ACIAR Indonesia Research Project

WORKING PAPER 99.11

IMPACT OF THE INDONESIAN CRISIS ON THE NUMBER OF POOR PEOPLE

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CASER/CSIS/CIES/ANU
joint research project on

Policy analysis of linkages between Indonesia's agricultural production, trade and environment

Rapid economic growth in Indonesia has been accompanied by significant structural changes, including for its agricultural sector and its unique natural environment. Recently questions have been raised about the impact of Indonesia's agricultural, industrial, trade and environmental policies on sustainable rural development. The nature of interactions between the economic activities of different sectors and the environment are such that an intersectoral, system-wide perspective is essential for assessing them. An international perspective also is needed to assess the impact on Indonesia of major shocks abroad, such as the implementation of the Uruguay Round agreements, APEC initiatives, or reforms in former centrally planned economies. There is increasing pressure on supporters of liberal trade to demonstrate that trade reforms at home or abroad affecting countries such as Indonesia will not add to global environmental problems (e.g., deforestation, reduced biodiversity). Again, this requires system-wide quantitative models of the economy and ecology, because typically there are both positive and negative effects at work, so the sign of the net effects ultimately has to be determined empirically.

To begin to address these issues, the Australian Centre for International Agricultural Research (ACIAR) has generously provided funds for a collaborative 3-year project (to mid-1999) involving the University of Adelaide's Centre for International Economic Studies (CIES) as the lead institution, Bogor's Centre for Agro-Socioeconomic Research (CASER) which is affiliated with the Ministry of Agriculture, Jakarta's independent Centre for Strategic and International Studies (CSIS), and the Economics Division of the Research School of Pacific and Asian Studies (RSPAS) at the Australian National University in Canberra. Being based on Indonesia with its rich diversity of environmental resources (and on which there are relatively good data) and its rapid economic growth, the project could also serve as a prototype for similar studies of other developing countries in Southeast Asia and elsewhere.

The key objective of the project is to assess the production, consumption, trade, income distributional, regional, environmental, and welfare effects of structural and policy changes at home and abroad particularly as they will or could affect Indonesia's agricultural sector over the next 5-10 years. Among other things, the analysis will focus both on the effects of economic changes on the environment, and on the impacts on Indonesia's agricultural production and trade of resource and environmental policy changes. The implications of regional and multilateral trade liberalization initiatives and Indonesia's ongoing unilateral trade reforms will be analysed, along with other potential domestic policy changes and significant external shocks such as the entry of China and Taiwan into the World Trade Organization. The analysis will draw on and adapt computable general equilibrium (CGE) models such as the national INDOGEM Model (built as part of an earlier ACIAR project) and the global GTAP Model.

The project is being undertaken in close collaboration with the Indonesian Ministry of Agriculture and ministries involved in trade, planning, and the environment. A Research Advisory Committee has been established to encourage close collaboration of representatives from those and other ministries.

ACIAR INDONESIA RESEARCH PROJECT

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Background and Objectives

In the last two decades Indonesia has exhibited remarkably high economic growth, averaging above 7 percent per annum, and has successfully established a firm basis for a quite stable economic growth. After having recorded successful green revolution in rice in the late 1970s, Indonesia, following trade liberalisation in early 1980s, then experienced rapid expansion of labour intensive manufacturing industries. The success story continued with the establishment of export-led growth economy, starting in early 1990s. Along with such economic success, absolute poverty fell dramatically, from around 60 percent in 1970 to around 11.3 percent in 1996, despite the large number of population.

Poverty reduction has been one of Indonesia major concerns. Indonesian government placed poverty reduction and equity high on its list of priority. Not only has the government put high priority in its public expenditure, but the government has also launched a number of programmes to direct assistance to the poor and less developed villages. Through the IDT program, which is the presidential instruction program for less developed villages, funds and efforts are reoriented toward poverty alleviation programs. Despite such a high priority on poverty alleviation, and despite the rapid reduction in absolute poverty, Indonesia still contains an unacceptably large number of people living below poverty line, around 22.5 million in 1996.

Meanwhile, such impressive performance made by Indonesia during the last two decades has been shocked by economic crisis. Following a number of Southeast Asian countries and East Asian countries, Indonesia, was suddenly hit by a severe economic crisis. Its severity is reflected in the drastic downturn of gross domestic product. Official estimate shows a minus 13.68 percent decline in real GDP in 1998. Since economic growth in the coming three to four years can no longer be expected to grow as fast as in the past, problem of absolute poverty once again becomes a major focus.

The objective of this paper is to assess the impacts of the crisis on the number of poor. With the very severe economic crisis that Indonesia is experiencing, business failures will undoubtedly lead to increasing unemployment and reduction in income, and due to the soaring prices, then result in consumption reduction and in rising poverty incidence. Income in informal sector must have been falling due to weaker domestic demand and higher input prices. Due to bankruptcies and efficiency measures in the formal sector, wages and income in formal sectors are also declining. Meanwhile, rural sector is also affected by the crisis through the hike in agricultural input prices, and weaker domestic demand, as well as disruption in the flow of income from off-farm sources. With a sizeable proportion of the near poor, as encountered in many developing countries, the sharp decline in income and the escalating prices, will lead to increases in poverty incidence.

Evidence from formal sectors

The escalating dollar-rupiah exchange rate has increased prices of imported goods significantly, and has led to skyrocketing domestic input prices, while increasing the burdens of establishments relying on foreign debt. Impacts on establishments may differ depending on establishment size, on import content, and on market orientation. In general, however, the crisis has deepened, and the impacts on establishments have been very serious since the second half of 1997, and have become much more severe during the first semester of 1998. According to BPS (1998) special survey -held with 295 establishments in 7 districts/municipalities- during that period, number of establishments operating below 50 percent of production capacity has more than doubled, increasing from 15.1percent to 36.3 percent (Table 1). Meanwhile, income of around 11.4 percent workers has been disrupted because they have been, either laid-off or put at home with no jobs.

The proportion of workers loosing their jobs is of course, much higher than 11.4 percent, because this proportion comes from the still surviving establishments, excluding those coming from the already out of business establishments. Moreover, these figures picture the business failures only until first semester of 1998. Official estimate of the rate of growth of GDP of manufacturing industry shows a minus 15 percent decline of this sector.

Without exception, establishments of all sizes are affected. The same survey shows that proportion of establishment operating below 50 percent of production capacity during the period of July 1997 to June 1998 has increased by around 20 percent in the case of small establishments, by around 25 percent for medium establishments, and by around 18 percent for large establishments. In terms of numbers, around 46.7 percent small establishments have been operated below 50 percent of production capacity. That compares to 36.8 percent for medium establishments, and to 30.5 percent for large establishments (Table 2). These figures may imply that lay-off involves workers of lower socio-economic class, as lay-off is encountered also in small and medium establishments.

Table 1. Performance of Establishments During The Last Three Semester

Performance	Jan - June 1997	July - Dec 1997	Jan - June 1998
< 50% Production. Capacity	13.1	15.1	36.3
Laying off employees	0.7	4.1	22.4
Putting employees at home	2.0	4.1	15.9
Rate of Lay-off	0.1	0.6	6.1
Rate of employees temporarily put at home	0.1	2.2	5.3

Source: Survey on Crisis Impacts on Cost of Production and Informal Sector, BPS 1998

Table 3 shows that lay-off problem is serious among workers having primary education and among those having secondary education, but is relatively less serious for tertiary education. It may very well imply that workers of lower socio-economic status is hit harder than those of higher status. With sizeable number of workers of low socio-economic status, impacts on poverty may have been very serious.

Pressures on employment and informal sector

The crisis may get its way through informal sector by increasing input prices, weakening demand, and increasing the incidences of lay-off and bankruptcy, because those experiencing lay-off or bankruptcy are more likely to enter informal than formal sector. Such a phenomenon may then lead to increasing competition. Some of workers experiencing lay-off or bankruptcy may remain jobless while looking for a new job. Hence, lay-off and bankruptcy issues, beside increasing unemployment rate, also increase the number of people working in the informal sector and increase the burden of this sector.

BPS (1998) special survey come up with open unemployment rate which is not abnormally high in the study area, around 7.2 percent (Table 4). This figure is higher than unemployment rate of average Indonesian population, which is 4.68 percent in 1997, but compared with unemployment rate in the average urban area in Indonesia, which is 8.04 percent in 1997, evidence in the study area does not convince an increasing pressure on employment problem in the area. As shown by Sakernas data, impact on unemployment on general, however, has been quite significant. Table 5 shows that unemployment rate has increased from 4.68 percent in 1997 to 5.46 percent in 1998. Unemployment rate increases significantly both in urban and in rural area, with urban unemployment increases from 8.94 percent to 9.29 percent, and rural unemployment up from 2.83 percent to 3.30 percent.

Table 2. Proportion of Establishments Operating Below 50 Percent of Production Capacity

Establishment Size	Jan - June 1997	July - Dec 1997	Jan - June 1998
Small	26.67	26.67	46.67
Medium	11.10	11.10	36.80
Large	9.47	12.63	30.53
All	13.01	15.04	36.59

Source: Survey on Crisis Impacts on Cost of Production and Informal Sector, BPS 1998

Table 3. Rate of Lay-off by Educational Attainment of Workers

Establishment Size	Jan - June 1997	July - Dec 1997	Jan - June 1998
Primary School or Lower	-	0.56	6.27
Junior High School	-	0.54	7.44
Senior High School	-	0.63	6.02
Academy/University	0.12	0.02	1.93

Source: Survey on Crisis Impacts on Cost of Production and Informal Sector, BPS 1998

Table 4. Unemployment Rate by Socio-Demographic Characteristics

Characteristics	Employed	Unemployed
Sex		
Male	93.4	6.6
Female	91.7	8.3
Age Group		
10 - 24	79.9	20.1
25 - 45	96.2	3.8
> 45	98.7	1.3
Education		
< Prim. School	95.6	4.4
Primary School	97.2	2.8
Junior H. School	92.7	7.3
Senior H. School	88.5	11.5
Academy/Univ	87.8	12.2
ALL	92.8	7.2

Source: Survey on Crisis Impacts on Cost of Production and Informal Sector, BPS 1998

Table 5. Unemployment Rate and Percentage Change of Unemployment by Region and by Sex, August 1997-August 1998

Open unemployment	August 1997 Number (000)	August 1997 Rate (%)	August 1998 Number (000)	August 1998 Rate (%)	% change
Region					
Urban	2567.5	8.04	3103.2	9.29	20.86
Rural	1629.8	2.83	1959.3	3.30	20.22
Urban + Rural	4197.3	4.68	5062.5	5.46	20.61
Sex					
Urban	2259.8	4.09	2862.2	5.04	26.66
Rural	1937.6	5.64	2200.3	6.12	13.56
Urban + Rural	4197.4	4.68	5062.5	5.46	20.61

Source: Sakernas 1997 & 1998, BPS

The special survey (BPS 1998) shows a slightly higher female than male unemployment rate, which is very well expected. Also, unemployment rate is higher among the youth and among higher educational level. The fact that people with low educational background have lower unemployment rate simply imply that they work mostly in an informal sector, as this sector is relatively easy to enter, even for people with no educational background.

Pressure on employment problems is visible in BPS special survey, which suggests difficulties for those experiencing lay-off or bankruptcy to find a decent job in a formal sector. Table 6 shows that around 60 percent of laid-off workers have not yet found new employment. That compares to around 38 percent for people having experienced bankruptcy. At least around 18.5 percent of laid-off workers has entered informal sector. Meanwhile, changing employment is quite common among those who had experienced bankruptcy and had finally found new employment.

Table 6. Percentage of People Ever experiencing Lay-off and Ever Experiencing By Employment Characteristics/Problems

Employment Characteristics/Problems	Ever Laid-Off	Ever Bankrupt
Employed	40.2	62.1
Formal Sector	21.7	22.4
Informal Sector	18.5	39.7
Unemployed		
Changes in Jobs		
1-2 times	59.8	82.8
>2 times	1.1	1.7

Source: Survey on Crisis Impacts on Cost of Production and Informal Sector, BPS 1998

Evidences of difficulties in job finding is also visible from Table 7. Despite the relatively high proportion of people working less than 35 hours per week, only a small portion of individuals has an additional job. Additional job is more common in individuals working in Agriculture and services sectors, it is especially true for informal sector workers (Table 8). Table 7 also suggest a relatively high proportion of people working less than 35 hours per week, which is 25.81 percent. That compares to 24.14 percent (Table 9) for average Indonesian urban population depicted by Sakernas data (the study area in BPS special survey is a typical urban area). Sakernas data also indicates a relatively sharp increase in the proportion of people working less than 35 hours since August 1997 to August 1998, in both urban and rural area. For urban area, the proportion increases from 20.85 percent to 24.14 percent, while for rural area, it increases from 43.61 percent to 47.04 percent. These evidence thus, suggest the increasing pressure on employment problems.

Pressures on employment problems are also very apparent from Sakernas data, as depicted in Table 10 and Table 11. Table 10 shows a significant shift in employment status from employees to self-employed. Proportion of employees declines from 54.89 percent to 51.91 percent for urban area, while at the same time, proportion of self-employed increases from 34.65 percent to 36.70 percent. Unpaid family worker also exhibits a significant increase. This phenomenon is true for both urban and rural area.

A big jump is apparent in the proportion of people working in agricultural sector, both in urban and rural area. The proportion of urban employment working in agricultural sector increases from 7.88 percent in August 1997 to 11.07 percent in August 1998 (Table 11). For rural area, the increase is from 57.94 percent to 62.86 percent. These big jumps come mostly from manufacturing industry, construction, trade restaurant and hotel, and services sectors.

Table 7. Percentage of People Having Additional Job, by Industry and Working hours of the main job in Modest Area

Industry	Working < 35 hours		Working ≥ 35 hours	
	All	Have Additional Job	All	Have Additional Job
Agriculture	45.84	20.45	54.16	11.54
Manufacturing Industry	20.20	11.86	79.80	4.72
Trade, Hotel and Restaurant	28.52	5.36	71.48	6.41
Transport and Communication	16.24	0.00	83.76	8.53
Services	27.86	16.31	72.14	12.60
Others	11.24	6.67	88.76	8.02
All	25.81	11.31	74.19	9.05

Source: CBS, Survey on The Crisis Impacts on Cost of Living and Retail Business

Table 8. Percentage of People Having Additional Job, by Industry and Working hours of the main job in Richer Area

Industry	Working < 35 hours and have additional job		Working ≥ 35 hours and have additional job	
	Informa l Sector	Formal Sector	Informal Sector	Formal Sector
Agriculture	20.69	0.00	8.33	0.00
Manufacturing Industry	19.35	7.22	3.33	3.58
Trade, Hotel and Restaurant	4.38	5.21	4.12	5.23
Transport and Communication	13.64	0.00	0.99	9.55
Services	8.16	10.48	2.27	9.74
Others	5.88	20.00	0.00	3.03
All	7.38	8.05	3.03	5.61

Source: CBS, Survey on The Crisis Impacts on Cost of Production and Informal Sector

Table 9. Distribution and Percentage change of Employment By Region and Working Hours

Region/ Working Hours	1997		1998		
	Number (000)	% Distribution	Number (000)	% Distribution	Percentage change
Urban					
< 15 Hrs	1 673.2	5.70	1 933.1	6.38	15.53
< 35 Hrs	6 120.5	20.85	7 314.3	24.14	19.50
≥ 35 Hrs	23 233.3	79.15	22 990.2	75.86	-1.05
ALL	29 353.8	100.00	30 304.5	100.00	3.24
Rural					
< 15 Hrs	6 497.6	11.59	7 260.2	12.66	11.74
< 35 Hrs	24 444.2	43.61	26 987.5	47.04	10.40
≥ 35 Hrs	31 607.5	56.39	30 380.4	52.96	-3.88
ALL	56 051.7	100.00	57 367.9	100.00	2.35

Source: Sakernas 1997 & 1998, BPS

Table 10. Distribution and Percentage Change of Employment by Region and Employment Status

Region/ Employment Status	1997 Number (000)	1997 % Distribution	1998 Number (000)	1998 % Distribution	% Change
Urban :					
Self-Employment	10 169.5	34.65	11 120.6	36.70	9.35
with no workers	6 762.2	23.04	7 464.9	24.63	10.39
with unpaid workers	3 407.3	11.61	3 655.7	12.06	7.29
Employer	684.1	2.33	721.7	2.38	5.50
Employees	16 112.6	54.89	15 730.4	51.91	- 2.37
Unpaid Family workers	2 387.6	8.13	2 731.8	9.01	14.42
Rural :					
Self-Employment	27 678.0	36.69	29 102.8	50.81	5.15
with no workers	13 102.6	23.38	13 068.4	22.76	- 0.34
with unpaid workers	14 575.4	26.00	16 034.4	27.95	10.01
Employer	782.4	1.40	803.9	1.40	2.75
Employees	14 165.2	25.27	13 075.0	22.79	- 7.70
Unpaid Family workers	13 426.1	23.95	14 396.2	25.09	7.23

Source: Sakernas 1997 & 1998, BPS

Table 11. Distribution and Percentage Change of Employment by Region and Industry

Region/ Industry	1997 Number (000)	1997 % Distribution	1998 Number (000)	1998 % Distribution	% Change
Urban :					
Agriculture	2 313.7	7.88	3 354.5	11.07	44.98
Mining & Quarrying	250.9	0.85	264.9	0.87	5.58
Manufacturing Industry	5 070.8	17.27	4 758.2	15.70	- 6.16
Electricity, Gas & Water	174.2	0.59	96.3	0.32	- 44.72
Construction	1 772.8	6.04	1 594.4	5.26	- 10.06
Trade, Rest & Hotel	9 177.9	31.27	9 408.7	31.05	2.51
Transport & Communication	2 199.6	7.49	2 258.0	7.45	2.66
Financial & Rental	548.0	1.87	533.4	1.76	- 2.66
Services	7 845.9	26.73	8 036.1	26.52	4.45
Rural:					
Agriculture	32 476.2	57.94	36 060.3	62.86	11.04
Mining & Quarrying	624.4	1.11	409.7	0.71	- 34.39
Manufacturing Industry	5 938.2	10.59	5 175.4	9.02	- 12.85
Electricity, Gas & Water	59.0	0.11	51.5	0.09	- 12.71
Construction	2 412.2	4.30	1 927.3	3.36	- 20.10
Trade, Rest & Hotel	7 775.1	13.87	7 405.5	12.91	- 4.75
Transport & Communication	1 925.8	3.44	1 895.7	3.30	- 1.56
Financial & Rental	108.7	0.19	84.4	0.15	- 22.36
Services	4 732.1	8.44	4 358.1	7.60	- 7.87

Source: Sakernas 1997 & 1998, BPS

Declining wages and income

With soaring prices of inputs and with more player coming into informal sector, while at the same time demand gets weaker, informal sector is hurt seriously. People dealing in informal sector seem to suffer more than those dealing in formal sector. Table 12 shows that the average per capita income of main jobs in informal sector has decreased significantly, even in nominal term, from Rp 100,995 per month in 1997 to Rp 80,307 in 1998, or a decline of approximately minus 20 percent in nominal term. The lowest economic class experienced more severe impacts compared with higher classes. Income from main job declined by 22.1 percent for the lowest class. That compares to 15.2 percent and 9.2 percent for higher classes. Wage decline is relatively lower for people working in a formal sector.

These evidences come the study area where the survey on informal sector is conducted. The area has been chosen where most informal sector workers are most likely to encounter, thus representing a modest area. Evidence from richer area, as used in the survey of cost of production (Table 13) suggest similar finding, in which higher income group is less severely hit. Table 13 also depicts that on average, impacts on this area is less severe than impacts on area where informal sector is more likely to encounter.

Table 12. Average Total Income per Month from Main Jobs of Those Working in 1998 and Worked in 1997

Percapita Household Income	Average Total Income From Main Job Per Month			
	In 1998		In 1997	
	Income (Rp)	% Different From 1997	Income (Rp)	People worked in 1998 also in 1997
< 200 000	67 156	-22.08	86 182	747
200 000 - 400 000	246 388	-15.17	290 442	87
> 400 000	356 944	-9.19	393 056	11
Informal Sector	80 307	-20.48	100 995	
< 200 000	99 537	-11.87	112 940	1 171
200 000 - 400 000	273 950	-1.32	277 620	260
> 400 000	722 512	1.49	711 878	45
Formal Sector	137 006	1-7.77	148 555	

Source: Survey on Crisis Impacts on Cost of Production and Informal Sector, CBS 1998

The decline in nominal income and the escalating prices certainly lead to higher number of poor. Poverty line, reached by applying a 96 percent rate of inflation (during 1996-1998 period) , arrive with around 48.6 percent population below the poverty line, in area where informal sector survey is conducted (Table 14). Applying the same poverty line in the richer area where cost of living survey is conducted, much lower poverty incidence (15.6 percent) is obtained (Table 15).

Table 13. Average Total Income per Month from Main Jobs of Those Working in 1998 and Worked in 1997

Household Income	Average Total Income from Main Job per Month			
	In 1998		In 1997	
	Income (Rp)	% Different from 1997	Income (Rp)	People Worked in 1998 also in 1997
< 400 000	392 994	0.88	389 529	459
400 000 - 1 000 000	445 763	-3.93	463 284	1 182
> 1 000 000	796 582	2.92	773 325	719
All Households	542 393	-0.19	543 397	2 360

Source: CBS, Survey on The Crisis Impacts on Cost of Living and Retail Business

Table 14. Percentage Cumulative Distribution of People by Income Group In Modest areas

Household per Capita Income	Cumulative Households		Cumulative Individuals	
	Number	Percent	Number	Percent
£ 40 000	299	17.87	1 427	19.90
40 000 - 60 000	539	32.22	2 614	36.45
60 000 - 75 000	724	43.28	3 488	48.64
75 000 - 80 000	768	45.91	3 695	51.53
80 000 - 85 000	824	49.25	3 935	54.87
85 000 - 90 000	875	52.30	4 190	58.43
90 000 - 95 000	902	53.92	4 309	60.09
95 000 - 100 000	1 006	60.13	4 714	65.74
100 000 - 125 000	1 154	68.98	5 364	74.80
125 000 - 150 000	1 305	78.00	5 931	82.71
>150 000	1 673	100.00	7 171	100.00

Source: Survey on Crisis Impacts on Cost of Production and Informal Sector, CBS 1998

Table 15. Percentage Cumulative Distribution of People by Income Group In Richer Areas

Household per Capita Income	Cumulative Households		Cumulative Individuals	
	Number	Percent	Number	Percent
£ 40 000	9	0.54	41	0.56
40 000 - 60 000	80	4.76	489	5.98
60 000 - 75 000	218	12.98	1 142	15.56
75 000 - 80 000	256	15.24	1 333	18.16
80 000 - 85 000	288	17.14	1 485	20.23
85 000 - 90 000	317	18.87	1 630	22.21
90 000 - 95 000	359	21.37	1 799	24.51
95 000 - 100 000	408	24.29	1 991	27.13
100 000 - 125 000	638	37.98	2 997	40.83
125 000 - 150 000	823	48.99	3 785	51.57
>150 000	1 680	100.00	7 340	100.00

Source: Survey on Crisis Impacts on Cost of Living and Retail Business, CBS 1998

Evidences on the declining real wages is also very apparent from the indices of real wages of Hotel, Mining, and Manufacturing Industry sectors. Indices of real wages of nearly all sub-sectors, except wood products, were significantly below 100 since the first quarter of 1998. Compared to indices of the second quarter of 1997, all indices experience a sharp decline. The smallest decline is experienced by Hotel workers, with a minus 16.1 percent decline in real wages. The decline in real wages in manufacturing industry workers ranged from 22.7 percent to 45.9 percent. Such a disruption in these typically urban workers may also affect rural sector as it affects flow of transfer to rural sector, while reducing job opportunity.

Table 16. Index of Real Wages by Type of Industry (1994 I=100)

Industry	1996 II	1997 II	1997 III	1998 IV	1998 I	1998 II	% Change 97 II- 8II
Hotel	91.4	86.4	86.8	88.9	84.4	72.5	-16.1
Mining	117.8	104.5	100.6	82.1	79.0	85.2	-18.5
Manufacturing Industry	112.9	125.7	121.5	121.5	96.7	92.2	-26.7
Foods	103.3	117.0	113.2	106.2	88.4	84.6	-27.7
Textile	113.5	124.5	118.2	124.6	97.8	89.6	-28.0
Wood/Products	120.4	138.7	140.5	136.7	109.2	107.0	-22.9
Paper/printing	128.7	153.9	137.7	129.4	109.7	83.2	-45.9
Chemical	118.2	123.4	118.9	116.8	95.8	95.5	-22.7
Cheramic	111.8	118.2	116.2	117.7	88.8	83.7	-29.2
Basic Metals	95.5	104.7	102.3	98.3	79.5	80.3	-23.3
Metal Products	110.6	131.4	128.4	125.6	97.1	98.8	-24.8
Others	102.5	120.4	115.9	108.8	84.3	75.0	-37.7

Source: BPS, Bureau For Demographic and Population Statistics

Rural sector and the improvement in off-farm

Income in rural sector depends mostly on agricultural sector. Rural sector, however, also receive income from non-agricultural sector, some is quite significant. As described in Table 11, around 20 percent of agricultural labourer have at least one additional job, some of which are in non-agricultural sectors. Part of rural household revenue also comes from urban area in the form of transfer. Thus any disruption in non-farm sector, may therefore, have some serious impacts on rural households revenue.

Huppi and Ravallion (1991) noted some evidence on the contribution of increasing non-farm employment opportunities, especially in East and Central Java. The gain to the rural poor was the result not only of improved consumption distribution within the agricultural sector. The poor also benefited both from an improvement in farm incomes as well as from opportunities for additional non-farm employment.

With agricultural sector exhibiting labour surplus, an increase in labour intensive manufacturing industry is also of great help. The rising labour intensive manufacturing industry from the mid-1980s has served as a built-in mechanism for the absorption of surplus labour from the rural sector. The rapid rate of growth of labour-intensive manufacturing sector, around 12 percent per annum since 1984, attributed to significant deregulation package, has increased exports and has helped improved rural sector as well. Since Indonesia may not be able to rely on the same success in raising agricultural productivity as in the past, especially in food crops, the importance of off-farm sector has been more and more recognised. Any negative shock in the off-farm sector, may therefore, contribute to increasing rural poor.

The development of manufacturing industry and other non-agricultural sector, such as construction and trade and transportation since the starting of the economic crisis have been such that, surplus labour from rural sector can no longer be absorbed, at least during two to three years since the crisis started. Evidences (mentioned earlier) have even suggest the big jump in agricultural sector, due to failures in non-agricultural sectors. Mention has been made regarding the declining real wages in many non-agricultural sectors, ranging between 16 to 45 percent, also about the falling real income from main job. These problems in non-farm activities would of course raise much pressure on agricultural sector. Meanwhile, the agricultural sector itself, is not unaffected by the crisis. Despite some positive impact on cash crops products, such as palm kernel, cacao, pepper, etc., the general picture of agricultural sector is also worrying.

As an important cash crops producer, South Sulawesi shows a more than 100 index of farmers' terms of trade, meaning that improvement in farmers' condition is quite likely as on average they received higher prices than those they paid (Table 17). The table, however, surprisingly shows that indices of farmers' terms of trade of North Sumatera, Lampung, and North Sulawesi were consistently far below 100 since June 1997. These provinces are among those having quite significant cash crops products such as palm kernel, cacao, pepper, and clove. Two provinces in Java, and Aceh also show a lower than 100 indices. Thus the overall picture of agricultural sector is also worrying.

The near poor and poverty line

The past decades have noted a significant number of Indonesians moving out of absolute, given some negative shocks such as the early 1980s recession. Due to a somewhat skewed income distribution, many Indonesians, however, fall under "the near poor", with income only marginally above the absolute poverty line. These individuals are extremely vulnerable to changes in economic circumstances and of course, also to any policy measures taken by the government for poverty alleviation.

The number of poor is also sensitive to any changes in the methodology for constructing the poverty line, as poverty line involves a bundle of commodity containing, altogether, 2100 calorie, and a bundle of non-food items representing the basic necessity of the near poor. The choice of commodity matters because the diet composition has quite different implications in terms of price and quality. The monetary value of 2100 calories consumed through the cheapest available grain is much lower than the value of the same calories coming from a balanced diet of fish/meat, grain, and vegetables. Applying a different grain-non grain ratio providing the same 2100 calorie as used in China, the 1990 number of absolute poor in Indonesia increases from by 13 million, from 27 million (18 percent) to 40 million or 28 percent (Johanson 1993).

Table 17. Indices of Farmers' Terms of Trade

Provinces	March 1997	June 1997	Jan 1998	June 1998	Sept 1998	Oct 1998
West Java	102.1	101.8	108.5	105.5	99.1	101.1
Central Java	104.0	103.6	99.2	96.2	97.8	96.8
DI. Yogyakarta	113.5	113.8	130.6	135.7	140.1	140.4
East Java	112.2	112.5	108.9	109.7	110.1	110.4
Aceh	95.4	96.3	91.8	87.2	80.7	78.5
North Sumatera	85.7	86.3	80.8	83.6	81.3	82.1
West Sumatera	116.3	119.1	125.3	120.1	115.1	113.7
South Sumatera	103.3	103.6	118.1	131.7	108.9	112.2
Lampung	73.8	77.1	78.7	69.8	71.9	74.0
Bali	121.8	116.5	126.3	130.1	123.7	128.7
West N Tenggara	118.6	123.2	133.2	139.7	148.1	151.9
South Kalimantan	100.1	101.1	113.3	104.0	107.1	108.2
North Sulawesi	100.5	99.9	105.1	104.8	83.5	84.9
South Sulawesi	111.7	113.1	120.2	127.1	125.2	127.4

Source: Economic Indicator, October 1998, BPS

As non-food items are also in the bundle, the ratio of food to non-food expenditure in the total consumption basket also lead to a significant difference to the poverty incidence. Johanson (1993) has also made an exercise by applying the same ratio as China (63% for both urban and rural), and arrived in a 13 percent increase in urban poverty incidence, and an 11 percent increase in rural poverty incidence.

Another exercise also suggests such sensitivity of the poverty line to the commodity composition and relative prices used in the estimation of a 2100 calorie poverty line. A 10 percent increase in the poverty line leads to a more than 30 percent increase in the number of absolute poor (World Bank, 1990).

Sigit (1997) has also made an assessment regarding the volatility of the estimate of the number of poor using the 1993 Susenas data. Applying a standard of minimum consumption arrived by using a more reasonable quality of food basket rather than the typical inferior foods basket, a 116 million poor (62 percent poverty incidence) is obtained. This standard is equivalent to a Rp 1300 per day of percapita consumption. With a Rp3300 per day, which is equivalent to the 1994 regional minimum wage (UMR), the number of poor increases to 177 million in 1993. Official figure shows a 25.9 million poor, with poverty line around Rp 28000 percapita per month for urban, and around Rp 18000 percapita per month for rural. But the UMR figure is apparently for an individual worker, which may support on average 3-4 members of household. Thus comparing UMR with percapita consumption would be too far. Nonetheless, these comparison provides some insight of the hugeness of the near poor.

With such a sensitive poverty incidence with respect to any changes in commodity composition, relative price, and food-non food ratio, any disruption in household income may therefore, lead to a substantial increase in the number and proportion of the poor. With a sizeable number of people earning marginal income in rural sector, any reduction in income in agricultural sector, also, in non-farm sector, would very much increase the number of rural; poor. As noted earlier, job is getting more and more difficult in non-farm sector, hence reducing the capability to absorb surplus of labour in rural sector, while at the same time, non-farm income also decline significantly.

Estimate of the real income decline

Some considerations

Estimate of poverty Incidence is made by taking into account the already clear negative impacts of the crisis on employment problems, disruption in urban sector, and the problems in rural sector itself. As mentioned earlier, evidences are abandon with regard to increasing pressures on employment problem in urban sector. Despite a sizeable proportion of people working less than 35 hours, only a relatively small portion have an additional job. Among those having been laid-off or experienced bankruptcy, nearly half is still jobless, while the rest enter informal and some enter formal sector. The possibility that they could not find a decent job is shown by the relatively high frequency of changing job among those having employed after laid-off or after experiencing bankruptcy.

Meanwhile, average income from main jobs has declined, even in nominal term, by around 20 percent in informal sector and minus 8 percent for formal sector, although evidence from other area of the survey suggest only a decline by minus 0.2 percent. The indices of real wages of all manufacturing sub-sectors, Hotel, and mining workers confirmed this falling real income, as the indices suggest a decline ranging from 16 to 45 percent in real term. In rural sector, the problem may even worse, as terms of trade of farmers in many provinces were consistently below 100, even for provinces of major cash crops producers. With the weakening demand, and the soaring prices, rural sector will very likely experience serious impacts. The problems in urban sector, again add some negative impacts hamper the rural sector. With the huge number of the near poor, with income only marginally higher above the 1996 poverty line, such a disruption in both urban and rural sector would result in a large increase in the number of poor.

Specifically, the number of poor is estimated by considering macro indicators, such as the decline in real income of the lower class, approximated by the decline in percapita GNP non-oil for the lower class. Changes in real wages, and rural-urban differences in the rate of inflation is also considered. Differential in lower-higher class has been very much emphasised in this estimate.

Methodology and assumptions

During the 1996 to 1998 period, real GDP is estimated to decline by minus 13.68 percent. Urban experiences, on average, larger decline, around - 9.02 percent, while rural shows a lower downturn, of around -3.78 percent. Real percapita GNP non-oil is estimated to decline by -29.57 percent for urban and by -6.45 percent for rural (Appendices Table A.1. and A.2).

Since official estimate of GNP was available only up to 1997, the 1998 GNP is estimated by first estimating the net factor income from abroad, as a function of exchange rate and time trend. Urban-rural differential is estimated by applying a factor of 9 to 1, with urban receiving the larger proportion. The estimate of 1998 GDP from oil and gas, which is available from the official estimate; is then subtracted from the estimated 1998 GNP to arrive at GNP no oil and gas (Appendices Table A1).

Percapita GNP non-oil is then computed by applying the estimate of the number of population, broken by urban and rural, from the official population projection. The 1990 population census-based projection is used in this estimate. Rate of growth of the percapita GNP non-oil of the average population is then obtained straightforwardly. The estimates show a -29.57 percent decline for urban and a -6.45 percent decline for rural percapita GNP non-oil, as mentioned earlier.

The decline in the percapita income of the lower class is believed to be larger than that of the higher class. Ample evidences are present which show that the lower class has been hit hardest, both in an informal and in a formal sector. The rate of growth of real GDP of some sub-sectors which typically employ more lower class than higher class is then compared to the rate of growth of GDP of the average population to give some insight on the differences between rate of growth of real income between lower and average population. Appendices Table A.3 suggests that the lower-higher class differential of rate of growth of GDP is substantial for both urban and rural area, around 7.50 percent for urban, and 16.25 for rural, with the lower class being the worse.

Assuming the same differential pattern, the rate of growth of percapita real GNP without oil, a - 37.07 percent decline for urban lower class real income, and an around - 22.70 percent decline for rural lower class real income are reached (Table A.4). It means that by mid 1998, the decline would be around -36.15% for urban and -22.10% for rural. This is obtained by applying the same discrepancy factor between the mid 1998 and end of year 1998 implied by the official estimates of GDP (0.92 percent difference for urban and 0.60 percent for rural). List of the sub-sectors used to indicate the differences between the rate of growth of the lower class and the average population can be found in Appendices Table A4.

This sub-sectors-average real growth comparison, while convincingly shows a much lower rate of growth of real income of the lower class than that of the average population, does not serve as a firm basis for proxying the discrepancies. Although it is true that those sub-sectors are sub-sectors which employ relatively more lower class labour than other sub-sectors, comparison of their real growth to the average real growth is only meaningful to give the insight of whether the rate of growth of the first is lower than that of the second. Such a comparison cannot be used as a proxy of the discrepancies between the rate of growth of these two groups of population because some portion of higher class of labour is also present in those sub-sectors, although the proportion of higher class is smaller than the proportion of the higher class of labour in the other sub-sectors.

To provide a more reasonable proxy of such a discrepancy, the average wage of labour of all sectors are contrasted between the lower class of labour and higher class of labour. Lower class of labour is represented by those having at most, primary education, while higher class of labour is represented by those having senior high school education (Appendices Table A.5). The rate of growth of average wage per hour from the 1990 Sakernas 1990 to the 1996 Sakernas is computed for total labour, broken down by urban and rural. Comparison between the average rate of growth between the lower and higher class clearly suggest that the lower class average wage increases more rapidly than the higher class wage, hence confirming the earlier findings.

Comparison between the lower class average wage between urban and rural seem to suggest a roughly the same average rate of growth of nominal wage between urban lower class and rural lower class. Owing to the fact that average annual rate of inflation faced by the lower class is approximately 5 percent higher for rural than urban, it can be concluded that the rate of growth of real wage in 5 percent lower in rural than in urban, or for two years, it is 10 percent lower (The indices of prices paid by farmers' increases 5 percent faster than the indices of consumer prices; also, the rate of growth of implicit price of calorie paid by lower class between 1993-1996 is around 5 percent faster for rural than for urban).

Comparison of the rate of growth of the percapita real GNP non-oil of the lower class has been arrived at around -36.1 percent for urban and -22.10 percent for rural (Appendices Table A.4). The rural estimate is then adjusted because with -22.10 percent rate of growth for rural, the estimate of the rate of growth of the urban low would have been -12.10 percent, which is less likely because the average urban percapita income is found to be around -29.57 (rate of growth of the lower class is expected to be lower than that of the average population). Based on urban lower class and the 10 percent difference in inflation, the real growth of rural lower class is obtained at around -46.1 percent. The minus 36.1 and minus 46.1 estimates of rate of growth of real income are then used.

Due to the still high unpredictability a minus 41.1 percent for urban and a minus 51.1 percent for rural is then adopted as a pessimistic view. A more (over) pessimistic view arrives at a minus 44.1 percent for urban and a minus 54.1 percent for rural.

Mention has been made regarding the rapidly declining real wages, as indicated by the indices of real wages of the three sectors, which range between 16 to 45 percent, and regarding the declining income from the main job, which decline by around 20 percent in nominal term, for informal sector. Evidences on the rising employment problems and rising difficulties associated with declining job opportunity are visible. In the wake of such a situation, a minus 36.1 percent decline of real percapita of the lower class does not seem to be contradicting. That rural estimate is worse than urban estimate can also be judged from the declining farmer's terms of trade of many provinces, and the higher rate of inflation in rural than in urban area. The estimates of a minus 44.1 percent decline for urban and a minus 54.1 percent decline for rural real is then used and serves as a very pessimistic view.

Estimate of the poverty incidence

Estimate of the poverty incidence is based on a very bold assumption regarding the distribution of population by expenditure classes (proxying income classes). Since the 1998 distribution is not available (Susenas with consumption module is not available for this particular year) the same 1996 distribution is assumed to hold in 1998. In real term, therefore, the 1998 distribution is seen as similar to the 1996 distribution, except that it shifts to the left to represent the degree of the decline in real income of the lower class.

Applying the minus 44.1 percent percapita income decline for urban lower class and the minus 54.1 percent percapita income decline for rural lower class, a 79.4 million of poor people is then obtained for mid 1998. The proportion of people living below poverty line, thus, is around 39.1 percent. Urban is estimated to contain around 22.7 million of poor, while rural is estimated to have around 56.7 million of poor people.

The number of people living below poverty line has, therefore, increased by as much as 56.9 million from mid 1996 to mid 1998, or increased by more than 3.5 times. Urban area experiences a 15.5 million-increase, while rural area experiences a 41.4 million-increase in the number of poor, or a 3.2 times increase for urban, and a 3.7 times increase for rural. Mentioned has been made regarding the huge number of the near poor, and the possibly huge number of people in rural area with marginal income. A slight change in the composition of grain in the food basket leads to a 13 million increase in the number of poor. With such a deep impacts of the crisis on the real income, a huge number of the near poor is then classified as poor.

Conclusion

Ample evidences are present regarding the disruption of the income of workers living in formal sector, in terms of the falling real wages, ranging from 16 to 45 percent, also of the declining income from the main job in informal sectors. Also visible is the picture of increasing pressure associated with limited job opportunity. Meanwhile, a sizeable number of people are living on income which are only marginally above the poverty line. With a significant decline in real income of the lower class, a huge number of these near poor are then classified as poor.

It is worth mentioning that the conclusion is arrived on the basis of a very pessimistic view of the crisis impact on the decline in percapita real income of the lower class. Also, a bold assumption regarding the similarity of the pattern of the 1996 and the 1998 distribution is held, meaning that percapita income of everybody within the group of people of the lower class move at the same direction and at the same phase. The over pessimistic view may be justified by the still very unpredictable and the very volatile prices and business in the private sectors. Thus, despite such a brave assumption, the resulting estimate of the number of poor mentioned earlier may serve as a reasonable, yet very pessimistic view of the number of poor.

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Appendices

Table A.1. Estimates of GNP and Net Factor Income From Abroad

Category	1996	1997	1998
Gross Domestic Product (GDP)			
Urban	396579.6	467281.1	699336.8
Rural	136051.2	157056.1	252049.1
Urban + Rural	532630.8	624337.2	951385.9
NFI from abroad*)			
Urban	12845.0	17205.8	96566.0
Rural	1427.2	1911.7	10729.5
Urban + Rural	14272.2	19117.5	107295.5
Gross National Product (GNP)			
Urban	383734.6	450075.3	602770.8
Rural	134624.0	155144.4	241319.6
Urban + Rural	518358.6	605219.7	844090.4
Oil and Gas**)	42314.2	53709.3	100722.8
GNP Non-Oil (GNPN-NO)			
Urban	341420.4	396366.0	502048.0
Rural	134624.0	155144.4	241319.6
Urban+Rural	476044.4	551510.4	743367.6

*. The 1998 figures is estimated as a function of exchange rate and time trend.
NFI = -8989.73 + 10.2450 E - 116.914 T
Urban-rural is obtained by a applying a ratio of 9 to 1.

** Oil and gas is only in urban area (BPS assumption)

Table A.2. Estimate of Non-Oil Real GNP (GNPR-NO)

Category	1996	1997	1998
Deflator: Urban	1.270499	1.398812	2.431448
Rural	1.351690	1.513075	2.602611
GNPR-NO			
Urban	268729.4	283359.0	206481.1
Rural	99596.8	102535.8	92722.1
Urban+Rural	368326.2	385894.8	299203.2
	1996	1997	1998 (Mid 98)
Population: Urban	73.6	76.9	80.3 (78.6)
Rural	124.7	124.5	124.1 (124.3)
U+R	198.3	201.4	204.4 (202.9)
GNPRK-NO			
Urban	3651.2	3684.8	2571.4
Rural	798.7	823.6	747.2
Urban+Rural	1857.4	1916.1	1463.8
R-gnprk-no		96/97	97/98 (96/98)
Urban	-	0.90	-30.22 (-29.57)
Rural	-	3.12	-9.28 (-6.45)
Urban+Rural	-	3.16	-23.61 (-21.19)

Notes: 1. Deflator is obtained by dividing nominal with real GDP Non-Oil
2. Using the 1990 Population Census-based projection, BPS

Table A.3. Rate of Growth Differential Between Lower Class and Average Population *)

Category	1996/1997	1997/1998	1996/1998
R-gdpr			
Urban: Lower class	5.27	-22.30	-18.20
Average Population	5.14	-15.07	-10.70
Difference (Low-Ave)			-7.50
Rural: Lower class	5.20	-23.98	-20.03
Average Population	3.13	-6.70	-3.78
Difference (Low-Ave)			-16.25

* Urban lower class is represented by: food and beverages, textile, wood products, construction, trade, land transportation, river transportation, and personal and households services

** Rural lower class is represented by: food crops, animal husbandry, quarrying, textile, woods/forest products, construction, trade, land transportation, river transportation, personal and household services

Table A.4. Estimates of Rate of Growth of Percapita Real Income of Lower Class (non-oil real GNP without oil)

Category	R of growth Real GDP (with oil) 96/98	R of growth of percapita real GNP Non-Oil			
		96/98	96-Mid 98 *)	Pessimistic	Over pessimistic
Urban					
Average population	-10.70	-29.57			
Lower class	-18.20	-37.07	-36.1	-41.1	-44.1
Difference (Lower-Ave)	-7.50				
Rural					
Average population	-3.78	-6.45			
Lower class	-20.03	-22.70	-22.10 -46.1**)	-51.1	-54.1
Difference (Lower-Ave)	-16.25				

Notes: * Mid 98 is obtained by applying a discrepancy factor of 0.92% (for urban) and 0.60% (for rural) as implied in the official estimates of 1998 and Mid 1998 GDP
**) The -22.10% is not used as it contradicts changes in wage shown by Sakernas. The -46.15% is arrived by assuming the same decline in nominal income between urban lower class and rural lower class (implied by Sakernas), and assuming a 5% per-year inflation differential or 10% higher for rural than urban within 2 years.

Table A.5. Differential in Rate of Growth of Wages Between Lower Class and Higher Class, 1990-96

Educational Attainment	Urban	Rural
Lower class:		
No Education	106.7	123.6
Not Finished Primary School	156.9	133.6
Primary School	118.9	138.5
Higher class:		
General Senior High School	92.0	115.4
Vocational Senior High School	103.1	112.7
Range of rate of growth:		
Lower class	107 - 157	124 - 139
Higher class	92 - 103	113 - 115

* Range suggests:
  1. Nominal Wages of Lower class increase faster than that of higher class
  2. Average rate of growths of nominal wages do not seem to vary significantly between urban low and rural low