Social Impacts of the Indonesian Crisis: New Data and Policy Implications *)

Prepared by Jessica Poppele (EACIQ), Sudarno Sumarto (SMERU) and Lant Pritchett (EACIF).

Summary. The social impacts of Indonesia's crisis, while serious, have fortunately been less dramatic than early reports suggested. Rather than the universal devastation in poverty, employment, education and health so widely predicted and repeated in the media, new data reporting on conditions as of the fall of 1998 reveal a more complex and heterogeneous picture. Not surprisingly, given the genesis of the financial and economic crisis in the formal sector, people in urban areas hurting more than rural areas. People on Java appear to have been more effected and are bearing the brunt of the crisis, both in comparison to more isolated islands with less linkage to the formal, modern economy (Maluku) or islands with export commodities (large parts of Sulawesi, Sumatra). The new data also show that pre-crisis economic status or poverty rates are not good indicators of how much any given region or household has been affected by the crisis. While some of the poor are doing worse, others appear to be better off and many of the newly emergent urban middle classes are hit the worst of all. There are however hard hit areas in Kalimantan and the Eastern Islands which were both poor pre-crisis and which have been hit very hard by the crisis. These new data have important implications for policy makers in designing and adjusting programs aimed at minimizing the affects of the crisis on the poor and vulnerable.

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Introduction

Expenditure changes and poverty impact. This paper looks first at new data sources on changes over the last year in expenditures and asset ownership and asset sales as proxies for income changes due to the crisis. These data dispel the notion that half of Indonesia's population will slip below the poverty line (predictions which were analytically unsound in any case). Instead the new data show large falls in expenditures, but that the falls have varied enormously between urban and rural, across regions of Indonesia and across households between rich and poor.

Sectors. Next this paper discusses the three areas targeted by the government in its social impact mitigation programs:

- employment creation and income maintenance,
- education, and
- health

Within these areas, this paper revisits the original forecasts -- the scope of the problem as it had been understood -- in light of new data noting possible policy and program design implications. Comparison of the impacts between rich and poor, urban and rural and across regions of Indonesia paints a more complex and varied picture of crisis impacts across the archipelago. There is a serious crisis to be addressed, but addressing the crisis requires that the responses be tailored to the actual dimensions and pattern of the crisis.

I. New data on the crisis

Because of the collaborative efforts of many individuals, government, donor agencies and foundations interested in mitigating the social impacts of the crisis there are a number of new sources of data which will tell us more about the crisis. This note relies principally on new data primarily from three sources, all of which are able to compare outcomes in roughly August-September 1998 versus a year earlier.

- The Indonesian Family Life Survey (IFLS),an ongoing longitudinal household and community survey, is a collaborative effort of RAND, Lembaga Demografi-UI, and UCLA. The IFLS results presented below are drawn from two publications:

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[1] This is *not* a World Bank report and has not received World Bank review nor approval. Circulation in this preliminary form is intended to disseminate the findings of work in progress to encourage the exchange of ideas, even if the work is less than fully polished. The paper carries the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are *entirely* those of the authors. They do not necessarily represent the view of the World Bank, its Executive Directors, or the countries they represent. Similarly, these views do no necessarily represent the views of those governments or organizations which provide support to SMERU.

"Health, Family Planning and Well-being in Indonesia During an Economic Crisis" by Frankenberg, Beegle, Sikoki, and Thomas (1998) and "Measuring Change in Household Welfare During a Crisis: Early Results from the Indonesian Family Life Surveys," by Beegle, Frankenberg, and Thomas (1999). Both are available from RAND, Santa Monica at <website address>. The papers are based on data that were collected in Aug-Dec, 1997, (as part of IFLS2) and Aug-Dec, 1998 (as part of IFLS2+) with funding from NIH, USAID, The World Bank, WHO, and UNFPA.

- The "100 Villages" Survey, sponsored by UNICEF and carried out by BPS (Central Bureau of Statistics), gives data from re-interviewing households in August 1998 that were previously surveyed in July 1997; and
- The *Kecamatan Crisis Impact Survey*, a qualitative survey of expert respondents from each of the roughly 4,000 kecamatan (sub-districts) in the country financed by Ford foundation and ASEM and carried out by BPS.

Where relevant these sources are compared with information from the government's period national expenditure survey, the National Socio-Economic Survey (SUSENAS) which was carried out in February 1998.

The timing of the surveys is important, as the crisis has played out in several stages. Essentially the crisis did not begin until August of 1997 when the exchange rate was first floated. Things deteriorated steadily, followed by an enormous crash in the exchange rate in January of 1998, after which things stabilized somewhat, only to be followed by the political crisis of May after which the exchange rate and stock market deteriorated again and prices continued to rise rapidly. Finally, there was a rapid run-up of the price of rice just before and during the period of independence day (August 17th). After September of 1998 the macroeconomic aggregates have stabilized, again, with rice prices declining from their late August peaks, consumer price inflation slowing to almost nothing and the exchange rate remaining fairly stable.

This timing implies several things about the data. First, the data is well timed capturing pre-crisis to post crisis (temporary) nadir. Second, the data may well have been influenced by the sharp temporary spike in rice prices (the price of medium quality rice in Jakarta rose from 2500 Rp/kg at the beginning of August to 3500 by first week of September, but then fell back to less that 3000 by the first week of October). Third, while the "crisis" was a year old in August 1998 as a *financial* crisis it is almost certain that many of the "real" effects are only beginning to be seen has firms and households respond to the changes. So the evolution of the social impacts will likely trace out a more delayed and lagged response relative to a quickly moving financial indicator like the exchange rate.

The IFLS2+ is a resurvey of almost 2,000 households in seven provinces that were part of the broader IFLS project. The seven provinces were purposively selected so that they span the full spectrum of socio-economic status and economic activity under the fuller IFLS sample which were representative of about 83 percent of Indonesia's population.

The household-level data collected in both IFLS2 and IFLS2+ include expenditures, assets, income and details of current work status of each household member; education enrollments, expenditures and school attendance; use of health care and family planning including prices and choice of provider; indicators of health status (both self-reported and measured by a trained health worker); migration; transfers among family members and transfers to and from community programs including such programs as the Padat Karya, school scholarship programs and the Kartu Sehat. Extensive data on prices, service availability and quality are collected at the community level, both from knowledgeable informants and through visits to schools and health facilities.

In contrast with the 100 Villages survey (below), the IFLS follows households and individuals who move from the location where they were interviewed in earlier rounds. IFLS2+ re-interviewed over 98% of the households (and over 96% of the individuals) that were interviewed in 1997. Sample attrition is not a serious concern in the IFLS 2+ data.

As noted by the authors of the IFLS publications that we are drawing from, all results are very preliminary and subject to change as the data and tabulations are still being verified and revised. Also None of the results are weighted to take account of purposive sampling differences. For more detail, and additional results, please see the IFLS publications cited above.

100 Villages. The 100 villages survey re-surveyed 120 people in each of 100 villages in 1998. The 100 villages are not statistically representative of the country, but were chosen as "representative" of various parts of the country. The data cover only 10 of the country's over 300 kabupaten. In the 1998 sample 80 households from the 120 interviewed in 1997 were re-interviewed while 40 new HH were selected and added to keep the sample size at 120[2]. Here we use comparisons of village averages only. The data include information on expenditures, asset ownership, education enrollment, health status, and other indicators. The survey is part of a larger exercise that means to integrate quantitative and qualitative indicators tracked over time to provide a more dynamic and integrated picture of poverty.

The results reported are from the preliminary tabulations of the BPS and analysis by UNICEF of the data in a draft titled "Rapid Appraisal" dated 12/4/98.

The nationwide Kecamatan Crisis Impact Survey was a subjective, expert respondent survey of three government officials in each of Indonesia's 4025 *kecamatans*. In each sub-district three respondents with kecamatan-wide responsibilities were chosen and asked a standard set of questions about changes taking place in the *kecamatan*. The questions asked about the degree of different kinds of impacts (migration, access to health and education, food availability, etc.), the frequency of different types of coping strategies, and the most severe impacts in each area. All questions were designed to measure proportional change in indicators relative to the same time in 1997, to eliminate seasonal changes.

National coverage was necessary in order to identify crisis-hit areas for program targeting. By asking for qualitative assessments the survey designers hoped to get universal coverage with complete response (the use of quantitative questions did dramatically raise the non-response rate in this survey). Using expert respondents eliminated the problem of large unmanageable sample sizes and allowed for rapid response, but raised the concern of inter-respondent reliability. Simply put, would two people who were asked the same question about the same *kecamatan* tend to give the same answer? Three cross-referencing approaches showed an acceptable degree of consistency in response patterns within *kecamatan* but also showed significant level of disagreement between respondents. This and other limitations imply that, while the broad patterns -- at the provincial and district level -- indicated by this data are useful in targeting of crisis response, used on their own, these data would be insufficient to target programs at the *kecamatan* level.

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[2] Unfortunately when one of the HH chosen for re-interviewing was not available (because they had moved or the HH has broken up) a new HH was chosen randomly from the 40 previously not selected from the previous year's HH and added to the "re-interview" group. This means that the sample in 1998 suffers from attrition bias as the 80 re-interviewed HH are no a random sample, but are a sample of those who could be re-interviewed.

The tables and graphs are taken from a document, "The Social Impact of the Crisis In Indonesia: Results From a Nationwide *Kecamatan* Survey", December, 1998 draft.

The SUSENAS, which contains a core, but short consumption schedule, is carried out every year. Once every three years, the survey contains a separate and detailed consumption module, and this is the one used for poverty estimation. The last year for which such detailed poverty statistics are available is 1996. The next official estimates are due based on data collected in February 1999 with poverty estimates based on an accelerated processing of a sub-sample of 10,000 available by June.

II. The impact of the crisis on expenditures, assets, and poverty

A. Forecasts

To date the government and various international agencies have predicted extreme and nation-wide impacts from the crisis. As expectations worsened from January 1998 through the chaos of May and into June people were caught up in a vicious cycle of doom saying in which the only news could be that the news was even worse. The estimated level of absolute poverty prior to the crisis was around 11 percent, since the population is near 200 million, around 22 million people[3]. In February initial estimates by the World Bank were that poverty would increase to around 17 percent, or 34 million people. Then others suggested poverty would reach 50 million people. In June The BPS reported that the percentage of people living below the poverty line in mid-1998 was around 40 percent or about 80 million people: an increase in the poverty rate of almost 30 percentage points in a year! Not to be outdone, more recently, the figure has been inflated in one report estimating that by the end of 1998, almost half the population, or 100 million Indonesians would be living below the poverty line.

The higher figures of 40 percent of the population in poverty produced by BPS and repeated by others (e.g. ILO) were known as soon as they were published to be analytically unsound. It was premised on a confusion of real and nominal incomes (which implied real income losses on the order of 80-90 percent). It was based on the unrealistic assumption that in 1998 people's *nominal* incomes would remain fixed while prices increased by 80 percent.[4]

Getting some sense of the increase in poverty is important for policymaking as if it really were the case that half the Indonesian population were in absolute poverty then this calls for massive, universal programs and very little attention to targeting, either regionally or by household. Just by simple arithmetic, if half the population were poor the a rupiah's worth of benefits distributed uniformly would be received by a poor household half the time. This is about as good a ratio of total cost to benefits received by the poor as any targeted program achieves.

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[3] This was of course based on a very strict definition of absolute poverty and obviously a higher level of expenditures to define the poverty line would have produced a greater number of people in poverty. However, no serious scholar disputes that whatever the line, there had been enormous progress in poverty reduction from the mid 1970s to the mid 1990s. Moreover, in discussing poverty increases one needs to use a consistent definition for "before" and "after."

[4] While the BPS has subsequently changed its methodology, this is layed out most clearly in Annex A to the ILO's June 1998 report "Employment Challenges Of the Indonesian Economic Crisis". The assumption that prices would rise 80 percent while nominal incomes were on average unchanged, assumes an economy of all buyers and no sellers.

The new data suggest that the dire forecasts are wrong, and by a lot, not a little, for three reasons. First, the typical magnitude of the decline in expenditures is not any where near as large as the 80 percent fall in real income implied by the combination of 80 percent inflation and stagnant nominal incomes. Second, the crisis has tended to hit urban areas, which has higher incomes and hence a given income shock has less influence on poverty rates. Third, there is some evidence the crisis has hit more affluent individuals proportionately harder than the absolute poor.

As with any important and complex issue, while it is easy to point out what is false, the truth is more subtle. While Indonesia is suffering a severe crisis, it is not the universal disaster that some would have it. There are large differences in how the crisis has effected urban and rural areas, in how it has effected different regions and how it has effected the rich and poor.

B. The Urban Crisis

Overall, the crisis has a strong urban bias where the depreciated rupiah, corporate debt, illiquid banks, exorbitant interest rates, exit of foreign investment and lack of trade finance, have to a large extent paralyzed the formal economy.

IFLS 2+. The preliminary data from the IFLS 2+ household survey in seven provinces shows that *average* per capita household expenditure had decreased by 24 percent (Table 1).

The average spending in urban areas *fell* by a shocking 34 percent with the median falling by 5 percent. In contrast, rural expenditures fell by much less, in both mean and median, have risen, with mean expenditure falling 13 percent but median expenditures falling by only 1.6 percent.

Table 1: Household Per Capita Expenditures: 1997, 1998 & Changes
real (1997) rupiahs per month ('000)

	Mean	Change in 1998		Percent Change	
	1997	Mean	Median	Mean	Median
Urban	319	-108	-7	-33.9%	-5.0%
Rural	194	-26	-2	-13.4%	-1.6%
All respondents	246	-60	-2	-24.4%	-1.5%

Source: IFLS2+, Table 2.1

We should raise here, in the first time we use the expenditures data that there is the very serious problem of the use of expenditure data as a proxy for incomes. It has become standard practice to use consumption expenditures as a proxy for incomes for reasons both practical and theoretical. Practically, it is just impossible to measure incomes. Theoretically, one can make the argument that since households will use saving and borrowing to smooth expenditures over time that expenditures measured over a short period is a better proxy for a household's long-run income and economic status than is measured income.

However, this same reason suggests that expenditure changes should be used only with great caution as an indicator for changes in welfare or income shocks due to the crisis. Someone very near "subsistence" level income may well sell assets or work more or undertake any expedient— even ones that lower long-run prospects--to maintain expenditures out of sheer necessity. In contrast, sudden changes in expectations about the future could occasion large changes in expenditure patterns among the better off, even if the actual income changes were not large.

Table 2: Fraction of Kecamatan in each area (province, urban, rural) reporting "people selling assets to meet basic needs" as a coping mechanism was "worse" (of severity 1,2 or 3)			
	Total	Urban	Rural
DI Aceh	65.6	93.3	62.0
North Sumatra	49.2	68.6	43.8
West Sumatra	52.7	75.0	43.9
Riau	37.2	61.1	30.9
Jambi	32.2	53.9	25.5
South Sumatra	28.4	50.0	26.6
Bengkulu	25.8	57.1	16.7
Lampung	43.9	75.0	36.3
Average	41.9	66.8	35.7
Jakarta	88.4	88.4	
West Java	83.2	87.5	82.5
Central Java	73.8	81.6	72.4
DI Yogya	65.4	84.2	59.0
East Jawa	76.7	86.0	75.4
Average	77.5	85.5	72.3
Bali	56.9	66.6	53.9
NTB	72.1	77.8	71.2
NTT	54.0	73.3	51.4
East Timor (Timtim)	40.3	46.2	38.7
West Kalimantan	33.6	100.0	26.7
Central Kalimantan	55.2	87.5	50.0
South Kalimantan	70.2	84.6	68.4
East Kalimantan	71.4	85.7	66.6
Average	56.7	77.7	53.4
North Sulawesi	28.0	35.3	26.4
Central Sulawesi	29.0	44.4	26.6
South Sulawesi	38.6	58.9	33.1
Southeast Sulawesi	51.6	55.5	51.0
Maluku	30.0	42.9	26.1
Average	35.4	47.4	32.6
Source: Kecamatan Crisis Impact Survey, Table 2			

Kecamatan Crisis Impact Survey . The kecamatan survey supports the finding that urban areas have in general taken a harder hit than rural areas. Comparing the 40 percent hardest hit provinces with the 40 percent least hit provinces reveals clearly that urban areas are, on average, much harder hit than rural areas. Of the 20 hardest hit areas, 14 are urban, while of the 20 least hit areas, 13 are rural. Table 2 shows the proportion of kecamatan in each provincial area reporting that the fraction of people "selling assets to meet basic needs" was "worse." Within nearly every province and each region or island this was consistently higher for urban than rural areas. In many cases the differences were dramatic, with only 17 percent in rural Bengkulu reporting that, by this indicator, things were worse, versus 57 percent in urban areas, or 33 percent "worse" in rural South Sulawesi versus 59 percent "worse" in urban areas in the same province.

This urban nature of the crisis makes eminent sense given the propagation of the crisis through an exchange rate crisis driven collapse in the banking and financial sectors affecting particular large corporations which were heavily involved in external borrowing.

C. Regional Dimensions

Looking nationwide, however, regional patterns reveal an even more complicated picture; the kind of picture one would expect in a country as large and economically diverse as Indonesia. While urban areas are generally harder hit than their rural neighbors in the same area, some rural areas have also been severely affected. Also, some of the eastern provinces in both urban and rural areas have experienced substantial negative impact. This distinct regional heterogeneity of crisis impacts with some areas suffering enormously, other areas booming and several gradations in between.

Kecamatan Crisis Impact Survey. The kecamatan crisis impact survey is the only data set that has national coverage. Examining a set of tables and maps on the regional distribution of the crisis suggests three prominent patterns.

- Java is hard hit, even in rural areas,
- Some of the other islands, particularly large parts of Sumatra, Sulawesi, and Maluku, have experienced minimal negative crisis impact and areas that escaped the drought may actually be booming from export crop earnings (due to the currency depreciation);
- Other areas show negative impact, but it is unclear whether problems are economic crisis-related or result from drought (East Timor, NTT, NTB) and fires (East Kalimantan).

The kecamatan survey results place all areas of Java in the 20 hardest hit areas, regardless of urban/rural status. The only other rural areas included in the 20 most affected areas are East Kalimantan and Aceh. The urban areas that fall into the least hard hit 40 percent are those in provinces where rural areas are also relatively unaffected, such as Jambi, South Sumatra, Bali, North Sulawesi, Central Sulawesi, Maluku, and Bengkulu.

One key indicator of impact in the kecamatan survey was the number of households selling assets to cope with the crisis. On the island of Sumatra 65 percent of rural kecamatans reported that by this indicator conditions were *the same or better* than last year. That is, people were not resorting to asset sales to cope with the crisis. On Sulawesi 70 percent of rural kecamatans reported things were the same or better. In contrast 72 percent of rural kecamatans on Java reported on the basis of emergency assets sales, that people were worse off, and 53 percent those in NTT, NTB and Kalimantan also reported “worse.” (See Table 2 above.)

Figure 1 shows the map at the tingkat II level showing the distribution across the country of a "coping" index which is based on indicators of the degree to which people were selling assets to meet their basic needs, reducing their participation and contributions to social activities, and other indicators of the use of "coping" mechanisms. What emerges very strongly is a regional pattern in which Java is hard hit. Also on these maps the cities stand out as the kotamadya are small black dots.

100 villages. Data from the 100 villages survey implies similar regional discrepancies by comparing changes in assets form 1997 to 1998. We constructed an index of asset ownership based on 10 durable goods (e.g. radio, bicycle) weighted by the relative prices of the goods. It appears that there have not been massive sales of assets to cover expenditures, but rather small increases in assets. Moreover, the increase in asset acquisition is increasing with largest increases in the western islands as compared to Java, and the Eastern islands holding about even. This is consistent with the patterns above.

The expenditure data show a similar regional pattern (without deflation it is impossible to say anything about levels). Expenditures have increased more in the parts of Sumatra in this sample (Riau and Lampung) than in either the villages surveyed on Java Bali or the Eastern islands (note that all the islands in the sample are those that are "hard hit" among the off Java islands in table 2).

Table 3: A weighted asset ownership index: 1997, 1998 and Changes, and nominal expenditure increases (undeflated).

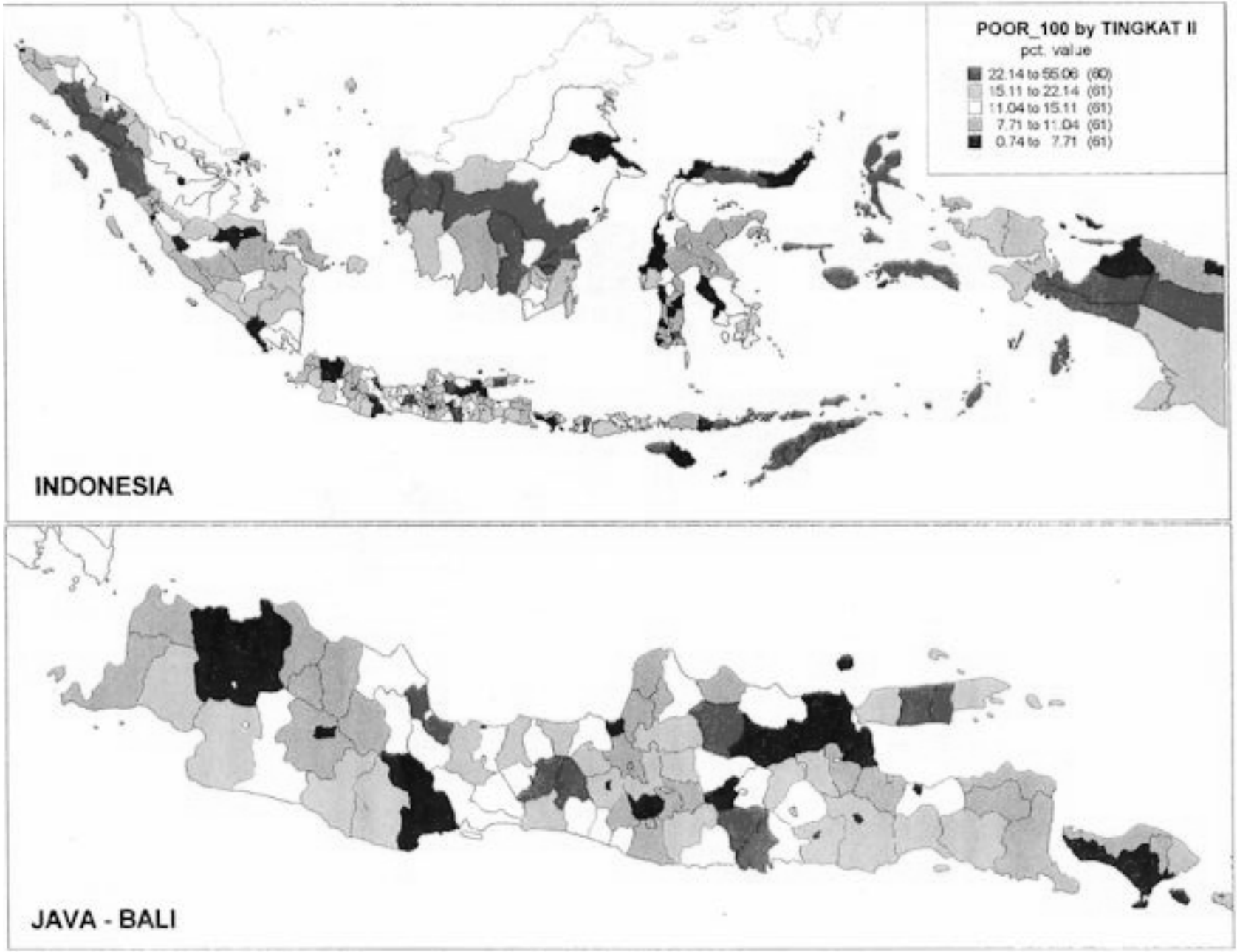
	Asset Index			Percentage change in nominal expenditures
	1997	1998	Changes	
Java-Bali	3.68	5.42	1.74	53.49%
Off Java Islands – West	4.27	9.42	5.15	89.38%
Off Java– East	7.62	7.65	0.03	51.00%
Off Java-West: Riau, Lampung, Off Java-East: East Nusa Tenggara (NTT), East Kalimantan, SE Sulawesi				
Source: 100 villages survey, Table 13				

While it is impossible to say precisely, there are obvious conjectures about the causes behind the regional pattern of the crisis, depending on the origin of the crisis.

First, since the crisis began as an exchange rate crisis with fed into a financial crisis affecting primarily firms that had either some debts denominated in dollars or which relied heavily on imports or firms which had links with the formal banking sectors. It makes sense that areas more closely tied up with the urban formal economy have been harder hit that those areas which were not as tightly integrated.

Second, those areas which either had export crops or which were export earners should be expected to do well, as the depreciation helped them enormously. This, combined with several reforms (e.g. clove marketing) that put more the benefit in the hands of farmers should mean that some rural areas— that are not drought affected and are not primarily rice producing (where, at least until August 1998 prices were kept down) benefited enormously.

Figure 1: Index of Changes in Use of Coping Strategies
(eg. Selling assets, reduced participation in arisan)



Third, some areas had natural disasters from which they have yet to fully recover. The drought of 1997/98 was not as bad as had been feared on Java, but did hit the Eastern Islands hard, as well as other scattered parts (west coast of Sumatra, parts of Sulawesi). In addition the drought interacted with the fires in East Kalimantan to produce an eco-disaster.

One extremely important aspect of the crisis is that it does not appear to have hit the poor areas disproportionately, but hit some well off areas hard and some poor areas hard, and vice versa. In fact, a simple correlation test between various indices and pre-crisis levels of the incidence of poverty based on SUSENAS 1993-1996 across *kecamatans* reveals very little correlation, statistically insignificant even with 3,900 observations.

The same lack of association between pre-crisis poverty and the magnitude of the crisis impact can be seen by comparing the figures which show changes (Figure 1, showing the index of "coping") due to the crisis to the pre-crisis poverty levels (Figure 2). Table 4 gives examples of the various types. While most of West Java, and especially the area around Jakarta, have very low poverty rates, the crisis has been enormous in those areas. In contrast, Maluku, with very high poverty rates, has perhaps even benefited from the crisis.

Table 4. Examples of differential impact of crisis

	Relatively well-off pre-crisis	Relatively poor pre-crisis
Hard-Hit	Jabotabek, West Java	NTT, East Kalimantan
Not Hard Hit	Central Sulawesi, Bali	Maluku, Jambi

Source: Kecamatan Crisis Impact Survey, Table 3

The implications of all of this for policy are discussed in section E.

D. For Richer and Poorer

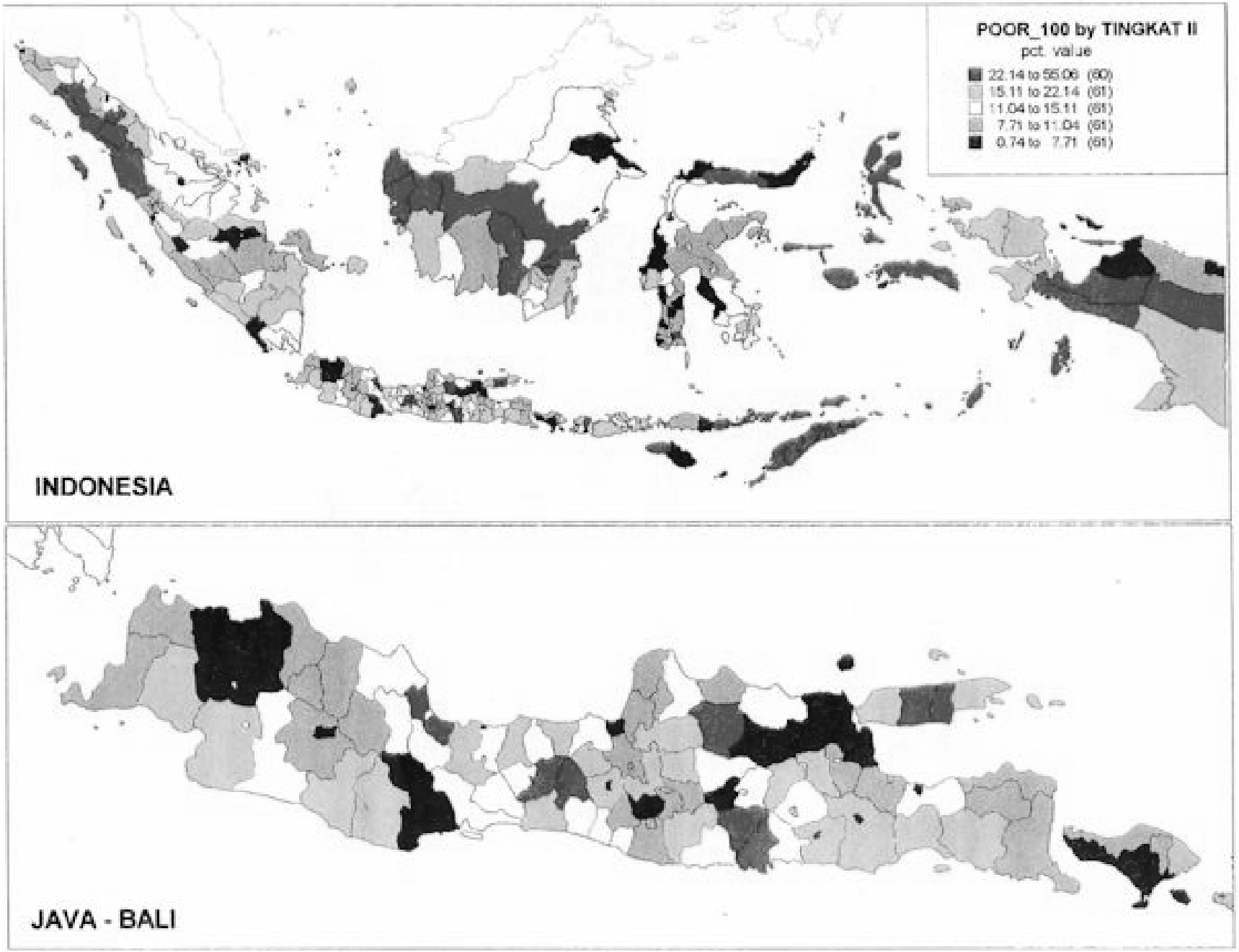
IFLS 2+. In additional to the regional dimensions of the impact of the shock, the IFLS 2+ also gives some indication that even *within* provinces or within urban areas the shock may not have hit the poor the worst, at least in proportionate terms. While it is true that the poor suffer more from a reduction in income because they are starting with so much less, yet there are some indications that this crisis has hit individuals who were better off harder in proportional terms.

Within those regions where the financial and corporate modern sector were hardest hit, Jakarta and West Java, there is an interesting story emerging from preliminary household data. *Average* real per capita household expenditures fell by 30 percent in Jakarta and 42 percent in West Java, which are truly terrifying falls. In contrast *median* expenditures fell by only one or two percent in Jakarta and fell by six percent

in West Java. In Central Java where average expenditures fell by 19 percent, median expenditures has remained stable. This indicates that relatively richer households have experienced the most significant declines in per capita household expenditure[5].

[5] This difference in the mean versus the median expenditure is a technical point about statistics of central tendency in an asymmetric distribution but conveys an important point and is worth explaining with a simple example. Suppose there were an economy of 10 people, 9 of whom made one dollar and 1 of whom made 91 dollars. *Average* income is 10 dollars even though 9 of 10 make much less and the *typical* or median income is only 1 dollar. Now suppose the income of the rich person fell to 41 dollars, *average* income has fallen in half to 5 dollars per person, but 9 out of ten people's income is unchanged and *median* income is still 1 dollar.

Figure 2: Proportion of Kabupaten Population in Absolute Poverty (average of 1993 and 1996 SUSENAS)



This means that the regional pattern is mainly apparent in the mean, not the median expenditures. It is not the case that by the change in the median income Jakarta and West Java are particularly hard hit, rather then are the typical. Who was hit hard then were those in Jakarta and West Java whose expenditures before the crisis were well above the provincial average.

Table 5: Household Per Capita Expenditures: 1997, 1998 & Changes In real 1997 rupiah '000 per month

Province	Mean 1997	Change in 1998		Percent Change	
		Mean	Median	Mean	Median
Jakarta	385	-115	-6	-29.9%	-3.4%
West Java	366	-154	-10	-42.1%	-5.9%
Central Java	234	-45	0	-19.2%	0.0%
S. Kalimantan	217	-47	-27	-21.7%	-17.2%
S Sumatra	187	-18	12	-9.6%	11.3%
North Sumatra	183	-18	-14	-9.8%	-10.9%
NTB	173	-23	-7	-12.7%	-6.5%

Source: IFLS 2+, Table 2.3

The same tendency for the shock to have affected those that began better off is evident in the data on change in expenditure level by education of the head of the household shown in table 6. Naturally the expenditure levels of those with higher levels of education were higher in 1997. However, expenditures decreased 14 percent in mean and rose 14 percent in median for those with no education. In contrast, median incomes for each of the other groups either rose slightly or fell, which mean income fell by over 20 percent for each of the more educated groups.

Table 6: Changes in mean and median per capita HH expenditures by level of education of the head of HH.

Level of Schooling	Mean HH monthly expenditures per capita ('000 rupiah) in 1997	Percentage change in the mean of expenditures	Percentage change in the median of expenditures
None	201	-14.43%	14.02%
Elementary	214	-26.64%	-1.69%
Secondary	267	-29.59%	-4.08%
Tertiary	357	-22.97%	1.66%

Source: IFLS2+, Table 2.5

This same effect is seen by examining the change in income of households to see to what extent those in the bottom part of the distribution remained there. Table 7 shows the distribution of expenditures per capita. Those that were measured to be in the bottom quartile of the expenditure distribution in 1997 saw an enormous increase in their measured expenditures in 1998. Similarly those in the top quartiles saw enormous declines. This likely reflects three factors.

The first is regression to the mean due to measurement error. In even the best surveys capturing per capita expenditures is a tricky business. Suppose incomes are measured with a large amount of measurement error, then many of those in the top are there merely due to measurement and would be expected to return with subsequent measurement, irrespective of what happened to their income.

The second is true transitory shocks to incomes and expenditures. In addition to measurement error, especially in turbulent economic times one would expect many

large changes and reversal of fortune. These "true" shocks would also tend to produce regression to the mean.

The third, is that the shock actually affected those at the top end more than at the bottom end of the distribution, as is suggested by the distribution of education.

Table 7: Changes in per capita expenditures, by initial quartile of per capita expenditure (PCE)

Quartile in 1997	Per capita expenditures 1997	Percentage change	
		In mean	In median
I	50	120.0%	49.0%
II	105	41.9%	11.7%
III	190	-1.6%	-18.8%
IV	680	-54.0%	-41.4%

Source: IFLS 2+, Table 2.6

What has happened to absolute poverty? Absolute poverty depends on what happens in the lower (left) tail of the income distribution. Clearly, given the differences in the mean and the median, merely assuming that the distribution of income changed in a distributionally neutral way (as many of the poverty estimates have) is untenable.

Table 8 shows the results of poverty calculations of absolute poverty. In order to calculate the fraction of households that in 1998 were below the level of expenditures that implied 11 percent poverty rate in 1997 one needs to deflate 1998 nominal expenditures to 1997 "real" terms. That is, nominal expenditures rose a large amount, but so did prices and hence there must be a deflation to "real" terms. Given the substantial price changes that happened this will be problematic, and, unfortunately, which approach is pursued makes a large difference to the resulting poverty rate.

The first two columns use the inflation rate by province calculated from the BPS measurement of prices in 44 cities, and hence assume equal inflation in urban and rural areas. In the absence of rural-urban deflators from official sources this is perhaps the most natural approach to deflation.

As can be seen by this approach "absolute poverty" has increased, from 11 percent to 13.8 percent of the population. Since there have been widely cited numbers, *not* based on new data, that poverty had increased to 39 percent (BPS) or even 48 percent (ILO) of the population it goes without saying this number, which suggests a change in poverty *an order of magnitude* smaller, will raise some controversy[6].

However, before dismissing it out of hand, this poverty calculation can be compared with the expenditures data from the "100 villages" survey. Using that data we pick the 11th percentile of the 1997 expenditure data as the poverty line (in other words we simply *assume* 11 percent poverty in 1997 for purposes of comparison, the 1997

[6] Of course, it was known since their publication that these numbers were a massive overstatement of the increase in poverty, as they were based on a huge analytical error in their assumptions about how inflation affected poverty. It is starkest in the ILO publication, which assumed 80 percent inflation raised the poverty line by 80 percent, but then assumed that nominal incomes were unchanged. But since every transaction has a buyer and a seller, each expenditure to one person is an income to another so the assumption of 80 percent inflation with unchanged nominal expenditures is just untenable. In fact the data show that nominal expenditures did in fact increase substantially (50-90 percent in table 3) and the only question is the appropriate deflation.

number is arbitrary). We then deflated 1998 expenditures by the national CPI and calculated the fraction of the households under the 1997 poverty line. By this calculation poverty also only increased to 14.3 percent.

Also, while there were dire predictions made about the extent of poverty, other estimates, that took into account the possible sectoral allocation of the fall in GDP, were less dire. For instance, in the World Bank's *Indonesia in Crisis* the base case predictions of the rise in poverty assumed zero growth in agriculture and hence that most of the fall would be in the urban sectors (manufacturing, construction). This meant that the forecast was that poverty would rise only by 3 percentage points, squarely in the range of 2.8 to 3.4 percentage point increases the actual new data show[7].

So the current findings, while dramatically different from some forecasts, are not in fact unreasonable given the sectoral and regional composition of the contraction in GDP. They are not some fluke or massive flaw in the data, this is a finding that needs to be taken seriously, but there are three issues that need to be taken into consideration.

Table 8: Poverty calculations using alternative assumptions about inflation and different expenditure data

IFLS expenditure data				
	Deflation by province specific CPI from BPS		IFLS deflation	
	1997	1998	1997	1998
All	11.0	13.8	11.0	19.9
Urban	9.2	12	9.2	15.8
Rural	12.4	15.2	12.4	23
None	19.1	19.4		
Primary	13.6	15.5		
Secondary	5.1	10.6		
Tertiary	1.6	6.5		
"100 villages" expenditure data				
	With BPS deflation		IFLS	
All	11.0	14.4	11	18.6

Source: IFLS 2+, Table 2.1 and Table 2.3 and calculations from "100 villages" data.

First, the BPS CPI inflation rate. The IFLS survey also collected price information on 38 items. Their inflation rate is 15 percentage points higher than BPS measured inflation for the same provinces, and inflation was 5 percent higher in rural than urban areas. Obviously for fixed nominal expenditures each increase in inflation lowers real incomes and hence will raise poverty. So under the IFLS assumptions about the inflation rate poverty rises from 11 to 19.9 percent.

However, it would be no trivial matter to accept that the CPI— besides the exchange rate— the most tracked macroeconomic indicator had misstated inflation by 15 percentage points in one year. This would have implications for nearly *every* indicator of economic performance.

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[7] In that report the baseline poverty rate in 1997 was 10.1 and the poverty rate was forecast to increase in 1998 to 14.1 under the assumptions of a 12 percent fall in GDP concentrated outside of agriculture.

Second, these calculations are not "true" poverty calculations as they deflate expenditures and then compare with a previous poverty line. If there had not been massive changes in *relative* prices this would be appropriate. However, the data show that food prices have risen by more than non-food prices. Since food prices play a much more important role in the poverty line than in the CPI it is almost certain that recalculating the poverty line (e.g. recalculating the level of expenditures necessary to maintain a "minimal" nutritional intake) would raise the poverty line by much more than the rate of inflation.

Third, we return to the point that what is measure is expenditures, not incomes, which has two important implications. In the face of massive rises in the prices of stables people will raise their expenditures to maintain their consumption, even at the expense of reducing consumption on other items. Hence they will be much worse off than expenditures per capita would indicate. Second, people will use "dissaving" to smooth their consumption expenditures in the face of income reductions— especially if those are perceived as temporary.

Both of these factors are illustrated by the dramatic changes in the composition of expenditures. Table 9 shows the changes in expenditure shares between 1997 and 1998 for the IFLS and the "100 villages" data sets. Both show a large increase in the share of expenditures devoted to food. In fact, in the 100 villages data the shift is almost unbelievably huge. The IFLS data show that most of the shift has been in "stables" with nearly everything else, including other food items, being reduced to accommodate.

Table 9: Changes in expenditures shares, 1997 to 1998

	IFLS			100 Villages		
	1997	1998	Change	1997	1998	Change
Food	70.0	74.0	4.0	66.2	75.7	9.5
Of which:						
Stapes	23.6	31.7	8.1			
Meat	12.7	10.0	-2.7			
Dairy	3.1	3.1	0.0			
Oil	2.4	2.7	0.2			
Vegetables	10.5	11.1	0.6			
Non-Food	30.0	26.0	-4.0	33.8	24.3	-9.5
Of which:						
Alcohol/tobacco	4.3	4.7	0.4			
Health	1.4	1.0	-0.4			
Education	3.5	2.9	-0.5			
HH goods	5.6	4.7	-0.9			
Transport	2.4	2.2	-0.2			
Clothing	2.5	1.9	-0.6			
Housing	8.2	6.6	-1.5			
Recreation	2.2	1.9	-0.3			

Source: IFLS 2+ , Table 3.1 and "100 villages" data.

In evaluating these figures on expenditures shares, keep in mind the earlier mentioned temporary spike in the price of rice. This would cause a temporary spike in the share of stables that my not reflect a long-term trend as the prices declined rapidly in October.

However, of particular concern is that expenditure *shares* on health and education are being reduced, which combined with the reductions in income imply reductions in absolute amounts being spent on these items.

E. Implications of the new data

There are two important questions, should these new findings be trusted? And second, what does this distribution of the shock across individuals mean for poverty rates and the social impact of the crisis?

We don't really know all we would like to know, and certainly it would be rash to make important decisions based only on new quantitative data, but decisions will be made and there is a need to act on what information we do have. How does the existing data square with available anecdotal accounts?

First, the heterogeneity of the crisis suggests that there has been a substantial fall in average or typical income, but that is perhaps even more striking is that there has been a huge amount of "churning" or changes in who is or is not doing well. There is an analogy with recent labor market studies that emphasize that changes in aggregates often mask huge underlying volatility amongst individuals. For instance, in industrial countries when the unemployment rate increases by one percentage point, from 5 to 6 percent this is not because 1 percent of the people lost their jobs. It is because the differences in the *gross* flows, which are normally very large, changed so that say, of the normal number of people losing jobs increased from 11 percent to 12 percent and the number of people finding jobs stayed steady at 11 percent. But the *gross* job creation and destruction is often orders of magnitude larger than the changes in the *net*.

So to in an economic crisis. Even though on average expenditures might not have changed much this is a combination of some people, which may have doing quite well prior to the crisis having done really badly while others staying about the same while still others are booming. This level of individual "churning" in well being cannot be ignored as an important part of the perceptions of the crisis as it creates uncertainty in everyone's mind in a way that structural poverty does not.

Second, the vast expansion in new reports in the media and through other channels on poverty and suffering need to take into account the very changed political circumstances. Whereas before government officials had no incentive to report on poverty, and in fact were likely encouraged to understate poverty, the existence of safety net program financing reverses those incentives. In addition, the media were not free in the previous regime and may have been directly or indirectly discouraged from reporting on negative features, like the homeless. In this case increased *reporting* on poverty is a new freedom on reporting.

Third, given the regional heterogeneity of the crisis what one reports depends on where one reports from. This crisis is consistent with village level studies that report either complete devastation (in villages dependent for employment on a particular factory) or a boom (in villages that are export crop oriented). There is a huge crisis in Jakarta, which is the capital city and hence reports from there will tend to reflect the serious and deep crisis there. But anecdotal reports cannot be extrapolated to a general or national picture.

Fourth, these reports are consistent with many anecdotal reports from different regions. Visitors to some parts of Indonesia have been reporting since the beginning of the crisis that in some areas there were few problems. So while about areas like

Jakarta one hears many crisis stories there are also anecdotal reports of rural areas in which local motorcycle dealerships are booming.

Moreover, a recent qualitative study in parts of Central Java by a team of sociologists studying the issue qualitatively report that the crisis is not in fact affecting the poor as severely as was feared. In fact, this report suggests the crisis may even be helping them in some ways, as middle class consumers return to traditional markets (dominated by informal sellers) from more formal retail channels and return informal services (such as repair) that would have been avoided.

Turning a question as important as reliability, what are the implications for policy?

- the data suggest that geographic targeting is a very important part of response to the crisis. If the country were hit equally across all regions then perhaps a universal response would be appropriate. However, it is clear some areas are (at least relatively) booming.
- disproportional impact on those who were doing well before the crisis means that there in general terms little correlation between the pre-crisis poor and near poor, ad the social *impacts* of the crisis. People who begin from different absolute levels of income will have different responses to the crisis. For instance, middle class families will respond to a shock by working more, reducing consumption, drawing down savings, and selling assets, but are unlikely to pull children from primary school or suffer malnutrition. In contrast, people near absolute poverty may not have the luxury of these coping strategies so an equally large shock will force them into more drastic measures, such as primary school drop-out and reduced food intake.
- the lack of correlation between those suffering from the crisis at *every* level (urban versus rural, across provinces, and across individuals) raises important and difficult questions in program design whether one is targeting to *poverty* or is targeting to *crisis suffering*.
- The type of programmatic response needs to be sensitive to the origin of the shock in a particular locality. Therefore, if the cause is a draught and the impact is affecting peasant farmers food for work programs are a possibly appropriate response. However, if the crisis is that former urban bank clerks with a high school education or higher are unemployed due to a banking crisis, it is not clear that relief type programs will be effective.

III. EMPLOYMENT

A. Forecast

In early October, 1998 the Manpower Minister stated that one in five Indonesian's was currently unemployed and that this would rise to 20 million people (22 percent of the workforce) by the end of the year.[8] However, these type of forecasts, as well as earlier unemployment numbers of 15 percent were extrapolated from simple GDP/employment elasticity models and not from real data.

These unemployment figures clearly do *not* hold up under analytical scrutiny. For one, relationships between output growth and employment developed as the economy grows are a poor indicator of what will happen to employment when output drops. Employment/output "elasticities" focus on the demand for labor, but say little about supply.

In fact, it is unlikely there will be widespread "unemployment" when wages are flexible downwards and households do not have sufficient savings or safety net support. That is, the effect one would expect to see from a contraction in labor demand in an economy like Indonesia is not "structural unemployment" of the type seen in Europe, but rather falls in real wages and *increases* in employment rates and labor hours as families try and maintain their real necessary expenditures. The absolutely poor cannot afford to be "unemployed."

The data bear this out. What is happening is an *increase* of the fraction of the labor force employed and little or no rise in open unemployment. What is happening is that household members are working more, and perhaps longer hours, working for lower wages, and there has been a massive shifts in the sectoral composition of employment growth with formal sectors like construction, manufacturing and finance contracting while informal sectors (self-employment, trade) are expanding.

B. New Unemployment and Employment data

The shortcomings of the Ministry's unemployment projections were elaborated in a June 1998 ILO report which put forward its own lower unemployment estimates. The report, "Employment Challenges of the Indonesia Economic Crisis", explained that "because many cannot afford to remain unemployed for long, around half of the workers displaced by the crisis will be absorbed in the informal sector." (p. 28) The study estimates that open unemployment would rise from 5 percent in mid-1997 (pre-crisis) to 7 percent in mid-1998. And that the problem will be one mainly of educated job seekers in the towns and cities. ILO's lower estimates are closer to findings of the new data sources.

SUSENAS. Initial results of the *SUSENAS* survey conducted in February 1998 show that employment *increased* in February 1998 by 4.5 million from a year earlier -- with almost all the new jobs in agriculture. Applying the GDP/employment elasticity model -- correlating unemployment to reduced output would instead suggest reduced employment of 11.5 million! These same *SUSENAS* data show that open unemployment rose from 5.1 percent in February 1997 to 6.4 percent in February 1998, as compared to 15.1 percent projected by the model. Impact of the crisis on participation in the labor market is shown in Table 10 where the first rows show data

[8] The Indonesia Observer, Oct. 9, 1998

from SUSENAS in Feb 1998 shows total employment rates among the population aged ten and above rising 1 percent, from 56 to 57 percent of the population.

Table 10: Employment rates of the population aged 10 and above				
	1994	1997	1998	Change, '97 to 98
Total	57.6	56.3	57.4	1.1
Urban	50.4	50.5	52.2	1.7
Rural	61.5	59.4	60.2	0.8
Source : SUSENAS				

100 villages. The data from the 100 village study show employment rates of the labor force and employment rates in non-agricultural activities and an indicator of open unemployment. Open unemployment in this sample is recorded at 1.6 percent of the population, the main informational value of which is that this indicator is a completely worthless indicator of the state of the labor market.

The labor force participation of the population aged 10 and above has fallen by less than a percentage point (-.7). This is a combination of a fall in employment of men and a slight rise for women.

Table 11: Employment and unemployment rates by gender			
	1997	1998	Change
Open unemployment			
Total	1.5	1.6	0.0
Employed (bekerja)			
Total	57.5	56.9	-0.7
Males	74.2	72.4	-1.8
Females	40.5	40.8	0.3
Work more than 35 hours			
Total	49.4	56.9	7.5
Males	58.8	64.5	5.8
Females	31.9	42.9	11.0
Source: 100 villages survey, various tables.			

What is perhaps somewhat more surprising is that those reporting working more than 35 hours a week has also increased, by a considerable amount.

IFLS 2+. The IFLS2+ has slightly different data on employment in that it breaks This data indicates that participation in the labor force (measured as those that earned income in the previous year) for both males and females at younger age (15-24) has increased substantially. On the other hand, older men and women have experienced a significant decline in labor market participation.

Table 12: Labor force participation (earned income in the year)			
Age group	1997	1998	Change 1997 to 1998
Males			
15-24	35.3	41.2	5.9
25-34	89.5	88.6	-0.9
35-44	96.3	91.8	-4.5
45-54	93.4	89.4	-4
55-64	83.6	73.8	-9.8
65+	61.3	56.8	-4.5
Females			
15-24	21.9	25.4	3.5
25-34	39.1	38.6	-0.5
35-44	46.8	48.9	2.1
45-54	45.2	45.5	0.3
55-64	36.4	35.7	-0.7
65+	28.3	26.9	-1.4
Source: IFLS 2+, Table 4.1			

C. Sectoral and Regional Shifts in Employment

SUSENAS. The new data from the census show huge shifts in the composition of employment between rural and urban, and between "formal" and "informal" sectors. For instance, employment in industry fell 13 percent, in Finance 7.3 percent, in electricity 27 percent, in construction 2.6 percent. However, some of these sectors are relatively small parts of the labor force. So for instance, although employment in finance declined 7.3 percent, since it was only .7 percent of the labor force this only reduced jobs in that sector by .1 percent of the total labor force. Agriculture more than expanded to pick up the slack.

Table 13: Sectoral composition of the labor force, comparing February 1997 with February 1998						
Sector:	1997		1998		Percentage change	Change are percent of 1997 labor force
	Number ('000)	Percent	Number ('000)	Percent		
Agriculture	36711.7	44.5%	42279.1	48.6%	15.2%	6.8%
Mining	737.8	0.9%	805.1	0.9%	9.1%	0.1%
Industry	9418.4	11.4%	8191.2	9.4%	-13.0%	-1.5%
Electricity	348.6	0.4%	254.1	0.3%	-27.1%	-0.1%
Construction	3963.4	4.8%	3606.5	4.1%	-9.0%	-0.4%
Trade	14613.5	17.7%	15032	17.3%	2.9%	0.5%
Transport	3835.1	4.6%	3734.6	4.3%	-2.6%	-0.1%
Finance	696	0.8%	645.2	0.7%	-7.3%	-0.1%
Services	12153.7	14.7%	12449.9	14.3%	2.4%	0.4%
	82478.2	100.0%	86997.7	100.0%	5.5%	5.5%
Source: SUSENAS, Table 2a						

In terms of the "formality" of the employment there is no explicit data. But table 14 shows the distribution of employment by category. It shows that employment as "employees" declined by roughly 2 percent of the labor force and that what caused the increase in the labor force was "self-employed" workers in urban and rural areas and an increase in "family" workers in rural areas. This is reflects the sectoral shift above.

Table 14: Distribution of the labor force by type of employment

	Urban			Rural		
	Share of 1997 labor force	Percentage growth	Growth as % of labor force	Share of 1997 labor force	Percentage growth	Growth as % of labor force
Self-employed (Berusaha sendiri)	6.6%	25.5%	1.7%	13.3%	25.4%	3.4%
Self-employed with workers (Berusaha dibantu buruh)	5.3%	-13.1%	-0.7%	20.0%	4.6%	0.9%
Employer/Employee (Buruh/Karyawan)	18.8%	-4.9%	-0.9%	16.6%	-6.0%	-1.0%
Unpaid family workers (Pekerja tak dibayar)	2.7%	-2.3%	-0.1%	16.7%	13.1%	2.2%
Total	33.4%	0.0%	0.0%	66.6%	8.2%	5.5%

Source: SUSENAS

D. Wages, Real and Otherwise

Individual survey variables in the Kecamatan Crisis Impact Survey show an i*ncrease in nominal wages*. More than 85% of the *mantri tani* reported that wages had increased for hoeing. Responses also indicate that there has been a less dramatic increase in harvesting wages[9]. These imply that while assumption of no change in nominal income are far off the mark[10], given of the data about price changes suggest there have been substantial real wages declines in many areas. However, on the revenue side, there has been an intermediate increase in non-rice output prices. *Mantri tani* responses also point to some increase in farm profitability (more than 50% answered that farm profits had increased compared to last year, although the mean response was no change), indicating that increases in output prices have outweighed rising labor costs in some areas.

The one set of data that do not jibe with this story (either in terms of regional patterns or the magnitude of the shock) are the rural wage data. BPS collects data on agricultural wages, which many people suspect for a variety of reasons (e.g. small samples, reports on "typical" wages no actual). These data show *large* falls in real wages for unskilled agricultural wages. National CPI inflation has been 81 percent between December and August. This would imply real wage losses between 30 and 40 percent in most provinces. This is certainly appears inconsistent with the

[9] Data from BPS indicate that agricultural wages have increased 30-35% on average for different tasks, with increases ranging from 10 to 50% in different provinces.

[10] One recent publication for instance, placed the numbers in poverty in Indonesia at nearing 100 million in 1998, which essentially assumed that nominal incomes would remain unchanged while prices climbed 80 percent. This is obviously both analytically unsound and empirically false.

evolution of expenditures, especially among HH headed by an unskilled worker, but perhaps the expenditure data are reflecting more HH members working and higher work hours.

The regional pattern does no seem to be consistent with either the Kecamatan or IFLS data, with smaller wage increases in East Java for instance, than in parts of Sumatera and Sulawesi.

Table 15: Daily nominal wages in various agricultural tasks (hoeing, weeding, planting), December and August 1998.

	% change	Dec-97	Aug-98
		Avg. of 3 agricultural tasks	
West Sumatra	21.08%	3091	3742
West Java	21.25%	3517	4264
Central Java	21.36%	2370	2876
South Kalimantan	24.31%	4044	5028
Lampung	24.59%	2256	2811
South Sumatra	26.16%	2404	3033
DI Yogya	26.91%	1333	1691
North Sumatra	29.89%	3349	4350
South Sulawesi	29.93%	2597	3374
East Java	32.80%	3428	4553
NTB	35.23%	3004	4062
Bali	38.71%	3940	5465
DI Aceh	54.47%	3021	4666
North Sulawesi	61.11%	4703	7577

Source: BPS, various publications

E. Implications for Employment Creation Program Design

In an economy like Indonesia "unemployment" is not the right lens to see the problem with collapsing labor demand, rather the focus should be on real wages, particularly the wage for unskilled labor and on total earnings of households.

Imagine two types of economies, one with perfectly fixed wages and one with perfectly flexible wages. In the economy with fixed wages a collapse in labor demand will mean workers will be laid off and will be unable to bid down the wage and hence will want to work at the going wage, but will be unable to do so. In this sense "unemployment" is a disequilibrium phenomena. In this case the brunt of unemployment will fall on those that are laid off. Many workers will continue to work at the same wage as ever while the earnings of those with no job will be zero so the suffering is born exclusively by those particular individuals who are unemployed. In this case the policy response to identify those individuals and raise their incomes.

In contrast in a market with flexible labor markets (e.g. few hiring and firing restrictions) and flexible wages (particularly real wages in an inflationary period) "unemployment" is not the problem but falling wages will be. That is, laid off workers will be able to bid down the wages of other workers such that everyone who wants to work at the going wage will be able to find employment. But, it may well be that the wage falls to very low levels. Especially in such an economy with little or no social security, large scale "unemployment" is just not feasible, people must work to survive

and the informal market absorbs the additional labor shed from the formal sector, but at lower and lower earnings.

And that is what the emerging data say. Employment rates, the proportion of the population in the paid labor force, are up. Unemployment rates are up only slightly. But this is not necessarily a good sign as working more is a coping mechanism as households are having more people work longer hours for less pay as a way of maintaining their incomes. The issue is sustaining the earnings of the poorest, not preventing lay-offs or providing "unemployment" insurance.

This implies that employment creation programs need not be targeted to specific individuals (as all are bearing the costs of reduced wages) but should be targeted to areas with depressed demand for labor.

Furthermore, this suggests that it is not desirable or possible to target employment programs based on data about "unemployment."

IV. EDUCATION

A. Forecast

There were also widely repeated forecast was that enrollment rate of school aged children would fall from 78 to 54 percent. This implies that one of five school aged children would with drop-out of school.

Now while this was often repeated as fact or a reliable forecast, the estimate was given as a guess of one official of what *might* happen *if* the crisis were severe and *if* nothing were done. Fortunately in this case something was done, the Bank and ADB supported a government launched a nationwide "Stay in School" campaign with an information program, scholarships to poor children in junior secondary school, and grants to schools to make up for lost revenue. What exact impact those programs had is hard to say, but it is clear that enrollment has not in fact fallen by anywhere near the amount feared.

There have been falls in enrollment, but nothing like the feared 24 percentage points, more like 4-5 percentage points. But this is no cause for complacency as any reversal in the schooling of children is a potentially irreversible waste that cannot be condoned. Moreover, the experience with the previous macroeconomic crisis was that the losses in enrollments began in the years after the crisis.

B. Primary versus secondary

In addition to the three sources above there is also a recent survey of schools themselves, tracking enrollments in schools over the last four or five years.

Kecamatan Crisis Impact Survey: The kecamatan survey asked only abut primary school. Nearly all respondents indicated that taking children out of *primary* school was not a common response to crisis impacts.[11] This result is further reinforced by the responses given by the school supervisors to the sector specific questions – almost 85% indicated that there had been no change or a reduction in the number of

[11] The common question did not differentiate between primary or secondary school students.

students that dropped out between Grade 3 and 4.[12] On average, school supervisors also indicated no change in the overall level of dropouts during the last school year (compared to the preceding year) or in the numbers of girls and boys that entered Grade 1 this school year (compared to last year).

However, for the latter there is some indication that in some areas there is a decrease in first-year enrollment rates, indicating that parents may be delaying school starts for younger children while letting older children continue.

100 Villages data. Table 16 shows the enrollment rates for ages 7-12 and 13-15 from the 100 villages data comparing 1994, 1997 and 1998. Strangely, the data indicate that there has been a substantial *increase* in the school enrollment rates of primary school aged children for both boys and girls.

Table 16: Enrollment rates at primary (7-12) and secondary (13-15) school ages

Age group	Gender	1994	1997	1998	Changes (percentage points)	
					1997 to 1998	94 to '98
Ages 7-12	Males	88.8	88.8	92.1	3.2	3.3
	Females	90.4	90.8	93.3	2.5	2.9
Age 13-15	Males	59.4	67.5	65.2	-2.3	5.8
	Females	58.4	70.6	65.2	-5.4	6.8

Source: 100 villages data, Table 06.A and Table 06.B

However, when we look at the 13-15 age group in the 100 villages data, school enrollment between 1997/98 and 1998/99 school years decreased by 3.3 percentage points in the 100 villages, with the fall substantially larger for girls than for boys. Interestingly, this still leaves enrollment rates in 1998 well above their levels in 1994.

IFLS 2+ data. The IFLS 2+ data has slightly different age breakdowns. They show do not break down into primary and secondary enrollment rates but divide children 7-12 year olds (essentially primary and lower secondary) and from youth and young adults 13-19 year olds (junior, upper secondary and beyond). For children enrollment rates declined by 1.1 percentage for boys and 2.8 percentage points for girls (but note that the absolute level is now equal for boys and girls). This suggests larger changes at this level than found in either the 100 villages (which suggested increases) or school survey below (which suggests no crisis induced change).

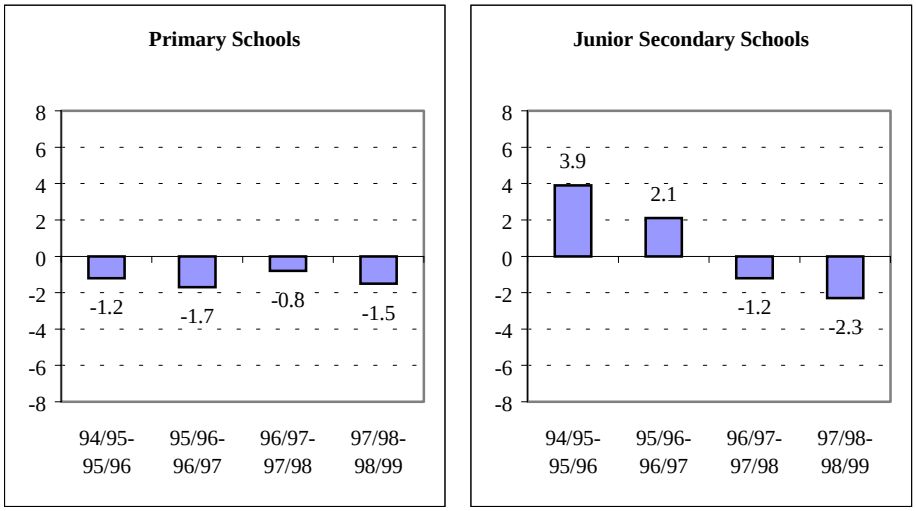
[12] Historically, dropout rates at the primary level are highest between these two grades. There was no difference in responses for girls or boys. Other data sources indicate the problem with drop out is at the junior secondary level and hence our data has little to contribute on this issue.

Table 17: Changes in enrollment rates by age groups and male-female				
		1997	1998	Change (percentage points)
Aged 7-12	Males	94.9	93.8	-1.1
	Females	96.6	93.8	-2.8
Aged 13-19	Males	61.6	56.8	-4.8
	Females	59.4	55.7	-3.7
Source: IFLS2+, Table 5.1 and Table 5.2				

The IFLS 2+ shows dramatic decreases in enrollments among youth and young adults. Enrollment rates dropped by 4.8 percentage points for males and 3.7 percentage points for females.

Educational survey. An additional source on education enrollment comes from a recently completely survey of schools, which examined the enrollments for 600 schools for the past five enrollment years. This data compares enrollment changes across years, with a focus on the most recent change from 1997/98 to 1998/99 school year where one would expect the "crisis impact".

Figure 3: Percentage change in the number of students enrolled



Overall enrollments at the *primary level* fell by 1.5 percent in 1998/99 ("crisis impact" year), but do not appear to be deviating from their past trend (Figure 3). Enrollments fell by similar, or even larger amounts in each of the three previous school years. Keep in mind that decreases in enrollments by school are consistent with rising enrollment *rates* of school aged children if either age cohorts are smaller due to falling population growth rates or with additional school construction.

There is some indication of increasing late enrollment at the primary level that suggests trouble down the road.

Overall at the *junior secondary* level there has been a decline in the number of students enrolled in the crisis year by 2.3 percent. This, is in contrast with primary school, is a much larger decrease than in previous years. However, it is a little

puzzling that the "change in the change" that is the decrease in the rates of growth precedes the crisis and that there was a decline of 1.2 percent the year *before* the crisis.

Summary: Primary versus Secondary. All of the data sources are consistent that the fall in enrollments is much larger at the secondary level than at the primary level. In fact, there appears to be either no decrease or a slight increase in enrollment rates at the primary level. There is a note of concern about increasing late enrollment of children, but difficult to assess the magnitude of that problem.

But, it has always been well known that the major problem with enrollment rates in Indonesia is the sharp fall off in enrollments as children, especially poor children, do not make the transition from primary to lower secondary school. In this sense it is not surprising that the observed response to the crisis is drop-outs at the junior secondary and higher, not the primary level.

C. Rural versus Urban and Regional Pattern

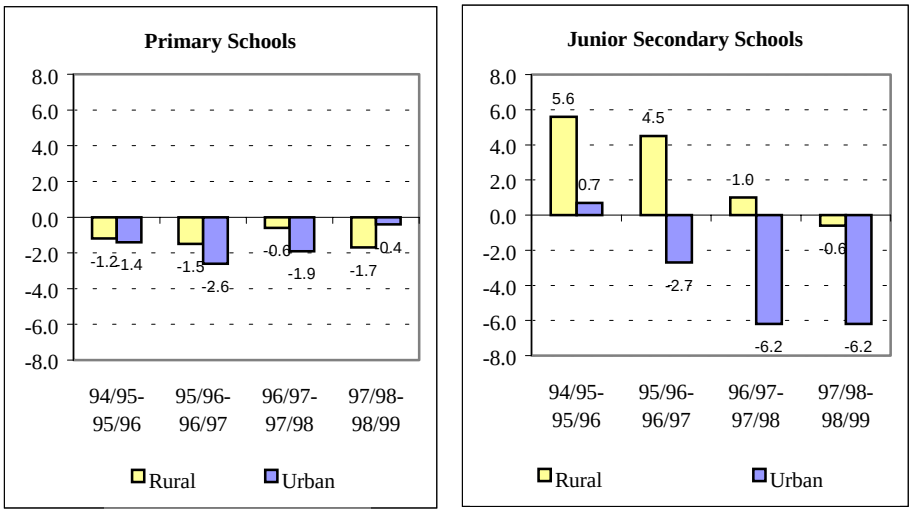
The various data sources are spotty in their coverage of rural-urban and regions. We focus first on the rural versus urban breakdown from the educational survey and then piece together information on the geographic distribution from the 100 villages and Kecamatan crisis impact survey.

Education survey data: Rural versus urban. The education survey gives the best information on the urban rural breakdown of changes in enrollment. There is no clear pattern in the data for primary schools. But for junior secondary schools there are two clear patterns, one which is quite puzzling.

First, there have been substantial reductions in enrollments in urban junior secondary schools. Moreover, as can be seen from table 18 enrollments *fell* in urban areas about six percent in the crisis year. Moreover, the crisis is even more evident in Jakarta than elsewhere, with junior secondary enrollments falling 8.6 percent (Table 20).

Of course, since this is school based (not household) data the declines in urban areas and relative stability in rural areas could be driven either by declines in urban populations of children or households migrate back to rural areas or by declines in enrollment rates among school aged children in urban areas.

Figure 4: Percentage change in the number of students enrolled in rural and urban areas



Second, and this is puzzling part, the decreases in the growth rate of enrollments seems to have happened the year *before* the crisis. That is, while enrollments grew in rural areas at 4.5 percent from school year 95/96 to 96/97 this was already a decrease in growth from the previous year of 5.6 percent growth. What is very puzzling is that while in the crisis year enrollment rates fell 6.2 percent, they also fell 6.2 percent in the previous year. Moreover, the growth rate declined by more (3.4 and 3.5 percentage points) in the two previous years than in the most recent, crisis year.

Table 18: Changes in enrollments in sampled junior secondary schools, by rural, urban and Jakarta

	Rural		Urban (incl. Jakarta)		Jakarta	
	Growth in Enrollment (percent)	Change in growth in enrollment	Growth in Enrollment (percent)	Change in growth in enrollment	Growth in Enrollment (percent)	Change in growth in enrollment
1994/95 to 1995/96	5.6		0.7		-0.8	
1995/96 to 1996/97	4.5	-1.1	-2.7	-3.4	-4.5	-3.7
1996/97 to 1997/98	1	-3.5	-6.2	-3.5	-5.1	-0.6
1997/98 to 1998/99*	-0.6	-1.6	-6.2	0	-8.6	-3.5
Source : Education Survey						

IFLS 2+ data. The IFLS 2+ data has similar patterns. Enrollment rates for youth and young adults 13-19 year olds (junior, upper secondary and beyond) dropped by 5 percentage points in urban areas, while it is only declined by 1.1 percentage for rural.

Table 19: Changes in enrollment children 13-19 years by rural and urban			
	1997	1998	Change
Urban	66.9	61.9	-5.0
Rural	53.9	52.9	-1.1
Source: IFLS2+, Table 5.2			

Regional Patterns

Education Survey data. The data from the educational survey can be broken down into provinces and rural/urban regions, but doing so produces quite small samples of schools and hence the results need to be taken with a great deal of caution. Nevertheless, the provincial and urban/rural desegregation suggests a common pattern, that some areas are doing relatively well (e.g. rural areas of South Sulawesi, rural Maluku) while others, particularly urban areas like Jakarta are doing badly.

Table 20: Data from education survey by region and rural urban			
		Rural	Urban
South Sulawesi	Number of Schools	12	10
	96/97 to 97/98	-1.5	-7.7
	97/98 to 98/99	8.1	-3.4
Maluku	Number of Schools	11	8
	96/97 to 97/98	-1.6	-0.1
	97/98 to 98/99	-0.7	-5.7
North Sumatra	Number of Schools	13	11
	96/97 to 97/98	0.9	-7.7
	97/98 to 98/99	-2.4	-2.3
Central Java	Number of Schools	15	9
	96/97 to 97/98	2.1	-7.5
	97/98 to 98/99	-0.4	-6
Jakarta	Number of Schools		32
	96/97 to 97/98		-5.1
	97/98 to 98/99		-8.6
Source: Education Survey			

100 villages. The 100 villages data only divides into the three regions, but nevertheless it is interesting to see that the major falls in enrollment rates in the 13-15 age group are happening in Java-Bali, then the “eastern” part, with a very small decrease recorded in the “western” islands.

Table 21: Enrollment rates of children aged 13-15, by region					
	1994	1997	1998	Change 1997-1998	Change 1994-1998
Java-Bali	53.44	65.93	59.55	-6.38	6.11
Off J-B-West	58.64	68.79	67.99	-0.8	9.35
Off J-B-East	67.13	73.24	70.9	-2.34	3.77
Off Java-West: Riau, Lampung, Off Java-East: East Nusa Tenggara (NTT), East Kalimantan, SE Sulawesi Source: 100 village survey					

Kecamatan Crisis Impact Survey. The map in Figure 5shows the distribution of the index of the severity of *primary* school drop-out across regions across kabupaten/kotamadya. Remember that on average drop out at the primary level in this survey was typically not a very severe problem so the variation across the categories between most and least hit is perhaps not as severe. Nevertheless, the distribution does appear consistent with the other regional data sets are showing. Areas (especially rural) areas in South Sulawesi, Sumatra (except for North) and Maluku are doing relatively well while the Eastern Islands, North Sumatra, and parts of Java (especially Central and West) and the cities are faring badly.

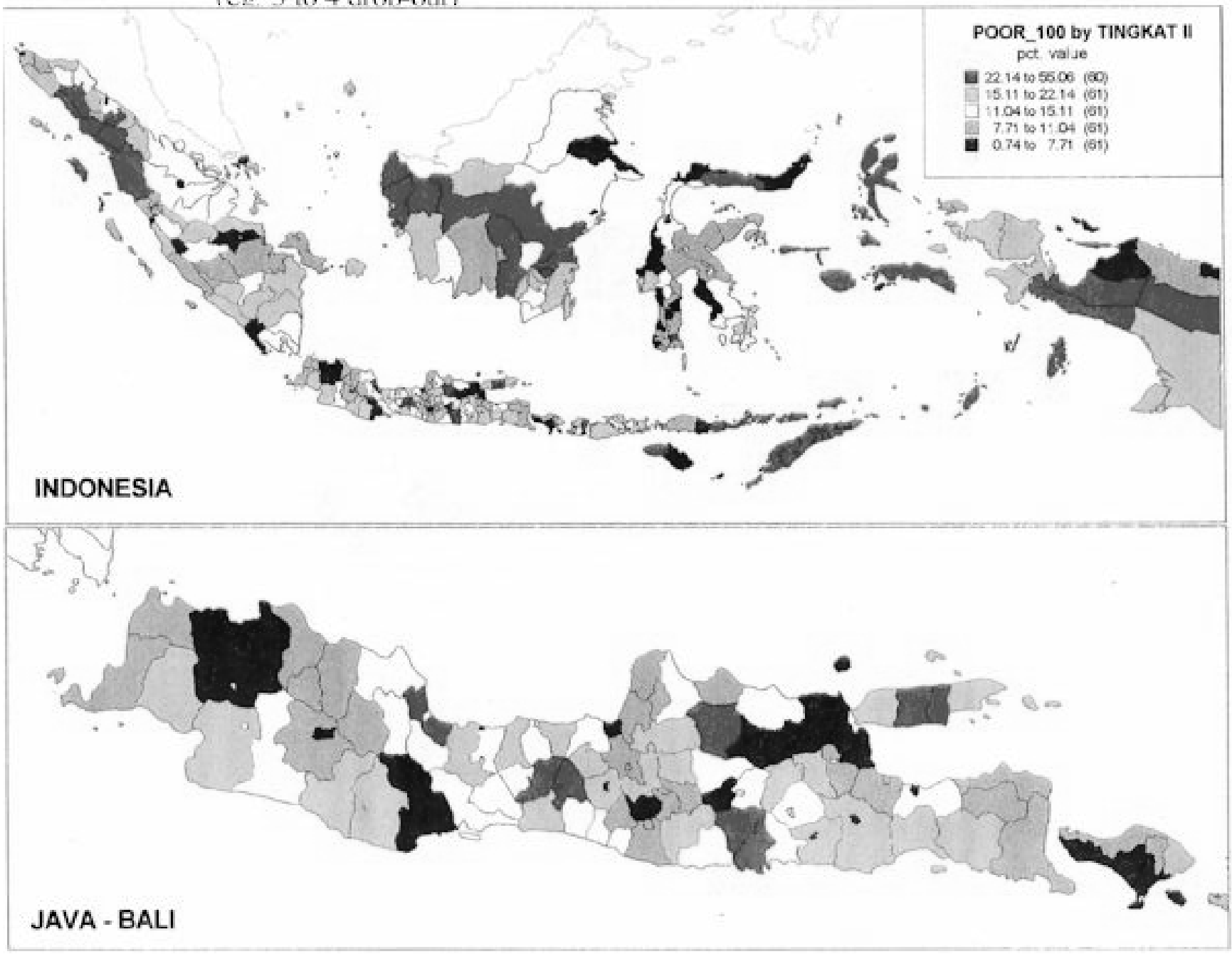
D. New data : Rich versus Poor

IFLS 2+. The IFLS is the only source that can show a relationship between the level of household expenditures and the change in the enrollment rates. The household enrollment rates are shown by their 1997 (pre-crisis) level of household per capita expenditures. For children aged 7-12 the data shows an 4.9 percentage point fall in enrollment for bottom quartile compared to no change or slight decreases for other expenditure groups.

For youths and young adults the results are different, in that the fall in percentage points is nearly the same for the bottom two quartile groups, 5.1 and 5.5 percentage points with much smaller falls for the higher quartiles. The percentage fall does follow in the income pattern closely.

Table 22: Change in enrollment rates by income group							
Quartile by HH per capita expenditures in 1997	Children Ages 7-12			Youths and Young Adults,. Ages 13-19			
						Change 97 to 98	
	1997	1998	Change 97 to 98	1997	1998	Percentage point	% change
I	93.1	88.2	-4.9	51.5	46.4	-5.1	-9.9%
II	96.3	96.8	0.5	64	58.5	-5.5	-8.6%
III	97	95	-2	62.1	61.1	-1	-1.6%
IV	98.4	98.4	0	66.9	64.6	-2.3	-3.4%
Source: IFLS 2+, Tables 5.1. and Table 5.2.							

Figure 3: Index of Changes in Primary Education Enrollment
(eg. 3 to 4 drop-out)



Reconciling these results suggesting that the falls in enrollments were the lowest amongst the rich with the results above that the greatest proportional losses in income came from the higher groups raises two important points about interpreting various indicators of the crisis.

First, particularly for indicators that are discrete (e.g. enrolled or not enrolled in school, eat two meals or more than two meals) there may be absolute thresholds. Suppose all families with income greater than a certain, quite low, level eat three meals a day while those below eat three meals a day. Then even a large shock to the rich will not show itself in an indicator that relies on eating a certain number of meals as they will absorb relatively large declines in their incomes before ceasing to eat three meals a day. Similarly with schooling, the rich will absorb large income losses and cope through other mechanisms before undertaking a desperate and irreversible action like withdrawing their children from school. In contrast, many of the poor may already be near the threshold and hence even a moderate shock may push them over the edge[13].

This means that one cannot use an indicator such as a change in enrollment as a proxy for the *general* impact of the crisis as it will depend both on the magnitude of the shock and the pre-existing level of income.

The second point is slightly more subtle, and has to do with the possibility of asymmetric responses to shocks and the impact of changes versus "churning." That is, suppose that enrollment and drop-out decisions are more or less irreversible. Furthermore, suppose that the drop-out decision is influenced by current income (in addition to lifetime income and future expectations). Now suppose that some households income increases while other households income decreases, but with no change in *average* income. It still will be the case that this churning will produce declines in enrollments, as the 16 year old who dropped out two years ago when his family was poorer is less likely to reenroll in school due to a positive income shock than the 16 year old is likely to drop-out when his family faces a negative shock. This asymmetry will mean that increased levels of churning of household income can lead to large changes in some indicators (like enrollments) even if the average or typical income does not change.

E. Implications for Response Program Design

The relatively small, and regionally concentrated, declines in enrollments are consistent with the varied nature of the crisis. Clearly if the shock fell primarily on the rich then one would not expect falls in primary or even lower secondary enrollments as even large falls in income would not bring these households to a threshold of withdrawing their children from school.

Hopefully at least some small part of the smaller magnitude of these declines than what was forecast is also a reflection of the success of the Bank/ADB "stay in school" campaign, even though the actual scholarships had not in many cases been disbursed by the time this data was collected. However, there is no evidence yet on program impact.

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[13] This is obvious in a technical sense from any non-linear model predicting a binary outcome (such as probit or logit regressions). The marginal impact of a given change depends not only on the magnitude of the change but also on where in the distribution function the change is evaluated.

The emerging data suggest that the strategy pursued so of scholarships and block grants is likely the right strategy. The fact that the losses are the largest amongst the poor and at the junior secondary and secondary school levels, suggesting that a strengthening of the campaign to retain students in school through targeted scholarships can be effective. However, the targeting of the program is a major issue, as it currently is targeted based on essentially "pre-crisis" poverty information (as that was all that was available) but needs to be sure it is also reaching new crisis areas like poorer sections of hard hit urban areas.

V. Health and nutrition

Summarizing health and nutrition status is complex as there are a variety of different indicators of health (self reported morbidity, visits the medical practioners, reports on specific disease conditions, etc.) and of nutrition (weight for age, birth weight, deficiencies in specific nutrients, etc.) and we do not have space to do it justice here.

At this stage we will make only two observations. First, that a collection of health and nutrition indicators from the IFLS 2+ and from SUSENAS '98 show how complex it will be to investigate impacts. Overall these data are not inconsistent with the evidence above of a complex and heterogeneous crisis, with pockets of serious health impacts. Second, there is clear evidence of a cutback in visitation rates to *public* clinics, but how exactly the interpret that is far from clear.

Indicators of health and nutrition

Table 23. derive from the IFLS 2+ data, shows a mix of indicators with a variety of patterns. Overall there are some indicators that show improvement, others that show worsening, but overall the changes are small in either direction.

Table 23: Variety of indicators of health and nutritional status			
	1997	1998	Change
Nutrition			
Height for age (% of children under 9 with z score <-2)	50.68	45.66	-5.02 (improvement)
Weight for height (% of children under 9 with z score <-1)	35.56	35.20	-0.36 (improvement)
Body mass index of adults (% of population with kg/meter squared<18)	14.05	14.69	0.63 (worsening)
Inadequate Hemoglobin (percent with level less than 12 mg/dl)	34.75	30.83	-1.66 (improvement)
Evaluated health status			
Number of seconds to move from sitting to standing 5 times	7.6	5.9	-1.64 (improvement)
Overall evaluation of health status by nurse	5.94	5.98	0.04 (slight improvement)
Self reported health status			
% reporting themselves in poor health: adults	13.64	13.83	0.19 (slight worsening)
% reporting their children in poor health	6.96	8.3	1.34 (worsening)
			0
% reporting that they had been ill	21.01	21.95	0.92 (slight worsening)
% reporting their children had been ill	25.56	24.76	-0.8 (slight improvement)
Source: IFLS2+, Table 6.7			

The data from the 1998 SUSENAS (collected relatively early in the crisis) shows some changes in self-reported morbidity.

Table 24: Self reported morbidity in SUSENAS						
Source of Income:	Morbidity			Disruptive Morbidity		
	1995	1998	Change	1995	1998	Change
Indonesia	25.4	25.5	.1	9.6	10.6	1.0
Financial services	21.9	25.1	3.2	6.4	9.2	2.8
Construction	24.8	26.5	1.7	9.5	11.2	1.7

The other data sources, such as the “100 villages” and other specific nutritional data show similar complex patterns, with some indicators improving and others worsening. Given the complex and regionally heterogeneous nature of the crisis itself, this is not surprising.

One additional point the data agree on is that usage of public clinics has declined. In the IFLS 2+ data the usage of publicly run health services declined by 1.8 percentage points among adults and by a huge 7.1 percentage points among children. SUSENAS

data comparing 1998 with 1995 (*not* 1997) show similar declines concentrated among public services. The concentration among public services raises the question as to whether these declines are driven by falling incomes and reduced ability to pay (in which case one would perhaps expect to see declines in the private services and a shift to public services). An alternative is that the budget cuts affected the perceived quality of the public clinics almost immediately (e.g. reduced inventories of drugs) or a pass through in public clinics of costs and hence the decline in demand is due to these factors specific to the public sector.

Table 25: Use of health services, particularly public health services

	1997	1998	Change
% of Adults using any services	14.4	13.3	-1.1
% of Adults using any public services	7.2	5.4	-1.8
% of children using any services	25.8	19.9	-5.9
% of children using public services	20.3	13.2	-7.1
SUSENAS data on contact rates in the population			
	1995	1998	Change
Total	14.6	12.1	-2.5
Private	7.0	6.5	-0.5
Public	7.6	5.6	-2.0
of which: Health centers	6.4	4.5	-1.8

VI. Conclusion

Many reports on the crisis in Indonesia suggest that the impact has been universal and devastating, severely affecting rural and urban, poor and rich, modern and traditional sectors, and almost every region. The BPS has reported that the percentage of people living below the poverty line in mid-1998 was around 40 percent or about 80 million people: an increase in the poverty rate of almost 30 percentage points in a year. In early October, 1998 the Manpower Minister stated that one in five Indonesian's was currently unemployed and that this would rise to 20 million people (22 percent of the workforce) by the end of the year.[14] There were also widely repeated forecast was that enrollment rate of school aged children would fall from 78 to 54 percent. This implies that one of five school aged children would with drop-out of school. Those reports have motivated of new survey to assess the impact of the crisis on many faces of the Indonesian economy.

Preliminary findings suggest that, indeed, the Indonesian crisis has affected the life of many Indonesians. There is no doubt one of the most serious crisis that Indonesia has faced in 30 years. However, the impact has been very heterogeneous and has been less dramatic than early predictions suggested. While many households are enduring difficult shocks, other are benefiting. Particularly, each of the numbers cited above are off, by roughly *an order of magnitude*.

The finding has potential implications in the allocation of resources, and the need for regular monitoring efforts for better targeting.

Designing specific programs that respond to the crisis is complicated and must balance several objectives, but this data at least suggest that crisis response efforts should target those areas with the relatively largest drops in welfare levels

[14] The Indonesia Observer, Oct. 9, 1998

It is important to note that the magnitude of crisis impacts does not correlate with pre-crisis levels of poverty. This result points to the need to reassess data and assumptions about poverty distributions. While difficult to draw in practice, there is a analytical distinction between targeting for the critical targeting long term poverty programs. In designing longer term poverty interventions there is a deeper, and resolved, question of whether the crisis has changed fundamental dynamics and hence calls for a rethinking of long-term poverty programs or is merely a temporary shock.

In terms of the kinds of interventions that should be designed for the crisis this requires more detailed analysis of the cost-effectiveness *in practice* of various types of interventions. But there appears a need for continued efforts to channel rice and other basic foods to needy areas, workfare programs, especially in urban areas, efforts to maintain health services, and continuation of the scholarship program.