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Transforming Indonesia: Structural Change from a Regional Perspective, 1968–2010

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1 Introduction

Indonesia was a shambles in the late 1960s. It was among the poorest countries in the developing world, with 68 per cent of its labour in agriculture (GGDC, 2015). Almost three decades later, the World Bank included the country as one of the Asian tigers in its East Asia Miracle report (World Bank, 1993). Under the authoritarian regime of president Suharto, income per capita in 2011 US dollars grew by a factor of three, from 959 USD in 1968 to 3,119 USD in 1993 (TED, 2014). Even though it was low compared to its neighbours, and 50 per cent of its labour force was still in agriculture, the country was on its way into the group of middle-income economies and not even the 1997s crisis could

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stop it. Indonesia forged ahead joining the G20 in 2008. At the same time the political voice of the Indonesians was enhanced with democratisation and decentralisation (Hall & Vidyattama, 2016).

However, over a decade into the twenty-first century, absolute poverty is still a major issue. Using the $3.10 a day benchmark, 112 million people were living in poverty in 2010 (WDI, 2017). Using the $1.90 a day benchmark, Indonesia, together with China and India, is also a main contributor to the new Bottom Billion, a term coined by Paul Collier more than a decade ago (Sumner, 2010).[1] In addition, surplus labour is still a main feature of the Indonesian economy, with 38 per cent of the labour force working in agriculture[2] in 2010 (GGDC, 2015). In a global comparison, the pattern of reallocation of agricultural labour for the period 1995–2010, which coincides with the most recent commodity boom, places Indonesia behind most Asian and Latin-American countries (Andersson & Palacio, 2016).

In this context, we ask to what extent the dual nature of growth has stimulated structural change, or just rewarded a particular sector or region of the Indonesian economy. To answer these questions, we apply a structural change perspective and examine the role of agriculture in the Indonesian economy over the period 1968–2010. By structural change we mean the reallocation of output and labour to other sectors of the economy (Lewis, 1954; Kuznets, 1955). The failure to allocate resources across economic sectors is a clear sign of weak structural change and therefore low productivity.

The measure of structural change used in this chapter, the Inter-Sectoral Gini, is the gap between the share of agricultural employment and GDP (Timmer, 2004). This gap indicates that there is room for growth if labour reallocation continues. We acknowledge the problem of occupational multiplicity or diversification of farm income into non-agricultural activities, which can lead to underestimating the size of the gap. Evidence suggests that around 70 per cent of agricultural households in 2003 still consider agriculture the main source of income (Booth, 2012). We also set out to complement the sectoral perspective of structural change with the geographical, or better said regional, one.

The regional distribution of growth in Indonesia, the world's largest archipelagic state, is linked to historically poor areas, at least in relative terms (Hill & Vidyattama, 2016). Similar patterns can be observed in parts of northeastern India, northern Nigeria and the northeast of Brazil, but Indonesia is more interesting given the weight of agriculture in the development policy in the 1970s and 1980s (GOI, Repelita I–V). Furthermore, Indonesia is one of the few developing countries with a steady growth at 5 per cent for almost three decades (Booth, 2016).

A caveat is the difficulties in presenting geographical boundaries that speak to the many political and administrative changes at the provincial level in Indonesia. To avoid these changes in provincial boundaries, we divide Indonesia into five regions[3]: Sumatra, Java, Kalimantan, Sulawesi and Eastern Indonesia. The aim is to identify the similarities and dissimilarities among regions in their process of structural change over the period 1968–2010. Java sticks out with 60 per cent of the national GDP, followed by Sumatra at 20 per cent and Kalimantan at 10 per cent (Hill, Resosudarmo, & Vidyattama 2008; Hill & Vidyattama, 2014).

We find that, with the exception of Jakarta, labour productivity growth in agriculture is indeed the main driver of the structural change during 1995–2010, but surplus labour remains a main feature of the economy. We see that the state provided support to agriculture in the 1970s and 1980s, without tapping the potential growth coming from greater labour reallocation. Labour-intensive manufacturing in the late 1980s did grow, especially in Java, but not enough to absorb the excess labour of the whole country. Since the 1970s, the GDP share of agriculture has declined at the expense of that of the service sector, with traditional services as the largest absorber of agricultural labour. Yet, Sumatra and Kalimantan, without their reource-rich provinces (Riau and East Kalimantan), have experienced weak structural change, or little labour reallocation. Although there is also evidence of diversification both within and outside agriculture (Booth, 2002, 2012), the linkages between sectors and regions have been weak. Not surprisingly, poverty is still high in Indonesia, at least by international standards.

2 Structural Transformation 1968–2010

One of the main propositions in economic history is that development implies structural change. Broadly speaking, structural change can be understood as "long term changes in the composition of output and employment across economic sectors" (Krüger, 2008). In other words, economic sectors do not grow at the same pace, and therefore these changes have effects on the labour market, with clear implications on the income distribution, that is, poverty and inequality. The analysis of the relationship between structural change and income distribution goes back to the work of Lewis (1954) and Kuznets (1955). The main argument is that the reallocation of agricultural labour and other resources into more productive sectors is the major structural change in a developing economy, leading to overall convergence in productivity between agriculture and non-agriculture and therefore to long-term changes in the income distribution.

To set the discussion, Fig. 11.1 presents the evolution of the sectoral value added, meassured in constant 2011 US Dollars, as a proportion of GDP since 1960. Studies show that the share of agricultural GDP in Indonesia fell quicker than in other fast-growing economies in East Asia (Manning, 1998, p. 6). It declined from 43 per cent to 14 per cent of total GDP during this period. At the same time the share of people employed in agriculture declined from almost 66 per cent in 1971 to 38 per cent in 2010 (see Fig. 11.2). Closing the gap between the share of agricultural employment and GDP reflects the improvement in the financial and labour markets in the economy (Timmer, 2004). Yet, this dimension of structural change appears to be developing slowly: 38 per cent of the Indonesian labour force with 14 per cent of the income, a gap of 24 units. Even if the agricultural labour force is adjusted down by 30 per cent to compensate for the multiplicity of occupation, the gap is still 12 units.

A brief comparison of the speed of reallocation of agricultural labour for the period 1960–2010 puts Indonesia on a par with Thailand and the Philippines, and behind almost every country in Latin America (Andersson & Palacio, 2016). In line with other Asian countries, the

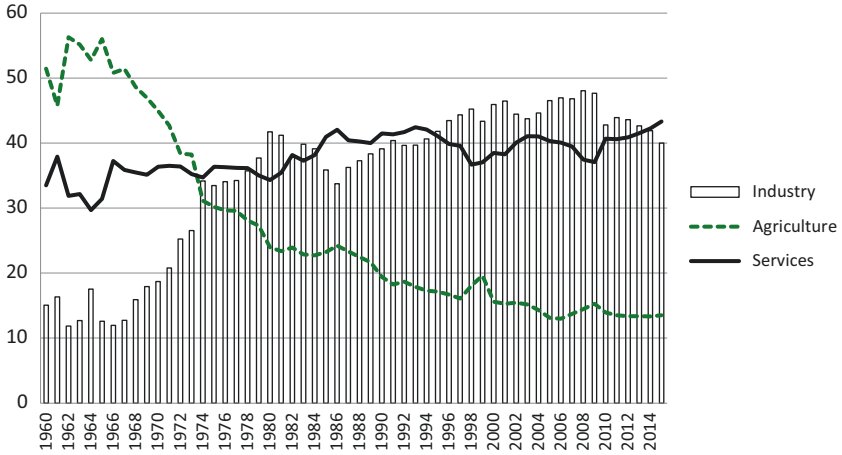

Fig. 11.1 Evolution of sectoral value added as proportion of GDP, 1960–2011 (%). Source: World Bank Development Indicators (2017)

evolution of labour productivity in Indonesia, which can be broken down into its within-sectoral productivity and a reallocation component, provides evidence that reallocation has been important for growth. For the period 1975–1990, the contribution of reallocation to labour productivity growth is 75 per cent (De Vries, Timmer, & de Vries, 2015). It falls to 20 per cent for the period 1990–2010, but remains healthy in contrast to most Latin-American countries.

To capture the nature of the structural transformation over time, we divide our period into three sub periods. The starting point is 1968, when Suharto came into power and Indonesia took shape as a centralised and unitary state. This first period ends in 1984 when the agricultural development strategy had arguably reached its pinnacle with the achievement, albeit only temporary, of rice self-sufficiency. The second period, 1984–1996, encapsulates the rise of Indonesia as a manufacturing powerhouse, which ends in economic calamity and political turmoil. The final period starts off out of the ashes of the Suharto regime in 1998, and ends in 2010.

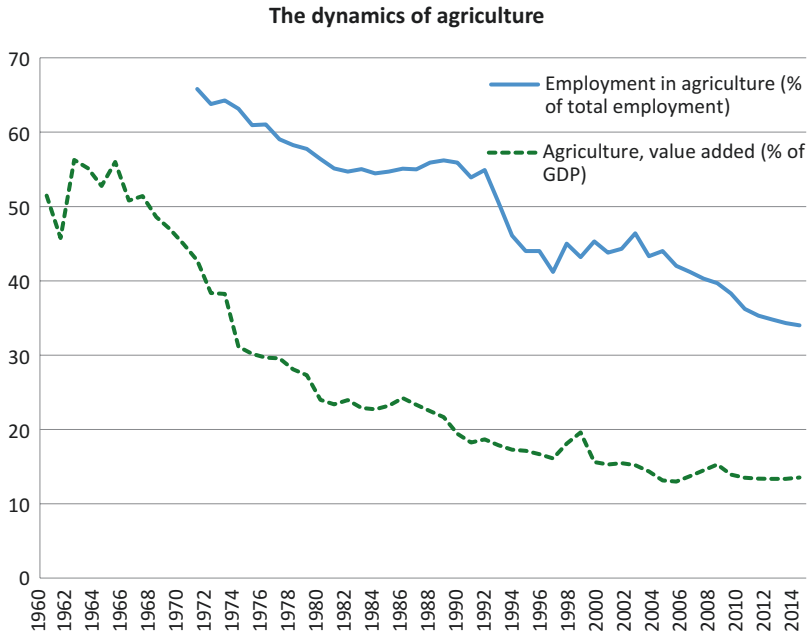

Fig. 11.2 Structural change: the gap between agricultural employment and GDP (%). Source: World Bank Development Indicators (2017)

2.1 A New Order 1968–1984

In an international comparison the Indonesian GDP per capita was the equivalent of many African countries of the time and ranked very low in an Asian context (Booth, 2016). The industrial sector was small. Agriculture accounted for over 50 per cent of total GDP and employed more than 60 per cent of the labour force (Fig. 11.2). To further aggravate the situation, food production could not keep up with demand (Bresnan, 1993).

By 1984 the picture had changed significantly. The value added from agriculture had halved to 20 per cent of GDP. Industry and services accounted for just below 40 per cent of GDP each. The decline in the agricultural labour force fell too, but the gap between shares remained as wide as before. In 1984 agriculture still accounted for 55 per cent of total farm household income (Booth, 2002). Given that centralisation under

Suharto was strong, the main reason behind the productivity increase in Indonesia is to be found in state policy (Booth, 1988; Axelsson, 2008). Some even argue that failing to put food, particularly rice, on the table would have risked Suharto losing power (Bresnan, 1993). The production of food crops was not driven by the expansion of land under cultivation but rather a result of state-led land intensification programmes (Simatupang & Timmer, 2008).

These programmes, known as Bimas, and later Insus, gained momentum in 1973 when funding through the windfall oil revenue meant that the agricultural extension system could be expanded. The programmes gave access to new modern agricultural inputs, cheap credit and instructions in modern cultivation practices. While the programmes had coercive elements (Axelsson, 2008), the adoption rate of new technology was impressive and by 1984 the high yielding varieties dominated. Initially, the programmes focused on Java but expanded further afield as they gained momentum (Booth, 1988). By 1985, 77 per cent of rice cultivation was under these intensification programmes (Sawit & Manwan, 1991). The dramatic increase in yields came with a rise in labour productivity.

Regarding cash crops, the Suharto regime inherited a crippled sector (Bresnan, 1993; Hill, 2000). Over the period there was a fast growth in the production of cash crops such as sugar in Java, and rubber and palm oil in Sumatra (Hill, 2000). A success story during this time is the palm oil sector; production had seen a more than fivefold increase by 1984. Yet, extension programmes were to a large degree absent until the end of the 1970s and even after that most smallholders did not participate. Instead, prices were the driving force with farmers increasing their production through working longer hours (Booth, 1988).

The period 1968–1984 saw the expansion of industry.[4] Given that the industrial base was only about 10 per cent of GDP at the time of Suharto's takeover, a top priority was to kick start the industrialisation process. As with agriculture, the opportunity for change came with the oil boom in 1973. The nature of the industrial policy and thereby the outcome was to have great impact on prospects for the structural transformation. Like in many other developing countries of the time, industrialisation was led through state initiatives and import substitution. The focus was on capital

rather than labour-intensive industries (Hill, 1990, 2000). This being said, the import substitution policies also benefitted the expanding manufacturing industries, making the Indonesian industrial sector much more diversified in the middle of the 1980s. Yet industries, such as textiles, which did expand in output, did so through technological upgrading (Hill, 1990).

2.2 Manufacturing Indonesia 1985–1996

After the slowdown in the structural transformation in the early 1980s, the pace of growth picked up once again in the second half of the decade; yet at a much slower rate than in the previous period. By the end of the Suharto era 18 per cent of GDP came from agriculture and it remained a major source of employment. The share of households declaring agriculture as the principal source of income only declined from 81 to 78 per cent between 1983 and 1993 (Booth, 2002).

True, the effects from the intensification programmes in agriculture had slowed down, partly because the political role of agriculture had changed with the achievement of self-sufficiency in 1984 (Bresnan, 1993), and public investments decreased as oil revenues declined, making it difficult to support agriculture (Simatupang & Timmer, 2008). It was also a consequence of the fact that the vast majority of farmers at this point were using modern technologies (Sawit & Manwan, 1991). At the same time cultivated land was being increasingly used for non-agricultural purposes. The response, the Supra Insus programme built on previous ones but had greater suport for technological adaptation. By 1992, the area under intensification programmes had increased to over 80 per cent (Hill, 2000). Again, these programmes focused on yields and production while mechanisation took secondary priority (Axelsson, 2013). In fact, with the new cultivation practices there is evidence of increased labour intensity, thus even hindering the shedding of labour (Sawit & Manwan, 1991). Yet in the early 1990s there is a dramatic decline in the agriculture labour force. This indicates that labour-saving technologies were used and therefore driving the transformation forward. In the cash crop sector there was little state support until the early 1990s, but we see a steady

increase in production (Booth, 2012; Hill, 2000). This is accompanied by the increasing importance of smallholders in the cash crop sector.

The industrial sector grew in importance and hovered around 40 per cent of GDP. The collapse in the oil price also had implications for industry. Indonesia could no longer sustain an oil-fed and inefficient industrial policy. For Indonesia to maintain the industrial share of GDP, a shift away from the industrial policy of the 1970s was needed (Bresnan, 1993; Hill, 2000). This shift was not done overnight and was often met with resistance from the industrial elites that had benefited from their close ties with Suharto (Vatikiotis, 1993). While there was an internal pressure for change, the regional dynamics in Asia had also changed with the Plaza Accord in 1985, which opened the gates for increased capital flows to feed manufacturing. The result was a shift in the drivers of the industrialisation process away from the oil-driven state-led industrialisation project towards an export-oriented manufacturing sector fuelled by foreign direct investment. It is this process that took off in the early 1990s with labour-intensive industries (Hill, 2000). Given the geographical concentration of non-natural resource, or labour-intensive, industries in Java, the spatial distribution of growth was set.

2.3 Out of the Ashes 1997–2010

The financial crisis in 1997 stopped the Indonesian economy dead in its tracks. Arguably the following decade was little more than a recovery, with GDP per capita not returning to pre-crisis levels until 2005 (WDI, 2017). Perhaps surprisingly, with the exception of the crisis years, the agricultural GDP continued to decrease at the same pace until 2005. After that, the process seems to have reversed and by 2010 it was back at levels seen a decade earlier. At the same time, agricultural labour share remained stagnant between 1995 and 2005. From then onwards, the steep decrease indicates labour productivity increases in agriculture and a strengthening off linkages to other sectors (shown in the next section). Here we also see the increase of diversification with the share of households deriving their income primarily from agriculture decreasing from 78 per cent to 69 per cent between 1993 and 2003 (Booth, 2002).

The 1997 crisis had far-reaching consequences beyond the economic scope. After three decades Suharto was forced to step down. Indonesia had under Suharto become increasingly centralised (Booth, 2014). Revenues from the regions, bar a few minor ones, were transferred to the national budget. The funds were then returned to the regions through subsidies or presidential decrees. Although the regime directed an increasing amount of funds towards the provinces, there was a growing dissent in the provinces in the last years of the Suharto regime, not least from the resource-rich provinces that felt cheated on their wealth (World Bank, 2003).

When Suharto stepped down in 1998, Indonesia embarked on a road towards democratisation. With democratisation came demands from regional governments for more power and the discussion on regional autonomy was reignited as the regions pressed for greater autonomy (Usman 2001; World Bank, 2003). In 1999, Law 22 and Law 25 were passed. Two years later decentralisation and regional autonomy was effectuated (World Bank, 2003). The "big bang" of decentralisation meant that the old top-down approach to development no longer applied. In concrete terms, for the agricultural sector this has meant an end to the broad and encompassing agricultural modernisation schemes of the past. Instead it was a decentralised system whereby each region was responsible for its own funding, which of course also meant that poor agricultural regions would be struggling to maintain its services especially in expensive project like irrigation (Firman 2009; Simatupang & Timmer, 2008). Consequently the organised efforts of the past were no longer in place. Instead we saw the old extension system struggling while NGOs and private interests gained ground promoting new cultivation practices, mechanisation of agriculture and, more importantly, focus had shifted towards agri-business and the marketing of agricultural products (World Bank, 2007).

In addition, the decentralisation process had, at least partially coincided with the commodity boom. The resource-rich regions saw their income from natural resources soar. This resurgence of agriculture was partly fuelled by the growing demand for "flexible crops", such as palm oil, soybeans, sugar cane, palm oil and corn. Flexible crops have multiple uses like food, feed, fuel and industrial material, which makes the agricultural

sector less vulnerable to price fluctuations (Da Silva, Gómez, & Castañeda, 2010) and allows it to diversify risks within a single crop sector (Borras et al., 2012). Among flexible crops, Indonesia is the world's largest producer of palm oil and among the top 20 producers of sugar cane, soybeans and maize (FAO, 2016). Indonesia is also among the top 20 producers of rice, rubber and coffee. In this context, most of these agricultural crops are labour intensive and therefore likely to have increased labour demand, especially in areas with palm oil and rubber.[5]

In this context, a debate on deindustrialisation has risen in recent years. Industrial GDP has grown slower than actual GDP (Basri, 2009). However, for this time period we do not see deindustrialisation as a concern because value added from industry was above 40 per cent on average. At the same time, there are indications that foreign investments are increasing and that the quality of industrial production is improving (Narjoko, 2014).

The new era emerging from the crisis has led to a changing role of the central state. The process is now in the hands of the provinces, and decentralisation has brought increasing conflicts between local stakeholders. For instance, local governments today exploit their resources to a much larger extent than they did before. The greater freedom has led to greater local possibilities but there are also signs that the development policies of the past have been replaced with more fragmented and short-sighted ones (Firman, 2009). Perhaps now, more than ever, it becomes important to look at the regional diversity within Indonesia.

3 Identifying Regional Structural Change in Indonesia

Here we explore the possible causes of regional diversity in growth experiences within Indonesia by using a structural change perspective to identify and highlight relationships among key economic variables. For comparability over time, the data is organised into five regional groups, which are composed of 26 provinces (see the list of provinces by region

in footnote 3). Labour data is taken from the official website of the Central Bureau of Statistics (CBS), sectoral value-added data from the Indonesian regional data at the World Bank, and national account data from the Groningen Growth and Development Centre (GGDC).[6]

While we are examining the whole period, we focus particularly on the years after 1995. Following De Vries, Timmer, and de Vries, (2015), we can run a decomposition exercise of labour productivity to examine which sectors are driving the performance of the Indonesian economy. However, we view structural change as the interplay between the two terms: without increases in sectoral productivity, reallocation does not contribute to growth as labour goes into low-productivity non-agricultural sectors.

Agriculture has been the largest contributor to overall labour productivity over manufacturing and traditional services.[7] We also confirmed the finding that labour reallocation explained around 20 per cent of the productivity growth while within sector productivity accounts for the remaining 80 per cent (De Vries, Timmer, and de Vries, 2015). In other words, Indonesia like most developing economies experienced a resurgence of agriculture during the recent commodity boom.[8] Yet, as noted earlier, the rate of reallocation of agricultural labour during the period 1995–2010 was among the lowest in the developing world: −1.4 per cent. Thus higher prices are the starting point of the explanation for people staying in agriculture. Indeed, even though the share of households engaged with agricultural commodities declined by more than 25 per cent between 2003 and 2013, the share of households engaged in the production of crops such as palm oil, sugar cane, rubber and cocoa grew by more than 27 per cent on average, and the income per capita of this group more than doubled during the period and outcompeted any other agricultural subsector.[9]

The income per capita allows the identification of three cohorts of regions that had similar patterns of growth. Table 11.1 shows the income per capita by region normalised to the national average. Part A in the table shows that there is *sustained growth* in the regions of Java and Kalimantan, *stagnation* in Sumatra and Sulawesi and *shrinking* in Eastern Indonesia.

Table 11.1 Income per capita as the share of the national income average

	1975	1990	2000	2010
A. Regional gross product per capita with rich provinces				
Sumatra	198	127	111	103
Java, incl. Jakarta	74	94	100	102
Kalimantan	139	169	178	158
Sulawesi	66	56	58	62
Eastern Indonesia	74	57	60	58
B. Regional gross product per capita without rich provinces				
Sumatra, w/out Riau	86	89	87	83
Java, w/out Jakarta	63	75	76	78
Kalimantan, w/out East	78	85	83	71
Sulawesi	66	56	58	62
Eastern Indonesia, w/out Papua	42	41	38	36

Source: Author's calculation based on data from the Indonesian Central Bureau Statistics and estimates from Hill and Vidyattama (2016)

3.1 Sustained Growth

Java accounts for over 60 per cent of the national GDP. The gap between agricultural GDP and labour fell by 20 per cent to 16 units for the period 1980–2010 (Table 11.2). Below 10 units characterises an advanced economy. The state support to agriculture slowed down the reallocation of labour into non-agriculture (see Figs. 11.3 and 11.4). With the exception of Jakarta, the provinces within Java had 29 per cent of the labour force in agriculture in 2010. Even though off farm income overestimates the number of people employed in agriculture, by the early 1990s around 40 per cent of agricultural households in Java considered agriculture their main source of income (Booth, 2002). Adjusting agricultural labour by 60 per cent, the gap is close to 4 units. Java, which dominates the rice and sugar cane markets in Indonesia, has indeed transformed its economy. However, the proximity to Jakarta has not been enough to converge in terms of income per capita. Without Jakarta, the mean income is 80 per cent of the national mean.

Kalimantan, the richest region by income per capita, has diverged upwards continuously from the rest of Indonesia. 47 per cent of the labour force in 2010 worked in agriculture, and the mean income was 58 per cent higher than the average. Twenty-seven per cent of the national

Table 11.2 Regional structural change, the gap between agricultural employment and GDP

	1980	1990	2000	2010	where, 1980–2010
A. Share of agricultural labour (%)					
Sumatra	68	67	56	47	−31%
Java	50	46	36	29	−42%
Kalimantan	68	61	50	47	−31%
Sulawesi	61	65	56	48	−21%
Eastern Indonesia	65	69	59	56	−14%
B. Share of agricultural regional gross product (%)					
Sumatra	28	25	24	24	−14%
Java	30	21	16	13	−57%
Kalimantan	40	26	24	21	−48%
Sulawesi	43	34	39	33	−23%
Eastern Indonesia	48	38	31	27	−44%
C. Difference between both shares = the gap					
Sumatra	40	42	32	23	−43%
Java	20	25	20	16	−20%
Kalimantan	28	35	26	26	−7%
Sulawesi	18	31	17	15	−17%
Eastern Indonesia	17	31	28	29	71%

Source: Author's calculation based on data from the Indonesian Central Bureau Statistics and sectoral GDP data from the Indonesian database at the World Bank (2017).

production of palm oil was concentrated in the region in 2014 (Indonesian Palm Oil Statistics, 2015), as was 18 per cent of the national production of rubber (Indonesian Rubber Statistics, 2015). Smallholdings dominated 82 per cent of the rubber production, and private estates, 84 per cent of palm oil. The gap indicates however that structural change is slow: it fell by 7 per cent for the period 1980–2010. The level is 26 units. Without East Kalimantan, its most diversified province, the income per capita of the region was 30 per cent below the national average income.

3.2 Stagnation

Sumatra lost ground to Java and Kalimantan. The income per capita had been halved between 1970 and 2010. The end of the oil boom is part of the explanation, yet the region still accounts for over 20 per cent of the national GDP. The agricultural sector, which used to employ almost 70 per cent of the workforce in the 1980s, provided for almost 50 per cent

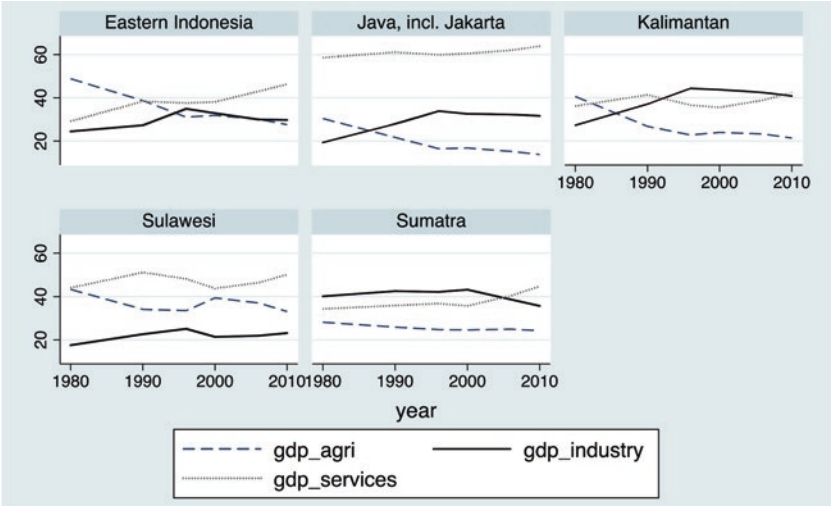

Fig. 11.3 The diversification of the economic structure. Shares of regional GDP (%). Source: Indonesia Database for Policy and Economic Research, World Bank (2017)

in 2010. The fact that smallholdings account for around 43 per cent of the production of palm oil and over 60 per cent of the production of rubber is a clear sign that agricultural households are participating in the commodity market. The agricultural GDP had barely fallen during the last three decades and accounts for 25 per cent of the regional GDP (70 per cent of the palm oil production and 74 per cent of the rubber production). The gap between agricultural GDP and labour, which fell by 43 per cent in the period 1980–2010, indicates that structural change had indeed occurred but income per capita had not increased. Without its wealthiest province of Riau, the mean income had remained over 80 per cent of the national one throughout the period.

In the same way, Sulawesi also showed little variation in the mean income. Its mean income was around 60 per cent of the national one. As in Sumatra, almost 50 per cent of the labour was in agriculture in 2010, but they were not engaged in the production of cash crops or flexible

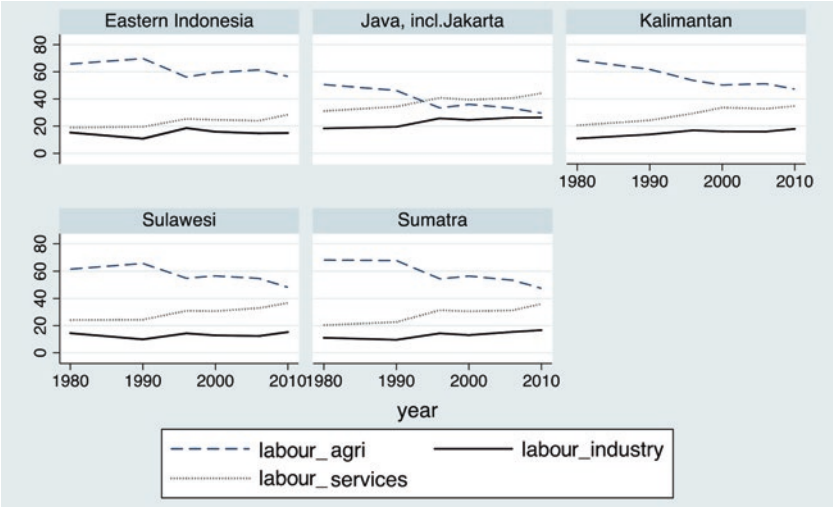

Fig. 11.4 Labour reallocation across regions and time. Shares of regional Labour (%). Source: Indonesia Database for Policy and Economic Research World Bank (2017)

crops. The gap between shares of agricultural labour and GDP had barely fallen and was at 15 units in 2010. There were no rich provinces that could serve as regional growth poles.

3.3 Shrinking

Agriculture is the main sector in Eastern Indonesia, with 56 per cent of the labour force in 2010 working in it. The decline in agricultural GDP in Eastern Indonesia was faster than in other regions, and that of labour slower. The gap between both remained at 30 units over the period, and income per capita was in decline. The region did not produce the most important commodities such as rice, palm oil, rubber, sugar cane and cocoa. Some of its provinces, for instance, West Nusa Tenggara and Papua, had grown at a fair rate, but others like Maluku had experienced continuous shrinking.

In conclusion, relative to total population, agriculture was a net source of labour supply in all regions, with positive contributions to labour that outpaced other sectors in the economy. In general, regional income per capita indicates that transformation has been slow. We believe that some sort of trap within agriculture has been strengthened by the recent decade of high commodity prices. The flexible crops, especially palm oil and rubber, for instance, increase the labour demand, and their multiple uses provides opportunities to diversify the risks. The concern lies in the long-term downward trend in the prices of agricultural commodities. After all, the expansion of palm oil is not exclusive to Indonesia, and those with the lowest labour costs set the world prices. Take the example of coffee, in which Indonesia is also among the top 20 producers in the world, but the households engaged in the production of coffee have declined by almost 20 per cent in the last decade. If people do stay in agriculture, the gap between the share of employment and GDP persists, and therefore the mobility of labour and capital may not ensure the full connection of agriculture to the rest of the economy. A result in the short run may be higher unemployment and poverty unless the non-agricultural sector provides new employment opportunities and a strong focus on the needs of the poorest population groups and regions. On the other hand, decentralisation seems to make little difference in the regional dynamics of structural transformation.

4 Indonesian and the Asian Development Model

In the discussion on the rise of post-war Asia Pacific, the role of an East Asian model of development is often referred (Kuznets, 1988; World Bank, 1993; Birdsall, 2005). This model thinking is useful when studying the transformation of Southeast Asia. Not least because although there may have been no explicit model for the first-tier countries to follow, the second-tier developers looked at countries like Japan and Taiwan for inspiration. Suharto, and the technocrats surrounding him, looked for inspiration and have often been put together with the first-tier newly

industrialised country (NIC) economies when explaining the East Asian miracle (Bresnan, 1993; World Bank, 1993).

At the core of the East Asian model and thereby the transformation process we find a dynamic agricultural sector. In the first-tier countries we saw significant increases in agricultural productivity and strong linkages to other sectors of the economy. These linkages meant that labour could shift into other sectors of the economy, resulting in an overall productivity increase and surplus capital available for other sectors of the economy. This was done through, among other things, pricing policies in favour of the growing industrial sector but with farmers keeping a sizable share of the increased income, resulting in a sharp decline in rural poverty (World Bank, 1993). In this way, agriculture could serve as a source of labour, capital, and food, and also become an important domestic market for domestically produced manufactured goods.

Indonesia has shown signs of dynamism in agriculture since the 1970s. The state did support the sector through subsidies and technical expertise, but it was not able to create the linkages that were strong enough to ensure a sustained transformation of agriculture. This was apparent already in the 1980s when the sector, despite becoming a less important contributor to GDP, continued to employ over half of the population. The oil boom allowed Indonesia to finance both the rise of industry and the modernisation of agriculture, but without the emergence of a new class of rural entrepreneurs linked to other sectors of the economy.

The East Asian model also stresses the equal distribution of income and land. This manifested itself in land reforms that set the preconditions for a more inclusive growth model. The land reform laws of 1960 aimed at limiting land ownership and tenancy, but they never bore fruit and therefore the more equal initial conditions that we had seen in the first-tier miracle economies were not present (Booth, 2012). The reasons for the failure relate to inadequate legislative framework, bureaucratic deficiencies, vested interests and corruption (Neilson, 2016). In addition, there were ideological differences, which after the coup that failed in 1965 became stronger and pushed land reforms down the public agenda (Bresnan, 1993). Finally, the land scarcity was also a constraint for implementing the 1960 land reforms. Instead Indonesia attempted to

equalise the access to agricultural inputs regardless of the income level across social groups (Axelsson, 2008). True, it did compensate the smallholders to a certain extent for the lack of land reform, but that does not qualify as equality. Furthermore, the industrial policy until the mid-1980s was not inclusive as it did not pull the broad base out of agriculture. The more equal countries were able to reallocate their productive assets more efficiently (Bourguignon, 2004). So, Indonesia has not succeeded in creating these egalitarian preconditions for sustained growth. In addition, the state support for agriculture was geographically unbalanced, favouring Java.

In spite of uneven regional growth and little transformation outside Java, political conflicts were kept in check by returning more funds to the regions as well as maintaining a strong military presence. These features make up for political stability during the Suharto regime. In this respect, Indonesia differs little from other Asian countries. Suharto and his technocrats built a development strategy based on the three aspects: growth, stability and equal distribution (Sajogyo & Wiradi, 1985), but the latter fell by the wayside and led to very different outcomes in terms of structural transformation compared to the country's Asian peers.

Given our estimates of labour decomposition, trends of diversification and regional trends of growth, and the history of the country, Indonesia still has much work to do. First, the integration of the outer regions into the economy goes through the agricultural sector. Our estimates of labour productivity indicate that the sector has indeed outpaced other sectors of the economy. Thus flexible crops with a high share of value in labour provide an opportunity to diversify income risks and generate higher farm income in rural areas. The experience so far shows that smallholding farmers have been able to deal with the task, at least in Java, Sumatra and Kalimantan. Similar experiences should be promoted and supported in Sulawesi and the Outer Eastern islands, given the relative abundance of land. Support services inspired by the spirit of the Suharto era, particularly in the food crop sector, should be encouraged in order to provide agricultural inputs, including high yielding seeds and land, within competitive markets. This is particularly important given the new institutional challenges that the transformation of agriculture entails in terms of size and productivity and the local capability issues tied to the decentralisation process.

Second, successful regional economies have enabled the labour force to move out of agriculture. The labour-displacing effect of the agricultural sector has at least partially been offset by an increase in the demand for labour coming from off-farm activities. In regions where stagnation dominates, the State must facilitate the transition out of agriculture into other sectors by investing in human capital and infrastructure. Furthermore, the State must focus on the delicate balance between the substitution of technology and labour as the national agricultural sector becomes more productive. Thus, where surplus labour is related to stagnation, strategies inspired by the old transmigration programmes must identify the differences across provinces in terms of factor endowments (land quality, labour and technology) and indicate the most suitable strategies for growth. Sometimes they might relate to the type of activities needed to trigger growth, or the quantity and quality of labour that needs to be retrained in other activities or the kind of institutional capabilities that need to be developed at the local level to ensure a better distribution of income across regions.

In sum, Indonesia only partially followed the Asian model. It did favour agriculture in its early stages, but failed to create the dynamics for a sustained transformation process independent of the State as a driving force for modernisation of both agriculture and industry. Furthermore, the process has been uneven given that the so-called pre-conditions for growth have been hampered by the unequal distribution of resources and the lack of linkages across sectors and regions. Java has indeed been able to diversify its economy and experience a sustained process of growth and transformation while the other regions seem to lag at least twenty years behind.

5 Conclusion

Since 1968, Indonesia has displayed an impressive growth record. We measure structural change by looking at the gap between the share of agricultural GDP and employment for Indonesia and its regions. Indonesia has transformed from a predominantly agricultural economy to one based on industry and services. Yet in a global comparison,

particularly in relation to other Asian countries, the structural transformation has been sluggish and poverty lingers. We argue that this is a consequence of the weak linkages across sectors and regions. The process was dependent on the State, and its needs. In the 1970s the State was pushing for the transformation process with food security as the principal goal. This was coupled with an industrial policy that prioritised output rather than creating labour opportunities or aiding the rise of the new entrepreneurial class. In the 1980s when structural transformation slowed down, in particular regarding labour reallocation, it coincided with waning state support for agriculture. It was not until a shift in industrial policy, forced by a decline in oil prices, that there was more labour-intensive manufacturing and an acceleration in the process once again.

With the financial crisis and its political aftermath a brief stagnation set in but as this was replaced by strong indications of the resurgence of agriculture, it was possible to believe that the structural transformation had been triggered again. However, at the regional level the process was clearly uneven. With decentralisation the role of the central government became less dominant, but the process of structural transformation was more reliant on local governments. True, local government may be closer to the people, but it is less organised and communities are eager to fend for themselves rather than coordinating policies across regions. More advanced regions like Java have greater opportunities to forge ahead. This means that at least 25 per cent of the Indonesian labour force is not fully taking part in the transformation process. If Indonesia is serious about turning from half to full miracle, the transformation process has to be more inclusive. In other words, the State must create policy to achieve a balancing act between the technology needed to catch up and the amount and type that will be good for labour, whilst also creating the social policies to safeguard the rights and satisfy the needs of those left behind across the regions.

Notes

1. The poverty estimates must be treated with caution because of the data limitations of the World Bank dataset.

2. By agriculture we mean farming, livestock, forestry, fishery and agro-business that processes and transports the output.
3. Sumatra (Aceh, Sumatera Utara, Sumatera Barat, Riau, Jambi, Sumatera Selatan, Bengkulu, and Lampung); Java (DKI Jakarta, Jawa Barat, Jawa Tengah, DI Yogyakarta, Jawa Timur and Bali) Kalimantan (Barat, Tengah, Selatan and Timur); Sulawesi (Utara, Tengah, Selatan and Tenggara); Eastern outer islands (Nusa Tenggara Barat, Nusa Tenggara Timur, Maluku and Papua).
4. By industry we mean mining, manufacturing, construction and public utilities.
5. Palm oil is to provide on average 350 jobs per 1000 ha and rubber 420 (Rising Global Interest in Farmland: can it yield sustainable and equitable benefits?).
6. We recognise the limitations of the data sources listed here. First, there are no reliable time series data on working hours in the labour data. Second, the data cannot be disaggregated by sources of income. We used household declaration of principal source of income and shares of income from agricultural censuses. Third, the sectoral data from GGDC does not capture the informal sector.
7. Agriculture 0.53%, mining 0%, manufacturing 0.23%, public utilities 0.02%, construction 0.08%, wholesale, retail and trade 0.35%, transport and communications, 0.15%, financial services 0% and personal and community services 0.13%.
8. Fuglie (2012) estimated agricultural TFP for Indonesia to have grown by a factor of 3.6 between 1991–2000 and 2001–2009.
9. Perennial crops, period 2003-2013: palm oil grew by 115%, rubber 71.7%, sugar cane 26.3% and cocoa 15.1%. Coffee fell by 18.6% (CBS, 2015).

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