, changes in the skill premium and educational attainment, the impact of the demographic transition, and variations in wage rates between industry and the rest of the economy, are important topics that should be taken into

account.[15]

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15. These issues, and others, are discussed in Manning (1998), and need to be associated with the changes in income distribution noted in this paper.

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Table 1: Exports and Government Revenue, Indonesia 1960-1997

Years[a]	Export Revenue		Total Government Revenue		
	(mln. US$)	% Share of Oil and Gas	(mln. US$)	% Share of Oil and Gas	% Share of ODA
1960-1968	722	35	220	7	4
1969-1973	1,637	47	1,615	25	24
1974-1978	9,114	77	8,209	45	18
1979-1983	21,636	78	18,377	57	14
1984-1988	18,326	58	18,742	39	20
1989-1993	29,553	35	27,696	27	18
1994-1997	47,182	23	31,045	18	15

a. Except for 1960-1968, years refer to fiscal years (e.g. 1969 is 1969/70).

Notes: Annual averages. Oil exports refer to crude oil and oil products. Government revenue calculated from fiscal year data with, for 1960-1971, the free market exchange rate of the rupiah, rather than the controlled rate to approximate actual purchasing power. Government revenue from oil and gas refers to net oil profits and company tax. Overseas development assistance (ODA) refers to government-to-government grants and concessional loans.

Sources: Calculated from *Statistik Indonesia*; *Bulletin of Indonesian Economic Studies*, 34, No.1 (1998) pp.44-45; *IMF International Financial Statistics*; *UN Trade Yearbook*; *Pick's Currency Yearbook*.

Table 2: Sector Shares in Employment in Indonesia, 1961-1990 (percentages)

	1961	1971	1980	1990
A. Males				
Agriculture[a]	74.2	66.4	57.2	50.5
Industry[b]	7.9	9.3	13.4	17.0
Services	17.9	24.3	29.4	32.5
B. Females				
Agriculture[a]	71.2	64.7	54.0	48.9
Industry[b]	8.4	11.7	13.2	16.8
Services	20.4	23.5	32.8	34.3

a.   Includes fisheries and forestry.
b.   Includes mining and construction.
Note: The years correspond to population census results.
Sources: Hugo, G.J. *et al.*, *The Demographic Dimension in Indonesian Development.* (Singapore: Oxford UP, 1987) pp.262-264; *Penduduk Indonesia. Hasil Sensus Penduduk 1990, Seri S.2.* (Jakarta: BPS, 1992).

Table 3: Gini Ratios of Per Capita Household Expenditure in Indonesia, 1964/65-1996

	Areas (1)		Total	Areas (2)	
	Urban	Rural		Java	Outer Islands
1964/65	0.34	0.35	0.35	0.33	0.34
1969/70	0.33	0.34	0.35	0.33	0.33
1976	0.35	0.31	0.34	0.35	0.32
1978	0.38	0.34	0.38	0.40	0.32
1980	0.36	0.31	0.34	0.35	0.31
1984	0.32	0.28	0.33	0.35	0.31
1987	0.32	0.26	0.32	0.35	0.27
1990	0.34	0.25	0.32	0.34	0.29
1993	0.33	0.26	0.34	0.35	0.30
1996	0.36	0.27	0.36	0.33	0.30

Note: Urban areas are defined as communities having a population density greater than 5,000 people per km², less than 25% of employment in agriculture, and 8 or more 'urban-related' facilities, such as medical clinics.
Source: Calculated from *Survei Sosial Ekonomi Nasional: Pengeluaran untuk Konsumsi Penduduk* (various years).

Table 4: Inequality among Wage Earners in Indonesia, 1976-1997

	Industrial Sectors			Total	Areas (1)		Areas (2)	
	Agri-culture	Manufac-turing	Other		Urban	Rural	Java	Outer Islands
A. Gini Ratios of Earnings among Wage Earners[a]								
1976[c]	0.36	0.45	0.44	0.49	0.44	0.45	0.50	0.41
1977	0.41	0.44	0.45	0.51	0.44	0.48	0.52	0.43
1978	0.44	0.49	0.48	0.54	0.47	0.51	0.55	0.43
1982	0.33	0.41	0.39	0.44	0.39	0.42	0.45	0.38
1986	0.38	0.41	0.38	0.42	0.38	0.43	0.43	0.36
1987	0.37	0.39	0.36	0.41	0.37	0.40	0.43	0.34
1988	0.38	0.39	0.36	0.40	0.37	0.40	0.42	0.33
1989	0.35	0.37	0.37	0.41	0.37	0.41	0.42	0.34
1990	0.39	0.39	0.37	0.41	0.39	0.40	0.44	0.34
1991	0.38	0.38	0.36	0.40	0.38	0.38	0.42	0.34
1992	0.37	0.36	0.35	0.39	0.36	0.39	0.41	0.34
1993	0.39	0.38	0.36	0.40	0.37	0.41	0.42	0.35
1994	0.38	0.35	0.34	0.38	0.34	0.38	0.38	0.35
1995	0.36	0.33	0.32	0.35	0.32	0.37	0.36	0.33
1996	0.37	0.31	0.30	0.34	0.30	0.36	0.35	0.31
1997	0.36	0.30	0.27	0.32	0.27	0.35	0.32	0.30
B. Gini Ratios of Earnings among Wage Earners[b]								
1990	0.39	0.41	0.38	0.43	0.41	0.40	0.45	0.35
1991	0.39	0.40	0.38	0.42	0.41	0.39	0.43	0.36
1992	0.37	0.38	0.38	0.42	0.39	0.39	0.43	0.37
1993	0.40	0.40	0.39	0.43	0.40	0.42	0.45	0.39
1994	0.40	0.38	0.38	0.41	0.38	0.40	0.41	0.39
1995	0.37	0.36	0.36	0.39	0.36	0.40	0.40	0.37
1996	0.39	0.36	0.34	0.38	0.34	0.40	0.39	0.36
1997	0.39	0.34	0.32	0.36	0.32	0.39	0.37	0.35
C. Wage Earners (millions)								
1986	3.5	3.1	10.9	17.5	7.3	10.2	13.0	4.5
1990	4.9	4.3	11.9	21.1	9.9	11.2	15.7	5.4
1997	4.8	6.7	19.0	30.5	16.2	14.3	20.8	9.7

a. Average in the highest income bracket of over Rp.300,000 per month assumed to be Rp.400,000.
b. Average in the highest income bracket assumed to be Rp.500,000 per month.
c. September and December only.

Notes: The procedures used to collect and extrapolate the basic survey data are different for 1976-78, 1982 and 1986-97. Except for 1976, the data are based on four quarterly surveys. For the definition of urban areas, see Table 3.

Sources: Calculated from *Keadaan Angkatan Kerja di Indonesia* (1976-78), *Keadaan Buruh/Pekerja di Indonesia* (1982, 1986-88), *Keadaan Pekerja/Karyawan di Indonesia* (1989-94, 1996-97), *Penduduk Indonesia: Hasil Survei Penduduk antar Sensus 1995, Seri S2.* (1995).

Table 5: Inequality of Regional GDP per Capita in Indonesia, 1971, 1983 and 1997

Province	1971		1983		1997	
	National Av.= 100	Rank	National Av.= 100	Rank	National Av.= 100	Rank
Jakarta	247	(1)	328	(1)	371	(1)
East Kalimantan	247	(2)	218	(2)	246	(2)
West Papua	99	(14)	108	(8)	163	(3)
Riau	139	(6)	116	(6)	135	(4)
Central Kalimantan	116	(8)	130	(4)	127	(5)
Bali	107	(11)	98	(11)	122	(6)
Aceh	96	(15)	119	(5)	107	(7)
North Sumatra	158	(4)	103	(9)	100	(8)
South Kalimantan	111	(9)	109	(7)	97	(9)
West Kalimantan	101	(12)	90	(13)	97	(10)
East Java	88	(19)	99	(10)	93	(11)
West Sumatra	89	(18)	97	(12)	91	(12)
Yogyakarta	75	(22)	75	(21)	89	(13)
West Java	87	(20)	81	(18)	88	(14)
South Sumatra	201	(3)	143	(3)	87	(15)
North Sulawesi	122	(7)	85	(16)	75	(16)
South Sulawesi	79	(21)	77	(20)	75	(17)
Central Java	74	(23)	74	(22)	71	(18)
Maluku	106	(10)	88	(14)	66	(19)
Jambi	150	(5)	84	(17)	65	(20)
Bengkulu	91	(17)	86	(15)	59	(21)
Lampung	92	(16)	57	(24)	55	(22)
Southeast Sulawesi	99	(13)	81	(19)	54	(23)
West Nusatenggara	52	(25)	51	(25)	44	(24)
Central Sulawesi	56	(24)	73	(23)	43	(25)
East Nusatenggara	48	(26)	48	(27)	40	(27)
Gini ratio[a]	0.18		0.21		0.24	
CVw[b]	0.42		0.55		0.66	
Ratio highest/lowest	5.1		6.8		9.8	

a. Calculated with provincial totals of population and GDP^Q, ranked by GDP per capita. The implicit assumption is that income is distributed equally within each province.

b. Coefficient of variation weighted by population.

Note: GDP excludes Gross Value Added from oil and gas, and is not corrected for price differences between provinces.

Sources: Calculated with population data from *Statistik Indonesia*, and GDP data from *Pendapatan Regional Propinsi-Propinsi di Indonesia, 1971-1977*. (Jakarta: BPS, 1980), *Pendapatan Regional Propinsi-Propinsi di Indonesia menurut Lapangan Usaha, 1983-1990*. (Jakarta: BPS, 1992), *Produk Domestik Regional Bruto Propinsi-Propinsi di Indonesia menurut Lapangan Usaha, 1993-1997*. (Jakarta: BPS, 1998).

Table 6: Size distribution of operated farms in Indonesia, 1963-1993

	1963 Farms	1963 Area[a]	1973 Farms	1973 Area	1983 Farms	1983 Area	1993 Farms	1993 Area[a]
Java (percentages):								
0.1 - 0.5 ha	52	19	55	22	54	21	66	32
0.5 - 1.0 ha	27	25	26	27	27	27	22	29
1.0 - 2.0 ha	15	28	14	27	14	27	9	21
2.0 - 3.0 ha	3	12	3	11	3	12	2	8
> 3.0 ha	2	16	2	13	2	13	1	10
Average farm size	0.73 ha		0.66 ha		0.67 ha		0.56 ha	
Gini ratio	0.464[a]		0.471		0.469		0.454[a]	
Number of farms (millions)	7.95		8.27		9.21		10.57	
Total farm area (million ha)	5.66[a]		5.47		6.17		4.91[a]	
Outer Islands (percentages):								
0.1 - 1.0 ha	55	16	52	16	44	14	57	24
1.0 - 2.0 ha	23	19	26	22	29	23	27	31
2.0 - 3.0 ha	9	13	11	16	9	19	10	20
3.0 - 5.0 ha	7	16	7	16	9	19	5	14
> 5.0 ha	5	36	5	30	5	26	2	11
Average farm size	1.72 ha		1.54 ha		1.61 ha		1.23 ha	
Gini ratio	0.572[a]		0.540		0.496		0.458[a]	
Number of farms (millions)	4.19		5.61		6.42		8.78	
Total farm area (million ha)	7.22[a]		8.66		10.33		10.32[a]	

a. Based on estimated cell averages in the absence of precise data on the distribution of land across size cells.

Notes: 1973, 1983 and 1993 exclude farms smaller than 0.1 hectare in order to conform to the 1963 definition. The data for these years refer to food producing farms only.

Sources: Sensus Pertanian 1963: Angka² Sementara; Sensus Pertanian 1973, Jilid I; Sensus Pertanian 1983, Seri B; Sensus Pertanian 1993, Jilid B1 - Indonesia.

*Table 7: Per Capita Household Income by Socio-Economic Groups in Indonesia, 1975-1993*

	Total average = 100					% Shares[a]	
	1975	1980	1985	1990	1993	1975	1993
A. Agriculture:							
- labourers	51	50	58	51	39	12	10
- farmers operating less than 0.5 ha	55	65	55	60	61	22	27
- farmers operating 0.5-1.0 ha	73	75	82	80	74	12	6
- farmers operating more than 1.0 ha	109	97	133	123	116	14	6
sub-total	70	73	76	69	65	60	50
B. Non-agricultural sectors, rural:							
- low socio-economic status	68	97	74	75	66	15	9
- high socio-economic status	194	163	123	123	144	6	13
- inactive	89	75	74	109	104	3	2
sub-total	102	104	89	104	112	24	23
C. Non-agricultural sectors, urban:							
- low socio-economic status	125	141	131	98	83	9	12
- high socio-economic status	335	267	213	210	241	6	12
- inactive	141	117	137	112	103	1	3
sub-total	203	171	160	153	154	17	27

a. Shares in total population, according to the classification of households.

Notes: Gross household income is total pre-tax income. Calculation of average income with after-tax income data yields virtually the same results. The groups with low socio-economic status (*golongan bawah*) include the self-employed, menial clericals, sales and services workers, and manual workers. The groups with high socio-economic status (*golongan atas*) include employers and employed elites such as bureaucrats, professionals, managers and the military. The inactive are people not in the labour force, such as young students, aged retirees, and the unemployed.

Source: Calculated from *Sistem Neraca Sosial Ekonomi Indonesia 1993*. (Jakarta: Biro Pusat Statistik, 1996) pp.84-98.

Figure 1: Sector Shares in Non-Mining GDP in Indonesia, 1951-2000
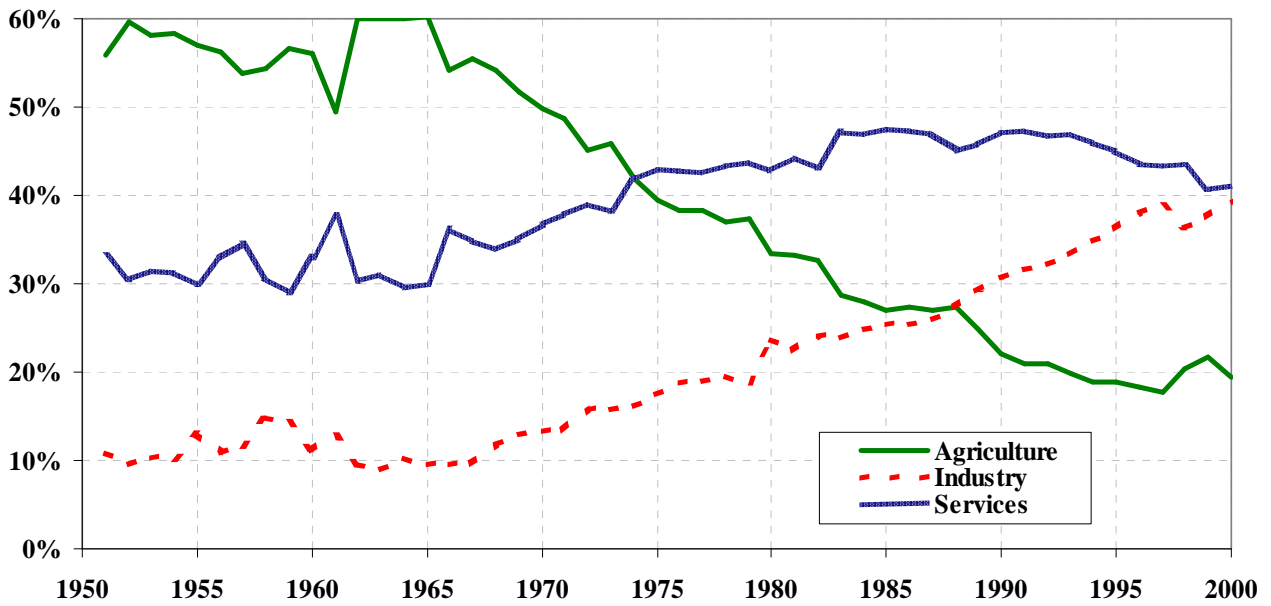
Source: Calculated from GDP in current prices from *Pendapatan Nasional Indonesia* (various years).

Figure 2: Historical Comparison of GDP per Capita and Income Distribution, UK, Japan and Indonesia
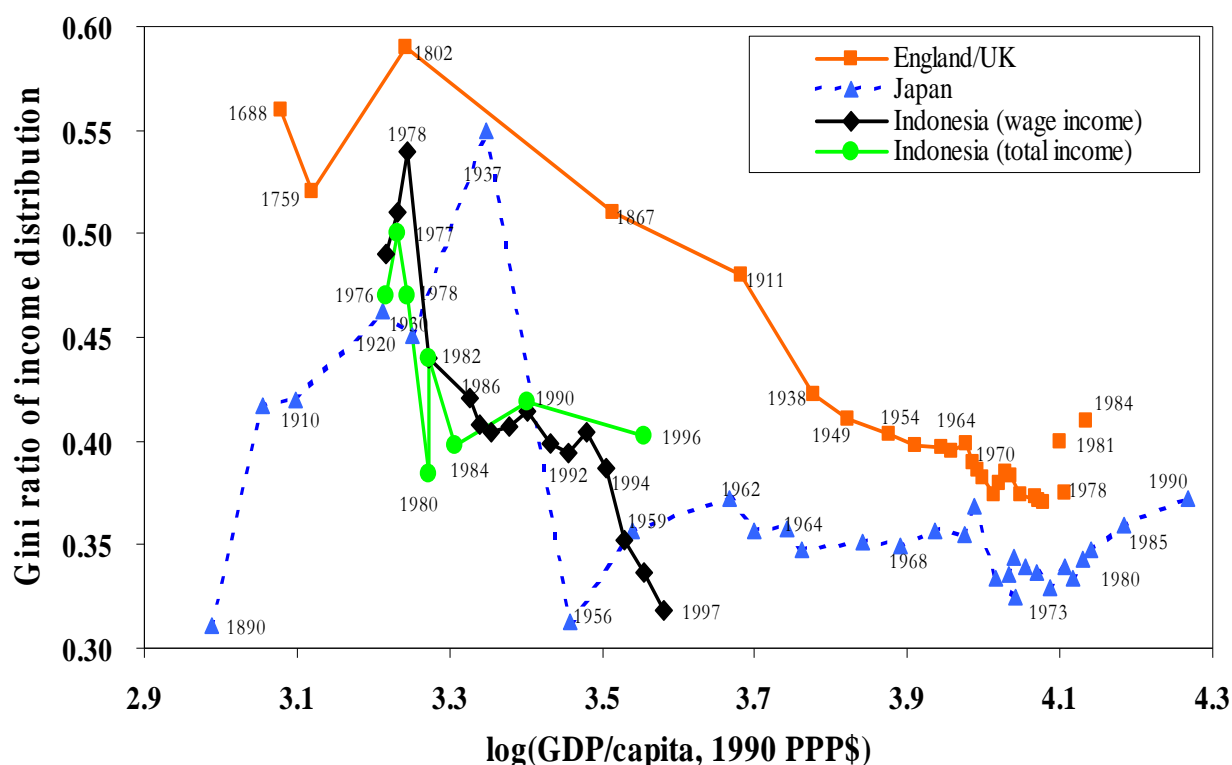
Notes: Not all years for which data are available are labelled in the chart. UK 1949-1984 refers to 'CSO hybrid estimates'. Indonesia (wage income) refers to panel A, Table 4.

Sources: England/UK Lindert, P.H. (2000) 'Three Centuries of Inequality in Britain and America' in A.B. Atkinson and F. Bourguignon (eds.) *Handbook of Income Distribution.* (Amsterdam: Elsevier) pp.175-177; Japan Mizoguchi, T. and Y. Terasaki (1995) 'Kakei no Shotoku Bunpu Hendo no Keizai - Shakai oyobi Sangyo Kozei-teki' [Fluctuations in Household Income Distribution as a Consequence of Changes in Economic, Social and Industrial Structures], *Keizai Kenkyu*, 46, pp.59-77, Mizoguchi, T. (1985) 'Economic Development and Income Distribution: The Experience of East and Southeast Asia' *The Developing Economies*, 23, p.310; Indonesia: Table 4, 1976-78 and 1982 A. Asra (2000) 'Poverty and Inequality in Indonesia: Estimates, Decomposition and Key Issues', Journal of the Asia-Pacific Economy, 5, p.102, 1980 and 1984 M. Ravallion and M. Huppi (1989) 'Measuring Changes in Poverty: A Methodological Case Study of Indonesia during an Adjustment Period', *The World Bank Economic Review*, 5, pp.57-82, 1990 and 1996 L. Cameron (2000) 'Poverty and Inequality in Java: Examining the Impact of the Changing Age, Educational and Industrial Structure', *Journal of Development Economics*, 62, p.157; GDP per capita Maddison, A. (1995) *Monitoring the World Economy 1820-1992.* (Paris: OECD) Table D, linked to constant price GDP indices *IMF International Financial Statistics*, UK pre-1820 linked to Maddison, A. (1991) *Dynamic Forces in Capitalist Development: A Long-Run Comparative View.* (Oxford: OUP) Tables A.5 and B.1.