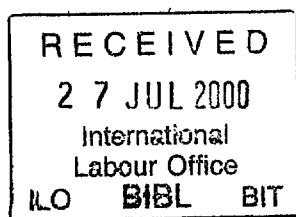


**MINIMUM WAGE AND  
THE WELFARE OF INDONESIAN WORKERS**

By

**Iyanatul Islam and Suahasil Nazara**



**International Labour Organization**

**July, 2000**

**Jakarta**



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## PREFACE

This is the third in a series of Occasional Discussion Papers launched by the ILO Jakarta Office in the Spring of 1999 to assist Indonesia with ideas and analysis which could contribute to its uphill task of recovery from the socially devastating financial crisis.<sup>1</sup>

This paper has been produced under an ILO project (INS/99/007) entitled Assistance for making Economic Recovery Employment-friendly funded by UNDP Jakarta carried out within the cross-sectoral framework of the United Nations Support Facility for Indonesian Recovery (UNSFIR).

The authors, Dr. Iyanatul Islam and Suahasil Nazara, are respectively Labour Market and Employment Specialist on the above ILO project and a staff member at the Department of Economics at the University of Indonesia.

The paper basically draws the following major conclusions:

- (a) When the notional minimum wage at the household level (1.4 wage earners) is compared to the household (average 4 members) poverty line, it can meet only two-thirds of the basic expenditure needs of households;
- (b) Nearly one third of the paid workers (1998) in Indonesia receive incomes lower than the minimum wage;
- (c) There is no convincing overall empirical evidence of a negative relationship between the level of minimum wage and the level of employment;
- (d) Despite a sharp increase in the level of minimum wage during the period 1985 to 1997, business profitability has been preserved.

Asif Hasnain and Shafiq Dhanani of UNIDO Jakarta facilitated this study with their analytical ideas and by sharing the findings from the UNIDO project on industrial policy in Indonesia.

July 2000

Iftikhar Ahmed  
Director  
ILO Jakarta Office

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<sup>1</sup> The titles of the previous issues of the Discussion Paper series are listed at the back of this document.

# MINIMUM WAGE AND THE WELFARE OF INDONESIAN WORKERS

By  
Iyanatul Islam and Suahasil Nazara

## 1. Introduction

In 1996, an influential study by the World Bank drew the attention of the Indonesian government to the adverse consequences of the sharp increase in regional minimum wages in the 1990s. Using a range of statistical indicators and drawing on econometric analysis, the report was able to argue that the rapid rise in regional minimum wages, particularly since 1989, is ‘...beginning to have a negative effect on the creation of employment, especially of women and young workers’.<sup>1</sup> The same study goes on to warn: ‘Caution must be exercised in raising them further for fear of eroding competitiveness, lowering employment growth and paradoxically of increasing poverty and labour unrest.’<sup>2</sup>

With the recent round of minimum wage increases that have been announced in February 2000 – between 15 per cent and 55 per cent – these issues and concerns have come to the fore.<sup>3</sup> Does a minimum wage policy really destroy jobs? What is the relationship between the level of minimum wage and business profitability? What preferred alternatives are there to protect the interests of workers, especially those suffering from low pay? This is an important issue at the best of times, but it becomes critical at a time when Indonesia is trying to recover from the terrible recession of 1998.

It appears that none of the key stakeholders in Indonesia – the government, the business community and unions – have made a systemic attempt to evaluate the likely impact of the new increases in regional minimum wages on the welfare of workers and whether it would abort an employment-friendly recovery.<sup>4</sup> In fact, the presumption that minimum wages have adverse effects on the labour market is upheld along with the empirically unverified assumption that minimum wage-induced increases in labour costs erode business profitability. Thus, in 1999, BAPPENAS (The National Planning Development Agency), in a ‘White Paper’ on the medium-term outlook of the Indonesian economy observed that minimum wages distorted the relative pay structure and inhibited labour market flexibility in Indonesia. It did not offer any evidence to substantiate this proposition.<sup>5</sup>

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<sup>1</sup> World Bank (1996: chapter 3, p.81). The report itself was a wide-ranging study of the dimensions of Indonesian economic growth. A significant part of chapter 3 was devoted to the issue of minimum wages.

<sup>2</sup> World Bank (1996: chapter 3, p.81).

<sup>3</sup> See *Jakarta Post* (‘Minimum wages set to rise...’, February 22, 2000).

<sup>4</sup> In a recent interview (March 15, 1999) with a senior official of the Ministry of Manpower (DEPNAKER), it became clear to the authors that the last major evaluation was done by the World Bank in 1996 – which is the ‘influential study’ that is cited in the text.

<sup>5</sup> BAPPENAS (1999: 78).

In the same year (April, 1999), an ILO-supported tripartite working group – consisting of representatives from employers, unions and the government (Ministry of Manpower or DEPNAKER) – highlighted the warning issued by the aforementioned World Bank study.<sup>6</sup> The working group proceeded to recommend the reform of the minimum wage setting process that would enable a clearer delineation of the criteria for stipulating minimum wages and strengthen the implementation capacities of the government. No attempt was made to re-assess the critique that minimum wages inhibit employment opportunities and undermine international competitiveness, nor to establish whether they were an appropriate tool to deal with the plight of the ‘working poor’.

This paper makes an attempt to respond to the perceived limitations of previous evaluations. In carrying out such an exercise, the paper argues that neither theory nor comparative evidence allows one to be dogmatic about the employment effects of a minimum wage policy. The core issue is not whether the imposition of minimum wages destroys jobs, but how best to assist the ‘working poor’, that is, those who are employed, but cannot earn enough to afford the basic necessities of life. The problem is not trivial. In 1999, for example, 23 per cent of wage earners in manufacturing were classified as living below the poverty line, and accounted for 12 per cent of all poor households in Indonesia.<sup>7</sup>

The paper is structured as follows. **Section 2** offers a brief background to the debates on the role of minimum wages in influencing the welfare of workers. The key conclusion is that the professional literature is much more ambivalent on this issue than the standard presumption that minimum wages have a negative effect on employment and other related variables. This ambivalence cannot be ignored when discussing the Indonesian experience.

**Section 3** offers a concise description of the processes and mechanisms adopted by the Indonesian government in implementing its minimum wage policy. The salient point is that the Indonesian government does not unilaterally impose minimum wages. There is a significant element of ‘endogeneity’, that is the processes and mechanisms take into account general macroeconomic conditions and the views of pertinent stakeholders rather than being driven by administrative criteria. This ‘endogeneity’ hypothesis is also supported by econometric analyses.

**Section 4** critically considers the notion that minimum wages have been set at an excessive level in Indonesia. Past evaluations are vulnerable to some logical flaws. The section puts forth the view that minimum wages are best seen as benchmarks – or poverty lines – that may be used to identify the incidence of low pay.

**Section 5** reviews the minimum wage-employment relationship in Indonesia using a combination of descriptive indicators and econometric analyses. The findings show that neither the new results reported here, nor previous results reported by others, are able to convincingly demonstrate that minimum wages have a negative effect on employment.

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<sup>6</sup> Hidayat, Lubis and Bhoka (1999).

<sup>7</sup> Sutanto and Irawan (2000: table 14a, p.34). Note that the incidence of the working poor in manufacturing is sensitive to the poverty line chosen. The figures reported in the text report only the estimates based on the ‘preferred’ poverty line of the Central Board of Statistics (BPS). Sutanto and Irawan report figures as low as 13.4 per cent poverty incidence for wage earners in the manufacturing sector using alternative poverty lines. Note however that wage earners in manufacturing as a proportion of total poor households varies between 12-13 per cent regardless of the poverty line selected.

**Section 6** concludes with some policy recommendations. In making such recommendations, the paper recognises that adopting a legal approach to the imposition of minimum wages is not necessarily the most effective anti-poverty approach. Alternatives need to be explored, but within this framework regional minimum wages can act as a focal point in highlighting the plight of the ‘working poor’.

## **2. Minimum wages and the welfare of workers: the debate in a comparative context**

The view that minimum wages constrain the capacity of business to create new jobs and are thus ultimately anti-labour in orientation derives from the textbook model of a competitive labour market. Thus, as shown in Appendix 1 (Figure A1.1), a nation-wide minimum wage set – and sustained by fiat – above the market-determined rate will cause job rationing and hence unemployment. Of course, as Stigler (1946) noted many years ago, this conclusion is only valid in the absence of ‘employer power’ (or monopsonistic elements) in the labour market. In the presence of a high degree of employer power, profit maximising decisions will lead business enterprises to ‘exploit’ workers because they will be paid less than what they are worth (that is below their marginal product). This profit maximising outcome will be less than the market-determined wage under a competitive labour market. The policy implication here is that the government can dissipate this employer power by legally compelling firms to pay a minimum that is equivalent to the market-determined wage under competition. As Figure A 1.2 (in Appendix 1) shows, such a minimum wage policy pursued in the context of monopsonistic elements in the labour market can bring substantial benefits to workers: both employment and the average wage will go up – at least over a certain range.<sup>8</sup>

Furthermore, the view that a nation-wide minimum wage inhibits the growth of employment implicitly assumes a zero-growth economy or lack of any compensating demand stimulus. A growing economy can absorb a cost squeeze imposed by the minimum wage. Even if one assumes a short-run model, where long-run growth issues are ignored, it is possible to show that a compensating demand stimulus through government intervention can nullify the negative employment effects of a rise in the minimum wage above the market clearing level. In an aggregate supply-aggregate demand model, increases in the minimum wage can be treated as a leftward shift in the aggregate supply curve. This will lead to a fall in equilibrium output and employment (see Figure A2.1 in Appendix 2). The government can respond to this by shifting the aggregate demand curve to the right (e.g., through a fiscal stimulus), thus restoring the initial level of equilibrium output and employment. Hence, in this simple macroeconomic model, there are no net job losses in aggregate.

The above discussion amply demonstrates that, in essence, the proponents of the negative employment effect of a minimum wage policy have to rationalise this proposition in empirical terms rather than derive them from basic theory. As was seen, the latter is by no means

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<sup>8</sup> It should be noted that the empirical evidence on employer power is hard to establish, even in highly location-specific contexts. See, for example, Staiger et al (1999).

unambiguous in terms of its predictive capacity. What, then, is the comparative evidence on the impact of minimum wages on labour market outcomes?

It would be fair to say that up to the early 1980s at least there was an apparent consensus, forged primarily by a large number of US time-series studies, that minimum wages had a negative – but small – effect on employment. The typical estimate suggested that a 10 per cent rise in minimum wages would lead to a decline in employment by 1-2 per cent.<sup>9</sup> Not surprisingly, this prompted one observer to conclude that the impact of minimum wages has been overrated.<sup>10</sup> The questioning of this orthodoxy began in earnest in the 1990s. Once again, focusing on the US experience, a series of studies sought to distinguish between ‘myth and measurement’ and argued that, based on their empirical evidence, they could not find any evidence of a minimum wage-induced effect on employment.<sup>11</sup> These findings were reinforced by a study based on the UK experience that apparently showed a positive relationship between minimum wages and employment! This inspired the authors of the study to argue that the state of the debate on the role of minimum wages has evolved from ‘how negative are the employment effects to is there an employment effect and, in some circles, what potential is there for a positive effect?’<sup>12</sup>

Needless to say, the revisionist view of minimum wages has not gone unchallenged. It has been subjected to all kinds of methodological criticisms, with critics ranging between those who have been dismissive to those who maintain that, at best, the revisionist view is able to demonstrate that minimum wages have a moderate effect on employment.<sup>13</sup> Every now and then, new studies report results that are consistent with the conventional position.<sup>14</sup> The debate, it seems, remains unresolved with protagonists possibly influenced by their prior beliefs.

In the case of developing economies, the presumption seems to be that while minimum wages may exist on paper, they are hardly effectively implemented. This is a reflection of poor enforcement capacities in such economies and the inherent difficulty of monitoring the fate of a very sizeable proportion of the work-force that reside in the unregulated informal sector as well as in rural areas. Nevertheless, attempts have been made to study the impact of minimum wages in selected developing countries. In two of them (Puerto Rico and Colombia) significant employment-inhibiting effects were found. In one of them (Mexico) no effects were discerned, while in another (Morocco) the imposition of rural wages apparently led to a reallocation of labour from small units to larger establishments.<sup>15</sup>

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<sup>9</sup> Brown et al (1982).

<sup>10</sup> Brown (1988).

<sup>11</sup> Prominent examples include Katz and Krueger, (1992), Card, (1992a, 1992b), Card and Krueger (1995).

<sup>12</sup> Machin and Manning (1996: 667).

<sup>13</sup> Welch (1995) notes in exasperation that the findings ‘just can’t be right’, while Freeman (1995) supports the moderate position.

<sup>14</sup> A very recent example is Neumark, Schweitzer and Wascher (2000) which uses US data to argue that workers earning near the minimum wage are adversely affected (in terms of reduced work-hours and employment) while higher-wage workers are little affected. The authors argue that since relatively low-wage union workers typically gain at the expense of the lowest-wage non-union workers, this enables one to appreciate why labour unions vigorously support minimum wage increases.

<sup>15</sup> On Puerto Rico, see Castillo-Freeman and Freeman (1992). The Moroccan case is analysed by Azam (1994), while the comparative evidence on Mexico and Colombia can be found in Bell (1995). These country experiences are reviewed in Rama (1996).

Another way in which the impact of minimum wages on employment in developing countries can be analysed is to focus on the experience of public works schemes. Such schemes, while instrumental in the building of public infrastructure, also act as unemployment relief mechanisms. The purpose is to attract unskilled workers at the prevailing wage rate and provide them with a cushion against transitory fluctuations in income by providing them with temporary employment. One public works scheme that has been extensively studied is the Maharashtra Employment Guarantee scheme (MEGS) in the state of Maharashtra in India. MEGS provided a 'guarantee' of employment at the prevailing market wage rate to all who needed it, but was constrained to a 5-kilometre radius from the place of residence. At least this was the status of MEGS until 1988.

In 1988 the programme wage was substantially raised. It was doubled in line with the increase in the state minimum wage. Evaluations show that such changes induced a significant amount of job rationing and led to fewer person days of employment.<sup>16</sup> However, MEGS is probably a special case because of the rather abrupt nature of the wage adjustment. Where such drastic adjustments do not take place, the typical recommendation is that wages for public works schemes should be set no higher than minimum wages (where they exist), thus implying that minimum wages are regarded as appropriate benchmarks in such cases.<sup>17</sup>

### **3. The determination of minimum wages in Indonesia: endogenous vs exogenous factors**

If minimum wages are unilaterally imposed by the government without seeking sufficient consultations from business and unions/worker organisations, and without taking due account of macroeconomic or local labour market conditions, then the potential for minimum wages for damaging employment prospects may be significant. It is thus important to establish whether minimum wages are largely 'exogenous' (that is administratively driven) or primarily 'endogenous' (that is the process is sensitive to market conditions and stakeholder consultations)

While the Indonesian government places great emphasis on setting minimum wages according to administrative criteria (the so-called KHM approach that focus on the notion of the subsistence needs of a single worker), there is a well-established process of consultation with appropriate stakeholders. The first point to note is that the government has always avoided the imposition of a nation-wide minimum wage. The latter is derived as a 'residual' after regional minimum wages for the 26 provinces have been set. Indeed, the larger provinces even have separate minimum wages for different districts and sub-regions. There are also separately published minimum wages for different sectors within provinces (or at least some of them). The focus on regional minimum wages recognises the country's economic diversity characterised by distinct local labour market conditions and spatial variations in the cost of living.

Local labour market conditions are formally assessed by tri-partite councils represented by the government (through the regional counterparts of the Ministry of Manpower), employers and

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<sup>16</sup> Subbarao (1997).

<sup>17</sup> Islam and Nazara (2000) review the experience of public works in developing countries, including Indonesia.

employees. The council makes a recommendation to the provincial governor who may seek a revision to align the recommendations with the long-run targets of the central government. The recommendations are then sent to the Ministry of Manpower in Jakarta that has the final say. However, starting from 2000, there will be a significant change. A senior official of the Ministry of Manpower has announced that, in line with the regional decentralisation agenda, the implementation of minimum wages will be the responsibility of regional administrations. The central government will only focus on specifying the criteria for setting minimum wages.<sup>18</sup>

It is also worth emphasising that recent regulations pertaining to the minimum wage setting criteria do not emphasise the subsistence needs of workers at the expense of other considerations. Thus, for example, a recent decree (Per-03/Men/1997) states that minimum wages are based on the subsistence needs of workers, the consumer price index, employment opportunities, the prevailing wage rate at the region, the firms' ability, development and continuity and the nation's economic development as a whole. These principles are consistent with the guidelines suggested by the ILO in its deliberations on the principles that should underpin the governance of minimum wages.<sup>19</sup>

The true test of the endogeneity of the determination of minimum wages lies, however, at the level of implementation rather than in the statement of principles or even the formal process of stakeholder consultations. Stated guidelines or formal stakeholder consultations can, after all, degenerate into mere rituals. Hence, this paper seeks to ratify the endogeneity hypothesis by focusing on the responses of key stakeholders – employers and employees – as revealed through public pronouncements, survey data and the incidence of strikes.

There is no clear evidence of widespread dissatisfaction of employers with the imposition of minimum wages. Despite the concerns raised by the Chairperson of the Business Development Council (DPUN) about the latest round of minimum wage increases announced in February of this year, APINDO (the employer's association) has formally endorsed the increases.<sup>20</sup>

A small-scale survey of 300 companies in four cities of East Java carried out between July 1997 and January 1998 shows that 66 per cent of employers paid at or above the recommended regional minimum wage. Around 88 per cent of respondents from the same survey agreed with the notion of the KHM as a basis for fixing minimum wages, at least in the short-term. Between 1989-1996, the number of companies seeking exemptions has been moderate. Around 70 per cent of respondents in a survey carried out by the tripartite working group (between January 1998 and May 1998) reported that they were satisfied by the application of regional minimum wages between 1996 and 1997.<sup>21</sup>

Admittedly, a significant number of highly visible strikes have occurred that are related to the application of minimum wages, but their incidence needs to be kept in perspective. In 1993 and 1994, for example, less than 50 per cent of the strikes were related to non-compliance or some

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<sup>18</sup> See *Jakarta Post* ('Minimum wages set to rise...', February 22, 2000).

<sup>19</sup> ILO (2000).

<sup>20</sup> The statement by the Chairperson of DPUN is reported in the *Jakarta Post*, March 9, 2000, while the statement by APINDO is reported in the *Jakarta Post*, February 22, 2000.

<sup>21</sup> All the survey results are discussed in Hidayat, Lubis and Bhoka (1999).

form of dissatisfaction with minimum wages. In 1995, less than 10 per cent of strikes were related to minimum wages.<sup>22</sup>

Statistical analysis conducted by the authors show that in practice, minimum wages – after adjusting for inflation - appear to be ‘endogenous’. In other words, they respond to macroeconomic conditions (approximated by GDP and average wages) as well – as can be seen from the estimated equation.<sup>23</sup> Note that the variables are specified in logarithmic terms, where GDRP represents gross domestic product at the province-level (excluding the oil and gas sector) and KHM represents the subsistence needs of a single worker.

Ln Real Minimum Wage =

$$-3.430 + 0.0871 \ln \text{GDRP} + 0.8898 \ln \text{Real Average Wage} + 0.223 \ln \text{KHM}$$

(5.69)    (3.54)                      (14.60)                      (2.36)

Adjusted R-sq = 0.7833    (t-statistics in parentheses, signifying that relevant variables are significant at the 5 per cent level)

In particular, the strong link between province-specific average wages and minimum wages is worthy of note: a one per cent increase in the former apparently leads to a .89 per cent increase in minimum wages. Province-specific average wages may be regarded as a good indicator of local labour market conditions. Thus, the results suggest that minimum wages are not simply driven by the government’s KHM criterion. In fact, the strength of the relationship between KHM and minimum wages, while statistically significant, is not very strong: a one per cent increase in the KHM variable leads apparently to a .22 per cent increase in minimum wages. Thus, the influence of average wages on minimum wages is much more potent than the KHM variable. The latter would not have been the case if the process of setting minimum wages were largely exogenous.

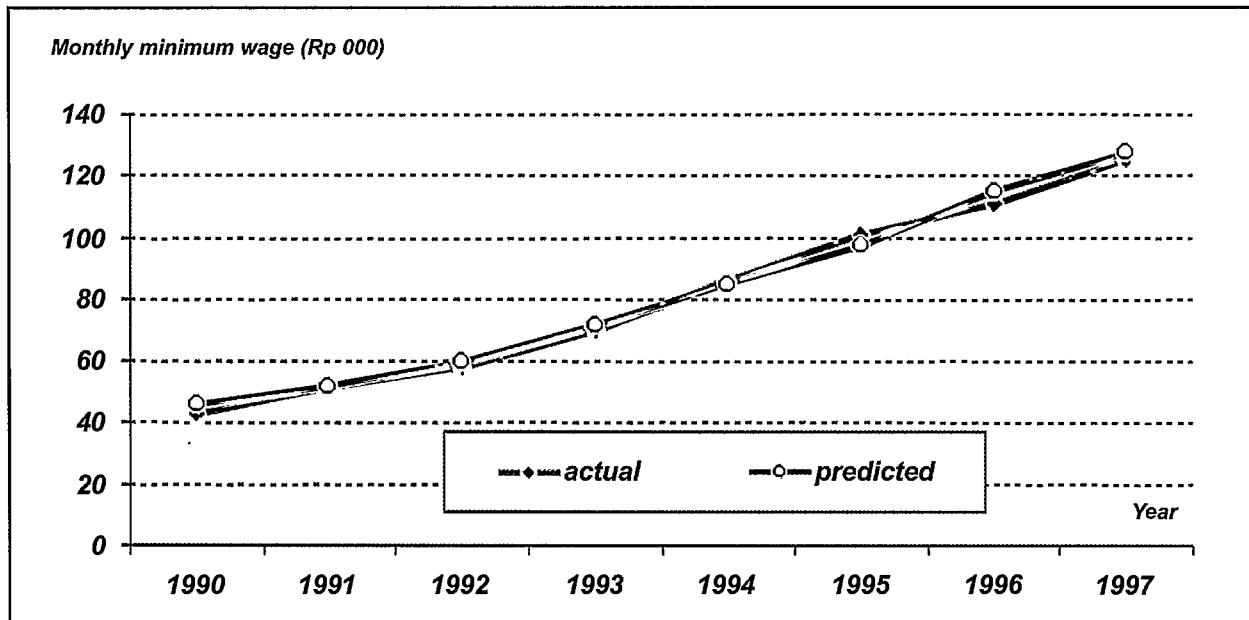
The correlation between minimum wages predicted by the estimated equation reported above and the actual pattern of minimum wages at the national level is quite high – see [Figure 1](#). In other words, the predicted values of the inflation-adjusted minimum wages derived from three variables – output, average wages, KHM - closely track the actual behaviour of real minimum wages at the national level. This is another way of suggesting that the ‘endogeneity’ hypothesis is valid in the case of Indonesia.

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<sup>22</sup> The incidence of strikes is discussed in Rama (1996, March: 9). The data for 1995 pertain to the first half of the year only. See also Cox (1996: section 5.2) who draws attention to the surge in the incidence of strikes in the 1990s. In interpreting this disturbing trend, Cox argues that they can be related to a number of factors. These are ‘favourable market conditions’ that enhanced the bargaining power of workers, the use of strikes as an attempt to gain organisational representation at the workplace, the aspiration to engender better working conditions and to the government’s role in influencing the wage setting mechanism (an oblique reference to minimum wages).

<sup>23</sup> All equations reported in this paper (see Tables 2a, 2b, 3) have been obtained by applying the generalised least squares (GLS) ‘random effects’ model. The latter generates theoretically consistent estimates for ‘pooled’ data.

**FIGURE 1:**  
**The actual and predicted values of minimum wages at the national level, 1990-1997**



Notes: The annual minimum wage at the national level is the average of the provincial minimum wages.

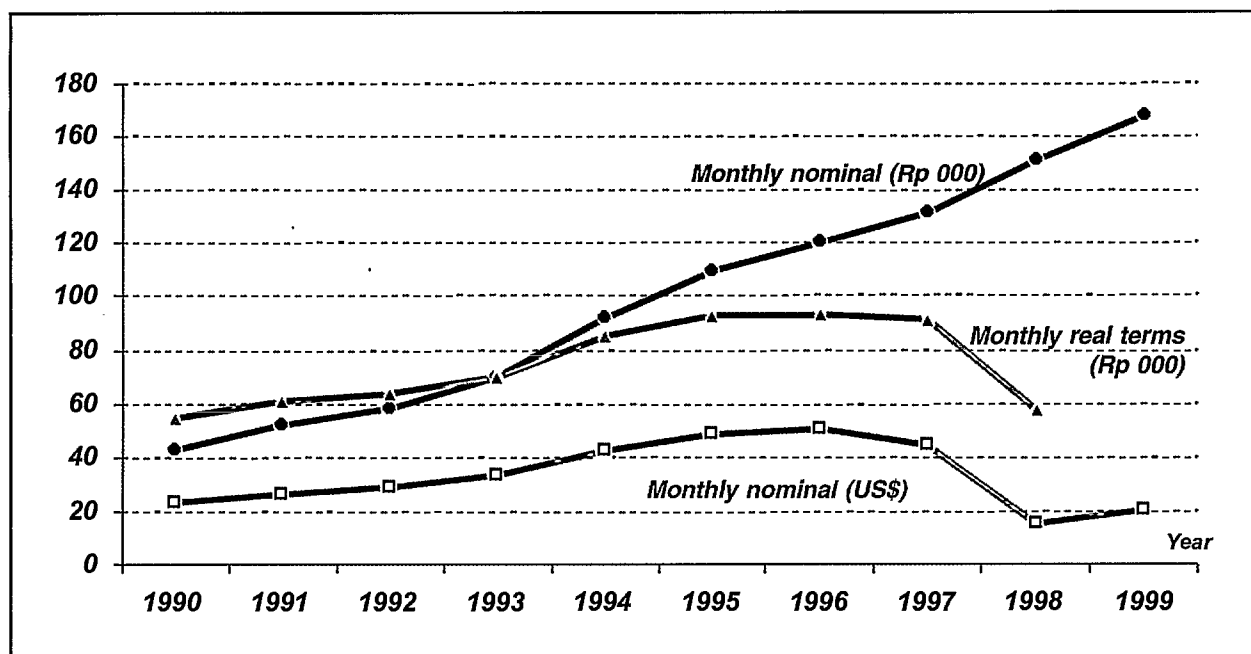
#### 4. Minimum wages in Indonesia: are they too high?

There is little doubt that in nominal terms minimum wages have risen sharply during the 1990s, but the pattern is less dramatic after adjusting for inflation or when expressed in US\$ at current exchange rates. See [Figure 2](#). Indeed, given the steep depreciation of the Rupiah against the US\$ in the wake of the 1997 financial crisis, minimum wages have fallen well below 1 US\$ a day. Even in the pre-crisis period, it appears that the sharp increase in minimum wages (both in real terms and expressed at nominal exchange rates) hit a plateau around 1995 and began to taper off after 1996. The surge in inflation in 1998 decimated the value of minimum wages. In real terms, they actually fell significantly.

Past attempts to demonstrate that regional minimum wages in Indonesia are too high compared the wages of urban workers in the manufacturing sector and the subsistence needs of a single worker (KHM) as calculated by the government with the urban official poverty line (which is published on a per person basis). The conclusion was that industrial workers were over five times better off when compared with the poverty line and that the KHM was two to three times higher than the official poverty line.<sup>24</sup> One could interpret these findings to imply that minimum wages were essentially geared towards the needs of a 'labour aristocracy' because such 'needs' did not represent the circumstances of a typically poor person in Indonesia.

<sup>24</sup> See World Bank (1996: Annexe table A3, p.90) for the comparison between average wage per worker and the per capita urban poverty line. See Agrawal (1995) for the comparison between KHM and the official poverty line (per capita once again) in urban areas.

**FIGURE 2:**  
**Minimum wages in nominal, real terms and in US\$**



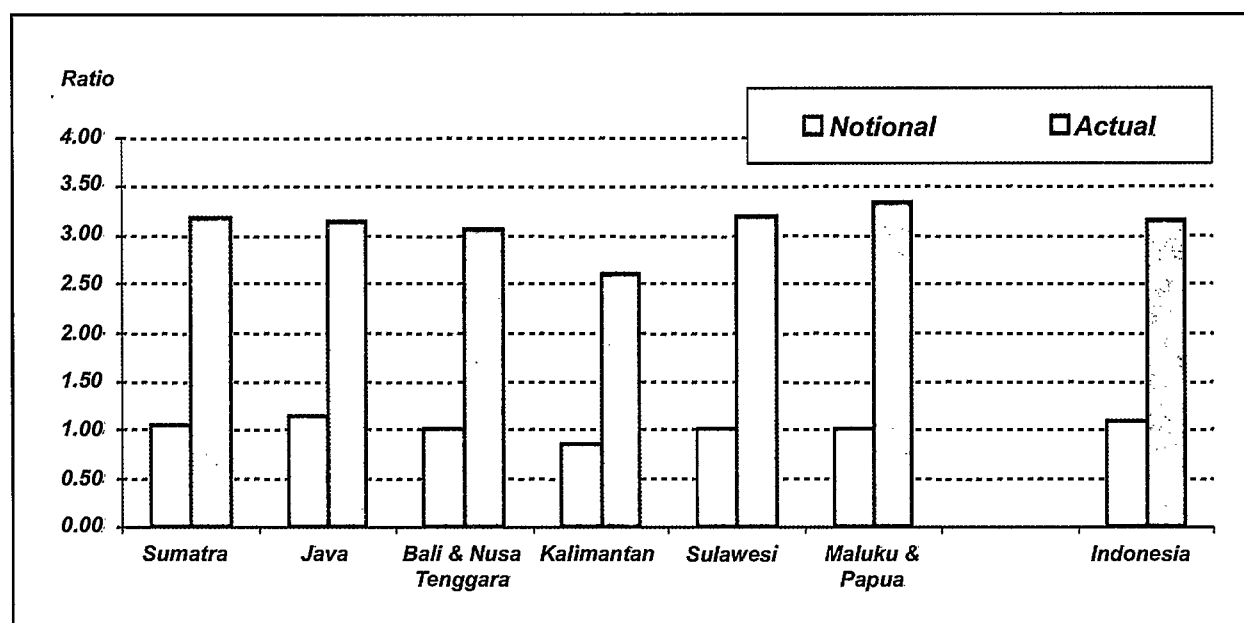
Notes: The annual minimum wage at the national level is the average of the provincial minimum wages.

Unfortunately, previous evaluations run the risk of comparing ‘apples with oranges’. They have overlooked the fact that the official poverty line is computed on the basis of expenditure needs of households to meet a prescribed minimal standard and then converted to a per person basis by deflating the poverty line by the average household size (just over 4 persons in 1998).

This means that the comparison with the household poverty line should be made with a *notional* minimum wage at the household level. The minimum wage per worker should be scaled up to reflect the average wage earners per household (1.4 persons in 1998). The underlying logic is that these wage earners – all assumed to receive minimum wages – will support dependants in the household.

If this procedure is accepted, the evidence shows a dramatic divergence between the ‘labour aristocracy’ hypothesis of previous studies and what is reported here – see Figure 3a. In 1996, minimum wages on a per worker basis were more than three times higher than the urban per capita poverty line. However, when the comparison is conducted on the basis of the notional household level minimum wage, it lies slightly above (by about nine per cent) the urban household poverty line. In some provinces, the notional minimum wage lies below the poverty line – see Appendix 3 for full province-specific details.

**FIGURE 3a:**  
**The notional and actual ratio of minimum wages to the poverty line, 1996**



Source: Appendix 4.

Notes: The 'notional' is the ratio of monthly minimum wage at the household level to the monthly urban poverty line at the household level, while the 'actual' is the ratio of monthly minimum wage per worker to the monthly per capita urban poverty line.

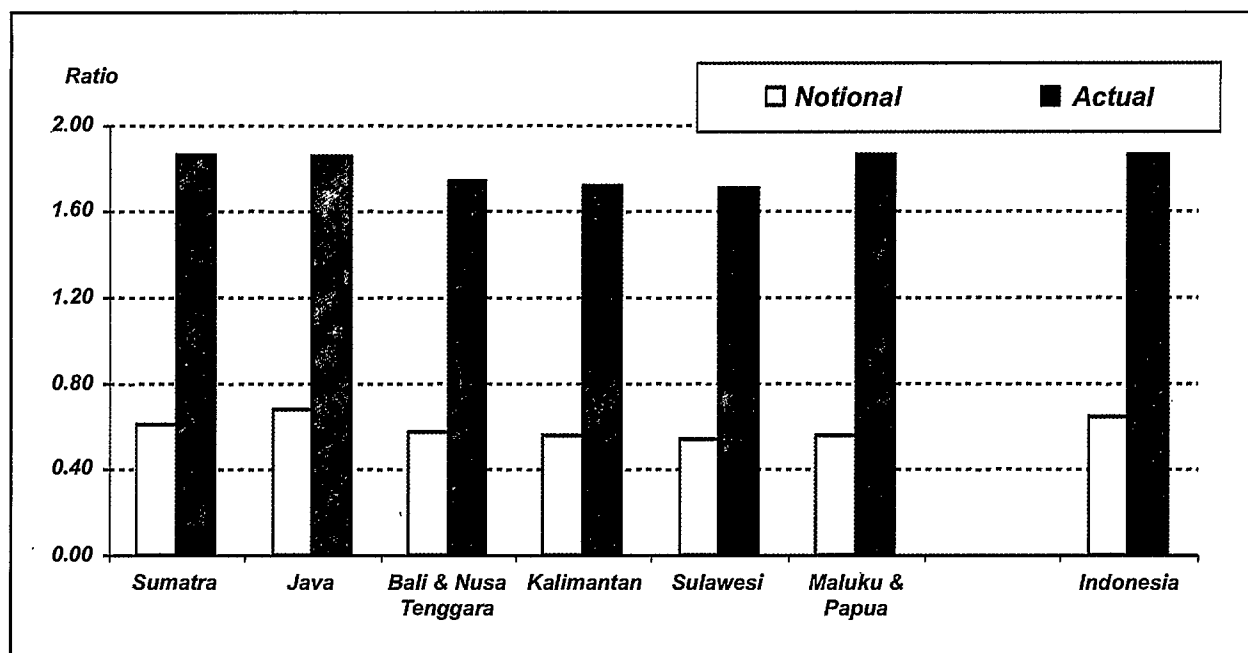
The data reported in [Figure 3b](#) are more telling. The notional minimum wages (of 1.4 persons) can, at best, meet only two-thirds of the basic expenditure needs of households (of 4 persons). This is a testimony to the fact that the value of minimum wages was substantially eroded by the end of the 1990s. Between 1996 and 1999, the urban poverty line went up by 125 per cent. At the national level, the poverty line went up by 136 per cent between 1996 and 1999. Over the same period, minimum wages at the national level went up by a moderate 46 per cent.<sup>25</sup>

Another way in which one can demonstrate that minimum wages are not too far out of line with the official poverty line is to compare the poverty line as a proportion of average expenditure and check the behaviour of this ratio with minimum wages as a proportion of average wages. In 1996, for example, the ratio of the poverty line with the average expenditure in urban areas was 43 per cent, while in 1999, it was 55 per cent. The ratio of the national poverty line to average expenditure was 52 per cent in 1996 and went up to 61 per cent in 1999.<sup>26</sup> Throughout the 1990s, the national average of regional minimum wages varied between 50 to approximately 60 per cent of average wages at the national level.

<sup>25</sup> Information on official poverty lines going back to 1976 can be found in Dhanani and Islam (2000: Table A4, p.31).

<sup>26</sup> The ratios were computed from information provided in Dhanani and Islam (2000: Table A4, p.31).

**FIGURE 3b:**  
**The notional and actual ratio of minimum wages to the poverty line, 1999**



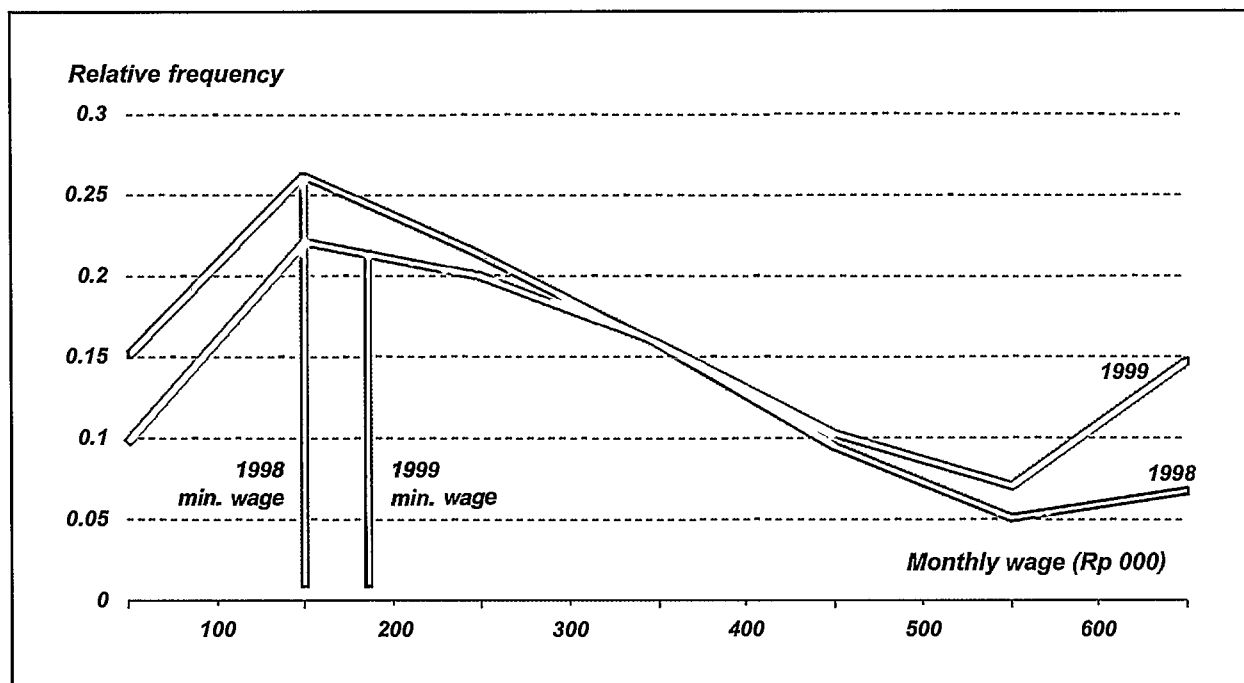
Source: Appendix 4.

Notes: The 'notional' is the ratio of monthly minimum wage at the household level to the monthly urban poverty line at the household level, while the 'actual' is the ratio of monthly minimum wage per worker to the monthly per capita urban poverty line.

It thus seems reasonable to argue that minimum wages in Indonesia were not necessarily geared towards the needs of a 'labour aristocracy'. They should instead be seen as a benchmark against which the incidence of low pay can be measured. As noted, the problem is not trivial. In 1999, 23 per cent of wage earners in the manufacturing sector did not earn enough to afford the basic necessities of life, while in 1998 30 per cent of all workers earned below the minimum wage (which at current exchange rates is well below US\$1.00 per day).

Pertinent evidence is provided in Figures 4 and 5. The former depicts the wage distributions for 1998 and 1999 (that is, the proportion of wage earners in different monthly wage categories) and superimposes the minimum wage lines on the distributions. As can be seen, the minimum wage lines are located around mode of the distributions. Those below the wage lines are classified as 'low paid workers'. Their incidence amounts to approximately 30 per cent of paid employees.

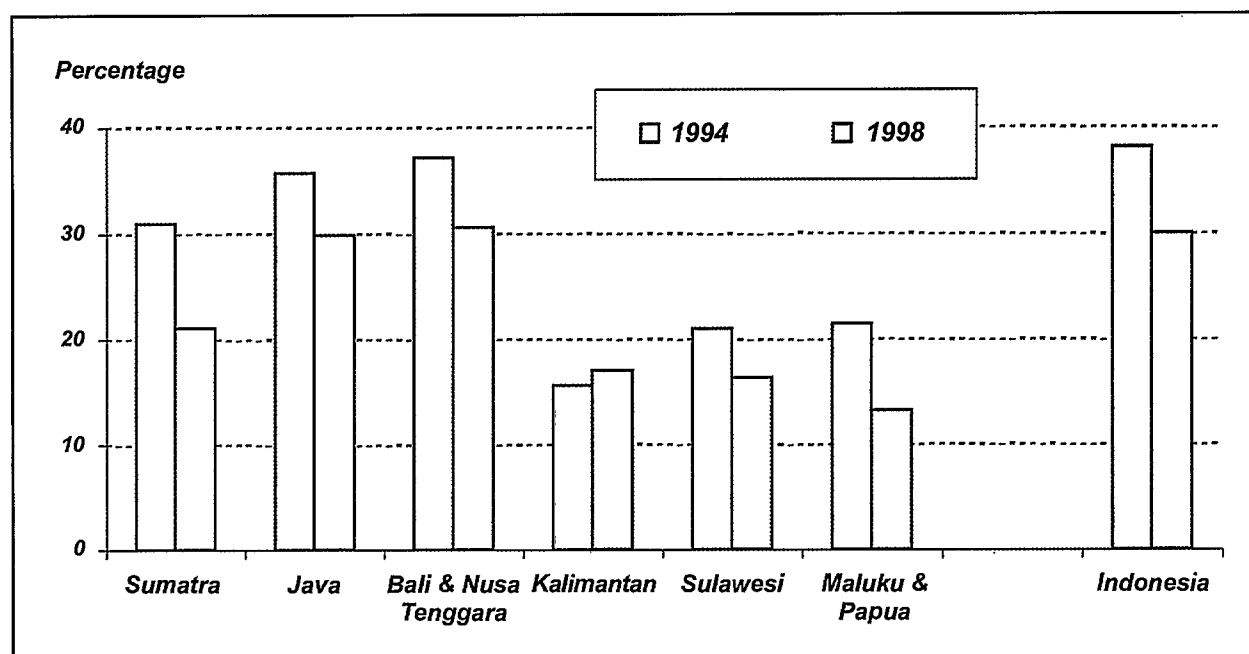
**FIGURE 4:**  
**Wage distribution and the incidence of working poor, 1998 and 1999**



Note: 1998 minimum wage is about Rp. 150,000 and that of 1999 is about Rp. 175,000.

Figure 5 shows the incidence of low pay (that is, the proportion of workers earning less than the designated minima) by the major island groups for 1994 and 1998. Details by each province are shown in [Appendix 3](#). There is considerable variation across provinces. In 1994, the incidence of low pay varied from 7.5 per cent in Central Kalimantan to 47.6 per cent in East Java. In 1998, the range of variation was from 8.8 per cent in South-East Sulawesi to 40.0 per cent in East Nusa Tenggara. Overall, the incidence of low pay seems to have come down from 38 per cent in 1994 at 29.9 per cent in 1999. It is difficult to determine whether it is a genuine improvement or partly the result of the way the minimum wage line is located vis-à-vis the wage distribution. Nevertheless, what one can at least conclude, based on Figures 4 and 5, is that there is a sizeable incidence of the ‘working poor’ in Indonesia. The challenge is to find ways in which one can assist them to earn a decent living.

**FIGURE 5:**  
**Percentage of paid workers receiving below the minimum wage, 1994 and 1998**



Source: Appendix 3.

## 5. The minimum wage-employment relationship in Indonesia: much ado about nothing?

The pioneering work on estimating the impact of minimum wages on employment in Indonesia is represented by Rama (1996). Based on this study, the World Bank (1996) concluded that a doubling of minimum wages would lead to a two to three per cent decrease in total employment.<sup>27</sup>

Unfortunately, the World Bank did not qualify these conclusions by noting that the Rama findings were based on tenuous econometric estimates. Nor did it highlight the fact that Rama's results show that the imposition of minimum wages would actually lead to an increase in employment in large firms, although this would be offset by strong employment displacing effects in small firms.

<sup>27</sup> See World Bank (1996, Chapter 3: 78). Based on the Rama study, the World Bank also highlighted the fact that youth employment would decrease by a much larger percentage (five to seven per cent), investment would drop by some five to seven percentage points of GDP.

Table 1 provides a summary of some of the key econometric estimates as reported by Rama. The estimates are based on 'pooled' data, that is, province-level data for different years. The first point that strikes one is the fragility of the results. Despite a very good explanatory power in overall terms (as measured by the adjusted R-square), *only three of the 10 equations used to estimate the impact of minimum wages on urban employment are statistically significant*. There is no compelling reason to choose the statistically significant estimates over the non-significant ones. If such a choice is made, it may reflect a predilection to highlight findings based on the researcher's prior beliefs. To a more eclectic and neutral observer, these results should create a sense of circumspection rather than the conviction that minimum wages inhibit employment opportunities in an Indonesian context.<sup>28</sup>

The table also shows that three of the 10 equations used to examine the relationship between lay-offs and various relative measures of minimum wages (including annual changes) are statistically significant, but are of the 'wrong' sign. In other words, instead of a predicted positive relationship between minimum wages and lay-offs (higher minimum wages leading to higher layoffs), the results suggest a negative relationship (higher minimum wages leading to lower layoffs). Rama interprets this as depicting the case of large firms in Indonesia because these firms are primarily responsible for formally notifying lay-offs to the government. Hence, the minimum wage-employment relationship for large Indonesian firms behaves in a manner consistent with the monopsony model of the labour market (see Section 2 of this paper).

In light of the circumspect nature of previous findings, the paper revisits the minimum wage-employment relationship in Indonesia. Rather than solely relying on econometric estimates, the paper examines the issue at various levels. First, it considers the relationship between minimum wages and employment at the nation-wide level. It then focuses on the experience of the manufacturing sector. Finally, some econometric estimates are reported using 'pooled', province-level data for the 1990-1998 period. Even here, the estimates are preceded by a visual examination of the 'scatter diagram' between province-level employment and province-level real minimum wages in order to detect evidence of any pattern.

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<sup>28</sup> In a revised version of the paper (released June 1996 and available from the World Bank website) Rama clearly recognises the tenuous nature of his econometric estimates. As he concludes (p.33): '...(T)he results of the empirical analysis of this paper indicate minimum wage effects are quite moderate...Regression analysis leads to barely significant coefficients in many of the specifications...'

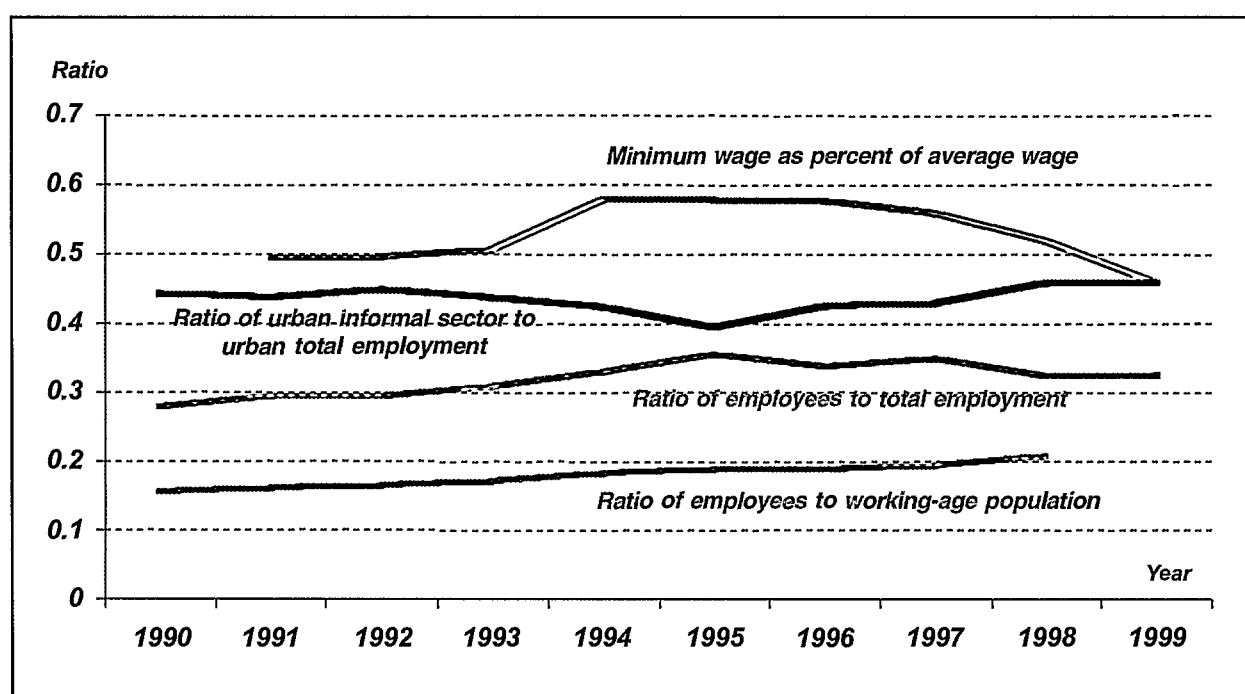
**Table 1: Impact of minimum wages on urban employment and lay-offs**

<p><u>Explanatory variables:</u></p> <p>(1) Minimum wage/average earnings of urban labourers and employees</p> <p>(2) Minimum wage/labour cost per worker in large manufacturing</p> <p>(3) Minimum wage/value added per worker in large manufacturing</p> <p>(4) Minimum wage/non-oil and gas GDP per worker</p> <p>(5) Annual changes in relative minimum wages as defined in (1), (2) and (3) above</p>	<p><u>Dependent variables:</u></p> <p>(1) urban wage employment (10 yrs and above as proportion of the working age population)</p> <p>(2) urban wage youth employment (as proportion of total urban youth population)</p> <p>(3) layoff requests as proportion of urban workforce</p>	<p><u>Number of equations</u></p> <p>That were statistically significant at either 10 per cent or five per cent level of significance</p>	<p><u>Overall explanatory power</u></p> <p>of equations as measured by R-squared</p>
<p><b>Comments &gt;&gt;&gt;&gt;&gt;&gt;</b></p>	<p>✓ Dependent variables (1) - (2) were 'regressed' on explanatory variables (1) - (4) and reported as 10 equations</p> <p>✓ Dependent variable (3) was 'regressed' on explanatory variables (5) and (1) - (4) and reported as 10 equations</p>	<p>✓ <u>Only three out of the 10 equations were statistically significant</u> at either the five or 10 per cent level.</p> <p>✓ <u>Two equations, while statistically insignificant, had the 'wrong' sign</u>, that is the relationship between a relative measure of minimum wages and employment was positive.</p> <p>✓ <u>Three of the 10 equations were statistically significant</u> at the five per cent level. BUT they were of the 'wrong' sign, that is, higher minimum wages led to lower lay-off requests by firms.</p>	<p>✓ Varied between .882 and .887</p> <p>✓ Varied between .584 to .802</p>

Source: Adapted from Rama (1996, March: Tables 9,10 and 13).

At the national level, there is no clear evidence of a negative relationship between the ratio of minimum to average wages and wage employment as a ratio of the working age population. See Figure 6.<sup>29</sup> Note that the wage employment ratio is a better measure of labour utilization in Indonesia than the unemployment rate since the latter is highly correlated with socio-economic status. In other words, in a society that lacks a comprehensive unemployment benefits system, unemployment is a ‘luxury’ that many cannot afford. Thus, if minimum wages have an adverse impact on the labour market, it would be reflected in sustained declines in the wage employment ratio as labour would be reallocated to self-employment (such as the urban informal sector) and to the agricultural sector. This has not happened – except during the terrible recession of 1998 when there were large-scale layoffs in the formal wage sector.

**FIGURE 6:**  
**Minimum wages and employment: nation wide trends**



Source: BPS.

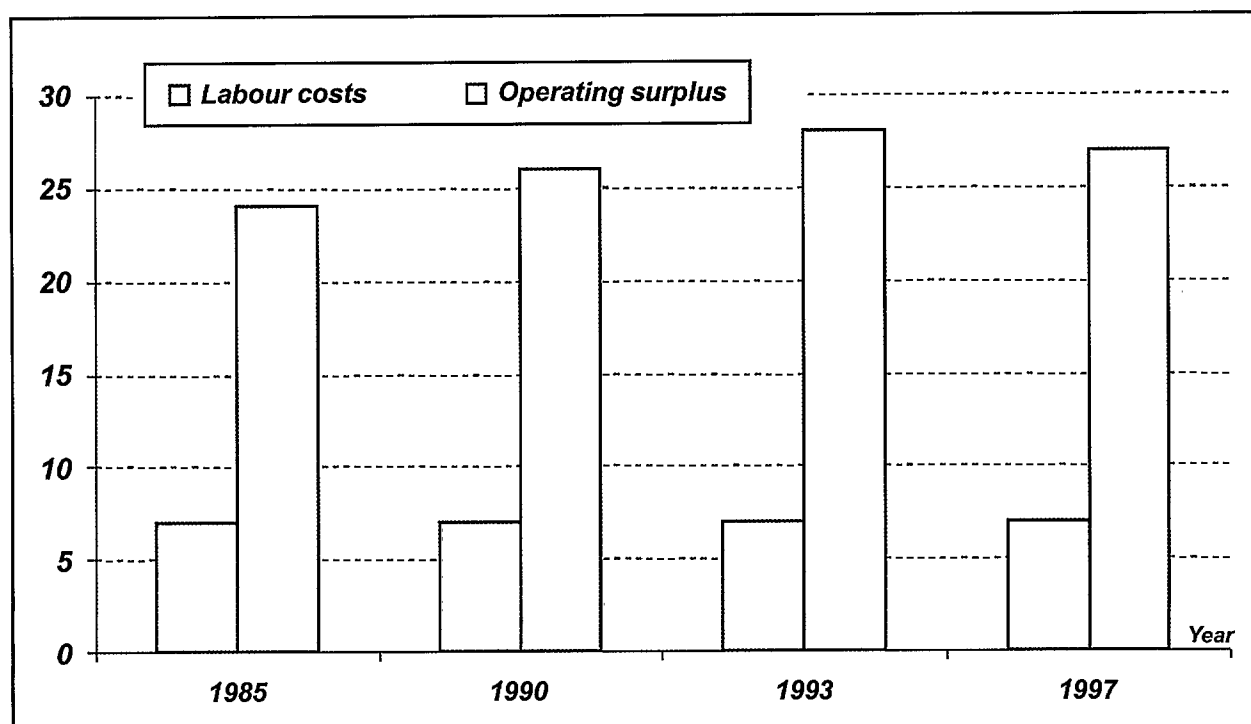
Notes: Working-age population is defined as those 10 years and above, except in 1998 where the benchmark is 15.

<sup>29</sup> Manning (2000:114) in his comprehensive review of labour market adjustments to the Indonesian economic crisis does note the sharp increase in minimum wages over the 1990s (‘...100 per cent in real terms over five years’). However, in a footnote (note 8, p. 132) he observes that this development, along with the extension of social security legislation in 1992 ‘...probably had only limited impact on competitiveness’. He goes on to observe: ‘...employment was growing rapidly in response to new investment...(A)verage wages increased significantly as a result of tightening labour markets...and still remained well above the minimum wage even for relatively disadvantaged workers’. Elsewhere, in the text, Manning shows that the growth of employment at the nation-wide level as well as in manufacturing was very robust during the 1990s – precisely the period during which minimum wages were rising sharply. These observations by Manning seem to be more optimistic than his previous concerns about minimum wage policy in Indonesia. See, for example, Manning (1998, chapter 8: 225-226).

In the manufacturing sector as a whole, it is possible to report some results from a UNIDO project on the performance of large and medium scale enterprises.<sup>30</sup> The experiences of such enterprises are germane to the analysis here because they are often closely monitored for their compliance with minimum wage regulations.

Figure 7 shows that there is no evidence of a wage cost squeeze on such enterprises, despite the sharp increases in minimum wages. The wage bill has been constant (7 per cent of gross output), while profitability has been preserved (25 per cent of gross output).<sup>31</sup>

**FIGURE 7:**  
**The share of wage bill and operating surplus in gross output, large and medium scale manufacturing, 1985-1997**



Source: UNIDO.

The UNIDO project also hypothesises that the primary challenge facing both domestically-oriented and export-oriented large and medium-scale enterprises is coming from competitive pressures emanating from other manufacturers of labour-intensive products, such as China, rather than from domestic labour costs. The export performance of some key labour-intensive products has been faltering even during the pre-crisis period, largely because of external competitive pressures. The unit price of a number of key Indonesian labour-intensive exports in world markets has been sluggish and, in some cases, has declined (wood, garments, footwear).

<sup>30</sup> The UNIDO report was prepared by Dhanani (2000).

<sup>31</sup> Business profitability is approximated by 'operating surplus', that is, total revenue less total costs of labour and non-labour inputs. The operating surplus is expressed as a proportion of gross output.

Additional evidence can be offered to support the contention of the UNIDO report. For example, the Indonesian Footwear Association (APRISINDO) has drawn attention to the large influx of low-priced footwear in the major cities of Indonesia from abroad, typically through illegal channels. The Association claims that such import competition is now the major threat to large-scale job losses in the industry.<sup>32</sup>

In evaluating the impact of minimum wages on the labour market, one also needs to consider the flow of foreign direct investment (FDI) to the economy in general, and to the manufacturing sector in particular. In Indonesia, as in many other countries, FDI serves both domestic markets and access to world markets. More importantly, FDI is an important source of domestic employment.

It is well known that Indonesia experienced an FDI boom prior to the crisis. Within manufacturing, FDI has largely flowed into textiles, metals and machinery subsectors. This occurred despite the sharp increases in minimum wages in the 1990s. Past studies do not reveal that FDI inflows have been influenced by minimum wage considerations.<sup>33</sup> Today, in post crisis Indonesia, it would be fair to maintain that investors – both domestic and foreign – are more concerned about policy predictability, political stability and law and order rather than labour costs. The latter in any case have been decimated by the sharp depreciation of the Rupiah.

As noted, the paper also used ‘pooled data’ for 1990-1998 (cross-section and time series) to test the relationship between minimum wages and employment at the province level. Scatter diagrams are depicted in Figure 8 that seek to establish some pattern between the (log of) real minimum wages and the (log of) employment at the province-level. The striking feature is the lack of any pattern – the minimum wage-employment relationship at the province-level essentially appears to be random!

Statistical analyses do not enable one to convincingly demonstrate that minimum wages have a negative effect on employment. Several ‘regressions’ were tried using province-level data for the 1990-1998 period. The results are reported in two batches. Table 2a and 2b embody statistically significant results that show a positive relationship between minimum wages and employment. Table 3b also shows that employment is strongly, and positively, related to annual changes in province-level income.

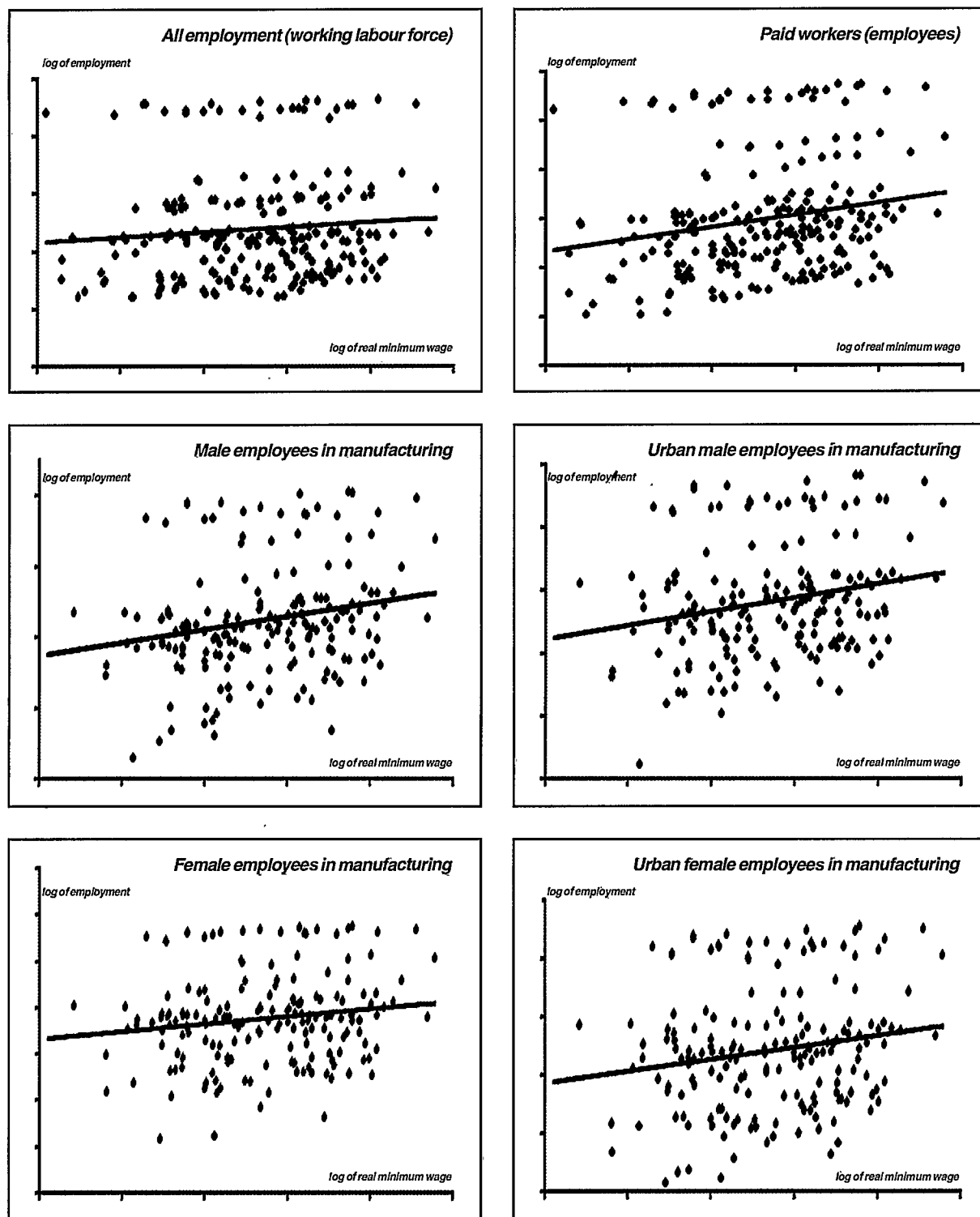
Where there is a statistically significant negative relationship between employment and minimum wages, the estimates are presented in Table 3. It is worth emphasising that the negative relationship only holds when dummy variables representing the crisis period and different island groups are inserted in the equations. In the absence of such dummy variables, the relationship disappears. Thus, the results, in common with others reported here, are highly model-specific.

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<sup>32</sup> See *Jakarta Post* (‘Illegal foreign footwear products concern APRISINDO’, May 25, 2000).

<sup>33</sup> Rama (1996, March: 33).

**FIGURE 8:**  
**Plots of employment-minimum wage: province-level patterns (1990-1998)**



Source: BPS, Labour Force Situation in Indonesia, various years.

Note: The data set comprises 26 provinces in Indonesia from 1990-1998. The real minimum wage is obtained by deflating the nominal minimum wage by the GDRP (Gross Domestic Regional Product) deflator.

**TABLE 2a:**  
**Econometric evidence supporting a positive relationship between minimum wages and employment (logarithmic specifications) using ‘pooled’, province-level data, 1990-1998**

Dependent variables >>>>>>>>	Ln Employment (all categories)	Ln Employment - Paid Workers only	Ln Employment- Paid Male Manuf	Ln Employment- Paid Urban Male Manuf	Ln Employment- Paid Female Manuf	Ln Employment- Paid Urban Female Manuf
Explanatory variables						
Constant	12.847 (56.57)	8.516 (27.91)	4.819 (6.57)	4.136 (4.54)	5.317 (4.07)	4.48 (4.15)
Ln minimum wage	0.136 (11.79)	0.395 (22.15)	0.497 (8.47)	0.484 (6.52)	0.368 (4.82)	0.37 (4.08)
Adjusted R-squared	0.0084	0.0412	0.0449	0.0467	0.0213	0.0306

**Note:** t-statistics in parentheses. The statistics signify that all relevant variables are significant at the 5 per cent level. Ln = natural log of the relevant variable.

**TABLE 2b:**  
**Econometric evidence supporting a positive relationship between minimum wages and employment (non-logarithmic specifications, with province-level income as an added variable) using ‘pooled’, province-level data, 1990-1998**

Dependent variable >>>>>	Annual changes in employment (paid workers)
Explanatory variables	
Annual change in real minimum wage	1.191 (1.93)
Annual change in gross regional domestic product (excluding oil and gas sectors)	.036 (9.38)
Adjusted R-squared	0.321

**Note:** t-statistics in parentheses. The statistics signify that all relevant variables are significant at the 5 to 10 per cent level.

Even if one is prepared to ignore the model-specific nature of the estimates, the finding of a negative relationship between minimum wages and employment in some cases should not be cause for alarm. The significance of such relationship depends critically on the implicit assumption of a zero-growth economy (see discussion in section 2 of this paper). A growing economy can absorb the increase in minimum wages to the point that net job losses may be negligible.

Using the figure of 90 million workers, the estimates in Table 3 can be manipulated to suggest that for every one per cent increase in GDP growth, minimum wages can rise by six per cent without incurring any net job losses.<sup>34</sup> This is because for every one per cent increase in GDP, approximately 350,000 jobs are created, but for every one per cent increase in minimum wages only around 52,000 jobs are lost. These are the magnitudes that can be derived from the implied elasticities in Table 3. Thus, if the Indonesian economy can grow at four per cent in the short to medium term (which is within the growth forecast of three-to-four 4 per cent for 2000-2001), minimum wages can increase by 24 per cent without incurring net job losses. More importantly, the fact that the Indonesian economy managed to grow at 7 per cent for sustained periods during the pre-crisis period also possibly explains why the doubling of minimum wages in the 1990s apparently had barely noticeable effects.

**TABLE 3:**  
**Econometric evidence supporting a negative relationship between minimum wages and employment (logarithmic specifications, with province-level income and ‘dummies’ as added variables) using ‘pooled’, province-level data, 1990-1998**

	Equation 1	Equation 2	Equation 3	Equation 4	Equation 5
Constant	8.9051 (0.000)	8.9675 (0.000)	8.3332 (0.000)	8.6452 (0.000)	8.7505 (0.000)
Ln minimum wage. (real): mwr	-0.0591 (0.016)	-0.0581 (0.018)	-0.0862 (0.001)	-0.0869 (0.000)	-0.0974 (0.000)
Ln gross domestic regional product (excluding oil and gas sector): income	0.3894 (0.000)	0.3848 (0.000)	0.4451 (0.000)	0.4212 (0.000)	0.4218 (0.000)
Ln mwr*dummy crisis	0.0084 (0.000)	0.0276 (0.096)	0.2598 (0.000)	0.2586 (0.000)	0.2390 (0.000)
Ln income*dummy crisis	—	-0.0143 (0.245)	-0.0218 (0.069)	-0.0283 (0.023)	-0.0269 (0.030)
Dummy crisis (1997,1998=1)	—	—	-2.6272 (0.000)	-2.5082 (0.047)	-2.3026 (0.001)
Ln mwr*dummy Java (Java=1)	—	—	—	0.0332 (0.047)	0.0376 (0.035)
Ln income*dummy Sumatra (Sumatra=1)	—	—	—	—	-0.0481 (0.096)
Ln mwr*dummy Sumatra	—	—	—	—	0.0653 (0.059)
Adjusted R-squared	0.6612	0.6602	0.6575	0.7078	0.7073

**Note:** Prob>|t-stat| in parentheses. All relevant variables are significant at the 5 to 10 per cent level. The only exception is “Ln income\*dummy crisis” variable in Equation 2. The sign on the minimum wage coefficient becomes positive when dummy variables are removed.

<sup>34</sup> The manipulation is based on equation no. 1 and 2 in Table 3.

One could, of course, argue that in the absence of minimum wages, employment growth would have been even faster – but counterfactuals are inherently difficult to prove. Furthermore, one has to contend with the findings of the aforementioned UNIDO project that external competitive pressures – and not domestic labour costs – represent the major challenge to large- and medium-scale manufacturing firms in their job creation efforts.

## **6. Discussion of policy issues**

This study has exonerated the Indonesian regional minimum wages policy from the allegation that they impair employment prospects. There is no evidence to suggest that minimum wage-induced increases in domestic labour costs erode business profitability in large and medium-scale manufacturing. It is also difficult to argue that minimum wages are geared to the needs of a ‘labour aristocracy’. It is thus plausible to interpret such stipulated remuneration as benchmarks against which the incidence of the ‘working poor’ can be measured.

However, this does not mean that the above conclusions uphold the view that more efforts should be invested in a stringent application of regional minimum wages policy. After all, despite a decade of highly publicised – and controversial – attempt to implement regional minimum wages, 30 per cent of workers still struggle to survive on earnings that are below such minima.

One should make a distinction between goals and instruments. A minimum wages policy is one possible, but not the only possible, instrument for dealing with the primary goal of assisting the working poor – that is, those who are employed but cannot earn enough to afford the basic necessities of life. Once this distinction between goals and instruments is appreciated and accepted, the policy debate in Indonesia on minimum wages can move to a more constructive phase.

In reflecting on this evolving policy debate, it is worth recalling that an ILO study has argued that the coverage and protection offered by statutory minimum wages have declined even in industrialised countries. This is a reflection of the trend towards labour market flexibility in an age of globalisation. One is thus witnessing increasing informalisation and casualisation of the workforce, the progressive replacement of collective bargaining instruments with individual contracts at the enterprise-level, and declining trends in unionisation.<sup>35</sup> In such changing circumstances, using minimum wages to offer income protection to low-paid workers becomes rather difficult. Alternatives need to be considered.

In many ways, Indonesia’s circumstances also represent challenges to the effective use of minimum wages to look after the needs of the working poor. More than 50 per cent of the workforce are own-account workers. Poverty is still largely a rural phenomenon. The union movement and a corresponding development of collective bargaining machinery are at an embryonic (and even chaotic) stage. This is a reflection of three decades of authoritarian rule that entailed tight political controls on the labour movement.

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<sup>35</sup> Standing (1999: Chapter 9).

The recent move towards regional decentralisation in Indonesia has also complicated the determination – and imposition – of minimum wages. A spokesperson for the Ministry of Manpower has confirmed that now the implementation of minimum wages will be left to the discretion of regional administrations.<sup>36</sup> The central government will still play a role, but only in setting the criteria for minimum wages. It remains to be seen how such a system will evolve because a lot will depend on the interplay among politics, bureaucratic capacity and the industrial relations system at local levels.

Given the particular circumstances of Indonesia, and the changes that have taken place, what should be the appropriate role for minimum wages in post-crisis Indonesia? It is worth recalling that when the ILO adopted the Minimum Wages Convention (no. 131) in 1970 with special reference to developing countries, the underlying assumption was that collective bargaining and other non-statutory means of wage determination would not spread rapidly enough in such countries.<sup>37</sup> This implies that efforts should be invested in improving the underlying institutional factors whose lack necessitates the need for state-driven minimum wages.

It seems that Indonesia's new found political freedom and the ratification by the government of all the core ILO conventions, provide a unique opportunity to invest efforts into developing an effective industrial relations system that will become the foundation for collective bargaining and non-statutory wage determination processes. These developments in turn will probably prove critical in empowering the government for dealing with the problem of low pay in Indonesia.

Initiatives that do not rely on minimum wages to help the working poor include an array of 'active' and 'passive' labour market programmes (industry and firm-specific training, assistance for self-employment, direct cash assistance for dealing with poverty at the household level etc).<sup>38</sup> Within this framework, minimum wages can still act as a focal point for raising awareness among the broader community, the government, the business sector and workers, on the incidence of low pay in Indonesia. However, for this to happen, the government ought to move away from its preoccupation with a statutory approach to minimum wages. The government ought to focus a lot more on encouraging analyses and dissemination on the characteristics of workers who are left behind in relation to the minimum wage benchmark and how best to deal with the plight of such workers.

In such a framework of advocacy and awareness-raising, minimum wages become widely shared standards (rather like 'poverty lines') against which progress – or lack of progress – in dealing with the problem of low pay can be monitored. The Indonesian experience has shown that treating minimum wages as legally binding instruments do not necessarily enable them to achieve the primary goal of helping low-paid workers to escape from their poverty-stricken existence.

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<sup>36</sup> This point was also noted in the discussion in section 2 of this paper.

<sup>37</sup> ILO (2000).

<sup>38</sup> See Islam and Nazara (2000) for a review of active and passive labour market policies.

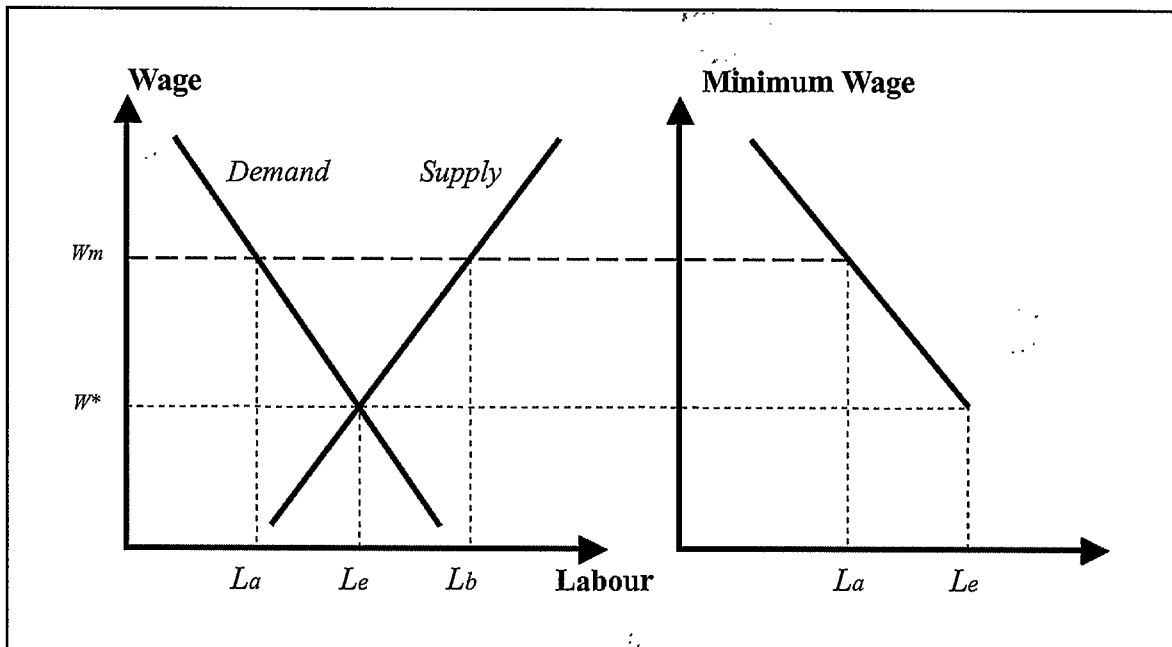
## Appendix 1

### Minimum wage-employment relationship from the perspective of basic theory: competitive vs. monopsonistic labour market

The following discussion will elaborate the relationship between minimum wages and employment with two different labour market characteristics: competitive and monopsonistic labour markets.

#### A1.1. Competitive labour market

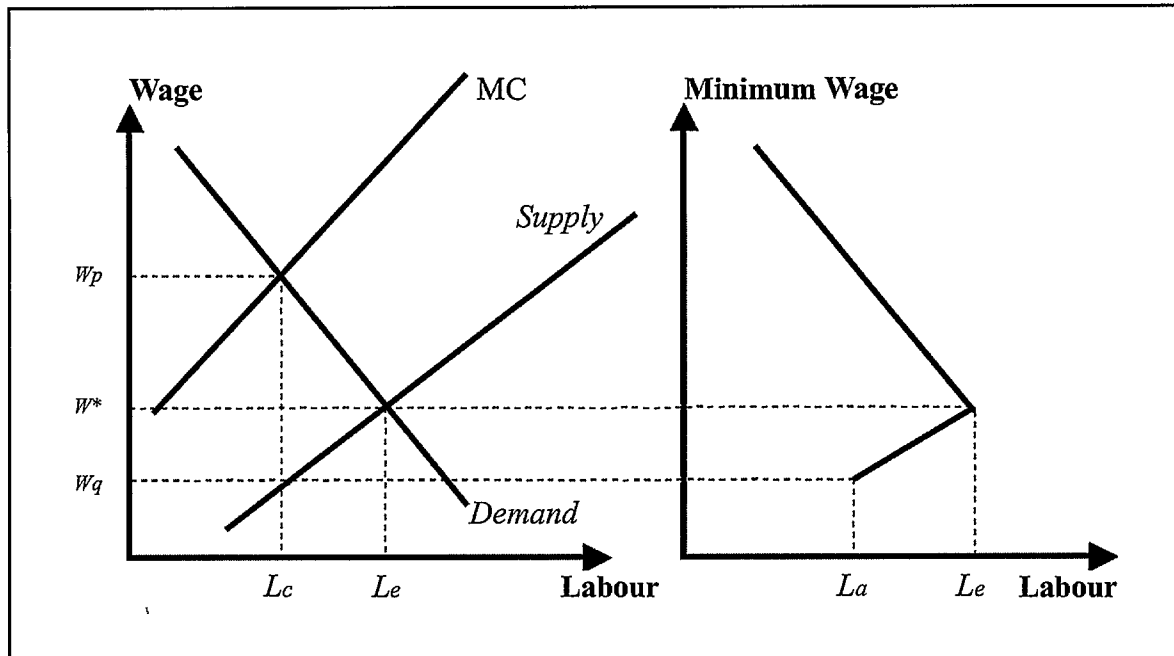
*Figure A1.1*  
*Competitive labour market*



The enforcement of minimum wage, which is set above the market clearing wage  $w^*$ , will result in a decline in demand or an excess supply of labour. Assume that the minimum wage is legislated at the level  $w_m$ . This will result in an excess supply of  $L_b - L_a$ , and employment will decline to  $L_a$  from the competitive level of employment  $L_e$ . Therefore, the minimum wage-employment in a competitive labour market is negative as shown in the right panel. The higher the minimum wage is set above the market clearing wage, the less the level of employment.

## A1.2. Monopsonistic labour market

Figure A1.2  
Labour market with employer power

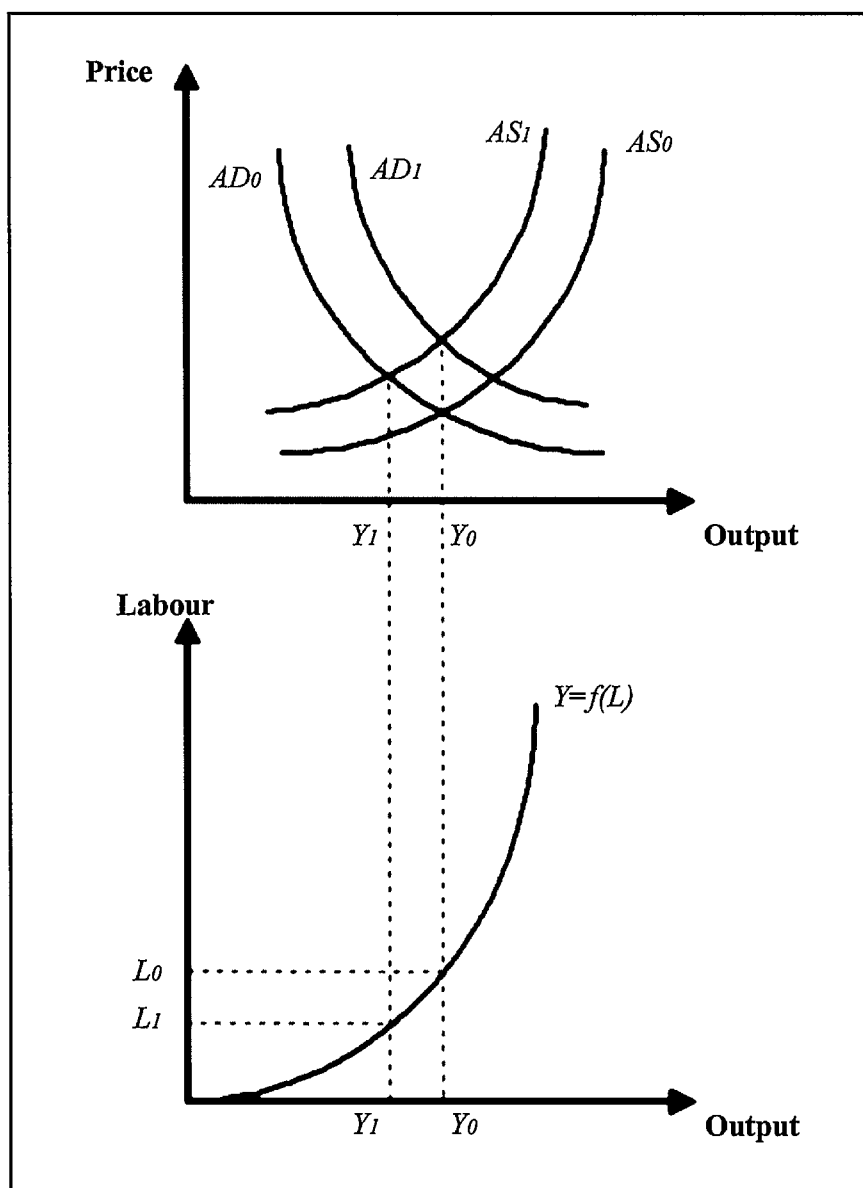


In a monopsonistic labour market, the demand is still identical to the marginal product of labour, but the relevant supply curve is the marginal cost curve facing the employer. In this labour market, workers are paid below their marginal product. The difference between the two is often regarded as the level of exploitation in the monopsonistic labour market. It reflects a situation where workers' contribution to the firm is not appropriately acknowledged. The profit maximizing level of labour is  $L_c$  where the marginal cost equals labour demand. The mechanism results in a profit maximizing wage level of  $w_p$  while the monopsony wage is merely  $w_q$ . It is therefore clear that a minimum wage set between the monopsony level  $w_q$  and the competitive wage level  $w^*$  will result in higher employment absorption. Should the government set the minimum wage higher than the competitive level  $w^*$ , the policy will result in a reduction of employment just as in the competitive labour market discussed previously.

## Appendix 2

### Minimum wage, aggregate supply and aggregate demand

*Figure A2.1*  
*Minimum wage, aggregate demand and aggregate supply*



The enforcement of a nation-wide minimum wage affects the economy on the supply side. Assume that the economy is at the initial equilibrium of  $Y_0$  as shown at the top panel of Figure A2.1. The minimum wage legislation jacks up production costs, thus shifting the aggregate supply to the left from  $AS_0$  to  $AS_1$ . Accordingly, the equilibrium national output drops from  $Y_0$  to  $Y_1$ , with an increase as well in the general price level. Using the short-run production function relationship, the drop in the national output is translated into a decline in employment from  $L_0$  to

*L1.* Therefore, it is clear in the AD-AS model that the enforcement of the nation-wide minimum wage reduces the national output as well as aggregate employment.

When the government perceives that the new state of equilibrium is unfavourable, it can restore the earlier equilibrium by shifting the aggregate demand curve from  $AD_0$  to  $AD_1$ , for example, through a fiscal stimulus. By so doing the initial level of national output  $Y_0$  (and hence employment) is reinstated.

## Appendix 3

Percentage of paid workers receiving below the minimum wage by province,  
1994 and 1998

Province	1994	1998
<b>Aceh</b>	25.0	14.7
<b>North Sumatra</b>	39.6	23.4
<b>West Sumatra</b>	26.1	17.4
<b>Riau</b>	27.6	23.4
<b>Jambi</b>	21.3	12.6
<b>South Sumatra</b>	35.2	31.3
<b>Bengkulu</b>	28.7	17.5
<b>Lampung</b>	43.5	28.0
<b>Jakarta</b>	21.0	19.2
<b>West Java</b>	41.0	34.9
<b>Central Java</b>	44.2	34.7
<b>Yogyakarta</b>	25.2	22.1
<b>East Java</b>	47.6	37.7
<b>Bali</b>	37.7	25.4
<b>West Nusa Tenggara</b>	46.6	40.0
<b>East Nusa Tenggara</b>	27.0	26.2
<b>West Kalimantan</b>	15.0	16.5
<b>Central Kalimantan</b>	7.5	14.7
<b>South Kalimantan</b>	22.1	18.6
<b>East Kalimantan</b>	17.5	18.3
<b>North Sulawesi</b>	25.1	20.3
<b>Central Sulawesi</b>	21.7	21.1
<b>South Sulawesi</b>	16.1	14.7
<b>South East Sulawesi</b>	20.6	8.8
<b>Maluku</b>	26.6	15.7
<b>Papua</b>	16.4	10.8
<b>Indonesia</b>	<b>38.1</b>	<b>29.9</b>

Source: SAKERNAS, 1994 and 1998

## Appendix 4

The notional monthly minimum wage at the household level as percent of urban monthly poverty line at the household level, 1999

Province	1996	1999
Aceh	92.5	60.0
North Sumatra	103.6	69.4
West Sumatra	85.2	53.1
Riau	148.9	87.4
Jambi	104.0	54.8
South Sumatra	80.4	55.1
Bengkulu	105.3	48.2
Lampung	107.8	56.5
Jakarta	112.4	69.3
West Java	126.9	74.7
Central Java	101.0	61.8
Yogyakarta	111.5	59.9
East Java	123.0	72.9
Bali	125.1	69.8
West Nusa Tenggara	91.7	55.0
East Nusa Tenggara	87.6	48.2
West Kalimantan	70.9	46.5
Central Kalimantan	96.6	66.3
South Kalimantan	85.3	54.0
East Kalimantan	86.9	57.5
North Sulawesi	111.2	58.4
Central Sulawesi	95.6	53.5
South Sulawesi	88.4	52.4
South East Sulawesi	105.2	49.9
Maluku	94.0	46.1
Papua	106.3	65.8
<b>Indonesia</b>	<b>109.1</b>	<b>64.5</b>

Source: Authors' calculation of BPS poverty line, minimum wages and SAKERNAS 1998

Note: Due to data limitation, the notional monthly minimum wage at the household level uses the average number of 1998 wage earners per household which is 1.4. The monthly household poverty line is obtained by multiplying the per capita monthly per capita income with the average number of household member in 1999.

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