

possibility that differences are due to seasonal variation.

Like previous studies, our research finds no evidence of severe social impacts. There is little change in school attendance; child labour force participation has actually declined; and there is little evidence of a deterioration in children's health. It is of course possible that the crisis will have longer-term effects that are not captured in the current data. This may be true in particular of health status.

Legitimate early concerns about severe social impacts resulted in a wide-ranging Social Safety Net (*Jaring Pengamanan Sosial*, JPS) program being put in place. This consists of a scholarships program, a food program, an employment creation program, subsidised credit, a health program and a nutrition program. The limited social impacts observed in the data may be attributable to these programs but could just as plausibly be due to a variety of other factors. Some detail on a few of these programs is given below but we do not attempt to assess them explicitly here.³

DATA

The data from the 100 Villages Survey cover 120 households in each of 100 villages across Indonesia. The survey is conducted by the Central Statistics Agency (BPS) and funded by UNICEF. The villages are located in 10 districts (*kabupaten*), spread across eight of Indonesia's then 27 provinces.⁴ They were chosen to represent different types of villages: 'poor' and 'non-poor', settlements in Java and the Outer Islands, in east and west Indonesia, and in urban, rural, coastal and inland areas. However, the survey was not designed to generate a nationally representative sample and focuses disproportionately on rural and relatively poor areas. It is therefore not appropriate to generalise the specific results to the country at large. The school

attendance rates calculated here, for instance, should not be thought of as national attendance rates but rather as attendance rates in the villages studied. There is no reason to expect, however, that they would differ substantially from those of many other villages around Indonesia.

The first round of the survey was conducted in 1994.⁵ Further rounds were conducted in May 1997, August 1998, December 1998, May 1999 and August 1999.⁶ The data can in theory be merged across time to form a panel, because in each round the majority of households from the previous round were re-interviewed. In this paper we do not attempt to exploit the panel nature of the data, for a number of reasons. First, merging the data across rounds is not easy. It is necessary to match households manually using the village of residence and the name of the household head. This is very time consuming and at the time of writing only the May 1997, August 1998 and December 1998 rounds had been matched successfully. Second, not all households were tracked across time. Of the 12,000 households interviewed in May 1997, only 8,142 were re-interviewed in August 1998, and only 6,201 of these appear again in the December 1998 data. The merged sample would be even smaller if it included the later, May 1999, round – and significantly smaller than the original sample. There are also legitimate concerns about sample attrition bias. The sample would remain representative if those households that were followed were chosen randomly. Although this was part of the initial sample design, it is not clear that this was followed in practice. It is plausible that the households who appear in the matched sample are those that were easier to track and so may have differing characteristics from those who left the sample.⁷ By using the entire sample

in each round (that is, not restricting our attention to the merged households) we avoid a large part of this problem.⁸

The 1997-1998 survey provides information both on the household in which the child lives and on the individual characteristics of the child. Information is gathered on the demographic attributes of the interviewees, as well as on education, health and family behaviour, migration, labour market activity, socio-economic status and crime. The post-crisis surveys focus to a greater extent on the living standards of households, and gather information on how they were coping with the effects of the crisis.⁹

Finally, it should be noted that in addition to the financial crisis, Indonesia was suffering from a severe El Niño-induced drought from April 1997 to April 1998.¹⁰ Thus the impacts examined below may best be considered the result of *kristal* – the ‘total crisis’, incorporating both financial and weather effects. To the extent that the drought reduced incomes and work opportunities, one would expect it to have had an effect on educational, health and labour market outcomes similar to that of the financial crisis. Its impact on health could possibly be more severe, as the drought directly affected households’ ability to produce their own food.

The comparisons of the May 1997 and May 1999 data are argued here to be the most informative because the seasonal component that exists when comparing different points in the calendar year is removed. It is true that May 1997 falls within the drought period, but as it was very early on in the drought, this is unlikely to severely bias our estimates of the impact of the crisis. The findings presented here are also consistent with those from data which extend back to the pre-drought period.

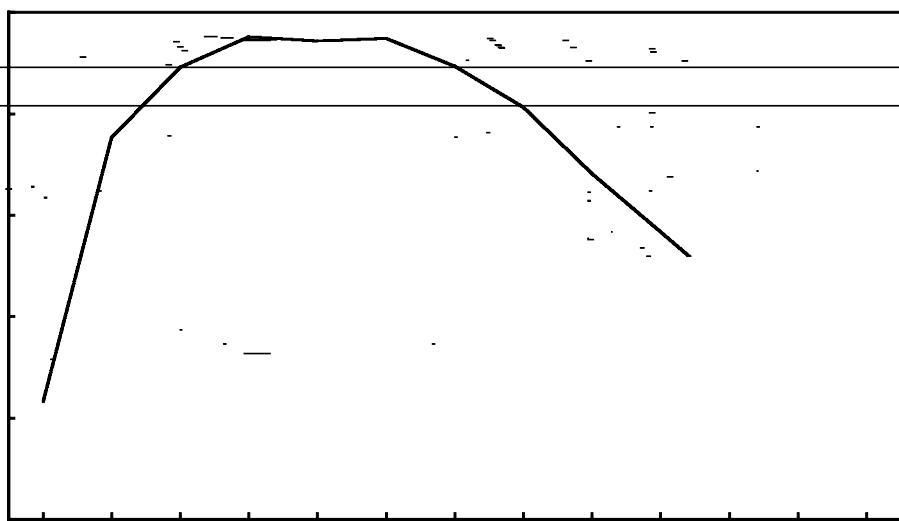
RESULTS

Educational Outcomes

Table 1 shows attendance rates by school level for each of the survey rounds. Children are designated as being of primary school age if they are 6–12 years

TABLE 1 *School Attendance Rates by Level of Schooling, 1997–99*
(%)

	May 1997	Aug 1998	Dec 1998	May 1999
Entire sample				
Primary (6–12 years)	80.4	87.4	86.4	81.8
Lower secondary (13–15 years)	69.0	65.2	66.7	69.7
Upper secondary (16–18 years)	33.1	31.5	32.2	34.3
Urban/rural attendance				
Primary				
Urban	84.8	90.4	88.7	84.4
Rural	79.4	86.7	85.8	81.1
Ratio	1.07	1.04	1.03	1.04
Lower secondary				
Urban	80.6	77.8	80.0	80.9
Rural	66.0	61.9	63.3	66.8
Ratio	1.22	1.26	1.26	1.21
Upper secondary				
Urban	47.6	50.7	49.4	53.4
Rural	28.6	25.8	26.8	28.5
Ratio	1.66	1.97	1.84	1.87
Male/female attendance				
Primary				
Male	79.1	86.5	85.5	81.1
Female	81.8	88.4	87.4	82.4
Ratio	0.97	0.98	0.98	0.98
Lower secondary				
Male	67.5	65.1	66.4	68.4
Female	70.6	65.2	67.1	71.1
Ratio	0.96	1.00	0.99	0.96
Upper secondary				
Male	34.7	32.5	33.1	34.4
Female	31.5	30.5	31.2	34.2
Ratio	1.10	1.07	1.06	1.01
Outer Islands/Java–Bali attendance				
Primary				
Outer Islands	80.4	87.1	86.2	81.9
Java–Bali	80.5	87.8	86.6	81.6
Ratio	1.00	0.99	1.00	1.00
Lower secondary				
Outer Islands	71.3	69.7	69.5	71.2
Java–Bali	65.9	59.6	63.2	67.7
Ratio	1.08	1.17	1.10	1.05
Upper secondary				
Outer Islands	35.6	34.3	34.9	34.9
Java–Bali	29.9	28.2	29.1	33.6
Ratio	1.19	1.22	1.20	1.04



Molyneaux and Brooks (2000) argue that the dip in August 1998 could be consistent with stable enrolments. Enrolment occurs at one point in the calendar year. The cohort of children who are 13 in August (and thus classified in table 1 as being in lower secondary school) has a greater proportion in higher grades than the cohorts who are 13 years old in May and December. This would lead one to expect lower school attendance in the August round even in the absence of the crisis.¹²

The upper secondary figures show a similar, albeit smaller, dip from 33% in May 1997 to 32% in August 1998. Upper secondary attendance had increased to above its pre-crisis level by May 1999 (34%). These changes are very small and so could just reflect random measurement error.

There are a number of other sources of information on school attendance. The nationally representative National Socio-Economic Survey (Susenas), conducted annually in February by the BPS,

is the most comprehensive source of information on enrolment rates. The Susenas data reveal only a slight decline in enrolments from 1997 to 1998 at the primary and junior secondary levels and an increase at all three levels over their pre-crisis levels by 1999 (Jones, Hagul and Damayanti 2000; Pradhan and Sparrow 2000). This pattern also appears in the Ministry of Education's own enrolment data.

The Indonesian Family Life Survey (IFLS) is a further source of information on school enrolments.¹³ The IFLS is a panel survey. The first round was conducted in 1993/94 and the second just before the crisis in 1997/98. A subsample was re-interviewed after the onset of the crisis in late 1998 to allow an assessment of its impact. Frankenberg, Thomas and Beegle (1999), in their analysis of the IFLS data, similarly find much smaller declines in enrolments than were originally feared, but larger declines than are evident from the Susenas and from the Ministry of Education's data.¹⁴

In magnitude, the initial dip in lower secondary school attendance shown in the 100 Villages data is larger than that in the Susenas but smaller than that in the IFLS.¹⁵ The pattern for upper secondary attendance is consistent with the 1999 Susenas figures.

The Ministry of Education also releases data on continuation rates. They show that continuation rates from primary to secondary school increased from the late 1980s and then fell in the 1996/97 school year and again in the 1997/98 school year (Jones, Hagul and Damayanti 2000; Booth 1999). The fall in 1996/97 occurred before the onset of the crisis. It may have been due to the drought, but this seems unlikely given that the drought started only late in the school year. Jones, Hagul and Damayanti (2000) have questioned the reliability of these data.

Table 1 further disaggregates school attendance figures to examine changes by urban/rural status, sex and geographic location. At primary and lower secondary levels, similar patterns are observed for rural and urban areas. At the upper secondary level, rural areas lost ground relative to urban areas from 1997 to 1999. The large increase in urban school attendance at the upper secondary level may be attributable to the lack of work for children in this age group in the cities, whereas in the rural districts children can be absorbed into self-employment on farms. The August and December urban/rural comparisons are likely to be influenced by seasonality in the agricultural sector. These findings are slightly at odds with those of some previous studies, which tend to show declines in enrolments in urban areas at the upper secondary level. In contrast, the Susenas data do not reveal any significant difference between changes in enrolment rates in rural and urban areas.

The figures by sex show that the decline in attendance at the lower secondary level in August and December 1998 was greater for girls than for boys. By May 1999, however, attendance for both sexes was back to pre-crisis levels. At upper secondary level girls had actually gained on boys by May 1999.¹⁶

At the lower secondary level, the initial decline in attendance in 1998 is almost entirely within Java-Bali, although by May 1999 school attendance in these provinces had increased relative to the Outer Islands. This was also the case at the upper secondary level.

Figure 2 presents changes in school attendance rates by per capita expenditure quintile and school level for May 1997 and May 1999.¹⁷ At the primary school level there is little difference across the quintiles. At the lower secondary level, attendance drops for children in the higher expenditure quintiles, but increases for those in the lower quintiles. This may reflect the larger room for increases among children in the lower quintiles. It is also consistent with the greater adverse impact of the crisis on households at the upper end of the expenditure distribution. The IFLS shows a quite marked decrease in enrolments among poorer children which is not evident here. The 100 Villages Survey results are, however, consistent with the Susenas as reported in Jones, Hagul and Damayanti (2000). They are also consistent with higher income earners being more mobile: households that move are less likely to put their children back in school. A similar pattern is apparent at the upper secondary level, where school attendance rates drop only in the upper quintile of the distribution.¹⁸

Coping Mechanisms. In addition to school attendance figures, the 100 Villages Survey provides information on how households coped with the crisis. For instance, in the post-crisis period

households were asked whether they had resorted to withdrawing children from school or sending them out to work.¹⁹ Table 2 shows that only a very small number of households withdrew their children from school (3% in August 1998, declining to 1% in May 1999). A larger percentage reported sending children out to work (about 10% in each year). Since we do not have any pre-crisis figures with which to compare these percentages, we do not know if this is more or less than would have occurred before the crisis. It may be that these children would have been removed from school or made to work regardless of the crisis. The school attendance figures discussed above and the child labour force participation rates that follow suggest that these are not large

TABLE 2 *Educational Costs, Attitudes and Coping Mechanisms of Households, 1998–99*
(%)

	Aug 1998	Dec 1998	May 1999
Coping mechanism			
Withdrew child from school	2.8	1.9	1.0
Sent child out to work	11.3	11.4	10.1
Experienced difficulty in paying for:			
Fees	28.3	22.7	24.0
Books	41.0	41.8	35.0
Transportation	9.1		

school expenses could be due to the introduction of the JPS scholarships program in the 1998/99 school year. This program is ongoing and seeks to provide Rp 10,000 per month to 6% of primary school students, Rp 20,000 per month to 17% of lower secondary students and Rp 30,000 per month to 10% of upper secondary students. Students from poorer socio-economic backgrounds are targeted, with payments more than covering the cost of their tuition. The targeting is accomplished by allocating more scholarship funds to poorer regions, and selecting the poorer students from within those regions.²⁰

Households were asked in August and December 1998 how they had gone about overcoming difficulties in paying school fees.²¹ The possible responses were to delay payment, borrow, request help, sell or pawn assets, find additional work, obtain a letter of exemption from the village head and 'other responses'. The figures do not vary much between the two periods, with 16% of those who delay payment. The number of households who reported doing so dropped six percentage points from 33% in August to 27% in December. Interestingly, this is the exact proportion of households that reported receiving a scholarship in that year.

For children who were not in school at the time the survey was conducted, questions were asked about the reasons for non-attendance. Changes in the range of possible responses to the question make interpretation of the results difficult. Nevertheless, consistent with

children from school, however, and it appears that the crisis may be dissipating.

Labour Force Participation

The 100 Villages Survey enquired about the time allocation of all householders aged 10 years and over. Individuals were specifically asked whether they worked and, if so, how many hours. They were

then asked about their sector of work and their work status. In the post-crisis surveys they were also asked why they had stopped work if they had done so recently.²²

Table 3 presents summary statistics for the answers to these questions. We will focus on the May 1997 and May 1999 results to eliminate concerns about seasonality.²³ The figures suggest that

TABLE 3 *Impact of the Crisis on Employment of Children Aged 10–17 Years, 1997–99*

	May 1997	Aug 1998	Dec 1998	May 1999
Working (%)	19.7	18.8	21.6	17.4
Looking for work (%)	2.6	1.4	1.1	1.2
Total	22.3	20.2	22.7	18.6
Proportion working by age (%)				
10–15 years	14.4	13.4	15.8	11.8
16–17 years	39.7	37.9	42.5	36.8
Average hours of those working				
10–15 years	24.3	25.8	25.8	25
16–17 years	32	33.3	32.7	33.1
Sector of work (%)^a				
Agriculture	72.3	71.6	74.5	70.2
Industry	10.3	9.9	9.3	11.3
Trade	9.8	7.9	7.3	8.0
Services	7.2	7.6	5.4	7.5
Other	0.4	3.0	3.4	3.0
Work status (%)				
Self-employed	17.5	15.8	15.1	16.2
Employee	12.2	13.5	12.4	14.9
Family worker	70.1	70.7	72.5	68.9
Recently stopped work (%)		6.5	8.4	7.7
Reason				
Lost job		7.6	4.5	3.5
Business folded		21.9	14.0	19.3
To help at home		4.8	3.9	11.7
Inappropriate work		10.5	6.2	6.9
Low salary		17.1	8.4	16.6
Work environment		12.4	5.6	3.5
Other		25.7	57.3	38.6

^aIn May

fewer children were working or looking for work in May 1999 than in May 1997. This was true of both 10–15-year-olds and 16–17-year-olds. Figure 3a plots labour force participation by age. It shows that at every age above 10 and below 17, the participation rate in May 1999 was lower than in May 1997. In previous studies, less attention has generally been paid to child labour force participation than to changes in enrolment rates. However, Pradhan and Sparrow (2000) have examined the impact of the crisis on child labour as revealed by the Susenas. They found that child labour market participation dropped continuously over the period 1995–98. Thus the 100 Villages Survey results are consistent with the Susenas findings.

Figure 3b plots by age the number of hours worked by children who were working. It shows that children under 13 were working fewer hours in May 1999 than two years earlier, but that children aged over 13 were working more hours.²⁴ This suggests that it may be the children who have left school and so are bona fide workers that are working longer hours to make ends meet. Figure 4 explores this explicitly. It shows that for children who are attending school and working there is no systematic change in hours worked. For children who are not attending school, those aged under 13 are working far fewer hours post-crisis, whereas those aged 14 and over are working more hours. Thus older children who have left school and taken on the responsibility of earning an income appear to be working longer hours. Younger children seem to be sheltered from this, possibly because of a lack of jobs for them.²⁵

Consistent with the observed overall decline in labour force participation by children, quite a high percentage of the sample of children in the post-crisis

years reported having stopped work recently. The reasons given do not present us with a clear picture as to why this was. The number who reported that their business had folded or that they had lost their job does seem to decline after August 1998, however. (Of those who stopped working, 29.5% gave these as the reasons in August 1998, compared with just over 23% in May 1999.)

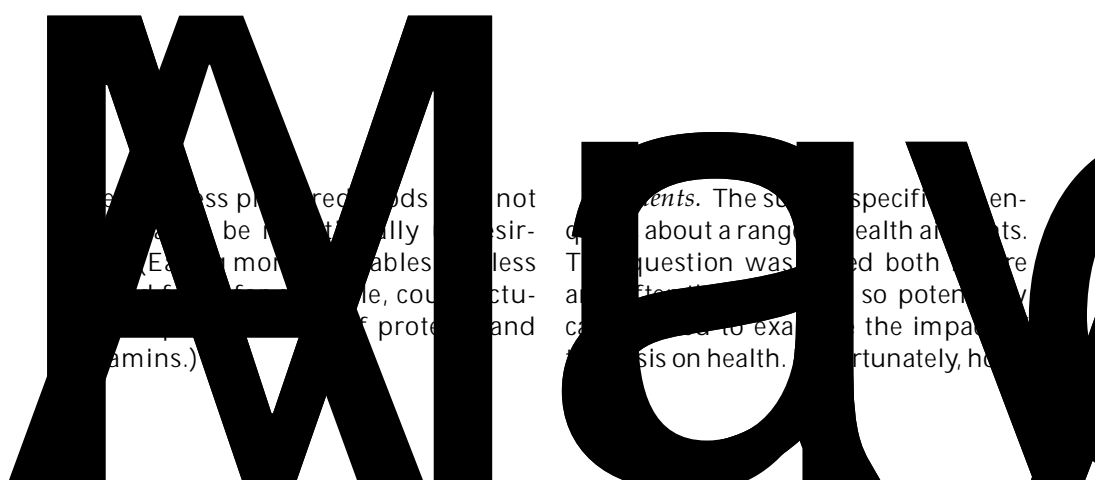
Given that the crisis has been largely a formal sector phenomenon, one might expect to see changes in the sector of employment and/or in work status that reflect this. One might, for example, expect to find a decrease in employees relative to family workers and the self-employed. There are no systematic changes in children's sector of employment across the years, however, nor in work status.

In summary, children seem to be working less on average since the crisis. This finding is consistent with the story coming out of the Susenas. This may be due to the difficulty of finding work in a market in which there are so many underemployed adults. Older children who are working and not attending school seem to be shouldering some of the burden by working longer hours than they did before the financial crisis.

Health Indicators

In the post-crisis rounds of the survey, households were asked whether they had experienced a shortage of food in the period preceding the survey: 17.6% reported that they had in the 12 months preceding August 1998; 14.8% had in the three months preceding December 1998; and 12.37% had in the three months prior to May 1999. Food shortages and other crisis-related stresses can lead to a deterioration in individuals' health status, although switching to

FIGURE 3b *Hours Worked by Working Children, by Age, 1997–99*
(no. of hours)



ever, differences in the pre-crisis and post-crisis questionnaires make this difficult. Although the question itself does not change, in the post-crisis rounds ~~is~~ interviewers are prompted to read out a list of possible ailments when asking individuals if they had been sick

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TABLE 4 *Health Status of Children Aged 10 Years and Under, 1997–99*
(%)

	May 1997	Aug 1998	Dec 1998	May 1999
Type of ailment				
Fever	11.4	18.0	16.3	17.3
Cough	7.5	14.3	13.1	14.6
Cold	7.5	15.2	14.9	15.6
Asthma	0.2	0.4	0.3	0.3
Breathing	0.4	0.6	0.3	0.3
Diarrhoea	1.5	2.5	2.4	1.4
Ear problems	0.1	0.3	0.13	0.1
Jaundice	0.03	0.1	0.02	0.2
Headache	1.8	2.2	1.3	1.0
Toothache	0.6	1.0	0.9	0.6
Other	0.8	4.6	7.4	5.5
Any of the above	18.7	28.4	30.3	27.4
Change in routine due to ailment	12.6	19.6	20.9	21.3
Illness incidence				
Urban/rural				
Urban	16.4	31.0	30.9	24.7
Rural	19.4	27.9	30.2	28.1
Ratio	0.85	1.11	1.02	0.88
Male/female				
Male	18.9	28.8	30.5	28.1
Female	18.7	28.0	30.2	26.7
Ratio	1.01	1.03	1.01	1.05
Outer Islands/Java–Bali				
Outer Islands	18.0	31.8	29.2	25.5
Java–Bali	19.8	23.9	31.9	29.8
Ratio	0.91	1.33	0.92	0.86
Per capita expenditure quintile				
I (poorest)	17.8	28.9	27.6	27.5
II	19.2	25.4	29.9	27.4
III	17.9	26.0	31.7	27.1
IV	20.0	29.2	32.2	26.2
V (richest)	20.6	35.8	34.2	29.3

(1999) find that children's reported health status (self-reported by children over 10 and as reported by the mother for children aged 10 and under) actually improved between 1997 and 1998.

Treatment of Ailments. The survey rounds also provide information on the

use of health services. Here again, changes in the questionnaire make comparison less than straightforward. In May 1997, anyone who was sick or had had a health consultation or examination (regardless of whether they had reported an ailment) was asked about the source of treatment. In all of the later

rounds, however, only those who reported an illness were questioned as to the type and source of treatment. Given that many more people reported illness in the post-crisis rounds, we compare the health service utilisation of all children who had reported being treated in 1997 (89% of whom had also reported an illness) with the utilisation of all children reported as being ill in the other rounds (table 5). A further complication is that the types of care allowed for in the questions differed from round to round.

The main result to come out of table 5 is that there has been a marked decrease in reliance on community health centres (*puskesmas*), subcentres (*puskesmas pembantu*) and village health posts (*posyandu*). There has also been a large fall in the percentage of children visiting private health practitioners. The table shows that the use of 'higher' level treatment, such as is available from both public and private hospitals, has declined only slightly but that there has been a large fall in second tier treatment such as is available from clinics and health centres. In May 1997, 55% of children who received any type of treatment were reported to have attended one of these facilities. By August 1998 this had declined to 38%.²⁸

Table 5 also breaks down the utilisation of facilities by public and private sector. It shows that reliance on public sector services fell markedly relative to private sector services in August and December 1998 but that the share of public sector treatments had rebounded somewhat towards the pre-crisis level by May 1999. The decline in public sector utilisation is also found in the IFLS data and is probably due to the fall in the quality of service at public facilities, reflected in a lack of medication and an inability to pay staff. By contrast, in the

private sector medicines were more widely available but prices had increased to cover the higher costs.

Finally, table 5 presents information on how households met their health expenses. This information is available only for the post-crisis rounds. The JPS health card (*kartu sehat*) program, which provides free public medical services for poor families, had become an important source of funds by 1999.²⁹ Whereas in August 1998 only 2.7% of all households had covered costs in this way, this had increased to 9.1% by May 1999.

Infants and Young Children. Infants and young children are more susceptible to illness than older children. The 100 Villages Survey provides some information specific to younger children (aged under five years) and to birthing practices. The information on birthing and breastfeeding is summarised in Table A1, and reveals no systematic change in behaviour over the period.³⁰

The data sets also provide information on the weight at birth and current weight of children aged under five. The probability density function of weight at birth was estimated non-parametrically for each round of the data and plotted. The densities lay almost exactly on top of one another. Similarly, non-parametric regressions were run for current weight on age for each round. These functions also hardly differed across the different rounds.³¹ IFLS respondents were also weighed and measured. This survey, too, found no evidence of a decline in children's weight-for-height or in their height-for-age. There was, however, evidence that adults' body mass indexes

TABLE 5 *Treatment of Ailments in Children Aged 10 Years and Under, 1997–99*
(% of children)

	May 1997	Aug 1998	Dec 1998	May 1999
Source of treatment				
(a) Public hospital (<i>RS pemerintah</i>)	1.9	2.0	1.5	1.1
(b) Private hospital (<i>RS swasta</i>)	1.0	0.5	0.7	0.6
(c) Doctor (<i>praktek dokter</i>)	10.2	9.1	8.8	9.7
(d) Community health centre (<i>puskesmas</i>)	23.5	24.8	19.4	18.3
(e) Community health subcentre (<i>puskesmas pembantu</i>)	15.1	n.a.	6.5	10.4
(d)+(e)	38.6	24.8	25.9	28.7
(f) Village health post (<i>posyandu</i>)	4.7	1.7	0.7	1.8
(g) Clinic (<i>poliklinik</i>)	1.4	0.8	0.6	0.5
(h) Private health practitioner (<i>praktek petugas kesehatan</i>)	13.9	9.2	5.8	8.2
(i) Traditional healer (<i>dukun/tabib/sinse</i>)	6.5	1.4	1.3	1.3
(j) Midwife (<i>praktek bidan</i>)	n.a.	n.a.	4.7	5.5
(k) Village midwife post (<i>bidan di desa</i>)	n.a.	2.6	0.7	1.3
(l) Self-treatment (<i>diobati sendiri</i>) ^a	38.0	61.4	61.6	55.9
(m) Other (<i>lainnya</i>)	1.0	n.a.	n.a.	n.a.
Level of treatment				
Hospital/doctor	12.8	11.5	10.6	11.2
Clinic/community health centre/ village health post	55.0	37.0	26.0	37.8
Traditional healer/self-treatment	40.3	62.5	62.6	56.7
Treatment by sector				
Public (a, d, e, f & k) ^b	43.6	30.3	21.8	31.9
Private (b, c, g, h & j) ^b	25.8	19.1	19.9	24.0
Ratio	1.69	1.59	1.10	1.33
Health expenses covered by:				
Household	n.a.	91.2	92.3	86.1
Insurance/employer	n.a.	5.1	5.5	5.8
Health fund	n.a.	0.5	0.3	1.0
Health card	n.a.	2.7	2.6	9.1
Letter of exemption	n.a.	0.2	0.3	0.1
Other	n.a.	2.6	1.8	1.7

^aQuestionnaires differ for this category. See note 28 for details.

^bThese figures represent the percentage of children who have been treated in a public facility, not the sum of the percentages using each public source of treatment. The latter would double count children using more than one public source of treatment.

time results in a significant increase in poverty, from about 11.3% of the population in 1976 to 20% in 1993 (Suryahadi, Sumarto, Suharso and Pritchett 2000). This increase is much more moderate than the widely cited prediction that 50% of the population would be living in poverty.

2 The survey is ongoing and a further round was conducted in August 1999. These data were unavailable at the time of writing.

3 See Suryahadi, Suharso and Sumarto (1999) for more details on these programs and an examination of their coverage.

4 The provinces covered are Riau, Lampung, West Java, Central Java, Bali, East Nusa Tenggara, East Kalimantan and Southeast Sulawesi. The number of Indonesia's provinces has changed since this study was done. East Timor is no longer a province and parliament has approved the creation of three new provinces. Others are under consideration.

5 I did not have access to these data and they are not well documented. It is not clear in which month the data were collected and whether the villages surveyed were the same as those in subsequent rounds.

6 The August 1999 round was not available for analysis at the time of writing.

7 Thomas, Frankenberg and Smith (2000) examine attrition in the Indonesian Family Life Survey. They find that households that had moved and were the most difficult to track were likely to be smaller and better off than other households. A similar pattern is seen in the 100 Villages Survey: households that appear in the matched sample seem to have slightly lower incomes and expenditures than the others, although they are similar in other respects.

8 The representativeness of each round still depends on the sampling frame used to select households to replace those that should have been tracked but could not be located. If these were chosen randomly, the sample would remain representative of the village populations.

9 The final sample sizes differ slightly across rounds and according to the vari-

able under observation. There were approximately 15,000 school-aged children in each round of 1985-1991. In 1999 each round were aged 10-17 (constituting the sample used for the analysis of child labour). Approximately 12,500 in each round were aged 10 and under, and 5,300 aged five and under (these constituting the samples used for the analysis of health outcomes).

10 See Fox (1999) for details on the drought.

11 The official age at which children start school in Indonesia is seven years but, as can be seen from figure 1, many children start attending school at six years of age. For this reason we have included six-year-olds in the analysis.

12 In May 1998 enrolment of 13-year-olds is based partly on a cohort born in 1984 who are in sixth grade, and partly on a cohort born in 1985 who are in fifth grade. In December 1998, enrolment of 13-year-olds is based almost entirely on a cohort born in 1984, who are all in sixth grade. But in August 1998, enrolment of 13-year-olds is based partly on a cohort born in 1984, who are now in the seventh grade, and partly on a cohort born in 1985, who are in the sixth grade. Enrolment of 13-year-olds will be an average of sixth and seventh grade enrolments, which will be much lower than the sixth grade enrolments.

13 The survey was conducted by RAND and the Demographic Instity

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have started before the crisis). See Filmer *et al.* (1998).

- 15 Poppel, Sumarto and Hitchett (1999) summarise the IFLS results, those of early rounds of the 100 Villages Survey and those of a further data set – the Rapor Kecamatan Survey. The latter, which only collected data on primary school enrolments, found some evidence of delayed enrolments.

There have also been a number of smaller scale studies. The Central Independent Monitoring Unit conducted a three-province study in 1999 and a later larger study covering all provinces. The Social Monitoring and Early Response Unit (SMERU) also conducted a survey of schools in the 1999/2000 school year. None of these sources of data show any signs of major declines in school enrolment rates into the 1999/2000 school year

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main activity in the last week and, if 'work' is not nominated, whether the individual worked one hour or more. Those who nominate work as their main activity and those who have worked at least one hour in the previous week are then asked about their hours of work. In contrast, the later surveys ask whether the individual worked in the last week and if so, how many hours. The distributions of hours worked were examined to see if the difference in the questions may have altered the reporting behaviour. Slightly more children reported working fewer than 10 hours in 1997 than in 1999 but this does not seem likely to have been the cause of the systematic differences observed in hours worked.

- 24 At age 17 the hours worked are approximately equal in both years.
- 25 Figure A1 shows labour force participation by age and school attendance.
- 26 A plot of reported illness incidence by age shows that incidence does not vary significantly with age among under-10-year-olds.
- 27 Note, though, that the incidence of illness increased more in the Outer Islands than in Java in the intervening period.
- 28 A much larger proportion of the population reported relying on self-treatment in the later rounds of the survey. However, in the post-crisis surveys individuals

were specifically prompted as to whether they had treated themselves for an illness in the past month, whereas in May 1997 self-treatment appeared only as one of several options. This change in the questionnaire is likely to have been responsible for at least part of the large increase in self-treatment reported after the crisis. The considerable rise in the number of households reporting visits to midwives can be explained by the existence of the Bidan Desa program. This program is training thousands of midwives, with the aim of having at least one in every village. The midwifery category is one of the problematic ones, though, because visits to midwives only became a possible response from August 1998.

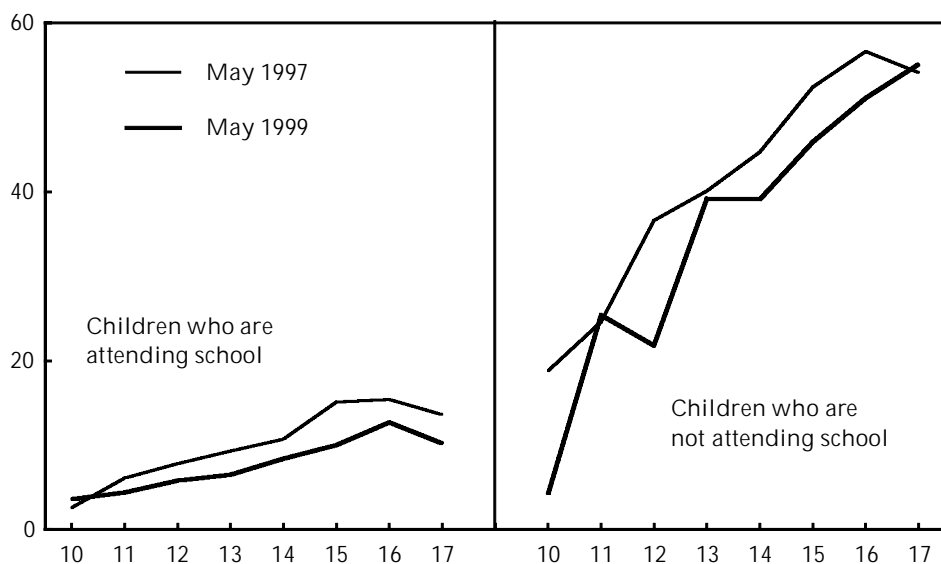
- 29 This program also uses the BKKBN data to identify poor families.
- 30 In May 1997 mothers were asked who had assisted them during the birth process. In later rounds they were asked to designate who was the first to help during the birth and who had provided the final assistance. Table A1 presents both sets of figures. The figures on first helper correspond closely to those reported in May 1997.
- 31 Figures are available from the author on request.
- 32 Body mass index is defined as weight (in kilograms)/height (in metres)².

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APPENDIX

FIGURE A1 *Labour Force Participation by Age and School Attendance, 1997–99*
(%)TABLE A1 *Birthing and Breastfeeding Summary Statistics*
(%)

	May 1997	Aug 1998		Dec 1998		May 1999	
		First ^a	Last ^a	First ^a	Last ^a	First ^a	Last ^a
Present at birth							
Doctor	2.7	3.3	3.6	3.0	3.8	2.6	3.0
Midwife	24.0	24.5	28.3	22.9	27.9	24.3	29.6
Other medical practitioner	0.9	0.4	0.6	0.3	0.6	0.6	0.9
Traditional healer	65.5	65.3	60.8	67.5	61.6	66.1	60.5
Family	4.9	5.6	5.5	5.9	5.5	5.5	5.4
Other	2.1	0.9	1.2	0.3	0.7	0.8	0.6
Whether breastfeeding							
Yes	98.0	97.9		n.a.		98.3	
No	2.0	2.1		n.a.		1.7	

^a'First' and 'last' refer respectively to the first and the last person to assist during the birth. These data are only available for the post-crisis rounds.

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