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Employment and growth in Indonesia (1990–2015)

Majid Nomaan
Sarma Nayantara

Employment and Labour Market Policies Branch

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Preface

The primary goal of the ILO is to work with member States towards achieving full and productive employment and decent work for all. This goal is elaborated in the ILO Declaration 2008 on Social Justice for a Fair Globalization which has been widely adopted by the international community. Comprehensive and integrated perspectives to achieve this goal are embedded in the Employment Policy Convention of 1964 (No. 122), the Global Employment Agenda (2003) and – in response to the 2008 global economic crisis – the Global Jobs Pact (2009) and the conclusions of the Recurrent Discussion Reports on Employment (2010 and 2014).

The Employment Policy Department (EMPLOYMENT) is engaged in global advocacy and in supporting member States in placing more and better jobs at the centre of economic and social policies and growth and development strategies. Policy research and knowledge generation and dissemination are essential components of the Employment Policy Department's activities. The resulting publications include books, country policy reviews, policy and research briefs, and working papers.

The Employment Policy Working Paper series is designed to disseminate the main findings of research on a broad range of topics undertaken by the branches of the Department. The working papers are intended to encourage the exchange of ideas and to stimulate debate. The views expressed within them are the responsibility of the authors and do not necessarily represent those of the ILO.

Sukti Dasgupta
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Foreword

Promoting productive employment is a major challenge for emerging and developing economies, and the challenge can be further compounded as a result of financial and economic crises. A better understanding of the labour market impacts and during the crisis and recovery stages can provide critical lessons for policymakers, workers' and employers' organizations in their continued efforts to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all, Sustainable Development Goal No. 8 of the 2030 Agenda for Sustainable Development.

This paper, authored by Majid Nomaan and Sarma Nayantara, examines the employment situation in Indonesia during and in the aftermath of the Asian Financial Crisis and the Great Recession, including importantly how the quality of work responded to the changing composition of Indonesia's growth process. The authors find that many labour market indicators have moved in an encouraging direction, but a decomposition of labour productivity indicates that productivity growth has been driven primarily from efficiencies "within" sectors rather than the allocation of labour across sectors. Facilitating and managing the structural transformation process in a fair and inclusive manner can further support Indonesia's socioeconomic development.

The paper was undertaken as part of a research project on "*New forms of work and income security: global and country-specific perspectives*," funded by the Government of the Republic of Korea. With unemployment and underemployment levels remaining stubbornly high and insufficient job growth to reduce the incidence of working poverty in many part of the world, against a backdrop of a rapidly changing world of work driven by new technologies, rapid shifts in the geography of production and trade, demographic change and other drivers, the project was undertaken with a view to building knowledge on the linkages between these areas. The support of the Government of Republic of Korea, and the ILO's Research Department, in particular Uma Rani Amara, who coordinated the project, are gratefully acknowledged.

Sukti Dasgupta
Chief
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I – Introduction

Over the past two and a half decades, the global economic landscape has experienced considerable and sudden changes occurring over a short span of time. International transmission mechanisms have developed in such a manner that localised events have far-reaching consequences for the rest of the world. The aim of this paper is to look at the evolution of the employment situation in Indonesia in recent periods of crisis and recovery. Treating the Asian Financial Crisis and the Global Financial Recession as two reference points for our analysis, we look at the implications of the growth process for employment.

The drivers of growth in Indonesia have changed from those during the 'New Order' era. The services sector has been increasingly catching up to industries. Since 1966, the Suharto regime pursued a restructuring of the economy: modernizing agriculture with green-revolution technologies and large investments in irrigation. Industrialisation was promoted with a focus on labour-intensive consumer goods and import-substitution. A combination of liberalisation policies in 1983 for the banking and trade sectors shifted Indonesia towards a path of export-led high growth.

Indonesia was one of the countries hit hardest by the Asian Financial Crisis of 1997 but it showed considerable resilience following the Global Financial Recession in 2008. Economic recovery was swifter than in many other high and middle-income countries. Growth can occur through different channels: it can be led by different sectors; be domestically or externally driven; arise from growth in productivity of resources or an increase in resources, etc. While growth of aggregate output translates to growth of income, traditionally measured in terms of GDP per capita, it is the composition or the drivers of growth that determine its distribution.

The consequent impact of economic recovery and the growth process on employment is, however, not at all obvious. In developing countries, the open unemployment rate is not necessarily a very revealing indicator. A further disaggregation of employment *across sectors* and *along status* or the nature of employment contracts is therefore, required. This paper attempts just that.

In Section I, we start with a description of the datasets that we will be using for our inferences. To set the stage, the following section describes Indonesia's growth experience and the accompanying shifts in monetary and fiscal policy over the reference period. We also devote attention to the role of the external sector in Indonesia's growth process and how it has transformed labour demand in recent years. Section III builds a context for the analysis of employment by looking at the structure of Indonesia's labour force, focussing specifically on demographic variables such as gender and age, and educational attainment. In section IV, we look specifically at employment and changes therein in trends and composition to yield a comprehensive and coherent understanding of the labour situation. The final section concludes.

II – Data

This paper draws from two main data sources: the World Development Indicators (WDI) and the Indonesian National Labour Force Survey (Sakernas). The World Development Indicators is primarily used for macroeconomic performance indicators such as growth, poverty and inequality for Indonesia and its peer countries. It is a time series dataset ranging from 1960 to 2015 compiled from international and national statistics divisions.

The main data source for labour force related indicators is the Indonesian National Labour Force Survey (Sakernas) complemented by the ILO statistical database - KILM. The Sakernas surveys were initiated in 1976 to cover labour market characteristics of all working age individuals within representatively sampled households. However, it was conducted on a regular basis only since 1986: quarterly (1986–93), annually (1994–2004), biannually (2005–10) and again quarterly (2011 onwards). For the biannual surveys, we refer to the August Sakernas which have the largest sample size of around 200,000 households.

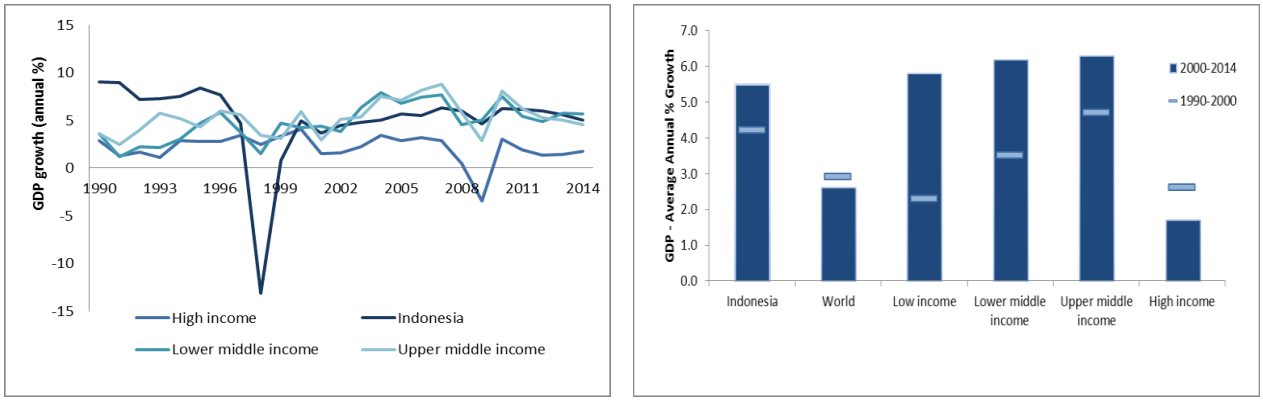
The study period for this paper includes all three Sakernas regimes. However, since the current survey methodology has been consistent since 2001 we restrict the core employment analysis to post-2001. According to the ILO classification, the survey considers working age as 15 years and above (increased from 10 years and above) and the expanded definition of unemployed which now includes those who are not working, but (a) actively looking for jobs, (b) not actively looking for jobs,[1] (c) have jobs to start later, or (d) preparing a business. Prior to 2001, Sakernas only recorded earnings for regular wage employment and during 1996-2000, earnings were disaggregated into cash and in kind.

[1] This includes "discouraged jobseekers": those persons available for work who did not seek employment for labour market-related reasons such as the past failure to find a suitable job or the lack of experience. (ILO "Report III – Report of the Conference", 19th International Conference of Labour Statisticians, Geneva 2013).

III – Growth and Macro Policy

The East Asian Financial Crisis of 1997-98 and the severity of its impact raised several questions about the sustainability of the growth models adopted by these economies. This applied especially for Thailand, South Korea and Indonesia because the crisis hit these markets after several years of steady high growth rates and generally stable market conditions (Figure 1, left). However, the consequent impact of the 2008 Global Financial Recession was very much tempered and these markets (middle income) staged a recovery – termed by many experts as a "V-shaped recovery". Growth in Indonesia surpassed that of upper middle and high income countries (Figure 1, left).

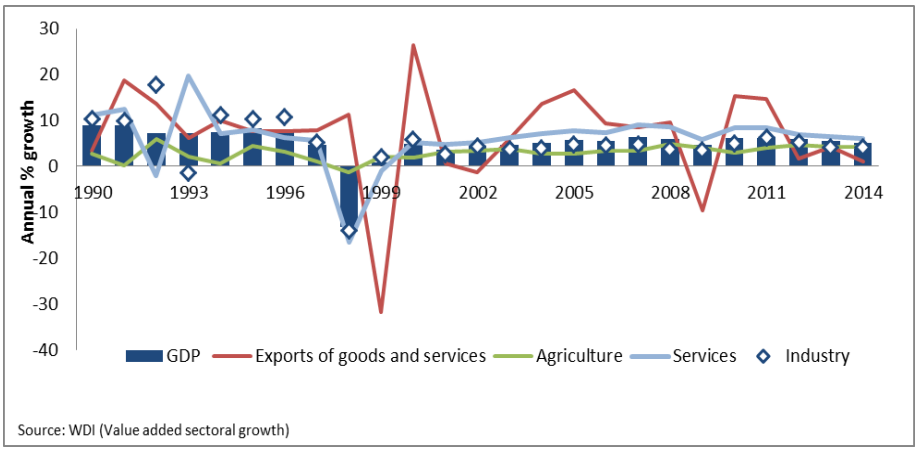
Figure 1 - GDP growth over time (left) and on average (right)



Source: WDI and WDI 2015.

In Indonesia, the period 1990-96 was marked by high annual GDP growth rates, following deregulations in 1983 to liberalise the banking sector and external trade and a general improvement in the investment climate. This period saw a focus on export-led growth strategy (a detailed explanation of the external sector is given in the following sub-section). A next round of deregulation in the early 1990s included measures to attract FDI by dismantling barriers and encouraging investment in export oriented sectors/activities which fuelled growth till the crisis years (Figure 2).

Figure 2: Sectoral growth



Source: WDI (Value added sectoral growth).

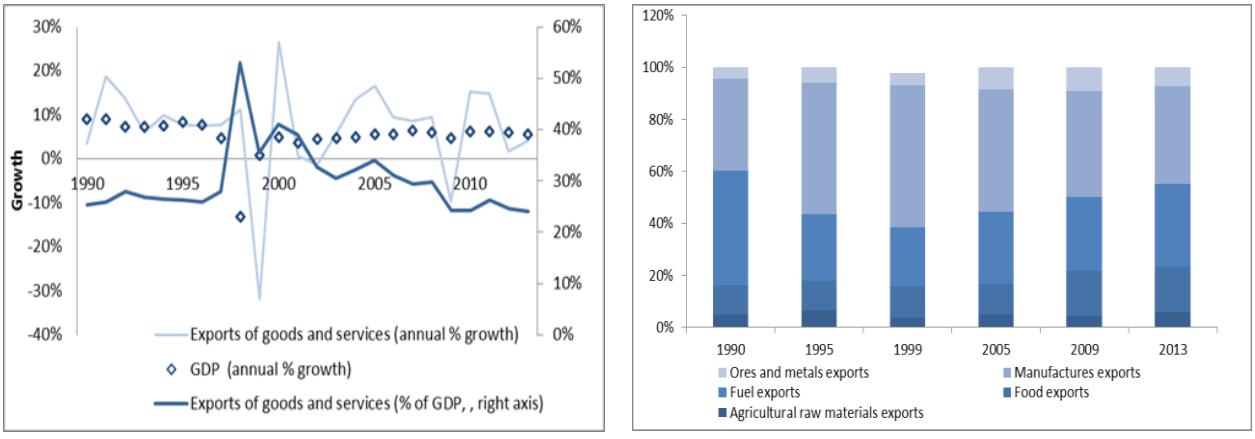
The modernisation of agriculture and improvements in productivity along with measures such as banking sector liberalisation and credit availability started during the Suharto regime led to rapid industrialisation, reduction in unemployment and poverty and steady GDP growth rates during this period (Radelet, 1999). However, there was also a downside to these liberal measures which resulted in certain unhealthy commercial and banking practices – namely, rapid growth disguised the depth of risky lending and encouraged financial policies to validate such practices thereby exposing Indonesia to external vulnerabilities and speculation. There were no incentives for effective risk management practices, either self-determined or through regulatory guidance (Radelet & Sachs, 1999).

In the following period, the East Asian crisis plunged the Indonesian economy into a deep recession with overall growth dipping to negative 13 per cent in 1998. The economy experienced high price increases (inflation rate of 78 per cent), low industrial production, high interest rates, drop in real incomes and an increase in poverty rates (ADB, 2009). There is a view that the Asian Financial Crisis was a result of panic responses (triggered by the Thai Baht collapse), and that these markets were fundamentally strong as they performed consistently well during the previous decades (hence the sobriquet "Tiger" economies). However, it is also generally accepted that the crisis was on account of the basic weaknesses in the Asian financial systems, hitherto masked by the rapid economic growth and large capital inflows, which was encouraged, in part, by pegged exchange rates. These basic weaknesses came to the fore due to the lack of appropriate risk management practices and the absence of a regulatory risk based approach to financial policies. While these views are not mutually exclusive, or exhaustive, they do serve to underscore the fact that what was required for a more stable and sustainable growth path was "reforms designed to strengthen the financial system" (Moreno, 1998).

Contrarily, while the crisis of 2008-09 impacted most of the economies in the region, Indonesia continued to record positive growth albeit at levels lower than what was achieved during the decade immediately after the 1997-98 crisis – this was true for all the sectors including manufacturing which was under great pressure due to extremely low order levels particularly from USA and Japan. The overall management of this crisis was far more efficient than earlier– macroeconomic management was better, the banking sector continued to be healthy, prices were maintained, foreign exchange reserves were sound and adequate to meet debt obligations.

III.A Role of the External Sector

Figure 3: Exports and GDP growth with share of exports (right), Composition of merchandise exports (left)



Source: WDI

During the pre-crisis or Suharto regime, Indonesia rapidly transitioned to export-oriented manufacturing which contributed more than 20 per cent of GDP (Figure 3, left). James and Fujita (2000) show that growth of manufactured exports, particularly in labour-intensive light industries, was the driving force behind employment gains in the period 1985 to 1995. However, post-crisis, employment generation declined in Indonesia's labour-intensive manufacturing sector. An extension of this paper based on an examination of input–output data, Aswicahyono et al (ADB, 2011) find that fewer jobs were created through exports in manufacturing industries in 2005 than before the crisis. The migration of labour from agriculture to manufacturing slowed down significantly during this period and employment growth was primarily due to absorption of labour by the services sector. According to Manning (1998), domestic policies did not sustain the growth of labour-intensive exports and the structural transformation that was initiated before the crisis.

Post-crisis, however, GDP growth did not cross five percentage until 2004 and stagnated, and subsequently has shown a slow increasing trend with the aforementioned dip around the 2008 crisis. With respect to employment, more concerning is the changing composition of merchandise exports away from light industries to more capital and skill intensive industries (Figure 3, right) although labour productivity gains are associated with this shift. Aswicahyono et al (ADB, 2011) find that while the share of traditionally labour-intensive industries such as textiles, clothing and footwear declined, the share of primary exports persisted (also as seen in Figure 3, right). This changing composition and its volatility due to its dependence on foreign demand, both contribute to the elasticity of regular employment[2] to export growth being relatively low.

The external sector comprises of a goods market as well as a capital market. The role of capital inflows from abroad can be discerned from the behaviour of domestic saving and investment rates during the following periods – high growth period, East Asian crisis years, recovery, the second crisis period during the global financial recession (Table 1) and the latest period. In the nineties, the investment rate is higher than the savings rate while FDI was rising. This suggests a crowding out phenomenon of domestic capital (Ghose, et. al. 2008), thereby leaving the economy vulnerable to external shocks. The opposite phenomenon occurs in the years preceding the 2008 crisis possibly due to a more prudent monetary policy framework which minimised the effects of the crisis except those via export demand channels.

Table 1: Average savings, investment and FDI rates (as percentage of GDP)

	Savings Rate*	Investment Rate^	Foreign direct investment §
1990-1996	26%	28%	1.53%
1997-1999	22%	25%	0.19%
2000-2007	25%	22%	0.23%
2008-2010	30%	30%	1.59%
2011-2014	32%	32%	2.53%

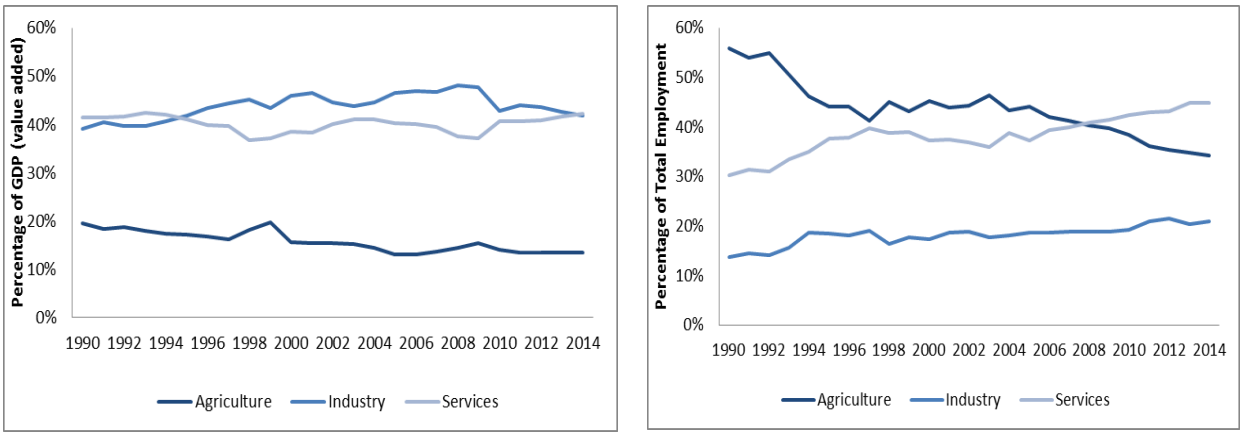
Source: WDI *Gross savings; ^ Gross fixed capital formation; § net inflows

[2] ICSE 1993 - Regular employees are those "employees with stable contracts" for whom the employing organization is responsible for payment of relevant taxes and social security contributions and/or where the contractual relationship is subject to national labour legislation.

III.B Sectoral Decomposition

A significant feature of the growth process since the Asian Financial Crisis was the increasing dominance of the services sector vis-à-vis industries (Figure 2) – the major contributions were from financial services, construction, travel and transportation and communication (Manning & Aswicahyono, ILO 2012). The increasing trend can also be seen in the sector's share of GDP and total employment (Figure 4).

Figure 4: Percentage share of sectors in GDP value-added (left) and employment (right)

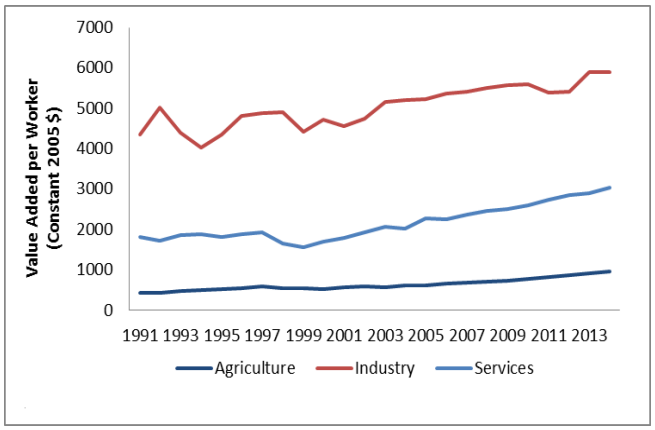


Source: WDI

According to Manning and Aswicahyono (ILO, 2012) the sector carried Indonesian growth since the Asian Financial Crisis. In comparison to its regional peers, industry in Indonesia has witnessed a slow recovery relative to services. Despite this, labour productivity was higher in industry than in services (Figure 5). It must be kept in mind, however that the services sector is a melange of several things – consumption goods as well as inputs for production; the formal and the informal. So the sector is home to both white-collar employment characterised by high levels of skill and productivity and informal enterprises that operate with unskilled workers and little capital.

Labour productivity is defined as output per unit of labour input (KILM 2015). Figure 5 describes the evolution of sectoral productivity over time for Indonesia and Table 2, a comparison with other South Asian countries. Improvements in labour productivity are an important source for economic growth and as Figure 5 shows, productivity or value added per worker in Indonesia has been concentrated in industry relative to services and agriculture. Country or sector level growth can be ascribed either to *increased employment* or to *more effective work* by those who are employed. The latter can be analysed through data on labour productivity.

Figure 5: Sectoral Productivity and Table 2: Country comparison of labour productivity growth

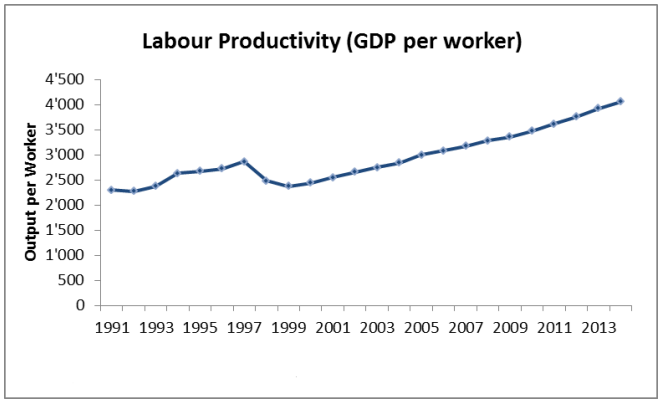


Country comparison of labour productivity (GDP/worker)					
	1991	1995	2005	2010	2015
Cambodia	74	87	131	150	201
China	45	70	153	254	362
Indonesia	**94**	**110**	**123**	**142**	**171**
Japan	93	95	107	109	113
Malaysia	74	94	113	127	137
Philippines	93	91	107	119	143
Singapore	67	86	109	125	134
Thailand	76	105	117	134	149
Viet Nam	63	80	125	156	190

Source: KILM and WDI and KILM estimates (constant 2011 international $ in PPP) **(2000=100)**

Sectoral differences, as those seen above, in productivity imply that the allocation of labour is not optimal and productivity gains are to be had by shifting more labour to industry from agriculture until the gap is closed. Labour productivity growth in an economy can be achieved in one of two ways (McMillan & Rodrik, 2013). Productivity can either grow *within* economic sectors through capital accumulation, technological change, or reduction of misallocation across plants or labour can move *across* sectors, from low-productivity sectors to high-productivity sectors, increasing overall labour productivity in the economy.[3] These two changes are referred to as the 'within' component and structural change.

Figure 6: Labour productivity growth over time and Table 3: Average shares of the 'Within' component and Structural change



	Within Component	Structural Change
1992-1996	56%	44%
1997-1999	101%	-1%
2000-2007	92%	8%
2008-2010	73%	27%
2011-2014	73%	27%

Source: KILM estimates (GDP constant 2005$) and Authors' calculations using WDI and KILM data

Barring a small dip in productivity after the onset of the crisis (1997), overall labour productivity has shown a steady rise in Indonesia (Figure 7). Using the McMillan and Rodrik (2012) decomposition formula,[4] Table 3 shows that the 'within' component had a much

[3] The limitation of such decomposition methods is that the informal economy is not captured adequately in the data while in reality it is crucial in absorbing labour. Official employment data falls short in labour-abundant countries where labour markets are 'dualistic' in nature (Ghose 2015).

[4] This can be expressed using the following decomposition $\Delta Y_t = \Sigma\ \theta_{i,t-k}\Delta y_{i,t} + \Sigma y_{i,t}\Delta\theta_{i,t}$ where i= agriculture, industry and services, t= 1991 to 2014 and Y_t and $y_{i,t}$ refer to economy-wide and sectoral labour productivity levels, respectively, and $\theta_{i,t}$ is the share of employment in sector i. The Δ operator denotes the change in productivity or employment shares between t – k and t. The first term in the decomposition is the weighted sum of productivity growth within individual sectors, where the weights are the employment share of each sector at the beginning of the time period or the "within" component of productivity growth. The second term captures

larger share of overall increases in labour productivity than structural change. Evidently, the Asian Financial Crisis period (1997-1999) experienced a negative average structural change component while the within-component dominated all increase in labour productivity (Table 3). This indicates a shift of labour away from industry or the high-productivity sectors towards agriculture and the informal sector. This coping mechanism is not seen however, during the second crisis period (2008-10) when the economy was perhaps more insulated. The weak pace of structural transformation over the past one and a half decades is a point of concern especially considering its contribution *prior* to the first crisis. This suggests a clear role for domestic policy towards high-productivity and labour-intensive sectors.

Any analysis of labour productivity would be incomplete without the complementary analysis of real wages. While growth in labour productivity measured in terms of output per workers averages 59 per cent (using KILM estimates), the growth in real wages (across all categories) averages half of that over the same period (Table 4). Growth in the real-wages of the casually employed is the highest but that is clearly a base effect since their wages are the lowest among all categories throughout the period.[5]

Table 4: Percentage growth in monthly real wage-earnings by employment status

Year	Self employed	Regular wage employment	Casual employment	Total
2002	3%	7%	3%	3%
2003	4%	8%	8%	7%
2004	3%	0%	-1%	1%
2005	-12%	-13%	-9%	-13%
2006	8%	10%	5%	8%
2007	-6%	1%	2%	-1%
2008	8%	-3%	4%	0%
2009	-2%	11%	2%	6%
2010	3%	0%	-2%	3%
2011	2%	4%	17%	7%
2012	0%	2%	4%	3%
2013	3%	8%	-5%	6%
2014	4%	-6%	16%	-3%
2001-14	**18%**	**29%**	**49%**	**28%**

Source: BPS (deflated with CPI)

III.C Poverty and Inequality

Indonesia is the largest economy in Southeast-Asia and has experienced a stable growth performance prior to and a moderate recovery post the Asian Financial Crisis. At the beginning of our study period, i.e. 1990, more than half of the population was below the international poverty line of PPP $1.25 per day (Table 5). National estimates of poverty are available only from 1996 with 17.5 per cent of the population living in poverty. The Asian

the productivity effect of labour reallocations across different sectors and is called the "structural change" component McMillan and Rodrik (2012).

[5] This positive trend in real wages of the casually employed can be attributed to a shift away from casual employment in agriculture to that in industry and services where wages are higher (ILO 2015). Also refer to Table 12.

Financial Crisis adversely affected growth rates and household expenditure, sending an additional 6 per cent of the population below the poverty line from 1996 to 1999. This translates to approximately 48 million people. Despite bringing poverty down to 11 per cent of the population according to the latest estimates, there is considerable disparity across rural and urban and ethnic divides (Balisacan et al, ADB 2002). Data shows that rural poverty is consistently higher than urban. Furthermore, the rate of poverty reduction has witnessed a decreasing trend; registering a drop of only a percentage point over the last three years.

Table 5: GDP growth and poverty and inequality over time

	GDP growth (annual %)	National poverty lines (% of population)	$1.25 a day (PPP) (% of population)	Gini §
1990	9.0	-	54.3	29.19
1996	7.6	17.5	43.4	31.33
1999	0.8	23.4	47.7	28.99
2002	4.5	18.2	29.3	29.74
2005	5.7	16	21.4	34.01
2008	6.0	15.4	22.6	34.11
2011	6.2	12.5	16.2	-
2014	5.0	11.3	-	41*

Source WDI (§World Bank estimates) (* BPS)

Manufacturing and job growth, being primarily concentrated in cities, drive millions of migrants to the capital, Jakarta, which already has the recognition of being one of the most populated megacities in Asia. Inequality measured traditionally, using the Gini coefficient, captures the extent to which the distribution of income deviates from a perfectly equal distribution. The level of inequality in Indonesia is comparable to other developing countries but what is disconcerting is its rise in recent years. The Asian crisis impacted particularly the right tail of the distribution bringing the Gini coefficient marginally down, however, there was no such effect from the crisis in 2008.

III.D Macro-economic Management

The East Asian Financial Crisis called for a strengthened Reform Agenda and better macro-economic management. By the end of July 1998, the Rupiah declined by 65% (relative to end 1997) resulting in loss of confidence and severe financial instability in Indonesia. A slew of measures were initiated which comprised of – tighter monetary policy to break inflation; food security through emergency imports, strengthened distribution and subsidies; banking sector reforms; deregulation, privatisation and improved governance. These policy measures delivered the required impetus and direction for stability – inflation was reined in, exchange rates stabilised, interest rates were down significantly. Market sentiments also improved as reflected in stock market recovery and falling risk premia.

A major factor which caused and influenced this transition was the adoption of a revised monetary policy framework. Prior to the 1997 crisis, the focus was on economic growth and increase in output. While this did have its benefits, it was seen that during periods of stress such an approach could not withstand the negative impact of external and internal disturbances. Price stability was the new Monetary Policy objective and in 2005, Bank Indonesia adopted the Inflation Targeting Framework – this was manifested in setting of policy rates which in turn would influence money market rates, and deposit and lending rates. These measures brought in the desired level of discipline in the financial space. In turn,

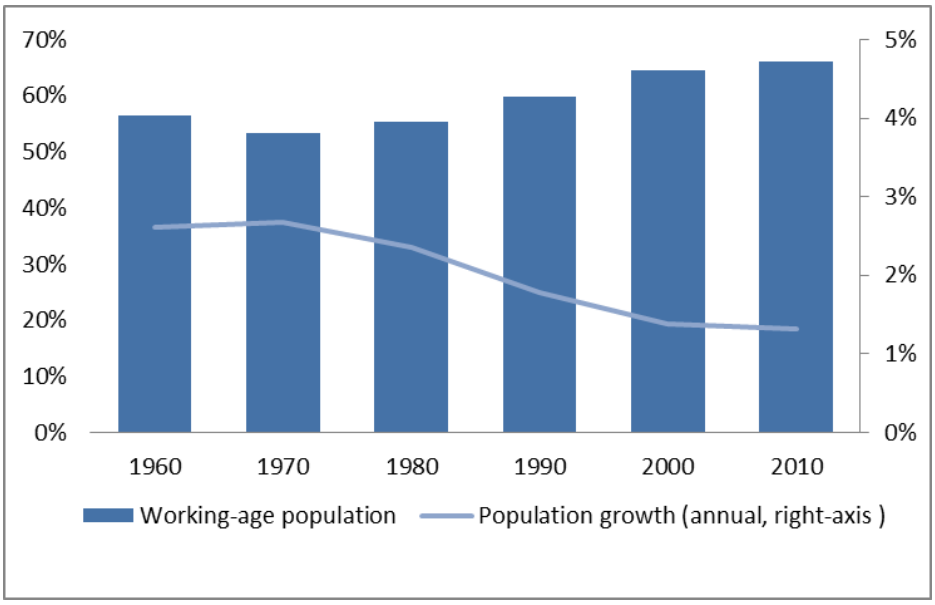
it also influenced outcomes with regard to output, prices and employment. The data over this period also vindicates this approach.

Along with the revised monetary policy approach, the overall macroeconomic management system was also revised following the Asian crisis. This provided for better coordination between the various ministries and regulatory authorities. The Bank Indonesia (BI) was made the independent Central Bank. Banking supervision was brought under the aegis of the newly formed Financial Services Authority whose mandate was mainly to maintain financial stability and a healthy banking system. The BI was therefore to oversee monetary policy mainly, although it also continued to monitor financial stability. Coordination between fiscal and monetary policy also took on new dimension, making for greater efficiencies. The fruits of these measures were reaped during the resilience exhibited during the Global Financial crisis. The economic outlook remained positive and stable despite the slowing down of growth and Indonesia maintained its emerging market status.

IV – Labour market context

Indonesia with a population of 254 million people is the third most populous country in Asia and fourth in the world (WDI, 2014). The rate of population growth, despite declining to 1.3 per cent annually, is projected to increase the country's inhabitants by more than 67 million in the next 20 years. Due to a persistent reduction in fertility rates in recent decades, Indonesia has experienced an increase in the share of the working-age population (Figure 7). While this bodes well for the dependency-ratio in coming years, the demographic dividend, in the absence of quality employment could become an economic time-bomb.

Figure 7: Population growth and share of working-age



Source: WDI

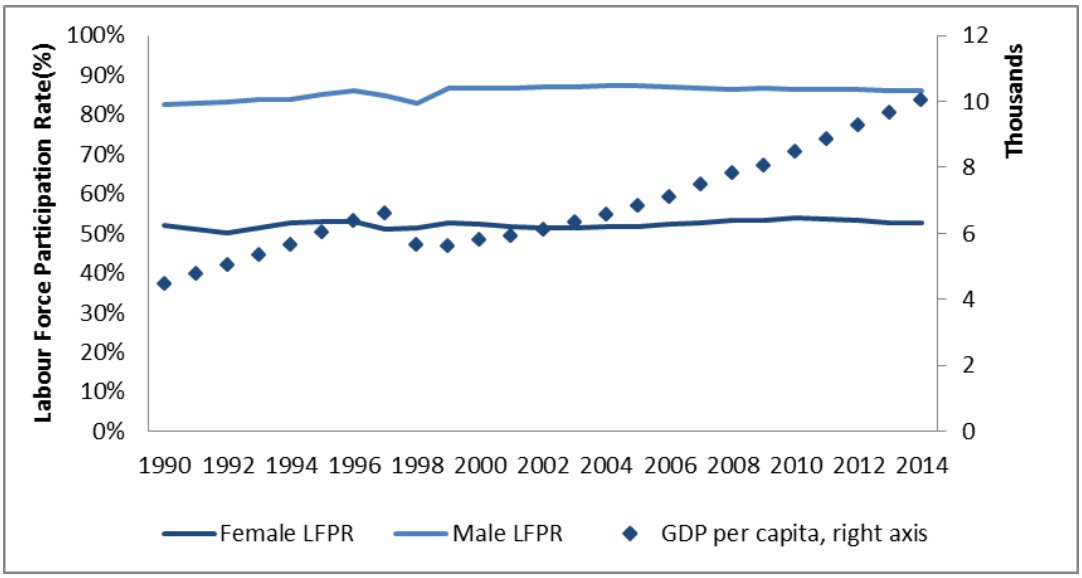
Table 5: Population and Labour Force increment (over 5-year periods)

Year	Labour force ('000)	Employment ('000)	Population growth	Labour force participation rate	Percent change in LFPR
1990	72,962	65,307	3%	67.3%	-
1995	84,390	77,385	3%	68.9%	2.4%
2000	94,989	89,838	2%	69.5%	0.9%
2005	102,895	93,958	2%	69.7%	0.2%
2010	112,276	108,208	1%	70.2%	0.8%
2015	120,101	114,628	1%	69.5%	-1.1%

Source: KILM and BPS

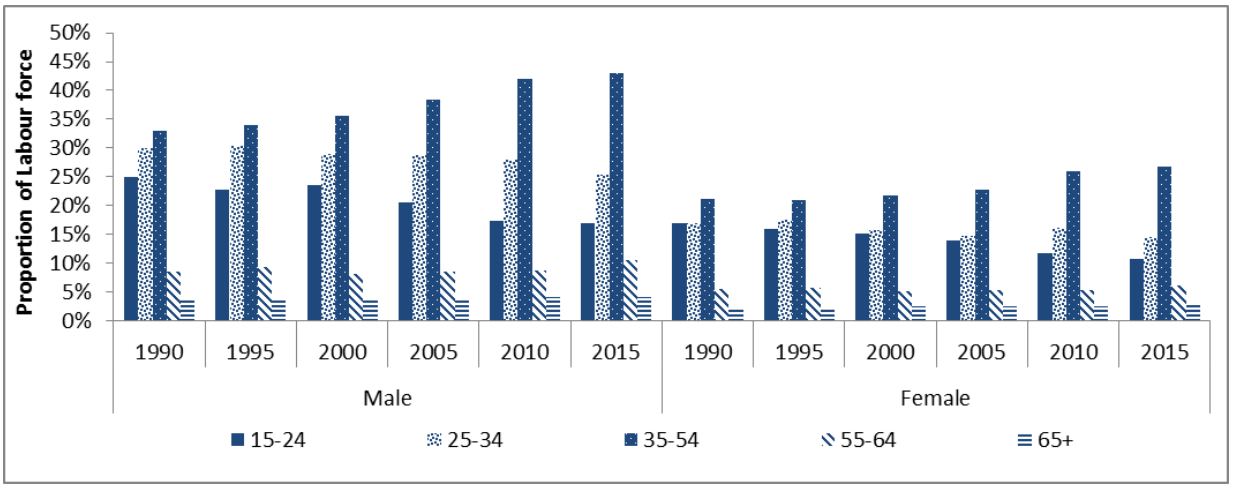
The absolute increase in the labour force measured over 5-year periods since 1990 has been healthy (contributing to a cylindrically inclined demographic pyramid). There was only a very slight response of the activity rate to recent stagnation in economic growth post 2005. The similarity in employment and labour force growth highlights Indonesia's labour abundance.

Figure 8: Labour force participation rates with GDP per capita (male and female)



When looked at annually over a longer time-horizon, the labour force participation rate for both males and females is considerably stable with a minor dip in the crisis years (Figure 8). This however, does not seem to be a testament to labour market resilience but perhaps to the fact that inactivity is not feasible in low-income countries. The increment in the labour force for both men and women is predominantly in the age cohort of 35-54 years (Figure 9). Evidence of the maturing population is also contained in the fact that the share of youth in the labour force which comprised of 35 per cent in 1990 decreased to 29 per cent in 2015 (ILO estimates).

Figure 9: Share of Labour force by age-cohorts



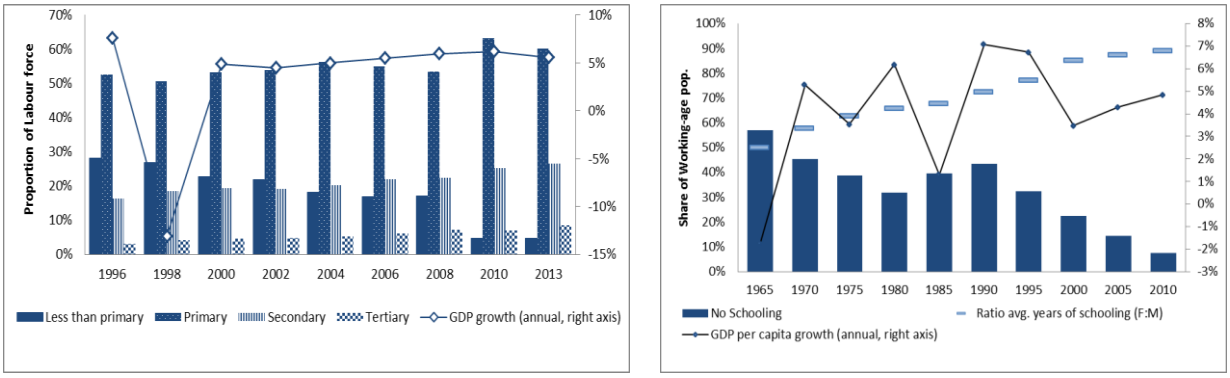
Source: KILM

Indonesia's labour force has made achievements in education with most of the gains (10 percentage points) being made in the secondary level. The share of the labour force with less than primary education has decreased from 28 per cent to five percent in a period of 20 years (Figure 10). GDP growth has the expected direction of correlation with levels of educational attainment (Table 6); being negatively associated with lower than primary education and positive with higher levels. However, the coefficients are low suggesting a weak link between GDP growth and growth of human capital.

Table 6: Correlation Coefficients between education levels and GDP growth

GDP growth ~ Less than primary	GDP growth ~ Primary	GDP growth ~ Secondary	GDP growth ~ Tertiary
-0.38	0.45	0.28	0.29

Figure 10: LF educational attainment with GDP growth (left), Working-age population without schooling with GDP per capita growth (right)



Source: KILM and WDI and Barro-Lee Educational Attainment Database

According to the Global Gender Report (2014) Indonesia has a score of 0.67 (highest gender parity=1) and ranks 97th out of 142 countries. Its weak performance is evidenced by the increase in the gender-gap in labour force participation over the past few decades (Table 7). There is encouraging evidence in the female to male ratio in average years of schooling which, at 89 per cent, is nearing parity (Figure 10, right). Its lack of association with per capita GDP growth however, reveals the limited effect of economic outcomes on gender empowerment or vice versa. This is, however, in line with the narrative of structural transition experienced by countries as they move through 3 stages. In the first stage, low household incomes force both men and women to engage in economic activity mainly in the primary sector. As the economy shifts from being primarily agrarian to manufacturing, women withdraw from the labour force to take care of domestic responsibilities due to a lack of social infrastructure. The final stage begins as infrastructure develops and the service sector expands. The opportunity cost of women's time increases leading them to re-join the labour force with higher wages than before (Mammen and Paxson, 2000).

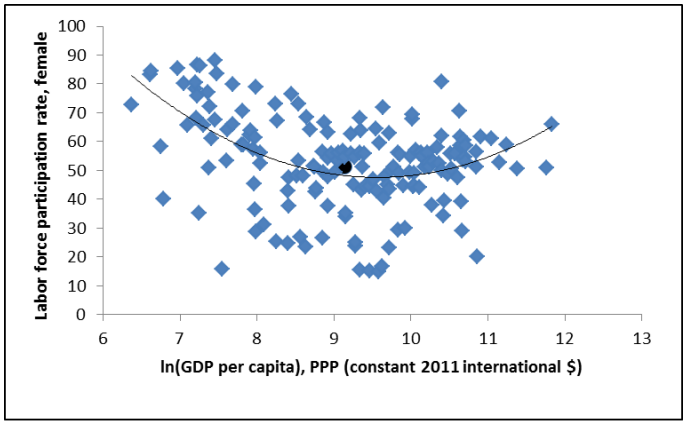
Table 7: Male-Female differences in labour force participation rates

Year	Female Labour force participation rate (%)	Male Labour force participation rate (%)	Male-Female LFPR
1990	51.93	82.58	30.65
1995	52.84	85.03	32.2
2000	52.24	86.69	34.46
2005	51.87	87.27	35.4
2010	53.94	86.25	32.31
2015	52.8	85.86	33.06

Source: KILM

The relative position of Indonesia in terms of other countries in the world on female labour force participation can be found in the middle portion of the U-shaped curve (black dot in Figure 11). Indonesia's position just above the curve indicates that it is in the second stage of structural transition.[6]

Figure 11: Female labour force participation and GDP per capita; Table 8: GDP growth and average years of schooling



Year	Average years of schooling	GDP per capita growth
1980	3.63	6.2%
1985	3.86	1.3%
1990	4.18	7.1%
1995	4.62	6.7%
2000	5.15	3.5%
2005	6.41	4.3%
2010	7.61	4.8%

Source: World Development Indicators, ILO estimates (2013) and WDI and Barro Lee database (for above 15 years of age).

[6] The U-shaped relationship between GDP per capita and female labour force participation depicted in Figure 11 is based on cross-sectional data while the relatively flat line in Figure 8 is based on time series data of Indonesia alone. This is consistent with experiences of other Asian countries such as Thailand and India where the coutry specific relationship is flatter (Mammen and Paxson, 2000). Factors such as household land ownership and female education determine the opportunity costs of women's participation in the labour force driving the causal relationship with income.

V – Employment Situation

This section comprises of our core analysis of how employment and its quality have been changing with the recovery and growth process. The choice of variables is extremely pertinent for the nature of question we want to ask.

The open rate of unemployment averages 6.9 per cent of the labour force over the past two and a half decades with some variation during years of crisis. The data series has an expected negative correlation with the GDP growth rate; however the coefficient is very low suggesting limited linkages with growth (Table 9). Despite stable growth rates in the early 1990s there was a slight increase in unemployment while the response to negative growth during the 1997 Asian Financial Crisis peaked at unemployment of 8.8 per cent in 1999. Unemployment remained high till 2005 before dipping again to around 6 per cent in 2014. It is characteristic of developing countries to have sluggish rates of unemployment and a large informal sector which absorbs the surplus (Fields 2011).

Table 9: Unemployment, GDP growth and Poverty headcount ratio

	Rate of Unemployment (% of labour force)	GDP growth (%)	Poverty headcount ratio* (% of population)
1990	2.9	7.2	-
1996	5.4	7.8	17.5
1998	6.2	-13.1	-
1999	8.8	0.8	23.4
2005	11.2	5.7	16
2008	8.4	6.0	15.4
2014	5.9	5.1	11.3

Source: WDI and KILM (*at national poverty lines)

So who are the unemployed – or rather, given certain characteristics, who is more likely to be so? The unemployment rate is higher for females and for younger members of the labour force (Table 10, left). The level of youth unemployment in Indonesia is higher compared to its regional peers (ILO, 2015) while the share having completed tertiary education is only 9 per cent (WDI, 2013). The rate of unemployment is also higher among those with higher levels of education and conversely, lower among those with no or only primary education. It is clearly an indication of the extent of vulnerability among the uneducated rather than of income security. To capitalise on the demographic dividend, Indonesia needs to create jobs well-matched to its labour force and to invest in human capital.

Table 10: Unemployment by gender and age (left), Unemployment rate by education levels (right)

	Male (% of labour force)	Female (% of labour force)	Youth (% of labour force)	Adult (% of labour force)
1991	7.5	9.6	22.7	3.4
1996	3.8	5.3	14.4	1.2
1998	5.0	6.3	17.8	2.1
2000	5.8	6.5	18.1	2.3
2005	9.5	14.1	32.3	5.4
2008	7.6	9.8	23.2	4.8
2014	5.5	6.5	19.8	3.0

	Primary or less (%)	Secondary (%)	Tertiary (%)
1996	1.7	9.6	10.2
1998	3.0	14.6	11.0
2000	3.9	13.7	10.4
2005	8.7	19.9	12.0
2008	5.8	15.3	12.0
2013	4.9	10.1	n.a
	1.7	9.6	10.2

Source: KILM

Thus, while the unemployment rate is a good indicator to begin with, it is the nature and terms of employment that is of ultimate interest. A deteriorating employment situation is entirely possible with no change in the open unemployment rate if the incidence of casual employment is increasing (Majid, 2012).

Data on employment status over the past decade reveals overall positive trends of increased regularity by around 10 percentage points (Table 11).[7] However, the source of the increase seems to be primarily from the services sector. Industry, despite witnessing value added growth in recent years higher than agriculture and comparable to services, has seen no growth in its share of regular employment. On the other hand, while growth in value addition by services is just marginally higher than that of industry, the increase in the share of regular employment in services is much more. An implication of this increase may be that it serves as a drag to labour productivity growth within services.[8]

Table 11: Share of regular employment by sector

	Overall	Agriculture	Industry	Services
2001	32%	9%	63%	44%
2005	31%	8%	61%	43%
2008	30%	8%	52%	42%
2011	38%	10%	56%	52%
2014	41%	12%	62%	52%

Source: BPS

[7] Many workers in Indonesia that are officially categorized as regular employees are working on short-term rather than permanent contracts and therefore still have precarious contractual arrangements. This is why the regular employment classification is an interim one. These are not formal employees but they are also not casual employees. More specifically, the Indonesia Manpower Act No. 13/2003 allows for workers to be hired on short-term contracts for a maximum of 3 years and in this context, approximately 40 per cent of regular employees have a job tenure of 36 months or less. See Asia Pacific Labour market Update October 2015 (http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_410962.pdf

[8] However, as noted in the discussion in section III B, this would contribute positively to overall productivity registering as a "structural change" component.

The story is however, yet incomplete. While regular employees are those "employees with stable contracts", non-regular employment, on the other hand, comprises of both the self-employed and casual employment. Thus we need to uncover whether the increased share of regular employment is truly a welfare improvement or is it picking up changes in the composite shares of non-regular employment.

Table12: Share of casual- and self-employment by sector

	Casual Employment				Self-Employed			
	Overall	Agriculture	Industry	Services	Overall		Agriculture	Industry
2001	7%	9%	9%	2%	61%		82%	27%
2005	10%	13%	17%	4%	59%		79%	22%
2008	11%	15%	20%	4%	59%		77%	28%
2011	10%	14%	18%	3%	52%	76%	25%	45%
2014	10%	13%	20%	3%	49%	75%	18%	44%

Source: BPS

From Table 12, the disaggregation of non-regular employment shows that there has been a casualization of labour over the past one and a half decade. The increase in the share of regular employment has, in fact, arisen from a decline in self-employed labour. The overall decline in self-employment is commensurate with the increase in regular employment, suggesting that overall job-quality has not necessarily ameliorated over time. The share of casual employment has risen most in industry followed by agriculture and is least in services.

Let us now merge the employment and growth stories to yield a coherent picture. The takeaway from the sectoral decomposition of growth in Section I was the catching-up and then the dominance of services in recent years vis-à-vis industry. Using growth elasticities of regular employment we can comment on whether growth has generated livelihoods of quality or been detrimental to the employment situation in its nature (Table 13). Elasticity is calculated as the ratio between percentage change in regular employment in each sector to percentage change in GDP value added (or value-added, growth), i.e.

$$\varepsilon_i = \frac{\%\ (\Delta \text{ in regular employment in sector i})}{\%\ (\Delta \text{ in GDP value added by sector i})}$$

According to Islam and Nazara (ILO, 2000), elasticity is better calculated with a regression using a log-log specification, but due to the lack of enough data-points, we calculate arc elasticity and generate averages.[9] For the interpretation of the elasticities in the presence of positive value-added growth as seen in Indonesia during the reference period, we rely on Kapsos (ILO, 2012).

[9] This measure of employment elasticity uses the change in regular employment and GDP value-added with reference to the previous year and no further lags.

Table 13: Employment elasticity of each sector (left) and its interpretation (right)

Year	Agriculture	Industry	Services, etc.
2002	-3.34	-1.57	-0.50
2003	-1.09	-0.82	-0.61
2004	-0.27	0.41	1.48
2005	1.99	1.64	-0.39
2006	-0.56	-1.99	1.64
2007	-0.56	1.98	0.28
2008	1.65	-1.57	0.43
2009	3.33	-0.64	0.70
2010	-2.69	2.17	1.86
2011	2.56	2.72	1.42
2012	3.67	3.10	0.93
2013	-0.58	-0.21	0.24
2014	0.78	0.51	0.71
Average	0.38	0.44	0.63

	GDP Growth	
Elasticity	Positive GDP growth	Negative GDP growth
$\varepsilon < 0$	(-)employment growth (+) productivity growth	(+)employment growth (-) productivity growth
$0 \leq \varepsilon \leq 1$	(+)employment growth (+) productivity growth	(-)employment growth (-) productivity growth
$\varepsilon > 1$	(+)employment growth (-) productivity growth	(-)employment growth (+) productivity growth

Thus, growth elasticity (ε) between 0 and 1 indicates growth in both employment as well as in labour productivity – which is what we see in most years. However, in 2005, the growth elasticity of services is actually negative implying that all value added growth originated in an improvement in productivity and not in the increase of jobs. This is corroborated with the data which shows an actual decrease in regular employment from 2001 to 2002. The same applies for industry in 2008. The average growth elasticity of employment ($\overline{(\varepsilon\_i)}$) is higher for services than for the other two sectors suggesting that growth in services generates more quality employment than the other sectors.

The difficulty with the services sector in developing countries is that it is an extremely heterogeneous category, some of which are not representatively captured in our statistics. In the BPS data, the services sector is aggregated from 5 economic activities - electricity, trade, transportation, finance and services. The employment generated therein lies both in the informal and the formal sector ranging from white-collar employment which is regular and to street-vendors who are casually employed. As Ghose (2015), points out in the context of India, official data are not always complete indicators of the informal sector which is large in labour-abundant developing countries; both in terms of output and employment. Thus while Table 13 is revealing for the changing roles of all three sectors, we maintain the apprehension that there are insights concealed.

The role of industry in generating regular employment warrants discussion. While it is characterized by high value-added growth and labour productivity, industry's growth elasticity of regular employment is low. For this we refer back to section III.B on the external sector and the falling share of labour-intensive manufactured goods in total merchandise exports. The changing composition of external demand and its volatility arising from its dependence on foreign, both contribute to the elasticity of regular employment to industry and exports growth being relatively low.

Employment Situation Index

In the process of reviewing Indonesia's employment situation, we have drawn from multiple threads in the story, each revealing a different narrative. In order to have a comprehensive account, we create a crude, but potentially useful measure – an Employment Situation Index (ESI) – that would condense the array of different variables we used into a single metric. In the construction of this index, we draw from Ghose, Majid and Ernst (2008) and their assessment of 19 countries covering a majority of the developing world labour force.[10] As the components of the ESI, we include agricultural productivity, the open rate of unemployment and the share of regular employment. The choice of these parameters can be justified with the argument that each captures a crucial element of labour market conditions. Agricultural productivity which is valued-added per worker is the lowest among all other sectors and an increase in this measure implies either use of improved technology within agriculture or a shift of labour to other sectors, thereby raising marginal productivity in agriculture itself, i.e. a classis Lewis phenomenon (Ghose, 2015). Thus an improvement or deterioration in this measure would imply the same for overall employment.

Secondly, the open unemployment rate, despite its limitations, is a clear case of labour force potential untapped. We use the difference in the unemployment rate from 100 per cent such that an improvement in the employment situation is captured by a movement in the same direction for all individual components. Since the open unemployment rate, as mentioned earlier, does not take into account the quality of employment, we incorporate a third parameter – the share of regular employment (aggregated over all sectors). Each component is equally weighted and we begin with the first year in our reference period (2001) as the base value.

Table 14: Employment Situation Index

	Agricultural Productivity	1-Unemployment Rate	Share of Regular Employment	Employment Situation Index
2001	100	100	100	100
2002	103	99	94	99
2003	107	98	89	98
2004	109	98	94	100
2005	112	97	95	101
2006	117	98	96	103
2007	119	99	96	105
2008	125	100	94	106
2009	129	100	95	108
2010	133	101	102	112
2011	139	102	117	119
2012	145	102	123	124
2013	152	102	125	126
2014	158	102	126	129

[10] The components of the ESI in Ghose, et. al. (2008) were: the share of the formal segment of total employment, real output per worker in the non-formal segment and the employment ratio. We have tried to adhere to these original components under minor definitional constraints of the existing datasets.

Overall the employment situation in Indonesia has improved with decreases in the beginning of the period. While agricultural productivity has been unequivocally improving throughout the period, the same cannot be said for open unemployment and the share of regular employment. Any change in the value of the overall index and its individual components to a value below 100 implies a decline with reference to 2001 whereas a change above 100 implies an improvement. We find a relatively weaker share of regular employment in the years 2002-09 which picks up considerably in the next decade. The benefit of the ESI is that it weighs equally all three components to give a composite picture of the employment situation where the individual components alone may be misleading or offer only part of the picture.

VI – Conclusion

In the past two and a half decades Indonesia witnessed two major global crises and weathered the latter with more resilience than the former. Annual GDP growth rested between 5-6 per cent in recent years and the incidence of poverty has more than halved since 1990 according to the PPP $1.25 international poverty line. Growth has increasingly been driven by the services sector relative to industry and agriculture with the external sector playing a key, albeit volatile, role. Labour force participation remains high for men but persistently 30 percentage points higher than that for women and the gender-gap does not seem to diminish despite seeing a two-fold increase in average years of education. Comparing Indonesia to other countries in the world, we find it in the middle part of the traditional U-shaped relationship between GDP per capita and female labour force participation. This position is associated with intermediate stages of structural transition. Declining fertility rates (as evident in the data) along with social assistance with regard to child and health care would encourage higher female labour force participation. With this context our paper addresses two central questions: a) what was the evolution of the employment situation in Indonesia over the period of the two crises and their subsequent recoveries? b) how has the quality of work responded to the changing composition of Indonesia's growth process?

The answer to the first question lies in our crude measure of the Employment Situation. All its dimensions – agricultural productivity, unemployment and the share of regular employment – have moved in an encouraging direction over the period. The open rate of unemployment tends to be a superficial indicator of labour market equilibrium in developing economies with surplus labour and unemployment often goes disguised. Employment security is more accurately gauged by the share of regular employment in the whole economy, which is also rising over the reference period.

Overall labour productivity traced a rising path with a minor break during the Asian Financial Crisis. A decomposition of aggregate labour productivity, however, reveals that gains in productivity arise from efficiencies 'within' sectors rather than the optimal allocation of labour across sectors, i.e. structural transformation. The Lewis process seems to be incomplete or interrupted – which brings us to our second question.

Services-led growth had positive consequences for the share of regular employment in the economy, as evidenced by the growth elasticity of regular employment being higher for services than for industry or agriculture. Investment in human capital needs to be promoted to capitalise on the demand for skilled labour in the services sector. Industry has not led to commensurate growth in regular employment because of the reduced share of labour-intensive light industries such as garments, footwear, etc. in total merchandise exports. In non-regular employment, self-employment declined and casualization marginally increased. Thus the overall increase in regular employment is partially muted by the rise in casual employment. Casual or informal employment is often a coping mechanism in post-crisis economies. Such a tendency is responsible for low labour productivity and income insecurity. To bridge this lacuna in the labour market, decent work opportunities need to be stimulated in sectors that have high labour absorbing capacities.

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