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**Employment trends in Indonesia over  
1996-2009: Casualization of the  
labour market during an era of crises,  
reforms and recovery**

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#### Abstract

The East Asian financial crisis of 1997-1998 hit Indonesia hard resulting in a winding back of the substantial economic and social gains made during the previous two decades. However, that crisis did not result in a large fall in employment and a commensurate rise in unemployment; rather, the economic contraction of over 13 per cent was accompanied by considerable transitions within employment, namely, from formal sector to informal and agricultural employment, particularly among women. The years following were characterized by slow growth and weak formal job creation, which has often been attributed to such factors as rigid labour regulations, especially the enactment of the Manpower Law in 2003. The economic and labour market situation in Indonesia only began to consistently improve over the last five years, notably during the boom years leading up to the global financial crisis. During this period, unemployment fell from its 2005 peak and employment increased. When the global financial crisis spread in late 2008 to emerging economies like Indonesia, it was expected that these countries would be severely affected. However, in contrast to the East Asian financial crisis, Indonesia proved to be rather resilient despite the fact that exports collapsed by almost 18 per cent from 2008 to 2009. This paper presents estimates that confirm the milder labour market impact of the most recent crisis. At the same time, the move towards more flexible and less protected forms of employment, as reflected by the increase in casualization, notably among the less-skilled, appear to be part of longer term trends. In this respect, labour market regulations, notably the Manpower Law of 2003, may have contributed to this trend, but the Law alone is not the main problem for employers in Indonesia. Overall, despite the apparent resilience to the global financial crisis, Indonesia continues to face a number of substantial challenges at both the macroeconomic and labour market level.

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## Preface

The primary goal of the ILO is to contribute, with member States, to achieve full and productive employment and decent work for all, including women and young people, a goal embedded in the ILO Declaration 2008 on *Social Justice for a Fair Globalization, and*<sup>1</sup> which has now been widely adopted by the international community.

In order to support member States and the social partners to reach the goal, the ILO pursues a Decent Work Agenda which comprises four interrelated areas: Respect for fundamental worker's rights and international labour standards, employment promotion, social protection and social dialogue. Explanations of this integrated approach and related challenges are contained in a number of key documents: in those explaining and elaborating the concept of decent work<sup>2</sup>, in the Employment Policy Convention, 1964 (No. 122), and in the Global Employment Agenda.

The Global Employment Agenda was developed by the ILO through tripartite consensus of its Governing Body's Employment and Social Policy Committee. Since its adoption in 2003 it has been further articulated and made more operational and today it constitutes the basic framework through which the ILO pursues the objective of placing employment at the centre of economic and social policies.<sup>3</sup>

The Employment Sector is fully engaged in the implementation of the Global Employment Agenda, and is doing so through a large range of technical support and capacity building activities, advisory services and policy research. As part of its research and publications programme, the Employment Sector promotes knowledge-generation around key policy issues and topics conforming to the core elements of the Global Employment Agenda and the Decent Work Agenda. The Sector's publications consist of books, monographs, working papers, employment reports and policy briefs.<sup>4</sup>

The *Employment Working Papers* series is designed to disseminate the main findings of research initiatives undertaken by the various departments and programmes of the Sector. The working papers are intended to encourage exchange of ideas and to stimulate debate. The views expressed are the responsibility of the author(s) and do not necessarily represent those of the ILO.

José Manuel Salazar-Xirinachs  
Executive Director  
Employment Sector

<sup>1</sup> See [http://www.ilo.org/public/english/bureau/dgo/download/dg\\_announce\\_en.pdf](http://www.ilo.org/public/english/bureau/dgo/download/dg_announce_en.pdf)

<sup>2</sup> See the successive Reports of the Director-General to the International Labour Conference: *Decent work* (1999); *Reducing the decent work deficit: A global challenge* (2001); *Working out of poverty* (2003).

<sup>3</sup> See <http://www.ilo.org/gea>. And in particular: *Implementing the Global Employment Agenda: Employment strategies in support of decent work*, "Vision" document, ILO, 2006.

<sup>4</sup> See <http://www.ilo.org/employment>.

## Foreword

The East Asian financial crisis of 1997-1998 hit Indonesia hard resulting in a winding back of the substantial economic and social gains made during the previous two decades. However, that crisis did not result in a large fall in employment and a commensurate rise in unemployment; rather, the economic contraction of over 13 per cent was accompanied by considerable transitions within employment, namely, from formal sector to informal and agricultural employment, particularly among women. The years following were characterized by slow growth and weak formal job creation, which has often been attributed to such factors as rigid labour regulations, especially the enactment of the Manpower Law in 2003. The economic and labour market situation in Indonesia only began to consistently improve over the last five years, notably during the boom years leading up to the global financial crisis. During this period, unemployment fell from its 2005 peak and employment increased.

When the global financial crisis spread in late 2008 to emerging economies like Indonesia, it was expected that these countries would be severely affected. However, in contrast to the East Asian financial crisis, Indonesia proved to be rather resilient despite the fact that exports collapsed by almost 18 per cent from 2008 to 2009. This paper presents estimates that confirm the milder labour market impact of the most recent crisis. At the same time, the move towards more flexible and less-protected forms of employment, as reflected by the increase in casualization, notably among the less-skilled, appear to be part of longer term trends. In this respect, labour market regulations, notably the Manpower Law of 2003, may have contributed to this trend, but the Law alone is not the main problem for employers in Indonesia.

Overall, despite the apparent resilience to the global financial crisis, Indonesia continues to face a number of substantial macroeconomic and labour market challenges, particularly in terms of creating more regular wage employment in the non-agricultural sector.

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# 1. Introduction<sup>5</sup>

From the 1970s to the 1990s, Indonesia made incredible economic and social progress. During this period, Indonesians moved from rural to urban areas to take up better paid jobs and, as a result, poverty fell from 40 per cent in 1976 to 11 per cent two decades later (Dhanani and Islam 2001). This rapid development trajectory was brought to a halt by the East Asian financial crisis of 1997-1998 and the subsequent political crisis, which sent the country into a deep recession leaving millions in poverty. Despite this tragic reversal of fortunes, the labour market appeared to be rather stable at the aggregate level – the impact of this crisis was more evident in transitions across employment states rather than a fall in the number of jobs, along with a sharp fall in real wages. In particular, the massive economic contraction in 1998 resulted in an increase in agricultural and informal sector employment and a rise in female labour force participation as a household coping mechanism (Fallon and Lucas 2002; Islam and Chowdhury 2009; Manning 2000).

The period following the East Asian financial crisis has been described as one of ‘jobless growth’, which has been variously attributed to public sector downsizing, slower industrial growth, the failure of the service sector to take up the slack, and the excessive regulation of the Indonesian labour market (World Bank 2010). In terms of the last factor, many commentators have blamed the Manpower Law (No.13/2003) for the poor labour market outcomes, especially with respect to the rise in unemployment from 2003, which persisted despite the pick-up in economic growth at that time.<sup>6</sup> However, although this law has been widely cited as a major constraint to formal sector job creation, compliance with the legislation is very low (Dhanani et al. 2009; World Bank 2010). Moreover, the unemployment rate peaked at 11.2 per cent in 2005 before falling strongly over the following years (along with rising employment), in spite of the high severance pay and restrictions on temporary work mandated by the Manpower Law. Therefore, although there has been considerable discussion on this issue, the relationship between labour market regulation and outcomes in Indonesia is far from straightforward.

In late 2008, the global financial crisis (GFC) spread across the globe, hitting many emerging economies hard, particularly as a consequence of the unprecedented contraction in world trade flows. Indonesia was no exception: exports fell by almost 18 per cent from 2008 to 2009. However, in contrast to the devastating effects of the East Asian crisis of a decade ago, the impact of the GFC on the domestic Indonesian economy has been relatively mild. Moreover, there is little indication at both the aggregate and micro-level that the latest crisis has had any major implications for labour market and employment trends. Indeed, the unemployment rate has continued to fall, reaching 7.9 per cent in 2009 (and 7.1 per cent in 2010), which is the lowest level since 2001.

Taking into account these key developments in the Indonesian labour market over the last few decades, the main objective of this paper is to dig deeper into trends and determinants of employment status since 1996. More specifically, this paper uses micro-data from the national labour force survey (Sakernas) over the period 1996-2009, which covers both the East Asian financial crisis of 1997-1998 and the global financial crisis

<sup>5</sup> In supporting the production of this paper, we wish to express our sincere appreciation and acknowledgement to the ILO Country Office for Indonesia and the Employment Policy Department (EMP/POLICY) for sharing the SAKERNAS (national labour force survey) micro-data files. We would also like to thank Duncan Campbell, Sandrine Cazes, Kazutoshi Chatani, Iyanatul Islam, Sangheon Lee, Moazam Mahmood, and Chris Manning for detailed comments and suggestions that have helped us improve the paper.

<sup>6</sup> See, for example, OECD (2008).

(GFC) of 2007-2009. This allows for a broader perspective on stability in and determinants of employment status in terms of both longer term trends and adjustments to large external shocks. The focus is on employment status because the nature of employment is arguably the greater labour market challenge in Indonesia than unemployment itself. The paper focuses in particular on the increasing casualization of wage employment in the 2000s.

The results presented in this paper show that much of the recent developments in the Indonesian labour market seem to have been part of a longer term trend since around mid-2000s. More specifically, the share of wage employment for both men and women has risen in the 2000s. However, this was accompanied by an increased casualization of wage employment. Indeed, formal employment growth remained limited, once casual employment is taken into account. Moreover, since about the mid-2000s, there has been an increase in transitions in the labour market, which could reflect greater job insecurity for a large proportion of the workforce. These labour market trends coincide with the adoption of the Manpower Law of 2003 and a hike in the inflation rate in 2005 (due to the reduction in the fuel subsidy); however, it is difficult to identify a causal relationship, particularly due to the number of policy and institutional changes during this period such as the push to decentralization. Finally, the recent global financial crisis has not significantly affected the Indonesian economy. Nonetheless, the failure for the economy to generate sufficient regular formal sector jobs, especially in the non-agricultural sector, continues to be a major challenge for the Indonesian government.

The remainder of the paper is structured as follows. Section 2 reviews the broad macroeconomic developments over 1996-2009, while section 3 examines labour market trends in more detail. Turning to the micro-econometric results, section 4 focuses on the trends and determinants of employment status, notably casual employment, over the last decade or so to highlight longer term issues and the impact of both the East Asia financial crisis of 1997-1998 and the global financial crisis of 2007-2009. Finally, section 5 concludes.

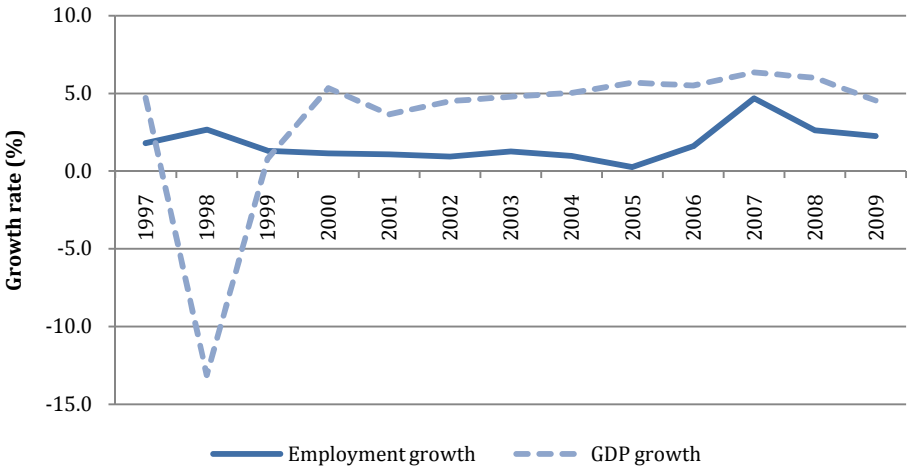
## **2. Reviewing over a decade of growth, crisis and recovery in Indonesia**

Prior to the East Asian financial crisis of 1997-1998, Indonesia belonged to the group of 'tiger' economies in the region that had grown rapidly and made major inroads into tackling poverty over the previous decades. The Indonesian economy grew by 6 per cent on average from 1976-1986, before accelerating to 6.9 per cent over the following decade (1987-1996). This period of strong growth resulted in an impressive fall in the headcount poverty ratio (based on the US\$1/day poverty line), from 40 to 11 per cent between 1976 and 1996 (Dhanani and Islam 2001). This remarkable achievement was propelled by gradual trade liberalization and a policy orientation towards manufacturing and exports.

This success story was interrupted by the crisis of 1997-1998, which began in Thailand in July 1997 and led to an unexpectedly severe downturn in Indonesia. The economy contracted by over 13 per cent in 1998, by 14 per cent in per capita terms (Figure 1). Following an emergency loan from the International Monetary Fund (IMF), the Government of Indonesia reined in government spending – though the crisis was largely driven by unsustainable external lending to the private sector – and let the rupiah (Rp.) float. Consequently, the rupiah fell from Rp. 2450/US\$ in June 1997 to Rp. 14,900/US\$ a year later, while interest rates were ratcheted up to defend the currency (from 19 per cent in June 1997 to 36 per cent in September 1998). In addition, external capital flows swiftly reversed, leaving businesses facing a severe credit crunch. Government debt rose from negligible levels prior to the crisis to US\$72 billion (Dhanani et al. 2009; Islam and Chowdhury 2009). The crisis also triggered a political crisis, which resulted in the end of the 33-year Soeharto era.



**Figure 1. Trends in GDP and employment growth since 1997**



Source: Authors' calculations from SAKERNAS, 1996-2009; IMF World Economic Outlook database, April 2010.  
 Notes: For the employment growth rate, 2005 refers to the November round. 2006-2009 refer to the August rounds

During this period of economic turmoil, the Indonesian labour market appeared to be remarkably resilient at the aggregate level. In spite of the magnitude of the shock witnessed during the East Asian crisis, total employment in Indonesia continued to grow by 2.7 per cent in 1998 (Figure 1). As a result, the employment-population ratio remained relatively static over this crisis period, rising in fact very slightly from 63.2 in 1997 to 63.3 per cent in 1998. At the same time, the unemployment rate (excluding discouraged workers) increased from only 3.1 per cent in 1997 to 3.7 per cent in 1998, before reaching 4.3 per cent in the following year.

However, beyond this aggregate view of the labour market, the downturn in 1997-1998 translated into considerable transitions in the labour market. In this respect, the various literature on this painful period of Indonesian history stresses that following the fall in male wage employment, there was an increase in agricultural employment and unpaid family work, particularly among women (Dhanani et al. 2009; Fallon and Lucas 2002; Islam and Chowdhury 2009; Manning 2000). Furthermore, the most deleterious outcome of the East Asian financial crisis was, in fact, a severe deterioration in real wages. In 1998, real wages in Indonesia fell by a massive 44 per cent (Fallon and Lucas 2002). This was due, however, to a surge in consumer prices inflation rather than a cut in nominal wages. Indeed, CPI rose by 58 per cent in that year, which was exacerbated by the El Niño drought of 1997 (Manning 2000).

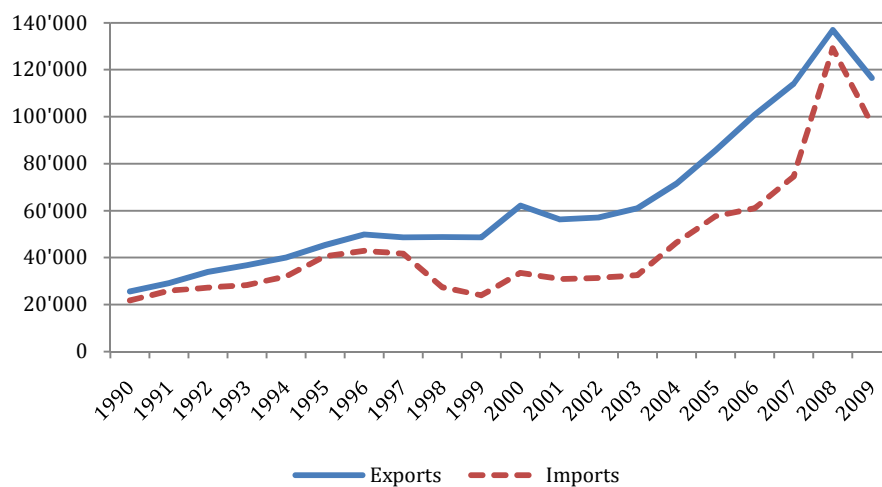
The Indonesian economy took a number of years to recover from the East Asian financial crisis. Growth remained weak in 1999 (0.8 per cent) before picking up at the start of the new millennium. Altogether, annual GDP growth was lower than the pre-East Asian crisis era (5.2 per cent for 2000-2008 versus 6.9 per cent for 1987-1996). Investment fell rapidly during the post-crisis years, and is yet to reach its pre-1997 levels (besides being outpaced by other countries in the region). This low level of capital formation has suppressed growth in Indonesia. Consequently, there has been a considerable stagnation in the labour market during this period. As underscored by Dhanani et al. (2009), following the East Asian crisis, wage employment failed to grow, while informal employment remained high. Employment barely grew in 2005 (reflecting an employment elasticity of growth of close to zero (0.04 per cent)). Overall, the structural transformation that had taken place in the 1980s and first half of the 1990s stalled: the share of employment in manufacturing fell from 12.9 per cent in 1997 to 12.4 per cent in 2007, while the share in agriculture remained at 41.2 per cent over this period. This was partly due to a fall in the export share of labour-intensive manufactured goods (electrical machinery and textiles, garments, footwear and leather products). World Bank (2010) argues that the period of

jobless growth following the crisis of 1997 was actually due to a fall in the employment elasticity of the service sector (over the period 1999-2003). Finally, in 2007, the level of real wages was no higher than in 1997 (Dhanani et al. 2009; Islam and Chowdhury 2009).

Benefiting from the global boom, growth in Indonesia started picking up after 2005, reaching 6.4 per cent in 2007 – the highest figure for over a decade. Investment reached 27.8 per cent of GDP in 2008.<sup>7</sup> Consequently, total employment grew by 4.7 per cent from 2006 to 2007 (Figure 1), which was largely due to growth in the wholesale and retail trade, agriculture and public sectors. These three sectors accounted for 1.4, 1.1, and 0.7 percentage points of the total employment growth, respectively. In comparison, the manufacturing and construction sectors only counted for 0.5 and 0.6 points.

Interrupting this more positive trend, the global financial crisis sent shockwaves around the globe in 2008 as advanced economies slid into deep recession. Like most developing countries, the impact of this most recent crisis in Indonesia was transmitted through the trade channel (Patunru and von Luebke 2010; Patunru and Zetha 2010). Indeed, as a consequence of the fall in global demand, Indonesian exports collapsed by almost 18 per cent from 2008 to 2009 (following a 20 per cent rise from 2007 to 2008) (Figure 2). Imports also shrunk by 9.5 per cent over the same period, which was driven partly by the high import content of Indonesian exports (Patunru and von Luebke 2010). Overall, the shock to exports in 2008-2009 was far larger than that witnessed during the East Asian crisis when exports fell by 8.5 per cent. The main reason for this difference is that, in comparison to the situation of the last couple of years, the emerging economy crisis of 1997-1998 did not result in a world recession: global growth in 1998 was 2.6 per cent, while in 2009, the world economy contracted by 0.6 per cent.

**Figure 2. Total merchandise exports and imports (current million USD), 1990-2009**



Source: UN Comtrade database, downloaded on 01.06.2010.

<sup>7</sup> World Development Indicators database, <http://data.worldbank.org/data-catalog/world-development-indicators>

Despite the large trade shock emanating from the global financial crisis, the Indonesian labour market came out looking relatively unscathed, despite early fears that the economy would be hard hit by the worldwide downturn.<sup>8</sup> A number of reasons have been proposed as an explanation for this resilience including the large domestic market and the relatively small share of exports in GDP (at around 30 per cent). In addition, the Indonesian economy was in a strong position as reflected by a budget surplus and low level of government debt (and hence fiscal space), current account surplus, large foreign currency reserves, and low inflation (Patunru and Zetha 2010).

As a consequence of these good 'initial conditions', Indonesia was able to react to the downturn of 2008 and 2009 with a fiscal stimulus package and loosening of monetary policy, in stark contrast to the East Asian financial crisis. On the fiscal side, the government focused efforts on tax cuts for individuals and businesses, which amounted to Rp. 43 trillion or 58.7 per cent of the total package (ILO 2009b; Patunru and Zetha 2010). According to official figures, the 2009 stimulus helped create over 1.07 million jobs (ILO 2009b). Nonetheless, though the stimulus package clearly played an important role in supporting the Indonesian economy, it is difficult to claim that it was the main reason behind this fortuitous outcome. As suggested by Patunru and Zetha (2010), it was the nature of Indonesia's trade structure, in particular the low share of exports to GDP, that helped to protect the country from a more severe downturn, as witnessed in other more open Southeast Asian economies such as Malaysia and Singapore. Due to the shallow impact of the global financial crisis, the Indonesian economy recovered strongly late in 2009. Growth continued to strengthen in 2010, moving from 5.7 per cent in the first quarter to 6.2 per cent in the second quarter.<sup>9</sup> The growth rate hit 6.5 per cent (year-on-year) in the first quarter of 2011.<sup>10</sup>

Therefore, on all accounts, this aggregate macroeconomic picture suggests a turnaround on the disastrous outcome of the 1997-1998 crisis, reflecting in part the improved capacity of the Indonesian economy to cope with a large external shock. However, the question remains as to whether the impact of the most recent crisis of 2008-2009 on the labour market is more subtle as witnessed during the East Asian crisis, especially in regard to changes in employment status. Furthermore, the growth experience of the last decade, which was characterized by the stagnation of the manufacturing sector, may have set off longer term labour market trends. These issues are the focus of the remainder of the paper, which reviews aggregate trends and presents findings from a micro-econometric analysis of the determinants of labour supply and employment status.

<sup>8</sup> See, for example, ODI (2009) for a discussion on the expectation of a further deterioration in 2009.

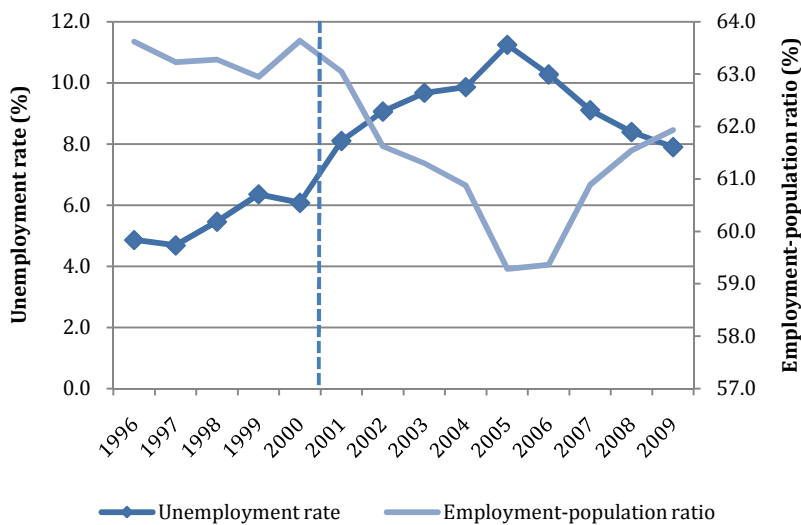
<sup>9</sup> See [dds.bps.go.id/eng/brs\\_file/eng-pdb-10mei10.pdf](http://dds.bps.go.id/eng/brs_file/eng-pdb-10mei10.pdf)

<sup>10</sup> See Statistics Indonesia (BPS), <http://dds.bps.go.id/eng/>

### 3. The Indonesian labour market 1996-2009: what do the aggregates tell us?

Moving to the labour market, Figure 3 shows the gradual increase in unemployment rate after the East Asian crisis, which reached a peak in 2005 (11.2 per cent). However, due to changes in the national labour force survey (BPS Sakernas), it should be noted that data before and after 2001 are not strictly comparable.<sup>11</sup> The unemployment rate subsequently fell from the 2005 highpoint, even during the GFC, reaching 7.9 per cent in 2009 (before falling further in 2010 to 7.1 per cent). The movement in the employment-population ratio mirrors the trends in unemployment: the ratio fell from 2000, arriving at a low of 59.3 per cent in 2005, before improving over the recent years (surpassing 62 per cent in 2009).

Figure 3. Unemployment rate and employment-population ratio, 1996-2009



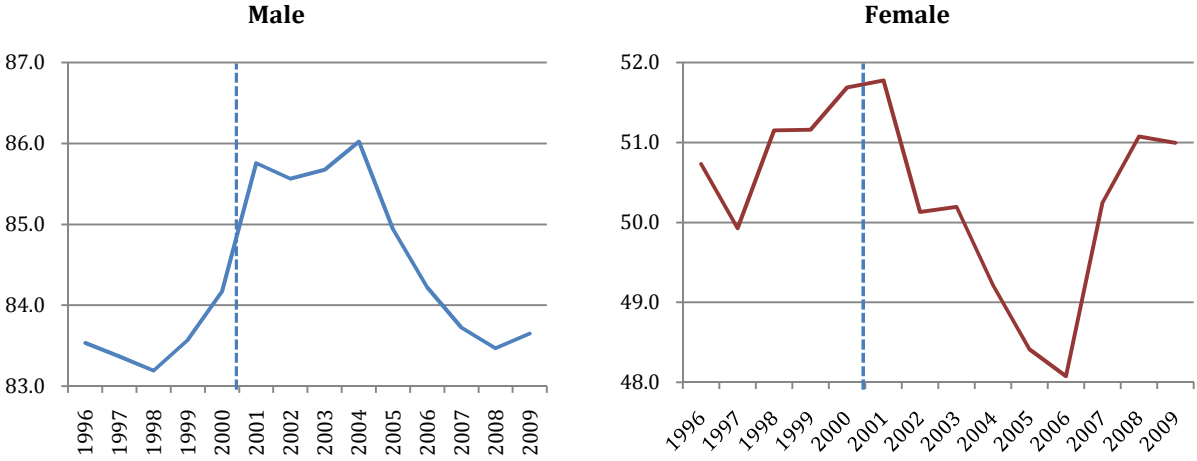
Source: Authors' calculations from SAKERNAS, 1996-2009. 2005 refers to the November round. 2006-2008 refer to the August rounds. 2009 refers to the February round.

Notes: For the unemployment rate, the series before and after 2001 are not comparable (indicated by the vertical line).

As illustrated in Figure 4, the rise in the female labour force participation rate in 1998 captures the much discussed added-worker effect evident during the East Asian financial crisis (see, for example, Manning (2000)). Figure 4 also suggests that much of the trend in unemployment since 2001 was driven by flows into and out of unemployment, since labour force participation rates for men were declining from 2004 and that of women had been declining since 2001. Interestingly, while the male labour force participation rate continued to decline up to 2008, there was a rise in the supply of labour by women during 2007 and 2008. This relationship is examined in more detail in the next section.

<sup>11</sup> In 2001, the definition of unemployment was broadened to include discouraged workers and future starts, which were previously considered inactive. This change in definition resulted in higher unemployment rates after 2001. Suryadarma et al. (2005) attempt to construct almost-comparable unemployment rates between 1994 and 2003 by excluding the discouraged.

**Figure 4. Labour force participation rates by gender, 1996-2009**



Source: Authors' calculations from SAKERNAS 1996-2009. August rounds for 2006 to 2009.  
 Note: Due to a change in the definition of the unemployed, the figures before and after 2001 are strictly not comparable. Also, the figure may be capturing changes in sampling errors over time. For example, the unweighted sample size of the labour force is notably small in 2001, and notably big between 2007 and 2009 due to the district-level representation of the data.

Though unemployment is a serious challenge for the Indonesian government, it is arguably less of a problem than the poor conditions of work and low-productivity of employment, particularly in the informal sector. For this reason, it is important to analyse trends in employment across sectors and by status.

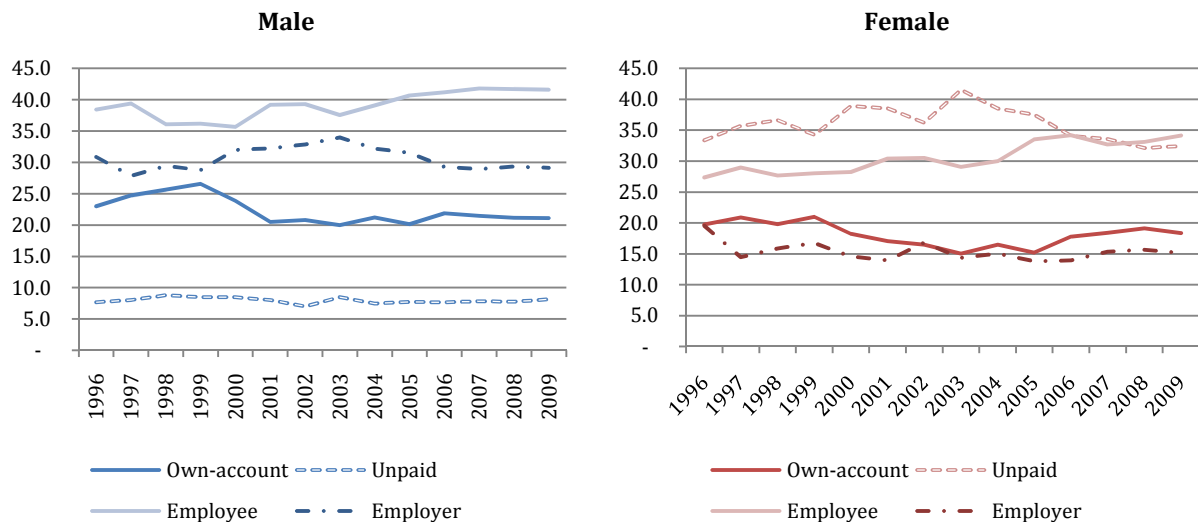
Firstly, the East Asian crisis negatively affected employment across a wide range of industries for both men and women, especially mining, manufacturing, electricity, gas and water, construction, trade, finance, and public and social/private services sectors. In the 2000s, employment recovered in most sectors (in terms of absolute numbers), except manufacturing. Indeed, between 2001 and 2009, manufacturing wage employment fell by 0.2 per cent per annum for men, while it increased by 0.1 per cent per annum for women. At the same time, the share of casual employment in total employment more than doubled in manufacturing, utilities and construction for men and in manufacturing and construction sectors for women.

Secondly, looking in more detail at employment status over 1996-2009, there have been some pronounced changes for both Indonesian men and women (Figure 5). Firstly, as noted by many studies, a fall in the share of wage employment is evident for Indonesian males during the East Asian financial crisis, which was accompanied by an increase in own-account employment that continued until 1999.<sup>12</sup> In comparison, there was only a moderate change to female wage employment in the late 1990s, accompanied by an increase in the share of unpaid work in 1998. The share of wage employment for both men and women began to increase around 2003 as the Indonesian economy started growing

<sup>12</sup> Since the SAKERNAS questionnaire changed its methodology in 2001, it is not possible to calculate a consistent series for formal and informal employment between 1996 and 2009. In general, wage employees are mostly formal workers, while own-account is mostly informal, and unpaid work is entirely informal. The employer category represents a mix of formal and informal employers. To avoid confusion, employment status is used in most of the discussions in the paper to proxy informal work. From this perspective, a large majority of women had been engaged in informal work throughout the period examined.

more strongly (the shares increased by approximately five percentage points between 2003 and 2009). For men, this was accompanied by a declining share of employers, while for women it was associated with a lower proportion of unpaid family workers.

**Figure 5. Employment status of men and women, 1996-2009 (% of total employment)**



Source: Authors' calculations from SAKERNAS, 1996-2009. 2005 refers to the November around. 2006 to 2009 refer to the August rounds. Vulnerable employment corresponds to own-account and unpaid family workers; employee corresponds to wage employment; and employer refers to those with permanent or temporary paid or unpaid helpers. Since 2001, employment status was refined by additional two categories: agricultural and non-agricultural casual workers. The casual workers were counted as employees for 2001-2009.

It is important to note that, while wage employment has increased since around 2003, the share of casual wage workers tended to increase faster, most notably for men in non-agricultural work (Figure 6). Casual agricultural and non-agricultural employment in Indonesia consists of persons who do not work permanently for other people, employers, or institutions, and have worked with more than one employer during the last month (BPS and ADB 2010). Besides experiencing higher job insecurity, casual workers in Indonesia earn on average less than half the wage received by regular workers.<sup>13</sup>

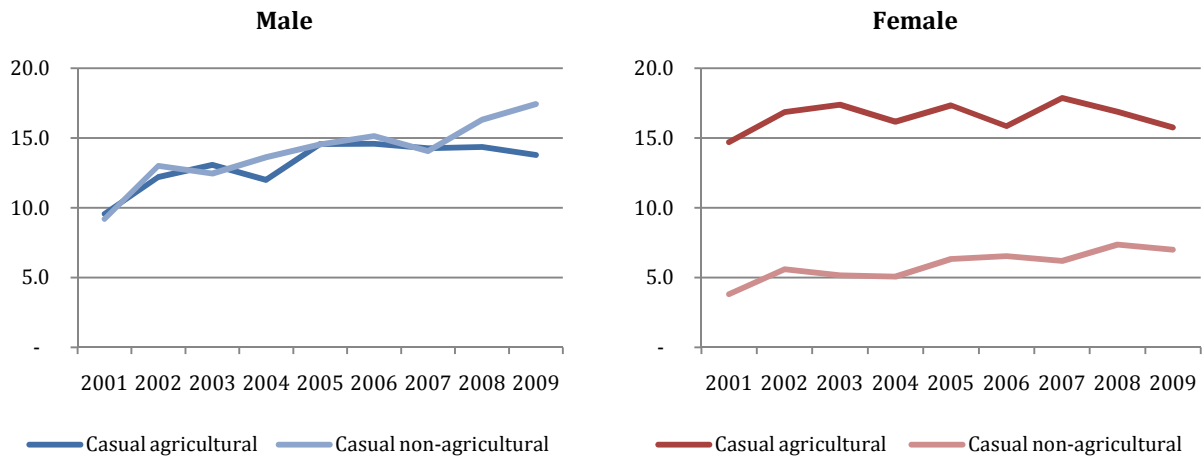
Overall, the proportion of casual workers (both agricultural and non-agricultural) in total employment increased from 6.7 per cent in 2001 to 11.0 per cent in 2009, before falling to 10.1 per cent in 2010. This proportion did not change from 2008 to 2009. The proportion of men employed on casual contracts increased the most over this period: from 7.3 per cent in 2001 to 13.0 per cent in 2009. This trend predates the global financial crisis that hit Indonesia late in 2008.

Interestingly, 2003 also coincides with an increased churning in the labour market (Figure 7). As highlighted above, there has been a widespread debate about labour market flexibility in Indonesia, particularly with regards to the impact of the Manpower Law, which was enacted in 2003. This law, if enforced, brought about a substantial increase in severance pay and restrictions on temporary employment (Manning and Roesad 2007). While it is very difficult to establish causality (many policies and pieces of legislation were

<sup>13</sup> Based on data compiled by Professor Chris Manning (ANU) for the Indonesia Study Group Presentation, ANU, December 2010.

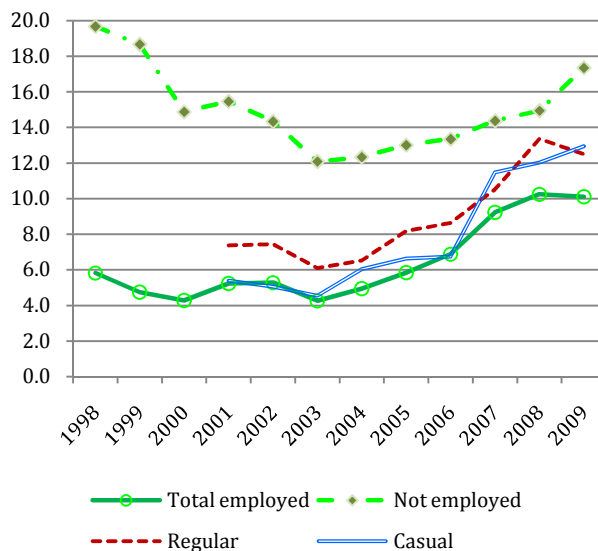
changed around the same time), it could be argued that the enactment of the Manpower Law has played a role in the increase in casual employment as a consequence of the high level of severance pay afforded to permanent workers (and hence in the segmentation in the Indonesia labour market).

**Figure 6. Increasing casualization of employees (% of total employees), 2001-2009**



Source: Authors' calculations from SAKERNAS, 1996-2009.

**Figure 7. Churning in the labour market, % who had worked before and changed or stopped work within 1 year, 1996-2009<sup>14</sup>**



Source: Authors' calculations from SAKERNAS, 1996-2009.

<sup>14</sup> This information has been collected since 1998. 'Not employed' consists of the unemployed and the inactive population.

However, such a causal effect of the Manpower Law is far from obvious. Firstly, Figure 7 shows that, until 2007, regular wage job holders were more likely to have changed their jobs or stopped work during the last year than casual job holders. Secondly, it is important to note that the increasing share of casual wage workers began between 2001 and 2002, and thus, the Manpower Law on its own is unlikely to account fully for such a trend. Thirdly, as reported in the World Bank (2010), compliance with the Manpower Law is low: 66 per cent of laid-off workers received no severance pay, 27 per cent obtained less than the amount stipulated under the law, and only 7 per cent were given the full entitlement. Thus, the law is not providing *de facto* protection to workers. Finally, looking at employers' perceptions as reported in the IFC's Enterprise Survey reveals that, in 2003, when the Law was introduced, 26.0 per cent of firms identified that labour regulations were a major constraint to doing business (which was only exceeded by corruption).<sup>15</sup> By 2009, this proportion had fallen to only 2.5 per cent despite being in the midst of the global financial crisis and its implications for retrenchments, particularly in export-oriented firms. In anticipating the implementation of the Law, the employers may have shifted their demand for workers from regular workers to temporary employees or outsourced its work to formal or informal entities in the short run. However, given its weak implementation, such a shift is unlikely to have continued in the longer run.

Based on these aggregate labour market trends, it is possible to come up with some preliminary insights. Firstly, the global financial crisis (2008-2009) did not severely impact the Indonesian economy or labour market. In comparison, the East Asian financial crisis had a much greater impact as reflected by a fall in male wage employment and a sharp contraction in real wages. The labour market outcomes witnessed over 2008-2009 seem to relate to much longer term trends that started to appear in the early 2000s, rather than as an outcome of the global financial crisis. More specifically, between the mid-2000s and 2009, there was an increase in male wage employment, especially in terms of casual employment, and the share of individuals who had changed work within the previous year. The unemployment rate continued to increase in the 2000s before peaking at 11.2 per cent in 2005 and starting on a downward trajectory. Given weak enforcement, the Manpower Law of 2003 alone is unlikely to explain the trend in the labour market in the 2000s. Around the same period, other major policies were implemented such as the move to decentralization that could have affected the labour market through its impact on local public investment initiatives, changes in administrative procedures and input sourcing across districts.<sup>16</sup>

#### **4. Further insights from the micro-data: drivers of employment status**

To provide sharper contours to the impact over the longer term, this section examines how individual and household characteristics drive employment status. In this paper, employment status consists of four states: own-account workers (self-employed), unpaid family workers, employers and employees. The first two categories make up what the International Labour Organization (ILO) defines as vulnerable employment, and thus acts as a proxy for informal employment. The category 'employees' represents workers receiving a wage/salary and, therefore, is more aligned with the notion of formal employment (though this is confounded by the inclusion of casual workers before 2001), while the other category ('employers') is probably a mixture of the two. The last subsection

<sup>15</sup> See [www.enterprisesurveys.org](http://www.enterprisesurveys.org).

<sup>16</sup> See for instance Kuncoro (2004) and Bardhan (2005).



checks the relevance of these four employment states by expanding the status to include casual workers for a shorter period covered by the data.

#### **4.1. Determinants of employment status between 1996 and 2009: summary statistics**

This analysis utilizes the micro-data from the national labour force (Sakernas) files of Statistics Indonesia (Badan Pusat Statistik). As a first step, it is useful to reflect on the sample summary statistics in order to identify key differences across employment states by individual and household characteristics. To this effect, Table A2 in the Appendix presents averages for the entire period (1996 to 2009), which provides a comparison of long-term cross-sectional traits that distinguishes between male and female workers for each employment state.<sup>17</sup> Table A1 in the Appendix provides a description of the key variables from Sakernas used in the empirical analysis.

These sample statistics indicate that the average age of male employers tends to be much higher than for other employment states, at around 44 years old, followed by own-account workers (39 years old). Similarly for women, both own-account workers and employers tend to be older than those in other employment states.

In terms of educational attainment, the best educated workers are unsurprisingly wage and salaried employees: 18.9 per cent of females and 12.7 per cent of males have a tertiary education compared to less than 2 per cent for the other employment categories. Conversely, own-account workers and unpaid family workers are the worst educated. In the case of males, 54.1 per cent of own-account workers have, at most, a primary level of education (54.4 per cent for unpaid family workers). A similar picture is evident for females. As expected, Indonesian men tend to be better educated than women. Looking at the trends in educational attainment confirms that both men and women in Indonesia have been getting better educated. However, the share of men without schooling or incomplete primary remained stubbornly high over this period at around one quarter, while it has decreased for females from 37.1 per cent in 1996 to 32.0 per cent in 2009.

In general, the agricultural sector represents the largest share of working men and women (44.2 per cent and 44.9 per cent respectively), particularly in the case of unpaid family workers and employers (for females). The next most important sector in terms of employment shares is wholesale and retail trade, which accounts for 25.7 per cent of women and 15.7 per cent of men. Employment in both these sectors is typically informal and unprotected. 9.9 per cent of working men and 12.7 per cent of working women are employed in the manufacturing sector. Reflecting the stagnation of this sector, the share of employment in manufacturing has fallen for both sexes: from 10.4 per cent in 1996 to 7.5 per cent in 2009 for men and from 14.0 per cent in 1996 to 9.9 per cent in 2009 for women.

Turning to the area of residence, the share of urban workers increased, most notably for women (from 30 per cent in 1996 to 40 per cent by 2009). This rising share of urban workers for women was led by an increase in the share of urban own-account workers and employers. For men, the increasing urban share in total workers was dominated mainly by own-account workers, whose share increased by 16 percentage points between 1996 and 2009. As a result, while wage employment is still predominantly an urban phenomenon, own-account work has become increasingly urbanized, particularly for men.

<sup>17</sup> These averages are also compared to changes over the entire period where relevant (not presented in Table A2 but are available upon request).

## 4.2. Determinants of employment status from 1996 to 2009: findings from a multinomial logit model

In order to examine the importance of individual and household characteristics in explaining differences in employment status, this section briefly presents estimates for various waves over the period 1996-2009, capturing both crises and periods of recovery. The model of employment status is estimated using a multinomial logit specification, which has the following response probabilities<sup>18</sup>:  $P(y = j|x) = \exp(x\beta_j) / [1 + \sum_{h=1}^J \exp(x\beta_h)]$ ,  $j=1, \dots, J$ , where  $y$  is the outcome variable (employment status),  $x$  is a  $1 \times K$  vector of explanatory variables, and  $\beta_j$  is  $K \times 1$  vector of coefficients. In this section, the dependent variable consists of four employment states: own-account workers, unpaid family workers, wage employees, and employers. The reason for choosing these four states stems from its comparability since the 1990s. The employer category is used as the normalized outcome (i.e.  $J = 3$ ). However, because of a rising incidence of casualization, notably in non-agricultural employment for men (see Figure 6), a five-state model is examined in greater details in the next subsection.<sup>19</sup> The model is conditioned on age, education, marital status, sector of employment, household size excluding the individual in question, urban location and provinces. Due to differences in labour force participation, the model is estimated separately for women and men. To ease interpretation of the results, this section focuses on the predicted probabilities and the marginal effects of specific characteristics on the predicted probabilities of employment status.<sup>20</sup> A Wald test is also carried out to indicate whether the relationship between individual characteristics and employment outcomes has changed over time.<sup>21</sup>

Given that average predicted probabilities depend on the composition of workers' characteristics, the equality of coefficients compared to a baseline year are tested after fitting the model to examine whether the relationship between the predicted probabilities of employment status and its determinants changed. Predicted probabilities can differ over time not only because of changes in returns to the worker characteristics and exogenous shocks but also as a result of changes in the composition of the sample. In this respect, testing the equality of coefficients can be considered as a way of analyzing whether the return to workers' characteristics changed over time. The main variables examined in this

<sup>18</sup> See, for example, Wooldridge (2002).

<sup>19</sup> Due to data constraints, an analysis of determinants of casualization is only possible from 2001.

<sup>20</sup> The coefficients of a multinomial logit model are not easily interpreted. Standard errors take into account the survey nature of the sample. The predicted probabilities and the marginal effects are generated from the estimated coefficients.

<sup>21</sup> To test the equality of coefficients across the years, the model was fitted for each year. Then, seemingly unrelated estimations were conducted on the obtained estimates between the baseline year and selected years for examination (1997, 1998, 1999, 2002, 2005, 2007, 2008, and 2009) in order to test the equality of coefficients across the years. In STATA, the post-estimation command *suest* was used after *mlogit*. A number of waves of the national labour force survey (Sakernas) were used as 'baseline' years in order to help identify changes over the two crisis periods: 1996 for the East Asian financial crisis of 1997-1998 and 2007 for the global financial crisis that hit Indonesia in 2008. Moreover, 2002 and 2005 are examined to help detect changes in the relationship between individual characteristics and employment status as a result of the enactment of the Manpower Law in 2003.

section are basic educational attainment<sup>22</sup> and urban-rural location, which provides some insights into the evolution of the Indonesian labour market since 1996.

On the whole, the coefficients across the years are (jointly) significantly different from each other, whichever baseline year is used. Focusing on the key issue of educational attainment, Table 1 presents the average predicted probabilities for individuals with primary education and less. The figures for males reveal that, *ceteris paribus*, the likelihood of own-account work for those with at most a primary education increased from 1996 to 1997 before decreasing (notably in 2005). At the same time, the probability of wage employment for less educated Indonesian men increased throughout the 2000s. Though representing a very low likelihood, the probability of unpaid family work has increased for men over the period. In comparison, there is less evidence of a changing role for educational attainment in the case of women. Overall, the predicted probabilities suggest that females with primary education or less are more likely to be in wage employment, a trend that has continued through the 2000s. The likelihood of unpaid family work has increased for women over the last few years.

Thus, this empirical analysis reveals that having low education is associated with better chances of wage employment than the case previously. This can be considered a positive labour market development, reflecting the expansion of employment opportunities for the less educated, if the type of wage employment is regular or formal in nature. Yet, as discussed above, there has also been an overall increase in the incidence of casual employment amongst wage employees in the 2000s. Whether or not the labour market increasingly offers better and more job opportunities for the less educated is further examined below.

**Table 1. Average predicted probabilities of employment status: men and women with primary education or less**

| Year | Male: average predicted probabilities |            |            | Female: average predicted probabilities |            |            |
|------|---------------------------------------|------------|------------|---|------------|------------|
|      | Own-account                           | Unpaid     | Wage       | Own-account                             | Unpaid     | Wage       |
| 1996 | 0.3323                                | 0.0158     | 0.3503     | 0.2552                                  | 0.3164     | 0.2095     |
| 1997 | 0.3583 **                             | 0.0257 *** | 0.3555 **  | 0.2824                                  | 0.3333     | 0.2159     |
| 1998 | 0.3866                                | 0.0269     | 0.3108 **  | 0.2708                                  | 0.3422 *   | 0.2000     |
| 1999 | 0.3736                                | 0.0239 *** | 0.3118 *** | 0.2764                                  | 0.3071     | 0.2149 *   |
| 2002 | 0.2820                                | 0.0212 *** | 0.3932 *** | 0.1993                                  | 0.3430     | 0.2640 **  |
| 2005 | 0.2729 **                             | 0.0217 **  | 0.4033 *** | 0.1695                                  | 0.3986     | 0.2652 *** |
| 2007 | 0.2968                                | 0.0292 *** | 0.3917 *** | 0.2191                                  | 0.3438 *   | 0.2501 *** |
| 2008 | 0.2815                                | 0.0283 *** | 0.3946 *** | 0.2130                                  | 0.3369 *** | 0.2684 *** |
| 2009 | 0.2814 *                              | 0.0284 *** | 0.3974 *** | 0.2159                                  | 0.3490 *** | 0.2648 *** |

Source: Authors' calculations from Sakernas, 1996-2009.

Note: The dependent variable for the multinomial logit model consists of four employment states: own account workers; unpaid family workers; employer; and employees. The predicted probabilities derived from the multinomial logit estimates are for education dummy (= 1 with primary education or less and = 0 otherwise), holding all other variables at their means. \*, \*\*, \*\*\* indicate that the underlying coefficient on education dummy is significantly different from the 1996 coefficient at 10%, 5% and 1% level respectively.

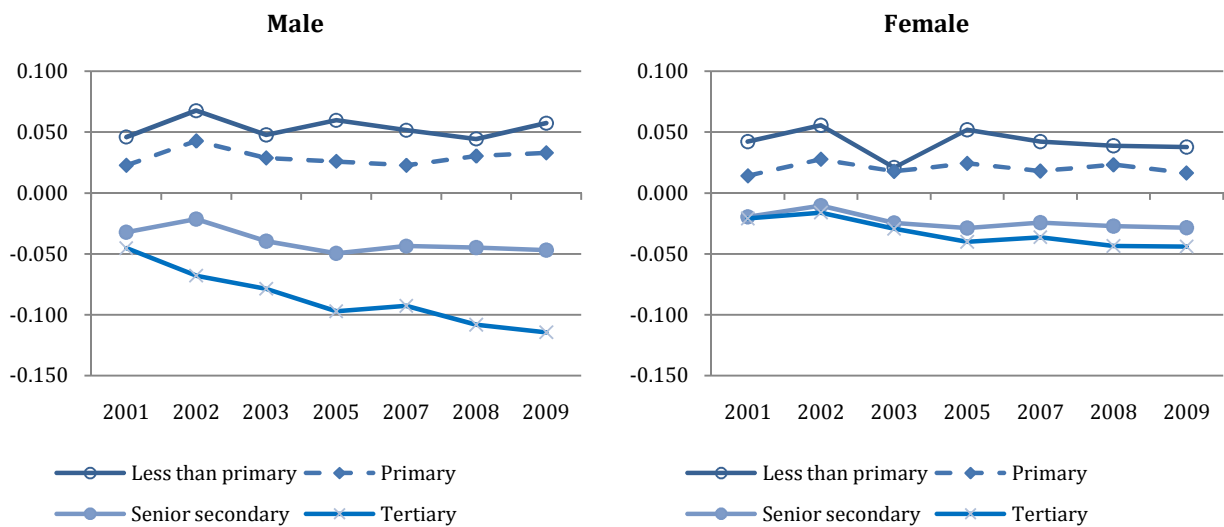
<sup>22</sup> In this section, educational attainment was simplified into a dummy which is equal to 1 for individuals with primary education or less and 0 otherwise.

### 4.3. What determines casual employment?

A four-state conceptualization of employment status is important for distinguishing different trends across workers over a long period of time (1996-2009). However, as highlighted above, there have been changes within the category of wage and salaried employees as a consequence of an increase in casual employment.

Moving to the results of an expanded multinomial logit model with five employment states (own-account workers, unpaid family workers, employers, employees and casual workers) amongst non-agricultural workers reveals a number of trends over 2001-2009 (Figure 9). Firstly, the probability of engaging in non-agricultural casual employment rises significantly for those with less than junior secondary education, while the converse holds for those with higher education.<sup>23</sup> Educational attainment plays a greater role in explaining the probability of casual employment for men than for women. Compared to those with junior secondary education, having no education increases the probability of non-agricultural casual employment by 5.4 and 4.1 percentage points for working-age men and women, respectively. Having tertiary education decreases the same probability by 8.6 and 3.3 percentage points respectively for men and women. For both sexes, the relationship between having no education and probability of engaging in casual employment did not differ significantly over the period.<sup>24</sup>

**Figure 9. Marginal effects of education on predicted probabilities of non-agricultural casual employment by gender, selected years**



Source: Authors' calculations from Sakernas, 2001-2009.

Note: The dependent variable for the multinomial logit model consists of five employment states: own account workers; unpaid family workers; employer; regular wage employees, and casual employees. Base educational level is 'junior secondary education'.

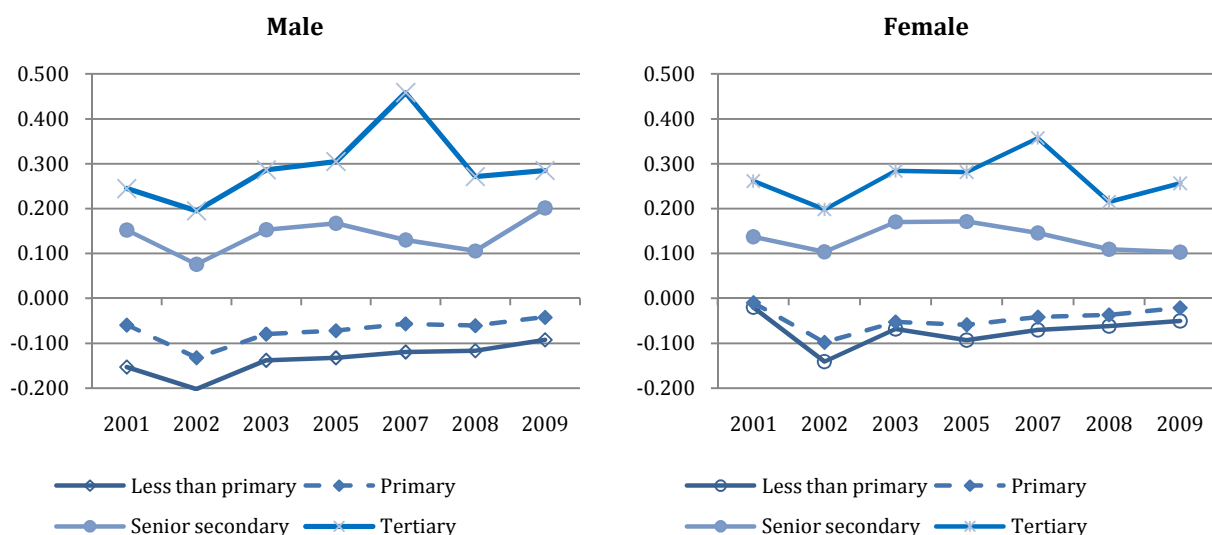
<sup>23</sup> In each year, the coefficients on educational dummies are significant at the 1% level for both men and women.

<sup>24</sup> The coefficients on education over the years were tested for differences, using 2001 as the baseline year. For women, 2003 was an exception when the coefficient on 'no education' significantly differed from the 2001 one at the 5% level.

In contrast, tertiary education is increasingly negatively associated with the probability of male casual employment, which is mostly likely to be due to higher returns to tertiary education. For women, however, having tertiary education seems to do little to keep well-educated women away from casual employment. In contrast to their male counterparts, the marginal effects of women's senior secondary and tertiary education do not show a large difference in terms of their influence on having casual employment. Therefore, though attaining higher education clearly matters for ensuring that workers can find permanent employment, this effect seems to be more limited for women than for men.

Turning to regular wage employment, compared to those with junior secondary education, having no education decreases the probability of regular wage employment by 13.6 and 7.2 percentage points respectively for working-age men and women (Figure 10), while having tertiary education increases it by 29.2 and 26.6 percentage points, respectively. Except in 2007, the positive marginal effects of tertiary education on regular wage employment remain almost constant over time, for both sexes.<sup>25</sup> At the same time, while senior secondary education plays an important role in increasing the likelihood of having regular wage employment, its impact tends to decline in the late 2000s, particularly for women.<sup>26</sup>

**Figure 10. Marginal effects of education on predicted probabilities of non-agricultural regular wage employment by gender, selected years**



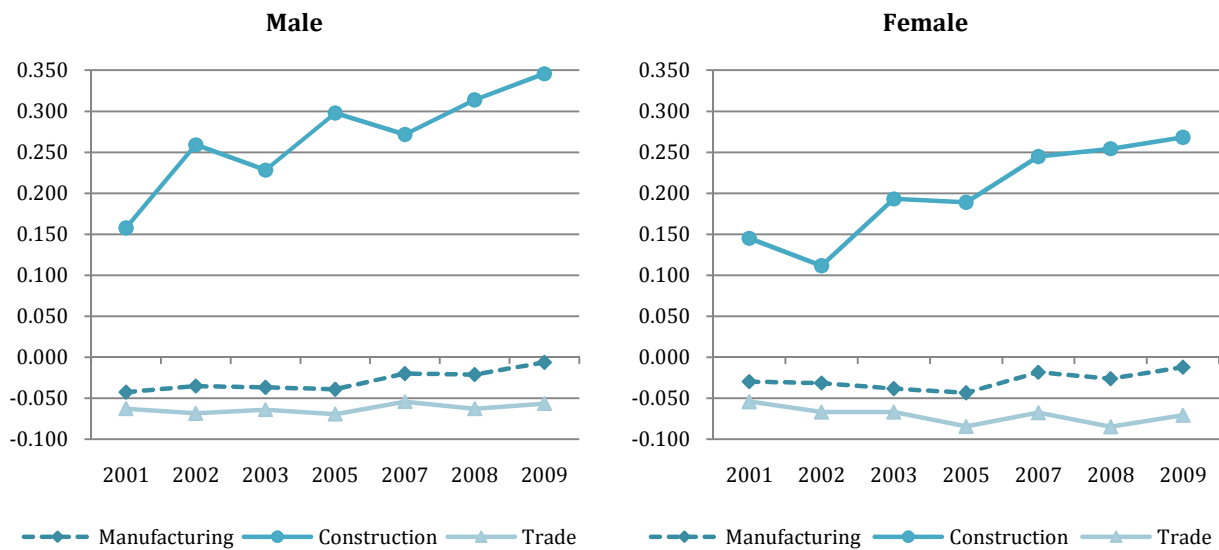
Source: Authors' calculations from Sakernas, 2001-2009.

Note: The dependent variable for the multinomial logit model consists of five employment states: own account workers; unpaid family workers; employer; regular wage employees, and casual employees. Base educational level is 'junior secondary education'.

<sup>25</sup> Compared to 2001, the coefficient on tertiary education differs significantly at the 5% level in 2002 and 2007 for men and in 2002, 2008, and 2009 for women.

<sup>26</sup> Compared to 2001, the coefficient on senior secondary education differs significantly at the 5% level in 2007, 2008 and 2009 for men and in all years examined for women. In 2009, the positive effect of senior secondary education on male regular wage employment seems to be exceptionally large.

**Figure 11. Marginal effects of industry on predicted probabilities of non-agricultural casual employment by gender, selected years and industries**



Source: Authors' calculations from Sakernas, 2001-2009.

Note: The dependent variable for the multinomial logit model consists of five employment states: own-account workers; unpaid family workers; employer; regular wage employees, and casual employees. Base industry is public administration, education, health, and social services; private households; and extra-territorial organizations.

Looking at the probabilities of employment status by sector shows that, for Indonesian males, there is only evidence of a large increase in the likelihood of casual employment for those working in construction (from 9.8 per cent in 2001 to 29.5 per cent in 2009). For females, the predicted probability increased from 1.9 per cent in 2001 to 8.7 per cent in 2009. Overall, the probability of casual employment has increased the most for those in the construction sector (Figure 11). By 2009, the marginal effect of being in the construction sector on the probability of casual employment reached 35 percentage points for men and 27 points for women.<sup>27</sup> In terms of the manufacturing sector, the predicted probability of being in casual employment increased for Indonesian men from 1.3 per cent in 2001 to 4.0 per cent in 2009.

With regard to non-agricultural regular wage employment, all selected industries show negative effects compared to the base industry of public, social, and private services (including education and health). Compared to the base industry, being in the trade sector decreases the likelihood of regular wage employment by 37 and 46 percentage points for men and women, respectively. For manufacturing, the negative marginal effects associated with regular wage employment are 2 and 11 percentage points respectively for men and women. Together with the results presented in Figure 11, this suggests that the public, social and private services sector tends to be the dominant provider of wage employment, both regular and casual. Casualization of wage employment takes place unambiguously in the construction sector, while in the other sectors, workers tend to resort to alternative employment states, such as unpaid contributing family work for women and own-account work for men.

<sup>27</sup> This is in relation to base industry of public, social and private services (including health and education).

## 5. Concluding remarks

As one of the star performers of the Asia region, Indonesia had grown rapidly during the 1980s and 1990s, resulting in a significant fall in poverty. However, when the East Asian financial crisis hit in 1997-1998, the country suffered a major blow to this economic and social progress. This earlier crisis did not result in a large fall in employment and a commensurate rise in unemployment; rather, the economic contraction was accompanied by considerable transitions within employment, namely, from formal sector to informal and agricultural employment, particularly among women. The years following the East Asian crisis were characterized by slow growth, stagnant investment, further economic diversification, and weak formal job creation, which have often been attributed to such factors as rigid labour regulations, especially the enactment of the Manpower Law in 2003. The economic and labour market situation in Indonesia only began to consistently improve over the last five years, notably during the boom years leading up to the global financial crisis. During this period, unemployment fell from its 2005 peak and employment increased. When the global financial crisis spread in late 2008 to emerging economies like Indonesia, it was expected that these countries would be severely affected. However, in contrast to previous crisis episodes, Indonesia proved to be rather resilient despite the fact that exports collapsed by almost 18 per cent from 2008 to 2009. Thus, for Indonesia, the most recent crisis turned out to be a short-lived temporary shock to export-oriented sectors.

The results presented in the paper both confirm the findings of previous studies and show that much of the recent developments in the Indonesian labour market seem to have been part of a longer-term trend since the mid-2000s, particularly regarding the increasing casualization of the workforce. There appears to be more changes by employment type than across sectors, as the sectoral shares of employment for both men and women remained remarkably steady for more than a decade. The findings of the paper also points towards the underlying changes in relationship between educational attainment and employment states in the late 2000s. Amongst the selected industries examined, casualization takes place unambiguously in the construction sector, while public, social, and private services sector remains a dominant provider of both regular and casual wage employment.

Despite the apparent resilience of Indonesia to the impact of the global financial crisis, the country, however, continues to face a number of substantial challenges at both the macroeconomic, sectoral and labour market levels. In particular, the Indonesian economy has failed in recent years to generate sufficient regular formal sector jobs, notably in the manufacturing sector. While there are some arguments that the introduction of new labour market regulations in 2003 (the Manpower Law) has deterred further investment from taking place and prevented creation of jobs in the formal sector, this paper argues that it is unlikely to be the main driver of observed trends in the data. While overly protective labour market regulation can potentially deter employers from hiring, there is no obvious indication that the labour market rigidities are the main concern for employers. This may be due to the low compliance rate of the regulations, as well as the existence of more serious deterrents to investment.

Overall, it is difficult to empirically isolate the impact of changes in labour market regulations *vis-à-vis* other important institutional and regulatory changes that took place in the 2000s; and a nuanced and careful analysis is necessary before embarking on further policy reforms. It has to be remembered that much of the changes that took place in the labour market during the 2000s apparently occurred with very little cross-sectoral redistribution of workers and economic activities. In this respect, the stagnant levels of investment and diversification of the economy of the last decade is likely to be more influenced by supply-side factors such as insufficient infrastructure, high transport and logistics costs, excessive costs of capital, inadequate education and training, and weak governance.

Ultimately, the Indonesian government should aim to develop more effective labour market regulations and unemployment benefit systems that provide adequate income and employment protection to workers. A broader approach to social protection than currently exists would ensure that the burden of unemployment and underemployment is shared between the government and social partners. This in turn requires effective social dialogue in order to reach an agreement that is sustainable, equitable and most importantly, politically viable.



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## Appendix

All data used in this paper is sourced from Statistics Indonesia's (Badan Pusat Statistik) national labour force survey (Sakernas) for the period 1996-2009.

**Table A1. Description of key variables**

| Variable                     | Description  |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
|------------------------------|--|-----------------------------|-------------------------|-------------------|-------------------------|-------------------|----------------------|---------|-----------------------|----------|------------------------|---------------------|----------------------|-------------|--------------------|------------|---------------------|------------------------------|----------------------|--------------------|-----------------------|-----------------|---------------|-----------|--------------------|-----------------|------------|-------------------|------------------|----------------|-----------------|------------|-----------|----------|--|
| Employment status            | <p>Employment status consists of four states:</p> <ol style="list-style-type: none"> <li>1. Own-account workers</li> <li>2. Unpaid family workers</li> <li>3. Employees</li> <li>4. Employers</li> </ol> <p>This categorization is refined further to include two separate states for employees: wage and salaried employees and casual employees</p>  |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| Educational attainment       | <p>Educational attainment is defined as follows:</p> <ol style="list-style-type: none"> <li>1. No education or incomplete primary</li> <li>2. Primary school</li> <li>3. Junior high school (general and vocational)</li> <li>4. Senior high school (general and vocational)</li> <li>5. Tertiary (diploma or university degree)</li> </ol>  |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| Sector                       | <p>Employment status is classified across 9 sectors:</p> <ol style="list-style-type: none"> <li>1. Agriculture, forestry, hunting and fishery</li> <li>2. Mining and quarrying</li> <li>3. Manufacturing industry</li> <li>4. Electricity, gas and water</li> <li>5. Construction</li> <li>6. Wholesale trade, retail trade, restaurants and hotels</li> <li>7. Transport, storage and communication</li> <li>8. Financing, insurance, real estate and business services</li> <li>9. Public administration (community, social, and personal services)</li> </ol>   |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| Province                     | <p>Geographical location is classified by urban/rural and provincial dimensions. Province is defined as:</p> <table style="width: 100%; border: none;"> <tbody> <tr> <td style="width: 50%;">1. Nanggroe Aceh Darussalam</td> <td style="width: 50%;">18. Nusa Tenggara Barat</td> </tr> <tr> <td>2. Sumatera Utara</td> <td>19. Nusa Tenggara Timur</td> </tr> <tr> <td>3. Sumatera Barat</td> <td>20. Kalimantan Barat</td> </tr> <tr> <td>4. Riau</td> <td>21. Kalimantan Tengah</td> </tr> <tr> <td>5. Jambi</td> <td>22. Kalimantan Selatan</td> </tr> <tr> <td>6. Sumatera Selatan</td> <td>23. Kalimantan Timur</td> </tr> <tr> <td>7. Bengkulu</td> <td>24. Sulawesi Utara</td> </tr> <tr> <td>8. Lampung</td> <td>25. Sulawesi Tengah</td> </tr> <tr> <td>9. Kepulauan Bangka Belitung</td> <td>26. Sulawesi Selatan</td> </tr> <tr> <td>10. Kepulauan Riau</td> <td>27. Sulawesi Tenggara</td> </tr> <tr> <td>11. DKI Jakarta</td> <td>28. Gorontalo</td> </tr> <tr> <td>12. Bogor</td> <td>29. Sulawesi Barat</td> </tr> <tr> <td>13. Jawa Tengah</td> <td>30. Maluku</td> </tr> <tr> <td>14. DI Yogyakarta</td> <td>31. Maluku Utara</td> </tr> <tr> <td>15. Jawa Timur</td> <td>32. Papua Barat</td> </tr> <tr> <td>16. Banten</td> <td>33. Papua</td> </tr> <tr> <td>17. Bali</td> <td></td> </tr> </tbody> </table> | 1. Nanggroe Aceh Darussalam | 18. Nusa Tenggara Barat | 2. Sumatera Utara | 19. Nusa Tenggara Timur | 3. Sumatera Barat | 20. Kalimantan Barat | 4. Riau | 21. Kalimantan Tengah | 5. Jambi | 22. Kalimantan Selatan | 6. Sumatera Selatan | 23. Kalimantan Timur | 7. Bengkulu | 24. Sulawesi Utara | 8. Lampung | 25. Sulawesi Tengah | 9. Kepulauan Bangka Belitung | 26. Sulawesi Selatan | 10. Kepulauan Riau | 27. Sulawesi Tenggara | 11. DKI Jakarta | 28. Gorontalo | 12. Bogor | 29. Sulawesi Barat | 13. Jawa Tengah | 30. Maluku | 14. DI Yogyakarta | 31. Maluku Utara | 15. Jawa Timur | 32. Papua Barat | 16. Banten | 33. Papua | 17. Bali |  |
| 1. Nanggroe Aceh Darussalam  | 18. Nusa Tenggara Barat  |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| 2. Sumatera Utara            | 19. Nusa Tenggara Timur  |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| 3. Sumatera Barat            | 20. Kalimantan Barat   |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| 4. Riau                      | 21. Kalimantan Tengah  |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| 5. Jambi                     | 22. Kalimantan Selatan   |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| 6. Sumatera Selatan          | 23. Kalimantan Timur   |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| 7. Bengkulu                  | 24. Sulawesi Utara   |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| 8. Lampung                   | 25. Sulawesi Tengah  |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| 9. Kepulauan Bangka Belitung | 26. Sulawesi Selatan   |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| 10. Kepulauan Riau           | 27. Sulawesi Tenggara  |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| 11. DKI Jakarta              | 28. Gorontalo  |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| 12. Bogor                    | 29. Sulawesi Barat   |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| 13. Jawa Tengah              | 30. Maluku   |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| 14. DI Yogyakarta            | 31. Maluku Utara   |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| 15. Jawa Timur               | 32. Papua Barat  |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| 16. Banten                   | 33. Papua  |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |
| 17. Bali                     |  |                             |                         |                   |                         |                   |                      |         |                       |          |                        |                     |                      |             |                    |            |                     |                              |                      |                    |                       |                 |               |           |                    |                 |            |                   |                  |                |                 |            |           |          |  |

**Table A2. Summary statistics of individual and household characteristics driving employment status by gender, average 1996-2009**

| Variable                               | Employment status (average) |        |          |           |       |
|--|-----------------------------|--------|----------|-----------|-------|
|  | Own-account                 | Unpaid | Employee | Employers | Total |
| <b>Female</b>                          |                             |        |          |           |       |
| Age (years)                            | 41.9                        | 37.3   | 33.1     | 42.9      | 37.7  |
| <i>Educational attainment</i>          |                             |        |          |           |       |
| No school/incomplete primary (%)       | 35.1                        | 33.3   | 17.2     | 36.7      | 29.3  |
| Primary school (%)                     | 37.4                        | 44.2   | 26.1     | 39.0      | 36.7  |
| Junior high school (%)                 | 15.2                        | 14.7   | 14.9     | 13.7      | 14.7  |
| Senior high school (%)                 | 10.7                        | 7.1    | 25.6     | 9.0       | 13.6  |
| Tertiary (%)                           | 1.6                         | 0.7    | 16.2     | 1.7       | 5.8   |
| <i>Marital status</i>                  |                             |        |          |           |       |
| Single (%)                             | 8.0                         | 13.5   | 33.5     | 6.2       | 17.5  |
| Married (%)                            | 66.7                        | 82.7   | 54.7     | 67.7      | 69.1  |
| Divorced/Widowed (%)                   | 25.2                        | 3.8    | 11.8     | 26.0      | 13.5  |
| Household size (persons)               | 4.0                         | 4.4    | 4.5      | 4.2       | 4.3   |
| Rural (%)                              | 55.1                        | 82.8   | 40.1     | 71.2      | 63.1  |
| <i>Sector</i>                          |                             |        |          |           |       |
| Agriculture (%)                        | 17.0                        | 73.4   | 21.3     | 48.2      | 43.6  |
| Mining (%)                             | 0.5                         | 0.4    | 0.4      | 0.2       | 0.4   |
| Manufacturing (%)                      | 12.5                        | 7.5    | 26.2     | 9.8       | 14.5  |
| Electricity, gas & water (%)           | 0.01                        | 0.004  | 0.1      | 0.01      | 0.05  |
| Construction (%)                       | 0.2                         | 0.1    | 1.0      | 0.2       | 0.4   |
| Whole and retail trade (%)             | 58.2                        | 17.5   | 11.5     | 38.6      | 26.2  |
| Transport, storage & communication (%) | 1.0                         | 0.2    | 1.2      | 0.5       | 0.7   |
| Financial int., real estate (%)        | 0.3                         | 0.05   | 2.5      | 0.3       | 0.9   |
| Public administration (%)              | 10.3                        | 0.9    | 35.7     | 2.3       | 13.4  |
| <b>Male</b>                            |                             |        |          |           |       |
| Age (years)                            | 39.2                        | 25.3   | 35.4     | 44.6      | 38.2  |
| <i>Educational attainment</i>          |                             |        |          |           |       |
| No school/incomplete primary (%)       | 20.7                        | 14.5   | 11.2     | 29.2      | 19.1  |
| Primary school (%)                     | 40.8                        | 40.1   | 29.0     | 42.9      | 36.8  |
| Junior high school (%)                 | 21.2                        | 28.8   | 19.7     | 15.3      | 19.4  |
| Senior high school (%)                 | 15.4                        | 15.4   | 29.0     | 10.8      | 19.3  |
| Tertiary (%)                           | 1.8                         | 1.3    | 11.1     | 1.8       | 5.4   |
| <i>Marital status</i>                  |                             |        |          |           |       |
| Single (%)                             | 13.4                        | 73.9   | 24.7     | 5.3       | 20.3  |
| Married (%)                            | 82.7                        | 23.2   | 73.4     | 92.0      | 77.0  |
| Divorced/Widowed (%)                   | 3.9                         | 3.0    | 1.9      | 2.7       | 2.7   |
| Household size (persons)               | 4.3                         | 5.1    | 4.5      | 4.3       | 4.5   |
| Rural (%)                              | 57.3                        | 82.3   | 44.2     | 78.3      | 60.8  |
| <i>Sector</i>                          |                             |        |          |           |       |
| Agriculture (%)                        | 32.5                        | 76.7   | 19.0     | 71.2      | 42.8  |
| Mining (%)                             | 1.2                         | 0.6    | 1.8      | 0.6       | 1.2   |
| Manufacturing (%)                      | 4.6                         | 6.3    | 20.3     | 6.5       | 11.4  |
| Electricity, gas & water (%)           | 0.1                         | 0.01   | 0.6      | 0.1       | 0.3   |
| Construction (%)                       | 2.8                         | 0.8    | 14.9     | 2.0       | 7.1   |
| Whole and retail trade (%)             | 30.2                        | 13.2   | 9.4      | 15.1      | 16.0  |
| Transport, storage & communication (%) | 20.5                        | 0.7    | 7.2      | 2.4       | 8.1   |
| Financial int., real estate (%)        | 0.4                         | 0.1    | 2.9      | 0.2       | 1.3   |
| Public administration (%)              | 7.7                         | 1.7    | 23.9     | 2.0       | 11.8  |

Source: BPS Sakernas, authors' calculations

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