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DRU–2064–NIA/NICHD

March 1999

Prepared from data funded by the National Institute on Aging, the National Institute of Child Health and Human Development, The Futures Group (the POLICY Project), the Hewlett Foundation, the International Food Policy Research Institute, John Snow International (OMNI project), the United Nations Population Fund, USAID, the World Bank and the World Health Organisation

Labor and Population Program Working Paper Series 99-04

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This study is based on data from two rounds of the Indonesian Family Life Survey (IFLS2/2+), is a project of RAND, in collaboration with UCLA and the Demographic Institute of the University of Indonesia. Our colleagues at the Demographic Institute have worked untiringly under extremely stressful conditions to make this project a success. We cannot overstate their contribution. We are especially grateful to Bondan Sikoki, Ni Wayan Suriastini, Muda Saputra, Endang Pudjani, Sutji Rochani, Akhir Matua Harahap, Cecep Sukria Sumantri, Hendratno, Iip, Wilson Victor and Widodo who helped to develop and pretest the instruments, train the interviewers, and supervise the fieldwork. We also owe a great debt to Victoria Beard, Trevor Croft, Graciela Teruel, and to all the supervisors, interviewers, and respondents who have participated in the Indonesia Family Life Survey.

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Executive Summary

Indonesia is at the center of dramatic political and economic upheaval. Projections put output in 1998 at 15% below its 1997 level and inflation at 75-80% for 1997. Riots and demonstrations flared in several Indonesian cities. After leading the country for more than a quarter of a century, President Suharto resigned in May of 1998.

Few Indonesians have remained untouched by these and other events of the last couple of years. The drought of 1997, the price shocks associated with the collapse of the rupiah and removal of subsidies and the income shocks arising from changes in demand combine to yield an extremely complex picture of substantial change throughout the society. The effects of the crisis on welfare of the population are nuanced and heterogeneous. They vary by region, across socio-economic groups, and across demographic groups. If policies are to succeed at mitigating the effects of the crisis, the policies must be based on solid information about who has been affected, how they have been affected, and how they are changing their behaviors in response to the crisis.

This study seeks to provide information on those topics. The results are based on data from the Indonesia Family Life Survey (IFLS), an on-going longitudinal survey of individuals, households, and communities in Indonesia conducted by RAND, in collaboration with UCLA and *Lembaga Demografi*. For the purpose of understanding how the economic crisis has affected welfare, we compare the responses of individuals interviewed in the second half of 1997 to responses obtained through reinterviews with those same individuals in the second half of 1998. In the 1998 follow-up survey, we succeeded at reinterviewing over 98% of the 1,934 households from which data were collected in 1997.

This study presents information on changes in a number of dimensions of family and individual well-being between 1997 and 1998: these include expenditure patterns, employment and earnings, education, use of health care and family planning, and health status. In addition to a comprehensive household survey, the study contains an integrated community and facility survey that documents changes in the prices, quality, and availability of health and family planning services at public and private facilities in the communities in which our respondents live. We do this not only because changes in services may affect well-being of the respondents, but also because it is these services that are the most amenable to policy intervention. We conclude with a discussion of respondents' perceptions of how the crisis has affected them and what coping strategies they have adopted to mitigate any deleterious affect of the crisis.

A question of key interest in a study such as this one is whether particular sub-groups emerge as having been especially hard-hit by the crisis. Our results suggest that relative to a year ago, investments in children—education and preventive health care—have declined, particularly among those from the poorest households. To the extent that these investments yield positive impacts far into the future, the children who are missing out now may bear the costs of the crisis for years to come.

Evidence on whether urban or rural households have born the brunt of the crisis is ambiguous. There can be little argument that both sectors have been affected, although not necessarily for the same reason.

To the extent that patterns emerge by province of residence, they reveal a complicated picture of who has been affected in what ways. Our study is not designed to capture regional effects. However, controlling for a series of observable household-level characteristics, we do find suggestive evidence that

our respondents in South Sumatra have been considerably less hard hit by the crisis than have other areas. The change in conditions since 1997 appears to be worst in West Nusa Tengarra and South Kalimantan. There is little to distinguish the other provinces that we visit in 1997 and 1998: West and Central Java, Jakarta, and North Sumatra.

Finally, although higher levels of education and expenditures in 1997 generally offer a protective effect on a number of dimensions of well-being, the relatively advantaged have experienced negative changes as well. Expenditure levels of the highest income groups have declined dramatically. The middle income households have also been affected. Declines in the share of the household budget spent on meat have been sharpest for those in the middle of the expenditure distribution. And it is children from middle-income households who are particularly likely to switch out of use of private health care.

We now turn to a brief summary of the findings on specific topics. Figures A, B, and C present a subset of the studys' key results graphically.

Expenditure levels and poverty

- Between 1997 and 1998 there has been a substantial decline in real purchasing power as measured by *per capita* levels of household expenditure. Reductions in the expenditures of those in the upper parts of the income distribution account for a large portion of the decline. The precise magnitude of the change, the extent of differences between urban and rural areas, and the implications for poverty rates depend critically on assumptions about prices and on where one draws the poverty line.
- Estimates that incorporate province-specific inflation rates (based on BPS price data from 44 urban areas) suggest that overall, the proportion of households below the poverty line has risen by about 25%, with a larger increase in urban than in rural areas. Estimates that allow for higher overall inflation and higher inflation in rural than urban areas (as indicated by the price data collected in the IFLS communities), suggest that the rise in poverty is considerably larger, and that rural households have experienced more change than urban households (see Figure A).
- Comparisons of household budget allocations between 1997 and 1998 helps move the issue of differential inflation from center stage (see Figure A). In both urban and rural areas there has been a substantial and significant increase in the proportion of the budget spent on food and, especially, on staples (primarily rice). The changes have been largest for the poorest and, controlling total resources, for the relatively better-educated. The share of the budget spent on meat, an important source of protein and minerals, has declined -- and the declines have been largest for those in the middle of the income distribution.
- In general, households have reduced their expenditure on non-essential goods or purchases that can be delayed. It is troubling, however, that while the price of health care has risen, spending on health has declined significantly. The share of the budget spent on education has declined as well and the decline is greatest for the poorest households.

Employment

- By 1998 slightly higher fractions of men and considerably higher fractions of women are working than in 1997. The changes are similar in urban and rural areas. However, changes in the proportion working reflect largely an entrance of unpaid family workers.
- If we consider only work for pay, there have been substantial increases in the employment rates of men and women in their late teens and early 20s, while older men are exiting the labor force.
- The average number of hours worked per week (among those working) has changed little between 1997 and 1998. But real wages have fallen dramatically. The declines in wages have been larger in urban areas

- than in rural, and somewhat larger for women than for men (see Figure A).
- For men, urban residence appears to protect against transitions into or out of employment by 1998 relative to rural residence. Urban women, however, are more likely to have lost a paying job by 1998 than are their rural counterparts. Employment opportunities seem to be stronger in Sumatra (North and South) and Kalimantan than on Java or in West Nusa Tengarra.

Education

- Between 1997 and 1998, the percentage of 13-19 year olds are not currently enrolled in school has risen. In both years, more 13-19 year olds are out of school in rural than in urban areas. However, the percentage not enrolled increased more in urban areas-- from 33 percent in 1997 to 38 percent in 1998, a change that is statistically significant. Children from poorer households are more likely to be out of school than children from better off households—a phenomenon that intensified between 1997 and 1998. The change is also reflected in drop out rates (see Figure B).
- Younger children are less likely to be in school in 1998 as well. The percentage of 7-12 year olds that have dropped out of school has tripled, from about 1% in 1997 to about 3.5% in 1998. In this age group the increase in drop outs has been larger in rural than in urban areas, and the gap between children at the bottom versus the top of the income distribution has widened. By 1998, children from the poorest households are about five times more likely to be out of school than their counterparts from households at the top of the expenditure distribution. The results are profoundly troubling, as those children may carry the burden of the crisis for many years to come.

Use of Health Care and Quality of Health Services

- For adults, the proportion using public services in the month before the interview has declined significantly, from 7.4% in 1997 interview to 5.6% in 1998. Users of health services are shifting away from the *puskesmas*, towards private providers and traditional practitioners. The relationship between economic resources and use of health care is stronger in 1998 than in 1997, suggesting that resources have become a greater barrier to private health care use among the poorest over the course of the crisis
- For children, overall use of health services has decreased substantially (see Figure C). A dramatic decline in visits to the health post *(posyandu)* by children under five, from 46.7% to 27.7% (in the month before the survey) accounts for the change. Visits to private providers have increased somewhat. Underlying these general changes is a strong shift between 1997 and 1998 in how expenditure levels affect use. It is children from the poorer and middle-income households who are switching out of use of public providers. Children from middle-income households are also switching out of use of private providers, but children from the higher-income households are increasingly relying on private care.
- For the youngest children (those under three), declines in use of the *posyandu* have translated into a significant reduction in the proportion receiving Vitamin A in the six months prior to the survey. Vitamin A deficiencies can result of loss of night vision. Moreover, considerable research shows that Vitamin A reduces children's vulnerability to infectious disease. Significant declines in immunization uptake have not yet emerged.
- The results for Vitamin A in the household data also emerges in the facility data. There have been significant decreases in the proportions of both public and private facilities offering Vitamin A. Simultaneously, stock outages of anti-biotics and supplies such as bandages have increased significantly at *puskesmas*. Private providers, on the other hand, do not appear to be experiencing dramatic increases in stock outs of those items. The results suggest that there has been a decline in the quality of public health services relative to private providers.
- Both public and private providers have raised the prices they charge for services. Although private providers are still more expensive than public providers, the relative difference is smaller in 1998 than in

1997. Thus, the prices of public health services has increased relative to private providers. The combination of an increase in relative prices and decrease in relative quality has resulted in a shift away from public to private providers among those who are in the middle of the income distribution. This fact, in combination with the substantial decline in the use of health services, suggests that the composition of users of public health services has changed and in 198 consists of a greater fraction of very sick clients. Resource allocations based on fixed per capita rates will put even greater pressures on public health services.

Use of Family Planning and Quality of Family Planning Services

- Overall, there has been little change in prevalence of contraceptive use or in method mix. Prevalence is estimated at 56.6% in 1997 and at 57.3% in 1998 (see Figure C). The distribution of users across methods has not changed significantly.
- Injection users have switched their sources of contraceptive services. In 1997 about 27% of injection users visited the *puskesmas* for services. By 1998 the figure had dropped to only 19%. Midwives are a more popular source of injections in 1998 than in 1997, probably because of changes in the relative price and quality of services.
- Method choice at private facilities appears to have increased between 1997 and 1998, with a higher fraction of private providers offering IUDs, and a significant rise in the proportion of providers offering Cyclofeem and Depo-Progestin. Prices of services at both public and private providers have risen substantially. In particular, the difference in injection prices at public versus private facilities has narrowed considerably by 1998. For both public and private providers, the frequency of stock outages of injections has increased significantly between 1997 and 1998.

Health Status

- The surveys contain an array of self-reported and physically-assessed measures of health status. Considering all of the evidence on changes in health status together, we conclude that in many dimensions, the current health status of respondents in 1998 is better than it was in 1997. Self-reports clearly indicate a decrease in the proportion of respondents experiencing particular symptoms in the month before the survey.
- Generally, results from the physical assessments are consistent with an improvement in health (see Figure C). With respect to nutritional status, the proportion of children at the lowest end of the spectrum (as measured by weight-for-height) has decreased. Overall, and particularly for the poorest women, it appears that hemoglobin status has actually improved.
- There are some indications that nutritional status of adults (as measured by BMI) has deteriorated over the last year. This result emerges particularly among poorer women. Moreover, the IFLS health workers consistently indicate that the health of our poorest respondents has deteriorated over the last year—perhaps in ways that have yet to emerge in the physical and self-reported assessments.

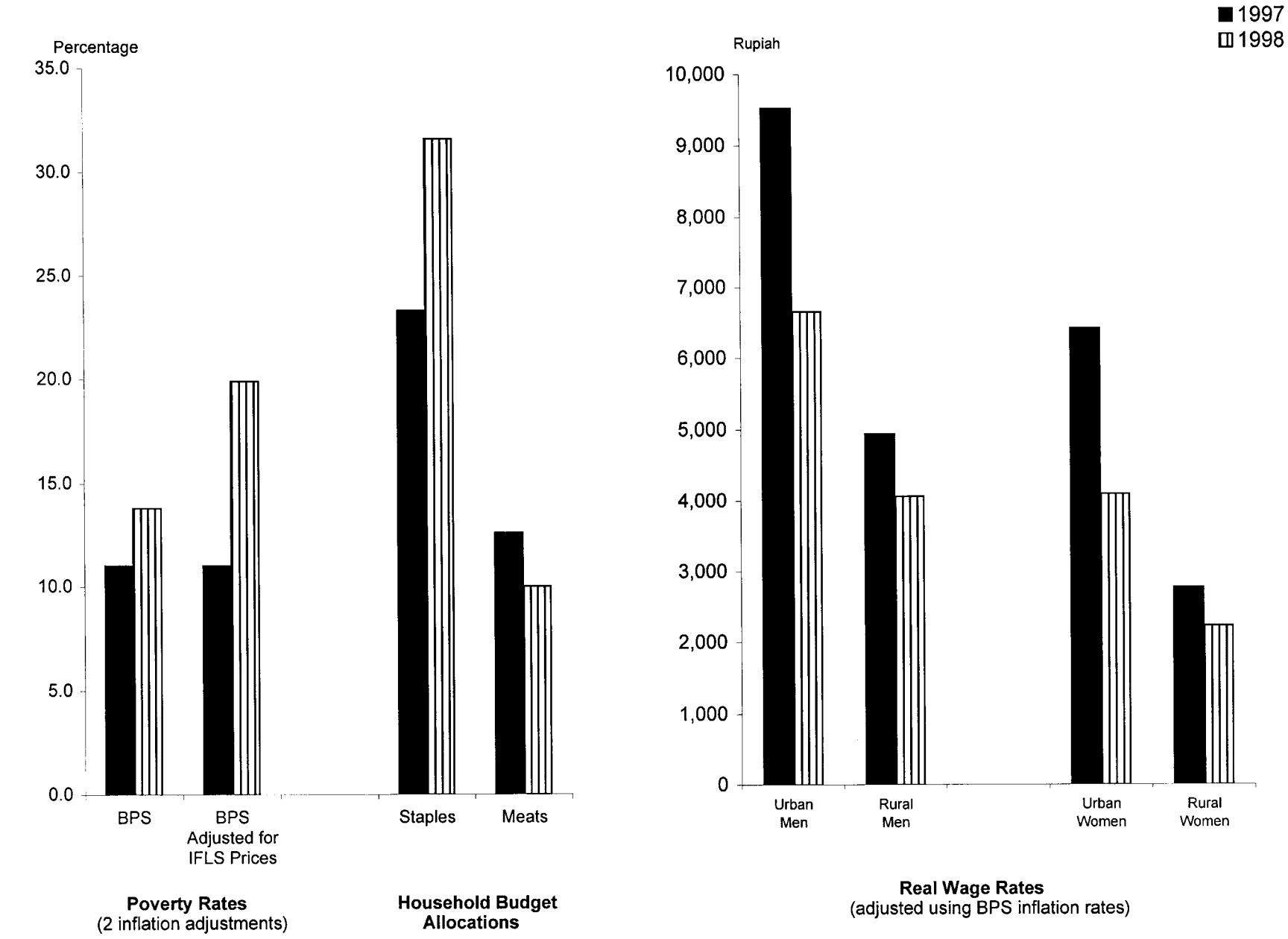
Respondents' Perceptions of the Crisis and the Role of the Community in Alleviating its Impact

- Although Indonesia's economic crisis has affected the prices, availability, and quality of a number of goods and services, the rising price of food has clearly been the most salient change with respect to individual well-being. Almost 60% of our respondents report that they have been made significantly worse off by the rising price of rice. Of course net rice producers are better off. Increases in the prices of other food, fuel, and health services are also reported to be detrimental by large fractions of the respondents.
- In response to the rising food prices, the government and NGOs have launched efforts to distribute free food and food at subsidized prices. In over 85% of IFLS2+ communities, a food assistance activity had

taken place in the six months before the survey.

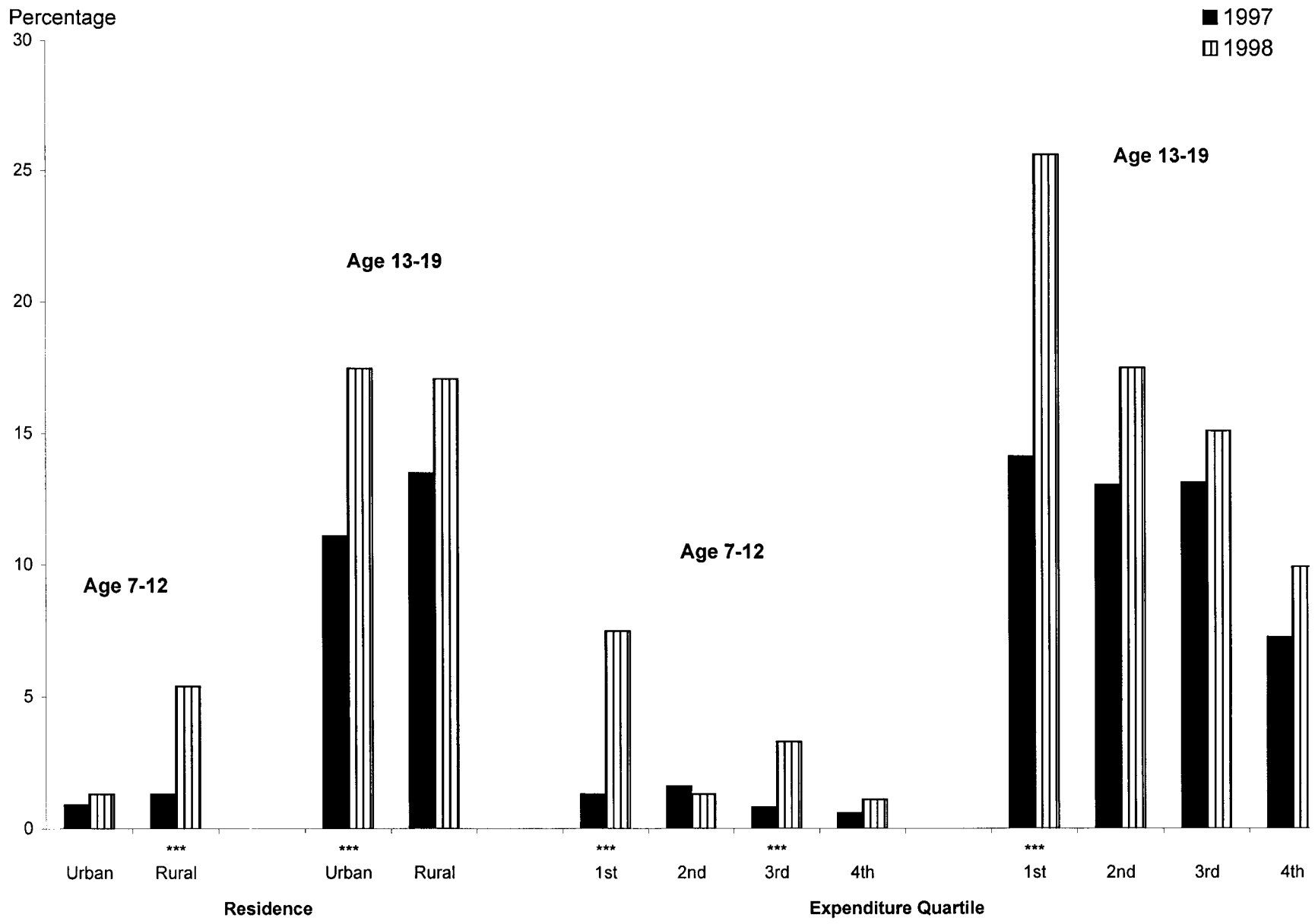
- About one quarter of households reported purchasing foods at reduced prices in the six months before the survey, while about 10% had received some food for free. Although the prevalence of receipt of consumption assistance is relatively high, the median value received is a small fraction of total household expenditures. Urban households, especially in Jakarta, are particularly likely to have benefited from public assistance.
- Informal assistance from friends and family members is also important. About one quarter of households have received informal assistance. The median value of that assistance is considerably higher than the value of assistance from formal sources.
- Both men and women have cut down their participation in a variety of community development activities such as neighborhood improvement projects and the *posyandu*. For men, education and expenditure levels appear to be more important determinants of participation in 1998 than in 1997. Among women, it is those with relatively low levels of education who are reducing their participation in *posyandu* activities.

Figure A: Selected Indicators of Economic Well-Being



Source: IFLS2 IFLS2+

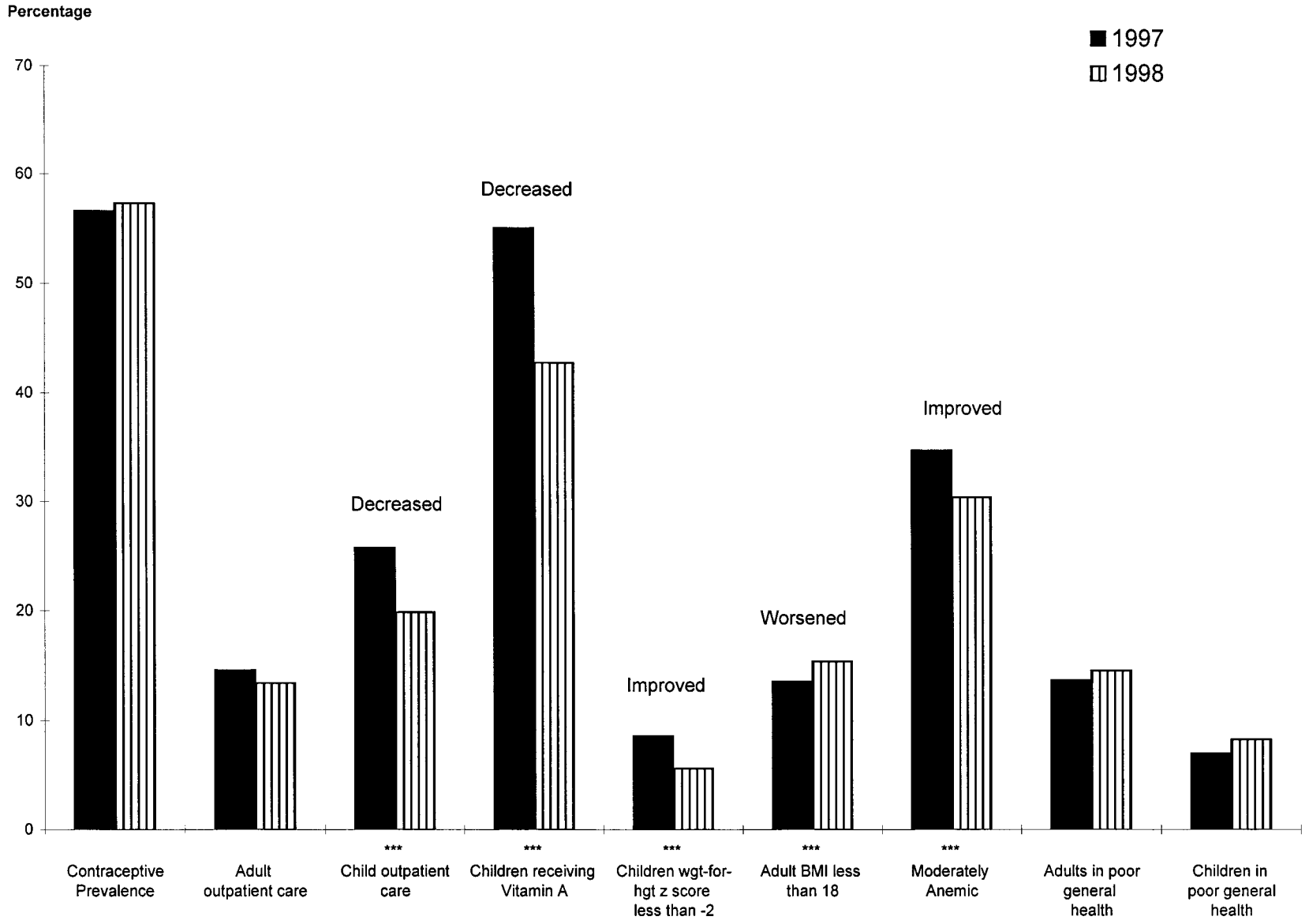
Figure B: School Dropout Rates in 1997 and 1998



*** indicates change between 1997 and 1998 is statistically significant

IFLS2 and IFLS2+

Figure C: Selected Indicators of Use of Health Care and Health Status



*** indicates change between 1997 and 1998 is statistically significant

IFLS2 and IFLS2+

Ringkasan Pelaksanaan

Indonesia telah mengalami perubahan-perubahan yang sangat besar baik dalam bidang ekonomi maupun bidang politik. Proyeksi-proyeksi pada tahun 1998 menempatkan output pada 15 % di bawah level tahun 1997 dan inflasi 75-80 % untuk tahun tersebut. Kerusuhan dan demonstrasi telah terjadi di sejumlah kota di Indonesia. Setelah memimpin negara selama lebih dari seperempat abad Presiden Suharto mengundurkan diri pada bulan Mei 1998.

Sedikit orang Indonesia yang tidak terjamah oleh semua ini dan peristiwa-peristiwa lainnya dalam beberapa tahun terakhir. Musim kemarau panjang tahun 1997, goncangan harga yang berkaitan dengan jatuhnya rupiah dan penghapusan subsidi serta goncangan penghasilan yang muncul akibat perubahan dalam permintaan, yang bergabung semuanya menghasilkan suatu gambaran yang sangat kompleks tentang perubahan yang mendasar di masyarakat. Pengaruh krisis terhadap kesejahteraan masyarakat memiliki corak dan bersifat heterogen. Pengaruh krisis berbeda menurut daerah, grup sosial-ekonomi dan grup demografi. Jika kebijaksanaan-kebijaksanaan ingin berhasil mengurangi pengaruh-pengaruh krisis, mereka harus didasarkan atas informasi yang kuat tentang siapa yang telah dipengaruhi, bagaimana mereka telah dipengaruhi, dan bagaimana mereka mengubah tindakan mereka dalam menanggapi krisis tersebut.

Laporan ini mencoba memberikan informasi mengenai topik-topik tersebut. Informasi ini didasarkan atas data Survei Aspek Kehidupan Rumah Tangga Indonesia (SAKERTI), suatu survei longitudinal yang sedang berlangsung, tentang individu, rumah tangga dan komunitas di Indonesia yang dilaksanakan oleh RAND, kerjasama dengan UCLA dan Lembaga Demografi. Guna memahami bagaimana krisis ekonomi telah mempengaruhi kesejahteraan, kami membandingkan tanggapan-tanggapan yang diperoleh dari individu-individu yang diwawancara dalam periode setengah tahun terakhir di tahun 1997 dengan tanggapan-tanggapan yang diperoleh melalui wawancara ulang dengan individu-individu yang sama dalam periode setengah tahun terakhir di tahun 1998. Dalam survei lanjutan di tahun 1998, kami berhasil mewawancarai lebih dari 98 % dari total 1.934 rumah tangga yang data mereka dikumpulkan pada tahun 1997.

Laporan ini menyajikan informasi tentang perubahan-perubahan pada sejumlah dimensi kesejahteraan rumah tangga dan individu antara tahun 1997 dan 1998 : meliputi pola pengeluaran, pekerjaan, pendidikan, penggunaan perawatan kesehatan dan keluarga berencana, dan status kesehatan. Sebagai tambahan dari survei rumah tangga yang konprehensip, studi juga terdiri atas survei Komunitas dan Fasilitas yang terintergrasi, mendokumentasikan perubahan-perubahan dalam harga, kualitas dan ketersediaan pelayanan kesehatan dan keluarga berencana di fasilitas pelayanan umum dan swasta pada komunitas di mana responden bertempat tinggal. Kami melakukan ini bukan hanya karena berubahan dalam pelayanan mungkin mempengaruhi kesejahtraan responden, tetapi juga karena pelayanan–pelayanan ini yang paling diterima untuk intervensi kebijakan. Kami menutup dengan suatu diskusi tentang persepsi responden mengenai bagaimana krisis telah mempengaruhi mereka dan starategi-strategi apa yang mereka adopsi untuk mengurangi dampak krisis yang mengganggu.

Sebuah pertanyaan utama dalam sebuah laporan semacam ini adalah apakah sub-grup tertentu muncul sebagai yang telah khususnya dihantam keras oleh krisis tersebut. Hasil-hasil kami menunjukkan bahwa dibandingkan satu tahun lalu, investasi pada anak-anak – pendidikan dan perawatan kesehatan yang bersifat mencegah-- telah menurun, khususnya bagi mereka yang berasal dari keluarga-keluarga paling miskin. Sampai pada taraf investasi-investasi dalam perawatan kesehatan yang bersifat mencegah dan dalam pendidikan memiliki dampak-dampak yang positif jauh ke depan, anak-anak yang tidak memperolehnya akan menanggung kerugian akibat krisis untuk masa-masa yang akan datang.

Kami tidak menemukan adanya bukti yang meyakinkan apakah rumah tangga di daerah perkotaan yang menanggung beban terberat dari krisis dibandingkan rumah tangga di daerah pedesaan, atau sebaliknya. Bahwa kedua daerah telah terpengaruh, meskipun tidak penting dengan cara yang sama ,keadaan ini menimbulkan sedikit perdebatan.

Sampai pada taraf bahwa pola-pola yang muncul berdasarkan propinsi tempat tinggal, hal tersebut menunjukkan suatu gambaran yang sangat kompleks tentang siapa yang telah dipengaruhi dan dalam hal-hal apa. Studi kami tidak dirancang untuk menangkap pengaruh daerah. Bagaimanapun juga, dengan melakukan kontrol pada sejumlah karakteristik yang terukur pada tingkat rumah tangga, kami menemukan sejumlah petunjuk, bahwa reponden kami di Sumatera Selatan muncul sebagai yang sangat kurang terhantam keras oleh krisis dibandingkan di daerah lainnya. Perubahan kondisi-kondisi sejak tahun 1997 tampak lebih buruk di Nusa Tenggara Barat dan Kalimantan Selatan Terdapat sedikit variasi pada propinsi-propinsi lain yang kami kunjungi pada tahun 1997 dan tahun 1998: Jawa Barat dan Jawa Tengah, Jawa Barat dan Sumatera Utara. .

Akhirnya, meskipun tingkat pendidikan dan pengeluaran yang lebih tinggi di tahun 1997 secara umum menawarkan suatu pengaruh yang bersifat melindungi terhadap sejumlah dimensi kesejahteraan, pihak yang secara relatif beruntung telah mengalami perubahan-perubahan yang bersifat negatif pula. Tingkat pengeluaran kelompok berpenghasilan tertinggi telah menurun secara drastis. Rumah tangga dengan pendapatan menengah juga terpengaruh. Penurunan dalam porsi anggaran rumah tangga yang dibelanjakan untuk daging merupakan yang paling tajam untuk mereka yang berada di tengah distribusi pengeluaran. Dan anak-anak dari rumah-tangga kelas menengah yang terutama cenderung untuk beralih ke penggunaan perawatan kesehatan swasta.

Kami sekarang pindah ke ringkasan singkat temuan-temuan pada topik-topik tertentu. Gambar A, B dan C menyajikan suatu sub-set hasil utama laporan-laporan secara grafik.

Tingkat Pengeluaran dan Kemiskinan

- Antara tahun 1997 dan 1998, terdapat penurunan yang sangat berarti dalam daya beli riil yang diukur oleh tingkat per kapita pengeluaran rumah tangga. Pengurangan dalam hal pengeluaran bagi mereka yang berada di posisi lebih atas pada distribusi penghasilan adalah penyebab penurunan dalam porsi yang besar. Besarnya perubahan secara pasti, sejauh mana perbedaaan-perbedaan antara daerah perkotaan dan pedesaan, dan implikasi tingkat kemiskinan bergantung secara kritis pada asumsi-asumsi tentang harga-harga dan di mana seorang menarik garis batas kemiskinan.
- Perkiraan-perkiraan yang memasukkan tingkat inflasi khusus propinsi (berdasarkan data nilai BPS dari 44 daerah perkotaan) menunjukkan bahwa secara keseluruhan, proporsi rumah tangga yang berada dibawah garis kemiskinan telah naik sekitar 25 %, dengan peningkatan yang lebih besar di daerah perkotaan dibandingkan daerah pedesaan. Perkiraan-perkiraan yang memungkinkan inflasi keseluruhan yang lebih tinggi dan inflasi yang lebih tinggi di daerah pedesaan dibandingkan di daerah perkotaan (sebagaimana ditunjukkan oleh data harga yang dikumpulkan dalam survai komunitas Sakerti), menunjukkan bahwa peningkatan kemiskinan jauh lebih besar, dan bahwa rumah tangga di daerah pedesaan telah mengalami perubahan yang lebih dibandingkan rumah tangga di daerah perkotaan (lihat gambar A).
- Perbandingan alokasi anggaran belanja rumah tangga antara tahun 1997 dan 1998 membantu menggeser masalah inflasi diferensial dari titik tengah. Di daerah perkotaan dan daerah pedesaan, telah terjadi kenaikan yang sangat besar dan berarti dalam proporsi anggaran belanja yang dihabiskan untuk makanan, dan terutama, makanan pokok (lihat gambar A). Perubahan-perubahan paling besar adalah bagi yang paling miskin dan, mengontrol seluruh sumber-sumber, bagi yang berpendidikan relatif lebih baik. Porsi anggaran belanja untuk daging, suatu sumber protein dan mineral yang penting, telah menurun -- dan penurunan-penurunan adalah paling besar bagi mereka yang berada di tengah-tengah distribusi penghasilan.
- Secara umum, rumah tangga - rumah tangga telah mengurangi pengeluaran mereka untuk barang-barang yang tidak penting atau pembelian-pembelian yang dapat ditunda. Hal tersebut menyulitkan, bagaimanapun juga, bahwa sementara harga perawatan kesehatan naik, pengeluaran untuk kesehatan

telah menurun secara berarti. Porsi anggaran belanja untuk pendidikan juga telah menurun dan penurunan tersebut adalah paling besar untuk rumah tangga - rumah tangga yang paling miskin.

Pekerjaan

- Sampai tahun 1998, porsi pria yang bekerja sedikit lebih banyak dan porsi wanita yang bekerja jauh lebih banyak dibandingkan tahun 1997. Perubahan-perubahan tersebut sama di daerah perkotaan dan di daerah pedesaan. Namun, perubahan dalam proporsi pekerjaan mencerminkan terutama masuknya pekerja-pekerja rumah tangga yang tidak dibayar.
- Jika kita hanya memperhitungkan pekerjaan yang dibayar, terdapat kenaikan yang sangat besar dalam tingkat pekerjaan pria dan wanita di akhir masa remajanya dan di awal usia 20-tahunan, sementara pria-pria yang lebih tua keluar dari ketenagakerjaan.
- Jumlah rata-rata jam kerja per minggu (bagi mereka yang bekerja) telah berubah sedikit antara tahun 1997 dan 1998. Tetapi upah riil telah turun secara dramatis. Penurunan upah lebih besar di daerah perkotaan dibandingkan di pedesaan, dan sedikit lebih besar untuk wanita dibandingkan untuk pria (lihat gambar A).
- Untuk pria, tempat tinggal di daerah perkotaan tampak melindungi dari transisi ke dalam atau keluar dari pekerjaan di tahun 1998 relatif terhadap tempat tinggal di pedesaan. Namun, wanita-wanita di perkotaan lebih cenderung kehilangan pekerjaan yang mendatangkan upah di tahun 1998 dibandingkan rekan-rekan mereka di daerah pedesaan. Peluang pekerjaan kelihatannya lebih kuat di Sumatera (Utara dan Selatan) dan Kalimantan dibanding Jawa atau Nusa Tenggara Barat.

Pendidikan

- Antara tahun 1997 dan 1998, persentase usia 13-19 tahun yang tidak bersekolah lagi telah naik. Pada kedua tahun, lebih banyak usia 13-19 tahun berhenti sekolah di daerah pedesaan dibandingkan perkotaan. Namun, persentase yang tidak bersekolah naik lebih banyak di daerah perkotaan -- dari 33 % di tahun 1997 menjadi 38 % di tahun 1998, suatu perubahan yang sangat berarti secara statistik. Anak-anak dari keluarga-keluaraga yang lebih miskin cenderung berhenti sekolah dibandingkan anak-anak dari keluarga yang lebih mampu - suatu fenomena yang meningkat antara tahun 1997 dan 1998. Perubahan tersebut juga tercermin dari tingkat putus sekolah (lihat gambar B).
- Anak-anak yang lebih muda memiliki kecenderungan yang lebih untuk tidak bersekolah di tahun 1998. Persentase usia 7-12 tahun yang telah putus sekolah naik dari 1 % di tahun 1997 menjadi sekitar 3,5 % di tahun 1998. Pada grup usia ini, kenaikan jumlah putus sekolah lebih besar di daerah pedesaan dibandingkan perkotaan, dan gap antara anak-anak di bagian bawah versus di bagian atas pada distribusi penghasilan telah melebar. Pada tahun 1998, anak-anak dari keluarga-keluarga yang paling miskin 10 kali lebih cenderung untuk putus sekolah dibandingkan rekan-rekan mereka dari keluarga-keluarga yang berada pada bagian atas distribusi penghasilan. Hasil ini sangat merisaukan, sepertinya anak-anak tersebut harus menanggung beban dari krisis untuk beberapa lama untuk terlihat dampaknya.

Penggunaan Perawatan Kesehatan dan Kualitas Layanan Kesehatan

- Untuk usia dewasa, proporsi yang menggunakan layanan umum sebulan sebelum wawancara telah menurun secara berarti, dari 7,4 % dalam wawancara tahun 1997 menjadi 5,6 % di tahun 1998. Pemakai layanan kesehatan telah beralih dari Puskesmas ke pemberi layanan swasta dan praktek-praktek tradisional. Hubungan antara sumber-sumber ekonomi dan penggunaan perawatan kesehatan lebih kuat di tahun 1998 dibandingkan di tahun 1997, yang menunjukkan bahwa sumber-sumber tersebut telah menjadi penghalang yang lebih besar bagi penggunaan perawatan kesehatan swasta untuk orang-orang yang paling miskin, selama masa krisis.
- Untuk anak-anak, secara keseluruhan penggunaan layanan kesehatan telah menurun sangat banyak (lihat

gambar C). Penurunan dramatis dalam kunjungan-kunjungan ke Posyandu, dari 56,8 % sampai 41,3 % (sebulan sebelum wawancara) menyebabkan perubahan tersebut. Kunjungan-kunjungan ke pemberi layanan swasta agak naik. Yang mendasari perubahan-perubahan umum ini adalah peralihan yang kuat antara tahun 1997 dan 1998 dalam hal bagaimana tingkat pengeluaran mempengaruhi penggunaan. Anak-anak dari keluarga-keluarga yang lebih miskin dan menengah yang beralih dari penggunaan pemberi layanan swasta, tetapi anak-anak dari keluarga-keluarga dengan penghasilan lebih tinggi semakin bergantung pada perawatan swasta.

- Untuk anak-anak yang paling muda (dibawah 3 tahun), penurunan-penurunan dalam penggunaan Posyandu telah berubah menjadi suatu pengurangan yang berarti dalam hal proporsi penerimaan vitamin A dalam 6 bulan terakhir sebelum survei. Kekurangan vitamin A menyebabkan kehilangan penglihatan malam. Lagi pula banyak penelitian menunjukkan bahwa vitamin A menurunkan anak terjangkit penyakit infeksi. Penurunan-penurunan yang berarti dalam imunisasi belum tampak.
- Hasil-hasil untuk vitamin A dalam data rumah tangga juga muncul dalam data fasilitas. Terdapat penurunan-penurunan yang berarti dalam proporsi fasilitas umum dan swasta yang menawarkan vitamin A. Secara bersamaan, kehabisan stok antibiotik dan persediaan peralatan seperti perban telah meningkat secara berarti di Puskesmas. Pemberi layanan swasta, sebaliknya, tidak kelihatan mengalami kenaikan yang dramatis dalam hal kehabisan stok barang-barang tersebut. Hasil-hasil menunjukkan bahwa telah terjadi penurunan dalam kualitas pelayanan di tempat pelayanan umum relatif terhadap tempat pelayanan swasta.
- Baik pemberi layanan umum dan swasta telah menaikkan biaya yang mereka terapkan bagi layanannya. Meskipun pemberi layanan swasta tetap lebih mahal dibandingkan pemberi layanan umum, perbedaan relatif lebih kecil di tahun 1998 dibandingkan di tahun 1997. Sehingga, relatif dengan di tempat pelayanan swasta harga pelayanan di tempat pelayanan umum telah meningkat. Kombinasi antara relatif meningkatnya harga dan menurunnya kualitas telah mengakibatkan terjadinya perpindahan dari tempat pelayanan umum ke tempat pelayanan swasta diantara mereka yang berada di tengah distribusi pendapatan. Kenyataan ini, berkombinasi dengan penurunan yang signifikan dalam pemakaian pelayanan kesehatan, mengisaratkan bahwa komposisi pemakai pelayanan kesehatan umum telah berubah dan di tahun 1998 secara konsisten tampak lebih banyak porsi pasien yang sangat sakit. Alokasi Sumber daya berdasarkan pada rate per kapita yang tetap akan lebih memperberat tekanan pada tempat pelayanan umum.

Penggunaan Keluarga Berencana dan Kualitas Pelayanan Keluarga Berencana

- Secara keseluruhan, terdapat perubahan yang kecil dalam prevalensi penggunaan kontrasepsi atau dalam kombinasi metoda. Prevalensi tersebut diperkirakan 56,6 % di tahun 1997 dan pada 57,3 % di tahun 1998 (lihat gambar C). Distribusi pemakai metoda-metoda tersebut tidah berubah secara berarti.
- Pengguna suntikan telah beralih dari sumber-sumber alat kontrasepsi mereka. Di tahun 1997, sekitar 27 % pemakai suntikan mengunjungi Puskesmas guna layanan. Di tahun 1998, jumlah tersebut telah turun menjadi hanya 19,8 %. Bidan-bidan merupakan sumber suntikan yang lebih populer di tahun 1998 dibandingkan di tahun 1997, mungkin karena perubahan-perubahan harga relatif dan kualitas pelayanan.
- Pilihan metoda di fasilitas swasta terlihat telah naik antara tahun 1997 dan 1998, dengan porsi yang lebih tinggi bagi pemberi layanan swasta yang menawarkan IUD dan kenaikan yang berarti dalam proporsi pemberi layanan Cyclofeem dan Depo-Progestin. Biaya layanan baik pada pemberi layanan umum dan swasta telah naik banyak sekali. Terutama, perbedaan biaya suntikan di fasilitas umum dibandingkan fasilitas swasta telah menyempit cukup banyak di tahun 1998. Di kedua pemberi layanan umum dan swasta, frekuensi habisnya stok suntikan telah meningkat secara berarti antara tahun 1997 dan 1998.

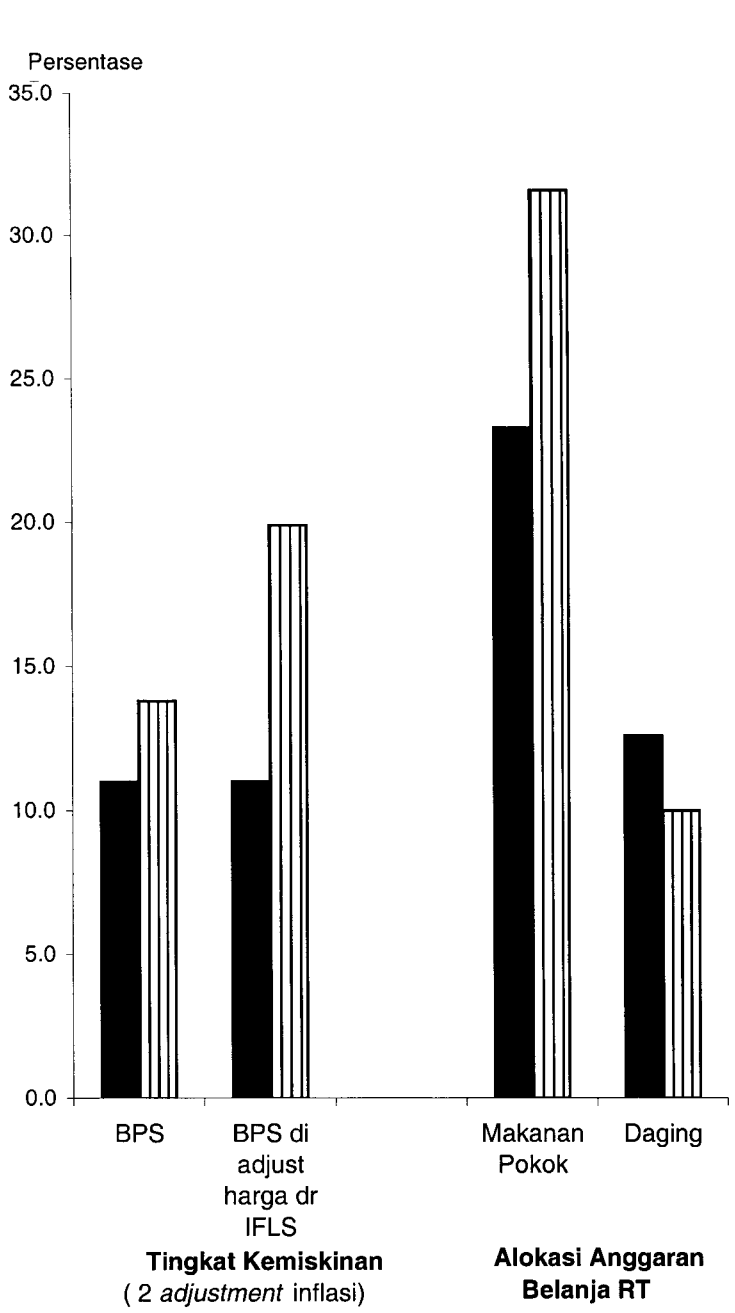
Status Kesehatan

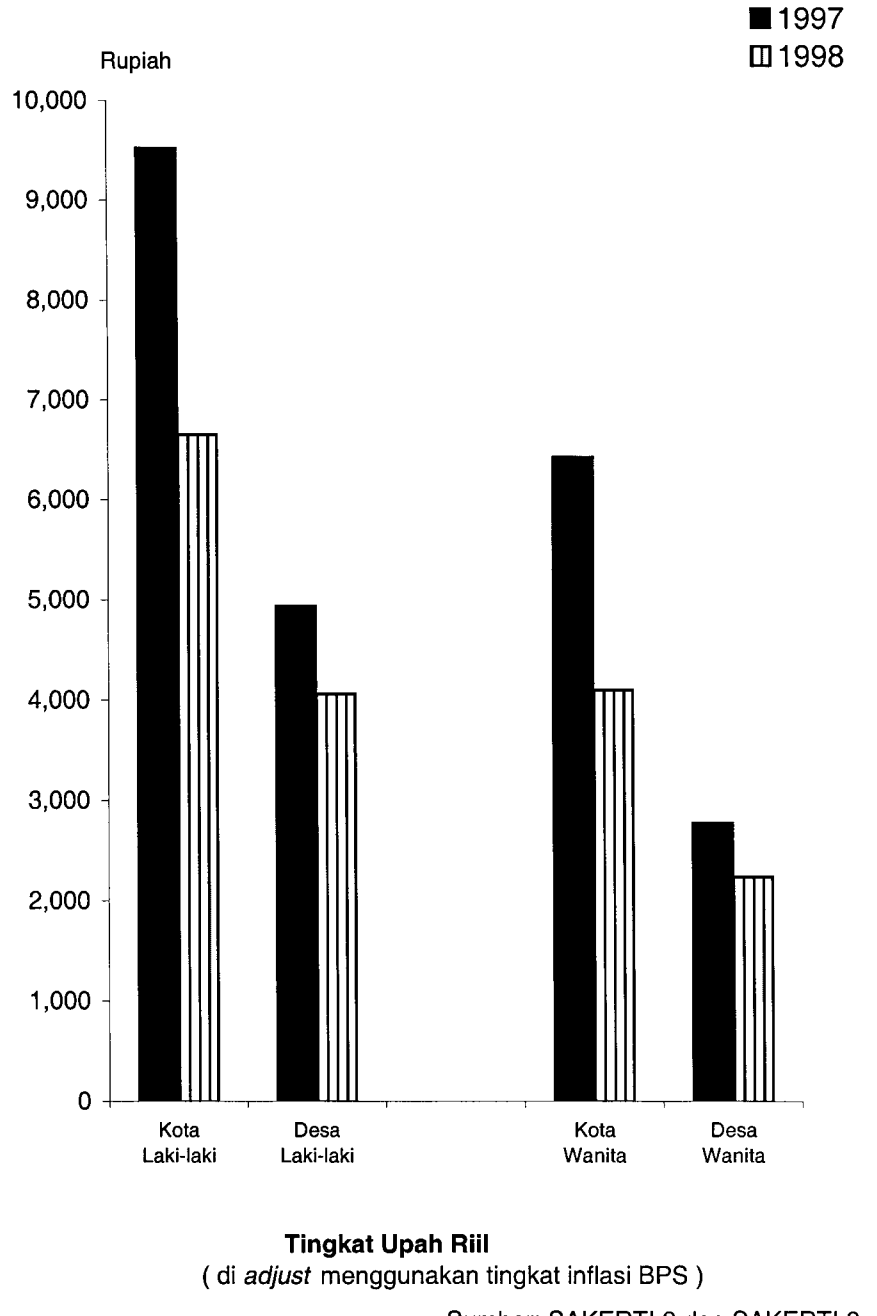
- Survei ini mengandung sejumlah pengukuran status kesehatan yang dilaporkan sendiri dan yang dinilai secara fisik. Memperhatikan semua bukti tentang perubahan-perubahan status kesehatan bersama, kami menyimpulkan bahwa dalam banyak dimensi, status kesehatan responden di tahun 1998 lebih baik dibandingkan di tahun 1997. Pelaporan Sendiri jelas menunjukkan suatu penurunan dalam proporsi responden-reponden yang mengalami gejala-gejala tertentu dalam jangka satu bulan sebelum survei.
- Secara umum, hasil dari penilaian fisik konsisten dengan peningkatan dalam hal kesehatan (lihat gambar C). Terhadap status gizi, proporsi anak-anak pada bagian paling bawah dari spektrum (seperti diukur oleh berat terhadap tinggi) telah menurun. Secara keseluruhan, dan terutama bagi wanita-wanita yang paling miskin, terlihat bahwa status haemoglobin sebenarnya telah meningkat.
- Terdapat beberapa indikasi bahwa status gizi orang dewasa (seperti yang diukur oleh BMI) telah memburuk pada tahun lalu. Hasil ini muncul terutama pada wanita-wanita yang lebih miskin. Lebih lanjut, petugas-petugas kesehatan Sakerti secara konsisten memperlihatkan bahwa kesehatan responden-responden kami yang paling miskin telah memburuk tahun lalu - mungkin dalam hal-hal yang masih harus muncul dalam penilaian fisik dan yang dilaporkan sendiri.

Persepsi Responden tentang Krisis dan Peranan Masyarakat Dalam Mengurangi Dampaknya

- Meskipun krisis ekonomi Indonesia telah mempengaruhi harga-harga, persediaan, dan kualitas dari sejumlah barang-barang dan layanan, kenaikan harga makanan jelas merupakan perubahan yang paling menonjol terhadap kesejahteraan individu. Hampir 60 % dari responden-responden kami melaporkan bahwa mereka telah dibuat sangat lebih buruk oleh harga beras yang naik. Sudah pasti para produsen beras menjadi lebih baik. Kenaikan harga-harga makanan lain, bahan bakar, dan layanan kesehatan juga telah dilaporkan mengganggu oleh sebagian besar responden.
- Dalam menanggapi kenaikan harga-harga makanan, pemerintah dan badan-badan non-pemerintah telah mengadakan usah-usaha untuk membagikan makanan secara gratis dan makanan dengan harga subsidi. Di lebih dari 85 % komunitas IFLS2+, aktivitas bantuan makanan telah berlangsung 6 bulan sebelum survei.
- Sekitar seperempat rumah tangga melaporkan pembelian makanan pada harga diskon dalam 6 bulan sebelum survei, sementara sekitar 10 % telah menerima makanan secara gratis. Meskipun prevalensi penerimaan bantuan konsumsi relatif tinggi, nilai median yang diterima merupakan suatu porsi kecil dari total belanja keluarga. Rumah tangga - rumah tangga di perkotaan, khususnya di Jakarta, terutama cenderung menikmati manfaat dari bantuan.
- Bantuan tidak resmi dari teman dan anggota keluarga juga penting. Sekitar seperempat rumah tangga telah menerima bantuan tidak resmi. Nilai median dari bantuan tesebut jauh lebih besar dibandingkan nilai bantuan dari sumber-sumber resmi.
- Baik pria maupun wanita telah mengurangi partisipasi mereka dalam berbagai aktivitas pembangunan masyarakat seperti proyek perbaikan lingkungan sekitar dan Posyandu. Untuk pria, tingkat pendidikan dan pengeluaran kelihatannya merupakan faktor yang lebih penting dari partisipasi di tahun 1998 dibandingkan tahun 1997. Pada wanita, mereka yang tingkat pendidikannya relatif rendah mengurangi partisipasi mereka dalam kegiatan-kegiatan Posyandu.

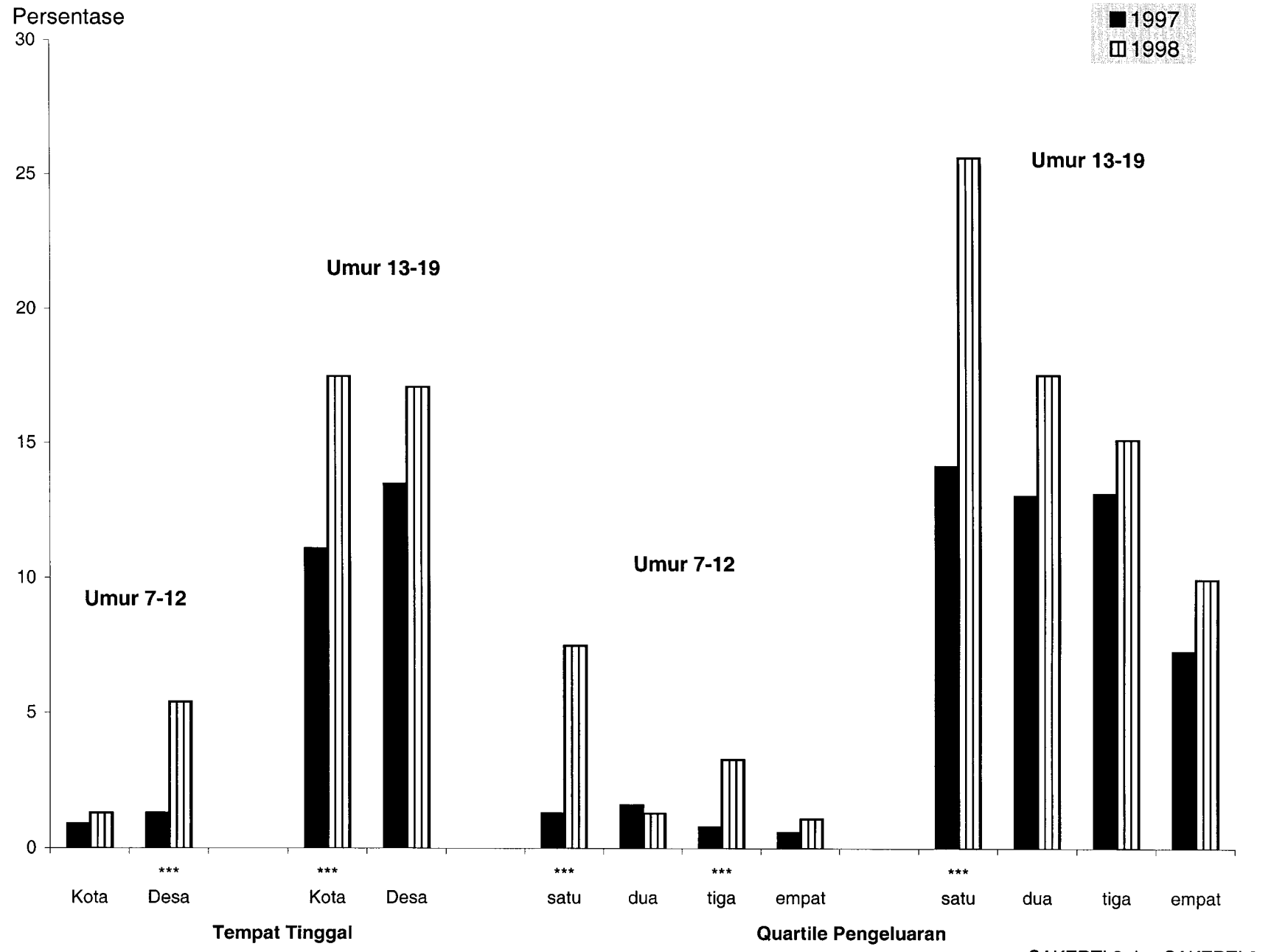
Gambar A: Indikator Terpilih Kesejahtraan Ekonomi





Sumber: SAKERTI 2 dan SAKERTI 2+

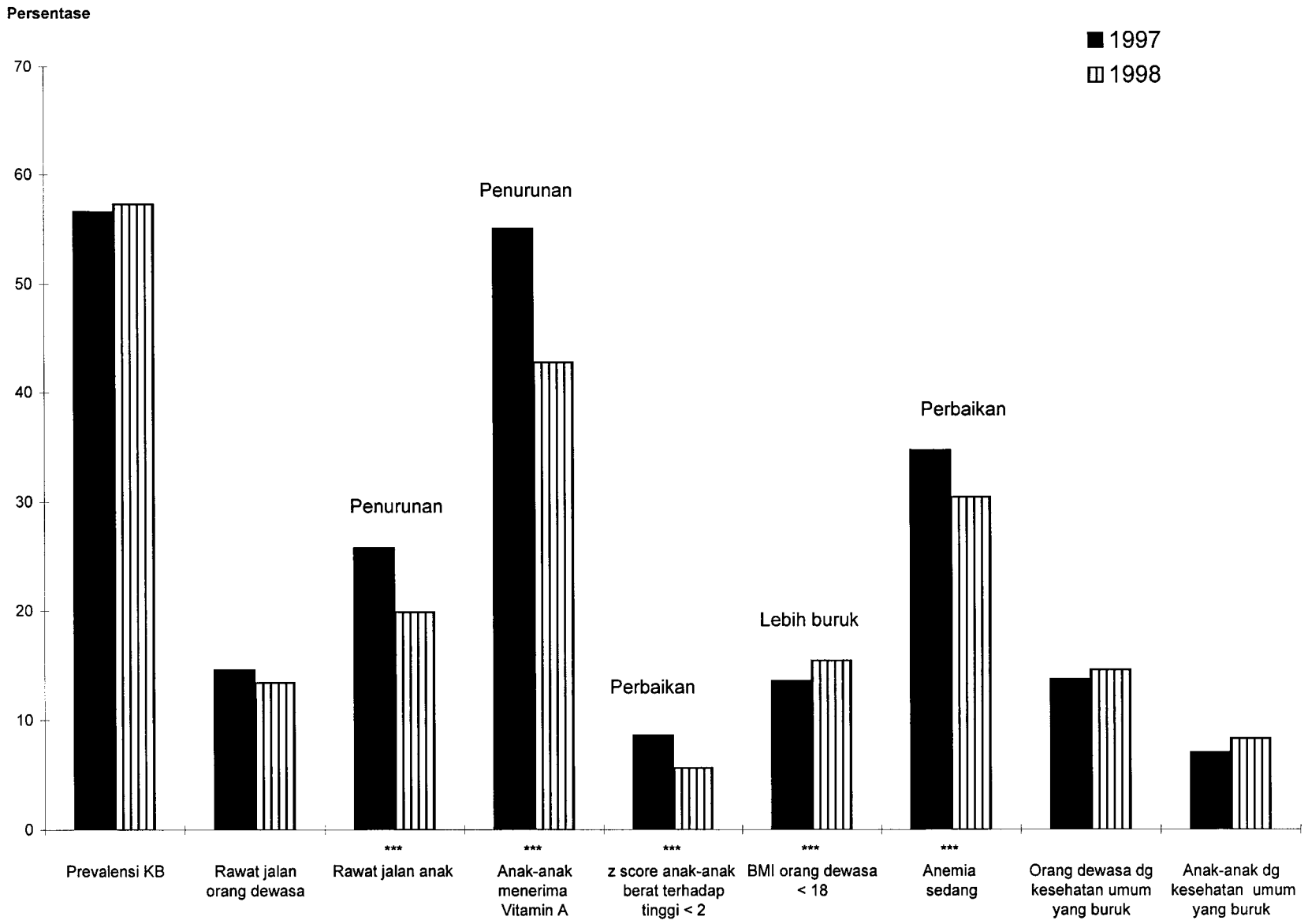
Gambar B:Tingkat Putus Sekolah 1997 dan 1998



SAKERTI 2 dan SAKERTI 2+

*** menunjukkan perubahan antara 1997 dan 1998 secara statistik signifikan

Figure C: Selected Indicators of Use of Health Care and Health Status



*** indicates change between 1997 and 1998 is statistically significant

IFLS2 and IFLS2+

0. Introduction

After almost three decades of sustained economic growth, Indonesia is currently in the midst of a major economic and financial crisis. Output in 1998 is expected to be about 15% below its level in 1997. The rupiah came under pressure in the latter part of 1997, falling from around Rp2,400 per US$ to about Rp4,800 by December of that year. In January 1998, the rupiah collapsed, to Rp15,000 per US$. For the first three quarters of 1998 the rupiah fluctuated, but by the end of the year it had strengthened to about half its January level. Interest rates have behaved much like the exchange rate: they quadrupled in August 1997 and have remained extremely volatile since then. The turmoil has wreaked havoc with the confidence of investors and with the availability of credit.

Sharp increases in commodity prices and changes in the government policy of subsidizing fuel and rice have accompanied the financial chaos. Prices spiraled upwards during the first three quarters of 1998 then stabilized. Estimates of the Central Statistical Bureau put annual inflation at about 75-80% for 1998. Prices of staple foods have risen faster than other prices, suggesting that rice farmers may have had some protection from the crisis. Many farmers, however, lost crops in the severe drought of 1997.

Transformations in the political sector have been just as dramatic as those in the economy. After over 30 years in office, President Suharto resigned in May 1998. Although the incoming president B.J. Habibie scheduled multi-party elections for the middle of 1999 and pledged political reform, protests continue to rock the country.

The events of the last year have left few Indonesians untouched. For some, such as those on fixed incomes, the turmoil is likely to have been devastating. For others, new opportunities have emerged. The notion that Indonesia is facing *a* crisis is naïve. Rather, the crisis has many interacting facets, the impacts of which likely vary across regions, across socio-economic groups, and across demographic groups in complex and nuanced ways.

The complexity of the Indonesian situation makes planning for the medium- and longer-term effects of the crisis extremely difficult. If programs are to succeed at ameliorating the impacts of the crisis, they must be well-targeted and they must address the specific problems people face. Such programs cannot be designed without identifying who has been affected by the crisis, ascertaining the coping mechanisms that provide individuals with short-term protection (such as pulling children out of school or delaying necessary health care expenditures), and evaluating the longer-term implications of these actions.

This study seeks to contribute new evidence on three questions, the answers to which are key for the design of effective and well-targeted public policy. The questions on which we focus are:

1) who has been affected most by the crisis
2) how they have been affected
3) how they have responded to the crisis

The data that we use to address these questions are uniquely well-suited to the task at hand. The Indonesia Family Life Survey (IFLS) is an on-going longitudinal survey of individuals, households, families, and communities in Indonesia.[1] In an effort to respond to the needs of the policy and scientific

[1] The IFLS1 was supported by funding from the National Institute for Child Health and Human Development, USAID, the Ford Foundation, and the World Health Organization. The IFLS2 is supported by funding from the National Institute on Aging, the National Institute for Child Health and Human Development, USAID, the World Health Organization, John Snow (OMNI project), the Hewlett Foundation, The Futures Group (the POLICY project) and the International Food Policy Research Institute. The IFLS2+ is supported by The Futures Group (the POLICY project), the World Bank, and the United Nations Population Fund. The IFLS study was conceived, designed and implemented by RAND, with a sub-contract to the Demographic Institute of the University of Indonesia.

communities, RAND and UCLA undertook a special wave of the IFLS, IFLS2+, in late 1998. IFLS2+ reinterviewed individuals from almost 2,000 Indonesian households that had been interviewed one year earlier as part of IFLS2. Because our focus in this study is on the immediate impact of the crisis, we contrast responses in the 1997 interview with the same person's (or household's) responses in the 1998 interview.

Our data provide unambiguous evidence that the crisis has had a far-reaching effect on the purchasing power of all our respondents, regardless of their position in the income distribution. The precise magnitude of the changes is controversial and depends critically on assumptions about inflation.

In an environment where prices have changed drastically, the difficulties with using changes over time in overall spending levels to pin down changes in economic status are formidable. They highlight the importance of considering a battery of indicators of well-being in any serious effort to understand the impact of the crisis. One of the strengths of the IFLS is the range of topics about which it contains information.

For example, when one considers changes not in overall levels of spending, but in how spending is allocated, our results suggest that the poorest households have been most affected. The share of the household budget spent on food, especially staples, has increased significantly and these increases are largest for the poorest. To absorb these expenditures, purchases of semi-durables appear to have been delayed. Expenditures on education have declined significantly, especially among the poorest. Combined with significant declines in enrollment rates for young children from poor households, the findings are very troubling.

Households have also significantly reduced the share of the budget spent on health services over the last year. At the same time, prices of health services have increased at least as fast as inflation. Thus on net there has been a substantial reduction in use of health services by both adults and children. The reduction is concentrated in the public health sector. Adult visits to government health centers and children's visits to community health posts have both fallen. For children the decline has been particularly dramatic. Among the better off there has been some switching into private health services, but those in the middle of the income distribution have switched away from use of private health services. While use of private services has changed little, the characteristics of users have changed a good deal.

The IFLS collects extensive data on health status, including physical assessments conducted by a nurse. Most measures of health status have improved over the over the last year, although there are some indications that the nutritional status of adults has worsened, particularly among the poorest. The results tentatively suggest that the health of the poor may be particularly vulnerable to an extended reduction in purchasing power.

We conclude that while the crisis has left few untouched, the short- and medium-term effects are likely to differ across sub-groups of the population. It is imperative that policy makers identify those people for whom the crisis is likely to have the most deleterious impact on the medium and longer-term for they are the people who need to be targeted for assistance today. Such targeting requires a good understanding of the behavioral responses to the crisis by individuals, families, and communities in Indonesia and careful monitoring of those responses as the people adapt to their changing socio-economic and political landscape.

The rest of this study is divided into nine sections. We begin with a description of the study design and the IFLS sample. The section is followed by a description of the impact of the crisis in terms of expenditure levels. The following two sections focus on employment and education. We next turn to use of health care and family planning, followed by a section on the characteristics of health care and family planning providers. The final sections focus on health status and on respondents' perceptions of the crisis and the role of programs intended to alleviate its impact. The final section summarizes our results.

1. Study Design and the IFLS Sample

The data on which this study is based have several features that make them particularly appropriate for understanding how the lives of Indonesians have changed as a result of the economic and political events of 1998. We highlight these features briefly, then provide more detail about the study methodology below.

First, the data are longitudinal. We compare data from individuals and households interviewed in late 1997 (IFLS2) with data from those *same* individuals and households one year later, in 1998 (IFLS2+). The longitudinal design is scientifically advantageous because if the study is well-implemented, sample composition will be held constant across waves and differences in respondents over time will reflect real changes, rather than differences in study design.

The IFLS has been extremely successful with respect to maintaining the sample composition. For the IFLS2+, we identified 1,934 households that we had interviewed in 1997 (as part of IFLS2) and from whom we wanted to obtain data in 1998. We succeeded at interviewing over 98% of these households. Because our reinterview rates are so high, attrition bias in our study is not an issue.

Second, the IFLS is extremely rich in content. The depth of the IFLS is important because Indonesia's economic crisis has the potential to affect many different aspects of well-being and to provoke a variety of responses. We collect data on a variety of topics. At the household level, we collect indicators of economic well-being, such as incomes, assets, savings, expenditures, and consumption. At the individual level we collect information on responses to changes in the economy (migration, asset sales, changes in labor force participation, school enrollment, and use of health and family planning services). The surveys also contain data on health outcomes such as self-assessed health status and physical assessments conducted by a health worker. In 1998 we included a special module on perceptions of the crisis and its effect on well-being.

The IFLS data are not limited to households and individuals. Through interviews with community leaders and visits to markets we obtain information on community-level changes in prices of food, fuel, and other goods, job opportunities, crop yields, and access to social safety net programs such as subsidized food distribution schemes and public works projects. Additionally we visit public and private schools and health facilities to collect data on the price and quality of services available at these institutions.

Third, the timing of the surveys is appropriate for pinpointing the short-term impacts of and anticipating the medium- and longer-term impacts of the crisis (Figure 1.1). IFLS2 was fielded in the second half of 1997, just before the rupiah collapsed precipitously. By design, IFLS2+ was fielded one year later, during the second half of 1998.

Fourth, the IFLS has good geographic coverage. The comparisons in this study are based on data from seven Indonesian provinces: Jakarta, West Java, Central Java, West Nusa Tenggara, South Kalimantan, South Sumatra, and North Sumatra. The survey respondents live in communities that in combination represent a great deal of Indonesia's economic, environmental, and cultural heterogeneity. The geographic breadth of the survey is important because the effects of the crisis and people's responses may vary considerably by region.

The data used in this study are part of a much larger project, the Indonesian Family Life Surveys. The results presented here are comparisons of the 1998 data with a subset of the data collected in 1997. In fact, the 1998 survey was designed specifically for assessing the impacts of the crisis through such comparisons. Consequently, the study design for the 1998 survey draws heavily on the earlier rounds of data collection with respect to the sample, questionnaire content, and field procedures.

Study Background

The IFLS is a large-scale integrated socio-economic and health survey that collects extensive

information on the lives of respondents, their households, their families, and the communities in which they live. The IFLS is an on-going longitudinal survey. The sample is representative of about 83% of the Indonesian population and contains over 30,000 individuals living in 13 of the 27 provinces in the country. The first wave was conducted in 1993/94 (IFLS1), with a follow-up in 1997/98 (IFLS2) and a special follow-up (of a 25% sub-sample) in late 1998 (IFLS2+).

The original IFLS sampling scheme balanced the costs of surveying the more remote and sparsely-populated regions of Indonesia against the benefits of capturing the ethnic and socioeconomic diversity of the country. Within 13 provinces, the scheme randomly sampled households from 321 enumeration areas (EAs). The EAs were selected from a nationally representative sample frame used in the 1993 SUSENAS.[2] A total of 7,730 households were included in the original listing for the first wave, IFLS1, and over 93% of these households were interviewed.

For each IFLS1 household, representative members (typically the female and male household heads) provided household-level demographic and economic information. In addition, several household members were randomly selected and asked to provide detailed individual information on a variety of topics, including use of health care and health status, contraception, education, migration and labor market behavior.

The second wave of the IFLS (IFLS2) was fielded between August 1997 and January 1998, with the goal of recontacting all original IFLS households and reinterviewing all IFLS1 main respondents. If a household had moved, we obtained information about their new location and followed them if they resided in any of the 13 IFLS provinces. Excluding the households in which everyone had died (usually single-person households), we succeeded at reinterviewing 94% of the IFLS1 households. This recontact rate places the IFLS in the same league as the best longitudinal surveys in the world, in spite of the fact that the hiatus between waves is longer than in most panel studies and the communication infrastructure is significantly less developed in Indonesia. Our success is testimony to the quality of the entire IFLS team and, particularly, the commitment of the project supervisors and interviewers.

When we relocated a household in IFLS2 we obtained some information on all of the 1993 household members, regardless of whether they were still resident. In 1997 we interviewed all individuals in the original household. Because we sought to re-interview all the IFLS1 main respondents, we attempted to track those who had split off from the original household.[3] We re-interviewed 91% of all the IFLS1 individuals that we targeted, including about 1,500 who had split-off from the original household and were successfully tracked and interviewed in a new household.[4]

Each round of the IFLS has included an extensive survey of the communities in which the IFLS households are located. The Community-Facility Survey includes interviews with the head of the community (the *Kepala Desa* or *Lurah*), the head of the Women's Group (*Ibu PKK*), and the collection of data on prices of food and non-food items from knowledgeable informants and from sales outlets. In addition, in each community, data are collected about facilities through visits to as many as 12 health care providers and 8 schools per community. With respect to health care providers, the types of facilities

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[2]The provinces are four on Sumatra (North Sumatra, West Sumatra, South Sumatra, and Lampung), all five of the Javanese provinces (DKI Jakarta, West Java, Central Java, DI Yogyakarta, and East Java), and four provinces covering the remaining major island groups (Bali, West Nusa Tenggara, South Kalimantan, and South Sulawesi).

[3] The IFLS1adopted a within-household sampling scheme when choosing the individuals who were administered an individual questionnaire book. Essentially this scheme amounted to interviewing the head, spouse, and a random sample of other residents. In IFLS2 we tracked those 1993 household members who had received an individual questionnaire and all members who were at least 26 years old in 1993. This was because of the costs involved in tracking everyone. The IFLS2 sample of individuals is representative of the underlying population for those who were at least 26 in 1993. The other age groups are representative after applying weights to account for the within-household sampling scheme used in IFLS1.

[4] See Thomas, Frankenberg, and Smith, "Lost but not Forgotten: Attrition and Recall Error in the Indonesia Family Life Survey", 1999, for a discussion of this issue with respect to the IFLS1 and IFLS2.

include public providers (government health centers such as *puskesmas* and *puskesmas pembantu*), private providers (private clinics and the single provider practices of doctors, midwives, nurses, and paramedics) and community health posts (*poysandu*). With respect to schools, IFLS1 and IFLS2 include interviews with public and private elementary schools (*SD*), junior high schools (*SMP*), and senior secondary schools (*SMA* and *SMU*).

IFLS2+

The purpose of the IFLS2+ survey was to provide insights into the likely immediate and medium-term effects of Indonesia's economic crisis by collecting timely data on who has been affected and on the strategies adopted to mitigate the impact. The IFLS2 was uniquely well-positioned to serve as a baseline for another interview, but we had neither the time nor the resources to mount a survey of the same magnitude as IFLS2 (which took over two years to plan and test). Instead, we chose to field a scaled down survey that retained as much as possible from IFLS2.

By design, IFLS2+ re-administers many of the IFLS1 and IFLS2 questions, so that comparisons across rounds can be made for characteristics of households and individuals (such as expenditure levels, school enrollments, use of contraceptives and health care) and for characteristics of communities and facilities (such as food prices and the availability and prices of drugs and contraceptive supplies).

There are several new sections in both the household and community-facility surveys in IFLS2+. These sections were specifically designed to elicit information about the impact of the crisis, how individuals and households have responded to it, and how the crisis is perceived. Some of these questions were included in response to the needs of the Government of Indonesia and the donors who funded the IFLS2+ fieldwork. The new sections were piloted in April/May, 1998 and the entire instrument was pre-tested in May/June, 1998. Fieldwork was conducted between August and December, 1998. As Figure 1.1 shows, IFLS2+ is approximately one year after IFLS2. The IFLS2 was largely completed before the collapse of the rupiah in January, 1998.

In IFLS2+ we decided to re-interview a 25% subsample of the IFLS households. We drew the IFLS2+ sample in two stages. First, to reduce costs we decided to revisit 7 of the 13 IFLS provinces: West Nusa Tengarra, Central Java, Jakarta, West Java, South Kalimantan, South Sumatra, and North Sumatra. These provinces span the full spectrum of socio-economic status and economic activity in the fuller IFLS sample. Second, within those provinces, we purposively drew 80 EAs with weighted probabilities in order to match the IFLS sample as closely as possible. The IFLS2+ sample is representative of the entire IFLS sample.

Counting all original households in IFLS1 and the split-offs in IFLS2, there are 2,066 households in the IFLS2+ target sample. We achieved a remarkable success rate given the turmoil in Indonesia during 1998: we relocated and reinterviewed over 95% of the target households.

For the purposes of this study, the households of central interest are those that were interviewed in both 1997 and 1998, since it is only for these households that we can contrast life a year ago with life now. Of these 1,934 households we interviewed over 98% of the original households. In no province were our completion rates less than 97% (Table 1.1). At the individual level our completion rate is 96% of the IFLS2 respondents.

The IFLS devotes considerably more resources than do most household surveys to the issue of tracking migrants. We do so because we believe that obtaining high follow-up rates with all types of baseline respondents is crucial. Those who have moved from their baseline location are likely to differ in important ways from those who have stayed (see Thomas, Frankenberg, and Smith, 1999, for a discussion).

A more standard practice in household panel surveys in developing countries is to return to the housing structures that were interviewed at baseline and reinterview the people currently living there. This strategy is flawed from a scientific perspective because it is unclear how to interpret the resulting sample.

The respondents who have moved from their original location are likely to be the ones whose lives have changed a lot, and they will be systematically excluded from the sample. It is naive to assume that new respondents who enter the sample because they are now living in an original housing structure are "like" the respondents who moved out. The panel sample of people interviewed in both surveys is representative of *only the non-movers,* which is obviously a select group of people. The value of the longitudinal dimension of the survey is seriously attenuated by the choice-based sample design that collects data only from non-movers.

Evidence on the representativeness of the IFLS2+ sample is presented in Table 1.2.[5] Columns 1 through 3 are based on data from IFLS2. Column 1 includes all households interviewed in 1997; column 2 includes the target sample and column 3 includes those households who were interviewed in IFLS2+. The sub-samples mirror the full sample reasonably closely. The small differences between the first and second columns will disappear when the data are weighted.

In addition to interviews with households and individuals, we repeated the community-facility survey in IFLS2+. Fieldworkers were instructed to reinterview both the community leaders, and all the facilities interviewed in IFLS2. For each community, interviewers were given a specific list of the names and addresses of the government health centers, private providers, community health posts, and schools from which data were collected in 1997. Of the providers interviewed in 1997, a total of 219 public providers (about 2.8 per community) and 387 private providers (about 4.8 per community) were reinterviewed in 1998. The results presented in subsequent sections compare the responses of these providers in 1997 to their responses in 1998.

[5]At this time, weights have not been computed and so all numbers in this study are unweighted. It is important to recognize that the purposive sampling design of IFLS2+ means that the sample is not representative at the province level.

Table 1.1: Reinterview Rates in 1998 for Households Interviewed in 1997

	Target # HHs (interviewed in 1997)	# HHs Interviewed in 1998	% HHs Interviewed in 1998
Total	1934	1903	98.4%
North Sumatra	213	208	97.7
South Sumatra	289	283	98.0
Jakarta	181	178	98.3
West Java	318	312	98.1
Central Java	452	445	98.5
West Nusa Tenggara	295	295	100.0
South Kalimantan	186	182	97.9

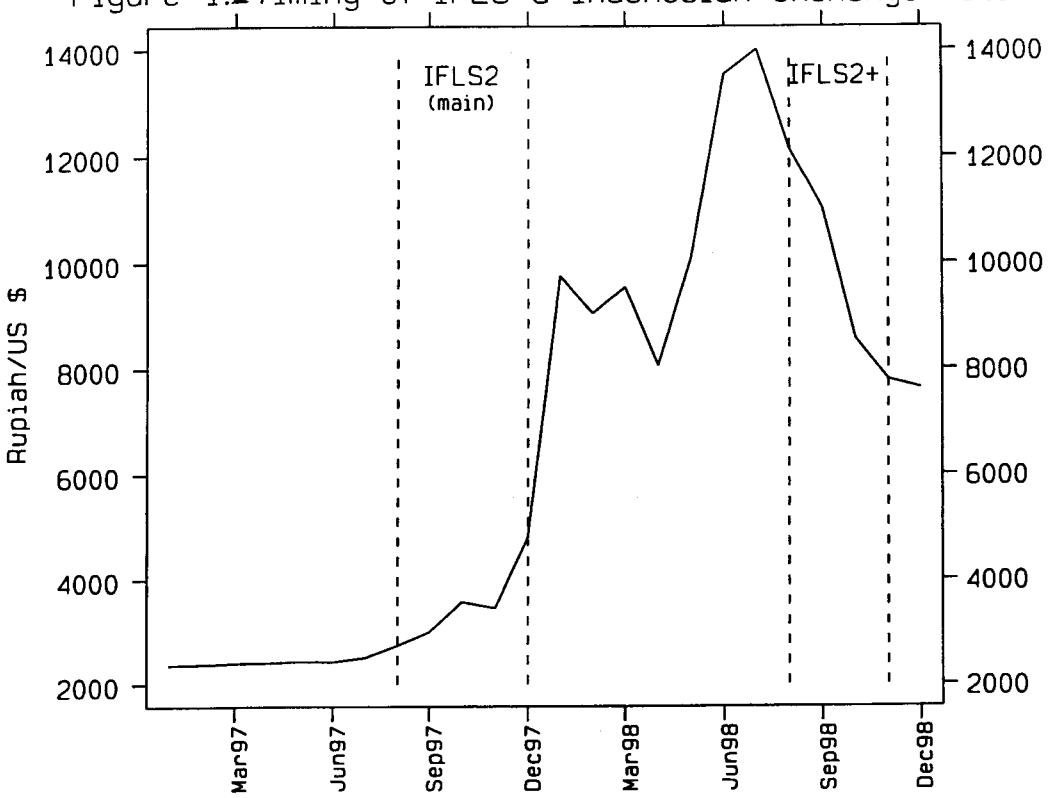
Table 1.2: Sample representativeness

Comparison of IFLS2 full sample, target sample for IFLS2+ and final IFLS2+ sample

Characteristics measured in:	1997			1998
	All HHs in IFLS2 (1)	Target HHs in IFLS2+ (2)	Inter-viewed in IFLS2+ (3)	IFLS2+ sample HHs (4)
Number of HHs	7560	1934	1903	1903
% urban	45.4	42.9	41.4	42.1
Household size	4.4	4.4	4.4	4.3
Number of children	1.41	1.47	1.48	1.49
Age of HH head	47.4	47.1	47.1	46.2
Education of HH head (years)	6.0	5.9	5.6	6.1
Means and (standard errors) of				
Per capita expenditure (Rp 000)	241 (7)	252 (17)	246 (18)	186 (5)
Share of budget spent on food	66.5 (0.2)	68.5 (0.5)	69.0 (0.5)	73.8 (0.5)
Source of data:	IFLS2	IFLS2	IFLS2	IFLS2+

Notes: Column 1 is based on all HHs interviewed in IFLS2. Column 2 is based on the random sub-sample of IFLS2 households that were included in the IFLS2+ target sample. Columns 3 and 4 are based on those households re-interviewed in IFLS2+; column 3 is based on their 1997 information (recorded in IFLS2) and column 4 is based on their 1998 information (recorded in 1998).

Figure 1.1 Timing of IFLS & Indonesian exchange rate



2. Expenditures and Poverty

Central to the question of how the Indonesian population has been affected by the economic crisis is understanding how the economic status of households has changed. A number of indicators of economic status are potentially relevant. In this section we focus on monthly expenditures.[6] Expenditures are a standard measure of economic status. They are thought to be less prone to measurement error than wealth or income and, because they incorporate a household's ability to maintain a standard of living through borrowing or spending down savings, they are likely to provide a more accurate picture of economic well-being over the longer tern than current income.

In this section we consider expenditures from several perspectives. First, we contrast the 1997 distribution of expenditures for all households with the 1998 distribution. This analysis provides a sense of how levels of expenditures have changed for the poor, the middle-class, and the relatively better off. Second, we look at expenditures separately for rural and urban areas. Third, we focus on the poorest households, exploring how estimates of the proportion of households below the poverty line have changed since 1997.

An issue that pervades these analyses is the question of how to adjust 1998 expenditures for inflation. The prices that Indonesian households faced have changed dramatically between 1997 and 1998, and these changes are not uniform throughout the country. As will be seen, conclusions about who has been affected and by how much are extremely sensitive to assumptions about inflation.

In an effort to move issues of inflation off centerstage, we examine the association between household characteristics and change in expenditures between 1997 and 1998, while controlling for price changes in flexible way. We also consider how budget allocations have changed between 1997 and 1998.

Expenditure Levels in 1997 and 1998: Table 2.1 presents summary statistics on the distribution of expenditures in 1997 and 1998, using several inflation adjustments. We first deflate 1998 expenditures with a province-specific price index based on *Biro Pusat Statistik* (BPS) price data going back to December, 1997.[7] Estimates for the country overall are presented in the first row. The mean total monthly household expenditure in 1997 is reported in the first column of Table 2.1: it is close to Rp 1 million. Real monthly expenditure in 1998, for the same households, is reported in the second column of the Table 2.1. The mean of the difference in expenditure (1998-1997) is reported in the third column. The percentage change between years is presented in the fourth column. On average, total household expenditure has declined by 11%. A similar comparison is drawn for changes in monthly *per capita* expenditure (PCE) in columns 5, 6, 7 and 8: it has declined on average by 24%. These are very large differences.

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[6]Household expenditure in this survey is based on respondents' recall of expenditures for a series of different goods (or categories of goods). The reference period for the recall varies depending on the good. The respondent is asked about food expenditures over the previous week for 37 food items/groups of items (such as rice; cassava, tapioca, dried cassava; tofu, tempe, etc.; oil; and so on. For those people who produce their own food, the respondent is asked to value the amount consumed in the previous week. There are 19 non-food items; for some we use a reference period of the previous month (electricity, water, fuel; recurrent transport expenses; domestic services) and for others, the reference period is a year (clothing, medical costs, education). It is difficult to get good measures of housing expenses in these sorts of surveys. We record rental costs (for those who are renting) and ask the respondent for an estimated rental equivalent (for those who are owner-occupiers/live rent free). All expenditures are cumulated and converted to a monthly equivalent. The sample in this section is restricted to those households who completed the expenditure module in both IFLS2 and IFLS2+.

[7]To this end, we have deflated 1998 expenditures using a province-specific price deflator that is based on the BPS price indices reported for 44 cities in Indonesia. We matched the cities in the BPS database to our provinces and used the (simple) average of

When we look at median expenditure, the story is strikingly different: it has remained relatively stable during this period. The *per capita* expenditure distributions are graphed in Figure 2.1.[8] These results indicate that there has been a substantial shift in the structure of the distribution of expenditure with the center of the distribution remaining relatively stable, the right tail being substantially truncated between 1997 and 1998 and the left tail becoming fatter.

The BPS price data contain information on the prices of a number of different goods, but prices are available only for urban areas. The IFLS community survey collects information on local prices from stores, markets, and knowledgeable informants within the community. Analysis of the IFLS price data suggests that inflation has been about 5% higher in rural areas than in urban areas. Additionally, the IFLS data suggest that inflation between the rounds of the survey has been about 15% higher than the rate estimated from the BPS data.[9] While it is important to emphasize that the IFLS is not designed to collect the detailed data necessary to calculate price indices, these estimates give us pause. We have, therefore, explored the implications of the IFLS findings. We do this first for the country overall, using the BPS province-specific price indices but inflating them by an additional 14% for urban households and 16% for rural households. We refer to this inflation rate as inflation from BPS prices adjusted for findings from the IFLS data.

The estimates based on these inflation rates are presented in the lower half of Panel A in Table 2.1 and graphically in Figure 2.2. It is readily apparent from Figure 2.2 that there has been a shift to the left of the entire distribution of PCE. This is reflected not only by a decline in mean PCE (of 39%) but also by a decline at the median (of 21%).

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the price index for provinces with more than one city. We use price indices for August, September, October and November, 1998, deflating all 1998 expenditures to December 1997. The inflation rates we use are:

	Inflation rate (relative to December 1997)			
Province	August	September	October	November
North Sumatra	68.2	78.2	76.7	77.9
West Sumatra	74.6	85.1	81.7	85.1
South Sumatra	76.4	87.7	85.4	85.0
Lampung	79.6	86.9	86.2	86.2
Jakarta	68.6	74.1	72.9	71.7
West Java	61.5	67.4	68.1	67.0
Central Java	61.4	67.6	67.3	68.1
East Java	69.2	76.7	76.4	76.0
Yogyakarta	78.8	83.4	83.6	85.0
Bali	62.7	70.5	71.3	73.8
NTB	73.5	82.9	85.1	89.0
South Kalimantan	63.2	74.0	74.1	72.7
South Sulawesi	70.0	77.1	77.0	78.3

[8] The figure is a non-parametric estimate of the density of PCE. It is based on an Epanechikov kernel with a 10% bandwidth.

[9] The IFLS community survey collects information on 10 prices of standardized commodities from local stores and markets; in addition, prices for 39 items are asked of the Ibu PKK and respondents at the *posyandu* in the community. Using those prices, in combination with the household-level expenditure data, we calculated EA specific (Laspeyres) price indices for the IFLS communities.

Expenditure Levels by Sector of Residence. The importance of getting prices right is even more apparent when one moves to questions about who has been affected by the crisis. The lower half of Table 2.1 presents summary statistics of the expenditure distributions in 1997 and 1998 for urban and rural areas separately. From the estimates based on BPS prices alone, the data suggest that urban households have been more seriously impacted by the crisis: PCE of the average urban household has declined by 34%, while for rural households it has declined by only 13%.

The story changes somewhat when the differential inflation rates suggested by the IFLS price data are taken into account. When the BPS inflation rates are adjusted upwards by 5% for rural areas, the estimated decline in PCE for the average rural household rises to 18%.

But the IFLS data suggest that inflation is higher not only in rural areas, but higher overall as well. The final panel reports changes in per capita expenditure, by sector of residence, using the BPS province-specific price indices but inflating them by about 15% (14% for urban households and 16% for rural households). According to these estimates, both urban and rural residents have experienced large declines in real expenditures between 1997 and 1998.

The effect of the crisis on the distribution of PCE is summarized in Figure 2.3 (box plot). It is clear that changes between 1997 and 1998 have been concentrated in the top and bottom quartiles of the expenditure distribution. We now turn the spotlight to the left tail of the expenditure distribution and focus on the poor.

Changes in Poverty Rates It is a common practice to define a poverty line by determining a bundle of goods and services that will support a basic standard of living then calculating the amount of money required to purchase those goods and services. Households are determined to be below the poverty line when their expenditures are below the level at which the basic bundle can be purchased.

We chose as the poverty line the expenditure level at which poverty rates in IFLS2 matched the BPS province- and sector-specific poverty rates for 1996 (the most recent poverty estimates for Indonesia).[10] Table 2.2 presents estimates of poverty levels in 1997 and 1998, overall and by sector of residence. The results are graphed in Figure 2.3. Again, because the estimates are sensitive to inflation adjustments, we present the rates associated with the BPS urban price data and the rates taking into account the IFLS results that inflation may have been higher overall, and higher in rural than in urban areas.

In 1997, about 11 percent of the IFLS households were below the poverty line. By 1998 the percentage of households in poverty had risen to 13.8 percent based on the BPS estimates of inflation. If the BPS inflation rates adjusted for the IFLS price results are used, almost 20 percent of households are poor in 1998.

In both 1997 and 1998, poverty rates are lower in urban than in rural areas, regardless of which inflation estimates are used. When the adjusted BPS inflation rates are used, or the BPS estimates are increased by 5% in rural areas, it appears that the percentage change in poverty rates between 1997 and 1998 has been higher or about the same in rural areas as in urban areas. If the inflation rate from the BPS prices alone is used, it appears that poverty rates have increased more in urban than in rural areas.

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[10] It is important to note, therefore, that our estimates of poverty rates are *constructed* to match those of BPS in 1996.

Note of Caution: The estimates of poverty rates discussed above are sensitive to the inflation rate. Changes in expenditure levels and in poverty rates are substantially smaller when they are calculated using an inflation rate from the BPS urban price data than when they are calculated using an inflation rate that combines the BPS and IFLS price data. In our judgement, it is likely that reality lies between these two extremes.[11]

Two things strike us as abundantly clear, however. First, the dire prediction that massive poverty has spread throughout Indonesia is simply wrong. Second, in a world of very high inflation, estimates of well-being based exclusively on PCE (or income) may be seriously misleading. In addition, even with very good price data there are some conceptual concerns that are extremely difficult to address. The appropriate inflation rate for a particular household will depend on their consumption patterns which may differ from the average (which is what is used in the construction of indices). Moreover, people are likely to substitute away from commodities that become relatively expensive in which case inflation rates based on a fixed bundle of goods will tend to overstate actual inflation. If the poorest households have little scope for substitution, they are likely to be more severely affected by price increases than households that are better off.

We address this concern in two ways. First, we present some estimates of whose economic status has been affected by the crisis that are somewhat less sensitive to assumptions about inflation. By controlling province and location in a regression context, we allow price differences (and other location-specific differences) to affect the outcomes in a flexible way. This strategy also obviates the need for weights in the analyses since their effect would be soaked up by the province and urban-rural effects. In this context we examine both poverty rates and the allocation of the budget to commodities. Our second strategy for dealing with the fact that estimates of inflation may impede understanding the effects of the crisis is to broaden the scope of the analyses and consider an array of other indicators of well-being. These include employment, schooling enrollment, health status, and use of health care and family planning. These measures are, of course, of interest in an of themselves and taking all the measures in combination provide a fuller picture of the effects of the crisis.

Correlates of Poverty Transitions. An important advantage of the longitudinal dimension of the IFLS is our ability to measure transitions. For example, in order to design policies that are well-targeted, it is necessary to distinguish households that remain poor for an extended period of time from those who dip into poverty briefly. A cross-sectional survey cannot say anything about these dynamics and while the comparison between IFLS2 and IFLS2+ will only tell us about short-term changes, those transitions are of special concern in the context of policy-making in Indonesia today.

It turns out that, even during this crisis, many households transition into *and* out of poverty. For example, using the BPS inflation rates, of the 11% of the population who were poor in 1997, 31% were also poor in 1998. This means that two-thirds of the poor have exited poverty over the last year. Fully 19% of the population will have experienced poverty during the last two years although only one in six of them will have been poor in both years.

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[11] It is extremely difficult to estimate inflation when prices change as rapidly as they have in Indonesia in 1998. Based on other evidence in the IFLS, we conjecture that the IFLS-based estimates of inflation are biased upwards. We do not have enough information in the market-based surveys to use those data alone and so we have combined them with information obtained from the PKK and *posyandu* informants who appear to have over-stated price increases. However, we have no reason to suppose that this overstatement is greater for rural, relative to urban households, and so in the absence of a better source for rural prices, we are inclined to rely on the IFLS estimate that rural inflation is slightly higher than urban inflation.

Table 2.3 presents multivariate regressions of the determinants of poverty transitions. The reference group is households who were not poor in either 1997 or 1998. The coefficients indicate the effect of the covariates on the likelihood of exiting poverty by 1998, entering poverty by 1998, and staying in poverty in both 1997 and 1998. In the first three columns expenditure levels in 1998 are adjusted for inflation using the BPS price data from urban areas. Columns 4-6 adjust for inflation using the higher estimates of inflation that the IFLS price data suggest.

All other things equal, larger household are significantly more likely to enter poverty or to stay in poverty than are smaller households. The presence of young women (age 15-24) appears to increase the probability of exiting poverty and decrease the probability of entering poverty, suggesting those women may be entering the labor market to maintain household income. Households in which the head is relatively well-educated are less likely to make a transition into poverty or to remain in poverty, which means they are more likely to have stayed out of poverty in both years. Households whose heads are younger are more likely to stay in poverty or enter poverty. The crisis, it appears, is having a serious impact on less-educated, younger, and larger households who are attempting to build their families. Households in urban areas are less likely than rural households to have stayed in poverty in both years. Urban households are also more likely than rural households to have exited poverty.[12]

Province of residence has a strong effect on poverty transitions, and the effect is relatively robust to which inflation adjustment is used. The reference category is West Java. Relative to West Java, households in South Sumatra are more likely to exit poverty, and less likely to enter or to stay in poverty. Households in Jakarta are less likely to exit, enter, or stay in poverty than are households in West Java. Households in South Kalimantan are more likely to enter or stay in poverty than households in West Java.

The results in this table are a function of both the impacts of economic change in the past year and the underlying structure of poverty in Indonesia. For example, urban households are less likely than rural households to be in poverty in both years. Although many urban households have been hurt by the crisis, the crisis has not reversed the fact that in Indonesia, urban households are less likely to be poor than are rural households. The results underscore the fact that policies that will alleviate long-term poverty are likely to be different from policies that address the needs of those who fall temporarily on hard times.

Correlates of Changes in Expenditure Levels. Having focused on the poor, we now turn to an analysis of the covariates that are associated with changes in ℓnPCE for all households in a multivariate regression context. To the extent that these covariates are not related to price changes, we can interpret the regression coefficients as providing descriptive information about the types of households who have been most seriously impacted by the crisis. Results are summarized in Table 2.4. A negative coefficient indicates that ℓnPCE decreased between 1997 and 1998.

[12] Using the BPS inflation adjustments, urban households are also more likely to have entered poverty than rural households. Using the IFLS inflation adjustments, there is no difference between urban and rural households in the likelihood of entering poverty.

The first two columns are based on the BPS inflation rates, columns 3 and 4 inflate rural prices by an additional 5% and columns 5 and 6 are based on the BPS+15% estimates. If we use BPS prices, we would conclude the crisis has hit urban households harder. However, allowing 5% higher inflation in the rural areas, there is no urban-bias to the crisis. When the BPS inflation rates are incremented by 14% in urban areas and by 16% in rural areas, the effects of the crisis have been felt harder in the rural areas. In view of the lack of robustness of these results, we would not want to draw conclusions about whether the crisis was concentrated among urban or rural dwellers based on these data alone. Similar concerns arise in the interpretation of the province coefficients: if the inflation estimates are wrong, then the inferences drawn from this table will also be wrong. (Recall that all the inflation estimates use the BPS province indices and so no information can be gleaned from comparing the columns in this case.)

We focus, therefore, on the household-specific characteristics all of which are measured in 1997. ℓnPCE has declined more among bigger households, households that are headed by a man, and households whose head is better educated. There is evidence that the impact of the crisis has been mitigated by the presence of prime age women (who might have entered the labor force) and is worse in households with young men (which likely reflects a change in household composition between 1997 and 1998). In the second column of each pair, we include household-level ℓnPCE in 1997 along with the community mean of ℓnPCE and the community standard deviation. There is a high level of persistence over time in ℓnPCE and, as would be predicted by a simple model of measurement error, considerable regression to the mean. We would not want to over-interpret that result. However, we do find that household level ℓnPCE has declined least in communities that are relatively better off, suggesting that targeting relatively poor communities may be an effective means of off-setting *some* of the immediate effects of the crisis.[13]

Household Budget Shares Another approach to side-stepping the problems that arise from measurement of the inflation rate is to examine changes in the share of the household budget allocated to specific commodities. In part, these changes will reflect the impact of changes in purchasing power and, in part, they will reflect changes in relative prices including changes in the extent to which goods are subsidized by the government. Table 2.5 reports mean shares of 15 commodities in 1997 and 1998 along with the change in the share (column 3) and the change as a percentage of the 1997 share (column 4). The results for households overall are summarized in Figures 2.4-2.6. Estimates from OLS regressions of changes in budget shares are reported in Tables 2.6 (for foods) and 2.7 (for non-foods). All covariates in the regressions are measured in 1997. We use the BPS inflation rates throughout this section.

There has been a significant increase in the share of the budget spent on food in both and urban and rural households. The coefficients on ℓnPCE (which is specified as a spline with a knot at the median) indicates the increases are concentrated among households whose PCE was below median in 1997 indicating that, all else held constant, the poorest have increased their food shares the most. However, food shares have increased more for the better educated: thus, it is not *only* the poor who have allocated a bigger share of the budget to food. A good part of the increase in the food share can be attributed to an increase in the share of the budget spent on staples: it has increased by 59% in urban areas and 29% in rural areas. Again, it is amongst the poorest and the better educated that shares have increased the most; in addition, small households and households with children (under 14) have switched more of their budget to staples.

[13]In principle, the IFLS is very well-suited to examining the mechanisms households have used to maintain their consumption patterns including drawing on assets and savings. This issue will be taken up in future work.

Assuming that food shares and, perhaps even better, staple shares are inversely correlated with well-being, one would be led to conclude that the effects of the crisis has had a substantial negative impact on the welfare of many households. The results also suggest that the effects of the crisis are complex and nuanced. Although staple shares have risen dramatically in urban areas, they account for almost twice as much of the total budget in rural households. The fact that better educated households have made more room in their budgets for staples -- and food -- indicates that it is not only the poorest who are tightening their belts. This point is underscored when we turn to expenditures on meat. Since staple shares have increased so much, some food shares must decline. Meat has borne the brunt of the burden -- and, the cuts have been deepest for those in the middle of the income distribution. Apparently, no one has been left unscathed by the price changes in Indonesia. In urban areas, cooking oil shares have risen whereas in rural areas households appear to have switched into more vegetables. These changes do not appear to vary across the income distribution.

Turning to non-foods, there has been a substantial reduction in the share of the budget allocated to non-essential items and purchases that can be delayed, including clothing, recreation, housing and, in rural areas, transportation. (In urban areas, transportation shares have remained constant presumably reflecting the combination of higher prices and the fact that travel is a necessity, particularly for workers.)

More troubling is the fact that budget shares spent on health and education have declined significantly and, in the case of education, the declines are greatest for the poorest households. The demographic covariates provide insights into the types of households that have been able to maintain their education expenditures. Because total household size is held constant in the regressions, the demographic covariates should be interpreted as the effect of increasing the share of household members in a particular group (such as children age 0-14) relative to the excluded category (which is females age 65 and older). Households with more young men (age 15-24) and old men ($\geq$65) are likely to spend more on education whereas women (age 15-64) reduce the share. This does not mean that young men (or old men!) are more likely to be in school since we cannot say anything about who the money is spent on, but rather suggests that household composition is playing an important role in mediating the impact of the crisis.

Figure 2.1

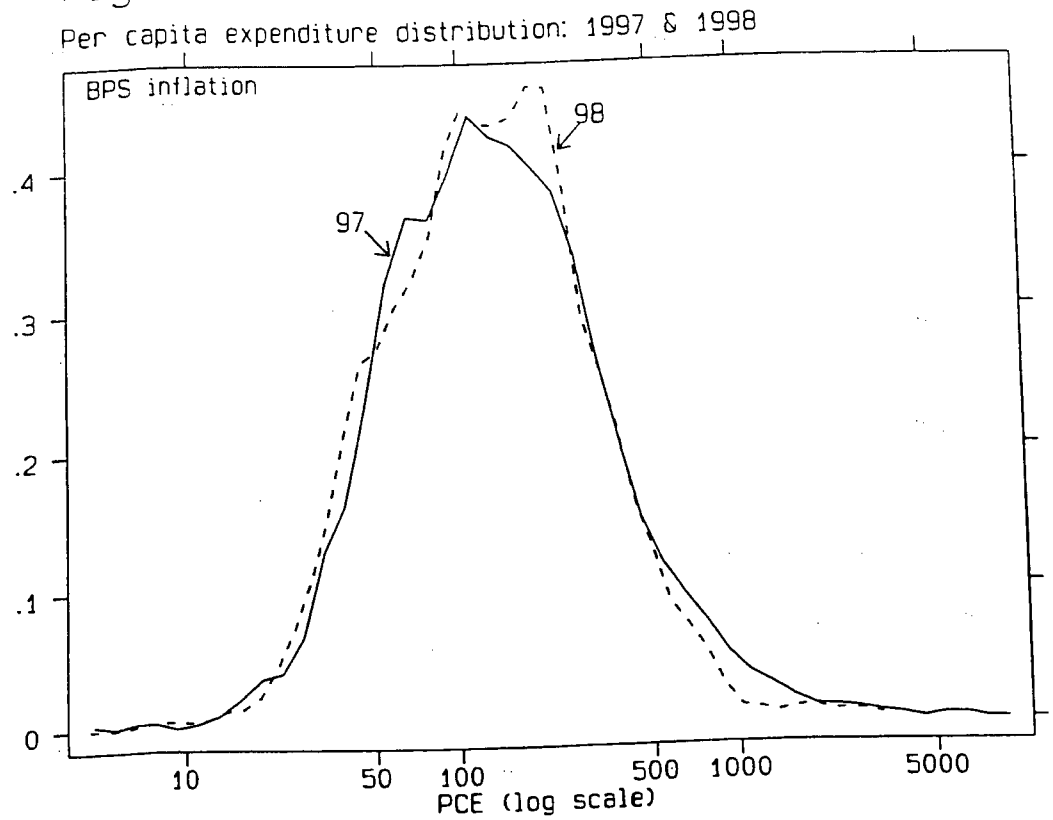

Figure 2.2

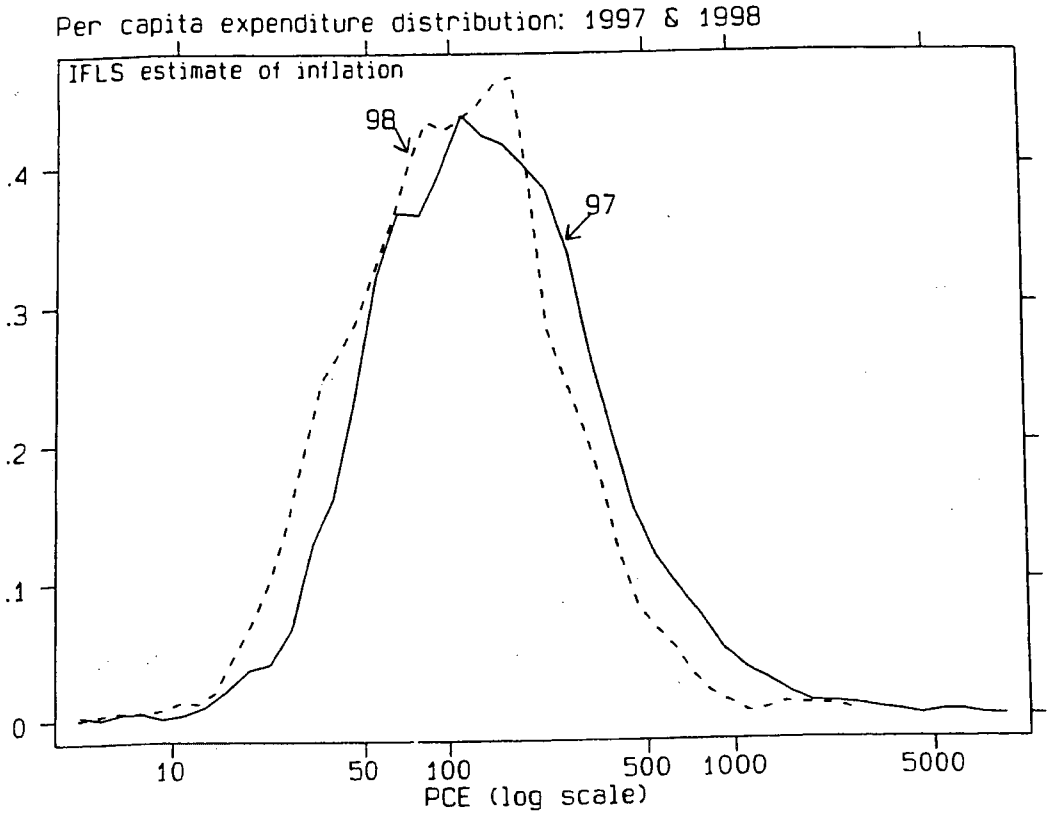

Figure 2.3

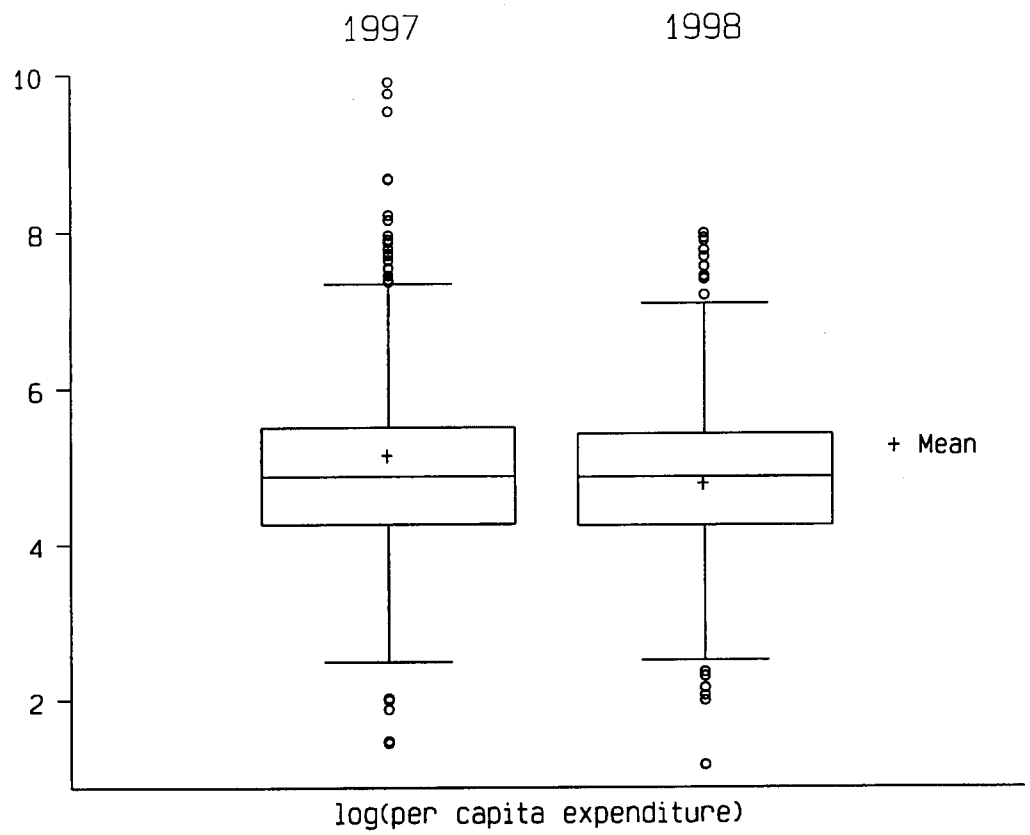

Table 2.1: IFLS Household expenditure: 1997, 1998 and changes

All households and households stratified by sector of residence

		Total Household Expenditure				Per Capita Expenditure			
		1997	1998	Change	%Change	1997	1998	Change	% Change
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A. Overall (# hh 1840)									
Inflation from BPS prices									
	Mean	921	823	-98	-11%	246	186	-60	-24%
	Std.err.	[79]	[22]	[77]		[18]	[5]	[17]	
	Median	544	557	13	2%	131	129	-2	-2%
Inflation from BPS prices adjusted for IFLS									
	Mean	921	668	-253	-27%	246	151	-95	-39%
	Std.err.	[79]	[19]	[77]		[18]	[4]	[17]	
	Median	544	446	-98	-18%	131	104	-27	-21%
B. By Residence (# urban hh 762, # rural hh 1078)									
Inflation from BPS prices									
Urban	Mean	1227	944	-283	-23%	319	211	-108	-34%
	Std.err.	[184]	[41]	[181]		[41]	[10]	[40]	
	Median	620	593	-27	-4%	141	134	-7	-5%
Rural	Mean	705	738	33	5%	194	168	-26	-13%
	Std.err.	[33]	[25]	[28]		[8]	[5]	[7]	
	Median	481	528	47	10%	127	125	-2	-2%
Higher inflation in rural areas									
Rural + 5%	Mean	705	703	-2	0%	194	160	-34	-18%
	Std.err.	[33]	[24]	[27]		[8]	[5]	[7]	
	Median	481	503	22	5%	127	120	-7	-6%
Inflation from BPS prices adjusted for IFLS									
Urban	Mean	1227	822	-405	-33%	319	184	-135	-42%
	Std.err.	[184]	[35]	[181]		[41]	[9]	[40]	
	Median	620	519	-101	-16%	141	116	-25	-18%
Rural	Mean	705	560	-145	-21%	194	128	-66	-34%
	Std.err.	[33]	[19]	[27]		[8]	[4]	[7]	
	Median	481	399	-82	-17%	127	95	-32	-25%

Notes: All expenditure estimates are converted to monthly equivalents in Rp000. In the first set of results the 1998 estimates are in real (December 1997) Rp using province-specific price indices based on the 44 city price indices published by BPS. In the second set of results the 1998 estimates are in real (December 1997) Rp using BPS prices adjusted for IFLS findings regarding higher and differential inflation. IFLS estimates of inflation for all IFLS2+ provinces are about 15% higher than BPS estimates; IFLS also estimates that rural inflation is about 5% higher than urban inflation. The BPS 44 city price indices have been converted to province-specific price indices which have been inflated by an additional 14% in urban areas and 16% in rural areas to generate the "BPS adjusted for IFLS" estimates of inflation. The results by sector of residence adjust for inflation first by using the BPS rates, second by assuming that inflation in rural areas is 5% higher than in urban areas as suggested by the IFLS community level data, and third by using the BPS adjusted for IFLS estimates of inflation.

Table 2.2 Changes in Poverty Rates, Overall and by Residence

	1997	1998	Change	% Increase
BPS Inflation Rates				
Urban	9.2	12.0	2.8	30%
Rural	12.4	15.2	2.8	23%
Overall	11.0	13.8	2.8	24%
BPS Inflation Rates, + 5% in Rural Areas				
Urban	9.2	12.0	2.8	30%
Rural	12.4	16.2	3.8	31%
Overall	11.0	14.3	3.3	30%
BPS Inflation Rates Adjusted for IFLS Prices				
Urban (+14%)	9.2	15.8	6.6	71%
Rural (+16%)	12.4	23.0	10.6	85%
Overall	11.0	19.9	8.9	81%

Figure 2.4: Sensitivity of Poverty Rates to Inflation Adjustments

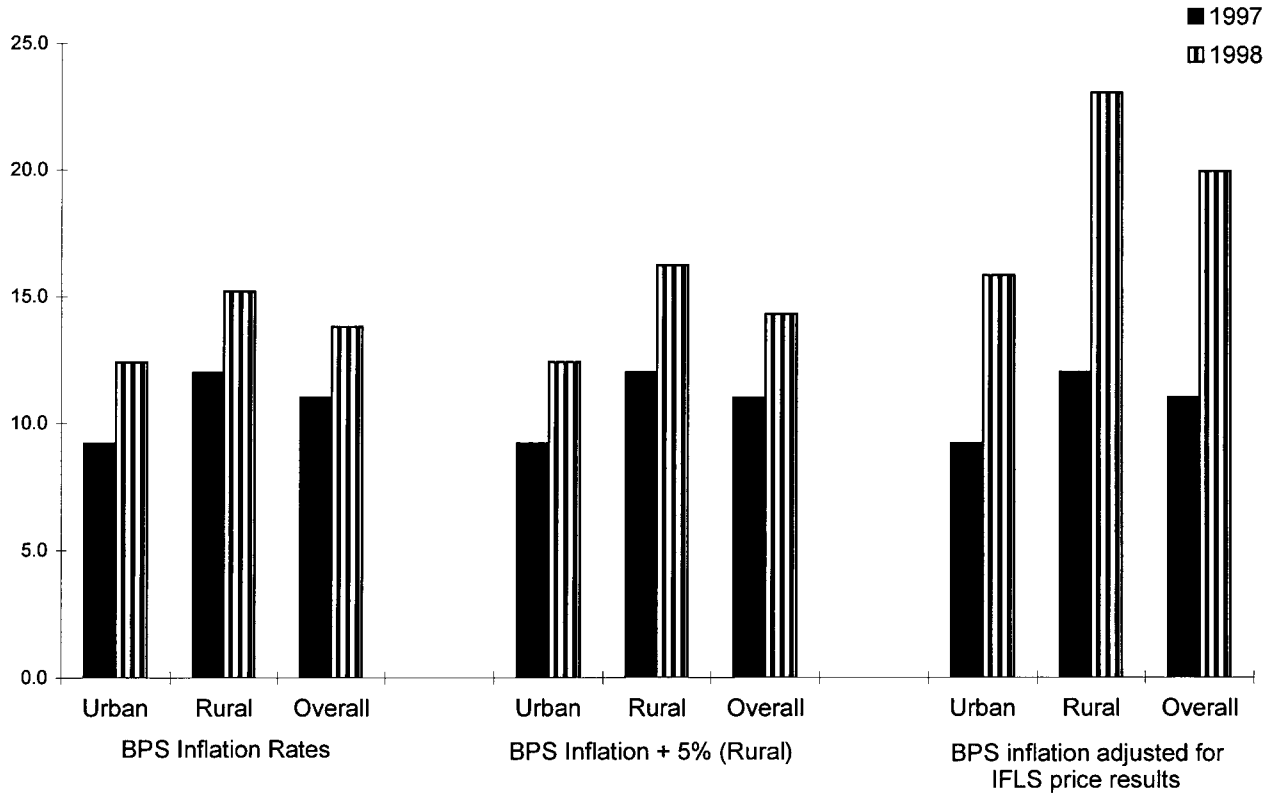

Table 2.3: Poverty transitions between 1997 and 1998: Multinomial logit estimates

Covariates associated with exiting, entering and staying in poverty

Risk ratios relative to excluded category of staying out of poverty

	BPS inflation rates			BPS inflation rates Adjusted for IFLS price results		
Covariates	Exit Poverty (1)	Enter Poverty (2)	Stay in Poverty (3)	Exit Poverty (4)	Enter Poverty (5)	Stay in Poverty (6)
ℓn(HH size)	1.741	2.182	8.243	1.092	1.405	9.325
	[1.63]	[2.69]	[3.53]	[0.25]	[1.38]	[4.43]
# children (0-14)	1.361	1.077	0.999	1.574	1.207	0.981
	[4.47]	[1.19]	[0.01]	[6.17]	[3.50]	[0.20]
# males (15-24)	0.838	1.077	0.810	0.859	1.057	0.773
	[2.27]	[1.23]	[1.68]	[1.81]	[1.06]	[2.44]
# males (25-64)	1.003	0.798	0.669	0.962	0.687	0.702
	[0.03]	[2.25]	[2.47]	[0.35]	[4.11]	[2.65]
# males (>=65)	2.676	1.737	1.056	3.302	1.220	0.951
	[5.88]	[3.46]	[0.19]	[6.60]	[1.34]	[0.21]
# females (15-24)	1.259	0.805	0.839	1.408	0.976	0.862
	[3.03]	[3.05]	[1.37]	[4.20]	[0.41]	[1.39]
# females (25-64)	0.996	0.789	0.753	1.051	0.987	0.809
	[0.04]	[2.65]	[1.83]	[0.48]	[0.17]	[1.68]
Age of head	1.000	0.987	0.980	0.998	0.982	0.984
	[0.03]	[3.88]	[3.32]	[0.38]	[5.78]	[3.14]
(1) if head is male	0.518	0.699	0.829	0.500	1.090	0.852
	[4.63]	[2.74]	[0.87]	[4.47]	[0.72]	[0.88]
Education of head (yrs)	0.876	0.937	0.804	0.879	0.926	0.809
	[9.96]	[6.29]	[10.29]	[8.81]	[8.58]	[11.95]
(1) if urban	1.458	1.324	0.731	1.597	1.023	0.746
	[3.94]	[3.44]	[2.07]	[4.45]	[0.32]	[2.33]
(1) if North Sumatra	1.103	1.453	1.556	1.467	1.639	1.176
	[0.53]	[2.66]	[1.71]	[1.85]	[4.11]	[0.72]
(1) if South Sumatra	1.494	0.674	0.453	1.700	0.586	0.584
	[2.50]	[2.64]	[2.56]	[2.89]	[4.15]	[2.42]
(1) if Jakarta	0.065	0.175	0.522	0.081	0.128	0.256
	[6.04]	[6.30]	[1.61]	[5.43]	[7.55]	[3.55]
(1) if Central Java	1.611	0.993	1.251	1.618	0.997	1.395
	[3.20]	[0.06]	[1.01]	[2.75]	[0.03]	[1.91]
(1) if NTB	1.255	1.530	1.785	1.924	1.896	1.313
	[1.43]	[3.34]	[2.77]	[3.68]	[5.97]	[1.52]
(1) if South Kalimantan	1.492	2.193	2.442	1.492	1.567	1.929
	[2.02]	[5.54]	[3.63]	[1.72]	[3.48]	[3.19]
χ^2		1165.97			1433.47	
Likelihood		-5380.93			-6010.20	
Pseudo R^2		0.10			0.11	

Table 2.4: Changes in ℓn(per capita expenditure) between 1997 and 1998

	BPS inflation rates		BPS +5% in rural areas		BPS inflation rates adjusted for IFLS price results	
Covariates	(1)	(2)	(3)	(4)	(5)	(6)
ℓnPCE	.	-0.732	.	-0.732	.	-0.732
		[67.32]		[67.36]		[67.40]
Community mean(ℓnPCE)	.	0.287	.	0.288	.	0.291
		[10.62]		[10.68]		[10.79]
Community std. dev(ℓnPCE)	.	-0.039	.	-0.041	.	-0.046
		[0.82]		[0.87]		[0.97]
ℓn(HH size)	0.254	-0.287	0.254	-0.287	0.254	-0.287
	[3.76]	[5.26]	[3.76]	[5.27]	[3.76]	[5.27]
# children (0-14)	-0.019	-0.009	-0.019	-0.009	-0.019	-0.009
	[1.22]	[0.74]	[1.22]	[0.75]	[1.24]	[0.75]
# males (15-24)	-0.042	-0.001	-0.042	-0.001	-0.042	-0.001
	[2.65]	[0.07]	[2.65]	[0.06]	[2.64]	[0.05]
# males (25-64)	0.012	0.019	0.013	0.019	0.013	0.02
	[0.53]	[1.03]	[0.55]	[1.04]	[0.57]	[1.07]
# males (>=65)	0.031	-0.021	0.031	-0.021	0.032	-0.02
	[0.72]	[0.63]	[0.73]	[0.61]	[0.75]	[0.59]
# females (15-24)	0.074	0.103	0.074	0.102	0.074	0.102
	[4.21]	[7.27]	[4.2]	[7.26]	[4.18]	[7.24]
# females (25-64)	0.058	0.082	0.058	0.083	0.059	0.084
	[2.61]	[4.64]	[2.63]	[4.67]	[2.67]	[4.72]
Age of head	0.001	0.005	0.001	0.005	0.001	0.005
	[0.72]	[6.67]	[0.72]	[6.66]	[0.7]	[6.64]
(1) if head is male	-0.085	-0.025	-0.085	-0.025	-0.085	-0.025
	[2.4]	[0.88]	[2.39]	[0.88]	[2.39]	[0.87]
Education of head (yrs)	-0.012	0.026	-0.011	0.026	-0.011	0.027
	[4.45]	[12.03]	[4.41]	[12.08]	[4.32]	[12.17]
(1) if urban	-0.05	-0.063	-0.005	-0.017	0.089	0.076
	[2.23]	[3.44]	[0.21]	[0.95]	[3.93]	[4.16]
(1) if North Sumatra	-0.082	-0.159	-0.082	-0.161	-0.084	-0.163
	[2.05]	[4.59]	[2.07]	[4.63]	[2.11]	[4.7]
(1) if South Sumatra	0.216	0.091	0.214	0.089	0.211	0.087
	[5.95]	[2.97]	[5.91]	[2.93]	[5.84]	[2.86]
(1) if Jakarta	-0.005	0.038	-0.002	0.04	0.003	0.043
	[0.11]	[1.03]	[0.05]	[1.08]	[0.06]	[1.18]
(1) if Central Java	0.045	-0.056	0.044	-0.056	0.044	-0.057
	[1.31]	[1.97]	[1.31]	[1.98]	[1.3]	[2]
(1) if NTB	-0.059	-0.108	-0.058	-0.107	-0.057	-0.106
	[1.62]	[3.52]	[1.61]	[3.51]	[1.59]	[3.49]
(1) if South Kalimantan	-0.138	-0.15	-0.139	-0.151	-0.14	-0.153
	[3.24]	[4.3]	[3.26]	[4.33]	[3.29]	[4.39]
Intercept	-0.366	2.121	-0.414	2.067	-0.644	1.828
	[4.86]	[15.61]	[5.51]	[15.22]	[8.57]	[13.47]
F(all covariates)	19.6	258.11	19.22	257.77	20.35	259.52
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
R^2	0.04	0.389	0.039	0.389	0.041	0.391

Notes: Dependent variable is $\ell nPCE_{98}$-$\ell nPCE_{97}$. [t statistics] under regression estimates; [p values] below test statistics. West Java is reference province.

Table 2.5: IFLS Expenditure shares: Urban and rural sector

	Urban Households				Rural Households			
	1997	**1998**	**Change**	**%Δ**	**1997**	**1998**	**Change**	**%Δ**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Food	58.96	63.95	4.99	8	76.17	80.84	4.68	6
Selected foods								
Staples	12.99	20.61	7.62	59	30.58	39.39	8.81	29
Meat	12.69	10.40	-2.29	-18	12.46	9.74	-2.72	-22
Dairy	3.66	3.74	0.08	2	2.67	2.64	-0.02	-1
Oil	1.93	2.89	0.96	50	2.70	2.48	-0.22	-8
Vegetables	8.91	8.51	-0.39	-4	11.47	12.94	1.48	13
Non-food								
Alcohol/tobacco	4.08	5.74	1.66	41	4.43	4.04	-0.39	-9
Health	1.73	1.49	-0.24	-14	1.16	0.69	-0.47	-40
Education	4.91	4.51	-0.40	-8	2.38	1.81	-0.56	-24
HH goods	8.17	6.80	-1.37	-17	3.59	3.17	-0.41	-12
Transport	3.15	3.20	0.04	1	1.80	1.51	-0.29	-16
Clothing	2.94	2.48	-0.46	-16	2.20	1.50	-0.69	-32
Housing	10.77	9.14	-1.63	-15	6.14	4.82	-1.32	-21
Recreation	2.58	2.05	-0.53	-21	1.83	1.70	-0.12	-7
# observations		762				1078		

Notes: %Δ is change as percentage of 1997 share.

Table 2.6: IFLS Change in share of budget spent on food between 1997 and 1998

Covariates	Food (1)	Staples (2)	Meat (3)	Dairy (4)	Oils (5)	Vegetables (6)	Alcohol & Tobacco (7)
ℓnPCE: below median	-6.142	-5.046	-3.579	-0.394	0.51	-0.944	2.896
(spline)	[5.23]	[3.59]	[3.72]	[0.91]	[1.66]	[1.13]	[3.34]
ℓnPCE: above median	-1.052	-3.589	2.36	0.784	0.202	0.927	-0.154
	[1.02]	[2.91]	[2.80]	[2.06]	[0.75]	[1.26]	[0.2]
ℓn(HH size)	-1.515	-12.184	-1.833	-0.322	0.686	0.364	-6.541
	[0.53]	[3.54]	[0.78]	[0.30]	[0.91]	[0.18]	[3.08]
# children (0-14)	0.112	2.39	0.302	0.144	-0.137	-0.183	1.557
	[0.14]	[2.54]	[0.47]	[0.49]	[0.67]	[0.33]	[2.69]
# males (15-24)	-0.411	2.044	0.098	-0.081	0.104	-0.761	1.809
	[0.45]	[1.86]	[0.13]	[0.24]	[0.43]	[1.16]	[2.67]
# males (25-64)	-0.369	2.344	-1.233	0.177	-0.135	1.373	-0.115
	[0.28]	[1.51]	[1.16]	[0.37]	[0.40]	[1.48]	[0.12]
# males (>=65)	-0.839	1.483	-1.529	0.494	0.684	-0.794	0.781
	[0.37]	[0.55]	[0.83]	[0.59]	[1.16]	[0.49]	[0.47]
# females (15-24)	1.122	1.991	1.194	-0.046	-0.148	0.285	0.966
	[1.14]	[1.69]	[1.48]	[0.13]	[0.57]	[0.41]	[1.33]
# females (25-64)	1.628	2.069	1.685	0.262	-0.238	-0.906	0.462
	[1.40]	[1.48]	[1.76]	[0.61]	[0.78]	[1.09]	[0.54]
Age of head	0.047	0.038	0.02	-0.009	-0.004	0.028	-0.016
	[1.01]	[0.68]	[0.52]	[0.52]	[0.35]	[0.85]	[0.48]
(1) if head is male	1.042	-2.028	2.827	0.329	-0.097	-1.11	0.842
	[0.60]	[0.97]	[1.97]	[0.51]	[0.21]	[0.89]	[0.65]
Education of head (yrs)	0.459	0.492	0.003	-0.083	0.02	-0.009	-0.007
	[3.36]	[3.02]	[0.03]	[1.65]	[0.55]	[0.10]	[0.07]
(1) if urban	0.463	-1.562	0.421	0.357	1.067	-1.307	1.617
	[0.41]	[1.15]	[0.45]	[0.85]	[3.57]	[1.61]	[1.92]
(1) if North Sumatra	-5.533	-10.864	2.463	0.022	0.956	-1.721	2.274
	[2.79]	[4.57]	[1.51]	[0.03]	[1.84]	[1.21]	[1.55]
(1) if South Sumatra	-3.329	-8.784	1.040	0.507	0.604	0.993	0.145
	[1.84]	[4.05]	[0.70]	[0.76]	[1.27]	[0.77]	[0.11]
(1) if Jakarta	-7.115	-4.117	1.638	-0.399	0.850	-2.194	3.068
	[3.17]	[1.53]	[0.89]	[0.48]	[1.44]	[1.37]	[1.85]
(1) if Central Java	-3.598	-2.232	-0.962	-0.491	0.409	-0.156	-0.205
	[2.20]	[1.14]	[0.72]	[0.81]	[0.95]	[0.13]	[0.17]
(1) if NTB	-3.904	-7.695	2.96	0.147	1.397	-0.251	0.784
	[2.18]	[3.60]	[2.02]	[0.22]	[2.98]	[0.20]	[0.59]
(1) if South Kalimantan	-3.555	-12.383	3.372	-0.843	1.502	1.039	-0.44
	[1.73]	[5.03]	[2.00]	[1.11]	[2.78]	[0.71]	[0.29]
Intercept	31.114	43.369	9.288	1.906	-3.561	4.824	-8.638
	[5.08]	[5.92]	[1.85]	[0.84]	[2.22]	[1.10]	[1.91]
F(all covs)	3.24	4.85	1.98	0.71	2.43	1.23	2.88
	[0.00]	[0.00]	[0.01]	[0.81]	[0.00]	[0.22]	[0.00]
R^2	0.03	0.05	0.02	0.01	0.03	0.01	0.03

Notes: 1,840 households. Dependent variable is $share_{97}$-$share_{98}$. [t statistics in parentheses]. [p values] below test statistics. West Java is reference province.

Table 2.7: Change in share of budget spent on non-food items between 1997 and 1998

	Health	Education	HH goods	Transport	Clothing	Housing	Recreation
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ℓnPCE: below median	0.258	0.716	1.153	-0.829	1.2	3.963	0.244
(spline)	[1.03]	[2.29]	[3.18]	[2.28]	[7.59]	[5.32]	[0.81]
ℓnPCE: above median	-0.076	1.09	1.669	0.509	0.735	-1.695	-0.111
	[0.35]	[3.97]	[5.25]	[1.59]	[5.30]	[2.60]	[0.42]
ℓn(HH size)	0.108	0.714	1.317	0.083	-0.193	1.575	-1.359
	[0.18]	[0.93]	[1.48]	[0.09]	[0.50]	[0.86]	[1.83]
# children (0-14)	0.018	-0.22	-0.09	0.052	0.083	-0.163	0.307
	[0.11]	[1.05]	[0.37]	[0.22]	[0.78]	[0.33]	[1.51]
# males (15-24)	-0.101	0.537	-0.418	-0.091	0.119	-0.288	0.155
	[0.52]	[2.20]	[1.48]	[0.32]	[0.96]	[0.49]	[0.66]
# males (25-64)	-0.017	-0.192	-0.603	-0.113	0.138	0.963	0.326
	[0.06]	[0.55]	[1.50]	[0.28]	[0.79]	[1.17]	[0.97]
# males (>=65)	-0.259	1.326	-1.935	-0.052	0.19	0.966	0.136
	[0.54]	[2.21]	[2.78]	[0.07]	[0.62]	[0.68]	[0.23]
# females (15-24)	0.028	-0.657	-0.348	-0.106	0.285	-0.813	0.32
	[0.13]	[2.51]	[1.15]	[0.35]	[2.16]	[1.30]	[1.26]
# females (25-64)	0.166	-0.557	-0.481	-0.296	-0.166	-0.997	-0.054
	[0.67]	[1.79]	[1.34]	[0.82]	[1.06]	[1.35]	[0.18]
Age of head	-0.012	-0.033	0.001	-0.012	-0.005	-0.045	0.009
	[1.21]	[2.73]	[0.08]	[0.86]	[0.78]	[1.56]	[0.78]
(1) if head is male	-0.361	-0.916	1.072	-0.166	0.277	-0.677	-0.531
	[0.98]	[1.97]	[1.99]	[0.31]	[1.18]	[0.61]	[1.18]
Education of head (yrs)	-0.027	0.007	-0.07	-0.082	-0.058	-0.246	0.001
	[0.95]	[0.18]	[1.66]	[1.93]	[3.16]	[2.84]	[0.03]
(1) if urban	0.361	0.036	-0.831	0.609	0.213	-0.106	-0.341
	[1.49]	[0.12]	[2.36]	[1.72]	[1.39]	[0.15]	[1.16]
(1) if North Sumatra	-0.123	-0.212	1.18	1.081	0.317	2.36	0.813
	[0.29]	[0.40]	[1.93]	[1.76]	[1.19]	[1.87]	[1.59]
(1) if South Sumatra	-0.294	0.27	0.433	0.616	0.424	1.594	-0.259
	[0.76]	[0.56]	[0.77]	[1.10]	[1.74]	[1.39]	[0.55]
(1) if Jakarta	-0.66	-0.287	-0.381	-0.21	0.26	3.838	0.447
	[1.39]	[0.48]	[0.55]	[0.30]	[0.86]	[2.69]	[0.77]
(1) if Central Java	0.105	-0.186	-0.082	0.031	0.273	3.87	0.227
	[0.3]	[0.43]	[0.16]	[0.06]	[1.24]	[3.73]	[0.54]
(1) if NTB	0.109	0.053	0.867	-0.85	0.483	3.234	0.862
	[0.29]	[0.11]	[1.57]	[1.53]	[2.01]	[2.85]	[1.87]
(1) if South Kalimantan	-0.05	0.318	0.687	0.704	0.153	3.367	1.876
	[0.11]	[0.58]	[1.08]	[1.10]	[0.55]	[2.58]	[3.53]
Intercept	-0.822	-1.882	-7.381	4.492	-6.354	-18.617	-0.719
	[0.63]	[1.15]	[3.91]	[2.37]	[7.72]	[4.8]	[0.46]
F(all covariates)	0.75	4.22	4.82	1.41	8.52	3.39	1.89
	[0.77]	[0.00]	[0.00]	[0.11]	[0.00]	[0.00]	[0.01]
R^2	0.01	0.04	0.05	0.02	0.08	0.04	0.02

Notes: 1,840 households. Dependent variable is $share_{97}$-$share_{98}$. [t statistics in parentheses]. [p values] below test statistics. West Java is reference province.

3. Employment

Changes in expenditures provide some evidence on how the economic status of households has changed since 1997. For many households, the labor market status of household members is a key indicator of economic well-being. In this section we present results on changes between 1997 and 1998 in labor market outcomes for adults age 15 and older (separately by gender).

Table 3.1 presents the results for a number of different labor market outcomes: proportion working in the month of the interview, the proportion working for pay (as opposed to unpaid family work), and, for workers, average weekly hours and median wage. As with expenditures, it is important to adjust wages for inflation in order to draw inferences from comparisons between 1997 and 1998. We compute real wages using two adjustments for inflation: the province-specific inflation rate derived from BPS data on prices, and the province-urban/rural specific inflation rate derived from BPS prices adjusted upwards by 15% as the IFLS price data suggest is appropriate (see Section 2 for additional details).

The first panel of results considers change in the proportion of respondents who are working. Slightly higher fractions of men are working and considerably higher fractions of women are working in 1998 relative to 1997. The changes are similar in urban and rural areas. By examining the second panel, however, it appears that with the possible exception of women in urban areas, changes in the proportion working reflect largely an entrance of unpaid family workers.

Another way in which labor supply may change is that people may work longer hours or take on an additional job. The proportion of male respondents with an additional job has declined, particularly in rural areas. The drop may reflect changes in demand for labor. There is some indication that more women in urban areas have taken on an additional job since 1997. The fourth panel turns to the issue of hours of work. On one hand, to the extent that employment opportunities are more scarce, working hours may have declined. On the other hand, if prices have increased, people may seek to work longer hours to keep their real incomes constant. Our results suggest that there has been relatively little change in the number of hours worked.

In sum, in terms of working for pay, there is little evidence of change in aggregate, in participation, or hours of work. The notion that Indonesia is characterized by massive unemployment is simply wrong. This does not mean, however, that the labor market has been left unscathed by the crisis.

The last two panels of Table 3.1 present real daily wage rates in both years of the survey. All groups have experienced a massive deterioration in real wages. The first set of results adjusts for inflation using the BPS price data from urban areas. For rural men, daily wages have decreased from just under Rp 5,000 to about Rp 4,000 (a decline of nearly 18%). For urban men, daily wages have decreased from about Rp 9,500 to Rp 6,700 per day. Declines for women, particularly urban women, have been large as well. In fact, urban women's wages have dropped by about 35% since 1997. The second set of results adjusts for inflation using BPS inflation rates incremented by 16% in rural areas and by 14% in urban areas. These results suggest an even larger decline in real wages. Both sets of results indicate that declines as a percentage of wages in 1997 have been larger in urban than in rural areas, and that in percentage terms the real wages of urban women have fallen the most. However, the magnitude of the differences between urban and rural areas is reduced when the inflation adjustments incorporates larger price increases in rural areas. Once again, the sensitivity of the estimates to inflation adjustments highlights the difficulties of quantifying the impact of crisis with standard economic measures when prices have changed so dramatically.

We now turn to results on the proportion of respondents working for pay, stratified by different demographic and socioeconomic indicators. Table 3.2 presents the results by age. Among 15 to 24 year olds, there have been substantial increases in employment rates of both men and women (part of which arises because the respondents are aging into the labor market). At the other end of the age distribution, older men have exited the labor force.

Table 3.3 focuses on adults age 22 to 65 and considers employment by education level and province of residence. In this age range, there has been a decrease in overall employment rates for men, but no change for women. Men with relatively low levels of education have seen relatively large declines in employment, and for those with primary education only, the change is statistically significant. Men in Jakarta, Central Java, and NTB have seen the largest declines in employment. For women, there have been no statistically significant changes in employment by level of education. Only for women in North Sumatra has there been a significant change (increase) in employment.

Behind the aggregate statistics presented in Tables 3.1-3.3 lies considerable upheaval in the labor market. About 8% of our respondents have exited the labor force between 1997 and 1998, and, among those who have been employed, 1 in 10 switched sector of employment. The biggest reductions in the labor force have been in the construction sector: of those employed in the sector in 1997, only 6 out of 10 were still working in construction in 1998; 3 out of 10 had found a job in another sector leaving only 25% of those who had left the sector unemployed. Those who had been working in the government, finance, or tourism sectors in 1997 did not far so well: 50% of those who have lost their jobs in the last 12 months were still unemployed at the time of the IFLS2+ interview. Agricultural workers fared worst of all: 6 out of 10 who had lost their jobs remained unemployed.

We explore the dynamics of employment further, using a multivariate framework to consider how education, age, and residence are related to levels of and changes in employment patterns for both men and women (Tables 3.4-3.7). The employment outcomes we consider are:

1) whether income was earned in 1997 and 1998 (Columns 1 and 2 of Tables 3.4 and 3.6)
2) relative to working in both years, the risks of working in neither year, of becoming employed, and of becoming unemployed (Colums 3, 4,and 5 of Tables 3.4 and 3.6)
3) relative to working in the formal sector in both years, the risks of transitions to or from unemployment, to or from self-employment, or between self- and unemployment (Tables 3.5 and 3.7.

The results for education are presented in the first row of the tables. For men, education level has no impact on whether respondents were working for pay in either 1997 or 1998. For both men and women education is associated with a much greater chance of working in the formal sector in both years, as opposed to making a transition between sectors or staying self-employed in both years. For women, additional years of education reduce the chance that a woman will become employed in 1998 as opposed to being employed in both years. This suggests that among women, the new workers in 1998 tend to have little education relative to those who are working in both years.

The effects of age are relatively complicated. An extra year of age for men in their late 20s and early 30s is associated with a lower chance of working for pay in both 1997 and 1998, with a higher chance of transitioning out of employment by 1998, and with a lower chance of moving from unemployment in 1997 to formal or informal employment by 1998. For men between 45 and 55, an extra year of age increases the chance of working for pay in 1998 and reduces the chance of transitioning out of employment, but increases the chance of transitioning out of the formal sector. Age appears to be less related to employment patterns for women.

Residence is fairly strongly associated with employment patterns for men and women. Respondents in urban areas are more likely to be working for pay in both 1997 and 1998. Additionally, urban men make fewer employment transitions (either out of paid work or out of the formal sector) than do their rural counterparts. Urban women are particularly likely to have lost a job altogether by 1998 (Column 5, Table 3.6), but less likely than rural women to have made a transition across sectors of work (Table 3.7).

Patterns of employment in North and South Sumatra and South Kalimantan appear to be quite different from West Java. Relative to men in West Java, men in these three provinces are significantly more likely to be working in 1997 and significantly less likely to make a transition either into or out of employment by 1998 (Table 3.4). They are also significantly more likely to make a transition from unemployment to self-employment (relative to working in the formal market in both years) than are men in West Java. Employment opportunities for women appear to be different as well. In 1997 women in North and South Sumatra were less likely to be working for pay than women in West Java. By 1998 that difference is gone. Women who were unemployed in 1997 in North Sumatra are more likely to have gotten a job by 1998 than women in West Java who were not working. Women in North and South Sumatra and South Kalimantan are significantly more likely to move from self-employment in 1997 to market employment in 1998 (relative to working in the formal market in both years) than are women in West Java.

These results suggest that to the extent that employment opportunities have changed in North and South Sumatra and South Kalimantan, the changes have not put people out of work, but rather have made working more attractive. For men, working in one's own business is relatively more attractive in 1997 than it was in 1998. For women, there has been movement from one's own business to working in the formal sector.

Jakarta, Central Java, and West Nusa Tengarra do not appear to be tremendously different from West Java in terms of employment patterns. There is evidence that men in Jakarta are more likely than men in West Java to be working for pay in both years, but also more likely to make the transition from the formal sector to unemployment by 1998. Women in both Central Java and West Nusa Tengarra are more likely to have been working for pay in 1997 and in 1998, and more likely to have lost jobs by 1998 than are women in West Java.

Table 3.1: Changes in Employment Patterns by Gender and Residence

Means and standard errors (note: median wage rate is presented)

	MEN			WOMEN		
	1997	**1998**	**Change**	**1997**	**1998**	**Change**
	(1)	(2)	(3)	(4)	(5)	(6)
Working (paid or unpaid)						
Rural	89.0	92.6	3.6	67.0	80.9	13.9
	(0.9)	(0.8)	(1.2)	(1.3)	(1.1)	(1.6)
Urban	85.5	88.7	3.2	59.5	69.6	10.1
	(1.1)	(1.1)	(1.6)	(1.5)	(1.4)	(2.0)
Working for pay						
Rural	75.2	73.1	-2.1	33.5	33.2	-0.3
	(1.3)		(1.8)	(1.3)	(1.3)	(1.8)
Urban	73.3	72.9	-0.4	39.1	41.9	2.8
	(1.5)	(1.5)	(2.1)	(1.5)	(1.5)	(2.1)
Proportion with an add'l job						
Rural	23.0	17.8	-5.2	6.1	6.3	0.2
	(1.3)	(1.1)	(1.7)	(0.6)	(0.6)	(0.9)
Urban	11.3	10.1	-1.2	3.2	4.1	0.9
	(1.1)	(1.0)	(1.5)	(0.5)	(0.6)	(0.8)
Hours per week						
Rural	32.6	34.7	-2.1	31.6	28.7	-2.9
	(0.7)	(0.6)	(1.0)	(0.9)	(0.8)	(1.2)
Urban	42.5	43.0	0.5	39.2	41.3	2.1
	(0.9)	(0.8)	(1.2)	(1.1)	(1.2)	(1.6)
Median daily real wage (adjusted with BPS prices)						
Rural	4,940	4,063	- 877	2,778	2,238	-608
Urban	9,523	6,656	-2,867	6,429	4,104	-2,302
Median daily real wage (adjusted with IFLS prices)						
Rural	4,940	3,533	-1,407	2,778	1,945	-833
Urban	9,523	5,788	-3,735	6,429	3,569	-2,860

Note: There are 2,023 men and 2,508 women (age 15 and older) who were interviewed in both IFLS2 and IFLS2+.

TABLE 3.2: Proportion working for pay by age and gender

	MEN			WOMEN		
	1997 (1)	**1998** (2)	**Change** (3)	**1997** (4)	**1998** (5)	**Change** (6)
Panel respondents interviewed in 1997 and 1998	74.4 [1.0]	73.0 [1.0]	-1.4 [0.9]	36.0 [1.0]	37.0 [1.0]	1.1 [0.9]
Stratified by age in 1997:						
15-24	35.3 [2.0]	41.2 [2.1]	6.0 [2.1]	21.9 [1.6]	25.4 [1.7]	3.5 [1.6]
25-34	89.5 [1.5]	88.6 [1.5]	-0.9 [1.8]	39.1 [2.0]	38.6 [2.0]	-0.5 [2.0]
35-44	96.3 [0.9]	91.8 [1.4]	-4.5 [1.5]	46.8 [2.3]	48.9 [2.3]	2.1 [2.2]
45-54	93.4 [1.4]	89.4 [1.8]	-4.0 [1.9]	45.2 [2.7]	45.5 [2.7]	0.3 [2.8]
55-64	83.6 [2.5]	73.8 [2.9]	-9.8 [2.9]	36.4 [3.0]	35.7 [3.0]	-0.8 [3.1]
≥65	61.3 [4.6]	56.8 [4.7]	-4.5 [4.7]	28.3 [3.8]	26.9 [3.7]	-1.4 [3.7]

Notes: There are 2,023 men and 2,508 women (age 15 and older) who were interviewed in both IFLS2 and IFLS2+ (row 3). [Standard errors] are in parentheses.

Table 3.3: Employment rates for men and women by educational level and province

	MEN			WOMEN		
	1997 (1)	1998 (2)	Change (3)	1997 (1)	1998 (2)	Change (3)
Panel respondents age 22-65:	89.5	86.0	-3.5	41.0	41.8	0.8
	[0.8]	[0.9]	[1.0]	[1.1]	[1.1]	[1.1]
Education attainment:						
None	89.4	84.1	-5.3	48.2	46.0	-2.2
	[2.7]	[3.2]	[3.9]	[2.5]	[2.5]	[2.7]
Primary	90.3	85.8	-4.5	38.3	39.8	1.5
	[1.1]	[1.3]	[1.3]	[1.6]	[1.6]	[1.7]
>Primary	88.4	86.7	-1.7	40.3	42.2	1.9
	[1.3]	[1.4]	[1.5]	[2.1]	[2.2]	[1.8]
Province of residence in 1997:						
North Sumatra	85.4	88.3	2.9	27.3	35.9	8.6
	[3.0]	[2.8]	[2.9]	[3.2]	[3.4]	[3.1]
South Sumatra	87.1	88.4	1.3	30.9	34.6	3.7
	[2.2]	[2.1]	[2.6]	[2.8]	[2.9]	[3.2]
Jakarta	85.0	78.1	-6.9	39.8	43.5	3.7
	[2.8]	[3.3]	[3.3]	[3.6]	[3.6]	[2.9]
West Java	93.3	89.3	-4.0	36.2	36.6	0.3
	[1.7]	[2.1]	[2.3]	[2.8]	[2.8]	[3.1]
Centra Java	91.1	86.1	-5.0	53.9	50.7	-3.2
	[1.5]	[1.8]	[1.9]	[2.3]	[2.3]	[2.4]
NTB	90.2	83.6	-6.7	45.1	46.5	1.3
	[2.0]	[2.5]	[2.7]	[2.9]	[2.9]	[2.9]
South Kalimantan	90.8	86.8	-3.9	40.1	34.7	-5.4
	[2.4]	[2.8]	[2.6]	[3.8]	[3.7]	[3.8]

Notes: 1,483 men and 1,881 women age 22 through 65 in the Panel sample. [Standard errors] in parentheses.

TABLE 3.4: Correlates of employment and employment transitions: Males

Logit and multinomial logit estimates: Relative risk ratios

	Working for Pay in:		Employment Transitions (ref cat. is working in both years)		
	1997	1998	Not working in either year	Take a job by 1998	Lose a job by 1998
Covariates	(1)	(2)	(3)	(4)	(5)
Education (years)	1.012	0.977	0.997	0.946	0.992
	[0.68]	[1.32]	[0.11]	[1.71]	[0.33]
Age (spline) <25	0.883	0.749	1.299	1.044	1.378
	[1.26]	[2.69]	[1.63]	[0.23]	[2.30]
25-35	0.838	0.915	1.012	1.141	1.211
	[6.33]	[2.95]	[0.23]	[2.25]	[4.16]
35-45	1.055	1.012	1.026	0.973	0.963
	[1.86]	[0.39]	[0.45]	[0.46]	[0.75]
45-55	1.020	1.081	0.897	0.970	0.910
	[0.65]	[2.60]	[1.89]	[0.53]	[2.00]
>55	1.136	1.090	0.926	0.874	0.843
	[3.78]	[2.70]	[1.29]	[2.38]	[3.83]
Urban	1.431	1.511	0.439	0.438	0.418
	[2.58]	[2.85]	[3.23]	[3.04]	[4.11]
Province					
North Sumatra	2.742	1.608	0.389	0.143	0.203
	[3.71]	[1.63]	[1.80]	[3.25]	[3.57]
South Sumatra	2.246	1.509	0.586	0.334	0.309
	[3.33]	[1.64]	[1.11]	[2.19]	[2.80]
Jakarta	2.272	2.048	0.722	0.686	0.309
	[3.08]	[2.65]	[0.64]	[0.72]	[2.67]
Central Java	1.415	1.352	0.609	0.581	0.495
	[1.40]	[1.22]	[1.00]	[1.09]	[1.64]
NTB	1.198	1.540	0.544	0.759	0.528
	[0.64]	[1.62]	[1.09]	[0.51]	[1.35]
South Kalimantan	1.800	1.407	0.487	0.339	0.347
	[2.35]	[1.33]	[1.45]	[2.12]	[2.48]
χ^2	161.69	104.25		239.45	
ℓn(Likelihood)	-875.38	-828.20		-1628.24	
Pseudo-R^2	0.08	0.06		0.07	

Notes: Estimates in columns 1 and 2 are odds ratios of being employed relative to not being employed based on logistic regressions. Estimates in columns 3, 4 and 5 are risk ratios relative to working in both 1997 and 1998; those estimates are based on a multinomial logit regression. [t statistics] in parentheses.

TABLE 3.5: Correlates of transitions between employment sectors: Males

Multnomial logit estimates: Risk ratios relative to staying in market sector in both years

97 status: / 98 status:	Unemployed Self-emp. (1)	Unemployed Formal Mkt (2)	Self-emp. Unemployed (3)	Self-emp. Self-emp. (4)	Self-emp. Formal Mkt (5)	Formal Mkt Unemployed (6)	Formal Mkt Self-emp. (7)
Education (years)	0.894	0.972	0.870	0.868	0.856	0.891	0.923
	[3.63]	[0.89]	[4.21]	[8.12]	[5.42]	[3.37]	[2.89]
Age (spline) <25	1.662	0.887	1.882	1.801	1.172	0.664	1.479
	[2.14]	[0.78]	[1.57]	[2.86]	[0.68]	[2.08]	[1.57]
25-35	0.805	0.867	0.924	1.022	0.968	0.967	0.996
	[4.32]	[3.19]	[1.34]	[0.75]	[0.70]	[0.60]	[0.11]
35-45	1.117	1.012	1.053	1.008	1.016	0.951	0.904
	[2.24]	[0.23]	[1.00]	[0.35]	[0.39]	[0.90]	[2.42]
45-55	1.069	0.998	1.113	1.094	1.068	1.173	1.147
	[1.33]	[0.04]	[2.10]	[3.10]	[1.41]	[2.66]	[2.71]
>55	1.136	1.174	1.118	1.060	0.976	0.993	0.970
	[1.86]	[1.70]	[1.69]	[1.15]	[0.30]	[0.08]	[0.37]
Urban	0.456	0.665	0.352	0.314	0.316	0.829	0.310
	[3.22]	[1.63]	[3.82]	[8.34]	[4.84]	[0.64]	[4.96]
Province							
North Sumatra	3.175	1.578	0.757	1.535	0.805	0.819	0.645
	[2.28]	[0.99]	[0.45]	[1.61]	[0.44]	[0.32]	[1.00]
South Sumatra	3.147	1.086	0.997	1.106	1.188	1.160	0.626
	[2.61]	[0.21]	[0.01]	[0.44]	[0.48]	[0.32]	[1.37]
Jakarta	2.112	1.859	1.107	0.720	0.751	2.452	1.088
	[1.41]	[1.54]	[0.18]	[1.13]	[0.54]	[1.95]	[0.21]
Central Java	1.168	0.707	0.738	0.639	0.506	0.954	0.472
	[0.34]	[0.88]	[0.73]	[2.05]	[1.86]	[0.11]	[2.32]
NTB	1.399	0.812	2.460	1.263	1.414	0.542	0.473
	[0.64]	[0.45]	[2.18]	[0.95]	[0.93]	[1.03]	[1.84]
South Kalimantan	2.746	0.855	1.309	1.304	1.446	0.857	0.914
	[2.22]	[0.37]	[0.62]	[1.15]	[1.04]	[0.31]	[0.27]
χ^2				643.16			
ℓn(Likelihood)				-2893.90			
Pseudo-R^2				0.10			

TABLE 3.6: Correlates of employment and employment transitions: Females

Logit and multinomial logit estimates: Relative risk ratios

	Working for Pay in:		**Employment Transitions** (ref cat. is working in both years)		
	1997	1998	Not working in either year	Take a job by 1998	Lose a job by 1998
	(1)	(2)	(3)	(4)	(5)
Education (years)	0.993	1.009	0.982	0.947	1.007
	[0.54]	[0.72]	[1.01]	[2.67]	[0.47]
Age (spline) <25	1.140	0.965	0.948	1.388	1.035
	[1.41]	[0.41]	[0.43]	[1.91]	[0.32]
25-35	1.046	1.075	1.080	1.028	1.083
	[2.31]	[3.79]	[2.78]	[0.91]	[3.45]
35-45	1.008	0.992	0.984	1.010	1.001
	[0.42]	[0.43]	[0.63]	[0.34]	[0.02]
45-55	0.980	0.986	0.970	0.957	0.981
	[0.96]	[0.69]	[1.00]	[1.38]	[0.78]
>55	0.925	0.927	0.963	0.963	0.892
	[2.71]	[2.69]	[0.94]	[0.89]	[3.21]
Urban	1.334	1.422	1.025	0.873	1.644
	[2.94]	[3.67]	[0.17]	[0.87]	[4.29]
Province					
North Sumatra	0.579	0.863	0.788	0.297	0.706
	[2.81]	[0.81]	[0.93]	[3.37]	[1.53]
South Sumatra	0.681	0.866	0.986	0.681	0.687
	[2.31]	[0.89]	[0.06]	[1.56]	[1.82]
Jakarta	0.854	1.040	0.894	0.527	0.988
	[0.82]	[0.21]	[0.40]	[1.84]	[0.05]
Central Java	1.891	1.830	1.360	1.431	2.489
	[4.26]	[4.05]	[1.41]	[1.61]	[4.97]
NTB	1.412	1.549	1.071	0.878	1.842
	[2.07]	[2.63]	[0.28]	[0.50]	[3.03]
South Kalimantan	1.174	1.000	0.931	1.202	1.129
	[0.98]	[0.00]	[0.30]	[0.79]	[0.60]
χ^2	123.11	97.92		215.51	
ℓn(Likelihood)	-1496.11	-1538.11		-2792.19	
Pseudo-R^2	0.04	0.03		0.04	

Notes: Estimates in columns 1 and 2 are odds ratios of being employed relative to not being employed based on logistic regressions. Estimates in columns 3, 4 and 5 are risk ratios relative to working in both 1997 and 1998; those estimates are based on a multinomial logit regression. [t statistics] in parentheses.

TABLE 3.7: Correlates of transitions between employment sectors: Females

Multinomial logit estimates: Risk ratios relative to staying in market sector in both years

Status in 1997 Status in 1998	Unemployed Self-emp. (1)	Unemployed Formal Mkt (2)	Self-emp. Unemployed (3)	Self-emp. Self-emp. (4)	Self-emp. Formal Mkt (5)	Formal Mkt Unemployed (6)	Formal Mkt Self-emp. (7)
Education (years)	0.880	0.885	0.865	0.848	0.844	0.828	0.820
	[4.64]	[3.86]	[4.95]	[6.52]	[3.26]	[4.92]	[3.43]
Age: <25	1.007	0.963	1.552	1.447	0.739	1.358	1.016
	[0.03]	[0.18]	[1.70]	[1.51]	[0.72]	[1.05]	[0.05]
25-35	1.018	0.972	0.948	1.008	1.092	0.944	0.895
	[0.40]	[0.61]	[1.20]	[0.20]	[0.96]	[1.07]	[1.41]
35-45	1.049	0.993	1.084	1.094	1.000	1.005	1.005
	[1.19]	[0.14]	[1.89]	[2.40]	[0.00]	[0.09]	[0.06]
45-55	0.998	0.980	0.966	0.995	1.023	1.009	0.911
	[0.04]	[0.31]	[0.63]	[0.10]	[0.26]	[0.13]	[0.67]
>55	1.191	1.239	1.216	1.127	1.157	1.198	1.252
	[1.59]	[1.73]	[1.76]	[1.12]	[0.99]	[1.46]	[1.07]
Urban	0.426	0.506	0.374	0.597	0.684	0.360	0.837
	[3.73]	[2.57]	[4.11]	[2.45]	[0.97]	[3.35]	[0.41]
Province							
North Sumatra	1.552	1.824	0.670	1.782	8.166	0.396	1.228
	[0.99]	[1.17]	[0.78]	[1.31]	[2.40]	[1.10]	[0.16]
South Sumatra	2.152	2.308	1.337	2.048	5.945	1.941	1.583
	[1.99]	[1.87]	[0.71]	[1.82]	[2.07]	[1.34]	[0.44]
Jakarta	0.804	1.468	0.427	1.142	1.504	1.179	1.153
	[0.51]	[0.83]	[1.66]	[0.33]	[0.38]	[0.29]	[0.13]
Central Java	0.639	0.606	0.626	1.333	0.811	0.721	2.270
	[1.34]	[1.23]	[1.38]	[0.89]	[0.23]	[0.77]	[1.02]
NTB	0.913	1.491	0.916	2.462	4.071	0.923	2.904
	[0.22]	[0.88]	[0.22]	[2.38]	[1.63]	[0.16]	[1.22]
South Kalimantan	1.492	1.073	1.803	1.964	5.194	1.612	1.682
	[1.04]	[0.15]	[1.54]	[1.78]	[1.95]	[0.99]	[0.54]
χ^2				324.45			
ℓn(Likelihood)				-2136.13			
Pseudo-R^2				0.07			

4. Education

The preceding section documents an increase in employment rates of young adults. Young Indonesians appear to be entering the labor force as a result of the economic crisis, and they may be leaving school in order to do so. In this section we explore changes in enrollment status and drop out rates for two age groups: 13-19 year olds and 7-12 year olds. Changes in schooling behavior are of importance for both age groups. Among older children, those who stop attending school during the crisis may never return. For younger children, interruptions in schooling may be temporary. Some may be leaving permanently and so in all likelihood will never learn to read and write. In either instance these children will suffer the consequences for years to come.

Current enrollment refers to the person's enrollment status at the time of the interview. The IFLS2 interview took place during the early part of the 1997/98 school year, while the IFLS2+ interview took place early in the 1998/99 school year.[14] Dropout is defined as having been enrolled in the previous year, but not in the current year. Thus the group from which dropout rates are computed (all children enrolled in the previous year) is smaller than that for current enrollment (all children).

Table 4.1 presents the results for 13-19 year olds, for each survey year. Columns 1-3 provide information from 1997 and 1998 on all children interviewed in the 80 IFLS2+ communities. Columns 4-6 provide information on the panel respondents — the subset of children who were interviewed in 1997 and again in 1998, and did not age out of the specified age category by 1998. By construction, the panel sample is one year older in 1998 and so comparison of the 1997 and 1998 estimates for the panel sample confounds the effect of aging with the effect of the crisis. Because age is strongly related to schooling behavior, particularly for the older age group, we place more emphasis on the estimates based on the cross-sections for this group (columns 1-3).

The results are presented by gender, by level of household expenditure in 1997, and by residence. Between 1997 and 1998, the percentage of 13-19 year olds who are not currently enrolled in school has risen. In both years, more 13-19 year olds are out of school in rural than in urban areas. However, the percentage not enrolled increased more in urban areas—from 33 percent in 1997 to 38 percent in 1998, a change that is statistically significant. Children from poorer households are more likely to be out of school than children from better off households—a phenomenon that intensified between 1997 and 1998. Gender is not associated with enrollment status in either year. The increases over time in the proportion of 13-19 year olds who are not enrolled are much larger for the panel sample.

Drop out rates are presented in Columns 7-9. They have risen significantly since 1997. The changes are more pronounced for males than for females, for urban residents than for rural residents, and for children from the poorest households.

Table 4.2 presents the results for 7-12 year olds. In this age group, as well, we find that fewer children are in school in 1998 than in 1997. The percentage of 7-12 year olds that are not currently in school has also risen between 1997 and 1998, to just over 6%. For several subgroups, the increase is statistically significant. In contrast to the results for older children, in this age group the increase in children who are out of school has been larger in rural than in urban areas. Failure to enroll has also risen sharply

[14] The school year typically begins in August. For a very small number of households in IFLS2+, the school year had not yet begun when the interviews took place.

among children from the poorest households. Overall, the size of the gap in enrollment between the top and bottom PCE quartiles has widened, so that by 1998, children from the poorest households are about ten times more likely to be out of school than their counterparts from households at the top of the expenditure distribution. Drop out rates have also risen for 7-12 year olds, particularly for children in rural areas and for children from poorer households.

We now explore the correlates of enrollment and drop out, for each age group, in a multivariate framework (Tables 4.3 and 4.4). For 13-19 year olds, there are strong declines in enrollment with each year of age, in both 1997 and 1998. The age pattern of enrollment does not appear to have changed significantly between years.

Among older children, the advantage for enrollment rates of living in an urban area deteriorated between 1997 and 1998. Likewise, for drop out rates, urban children had lower drop out rates than rural children in 1997, but by 1998 the rates are about equal. In 1997 there is no relationship between expenditure and enrollment, indicating that education was reaching even the poorest. Household expenditure levels show a strong positive association with enrollment in 1998. By 1998 resource constraints deter schooling, which is a disturbing result.

The multivariate results for younger children are presented in Table 4.4. The patterns of enrollment and drop-out probabilities by residence are different from those for older children. In 1998 young children in rural areas are significantly less likely to be in school than children in urban areas. No differential existed in 1997. Likewise, the dropout rate is higher for rural than for urban children in 1998, but not in 1997. Generally, province of residence has little to do with enrollment and drop out for younger children. The exception is South Sumatra, where the probability of enrollment has decreased and the probability of dropout has increased significantly relative to West Java. Rising levels of household expenditure are associated with a greater chance of enrollment, and a lower chance of dropping out, and the benefits of resources are stronger in 1998 than in 1997.

In addition to questions within the household survey that focused on education for individuals, we also visited primary and junior secondary schools and conducted interviews with the school principal or (if he or she was unavailable) with an assistant principal or teacher. A total of 243 elementary schools and 233 junior secondary schools were interviewed. About 85% of the elementary schools in this study are administered by the Ministry of Education (MOE), while about 55% of junior secondary schools are MOE schools. Most of the non-MOE schools are operated by private foundations.

One set of questions in the IFLS2+ questionnaire focused on identifying what dimensions of the crisis have affected the operation of schools (first panel of Table 4.5). The rising cost of paper was mentioned as a problem more than any other factor. More than half of all schools also experienced problems associated with the rising costs of books, supplies, and photocopying. For the most part, elementary and junior secondary schools face the same problems. However, payment of monthly (BP3) fees is more problematic at elementary schools than at junior secondary schools, while the cost of transportation and shortage of maintenance funds is more problematic for junior secondary schools than for elementary schools. Respondents mentioned a number of ways that they addressed these problems. Common responses to rising costs of paper and photocopying are writing on the board, reading test questions, and increasing test fees or asking parents for donations. Common responses to book shortages were asking students to share books, placing more copies in the library, and no longer requiring use of the book.

An obvious question is how these difficulties have affected teachers and students. The school principals were asked whether teacher attendance and performance had changed since the 1997/98 school year. Most respondents reported either no change, or that performance and attendance had actually improved. Assessing how changes in school quality have affected students is difficult. The school survey does contain information on the number of students enrolled in each grade (for both the 1997/98 and 1998/99 school years) and on the number of teachers per grade. The statistics were used to compute the mean number of students enrolled and the mean number of students per teacher (lower half of Table 4.5). Neither numbers of students enrolled nor the number of students per teacher appears to have changed much between 1997/98 and 1998/99.

Table 4.1: Enrollment and Drop Out Rates, Children 13-19

	Percentage of Children not Currently Enrolled						Drop Out Rate		
	Same Communities			Same Respondents			Same Communities		
	1997	1998	Change	1997	1998	Change	1997	1998	Change
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Gender									
Male	38.5	43.1	4.6	31.5	43.4	11.9	12.1	17.7	5.6
	(1.8)	(1.8)	(2.5)	(2.0)	(2.1)	(2.9)	(1.5)	(1.6)	(2.2)
Female	40.6	44.1	3.5	32.8	43.5	10.7	12.3	16.2	3.9
	(1.8)	(1.7)	(2.5)	(2.0)	(2.1)	(2.8)	(1.5)	(1.5)	(2.2)
Expenditure Level in 1997									
1st Quartile	48.5	54.1	5.6	40.7	57.1	16.4	14.2	25.5	11.3
	(2.5)	(2.4)	(3.4)	(2.7)	(2.8)	(3.9)	(2.2)	(2.7)	(3.5)
2nd Quartile	36.0	43.3	7.3	30.7	42.6	11.9	13.1	17.6	4.5
	(2.5)	(2.4)	(3.4)	(2.7)	(2.9)	(3.9)	(2.0)	(2.2)	(3.0)
3rd Quartile	37.9	40.4	2.5	29.0	37.3	8.3	13.2	15.5	2.3
	(2.6)	(2.5)	(3.6)	(2.7)	(2.9)	(4.0)	(2.1)	(2.2)	(3.1)
4th Quartile	33.1	35.5	2.4	25.6	32.6	7.0	7.3	9.5	2.2
	(2.8)	(2.6)	(3.8)	(2.9)	(3.1)	(4.2)	(1.8)	(1.9)	(2.6)
Residence:									
Urban	33.2	38.4	5.2	25.0	38.1	13.1	11.1	17.5	6.4
	(1.8)	(1.8)	(2.5)	(1.8)	(2.1)	(2.8)	(1.4)	(1.7)	(2.1)
Rural	46.0	48.5	2.5	39.1	48.5	9.4	13.5	16.8	3.3
	(1.9)	(1.7)	(2.5)	(2.0)	(2.1)	(2.9)	(1.6)	(1.6)	(2.3)
Number of Respondents	1431	1691		1138	1138		972	1141	

Table 4.2: Enrollment and Drop Out Rates, Children 7-12

	Percentage of Children not Currently Enrolled						Drop Out Rate		
	Same Communities			Same Respondents			Same Communities		
	1997	1998	Change	1997	1998	Change	1997	1998	Change
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Gender									
Male	5.1	6.1	1.0	3.7	6.1	2.4	1.0	3.4	2.4
	(0.9)	(0.9)	(1.3)	(0.9)	(1.1)	(1.4)	(0.4)	(0.7)	(0.6)
Female	3.4	6.2	2.8	2.4	5.8	3.4	1.2	3.8	2.6
	(0.8)	(1.0)	(1.2)	(0.7)	(1.1)	(1.3)	(0.5)	(0.8)	(0.9)
Expenditure Level in 1997									
1st Quartile	6.9	11.7	4.8	4.9	10.7	5.8	1.3	7.5	6.2
	(1.3)	(1.6)	(2.0)	(1.2)	(1.7)	(2.1)	(0.6)	(1.4)	(1.5)
2nd Quartile	3.7	3.6	-0.1	2.7	3.5	0.8	1.5	1.2	-0.3
	(1.0)	(1.0)	(1.5)	(1.0)	(1.1)	(1.5)	(0.7)	(0.6)	(0.9)
3rd Quartile	3.0	4.8	1.8	2.3	4.7	2.4	0.7	3.1	2.4
	(1.0)	(1.3)	(1.6)	(1.0)	(1.4)	(1.8)	(0.5)	(1.0)	(1.2)
4th Quartile	1.6	2.5	0.9	0.7	1.4	0.7	0.6	1.6	1.0
	(0.9)	(1.1)	(1.5)	(0.7)	(1.0)	(1.2)	(0.6)	(0.8)	(1.1)
Residence:									
Urban	2.4	2.5	0.1	1.9	2.2	0.3	0.9	1.3	0.4
	(0.7)	(0.7)	(1.0)	(0.7)	(0.8)	(1.1)	(0.4)	(0.5)	(0.7)
Rural	5.5	8.8	3.3	3.8	8.2	4.4	1.3	5.4	4.1
	(0.8)	(1.0)	(1.3)	(0.8)	(1.1)	(1.4)	(0.4)	(0.8)	(1.0)
Number of Observations	1189	1286		942	942		1151	1252	

Table 4.3: Correlates of Enrollment and Drop-Out for Young Adults Age 13-19

		Enrollment			Drop-out		
		1997	1998	Change	1997	1998	Change
Covariates		(1)	(2)	(3)	(4)	(5)	(6)
Age is at least:	14	-4.766	-3.236	1.530	-1.115	-2.574	-1.459
		(1.190)	(0.834)	(0.274)	(0.357)	(0.751)	(0.313)
	15	-15.103	-7.278	7.825	5.294	2.750	-2.545
		(3.632)	(1.908)	(1.386)	(1.528)	(0.793)	(0.514)
	16	-9.623	-17.806	-8.183	5.414	9.558	4.144
		2.300)	(4.507)	(1.422)	(1.467)	(2.483)	(0.771)
	17	-9.636	-6.708	2.928	-0.312	-2.978	-2.667
		(2.299)	(1.686)	(0.507)	(0.080)	(0.711)	(0.463)
	18	-12.946	-19.563	-6.617	11.539	21.522	9.983
		(3.123)	(4.832)	(1.142)	(2.755)	(4.595)	(1.583)
	19	-15.354	-14.160	1.194	12.992	17.948	5.286
		(3.344)	(3.424)	(0.193)	(2.314)	(3.380)	(0.685)
Female		-4.204	-2.209	1.995	1.458	-0.816	-0.274
		(1.862)	(1.043)	(0.644)	(0.716)	(0.383)	(0.766)
Urban residence		9.853	5.147	-4.706	-3.980	1.733	5.713
		(3.934)	(2.142)	(1.356)	(1.761)	(0.722)	(1.722)
Province:							
North Sumatra		13.526	13.158	-0.368	-5.707	-5.952	-0.245
		(3.120)	(3.239)	(0.062)	(1.512)	(1.450)	(0.044)
South Sumatra		4.045	8.995	4.950	-7.45	-2.347	5.105
		(0.960)	(2.302)	(0.861)	(1.921)	(0.583)	(0.906)
Jakarta		-1.532	8.257	9.789	3.582	-7.043	-10.625
		(0.308)	(1.784)	(1.440)	(0.833)	(1.535)	(1.680)
Central Java		4.657	3.705	-0.952	-1.562	-0.765	0.796
		(1.224)	(1.032)	(0.182)	(0.453)	(0.200)	(0.154)
West Nusa Tengara		6.692	13.189	6.497	-2.728	-5.441	-2.173
		(1.623)	(3.483)	(1.160)	(0.720)	(1.384)	(0.493)
South Kalimantan		-0.205	0.483	0.688	-5.337	3.993	9.330
		(0.043)	(0.107)	(0.105)	(1.167)	(0.819)	(1.387)
Age of household head		0.030	-0.088	-0.118	0.023	0.114	0.091
		(0.302)	(0.890)	(0.839)	(0.243)	(1.124)	(0.645)
Household head is male		-0.071	-7.344	-7.273	5.378	6.932	1.553
		(0.020)	(2.252)	(1.514)	(1.578)	(2.032)	(0.319)
Years of education of hh head		2.456	2.249	-0.208	-0.870	-1.092	-0.223
		(8.375)	(7.983)	(0.512)	(3.309)	(3.873)	(0.574)
ln (PCE)		0.609	4.219	3.610	-1.748	-4.189	-2.441
		(0.472)	(3.484)	(2.041)	(1.523)	(3.463)	(1.454)
Number of children in hh (0-14)		-1.104	-2.469	-1.365	0.728	1.377	0.650
		(1.008)	(2.349)	(0.899)	(0.738)	(1.310)	(0.448)
ln (household size)		-0.712	4.387	5.099	-3.183	-2.599	0.584
		(0.196)	(1.280)	(1.020)	(0.935)	(0.738)	(0.118)
Intercept		54.372	41.528	-12.844	57.995	37.150	-20.845
		(3.388)	(2.684)	(0.576)	(3.998)	(2.190)	(0.933)
Adjusted R^2		0.258	0.274		0.083	0.139	
F(all covariates)		24.52	30.09	1.08	5.22	9.46	1.72
# observations		1422	1620	3042	979	1099	2078

Notes: Source IFLS2 & IFLS2+. Estimates are from a linear probability model. T-statistics in parentheses.

Table 4.4 : Correlates of enrollment and Drop Out for Children 7-12 years of age

Covariates		Enrollment 1997 (1)	Enrollment 1998 (2)	Enrollment Change (3)	Drop-out 1997 (4)	Drop-out 1998 (5)	Drop-out Change (6)
Age is at least:	8	7.890	0.153	-7.736	0.788	0.827	0.039
		(3.925)	(0.064)	(2.472)	(0.712)	(0.435)	(0.018)
	9	2.052	1.249	-0.803	-0.988	-0.344	0.644
		(1.012)	(0.554)	(0.263)	(0.909)	(0.193)	(0.303)
	10	-1.196	0.180	1.377	1.250	1.934	0.683
		(0.586)	(0.079)	(0.446)	(1.148)	(1.072)	(0.319)
	11	0.123	-2.177	-2.300	-1.060	1.620	2.679
		(0.061)	(0.931)	(0.745)	(0.987)	(0.886)	(1.253)
	12	-6.057	1.153	7.210	4.294	-1.417	-5.711
		(3.093)	(0.504)	(2.390)	(4.071)	(0.792)	(2.724)
Female		1.770	-0.321	-2.091	0.002	0.616	0.614
		(1.532)	(0.239)	(1.177)	(0.004)	(0.583)	(0.495)
Urban residence		0.710	4.223	3.513	-0.138	-2.944	-2.805
		(0.520)	(2.688)	(1.681)	(0.188)	(2.391)	(1.932)
Province							
North Sumatra		0.272	-1.253	-1.525	1.001	-0.149	-1.150
		(0.115)	(0.456)	(0.419)	(0.783)	(0.069)	(0.454)
South Sumatra		-0.870	-14.871	-14.001	0.803	13.010	12.207
		(0.429)	(6.309)	(4.490)	(0.732)	(7.007)	(5.607)
Jakarta		-0.946	-4.372	-3.426	2.079	2.295	0.215
		(0.338)	(1.421)	(0.818)	(1.386)	(0.952)	(0.074)
Central Java		1.843	0.985	-0.858	0.724	-1.174	-1.898
		(0.941)	(0.434)	(0.285)	(0.686)	(0.661)	(0.908)
West Nusa Tenggarra		0.802	1.782	0.980	-0.087	-2.287	-2.200
		(0.403)	(0.774)	(0.321)	(0.081)	(1.264)	(1.032)
South Kalimantan		-7.097	-8.200	-1.103	1.500	3.929	2.431
		(2.581)	(2.703)	(0.267)	(0.987)	(1.632)	(0.831)
Age of household head		-0.080	0.028	0.108	0.054	-0.048	-0.103
		(1.341)	(0.436)	(1.223)	(1.685)	(0.962)	(1.667)
Household head is male		1.158	-1.420	-2.578	-0.953	0.450	1.403
		(0.620)	(0.643)	(0.890)	(0.943)	(0.260)	(0.695)
Years of education of hh head		0.533	0.436	-0.097	-0.068	-0.147	-0.079
		(3.353)	(2.360)	(0.396)	(0.791)	(1.015)	(0.467)
ℓn(PCE)		1.035	3.037	2.002	-0.099	-2.278	-2.179
		(1.364)	(3.586)	(1.750)	(0.241)	(3.419)	(2.730)
Number of children in hh (0-		-2.042	-1.195	0.847	1.451	0.254	-1.197
		(2.821)	(1.544)	(0.792)	(3.711)	(0.416)	(1.601)
ln (household size)		2.855	-0.307	-3.161	-4.730	0.504	5.234
		(1.017)	(0.116)	(0.802)	(3.121)	(0.242)	(1.906)
Intercept		87.916	86.466	-1.450	3.582	9.436	5.854
		(9.416)	(8.916)	(0.106)	(0.717)	(1.248)	(0.622)
R^2		0.060	0.093		0.024	0.102	
F(all covariates)		4.74	7.28	3.75	2.39	7.78	6.54
# observations		1183	1224	2407	1145	1191	2336

Notes: Source IFLS2 & IFLS2+. Estimates are from a linear probability model. T-statistics in parentheses.

Table 4.5: Characteristics of Schools

	Elementary (SD)		Junior Secondary (SMP)	
Over the past 12 months, the operations of this school have been affected by changes in:				
Cost of paper	70.4		76.0	
cost of non-compulsory books	64.6		65.3	
cost of other supplies (non-books)	55.1		50.2	
photocopy costs	54.7		55.3	
availability of compulsory books	42.4		42.0	
budget available for maintenance	37.9		43.5	
payment of monthly BP3 fees	32.5		24.9	
cost of transportation	11.9		19.0	
	1997/98	**1998/99**	**1997/98**	**1998/99**
Mean enrollment, all schools	224.8	225.8	512.5	527.5
Urban schools	257.1	256.6	597.5	606.3
Rural schools	182.2	184.0	399.3	420.3
Mean pupils per teacher, all schools	25.2	25.6	17.4	16.8
Urban schools	24.9	25.5	18.5	17.2
Rural schools	25.6	25.7	15.9	16.3

Notes: Source IFLS2+. Reports by principals (or, when not available, assistant principals or a teacher). 243 primary schools and 233 junior secondary schools.

5: Use of Health Care

The exchange rate fluctuations and other dimensions of the crisis have altered both the absolute and the relative prices of goods and services. Health services are no exception. Moreover, in addition to changes in the explicit price of health services, travel costs to providers and waiting times at providers may have changed in ways that make use of services relatively more or less attractive in 1998. Changes in use may also have occurred if the crisis has altered underlying health status and thus the need for health care. In this section we explore whether use of health services has changed between 1997 and 1998.

The IFLS2 and IFLS2+ asked respondents about use of outpatient services in the four weeks prior to the interview. Respondents provided information about the source of care for any outpatient visit they had made during the reference period. In these analyses we consider overall rates of use and use of public, private, and traditional services, for adults (age 15 and above) and children (age 14 and below). [15]

The results for use of health care tell a dramatic story: between 1997 and 1998 use of health services, particularly public services, has fallen substantially both for adults and children.

Use of Health Care by Adults and Children. Table 5.1 summarizes the statistics on use of health care by adults. The proportion of adults visiting a public provider dropped from 7.4% in 1997 to 5.6% in 1998—a statistically significant reduction in use. Changes in the proportions of adults visiting private facilities and traditional practitioners did not change significantly. Overall, the proportion of adults making an outpatient visit to any provider dropped from 14.6% in 1997 to 13.4% in 1998—a decline that is relatively small and is not statistically significant.

For those who used care in 1997 or 1998, we also examine changes in which providers were visited. Among those who used health care, we find that the proportion relying on public services dropped dramatically. In 1997 about 47% of visits were to a *puskesmas* or *puskesmas pembantu.* By 1998, the proportion of visits that were to a *puskesmas* shrunk by ten percentage points. Visits to private doctors increased between 1997 and 1998, but not significantly. Although overall use of traditional practitioners was relatively low in both years of the survey, the proportion of visits made to traditional practitioners nearly doubled between waves—a change that is statistically significant.

Children are making fewer visits to outpatient providers in 1998 as well (Table 5.2). With respect to children we discuss the results for all respondents rather than for panel respondents.[16]

Overall, the proportion of children using health services in the month prior to the interview declined significantly, from just over one-quarter of all children in 1997, to just over one-fifth of children in 1998. Rows 2-5 of the table show that almost all of the decline is due to a reduction in use of *pukesmas* and community health posts. Use of private and traditional services has changed little. *Posyandu* are targeted to children under five, so we present change in use of these posts by children under five. The decrease is

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[15] Respondents were asked about visits to each of the following types of providers: public hospitals, government health centers and subcenters (*puskesmas* and *puskesmas pembartu*), private hospitals, private clinics, doctors' practices, nurses and paramedics and midwives, traditional practitioners, and others. The first two categories are considered public providers, while the next four categories are considered private providers. Children were asked about community health posts (*posyandu*) as well. *Posyandu* are considered as public providers.

[16] Children use less care as they get older. Consequently, the decreases in use observed for panel respondents are a combination of two effects: the effect of the crisis and age-related decline in use that occurs because all panel respondents are a year older in 1998 than they were in 1997.

enormous. In 1997 almost half (46.7%) of children under five visited a community health post in the month before the survey. By 1998 only about one-quarter (27.7%) of children visited a post.

Subsequent rows of the table explore changes in the types of providers children see, given that a visit is made. The most striking findings are the dramatic decline in visits to *posyandus* and a substantial increase in the proportion of children visiting private doctors. In 1997, 56.8% of children visited a *posyandu* in the month before the survey. By 1998 the proportion of visitors to the *posyandu* had dropped by 15.3 percentage points, to 41.6%. With respect to private providers, in 1997 only about 30% of children who sought care did so from private practitioners. By 1998 the fraction had risen to 38.2%. As was true for adults, this increase is accounted for by increased use of private doctors rather than midwives, nurses, or paramedics.

Unlike the pattern we observed for adults, no significant change in use of the *puskesmas* occurred among children who used health services. Nor did the fraction of child users who visited traditional practitioners change significantly between 1997 and 1998.

The decline in children's use of the *posyandu* is of concern because the *posyandu* is an important source of preventive care, such as growth monitoring, immunization, and Vitamin A. Table 5.3 examines the extent to which immunization and Vitamin A uptake have changed between 1997 and 1998, for children less than three years old. With respect to Vitamin A, the child's mother provided information about whether the child had received any in the previous six months. Information on the child's immunization status was obtained from the child's KMS (growth monitoring) card or from the child's mother or caretaker when a KMS card could not be seen.

Receipt of Vitamin A in the six months before the survey has declined substantially. In 1997, 55% of children under three had been given Vitamin A in the previous six months. By 1998 the proportion was less than 43%.

There are relatively few significant changes in receipt of other services typically provided through the *posyandu*. The proportion of children for which a KMS card was available did not change between 1997 and 1998. Nor, for the most part, do rates of immunization uptake appear to have changed significantly. There are two immunizations for which uptake appears to have changed: Polio 1, for which the rate is significantly lower in 1998 than in 1997, and Hepatitis B, for which the rate is significantly higher in 1998 than in 1997.

The results in Table 5.3 suggest that thus far, decreasing rates of participation in the *posyandu* program have not produced significant declines in immunization coverage—a finding that may reflect a variety of dynamics. For one thing, the *posyandu* is not the only source of immunizations. It may well be the case that children are receiving immunizations at *puskesmas* or private providers, for which rates of utilization have not diminished. Moreover, it is not necessary for children to attend the *posyandu* every month in order to be adequately immunized. It may be that children are attending the *posyandu* with reduced, but still sufficient frequency to receive the necessary immunizations. It does appear that children are receiving less Vitamin A than they were a year ago.

To summarize the statistics that we have presented above, we see that for adults, not only has overall use of public services declined, but health service users are shifting away from use of the *puskesmas* in favor of private doctors and traditional practitioners. For children, use of health services has declined

significantly. Among children who used care, the fraction visiting a *posyandu* decreased substantially, while the fraction visiting a private doctor increased.

It is of interest to go beyond the aggregate rates and consider whether particular sub-groups of the population have experienced more changes in use than other groups. The next set of tables explores the factors associated with these changing patterns of health care use.

The correlates of use of health care among adults are presented in Table 5.4. We analyze the correlates of use of care in 1997 and 1998 (columns 1-4), as well as the correlates of changes in use of both public and private providers. Estimates from multinomial logit models of use of health care are reported in columns (1) and (2), for 1997, and (3) and (4), for 1998. The estimates represent risk ratios of using public or private health services relative to not using any health care. Columns 5-8 provide a summary of the transition to and from use of public and private providers, relative to experiencing no change in use of care, in a multinomial logit framework.

For adults the effect of (log) *per capita* expenditures on use of care changes between 1997 and 1998.[17] In 1997 expenditure level had a significant effect on use of private services, but only for those above the median level of expenditure. By 1998, for those both above and below the median, increasing expenditures are associated with an increase in the chance that a visit to a private provider is made.

Urban residence is not related to use of care in 1997 or in 1998, nor is it related to transitions into or out of use of care. The effects of province of residence are more difficult to disentangle. The coefficients in Table 5.4 represent the difference between residents of a particular province and residents of West Java (the reference population) on a particular dimension of health care use. The biggest differences observed are between North Sumatra and West Java. North Sumatrans are generally less likely to use care in 1997 and in 1998 and more likely to transition out of using care by 1998 than are residents of West Java. In 1997 Jakarta residents were more likely to use private services but by 1998 this difference has disappeared. Residents of NTB are more likely transition out of use of public services by 1998 than residents of West Java.

Table 5.4 also indicates that men's visit patterns differ from those of women. In both 1997 and 1998 men are less likely to visit either public or private practitioners than are women (Columns1-4). Men are also less likely to make a transition in health care use between 1997 and 1998. That is, they are significantly less likely than women either to start or stop using either public or private providers (Columns 5-8).

The effect of age on use of health care is allowed to vary within three categories: 20-29, 30-49, and 50 and above. This flexible specification allows us to see that the effects of age on use vary both across and within categories. For those 50 and older, an extra year of age has no effect on use of care (either public or private) in 1997 or 1998, or on changes in use patterns between 1997 and 1998. For those between 20 and 29, an extra year of age is associated with an increased chance of using private care in 1997 (Column 2), and with an increased chance of transitioning out of use of private care by 1998 (Column 8). Among adults aged 30 to 49, being older is associated with a greater chance of using public care in 1997, using public or private care in 1998, and of transitioning in to use of public or private care between 1997 and 1998.

[17] The log of per capita expenditure is entered as a spline with a knot at the median.

Table 5.5 parallels Table 5.4 but present the results for children. The same explanatory factors are considered.

The effects of per capita expenditure on children's use of care are strikingly different from those for adults. First, it appears that in 1997, among children from households below the median level of per capita income, those in the relatively better off households are somewhat more likely to use public care. By 1998 household resources are irrelevant with respect to use of public care (Column 3). However, evidence that children from higher income households are less likely to have lost a public health care visit between 1997 and 1998 indicates that middle income children account for a relatively large share of the reduction in public health care services.

With respect to private care, resources do matter among children from lower income households in 1997: the poorest are the least likely to use private care (Column 2). By 1998, however, the differential use of private services across the income distribution has been severely attenuated and is not significant (Column 4). Thus, among lower PCE children, as PCE rises, there is an increasing chance the child will switch out of private care between 1997 and 1998 so that by 1998, fewer children from middle income households are using private care (Column 8). This effect is offset by an increase in the probability a child from a higher income household switched into using private care in 1998. Thus, the net effect is a relatively small change in the use of private care (as seen in Table 5.2) but a very large change in which children who are using private care. By 1998, it is the children of the relatively better off.

No significant differences emerge in health care use patterns by gender of the child, or by the size of the household in the which the child lives. Age, however, has a strong effect. Older children generally have fewer service needs than their younger counterparts, and so increases in age reduce use of services and transitions into patterns of more service use in 1998 relative to 1997.

Unlike the results for adults, urban residence does affect children's health care use: children in urban areas are more likely to switch into use of private services by 1998.

There are many similarities to the results for adults with respect to the effects of province on children's use of health care. As with adults, children in North Sumatra are generally less likely to use care or transition into care than are their counterparts in West Java. The effects of residence in South Sumatra are similar in direction to those for North Sumatran children. In Jakarta, in 1997, children were less likely to use public services than were children in West Java. By 1998 this is no longer true. Children in Central Java are less likely to use public services in 1997 and less likely to transition into use of public services by 1998. Children in NTB and in South Kalimantan were substantially less likely to transition into use of private services than are children in West Java.

It appears from these results that much of the increased use of private doctors is among children from better off households, children in urban areas, and to some extent children on Java. Reductions in use of public services are occurring for children in the poorest and middle-income households, older children, and children in North Sumatra.

Use of Family Planning. The results presented above focus on use of outpatient care. Another important service is family planning. We now turn to the question of how contraceptive use has changed between 1997 and 1998. The analyses are based on questions asked to currently married women in 1997 and again in 1998 about current use of contraception and, if contracepting, about method used. The

overwhelming conclusion is that between 1997 and 1998 there have been no significant changes in contraceptive prevalence or method mix.

Table 5.6 presents overall prevalence, and prevalence by method, in 1997 and 1998. The first column of the table presents the overall contraceptive prevalence rate and the distribution of users by method for the entire sample of women interviewed in 1997 (5,629 women). The remaining columns of the table present the overall prevalence rate and method mix in 1997 and in 1998, and the difference between 1997 and 1998, for two groups of women. In columns 2-4, the results are computed based on all women interviewed in the 80 IFLS2+ communities (we refer to this group as all respondents). In columns 5-7 we present the results only for the women who were interviewed in 1997 and 1998. There are 1,267 women who were interviewed in both years. We refer to these women as panel respondents.

The results in Table 5.6 indicate that there has been no statistically significant change in either contraceptive prevalence or method mix between 1997 and 1998. Among panel respondents prevalence was 56.6% in 1997 and 57.3% in 1998. In both years, the majority of users rely on pills or injections. Although it is possible that the distribution of users across methods could change in ways that do not alter overall prevalence, further examination of Table 5.6 indicates that for no method has there been a significant change in the proportion of women who use it. Injection is the only method for which there is more than a one percentage point change in prevalence. Although the 2.27 percentage point decrease in injections is not statistically significant, it may portend a longer-term decline in the use of injections, or it may be a reflection of inadequate supplies (see below).

Table 5.7 explores the IFLS information on source of supplies for contraceptives, for pill users and for injection users. For each respondent who reported current use of one of these methods, we constructed a variable indicating the source (within the seven months prior to the interview) from which she most recently obtained contraceptive services. The table reports the results for the most common sources. Not all users reported a visit for services in the seven months prior to the interview.

The first row of Table 5.7 reports the proportion of pill users that did not make a visit. The proportion with no visit is significantly higher in 1997 (14.5%) than in 1998 (6.2%). The change may reflect a shift in women's patterns of procuring contraceptives. Possibly in 1997 women were more likely to "stock up" on pills, obtaining multiple strips in one visit so that visits could be made less frequently. The tendency to stock up on supplies may have diminished in 1998 to the extent that sources of services are more likely to be out of stock, or to the extent that women are less able to afford to purchase multiple strips in one visit. The subsequent rows of the table present the distribution of visitors across the most important sources of family planning supplies. There have basically been no changes in sources of oral contraceptives.

The second panel of the table reports the same statistics for injection users. Here we observe a large change in source of supplies. Between 1997 and 1998, the proportion of women visiting the *puskesmas* for supplies dropped significantly. For women in the same communities, the drop is 13 percentage points (from 30.5% to 17.5%). For women interviewed in both 1997 and 1998, the drop is 8 percentage points (from 27.1% to 19.1%). Both changes are statistically significant. Concomitantly, there appears to have been a significant rise in the proportion of injection users obtaining services from Village Midwives.

The results presented thus far explore changes in contraceptive use patterns in the aggregate. It is clear from these analyses that there has been some change in the providers from whom women obtain

injections, but no change in prevalence or method mix during the first year of Indonesia's economic crisis.

These results do not reveal what factors are associated with whether a particular individual changes her contraceptive behavior. To shed light on this question, we now move to a discussion of the characteristics associated with discontinuation and adoption at the individual level. Results from the multivariate regressions are reported in Table 5.8. The determinants that we consider are per capita expenditure, the woman's age and education, her province of residence, and whether she resides in an urban area.[18]

We use multinomial logit specifications to estimate the effects of women's characteristics on adoption and discontinuation of any method (Columns 1 and 2), of the pill (Columns 3 and 4), and of injections (Columns 5 and 6). In each specification the reference group is women who did not adopt or discontinue the method in question between 1997 and 1998 (that is, they experienced no change in use of that method). The coefficients in the table indicate how a particular characteristic affects the chance that a woman experiences a particular change in behavior. A coefficient greater than one indicates an increase in the likelihood of the behavior (relative to the reference group) and a coefficient of less than one indicates a lower probability.

The first two columns of the table present the correlates associated with the decision to quit (Column 1) or adopt (Column 2) any method of contraception between 1997 and 1998. The decision to discontinue method use is not affected by education, economic status, or residence. The decision to adopt contraception is not significantly affected by any of the factors considered.

Columns 3-6 present the results for discontinuation or adoption of the pill or the injection. Socioeconomic characteristics do have some influence on the decision to stop or start pill use. For women in households where per capita expenditure is above the median, increasing levels of expenditure significantly increase the chance that they will discontinue use of the pill—possibly because women in better-off households can better afford alternative methods of contraception. An additional year of education decreases the chance that a woman will adopt the pill. Urban residents are almost twice as likely to adopt the pill as rural residents. Adoption and discontinuation of injections is not related to socioeconomic characteristics.

Overall, of the characteristics we consider, age is most closely related to adoption and discontinuation of contraception. Increasing age is a significant deterrent to discontinuation of any method, of pills, and of injections. Among older women, increasing age is also a significant deterrent to adopting use of pills or injections (but apparently does not discourage women from adopting other methods). Together these results suggest that among older women, those who were not already using the pill or injection by 1997 were unlikely to start, while those who were using the pill or injection by 1997 were unlikely to quit.

Residence does not emerge as a strong predictor of adoption or discontinuation of method use. For the most part (see the discussion of pill results for an exception), neither does economic status. The fact

[18] The independent variables are measured as of 1997. We allow the effect of (log) per capita expenditure to be non-linear by specifying a spline function with a knot at the median. This specification captures the fact that the effect of an increase in expenditure on adoption or discontinuation may vary depending on whether the woman is relatively well-off or less well-off economically. Age is also included as a spline, which allows the effect of an additional year of age to differ depending on whether women are between 15 and 29 or between 30 and 49. The province effects are estimated relative to West Java. The coefficient for urban residence reveals the effect of living in an urban area relative to a rural area.

that neither expenditure levels nor education affects the decisions to discontinue or to adopt contraception suggests that the whatever the effects of the crisis on economic well-being, they have not resulted in changes in contraceptive behaviors. The stability of contraceptive prevalence in the face of the economic crisis suggests that for the majority of couples in Indonesia, contraception is a more appealing option than the risk of having an additional child in the current economic environment, despite the fact that contracepting is relatively more expensive now than it used to be (see below).

Table 5.1: Use of health care by adults

Means and [standard errors]

Indicator	All resp. in 1997 (1)	Same communities 1997 (2)	1998 (3)	Change (4)	Same respondents 1997 (5)	1998 (6)	Change (7)
% use any health services	15.10	14.40	13.30	-1.10	14.61	13.36	-1.26
	[0.3]	[0.5]	[0.4]	[0.7]	[0.5]	[0.5]	[0.7]
% use public health services	6.68	7.20	5.39	-1.81	7.39	5.57	-1.82
	[0.2]	[0.4]	[0.3]	[0.5]	[0.4]	[0.3]	[0.5]
% use private health services	8.85	7.71	7.70	-0.02	7.74	7.57	-0.17
	[0.2]	[0.4]	[0.3]	[0.5]	[0.4]	[0.4]	[0.6]
% use traditional health services	0.39	0.45	0.75	0.30	0.48	0.80	0.33
	[0.0]	[0.1]	[0.1]	[0.1]	[0.1]	[0.1]	[0.2]
Among users							
% puskesmas	38.68	46.43	34.99	-11.43	47.03	37.01	-10.02
	[0.9]	[1.9]	[1.6]	[2.5]	[1.9]	[1.9]	[2.7]
% private doctor	25.37	20.86	25.48	4.62	20.47	23.70	3.23
	[0.8]	[1.5]	[1.5]	[2.1]	[1.6]	[1.7]	[2.3]
% nurse, midwife, paramedic	24.20	25.14	24.58	-0.57	24.93	24.84	-0.09
	[0.8]	[1.6]	[1.4]	[2.2]	[1.7]	[1.7]	[2.4]
% traditional	2.57	3.14	5.66	2.52	3.26	6.01	2.74
	[0.3]	[0.7]	[0.8]	[1.1]	[0.7]	[1.0]	[1.2]
# obs	19841	4861	6640	11501	4612	4612	4612

Notes: Sample is all adults 15 and over.

Table 5.2: Use of health care by children

Means and [standard errors]

Indicator	All resp.	Same communities			Same respondents		
	in 1997 (1)	**1997** (2)	**1998** (3)	**Change** (4)	**1997** (5)	**1998** (6)	**Change** (7)
% use any health services	27.39	25.82	19.88	-5.94	26.91	16.71	-10.19
	[0.4]	[0.8]	[0.7]	[1.09]	[0.9]	[0.8]	[1.2]
% use *pukesmas*	6.9	7.4	5.7	-1.6	7.8	5.4	-2.4
	[0.2]	[0.4]	[0.4]	[0.6]	[0.5]	[0.4]	[0.7]
% use *posyandu*	16.1	14.7	8.3	-6.4	15.8	6.0	-9.8
	[0.3]	[0.7]	[0.5]	[0.8]	[0.7	[0.5]	[0.9]
% use private health services	8.49	7.79	7.59	-0.21	7.87	6.69	-1.18
	[0.3]	[0.5]	[0.5]	[0.70]	[0.5]	[0.5]	[0.7]
% use traditional health services	0.50	0.80	0.74	-0.06	0.86	0.69	-0.16
	[0.1]	[0.2]	[0.2]	[0.23]	[0.2]	[0.2]	[0.3]
% use *posyandu*, children < 5	50.6	46.7	27.7	-19.0			
	[0.9]	[1.8]	[1.5]	[2.3]			
Among users							
% posyandu	58.62	56.84	41.56	-15.28	58.64	35.85	-22.78
	[0.9]	[1.9]	[2.0]	[2.72]	[1.9]	[2.4]	[3.1]
% puskesmas	25.08	28.63	28.90	0.26	28.94	32.44	3.50
	[0.8]	[1.7]	[1.8]	[2.49]	[1.8]	[2.3]	[2.9]
% private doctor	13.79	12.41	17.86	5.45	11.52	18.78	7.27
	[0.6]	[1.2]	[1.5]	[1.96]	[1.2]	[1.9]	[2.2]
% nurse, midwife, paramedic	13.86	12.69	12.99	0.29	13.03	13.17	0.14
	[0.6]	[1.3]	[1.4]	[1.84]	[1.3]	[1.7]	[2.1]
% traditional	1.83	3.10	3.73	0.63	3.18	4.15	0.96
	[0.3]	[0.7]	[0.8]	[1.00]	[0.7]	[1.0]	[1.2]
# obs	10351	2746	3098	5844	2453	2453	2453

Notes: Sample is all children age under 15, except for row for use of the community health post by children less than five.

Table 5.3: Immunization uptake for children less than three years old

Means and Standard Errors

Indicator	All Resp. in 1997	Same communities		
		1997	1998	Change
	(1)	(2)	(3)	(4)
% of children who received Vitamin A in 6 months before survey	60.6	55.12	42.75	-12.37
	[0.8]	[2.4]	[2.1]	[3.2]
% of children who could present a KMS card	22.8	30.00	29.73	-0.26
	[0.7]	[2.2]	[2.0]	[3.0]
% of children who have received BCG	77.05	74.88	73.61	-1.28
	[1.0]	[2.1]	[1.9]	[2.8]
% of children who have received Polio at birth	21.62	18.60	22.49	3.89
	[0.9]	[1.9]	[1.8]	[2.6]
% of children who have received Polio 1	87.06	86.97	80.11	-6.87
	[0.8]	[1.6]	[1.7]	[2.4]
% of children who have received Polio 2	73.05	69.53	67.47	-2.06
	[0.1]	[2.2]	[2.0]	[3.0]
% of children who have received Polio 3	49.27	47.44	45.17	-2.27
	[0.1]	[2.4]	[2.1]	[3.2]
% of children who have received DPT 1	72.98	70.40	72.11	1.72
	[1.0]	[2.2]	[1.9]	[2.9]
% of children who have received DPT 2	57.28	54.46	59.67	5.21
	[0.1]	[2.4]	[2.1]	[3.2]
% of children who have received DPT 3	42.55	38.73	42.19	3.46
	[0.1]	[2.4]	[2.1]	[3.2]
% of children who have received Measles	57.08	55.11	51.67	-3.44
	[0.1]	[2.4]	[2.2]	[3.2]
% of children who have received Hepatitis B	49.74	39.77	48.51	8.75
	[0.1]	[2.3]	[2.2]	[3.2]
# obs	1697	430	538	

Table 5.4: Multivariate correlates of use of health care: adults

	Use of care in 1997		Use of care in 1998		Change in use of care between 1997 and 1998			
	Public	Private	Public	Private	Gain Public	Gain Private	Lose Public	Lose Private
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ℓnPCE (spline): below median	1.252	1.088	1.168	1.912	1.692	1.695	1.353	0.981
	[1.34]	[0.53]	[0.82]	[3.27]	[2.12]	[2.41]	[1.56]	[0.12]
above median	0.792	1.226	0.990	1.261	0.823	1.173	0.770	1.104
	[1.84]	[2.56]	[0.08]	[2.91]	[1.24]	[1.70]	[1.83]	[1.01]
Male	0.675	0.626	0.693	0.666	0.688	0.758	0.663	0.701
	[3.16]	[4.01]	[2.63]	[3.47]	[2.27]	[2.09]	[2.93]	[2.70]
Age (spline): 20-29	1.024	1.043	1.020	1.014	1.000	1.016	1.013	1.049
	[1.43]	[2.69]	[1.04]	[0.87]	[0.02]	[0.87]	[0.70]	[2.72]
30-49	1.025	1.004	1.029	1.033	1.038	1.033	1.018	0.999
	[2.64]	[0.49]	[2.79]	[3.60]	[2.97]	[2.79]	[1.72]	[0.08]
≥50	1.001	1.001	1.001	1.000	1.000	0.990	1.000	0.999
	[0.22]	[0.18]	[0.19]	[0.07]	[0.04]	[0.86]	[0.03]	[0.21]
ℓn(HH size)	1.142	1.100	1.185	1.108	1.082	1.083	1.102	1.075
	[0.96]	[0.75]	[1.10]	[0.82]	[0.44]	[0.54]	[0.62]	[0.49]
Urban resident	0.966	0.974	1.012	1.175	1.185	1.202	1.044	0.986
	[0.27]	[0.21]	[0.08]	[1.33]	[1.01]	[1.32]	[0.30]	[0.10]
Province: North Sumatra	0.272	0.605	0.412	1.138	0.550	1.055	0.269	0.538
	[3.81]	[2.00]	[2.72]	[0.61]	[1.79]	[0.23]	[3.48]	[2.14]
South Sumatra	0.865	0.750	0.648	0.691	0.777	0.522	0.690	0.694
	[0.65]	[1.31]	[1.69]	[1.62]	[0.88]	[2.41]	[1.46]	[1.50]
Jakarta	0.584	1.540	0.488	1.037	0.597	0.937	0.591	1.470
	[1.81]	[1.99]	[2.17]	[0.16]	[1.44]	[0.25]	[1.65]	[1.57]
Central Java	0.718	1.036	0.638	0.917	0.567	0.836	0.696	0.935
	[1.66]	[0.20]	[2.04]	[0.48]	[2.15]	[0.87]	[1.65]	[0.34]
NTB	1.813	0.950	1.557	0.794	1.318	0.619	1.649	0.706
	[3.14]	[0.25]	[2.13]	[1.07]	[1.10]	[1.89]	[2.39]	[1.45]
South Kalimantan	0.929	1.026	0.963	1.251	0.679	1.037	0.686	0.816
	[0.30]	[0.11]	[0.14]	[1.02]	[1.14]	[0.14]	[1.29]	[0.76]
Intercept	-0.061	-0.059	0.922	-0.031				
	[0.65]	[0.86]	[3.47]	[0.71]				
χ^2/F(joint significance	157.83		157.99		198.93			
all covariates)	[0.03]		[0.04]					
ℓn(Likelihood)	-2257.61		-2063.35		-3466.63			

Notes: Estimation methods: MNL is multinomial logit; estimates are risk ratios relative to excluded category of no use of health care. [Asymptotic t statistics] in parentheses. p values below test statistics. Sample is 4,612 adults in IFLS2 & IFLS2+. See Table 5.1.

Table 5.5: Multivariate correlates of use of health care: children

	Use of care in 1997		Use of care in 1998		Change in use of care Between 1997 and 1998			
	Public	Private	Public	Private	Gain Public	Gain Private	Lose Public	Lose Private
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ℓnPCE (spline): below median	1.319	3.288	0.973	1.516	0.985	1.165	1.251	2.706
	[1.83]	[4.41]	[0.15]	[1.73]	[0.07]	[0.57]	[1.34]	[3.51]
above median	0.892	1.116	1.198	1.259	1.100	1.303	0.843	1.150
	[0.92]	[0.89]	[1.42]	[1.83]	[0.55]	[1.89]	[1.17]	[1.04]
Male	0.968	1.143	0.934	1.012	0.889	1.000	0.963	1.090
	[0.28]	[0.83]	[0.46]	[0.07]	[0.62]	[0.00]	[0.30]	[0.50]
Age	0.710	0.784	0.776	0.839	0.835	0.867	0.781	0.820
	[18.69]	[10.72]	[11.93]	[7.84]	[7.05]	[5.46]	[13.61]	[8.52]
ln (HH size)	1.050	0.959	0.912	0.958	0.655	0.883	0.973	0.755
	[0.29]	[0.19]	[0.46]	[0.19]	[1.64]	[0.45]	[0.15]	[1.21]
Urban resident	1.167	1.379	1.077	1.430	0.889	1.593	1.106	1.234
	[1.18]	[1.82]	[0.46]	[1.97]	[0.55]	[2.13]	[0.71]	[1.11]
Province:								
North Sumatra	0.194	0.205	0.282	0.848	0.292	1.234	0.397	0.267
	[6.17]	[3.53]	[3.53]	[0.58]	[2.95]	[0.64]	[3.25]	[2.76]
South Sumatra	0.514	1.116	0.543	0.480	0.411	0.508	0.707	1.069
	[3.20]	[0.38]	[2.36]	[2.46]	[2.72]	[1.83]	[1.52]	[0.22]
Jakarta	0.458	1.529	0.976	0.952	0.418	1.042	0.678	1.408
	[2.90]	[1.35]	[0.08]	[0.16]	[1.88]	[0.11]	[1.32]	[1.00]
Central Java	0.564	1.617	0.692	0.688	0.545	0.728	0.660	1.564
	[2.94]	[1.83]	[1.58]	[1.45]	[2.10]	[0.98]	[1.88]	[1.62]
NTB	0.698	0.490	0.685	0.279	0.587	0.310	0.929	0.502
	[1.90]	[2.16]	[1.62]	[3.84]	[1.87]	[2.83]	[0.36]	[1.99]
South Kalimantan	0.685	0.519	0.577	0.277	0.455	0.210	0.913	0.458
	[1.58]	[1.63]	[1.80]	[2.96]	[2.02]	[2.47]	[0.35]	[1.79]
Intercept	0.014	0.388	0.69	0.233				
	[0.11]	[4.33]	[3.01]	[3.49]				
χ^2/F(joint significance	685.73		298.03		460.821			
all covariates)	[0.00]		[0.00]		[0.00]			
ℓn(Likelihood)	-1468.66		-1198.33		-2156.44			
Estimation method	MNL		MNL		MNL			

Notes: Estimation methods: MNL (multinomial logit); estimates are risk ratios relative to excluded category of no use of health care. Asymptotic t statistics below estimates, p values below test statistics. Sample is 2,453 children age under 15 in IFLS2 & IFLS2+. See Tables 5.2 & 5.4.

Table 5.6: Use of contraceptives by currently married women

Means and [standard errors]

	All resp.	Same communities			Same respondents		
	in 1997	**1997**	**1998**	**Change**	**1997**	**1998**	**Change**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
% current use any method	55.10	53.38	53.08	-0.30	56.59	57.30	0.71
	[0.7]	[1.3]	[1.2]	[1.8]	[1.4]	[1.4]	[2.0]
% use modern method	97.09	97.34	97.10	-0.24	97.77	97.52	-0.25
	[0.3]	[0.6]	[0.6]	[0.8]	[0.6]	[0.6]	[0.8]
% pill	26.86	33.82	34.26	0.44	34.31	33.75	-0.56
	[0.8]	[1.7]	[1.6]	[2.3]	[1.8]	[1.8]	[2.5]
% injection	38.41	38.62	35.83	-2.79	39.05	36.78	-2.27
	[0.9]	[1.8]	[1.6]	[2.4]	[1.8]	[1.8]	[2.6]
% condom	0.94	0.93	0.78	-0.15	0.84	0.96	0.13
	[0.2]	[0.4]	[0.3]	[0.5]	[0.3]	[0.4]	[0.5]
% IUD	15.70	7.19	8.82	1.63	6.97	7.85	0.88
	[0.7]	[0.9]	[0.9]	[1.3]	[1.0]	[1.0]	[1.4]
% Norplant	6.80	10.12	10.38	0.26	10.46	11.43	0.97
	[0.5]	[1.1]	[1.0]	[1.5]	[1.1]	[1.2]	[1.6]
% male/female sterilization	8.22	6.39	6.92	0.53	5.86	6.61	0.75
	[0.5]	[0.9]	[0.8]	[1.2]	[0.9]	[0.9]	[1.3]
% intra-vaginal	0.16	0.27	0.11	-0.15	0.28	0.14	-0.14
	[0.1]	[0.2]	[0.1]	[0.2]	[0.2]	[0.1]	[0.2]
% traditional method	2.88	2.66	2.90	0.24	2.23	2.48	0.25
	[0.3]	[0.6]	[0.6]	[0.8]	[0.6]	[0.6]	[0.8]
# obs	5629	1407	1688	3095	1267	1267	1267

Notes: Source IFLS2 & IFLS2+ HH surveys. Sample is all ever married women age 15 and older. Column (1) includes all women in IFLS2. Column 2 includes all women in IFLS2 living in the IFLS2+ EAs. Column 3 includes all women in IFLS2+, including new entrants to the survey (because they joined an IFLS2+ household). Column 4 is the difference (3)-(2). Column 5 and 6 includes all women who were interviewed in both IFLS2 and IFLS2+. Responses in IFLS2 are reported in column 5; IFLS2+ responses are in column 6. The change, (6)-(5), is reported in column 7.

Table 5.7: Source of contraceptive supplies among pill users

(Means and Standard Errors)

	Same Communities			Same Respondents		
	1997	1998	Change	1997	1998	Change
	(2)	(3)	(4)	(5)	(6)	(7)
PILLS						
No Visit	14.5	6.2	-8.3	13.0	6.3	-6.7
	(1.9)	(1.7)	(2.5)	(2.1)	(2.0)	(2.9)
Conditional on a visit:						
Hospital, Pvt Practice other than midwife	12.4	9.4	-3.0	12.7	10.8	-1.9
	(2.1)	(1.8)	(2.8)	(2.5)	(2.3)	(3.4)
Government Health Ctr (Puskesmas)	23.0	22.5	0.5	23.0	20.7	-2.3
	(2.9)	(2.4)	(3.8)	(3.2)	(2.9)	(4.3)
Community Source (Posyandu, PPKBD)	26.3	23.9	-2.4	27.3	28.6	1.3
	(2.9)	(2.5)	(3.9)	(3.5)	(3.2)	(4.7)
Pharmacy	8.3	11.1	2.8	7.3	10.8	3.6
	(2.0)	(1.7)	(2.7)	(2.3)	(2.0)	(3.0)
Private Midwife	14.7	13.1	-1.6	13.3	9.9	-3.5
	(2.3)	(2.0)	(3.1)	(2.5)	(2.2)	(3.3)
Village Midwife (Bidan Desa)	3.7	5.1	1.4	4.2	5.4	1.2
	(1.4)	(1.2)	(1.8)	(1.7)	(-1.5)	(2.3)
Number of Observations	256	206		230	246	
INJECTIONS						
No Visit	5.2	1.6	-3.6	4.0	1.9	-2.1
	(1.0)	(1.0)	(1.4)	(1.1)	(1.2)	(1.6)
Conditional on a visit						
Private Practice other than midwife	19.3	20.9	1.7	21.0	21.5	-0.5
	(2.4)	(2.2)	(3.3)	(2.8)	(2.8)	(4.0)
Government Health Ctr (Puskesmas)	30.5	17.5	-13.0	27.1	19.1	-8.0
	(2.5)	(2.3)	(3.5)	(2.9)	(2.9)	(4.1)
Community Source (Posyandu, PPKBD)	3.3	1.9	-1.4	3.7	1.4	-2.3
	(0.9)	(0.9)	(1.4)	(1.1)	(1.1)	(1.5)
Private Midwife	39.3	44.4	5.1	40.7	42.6	1.9
	(3.0)	(2.8)	(4.0)	(3.4)	(3.4)	(4.8)
Village Midwife (Bidan Desa)	5.1	11.3	6.2	4.7	10.0	5.4
	(1.7)	(1.5)	(2.3)	(1.8)	(1.8)	(2.5)
Number of Observations	290	209		239	223	

Table 5.8: Multivariate correlates of change in contraceptive use between 1997 and 1998

Multinomial logit estimates of relative risk ratios

	Any method		Pill		Injection	
	Quit	Adopt	Quit	Adopt	Quit	Adopt
	(1)	(2)	(3)	(4)	(5)	(6)
ℓnPCE (spline): below median	0.713	1.073	0.689	1.025	1.100	1.348
	[1.32]	[0.24]	[1.11]	[0.07]	[0.26]	[0.81]
above median	1.226	0.949	1.517	1.274	0.923	0.976
	[1.28]	[0.27]	[2.12]	[1.08]	[0.31]	[0.10]
Age (spline): 20-29	0.863	0.981	0.949	0.992	0.875	1.005
	[5.36]	[0.55]	[1.41]	[0.19]	[4.05]	[0.13]
30-49	0.997	0.979	0.923	0.938	0.913	0.870
	[0.13]	[0.96]	[2.40]	[2.09]	[2.36]	[3.92]
Education (years)	1.037	1.032	1.006	0.912	1.029	1.028
	[1.26]	[1.08]	[0.16]	[2.37]	[0.73]	[0.78]
Urban resident	1.009	0.888	1.209	1.948	1.223	0.917
	[0.04]	[0.51]	[0.65]	[2.27]	[0.69]	[0.32]
Province						
North Sumatra	0.894	0.622	1.416	1.009	0.229	0.441
	[0.27]	[1.02]	[0.72]	[0.02]	[1.90]	[1.53]
South Sumatra	0.531	0.699	0.705	1.630	0.573	0.456
	[1.73]	[1.00]	[0.76]	[1.03]	[1.29]	[1.89]
Jakarta	1.008	1.105	0.665	1.525	0.584	0.467
	[0.02]	[0.25]	[0.74]	[0.79]	[1.05]	[1.46]
Central Java	0.857	0.648	0.733	0.504	0.573	0.568
	[0.52]	[1.31]	[0.78]	[1.29]	[1.48]	[1.61]
NTB	0.517	1.192	0.408	1.541	0.655	0.705
	[1.73]	[0.53]	[1.65]	[0.92]	[1.01]	[0.92]
South Kalimantan	1.103	0.680	1.159	1.863	0.481	0.343
	[0.28]	[0.91]	[0.32]	[1.26]	[1.45]	[2.05]
χ^2	67.88		50.09		91.47	
ℓn(Likelihood)	-727.21		-473.84		-502.73	
Psuedo R^2	0.04		0.05		0.08	

Notes: See Table 3.1. Sample is 1,267 women in IFLS2 and IFLS2+. Estimates are risk ratios relative to excluded category of no change; risk ratio > 1 ⇒ higher risk; risk ratio < 1 ⇒ lower risk. [Asymptotic t statistics] in parentheses.

6. The Availability, Quality, and Price of Health and Family Planning Services

The results in Section 5 focus on the findings of the household survey with respect to use of health care and contraception. The IFLS2+ also collected data from health and family planning service providers in the 80 IFLS2+ communities. In this section we summarize results from the facility survey with respect to the provision of health and family planning services. These results provide information about whether the availability, quality, and prices of health care and family planning have changed between 1997 and 1998. In this section, we use the term public providers to refer to *puskesmas* and *puskesmas pembantu*, while private providers refers to doctors, clinics, midwives, nurses, and paramedics.

We begin (Table 6.1) with a discussion of the problems that providers themselves mention have emerged in the past 12 months. Providers were presented with a list of 11 factors and asked whether the factors had changed within the past 12 months. When a provider responded that there had been a change, he or she was asked whether the change had negatively, positively, or neutrally affected services in the facility.

Overall, public facilities appear to have been more affected by changes in the availability of drugs and supplies, while private providers have been more affected by changes in the prices of these inputs. Generally, more facilities (whether public or private) have been affected by changes related to drugs than by changes related to supplies.

There is general agreement that the availability of drugs has changed-- over 60% of both public and private providers say that drug availability has changed within the past 12 months. For about half of these providers, the change has made provision of services significantly more difficult. Changes in the availability of supplies affect a smaller proportion of providers, but more public than private providers.

With respect to the price of drugs, almost 90% of private providers stated that drug prices have changed, while only 40% of public providers mention rising drug prices. Almost half of both the public and private providers who mention rising drug prices feel that their practices have been negatively affected. Changes in the price of fuel are more of a problem for public than for private providers, which makes sense given the outreach responsibilities of public providers.

Providers whose services had been affected by changes in the availability of drugs and supplies were asked to describe how they had reacted to the changes. For drugs, the most common responses for both public and private providers were that they had reduced the quantity of drugs given to clients, raised prices, and referred clients to other providers. For supplies, responses included recycling supplies and asking clients to provide the supplies themselves.

Panel A of Table 6.2 presents results with respect to whether the availability of services related to maternal and child health has changed between 1997 and 1998. Results are given for all facilities interviewed in 1997 and for the matched sample of facilities interviewed in both 1997 and 1998 (panel facilities in the 80 IFLS2+ communities), and for the change between 1997 and 1998. The first four columns of the table report the statistics for public facilities: *puskesmas* and *puskesmas pembantu*. Columns 5 through 8 report the statistics for private facilities: clinics, doctors, midwives, nurses, and paramedics. With the exception of Vitamin A, there have been no significant declines in the availability of services related to maternal and child health at either public facilities or private facilities. There has been a significant decline in the proportion of both public and private facilities offering Vitamin A. This result ties back to the household

data, where we saw a significant decline in the proportion of children under three who had received Vitamin A in the past 6 months. Among public facilities, the proportion giving out Vitamin A has dropped from 87.7% to 71.7%. In private facilities, provision of Vitamin A declined from 56% to 39.6%.

Panel B of Table 6.2 shows the median price changes for two maternal and child health-related services: BCG immunization for children and tetanus toxoid immunization for pregnant women. Interestingly, for these services the median price has risen significantly in public facilities, but has not changed (at the median) in private facilities.

Table 6.3 displays the results for family planning services. In both 1997 and 1998 over 80% of public facilities offer IUDs, injections, and oral contraceptives, while nearly 60% offer implants. Regardless of the type of method, there have been no significant changes in the percentage of facilities providing that method. The proportions of public facilities offering IUDs and Noristerat (an injectable contraceptive) appear to have decreased somewhat, although in neither case is the change statistically significant.

The results for private providers, which are summarized in columns 5-8 of Table 6.3, are quite different. For one thing, the overall proportion of private providers offering family planning services is much lower than in the public sector facilities. Among private providers, about one-third offer IUDs, about three-quarters offer injections, slightly more than half offer oral contraceptives, and under one-fifth offer implants. Additionally, changes in the proportion of facilities offering family planning between 1997 and 1998 are more pronounced in the private sector facilities. For example, the proportion of providers offering IUDs has risen from 26.6% to 32.6%. The proportion of providers offering any type of injection has not changed, but significantly higher numbers of private provider are offering Depo-progestin and Cyclofeem in 1998 than was the case in 1997.

These results suggest that family planning method choice has increased at the practices of private providers—a finding that is consistent with the fact that a number of women who are more satisfied with family planning services in 1998 mention more methods to choose from as the reason. Public sector services have changed little, but to the extent that they have, the changes have been in the direction of offering less choice.

In addition to services for women and children, most public and a number of private facilities offer more general services, including provision of basic drugs such as antibiotics, and more specialized medicines such as those related to the treatment of tuberculosis. Table 6.4 presents statistics on the proportion of facilities (public and private) offering these types of medicines.

Essentially all public facilities provide some form of antibiotics. Overall, there has been little change in the specific types of antibiotics offered, although the proportion of facilities providing chloroamphenicol has dropped significantly, while the proportion providing clotrimazone has risen.

Most public facilities provide some sort of drug for the treatment of tuberculosis. For each of the tuberculosis drugs, the proportion of public facilities providing the drug decreased, although none of these changes is statistically significant, nor do they combine to result in a significant decrease in the proportion of facilities providing any form of TB treatment.

In 1998 about 71% of public facilities provided the anti-helminth pyrantel pamoate. This drug was

not included in the IFLS2 facility questionnaires, so we do not know whether its provision was more or less common in 1997.

Columns 5-8 of Table 6.4 focus on private providers. As with public facilities, most private providers do make available some form of antibiotics, particularly in 1998. In fact, between 1997 and 1998 the proportion of private facilities providing antibiotics rose from 83.6% to 94.9%, which is a statistically significant change. Four antibiotics (ampicilin, tetracycline, chloroamphenicol, and chlotrimazore) have all increased significantly in terms of their availability at private facilities.

A far smaller fraction of private facilities provide tuberculosis medications and pyrantel pamoate. Provision of tuberculosis drugs, either in general or by type, by private providers has not changed between 1997 and 1998.

Table 6.5 presents results on the median prices of family planning services at public and private facilities.[19] Prices for most services at both public and private providers have indeed risen. The median price of an IUD insertion at a *puskesmas* basically doubled, from Rp. 1000 to Rp. 2000, between 1997 and 1998. Prices for IUD insertions at private facilities are much higher, but the proportionate change in the price between 1997 and 1998 was smaller. In 1998, the prices associated with IUDs were about 10 times higher at private than at public facilities (prices were also much higher at private facilities in 1997). Prices of injections also rose between 1997 and 1998 at both public and private providers, but the proportionate change was somewhat larger in public than in private facilities, and the price differences in 1998 between public and private facilities are smaller for injections than for other methods. Overall, price changes have been smallest for oral contraceptives, changing very little at public facilities and increasing by about one-third in private facilities. The 1998 prices for oral contraceptives are about two times higher at private facilities than at public facilities. Prices for insertion or removal of implants rose in both public and private facilities. Implant services cost about four times more at private facilities than at public.

The preceding tables provides a sense of which services are supposed to be available at public and private providers and how much those services cost, but they do not tell us whether essential medications and suppies are usually in stock and which may not actually be available to patients who show up on a given day. Information on stock outages of specific drugs is tabulated in Table 6.6.

At public facilities in 1997, for no drug was the proportion of facilities experiencing a stock outage in the past six months more than 20%, and for all drugs but ampicillin the proportion was substantially less than 15%. By 1998 the situation has changed dramatically, particularly with respect to antibiotics. For all antibiotics other than tetracycline and benazaythine penicillin G, the proportion of facilities experiencing a stock outage increased significantly. For penicillin, the change represents a six-fold increase. By 1998 about one quarter of public facilities had experienced stock outages of penicillin and ampicillin.

For drugs other than antibiotics changes in stock outages between 1997 and 1998 are not statistically significant. For Vitamin A this may be because facilities have stopped providing it altogether (see Table 6.2). In public facilities there has actually been a significant decrease in the proportion of providers running out of stock of iron tablets.

The picture at private facilities stands in stark contrast. The proportions of facilities experiencing

[19] We use median prices because they are more robust to outliers, which potentially produce large changes at the mean.

significant changes in experience with stock outages are not significant for any drug. The result reflects the fact that stock outages in 1998 are generally lower in private than in public facilities, and also the fact that because fewer private facilities offer drugs, the standard errors for private facilities are larger.

Provision of appropriate drugs is one component of providing quality services. The availability of basic supplies is another. Table 6.7 considers the availability of gloves, bandages, and needles. For gloves and bandages the results are similar to what we observed for drugs: at public facilities there have been increases in the proportion of facilities that do not have sufficient stocks. For bandages, but not for gloves, the increase is significant. The proportion of private facilities with gloves and bandages in stock has not changed. The data on needles is available only for 1998. About 9.2 % of public providers and 6.3% of private providers experienced a stock outage of needles within the six months prior to the interview.

Table 6.8 presents statistics on the frequency of stock outages at public and private facilities. For the public providers these data are available in both years of the survey only for injections. The results indicate that between 1997 and 1998 there have been large and statistically significant increases in the proportion of public facilities experiencing stock outages of injections. These shortages may contribute to the decline in use of injections observed in the household survey. The shortages almost certainly contribute to the large decrease in the proportion of injection users who rely on government health centers (*puskesmas*) for services. The proportions of facilities experiencing stock outages of oral contraceptives are also high in 1998, but since these data were not collected in 1997, it is not clear whether the numbers for 1998 represent an increase over the previous year. Private providers have also experienced stock outages, but the proportions of private providers with outages are much lower (about half) than what is observed for public providers.

Table 6.1 Factors Affecting Provision of Health Services in Public and Private Facilities in 1998

Factor:	Public Facilities		Private Facilities	
	% Experiencing a change in	% for whom factor has made service provision more difficult	% Experiencing a change in	% for whom factor has made service provision more difficult
Availability of Drugs	60.1	49.2	64.9	48.8
Availability of Supplies	35.8	43.6	25.9	41.4
Price of Drugs	40.4	51.1	87.4	49.7
Price of Supplies	25.2	43.6	32.7	39.2
Price of Fuel	23.4	54.9	12.8	55.1
Availability of Family Planning	48.6	71.7	35.3	63.7
Number of Observations		219		387

Table 6.2 Provision of Maternal and Child Health Services in Public and Private Health Facilities

	Public Facilities				Private Facilities			
	All	Same Facilities			All	Same Facilities		
	1997	1997	1998	Change	1997	1997	1998	Change
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A. Service Availability								
Vitamin A	90.9	87.7	71.7	-16.0	55.3	56.0	39.6	-16.4
	[1.0]	[2.3]	[3.1]	[3.8]	[1.2]	[2.6]	[2.6]	[3.7]
Oralit	98.4	99.1	99.1	0.02	72.9	75.9	80.7	4.8
	[0.4]	[0.7]	[0.6]	[0.9]	[1.1]	[2.2]	[2.1]	[3.1]
Child immunization	82.7	78.1	78.5	0.5	35.2	32.0	31.2	-0.8
	[1.3]	[2.8]	[2.8]	[4.0]	[1.1]	[2.4]	[2.4]	[3.4]
BCG	82.3	78.1	78.5	0.5	33.6	31.0	29.3	-1.7
	[1.3]	[2.8]	[2.8]	[4.0]	[1.1]	[2.4]	[2.3]	[3.3]
DPT	82.5	78.0	78.5	0.6	35.0	31.7	30.4	-1.3
	[1.3]	[2.8]	[2.8]	[4.0]	[1.1]	[2.4]	[2.4]	[3.3]
Polio	82.4	78.0	78.5	0.6	34.8	31.4	30.7	-0.8
	[1.3]	[2.8]	[2.8]	[4.0]	[1.1]	[2.4]	[2.4]	[3.3]
Measles	82.6	78.0	78.5	0.6	34.4	31.2	30.3	-0.9
	[1.3]	[2.8]	[2.8]	[4.0]	[1.1]	[2.4]	[2.3]	[3.3]
Tetanus toxoid	88.3	84.0	83.1	-0.9	43.9	41.7	40.2	-1.5
	[1.1]	[2.5]	[2.5]	[3.6]	[1.2]	[2.5]	[2.5]	[3.6]
Iron Tablets	96.0	93.4	95.9	2.5	64.0	64.0	69.8	5.8
	[0.7]	[1.7]	[1.3]	[2.2]	[1.2]	[2.5]	[2.5]	[3.5]
B. Median price of services								
Child Immunization:	500	500	750	250	3500	5000	5000	0
	[44.2]	[106.9]	[104.0]	[121.2]	[252.4]	[927.5]	[685.4]	[706.1]
Tetanus toxoid	500	500	900	400	4000	5000	5000	0
	[44.1]	[64.1]	[124.2]	[94.5]	[245.3]	[345.4]	[459.2]	[469.2]
Number of observations	900	219	219	219	1815	387	387	387

Table 6.3 Provision of Family Planning Services in Public and Private Facilities

	Public Facilities				Private Facilities			
	All	Same Facilities			All	Same Facilities		
	1997	1997	1998	Change	1997	1997	1998	Change
Indicator	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IUD	88.5	86.3	81.7	-4.6	33.3	26.6	32.6	6.1
	[1.1]	[2.3]	[2.6]	[3.5]	[1.1]	[2.3]	[2.4]	[3.3]
LL insertion	76.1	76.7	68.5	-8.2	22.7	18.5	24.9	6.4
	[1.4]	[2.9]	[3.2]	[4.3]	[1.0]	[2.0]	[2.2]	[3.0]
LL removal	64.9	61.2	55.3	-5.9	23.7	19.1	25.9	6.9
	[1.6]	[3.3]	[3.4]	[4.7]	[1.0]	[2.0]	[2.2]	[3.0]
Copper T insertion	69.9	69.9	65.3	-4.6	29.2	23.6	27.7	4.1
	[1.5]	[3.1]	[3.2]	[4.5]	[1.1]	[2.2]	[2.3]	[3.2]
Copper T removal	69.2	68.0	70.8	2.7	30.1	24.2	28.0	3.8
	[1.5]	[3.2]	[3.1]	[4.4]	[1.1]	[2.2]	[2.3]	[3.2]
Contraceptive	88.1	84.9	84.5	-0.4	72.7	77.2	78.5	1.4
Injection	[1.1]	[2.4]	[2.5]	[3.5]	[1.1]	[2.2]	[2.1]	[3.0]
Depo-Provera	70.6	66.1	62.1	-4.0	61.6	64.4	66.1	1.7
	[1.5]	[3.2]	[3.3]	[4.6]	[1.2]	[2.4]	[2.4]	[3.4]
Depo-Progestin	79.4	79.4	78.5	-0.8	45.6	48.2	65.5	17.4
	[1.4]	[2.8]	[2.8]	[3.9]	[1.3]	[2.8]	[2.4]	[3.7]
Noristrat	16.7	16.5	10.1	-6.5	15.8	13.9	10.1	-3.8
	[1.3]	[2.5]	[2.0]	[3.2]	[0.9]	[1.8]	[1.5]	[2.4]
Cyclofeem	25.8	24.9	22.4	-2.5	30.8	27.8	40.9	13.2
	[1.5]	[2.9]	[2.8]	[4.1]	[1.2]	[2.5]	[2.5]	[3.6]
Oral contraceptives	84.6	82.2	82.2	0.0	54.6	57.0	54.7	-2.4
	[1.2]	[2.6]	[2.6]	[3.7]	[1.2]	[2.5]	[2.5]	[3.6]
Microgygnon 30	33.6	40.1	43.4	3.3	48.3	49.2	49.7	0.5
	[1.6]	[3.3]	[3.4]	[4.7]	[1.2]	[2.6]	[2.6]	[3.6]
Marvelon 28	71.0	70.3	71.7	1.4	32.7	36.3	34.7	-1.6
	[1.5]	[3.1]	[3.1]	[4.4]	[1.1]	[2.5]	[2.4]	[3.5]
Excluton 28	70.6	70.8	71.7	0.9	34.7	37.6	37.1	-0.6
	[1.5]	[3.1]	[3.1]	[4.3]	[1.1]	[2.5]	[2.5]	[3.5]
Nordette	70.9	69.4	74.0	4.6	25.5	25.9	31.6	5.8
	[1.5]	[3.1]	[3.0]	[4.3]	[1.0]	[2.2]	[2.4]	[3.3]
Other	71.3				16.6	19.5	18.9	-0.6
	[1.5]				[0.9]	[2.1]	[2.0]	[2.9]
Implants		69.0	74.4	5.5				
		[3.1]	[3.0]	[4.3]				
Norplant insertion	52.6	60.7	58.0	-2.7	13.3	16.4	17.1	0.7
	[1.7]	[3.1]	[3.3]	[4.7]	[0.8]	[1.9]	[1.9]	[2.7]
Norplant removal	51.3	59.6	58.5	-1.2	14.9	17.4	18.1	0.7
	[1.7]	[3.3]	[3.3]	[4.7]	[0.8]	[1.9]	[2.0]	[2.8]
Implanon insertion			26.9				11.2	
			[3.0]				[1.6]	
Implanon removal			27.9				12.2	
			[3.0]				[1.7]	
Condoms			69.9				0.8	
			[3.1]				[0.5]	
Number of obs	900	219	219	219	1815	387	387	387

Table 6.4 Provision of Basic Drugs by Public and Private Health Facilities

Indicator	Public Facilities				Private Facilities			
	All	Same Facilities			All	Same Facilities		
	1997	1997	1998	Change	1997	1997	1998	Change
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Antibiotics	99.8	99.5	100.0	0.5	83.2	83.6	94.9	11.3
	[0.2]	[0.5]	[0.0]	[0.5]	[0.9]	[1.9]	[1.2]	[2.3]
Penicillin	40.1	47.1	45.0	-2.1	24.5	26.9	25.1	-1.9
	[1.7]	[3.5]	[3.4]	[4.9]	[1.0]	[2.3]	[2.2]	[3.2]
Ampicilin	96.1	95.8	95.4	-0.4	75.0	76.3	86.1	9.8
	[0.7]	[1.4]	[1.4]	[2.0]	[1.0]	[2.2]	[1.9]	[2.9]
Tetracycline	98.7	99.1	99.5	0.5	71.9	72.5	81.5	9.0
	[0.4]	[0.7]	[0.5]	[0.8]	[1.1]	[2.3]	[2.1]	[3.1]
Chloroamphenicol	95.3	98.6	94.5	-4.1	62.4	63.3	74.7	11.4
	[0.7]	[0.8]	[1.5]	[1.8]	[1.2]	[2.5]	[2.3]	[3.4]
Chlotrimazore	84.7	85.9	93.2	7.3	49.6	52.9	68.2	15.3
	[1.2]	[2.4]	[1.7]	[2.9]	[1.2]	[2.6]	[2.5]	[3.6]
Ciprofloxacinl	2.4	3.5	1.4	-2.1	6.9	10.3	10.5	0.2
	[0.5]	[1.3]	[0.8]	[1.5]	[0.6]	[1.6]	[1.6]	[2.3]
Cefriaxone	1.7	2.5	0.9	-1.6	1.8	1.7	1.1	-0.5
	[0.4]	[1.1]	[0.6]	[1.3]	[0.3]	[0.7]	[0.6]	[0.9]
Benazaythine penicillin G	8.4	13.9	10.1	-3.8	4.8	5.6	6.0	0.4
	[1.0]	[2.4]	[2.0]	[3.2]	[0.5]	[1.2]	[1.3]	[1.8]
Acyclofir					2.07	1.7	3.7	2.0
					[0.4]	[0.7]	[1.0]	[1.2]
Anti-TBC	81.9	83.6	79.5	-4.1	25.4	28.8	27.8	-1.0
	[1.3]	[2.6]	[2.7]	[3.7]	[1.1]	[2.4]	[2.4]	[3.4]
INH	78.3	81.1	76.3	-4.9	23.1	25.5	25.9	0.3
	[1.4]	[2.7]	[2.9]	[4.0]	[1.0]	[2.3]	[2.3]	[3.3]
Rifampicin	55.8	63.8	55.7	-8.1	16.5	19.2	19.6	0.4
	[1.7]	[3.4]	[3.4]	[4.8]	[0.9]	[2.1]	[2.1]	[3.0]
Ethambutol	70.6	76.9	73.1	-3.8	17.2	19.5	21.3	1.8
	[1.5]	[2.9]	[3.0]	[4.2]	[0.9]	[2.1]	[2.2]	[3.0]
Streptomycin	32.4	42.2	36.1	-6.2	7.7	8.8	9.1	0.3
	[1.6]	[3.5]	[3.3]	[4.7]	[0.7]	[1.5]	[1.5]	[2.1]
Anti-helminths:			70.8				31.3	
pyrantel pamoate			[3.1]				[2.5]	
Number of Observations	900	219	219	219	1815	387	387	387

Table 6.5 Median Prices of Family Planning Services: Levels and Changes at Public and Private Facilities

	Public Facilities				Private Facilities			
	All	Same Facilities			All	Same Facilities		
	1997	1997	1998	Change	1997	1997	1998	Change
Service	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IUD								
LL insertion	900	1,000	2,000	1000	12,000	15,000	20,000	5,000
	[48]	[145]	[517]	[306]	[1276]	[2539]	[2443]	[5190]
LL removal	900	1,000	1,000	0.0	5,000	5,000	10,000	5,000
	[72]	[145]	[338]	[295]	[724]	[1234]	[1666]	[1325]
Copper T insertion	900	1,050	2,000	950	20,000	20,000	25,000	5,000
	[37]	[391]	[651]	[557]	[1017]	[2532]	[2428]	[5102]
Copper T removal	900	1,000	1,000	0.0	7,500	7,500	10,000	2,500
	[48]	[144]	[338]	[295]	[1006]	[1306]	[1583]	[737]
Contraceptive Injec.								
Depo-Provera	3,000	3,500	7,500	4000	5,000	5,000	10,000	5,000
	[183]	[200]	[245]	[449]	[202]	[201]	[534]	[420]
Depo-Progestin	3,350	3,500	7,500	4000	5,000	5,000	8,000	3,000
	[127]	[245]	[212]	[439]	[215]	[214]	[237]	[465]
Noristrat	1,000	2,500	2,500	0.0	5,000	5,000	10,000	5,000
	[277]	[837]	[1509]	[1810]	[219]	[339]	[621]	[648]
Cyclofeem	4,000	5,000	8,000	3000	5,000	6,000	10,000	4,000
	[293]	[261]	[498]	[581]	[149]	[358]	[393]	[709]
Oral contraceptives								
Microgygnon 30	500	900	1,000	100	2,500	2,000	2,000	0
	[43]	[122]	[90]	[96]	[168]	[251]	[240]	[350]
Marvelon 28	500	900	900	0.0	1,500	1,500	2,000	500
	[33]	[121]	[61]	[99	[243]	[252]	[243]	[505]
Excluton 28	500	900	1,000	100	1,500	1,500	2,000	500
	[33]	[123]	[89	[96]	[207]	[250]	[234]	[498]
Nordette	500	900	900	0.0	1,000	1,500	2,000	500
	[32]	[123]	[62]	[100]	[134]	[383]	[244]	[513]
Other	500	500	900	400	1,000	1,000	2,000	1,000
	[43]	[114]	[97]	[97]	[110]	[172]	[244]	[364]
Implants								
Norplant insertion	3,500	3,500	7,500	4000	15,000	10,000	25,000	15,000
	[251]	[636]	[1282]	[1043]	[1161]	[1758]	[2491]	[3733]
Norplant removal	3,000	3,000	5,500	2500	10,000	10,000	20,000	10,000
	[378]	[724]	[1306]	[1315]	[1347]	[1495]	[1706]	[1705]
Implanon insertion			15,000				60,000	
			[4173]				[3704]	
Implanon removal			5,000				20,000	
			[1486]				[3867]	
Condoms			900				40,000	
			[122]				[30052]	
Number of Obs	900	219	219	219	1815	387	387	387

Table 6.6: Proportion of Facilities Reporting Stock Outages of Essential Drugs and Vaccines in the Past Six Months

	Public Facilities				Private Facilities			
	All	Same Facilities			All	Same Facilities		
Indicator	1997	1997	1998	Change	1997	1997	1998	Change
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Vitamin A	7.1	6.0	3.6	-2.4	7.9	8.3	9.5	1.2
	[1.1]	[2.2]	[1.8]	[2.9]	[0.9]	[2.1]	[2.5]	[3.2]
Antibiotics								
Penicillin	10.9	3.5	27.6	24.1	19.5	19.5	20.0	0.5
	[2.1]	[2.5]	[5.9]	[6.5]	[2.1]	[4.4]	[4.1]	[6.0]
Ampicilin	16.2	15.6	40.8	25.2	12.1	14.8	17.4	2.6
	[1.5]	[3.1]	[4.0]	[5.2]	[0.9]	[2.2]	[2.2]	[3.1]
Tetracycline	12.0	12.0	16.2	4.2	9.0	9.1	13.1	4.1
	[1.4]	[2.8]	[3.0]	[4.2]	[0.8]	[1.9]	[2.0]	[2.8]
	11.8	10.8	21.0	10.2	9.4	9.3	15.0	5.7
Chloroamphenicol	[1.4]	[2.7]	[3.4]	[4.4]	[0.9]	[2.0]	[2.2]	[3.0]
Chlotrimazore	11.5	10.8	24.7	13.8	8.6	12.1	13.8	1.7
	[1.5]	[3.0]	[3.6]	[4.9]	[1.0]	[2.5]	[2.2]	[3.4]
Ciprofloxacinl					7.4	6.7	16.2	9.6
					[2.7]	[4.6]	[6.1]	[8.0]
Benazaythine	2.3	0.0	7.7	7.7	9.0	5.6	19.1	13.5
penicillin G	[2.3]	[0.0]	[7.7]	[7.1]	[3.5]	[5.6]	[8.8]	[10.8]
Anti-TBC								
INH	6.0	5.9	3.2	-2.7	9.3	8.5	6.7	-1.9
	[1.1]	[2.3]	[1.6]	[2.8]	[1.6]	[3.1]	[2.6]	[4.1]
Rifampicin	10.0	8.6	8.1	-0.5	11.0	9.5	5.9	-3.6
	[1.7]	[3.1]	[3.0]	[4.3]	[2.0]	[3.7]	[2.9]	[4.7]
Ethambutol	9.6	9.0	8.6	-0.4	9.1	11.1	8.0	-3.1
	[1.5]	[2.9]	[2.6]	[3.9]	[1.8]	[4.0]	[3.2]	[5.0]
Streptomycin	9.4	6.9	5.6	-1.3	11.4	14.3	6.3	-8.0
	[2.3]	[3.4]	[3.2]	[4.6]	[3.0]	[6.7]	[4.4]	[7.8]
Anti-helminths:			5.0				9.1	
pyrantel pamoate			[2.0]				[2.8]	
Oralit	4.5	4.7	6.7	2.0	8.2	8.0	7.5	-0.5
	[0.9]	[1.9]	[2.0]	[2.8]	[0.8]	[1.8]	[1.6]	[2.4]
Iron tablets	6.2	4.1	0.7	-3.5	7.0	7.1	6.7	-0.4
	[1.0]	[1.8]	[0.7]	[1.8]	[0.8]	[1.8]	[1.6]	[2.4]
Immunizations:								
BCG			8.8				14.7	
			[2.2]				[3.5]	
DPT			7.0				7.8	
			[2.0]				[2.7]	
Measles			7.6				11.4	
			[2.0]				[3.1]	
Polio			8.8				7.5	
			[2.2]				[2.6]	
Tetanus Toxoid			10.4				23.4	
			[2.3]				[3.4]	
Number of Obs	900	219	219	219		387	387	387

Table 6.7: Stock Outages and Sufficiency of Basic Supplies

	All Facilities	Same Facilities		
	1997	1997	1998	Change
	(1)	(2)	(3)	(4)
Govt Health Ctr (Puskesmas)				
Gloves				
has in stock and has enough	90.7	92.3	87.7	-4.6
	[1.0]	[1.8]	[2.2]	[2.9]
has in stock, don't know if enough	3.1	1.4	0.0	-1.4
	[0.6]	[0.8]	[0.0]	[0.8]
has in stock but not enough	2.1	3.2	5.9	2.8
	[0.5]	[1.2]	[1.6]	[2.0]
doesn't have	4.0	3.2	6.4	3.2
	[0.7]	[1.2]	[1.7]	[2.0]
Bandages				
has in stock and has enough	95.8	97.7	93.6	-4.1
	[0.7]	[1.0]	[1.7]	[1.9]
has in stock, don't know if enough	2.3	0.9	0.0	-0.9
	[0.5]	[0.6]	[0.0]	[0.6]
has in stock but not enough	1.3	0.9	4.6	3.7
	[0.4]	[0.6]	[1.4]	[1.6]
doesn't have	0.6	0.5	1.8	1.4
	[0.3]	[0.5]	[0.9]	[1.0]
Needles				
proportion with stock outage in previous six months			9.22	
			[2.0]	
Number of Observations	900	219	219	219
Private Practitioner				
Has gloves	91.5	90.2	90.4	0.2
	[0.7]	[1.5]	[1.5]	[2.1]
Has bandages	98.4	98.7	97.7	-1.0
	[0.3]	[0.6]	[0.8]	[1.0]
Needles				
proportion with stock outages in previous six months			6.3	
			[1.3]	
Number of Observations	1815	387	387	387

Notes: Source IFLS2 & IFLS2+.

Table 6.8 Proportion of Facilities Reporting Stock Outages of Family Planning Supplies in the Past Six Months

	Public Facilities				Private Facilities		
	All Facil.	Same Facilities			All Facil.	Same Facilities	
Indicator	1997	1997	1998	Change	1997	1997	1998
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Injections					6.8	6.3	
					[0.8]	[1.6]	
Depo-Provera	11.3	11.1	45.6	34.5			20.7
	[1.5]	[3.2]	[4.5]	[5.8]			[2.6]
Depo-Progestin	10.9	10.7	28.3	17.7			15.9
	[1.4]	[2.8]	[3.5]	[4.8]			[2.3]
Noristrat	14.3	15.8	65.4	49.6			34.4
	[3.7]	[8.6]	[9.5]	[13.4]			[8.5]
Cyclofeem	10.9	9.5	30.3	20.8			7.3
	[2.5]	[4.6]	[6.2]	[8.2]			[2.1]
Oral contraceptives							
Microgygnon 30			39.7				26.6
			[4.0]				[3.2]
Marvelon 28			39.5				18.7
			[4.4]				[3.3]
Excluton 28			38.5				24.5
			[4.1]				[3.6]
Nordette			30.1				28.7
			[3.7]				[4.1]
IUDs							
Plastic/Lippes			4.6				13.4
			[1.7]				[3.5]
Copper T			12.2				15.5
			[2.6]				[3.5]
Implants							
Norplant			20.2				19.3
			[3.8]				[5.3]
Implanon			22.1				16.4
			[3.9]				[4.6]
Condoms			6.7				5.6
			[2.0]				[2.2]
Number of Obs	900	219	219	219		387	387

7. Health Status

The previous sections have documented a decline in use of health services and changes in the prices and potential quality of health services. In this and the next section of the study we explore the extent to which health status has changed between 1997 and 1998. The Indonesia Family Life Surveys contain a number of measures of health status. In this section we report on the results of self-reported measures of health status: measures obtained by asking the respondents specific questions about their health during the four weeks prior to the interview. The questions focus on the respondents' experience with any of a list of symptoms, whether normal daily activities have been disrupted by ill health, whether health status has required the respondent to stay in bed, and the respondent's ranking of his or her general health status. We look first at levels and at changes in levels of self-reported health for adults and children, then turn to an exploration of the determinants of changes in health status.

Self-Reported Indicators. Table 7.1 summarizes the results for adults. The first 11 rows of Column 7 report the difference between the proportion of panel respondents who experienced a symptom in 1998 and that proportion in 1997. The numbers are negative, indicating that the proportion of adults experiencing symptoms has declined between 1997 and 1998. This results holds for the proportion experiencing any symptom (row 1) and the proportion experiencing specific symptoms. All the changes are statistically significant. The remaining rows of the table report other self-reported indicators of health. The average number of symptoms declined slightly (but significantly), as did the proportion of adults who spent at least one day in bed because of poor health.

The same indicators are reported for children in Table 7.2. Children over 10 were generally asked to report for themselves, whereas questions were posed to the mother (or other caretaker) for children 10 and below. As with use of health care for children, our discussion focuses on the results for all respondents (Column 4), rather than panel respondents, so that we do not confuse age-related changes in health status with changes over time.

The results for children generally mirror what we observed for adults: overall there appears to have been an improvement in health status as indicated by the self-reported measures. Most of the symptoms have declined significantly between 1997 and 1998, and the average number of symptoms reported is smaller in 1998 than in 1997. The overall proportion of children experiencing at least one symptom has not declined significantly between 1997 and 1998 (it is about 70% in both years).

The self-reported indicators present a positive picture of changes in health status between 1997 and 1998: overall, health, or at least respondents' perceptions of health, seems to have improved. Tables 7.3 and 7.4 address the question of how these changes in health are related to socioeconomic status, demographic characteristics, and residence. For adults, we consider three health outcomes, and for each of these outcomes analyze the correlates of deteriorations and of improvements in health, relative to no change. The three health outcomes are whether the respondent reports at least one symptom, whether the respondent spent at least one day in bed, and the respondent's assessment of his or her general health status. For adults we estimate the equations separately for men and women. For children we pool boys and girls and include a term for gender.[20] For children we consider an additional outcome: whether normal activities were disrupted by poor health.

[20] These specifications were chosen after testing for differences by gender. There were no significant differences in the effects of the covariates on use of care and so we do not stratify on gender in those regressions.

One of the results that emerges for both adults and children is that the links between socioeconomic status and change in self-reported health status appear to be relatively weak. For the most part, household expenditure levels are not significantly associated with transitions either to poorer health or to better health. There are two exceptions. As the expenditure level of the household rises, the chance decreases that either men or children move from experiencing no symptoms in 1997 to experiencing at least one symptom in 1998. We also consider education (for adults) and find that it does not appear to be closely associated with changes in health status.[21] Only for men, and only for one outcome (the change from zero to at least one day in bed), do higher levels of education appear to protect against a deterioration in health status. For women, none of the health outcomes is associated with either education or expenditure levels.

Age is an important predictor of health transitions for children-- less so for adults. For children, increasing age significantly increases the probability of transitions in experiencing symptoms, but significantly decreases the probability of transitions in disrupted activities, days in bed, and general health status. It may be that these last three indicators are more closely associated with permanent components of health status (that tend not to change over time) for older children than for younger children, while symptoms are a more common occurrence for younger children (who have them all the time and thus make few transitions) than for older children (who have "grown out" of recurring problems of coughs, colds, and diarrhea).

As a group, and across the various health outcomes, the variables measuring province of residence (but not urban residence) exhibit a number of associations with changes in health status. For adults, relative to West Java, residence in South Sumatra, Jakarta, Central Java, and NTB seems to be associated with lower probabilities of improved health status and higher probabilities of worsening health status, as measured by changes in symptoms and changes in assessment of general health status. The effects of residence in North Sumatra and South Kalimantan vary by health outcome and to some extent by gender.

For children, the effects of province vary somewhat across the indicators. With respect to changes in assessment of general health status, the picture is less positive for residents of Jakarta, Central Java, North Sumatra, and South Kalimantan than for residents of West Java. Children in NTB, South Kalimantan, and South Sumatra are less likely than children in West Java to experience either an improvement or a deterioration in health status as measured by health-related activity disruptions or days in bed.

Physical Assessments. In addition to the self-reported measures of health status described above, the IFLS2 and 2+ data contain an array of physically-assessed measures of health status. The physically-assessed measurements are conducted by a trained nurse who travels with the survey team. The nurse measures the height and weight of all respondents, hemoglobin levels of respondents at least one year of age, lung capacity of respondents nine years old and above, and the blood pressure and pulse of respondents 15 and above. In addition, respondents 15 and above are asked to rise from a sitting to a standing position five times and are timed in this exercise. Finally, the nurse evaluates each respondent's health on a 9 point scale.

Examination of the levels and changes in these measures between 1997 and 1998 provides another perspective on health status—one that is less likely to incorporate the respondent's knowledge and

[21] Experiments with parental education in the child regression indicate that it had no effect on health transitions.

perceptions of his or her health status. Table 7.5 presents evidence on nutritional status. For children less than nine in 1997 we present the results on height-for-age (a long-run measure of health status). For children less than nine in 1997 we present weight-for-height (a shorter-run measure more indicative of recent changes in health status) . The results are expressed as z-scores. The z-scores provide a measure of each child's height and weight-for-height relative to that of the median child (of the same age) from a well-nourished reference population.[22]

The first and fourth rows of Table 7.5 present the average z-scores on height-for-age and weight-for-height for the IFLS children (all and panel respondents) in 1997 and in 1998. For neither height-for-age nor weight-for-height has there has been a significant change in the past year in the average z-scores of the IFLS children.

We also present the proportions of children whose nutritional status indicators are more than one standard deviation and more than two standard deviations below the median for the reference group. These statistics tell us something about how nutritional status has changed for the children at the low end of the scale. With respect to weight-for-height, a measure of recent health status, the results are encouraging. For both all and panel respondents there has been a significant decrease in the proportion of children whose weight-for-height is more than two standard deviations below the median. This result is broadly consistent with the evidence from Table 7.2 (to the extent that illness takes a toll on short-run nutritional status), which suggests that children are experiencing fewer symptoms in 1998 then they did in 1997. For all respondents, the data also suggest that the proportion of children whose height-for-age is more than two standard deviations below the median has decreased.

For adults 18 and older we consider Body Mass Index (BMI).[23] We present statistics on the average BMI in both years, and on the proportion of respondents whose BMI is below 18 (the cut-off below which respondents are considered to be unhealthy and mortality rates begin to rise). The picture regarding nutritional status for adults is not as positive as that for children. There has been a statistically significant decline in average levels of BMI for adults. For respondents whose BMI has remained in the range considered healthy, a decrease does not necessarily represent a deterioration in health status. Unfortunately, among panel respondents the decline is not limited to adults whose BMI is in the healthy range. There has also been a significant increase in the proportion of adults with a BMI below 18. In 1997, 13.6% of panel respondents were in this category. By 1998, 15.4% of respondents have fallen into this category.

The fact that at the low end of the nutritional spectrum (z-scores of less than -2 for children, BMIs of less than 18 for adults) weight-for-height of children has improved, while the BMI of adults has decreased, suggests that in terms of net energy intake, adults are bearing a greater share of the nutritional burden that the crisis has imposed than are children. This may reflect reduced intake by adults or increased energy output (e.g. working harder).

The last indicator of nutritional status that we consider is hemoglobin level, which is measured for all respondents at least one year of age in 1997. On average there has been a significant increase in hemoglobin level since 1997. The improvement extends to those with the lowest levels of hemoglobin. The

[22] The z-score is the number of standard deviations above or below the median of the reference population. We use the National Center for Health Statistics reference population as the standard, which is based on children in the U.S.

[23] Body Mass Index is computed as weight (in kilograms) divided by the square of height (measured in meters).

proportions of respondents with hemoglobin levels below 10 and below 12 (standard cut-offs for moderate and severe anemia) have decreased significantly since 1997.

In Table 7.6 we present the results for the other physical assessments of health status. For the most part these results are consistent with the interpretation that there have been some improvements in health status since 1997. For both panel and all respondents, lung capacity has increased slightly, while blood pressure and sit-to-stand time have decreased. There has been no change in the average score assigned by the nurse as his or her evaluation of health status.

Tables 7.7 and 7.8 present evidence on the correlates of changes in nutritional status between 1998 and 1997. One of the findings that emerges from this table is that increasing levels of expenditures in 1997 are associated with improvements in nutritional status for male children (as measured by height-for-age) and female adults (as measured by BMI). Expenditure levels do not appear to be associated with weight-for-height, with BMI for adult males, or with height-for-age for female children. Expenditure level does not affect change in hemoglobin levels, except for adult women. Among adult women, higher levels of 1997 expenditure are associated with significantly lower levels of hemoglobin.

The effect of expenditure level on adult women's BMI is the opposite of its effect on adult women's hemoglobin level, suggesting that the diets of women in poorer households have changed in ways that cause them to lose weight, but become more iron replete. Although women in better-off households have been protected from weight loss, their hemoglobin levels have not improved.

Province of residence is less closely associated with changes in nutritional status than it was with changes in the self-reported indicators. For boys, improvements in weight-for-height are less likely for residents of South Sumatra. For girls (less than 10), improvements in hemoglobin levels are larger in urban areas. For adolescents of both sexes, residence in Jakarta tends to reduce hemoglobin levels, while for adolescent girls and for adults, residence in North Sumatra improves it. For women, decreases in BMI are particularly likely in Central Java, while decreases in hemoglobin are particularly likely in NTB.

Correlates of changes in the other physical assessments of health are presented in Table 7.9. We highlight a few of the results here.

Estimates of the effects of the socioeconomic and demographic characteristics on changes in lung capacity are reported separately for teenagers and adults, stratifying on gender in the first four columns of Table 7.9. For teenagers, increases in lung capacity are smaller for older respondents which likely reflects the fact that lung capacity is highly correlated with height and younger teenagers grow faster than older teenagers. Among adults, height is fixed (at least until old age) and so the (small but significant) negative coefficient on age can be interpreted as an effect of aging. The effects of household resources are small and (marginally) significant only for teenage females. In contrast, location of residence is a powerful predictor of change in lung capacity. Among teenagers, increases in lung capacity between the waves of the survey are concentrated among rural dwellers. Inter-province differences in the *change* in lung capacity are very large; in part, these may reflect differences between the health workers, some of whom were more aggressive when demonstrating the use of the peak flow meter. (There was one health worker per province and only in South Kalimantan was the same health worker used in 1997 and 1998.) However, heterogeneity among health workers is unlikely to explain all the differences since we would expect the effects to be common to males and females, older and younger respondents.

The correlates of change in blood pressure are presented in Columns 5 and 6. The interpretation of a positive coefficient is that it is associated with an increase in blood pressure between 1997 and 1998, and thus a deterioration in health status. Relatively few of the covariates are statistically significant. For women, residence in an urban area is associated with a smaller change in blood pressure, while residence in Jakarta and South Sumatra is associated with an increase in blood pressure. For men, residence in Jakarta also increases blood pressure, as does residence in Central Java.

Correlates associated with the time taken to stand from a sitting position (5 times) are presented in columns 1 and 2 of Table 7.10. The only characteristics that are significant predictors of changes in time are province of residence; we cannot distinguish them from differences in the way the health worker used the stopwatch and so we do not interpret them as purely residence effects.

The same caveat holds for the health worker evaluations in the last four columns of Table 7.10 for we have not cross-validated their evaluations and so do not interpret the province controls (which we treat as health worker fixed effects). We focus, instead, on the individual and household characteristics associated with changes in the evaluations of the respondent's health status. First, relative to rural dwellers, there have been significant improvements in the health of those living in urban areas. Second, in sharp contrast with the respondent's own evaluations of changes in their health (which were unrelated to household resources), the health workers systematically indicate that the health of those in the poorest households has deteriorated the most between 1997 and 1998 for all respondents except adult males.

Taking all the evidence on changes in health status together, we conclude that in many ways, the current health status of respondents in 1998 is better than it was in 1997. However, there are some indications that nutritional status of adults (as measured by BMI) has deteriorated over the last year, particulary among poorer women although there have also been improvements in their hemoglobin status (perhaps because of changes in diet). Moreover, our healthworkers consistently indicate that the health of our poorest respondents has deteriorated over the last year and while this has not yet shown up in the physical assessments it does suggest that continued monitoring of the state of health of the population is key. In particular, the medium term effects of the crisis may be quite different from their immediate effects especially when we take into account the large declines in use of health services -- especially among the poorest.

Table 7.1: Self-reported morbidity, days ill and general health status -- Adults

Means and [standard errors]

Indicator	All resp.	Same communities			Same respondents		
	in 1997	1997	1998	Change	1997	1998	Change
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
% have any morbidity	79.26	82.06	78.21	-3.85	82.26	78.62	-3.64
	[0.3]	[0.6]	[0.5]	[0.8]	[0.6]	[0.6]	[0.8]
% have diarrhea	6.43	7.51	6.42	-1.09	7.55	6.46	-1.08
	[0.2]	[0.4]	[0.3]	[0.5]	[0.4]	[0.4]	[0.5]
% have cough/breathing problems	37.38	40.92	34.95	-5.96	41.11	35.21	-5.90
	[0.3]	[0.7]	[0.6]	[0.9]	[0.7]	[0.7]	[1.0]
% have nausea/vomit	10.49	12.43	9.40	-3.03	12.49	9.50	-2.99
	[0.2]	[0.5]	[0.4]	[0.6]	[0.5]	[0.4]	[0.7]
% have fever	22.87	25.37	20.18	-5.18	25.30	20.14	-5.16
	[0.3]	[0.6]	[0.5]	[0.8]	[0.6]	[0.6]	[0.9]
% have head ache	54.92	57.95	52.56	-5.39	57.91	52.69	-5.23
	[0.4]	[0.7]	[0.6]	[0.9]	[0.7]	[0.7]	[1.0]
% have runny nose	47.22	50.65	43.03	-7.62	50.78	43.26	-7.52
	[0.4]	[0.7]	[0.6]	[0.9]	[0.7]	[0.7]	[1.0]
% have stomach pain	21.06	25.18	20.96	-4.22	25.02	19.60	-5.42
	[0.3]	[0.6]	[0.5]	[0.8]	[0.6]	[0.6]	[0.9]
% have swollen joints	23.26	24.79	19.52	-5.27	25.09	21.49	-3.60
	[0.3]	[0.6]	[0.5]	[0.8]	[0.6]	[0.6]	[0.9]
# morbidities reported	3.20	3.51	3.06	-0.44	3.51	3.10	-0.42
	[0.0]	[0.0]	[0.0]	[0.1]	[0.0]	[0.0]	[0.1]
% been ill	20.76	21.02	21.95	0.92	20.94	22.31	1.37
	[0.3]	[0.6]	[0.5]	[0.8]	[0.6]	[0.6]	[0.9]
% been in bed	7.91	9.03	7.86	-1.17	9.13	7.52	-1.61
	[0.2]	[0.4]	[0.3]	[0.5]	[0.4]	[0.4]	[0.6]
% in poor health	11.43	13.64	13.83	0.19	13.66	14.59	0.93
	[0.2]	[0.5]	[0.4]	[0.7]	[0.5]	[0.5]	[0.7]
# obs	19841	4861	6640	11501	4612	4612	4612

Notes: Sample is all adults age 15 and older. See Table 3.1.

Table 7.2: Morbidity, days ill and general health status – Children below age 15

Means and [standard errors]

Indicator	All resp.	Same communities			Same respondents		
	in 1997	1997	1998	Change	1997	1998	Change
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
% have any morbidity	70.30	70.72	70.37	-0.35	70.36	68.61	-1.75
	[0.4]	[0.9]	[0.8]	[1.2]	[0.9]	[0.9]	[1.3]
% have diarrhea	10.17	11.87	9.88	-1.99	12.11	8.68	-3.42
	[0.3]	[0.6]	[0.5]	[0.8]	[0.7]	[0.6]	[0.9]
% have cough/breathing problems	33.95	34.56	32.15	-2.41	35.14	30.53	-4.61
	[0.5]	[0.9]	[0.8]	[1.2]	[1.0]	[0.9]	[1.3]
% have nausea/vomit	7.28	8.81	6.49	-2.32	8.81	5.91	-2.89
	[0.3]	[0.5]	[0.4]	[0.7]	[0.6]	[0.5]	[0.7]
% have fever	32.81	32.16	28.60	-3.56	32.98	26.91	-6.07
	[0.5]	[0.9]	[0.8]	[1.2]	[0.9]	[0.9]	[1.3]
% have runny nose	47.16	47.31	43.48	-3.83	47.78	42.11	-5.67
	[0.5]	[1.0]	[0.9]	[1.3]	[1.0]	[1.0]	[1.4]
# morbidities reported	2.63	2.76	2.53	-0.23	2.77	2.43	-0.34
	[0.0]	[0.1]	[0.0]	[0.1]	[0.1]	[0.1]	[0.1]
% been ill	25.86	25.56	24.76	-0.80	26.33	23.01	-3.32
	[0.4]	[0.8]	[0.8]	[1.1]	[0.9]	[0.9]	[1.2]
% been in bed	11.02	11.43	9.38	-2.06	11.53	8.86	-2.68
	[0.3]	[0.6]	[0.5]	[0.8]	[0.6]	[0.6]	[0.9]
# days in bed (if >0)	3.83	3.57	3.83	0.27	3.54	3.70	0.16
	[0.1]	[0.2]	[0.2]	[0.3]	[0.2]	[0.2]	[0.3]
% in poor health	6.70	6.96	8.30	1.34	7.30	8.32	1.02
	[0.2]	[0.5]	[0.5]	[0.7]	[0.5]	[0.6]	[0.8]
# obs	10,351	2,746	3,098	5,844	2,453	2,453	2,453

Table 7.3: Correlates of changes in self reported health status between 1997 and 1998: Adults

Multinomial logit estimates of risk relatives

	Change in probability respondent reports at least one morbidity				Change in probability respondent spent at least one day in bed				Change in General health status			
	Male		Female		Male		Female		Male		Female	
	Got sick (1)	Got well (2)	Got sick (3)	Got well (4)	Got sick (5)	Got well (6)	Got sick (7)	Got well (8)	Got better (9)	Got worse (10)	Got better (11)	Got worse (12)
ℓnPCE	0.849	0.929	0.975	0.975	0.913	0.898	0.957	1.179	1.118	0.979	0.956	0.943
	[1.98]	[0.75]	[0.33]	[0.29]	[0.82]	[0.79]	[0.47]	[1.69]	[1.42]	[0.27]	[0.67]	[0.88]
Age (spline): 20-29	1.001	0.993	0.990	0.981	0.990	1.008	0.972	0.978	1.004	0.988	1.002	0.995
	[0.07]	[0.35]	[0.66]	[1.13]	[0.45]	[0.27]	[1.37]	[0.98]	[0.25]	[0.70]	[0.15]	[0.36]
30-49	0.985	0.994	0.975	0.980	0.995	1.014	1.028	1.017	1.016	1.016	1.016	0.997
	[1.26]	[0.43]	[2.13]	[1.46]	[0.31]	[0.75]	[1.92]	[1.07]	[1.47]	[1.49]	[1.54]	[0.26]
>=50	0.969	0.960	0.951	0.992	1.017	1.024	1.002	1.035	0.999	1.000	1.018	1.026
	[2.02]	[2.12]	[2.74]	[0.47]	[1.02]	[1.46]	[0.13]	[2.53]	[0.27]	[0.07]	[1.66]	[2.34]
Education (years)	0.988	1.000	0.983	1.014	0.918	0.956	1.000	0.969	0.982	0.968	1.008	1.001
	[0.70]	[0.01]	[0.95]	[0.65]	[3.38]	[1.49]	[0.01]	[1.23]	[1.03]	[1.79]	[0.46]	[0.08]
ℓn(HH size)	1.039	1.186	0.800	1.112	0.754	1.051	0.852	1.262	0.901	0.773	0.876	0.848
	[0.24]	[0.89]	[1.54]	[0.64]	[1.36]	[0.19]	[0.97]	[1.32]	[0.67]	[1.67]	[1.07]	[1.35]
Urban resident	1.149	0.901	0.868	0.739	1.326	0.830	0.670	1.098	0.929	0.924	1.167	1.177
	[0.99]	[0.62]	[1.02]	[1.94]	[1.45]	[0.77]	[2.29]	[0.53]	[0.50]	[0.53]	[1.24]	[1.33]
Province												
North Sumatra	1.919	2.963	2.253	2.035	0.367	3.136	0.624	1.363	0.526	1.137	0.494	1.215
	[2.38]	[4.16]	[3.21]	[2.94]	[2.14]	[2.39]	[1.53]	[1.10]	[2.16]	[0.41]	[3.01]	[0.83]
South Sumatra	1.413	1.241	1.622	1.266	0.955	1.884	0.662	0.551	1.381	3.297	0.939	2.771
	[1.39]	[0.82]	[1.99]	[0.99]	[0.15]	[1.31]	[1.51]	[1.79]	[1.43]	[4.74]	[0.31]	[4.91]
Jakarta	1.368	0.908	1.050	0.655	0.752	2.183	0.462	0.437	1.344	3.037	1.197	1.671
	[1.10]	[0.29]	[0.16]	[1.28]	[0.74]	[1.40]	[1.92]	[2.02]	[1.11]	[3.81]	[0.80]	[2.03]
Central Java	1.671	0.664	1.631	0.680	0.556	2.081	0.666	0.724	1.023	1.956	0.534	1.214
	[2.30]	[1.53]	[2.27]	[1.64]	[1.95]	[1.66]	[1.74]	[1.24]	[0.11]	[2.77]	[3.45]	[0.98]
NTB	1.652	0.907	1.378	0.789	1.330	2.489	0.794	0.483	1.051	1.297	1.024	1.126
	[2.05]	[0.34]	[1.37]	[0.96]	[1.00]	[1.95]	[0.93]	[2.30]	[0.22]	[0.92]	[0.13]	[0.54]
South Kalimantan	0.942	0.522	0.504	0.395	1.585	3.708	1.062	1.870	0.670	1.721	0.703	1.632
	[0.20]	[1.83]	[2.01]	[2.61]	[1.52]	[2.78]	[0.21]	[2.20]	[1.41]	[1.89]	[1.48]	[2.05]
χ^2	93.86		120.61	71.15	83.33		71.01			94.63		
ℓn(Likelihood)	-1434.42		-1613.22	-863.11	-1226.37		-1578.49			-2107.28		
R^2	0.03		0.04	0.04	0.03		0.02			0.02		

Notes: Linear probability estimates. In each pair of regressions, left panel estimates probability a respondent is sick in 1998 conditional on not being sick in 1997; the right panel estimates probability a respondent gets better by 1998 given he/she was ill in 1997. Sample is 4,612 adults in IFLS2 & IFLS2+. [t statistics] below regression estimates.

Table 7.4: Correlates of changes in respondent reported health status between 1997 and 1998: Children

Multinomial logit estimats of risk relatives
Relative to excluded category of no change

	Change in probability at least one morbidity		Change in probability at least one day ill		Change in probability at least one day in bed		Change in General health status	
	Got sick (1)	Got well (2)	Got sick (3)	Got well (4)	Got sick (5)	Got well (6)	Got better (7)	Got worse (8)
ℓnPCE	0.846	1.046	1.076	0.905	1.002	0.951	1.128	0.955
	[2.44]	[0.65]	[1.13]	[1.35]	[0.03]	[0.52]	[1.77]	[0.66]
Male	0.967	1.064	0.976	0.947	1.117	0.858	0.934	0.900
	[0.32]	[0.55]	[0.22]	[0.46]	[0.80]	[0.96]	[0.60]	[0.94]
Age	1.052	1.041	0.953	0.920	0.975	0.912	0.988	0.972
	[3.68]	[2.82]	[3.46]	[5.51]	[1.49]	[4.53]	[0.84]	[2.00]
ℓn(HH size)	0.982	1.372	0.662	1.015	0.612	0.744	0.802	0.890
	[0.12]	[1.94]	[2.76]	[0.09]	[2.67]	[1.35]	[1.38]	[0.74]
Urban resident	0.934	0.981	1.025	1.196	1.012	1.134	0.912	1.229
	[0.58]	[0.15]	[0.20]	[1.36]	[0.08]	[0.72]	[0.72]	[1.67]
Province								
North Sumatra	1.182	2.779	0.204	0.627	0.263	0.633	0.567	1.348
	[0.77]	[4.64]	[5.72]	[1.96]	[4.15]	[1.57]	[2.27]	[1.12]
South Sumatra	0.945	1.804	0.606	0.930	0.356	0.433	1.388	3.941
	[0.30]	[2.85]	[2.70]	[0.36]	[4.20]	[2.96]	[1.69]	[6.16]
Jakarta	0.938	1.047	0.711	1.284	0.595	0.702	1.323	2.447
	[0.26]	[0.17]	[1.42]	[1.01]	[1.77]	[1.08]	[1.13]	[3.26]
Central Java	1.082	1.181	0.803	0.859	0.545	0.765	0.820	2.154
	[0.44]	[0.78]	[1.29]	[0.76]	[2.86]	[1.13]	[1.02]	[3.42]
NTB	1.058	1.478	0.563	0.511	0.572	0.355	1.307	1.559
	[0.31]	[1.88]	[3.23]	[3.09]	[2.65]	[3.61]	[1.46]	[1.87]
South Kalimantan	0.654	0.888	0.474	0.757	0.584	0.393	0.393	1.907
	[1.69]	[0.43]	[3.13]	[1.07]	[2.00]	[2.50]	[3.04]	[2.40]
χ^2	77.55		126.75		85.070		107.64	
ℓn(Likelihood)	-2139.54		-2019.37		-1353.885		-2029.45	
R^2	0.02		0.03		[0.03]		0.03	

Notes: Sample is 2,453 children in IFLS2 & IFLS2+. See Table 5.3

Table 7.5: Nutritional status

Means and [standard errors]

Indicator	All resp. in 1997 (1)	Same communities 1997 (2)	Same communities 1998 (3)	Same communities Change (4)	Same respondents 1997 (5)	Same respondents 1998 (6)	Same respondents Change (7)
Height for age (z score)	-1.77	-1.96	-1.89	0.07	-1.91	-1.91	0.00
	[0.02]	[0.04]	[0.03]	[0.05]	[0.04]	[0.04]	[0.05]
% z score<-2	42.94	50.68	45.66	-5.02	50.00	47.25	-2.75
	[0.82]	[1.62]	[1.33]	[2.10]	[1.63]	[1.62]	[2.30]
# obs	3,652	951	1,395	2,346	946	946	946
Weight for height (z score)	-0.57	-0.61	-0.62	-0.00	-0.64	-0.66	-0.02
	[0.01]	[0.03]	[0.02]	[0.04]	[0.03]	[0.03]	[0.04]
% z score<-1	33.91	35.56	35.20	-0.36	36.79	35.92	-0.87
	[0.62]	[1.22]	[1.08]	[1.63]	[1.36]	[1.35]	[1.91]
% z score<-2	7.31	8.57	5.59	-2.97	8.39	4.98	-3.40
	[0.34]	[0.71]	[0.52]	[0.86]	[0.78]	[0.61]	[0.99]
# obs	5,839	1,541	1,949	3,490	1,264	1,264	1,264
Body mass index kg/m2	21.39	21.28	21.07	-0.21	21.33	21.06	-0.27
	[0.03]	[0.05]	[0.04]	[0.07]	[0.05]	[0.05]	[0.08]
% < 18	13.06	14.05	14.69	0.63	13.64	15.35	1.71
	[0.26]	[0.54]	[0.49]	[0.73]	[0.57]	[0.59]	[0.82]
# obs	16,927	4,156	5,168	9,324	3,688	3,688	3,688
Hemoglobin (mg/dl)	12.69	12.62	12.82	0.20	12.61	12.79	0.18
	[0.01]	[0.02]	[0.02]	[0.03]	[0.02]	[0.02]	[0.03]
% hemoglobin<10mg/dl	6.13	6.68	5.02	-3.91	6.64	4.74	-4.25
	[0.15]	[0.30]	[0.24]	[0.76]	[0.32]	[0.27]	[0.85]
% hemoglobin<12mg/dl	33.20	34.75	30.83	-1.66	34.79	30.54	-1.90
	[0.29]	[0.58]	[0.50]	[0.38]	[0.61]	[0.59]	[0.42]
# obs	27,017	6,829	8,562	15,391	6,142	6,142	6,142

Notes: Height-for-age estimates include only children age 9 or under in 1997; weight for height includes children age 9 or under in 1997. Body mass index includes adults age 18 or over in 1997. Hemoglobin is measured for everyone age 1 or older in 1997. See Table 3.1.

Table 7.6: Physical health assessments

Means and [standard errors]

Indicator	All resp.	Same communities			Same respondents		
	in 1997	**1997**	**1998**	**Change**	**1997**	**1998**	**Change**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Lung capacity	310.18	309.16	320.48	11.32	310.04	319.99	9.95
	[0.71]	[1.53]	[1.30]	[2.00]	[1.61]	[1.49]	[2.20]
# obs	22,864	5,722	7,063	12,785	5,040	5,040	5,040
Blood pressure --diastolic	126.61	126.78	124.27	-2.52	126.91	124.52	-2.39
	[0.18]	[0.35]	[0.29]	[0.45]	[0.36]	[0.35]	[0.50]
Blood pressure --systolic	78.54	78.45	77.52	-0.94	78.53	77.63	-0.90
	[0.09]	[0.18]	[0.15]	[0.24]	[0.19]	[0.19]	[0.26]
# obs	19,158	4,701	5,927	10,628	4,193	4,193	4,193
Sit->stand 5 times (secs)	7.23	7.60	5.96	-1.64	7.58	6.04	-1.54
	[0.02]	[0.04]	[0.02]	[0.04]	[0.04]	[0.03]	[0.05]
# obs	17,994	4,493	5,581	10,074	3,848	3,848	3,848
Health status (Nurse evaln)	6.14	5.94	5.98	0.03	5.92	5.89	-0.03
	[0.01]	[0.01]	[0.01]	[0.02]	[0.01]	[0.02]	[0.02]
# obs	28,612	7,220	8,922	16,142	6,578	6,578	6,578

Notes: Lung capacity is measured for all people age 9 and older. Blood pressure and time to stand from a sitting postion are measured for all people age 15 and older. After completing the physical assessments and discussing health problems with the respondents, the health worker scored every respondent's health status (using a range from 1 through 9 where 9 is excellent 1 is very poor). See Table 3.1.

Table 7.7: Correlates of changes in nutritional status: Anthropometry

	Change in Height for age (0-9 yr olds)		Change in Weight for height (0-9 yr olds)		Change in Body Mass Index (20-69 yr olds)	
	Male (1)	Female (2)	Male (3)	Female (4)	Male (5)	Female (6)
ℓnPCE	0.132	-0.015	0.081	0.086	0.001	0.103
	[2.63]	[0.25]	[0.66]	[0.67]	[0.03]	[2.37]
Age	-0.029	0.022	0.090	0.088	-0.007	-0.009
	[1.58]	[0.91]	[2.97]	[2.12]	[2.73]	[2.99]
ℓn(HH size)	-0.044	0.046	0.157	-0.485	-0.03	-0.112
	[0.42]	[0.29]	[0.57]	[1.41]	[0.34]	[1.30]
Urban resident	0.102	-0.117	-0.051	0.255	0.027	0.015
	[1.22]	[1.1]	[0.24]	[1.08]	[0.35]	[0.19]
Province						
North Sumatra	0.129	0.324	-0.071	0.03	-0.295	0.071
	[0.97]	[1.52]	[0.21]	[0.07]	[1.88]	[0.46]
South Sumatra	0.127	-0.112	-0.811	-0.003	-0.058	0.255
	[0.97]	[0.58]	[2.49]	[0.01]	[0.44]	[1.82]
Jakarta	-0.106	-0.225	-0.087	-0.139	0.077	0.339
	[0.64]	[0.88]	[0.21]	[0.27]	[0.51]	[2.07]
Central Java	0.139	-0.042	0.005	-0.383	-0.092	-0.302
	[1.19]	[0.24]	[0.02]	[1.06]	[0.82]	[2.51]
NTB	0.169	0.046	-0.308	-0.215	0.085	0.221
	[1.44]	[0.26]	[1.02]	[0.59]	[0.68]	[1.67]
South Kalimantan	0.044	0.350	0.035	-0.377	-0.015	-0.057
	[0.30]	[1.70]	[0.09]	[0.84]	[0.11]	[0.36]
Intercept	-0.924	-0.107	-0.409	-2.117	0.148	-0.354
	[2.44]	[0.21]	[0.42]	[1.95]	[0.47]	[1.07]
F(all covs)	1.36	1.04	1.29	1.83	1.69	5.67
	[0.16]	[0.42]	[0.2]	[0.02]	[0.08]	[0.00]
R^2	0.05	0.04	0.027	0.052	0.012	0.03

Notes: Height for age and weight for height are measured as change in z-score; BMI is measured in kg/m^2. See Table 8.1. OLS estimates. [t statistics] below regression coefficients; [p values] below test statistics.

Table 7.8: Correlates of changes in nutritional status: Hemoglobin

	Children (0-9 yr olds)		Teenagers (10-19 yr olds)		Adults (20-69 yr olds)	
	Male	Female	Male	Female	Male	Female
	(1)	(2)	(3)	(4)	(5)	(6)
ℓnPCE	0.045	-0.087	-0.066	-0.052	-0.035	-0.093
	[0.59]	[1.1]	[0.7]	[0.65]	[0.58]	[2.03]
Age	0.003	-0.024	0.008	-0.05	-0.003	0.002
	[0.16]	[1.08]	[0.25]	[1.96]	[0.85]	[0.53]
ℓn(HH size)	0.087	-0.126	-0.15	0.042	0.052	-0.027
	[0.49]	[0.64]	[0.71]	[0.24]	[0.41]	[0.3]
Urban resident	-0.015	0.323	0.168	0.017	0.014	-0.02
	[0.11]	[2.33]	[1.03]	[0.13]	[0.13]	[0.24]
Province						
North Sumatra	1.05	0.502	0.501	1.136	0.855	0.457
	[4.49]	[1.8]	[1.51]	[4.3]	[3.79]	[2.76]
South Sumatra	0.312	0.331	-0.046	-0.293	-0.324	-0.259
	[1.57]	[1.47]	[0.17]	[1.23]	[1.73]	[1.74]
Jakarta	-0.211	-0.473	-0.686	-0.589	-0.166	-0.261
	[0.79]	[1.65]	[2.1]	[2.01]	[0.76]	[1.5]
Central Java	0.643	0.305	0.52	0.609	0.23	0.166
	[3.37]	[1.47]	[2.05]	[2.86]	[1.42]	[1.3]
NTB	0.093	-0.077	0.01	0.257	-0.134	-0.344
	[0.48]	[0.37]	[0.04]	[1.19]	[0.74]	[2.44]
South Kalimantan	0.204	-0.07	0.213	0.193	0.334	0.161
	[0.82]	[0.25]	[0.65]	[0.71]	[1.64]	[0.97]
Intercept	-0.354	0.689	-0.145	0.781	0.245	0.574
	[0.58]	[1.08]	[0.17]	[1.05]	[0.55]	[1.66]
F(all covs)	2.78	2.05	1.85	3.95	3.77	4.63
	[0.00]	[0.01]	[0.02]	[0.00]	[0.00]	[0.00]
R^2	0.06	0.05	0.05	0.08	0.03	0.02

Notes: OLS estimates. See Table 7.3.

Table 7.9: Correlates of changes in lung capacity and blood pressure

	Lung capacity Teenagers (10-19 yr olds)		Lung capacity Adults (20-69 yr olds)		Blood pressure Adults (20-69 yr olds)	
	Male (1)	Female (2)	Male (3)	Female (4)	Male (5)	Female (6)
ℓnPCE	1.319	2.908	-0.237	0.235	-0.14	0.121
	[0.62]	[1.92]	[0.54]	[0.57]	[0.41]	[0.41]
Age	-0.171	-0.389	-0.039	-0.046	-0.006	-0.03
	[2.55]	[5.01]	[2.94]	[2.04]	[0.55]	[1.88]
ℓn(HH size)	-6.633	-6.523	-0.745	-0.276	0.296	-0.007
	[1.47]	[2.19]	[0.83]	[0.35]	[0.43]	[0.01]
Urban resident	-6.125	-9.297	-0.631	-1.504	-0.483	-1.518
	[1.58]	[3.45]	[0.78]	[1.97]	[0.78]	[2.82]
Province						
North Sumatra	49.777	53.096	3.318	5.496	0.592	0.977
	[6.19]	[10.08]	[2.01]	[3.78]	[0.47]	[0.95]
South Sumatra	16.359	-16.399	1.431	0.478	4.657	1.977
	[2.48]	[3.48]	[1.03]	[0.35]	[4.39]	[2.06]
Jakarta	44.84	45.68	1.723	3.928	0.591	2.846
	[5.67]	[8.06]	[1.07]	[2.49]	[0.48]	[2.56]
Central Java	-11.082	-6.797	2.026	1.675	0.878	0.154
	[1.88]	[1.65]	[1.68]	[1.44]	[0.95]	[0.19]
NTB	83.459	94.033	0.86	0.5	2.702	-0.321
	[13.11]	[21.58]	[0.64]	[0.4]	[2.62]	[0.36]
South Kalimantan	7.3	22.921	1.887	3.537	0.476	0.661
	[0.98]	[4.34]	[1.23]	[2.36]	[0.41]	[0.63]
Intercept	-1.196	-3.594	0.833	-3.022	-1.102	-0.516
	[0.08]	[0.33]	[0.27]	[1.01]	[0.46]	[0.24]
F(all covs)	36.14	106.21	1.46	2.98	3.25	2.38
	[0.00]	[0.00]	[0.15]	[0.00]	[0.00]	[0.01]
R^2	0.14	0.28	0.01	0.01	0.02	0.01

Notes: OLS estimates. See Tables 7.2 and 7.3.

Table 7.10: Correlates of changes in time to sit from standing position and nurse evaluation of health status

	Time to stand from sitting position (15-69 year olds)		Nurse evaluation of respondent's health status (Scaled from 1-9)			
			(0-19 yr olds)		(20-69 yr olds)	
	Male	Female	Male	Female	Male	Female
	(1)	(2)	(3)	(4)	(5)	(6)
ℓnPCE	0.115	0.027	-0.184	-0.179	-0.032	-0.086
	[1.92]	[0.38]	[4.41]	[4.57]	[0.82]	[2.70]
Age	-0.002	-0.006	0.003	0.000	-0.001	0.002
	[1.09]	[1.48]	[0.46]	[0.03]	[0.47]	[0.69]
ℓn(HH size)	0.021	-0.171	-0.127	0.040	0.075	0.060
	[0.17]	[1.22]	[1.35]	[0.45]	[0.94]	[0.94]
Urban resident	-0.09	0.186	0.409	0.334	0.361	0.311
	[0.83]	[1.42]	[5.69]	[4.86]	[5.18]	[5.21]
Province						
North Sumatra	-2.159	-2.470	-0.518	-0.532	-0.328	-0.801
	[9.56]	[9.59]	[3.96]	[4.06]	[2.29]	[7.07]
South Sumatra	-4.075	-4.485	-1.094	-1.061	-1.281	-1.146
	[21.64]	[19.05]	[9.57]	[9.00]	[10.73]	[10.96]
Jakarta	-2.370	-2.788	-0.044	0.334	-0.015	-0.202
	[10.82]	[10.39]	[0.31]	[2.33]	[0.11]	[1.67]
Central Java	-1.065	-1.655	-0.273	-0.324	-0.438	-0.595
	[6.52]	[8.40]	[2.56]	[3.05]	[4.25]	[6.64]
NTB	-2.098	-2.248	-1.875	-1.907	-1.682	-2.247
	[11.51]	[10.38]	[17.01]	[17.77]	[14.64]	[22.84]
South Kalimantan	-1.066	-1.103	-1.745	-1.747	-1.669	-2.051
	[5.14]	[4.38]	[12.55]	[12.81]	[12.79]	[17.67]
Intercept	-0.001	0.576	1.453	1.255	0.683	1.058
	[0.00]	[1.10]	[4.34]	[3.93]	[2.39]	[4.37]
F(all covs)	58.63	43.24	40.29	48.33	49.58	88.97
	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
R^2	0.26	0.17	0.31	0.34	0.26	0.32

Notes: OLS estimates. See Tables 7.2 and 7.3.

8. Perceptions of the Crisis, Receipt of Assistance, and Community Participation

The preceding sections have examined the impacts of Indonesia's crisis in terms of changes in various behaviors and outcomes thought to reflect well-being, such as employment status, educational enrollment, use of health services, and health status. In our final section we present evidence from a special module included in the IFLS2+ questionnaire that queried respondents directly about their impressions of the impact of the crisis. We then look at receipt of assistance through informal (family and friends) and formal (government and NGOs) channels. Finally, we analyze changes in participation in community development activities, which in the past have played a central role in the implementation of government development programs.

In the 1998 interview we designed a special section of the questionnaire which focused on respondents' perceptions of the crisis. The crisis has affected the price and quality of many goods and services. *A priori* it is not clear which changes will have had the greatest salience for which respondents, nor is it clear that all changes will have had negative consequences for all respndents. For that reason, we asked respondents whether in the past 12 months changes in various phenomena had occurred, and if so, how the changes had affected them. The results are summarized (by gender) in Table 8.1.

About 60% of men and about 75% of women report that opportunities to earn income have not decreased, and about the same proportions report that neither have opportunities to earn income increased. Most respondents who report a decrease in opportunities say that they have been made worse-off by the change. Most respondents who report an increase in opportunities say that the change has had no impact on them or that they do not know how it has affected them.[24]

The majority of respondents report that prices of rice and other foods have changed and that because of those changes they are now worse-off than they used to be. The majority of respondents also report changes in the prices of fuel, gold, credit, and health services, but the impacts of these changes vary. Changes in the prices of fuel and health services have either had no impact or made respondents worse off. Changes in the price of gold have made some respondents worse off, but for most respondents have had little impact. Additionally, sizable fractions of respondents report that they do not know how changing fuel, gold, and health service prices have affected them. Most respondents report that there has been no change in crime levels or in the quality of health services. For none of the phenomena does any substantial proportion of respondents report that they have been made better off.

There are some differences in reporting by gender. For one thing, the fractions of women reporting that no change in the various phenomena has occurred tend to be higher than the fractions of men, while more men than women report that they do not know how a change has affected them. Men are considerably more likely than women to report being made worse off by changes in opportunities to earn income, while women are somewhat more likely than men to report that they have been made worse off by changes in the prices of foods other than rice, changes in the price of gold, and changes in the prices of health services. These results are all consistent with the idea that the typical family is organized along gender lines, so that members have responsibility for particular spheres of influence.

[24] On net there is a suggestion that labor demand (or demand for services) has decreased although the magnitude of the effect is relatively small. Consistent with the results presented above, fears that there would be massive unemployment because of the crisis are simply unfounded.

From Table 8.1 it is clear that the changes of greatest salience for respondents have been the changes in food prices. Moreover, when asked whether food consumption in the past month was sufficient for the household's needs, about 20% of households reported that the level of food consumption had been less than sufficient.

Both government and non-government groups have responded to increasing food prices by distributing free or subsidized foods available. Table 8.2 reports on the availability and uptake of assistance in the six months prior to the survey by IFLS2+ households. From Column 5 we see that in fully 86% of IFLS2+ communities some form of assistance was available in the past six months.

With respect to uptake of assistance by households, we consider receipt of any assistance, and assistance by source (family and friend, free food from government or NGOs, or the purchase of subsidized food through "Discount Markets"). Overall, about 44% of households report receiving some type of assistance in the past six months (column 1).[25] Rice was the most common form in which assistance was received. About one-third of households had received rice. Other common forms of assistance are cash, sugar, and cooking oil. Households were about equally likely to receive assistance from friends and family or by purchasing foods at subsidized prices. Direct hand-outs were the least common type of assistance. Friends and family were most likely to provide cash, followed by rice. Government and NGO assistance and subsidized markets concentrated on rice, sugar, cooking oil, and (to some extent) noodles.

While the prevalence of assistance is high, the value is relatively low. Among the 44% of households reporting receipt of some type of assistance, the value is on average less than 1% of their monthly expenditures. The median value of assistance received from family or friends was Rp. 50,000 over a six month period. The figure for aid from the government or from NGOs is Rp. 13,900, while the median savings from purchases at subsidized markets was about Rp. 7,500 (over six months).

Food aid has been an important component of government and NGO efforts to respond to the crisis. We explore the correlates of receipt of food aid in Table 8.3. The results are from a multinomial logistic regression of the likelihood of receiving aid from of the three sources, relative to receiving no aid.[26] We consider rural and urban households separately (urban households are significantly more likely to have received assistance). The correlates we include are per capita expenditure; age, education, and sex of the household head; household composition; and province of residence. All characteristics are measured as of 1997.

In rural areas, households in which 1997 expenditure levels were relatively high were significantly less likely to receive assistance from friends and family in 1998 and marginally less likely to receive assistance from government/NGOs or to purchase subsidized foods. In urban areas the better off households are likely to receive assistance from government or NGOs, but expenditure levels are not related to receipt of assistance from friends and family or to making subsidized purchases. In urban areas, male headed households are less likely to receive assistance from family/friends or from the government or NGOs. Sex of the household head is irrelevant in rural areas. In rural areas, as the proportion of the household's members who are less than 14 rises, the chance that assistance has been received diminishes. There is no effect of household composition in urban areas.

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[25] We asked about a number of types of assistance, including cash, rice, vegetables, sugar, noodles, fruit, meat and fish, snacks, other food, cooking oil, kerosene, and other goods.

[26] Only about 10% of households received aid from more than one source. These households are included in the source for which the value of the aid received was the highest.

The effects of province of residence are quite significant in both rural and urban areas. The reference category is West Java. In rural areas, households in North Sumatra are much less likely to receive aid from family and friends, while households in South Sumatra are particularly likely to have purchased food at subsidized prices. Receipt of assistance from family and friends or through subsidized purchases is relatively high in both urban and rural Central Java relative to West Java. Assistance via subsidized markets is also more common in rural and urban NTB and South Kalimantan and in Jakarta. There are relatively few provincial differences in the likelihood of receiving free food (or other goods) from the government or NGOs, but residents of Jakarta are considerably more likely to have received assistance from all three sources.

Increased distribution of free and subsidized food is a relatively recent effort on the part of the government and other aid groups to respond to the crisis. Historically in Indonesia, the government has promoted economic development by encouraging active participation in development activities by local residents. The activities take a variety of forms, from community meetings to labor on infrastructure projects to children's health groups, and typically involve contributions of time and money by community residents. A possible impact of the crisis is reduced participation in such activities. The results presented in Table 8.4 suggest that there have indeed been relatively sizable and statistically significant decreases in participation rates. In fact, the only activity for which a decrease has not occurred is neighborhood security organizations. Consistent with findings presented in Section 5, women have significantly reduced participation in the Community Health Post (*posyandu*).

Tables 8.5 and 8.6 explore the correlates of participation for men and women, for any activities and then for security posts (men) and *posyandu* (women). Results are presented for participation in 1997, in 1998, and for change in participation between years. For men with respect to participation in any activity, the strongest determinant of change in participation rates is province of residence. Urban residence and residence in South Sumatra is a significantly stronger deterrent to participation (relative to West Java) in 1998 than in 1997. Whereas men in Jakarta were less likely to participate in 1997 than were men in West Java, by 1998 there is no difference. Likewise, in 1997 men in NTB were more likely to participate than men in West Java, but by 1998 there is no difference. It is interesting to note that there is no impact of education or household expenditure on participation in 1997, but by 1998 men at the bottom of the expenditure distribution and men with the lowest levels of education are participating significantly less than their counterparts at higher levels of socioeconomic status. The results for women are somewhat different. The only correlate that changes significantly between 1997 and 1998 is residence in NTB. Women in NTB were significantly more likely to participate in community development activities in 1997 than women in West Java: by 1998 this difference is gone. In both years, women at the top end of the expenditure distribution are less likely to participate, but women with relatively higher levels of education are more likely to participate.

Table 8.6 presents the results for participation in two specific types of activities: security organizations (men only) and the *posyandu* (women only). With respect to security organizations, there is a significant change in the coefficient on age for men 50 and older. Relative to 1997, increasing age for those older than 50 is much less of a deterrent to participation in security organization activities by 1998. There are several changes in the province effects, and they likely reflect a trade-off between concerns with crime versus less time available for community participation. For example, participation in a security organization in Jakarta (relative to West Java) is much more likely in 1998 than in 1997. But by 1998 participation in NTB, relative to West Java, has gone down substantially.

With respect to participation in the *posyandu*, the association between education and participation and between age and participation changes between 1997 and 1998. In 1997 women with higher levels of education are less likely to participate in the *posyandu*. By 1998 education is no longer associated with participation, indicating that the less educated women in particular have reduced their involvement relative to 1997. The effect of age has changed as well. In 1997 participation rates rose with age for women in their 20s and fell with age for women between 30 and 50 (most probably the pattern reflects the ages of the women's children). By 1998 the age pattern has flattened significantly. There are no significant changes in the effects of province of residence on women's participation in the *posyandu*.

The results presented in this section emphasize a number of points. First, the environments in which our respondents live have changed in a number of ways that have made people worse off. Foremost have been the sharp increases in the price of rice and other foods, but increases in the prices of fuel, gold, and health services have also had a negative impact on well-being.

Efforts to assist individuals and households have been relatively widespread. In over 85% of IFLS2+ communities food distribution projects or subsidized markets had been held in the six months prior to the interview. Almost 45% of households had received some sort of assistance in the past six months, although for many households this assistance came from family and friends rather than from the government or NGOs. Moreover, the value of assistance received is relatively low. Formal assistance has focused on distributing or subsidizing rice, sugar, and cooking oil. More urban than rural households have benefited from these efforts.

The food assistance programs are a relatively recent effort to respond to the crisis by making available aid at the community level. Other aspects of community development have suffered. In particular, participation rates in activities such as meetings of local government, neighborhood improvement initiatives, infrastructure projects, and community health posts have decreased significantly. The only activity that does not show decreased involvement by local residents is the security organizations that exist in many communities.

Table 8.1: Perceptions of the Crisis and its Impact on Well-Being

Respondents were asked whether each of the following factors had changed in the past 12 months, relative to the previous year. When respondents reported a change, they were asked how they had been affected by the change.

Factor		Has there been a change, and how has it affected you? No Change	No effect of change	Worse Off	Better Off	Don't Know how affected
Decrease in opport. to earn income	Men	58.7	6.9	22.6	--	11.8
	Women	77.8	4.6	12.6	--	5.0
Increase in opport. to earn income	Men	59.6	16.0	--	12.7	11.8
	Women	74.6	9.6	--	10.8	5.0
Price of rice	Men	0.4	27.7	56.7	2.0	13.2
	Women	0.5	32.5	59.6	1.5	5.9
Price of other food	Men	1.4	22.9	61.7	0.7	13.2
	Women	1.3	25.2	66.9	0.4	6.2
Price of fuel	Men	5.4	36.5	42.4	0.7	15.0
	Women	8.3	39.4	40.6	0.7	11.0
Price of gold	Men	1.3	53.9	19.7	1.2	23.9
	Women	1.0	56.2	25.8	1.9	15.1
Price of health services	Men	17.7	23.6	31.3	1.4	26.0
	Women	17.3	24.7	35.2	1.4	21.4
Interest Rate	Men	9.7	15.7	6.6	1.0	67.0
	Women	8.6	11.6	5.3	0.9	73.6
Assistance from Family*	Men	32.3	4.4	3.0	6.3	12.0
	Women	39.4	5.4	4.5	5.9	5.2
Crime Level	Men	57.0	8.4	13.6	6.7	14.3
	Women	62.0	8.1	16.0	4.4	9.5
Quality of Health Services**	Men	50.7	4.8	3.0	7.9	17.3
	Women	58.0	4.6	2.5	8.9	12.1

* 41.8% of men and 39.6% of women reported that they never receive assistance (question not applicable)
*** 16.3% of men and 13.9% of women reported that they never use health services (question not applicable)

Table 8.2: Receipt of Assistance (Cash, Food, or Non-food) in the Six Months Prior to the Interview

	Receipt of Assist.	By Source: Family/ Friends	Govt. or non-govt.	Purchase at Subsidized mkts	Community-Level Availability
Proportion of households receiving assistance past six months:	44.8	22.9	9.6	22.9	86.3
Proportion of Households receiving:		Type of assistance received by households that received any assistance:			
Cash	15.1	63.7	9.3	--	2.7
Rice	32.5	47.0	86.1	84.5	31.1
Vegetables	2.7	12.1	0.0	0.0	0.5
Sugar	14.2	20.7	35.2	31.4	20.6
Noodles	5.8	7.8	26.4	8.6	14.6
Fruit	2.2	10.1	0.0	0.0	0.0
Meat and fish	1.8	6.5	2.8	0.6	0.9
Snacks	2.0	8.4	0.5	0.0	1.8
Other food	3.4	9.8	6.5	2.4	2.3
Cooking oil	11.9	7.2	35.7	33.3	21.0
Kerosene	0.2	0.4	0.0	0.4	0.9
Other goods	2.4	5.5	2.8	3.5	3.7

Table 8.3: Correlates of Receipt of Assistance in the Past Six Months

Covariates	Rural			Urban		
	Family/ Friends	Govt or NGO	Subsidized Purchase	Family/ Friends	Govt or NGO	Subsidized Purchase
LnPCE	0.781	0.745	0.813	0.957	0.716	0.943
	(2.579)	(1.887)	(1.918)	(0.457)	(2.191)	(0.516)
Head is male	0.696	0.925	0.765	0.555	0.474	0.771
	(1.668)	(0.195)	(1.051)	(2.359)	(2.428)	(0.965)
Education of Head	1.110	0.944	1.052	1.010	0.945	0.904
	(4.407)	(1.231)	(1.949)	(0.476)	(1.860)	(4.185)
Age of head (spline):						
<= 40 years	0.974	0.972	1.030	1.022	1.012	1.020
	(1.360)	(0.831)	(1.235)	(0.944)	(0.364)	(0.812)
> 40 years	1.022	1.006	0.992	0.998	0.997	0.977
	(2.505)	(0.388)	(0.774)	(0.171)	(0.203)	(1.900)
Ln(HH size)	0.959	1.018	1.267	0.923	0.924	1.188
	(0.209)	(0.052)	(1.061)	(0.385)	(0.284)	(0.740)
Prop. 0-14 years in HH	0.382	0.251	0.255	0.937	1.675	2.492
	(2.132)	(1.662)	(2.708)	(0.125)	(0.746)	(1.679)
Province						
North Sumatra	0.317	0.441	0.439	0.693	0.516	1.416
	(2.970)	(1.530)	(1.764)	(0.943)	(1.323)	(0.828)
South Sumatra	1.541	1.734	2.148	1.512	0.768	2.223
	(1.621)	(1.530)	(2.353)	(1.151)	(0.497)	(1.878)
Central Java	3.032	0.163	2.128	3.382	1.089	2.432
	(4.916)	(2.855)	(2.509)	(4.183)	(0.209)	(2.332)
NTB	1.451	0.661	2.485	2.543	0.479	5.195
	(1.437)	(0.990)	(2.946)	(2.628)	(1.202)	(4.198)
South Kalimantan	0.661	0.273	5.619	1.277	0.572	4.338
	(1.062)	(1.701)	(5.536)	(0.554)	(0.821)	(3.410)
Jakarta				1.818	3.867	3.603
				(1.878)	(3.703)	(3.407)
χ^2	216.16			184.45		
Log Likelihood	-1213.10			-1033.55		
Psuedo R^2	0.082			0.082		
Sample size	1263			903		

Notes: Source IFLS2+ and IFLS2. Estimates from multivariate logits are relative risk ratios, where the base category is no assistance. Asymptotic t-statistics are in parentheses.

Table 8.4: Participation in Community Development Activities

	All Resp.	Same Communities			Same Respondents		
	in 1997	1997	1998	Change	1997	1998	Change
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All Adults							
Community Meeting	24.1	22.3	16.6	-5.7	22.7	18.2	-4.5
	(0.3)	(0.6)	(0.5)	(0.7)	(0.6)	(0.6)	(0.8)
Voluntary Labor	30.3	28.9	21.8	-7.0	29.4	23.0	-6.4
	(0.3)	(0.7)	(0.5)	(0.8)	(0.7)	(0.6)	(0.9)
Comm. Improvement	13.3	16.5	13.4	-3.1	16.6	14.5	-2.1
	(0.2)	(0.5)	(0.4)	(0.7)	(0.6)	(0.5)	(0.8)
Men							
Security Organization	32.5	32.1	28.6	-3.5	32.9	30.8	-2.1
	(0.5)	(1.0)	(0.8)	(1.3)	(1.0)	(1.0)	(1.5)
Women							
Women's Group (PKK)	11.9	8.7	6.5	-2.2	9.1	7.3	-1.8
	(0.3)	(0.6)	(0.4)	(0.7)	(0.6)	(0.5)	(0.8)
Comm. Health Post	20.3	20.4	15.1	-5.3	20.5	16.5	-4.0
	(0.4)	(0.8)	(0.6)	(1.0)	(0.8)	(0.7)	(1.1)

Table 8.5: Correlates of Participation in Any Community Development Activity

	Men			Women		
	1997	1998	Change	1997	1998	Change
LnPCE:						
below median	0.838	5.316	4.478	2.175	2.579	0.404
	(0.399)	(2.403)	(1.469)	(1.075)	(1.298)	(0.142)
above median	-2.041	-0.140	1.901	-6.825	-5.199	1.626
	(1.066)	(0.070)	(0.685)	(3.625)	(2.788)	(0.613)
Education (years)	0.305	0.476	0.171	0.905	0.964	0.059
	(1.176)	(1.709)	(0.449)	(3.266)	(3.556)	(0.153)
Age: 20-29 (spline)	0.636	0.725	0.089	0.911	0.744	-0.167
	(5.995)	(6.130)	(0.561)	(8.645)	(6.872)	(1.105)
30-49	0.466	0.294	-0.171	-0.979	-0.405	0.574
	(2.885)	(1.725)	(0.726)	(5.920)	(2.512)	(2.488)
>=50	-0.975	-0.896	0.079	-0.798	-0.924	-0.126
	(5.223)	(4.958)	(0.305)	(4.317)	(5.451)	(0.503)
Ln(HH size)	1.582	7.515	5.933	0.043	0.484	0.441
	(0.700)	(3.132)	(1.800)	(0.020)	(0.230)	(0.147)
urban resident	-2.808	-9.533	-6.725	-0.195	-1.982	-1.786
	(1.334)	(4.280)	(2.195)	(0.094)	(0.975)	(0.615)
Province						
North Sumatra	-50.289	-47.762	2.527	-29.576	-30.463	-0.887
	(13.357)	(12.002)	(0.461)	(7.971)	(8.375)	(0.171)
South Sumatra	-18.218	26.471	-8.253	-14.884	-20.007	-5.123
	(5.410)	(7.445)	(1.685)	(4.307)	(5.925)	(1.060)
Jakarta	-9.700	4.793	14.493	-14.911	-16.945	-2.034
	(2.423)	(1.133)	(2.489)	(3.634)	(4.281)	(0.354)
Central Java	-3.162	2.402	5.564	4.540	-0.377	-4.917
	(1.504)	(0.758)	(1.275)	(1.522)	(0.129)	(1.178)
NTB	8.125	-2.412	-10.537	14.232	3.587	-10.645
	(2.425)	(0.681)	(2.162)	(4.362)	(1.123)	(2.331)
South Kalimantan	-6.270	-11.765	-5.495	-7.656	-12.345	-4.780
	(1.669)	(2.966)	(1.006)	(1.942)	(3.239)	(0.877)
Intercept	57.279	21.606	-35.673	24.487	16.347	-8.140
	(5.276)	(1.875)	(2.254)	(2.377)	(1.607)	(0.562)
Adjusted R^2	0.156	0.153	0.158	0.132	0.098	0.124
F(all covariates)	28.04	27.31	4.41	28.54	20.71	4.83
# observations	2045	2045	4090	2535	2535	5070

Table 8.6: Correlates of Participation in Security Group (Men) and Community Health Post (Women)

	Neighborhood Security Post			Community Health Post		
	1997	1998	Change	1997	1998	Change
LnPCE: (spline)						
below median	-2.108	1.965	4.073	-1.373	-1.938	-0.565
	(0.949)	(0.901)	(1.309)	(0.863)	(1.261)	(0.255)
above median	-3.634	-4.319	-0.955	-4.030	-2.501	1.529
	(1.659)	(2.185)	(0.337)	(2.723)	(1.735)	(0.740)
Education (years)	-0.164	0.422	0.586	-0.335	0.290	0.626
	(0.595)	(1.540)	(1.509)	(1.538)	(1.386)	(2.069)
Age: 20-29 (spline)	0.757	0.649	-0.108	1.364	0.865	-0.499
	(6.727)	(5.566)	(0.663)	(16.473)	(10.337)	(4.237)
30-49	0.340	0.234	-0.106	-2.215	-1.472	0.743
	(1.966)	(1.391)	(0.440)	(17.030)	(11.812)	(4.125)
>=50	-1.315	-0.867	0.448	-0.022	0.066	0.088
	(6.646)	(4.872)	(1.683)	(0.154)	(0.500)	(0.450)
Ln(HH size)	3.724	0.570	-3.154	1.872	2.341	0.468
	(1.555)	(0.241)	(0.937)	(1.115)	(1.439)	(0.200)
urban resident	0.468	-2.235	-2.703	-2.739	-5.611	-2.872
	(0.210)	(1.018)	(0.864)	(1.679)	(3.570)	(1.268)
Province						
North Sumatra	-31.845	-33.204	-1.359	-10.042	-14.646	-4.604
	(7.983)	(8.467)	(0.243)	(3.443)	(5.208)	(1.136)
South Sumatra	-5.124	-8.091	-2.967	-10.412	-8.113	2.300
	(1.436)	(2.309)	(0.593)	(3.832)	(3.108)	(0.610)
Jakarta	0.880	17.872	16.992	-5.281	-2.810	2.471
	(0.207)	(4.288)	(2.857)	(1.637)	(0.905)	(0.552)
Central Java	-15.619	-7.888	7.731	-1.882	-2.171	-0.289
	(4.915)	(2.526)	(1.735)	(0.803)	(0.961)	(0.089)
NTB	9.444	-25.546	-34.990	2.858	-1.576	-4.435
	(2.660)	(7.324)	(7.030)	(1.114)	(0.638)	(1.245)
South Kalimantan	1.589	-2.850	-4.439	-4.052	-7.947	-3.896
	(0.399)	(0.729)	(0.796)	(1.323)	(2.697)	(0.916)
Intercept	28.253	14.474	13.779	17.796	19.459	1.663
	(2.456)	(1.275)	(0.852)	(2.197)	(2.474)	(0.147)
Adjusted R^2	0.116	0.115	0.116	0.187	0.111	0.154
F(all covariates)	20.19	20.02	19.50	42.59	23.50	3.85
# observations	2045	2045	4090	2535	2535	5070

9. Summary

Indonesia has experienced vast changes in the both the economic and the political environment during 1998. Few Indonesians have remained untouched by the events of the year, but the effects of the economic crisis on welfare vary by region and across socio-economic and demographic groups. This study has sought to provide information on those topics, based on data from the Indonesia Family Life Survey (IFLS), an on-going longitudinal survey of individuals, households, and communities in Indonesia. For the purpose of understanding how the economic crisis has affected welfare, we compare the responses of individuals interviewed in the second half of 1997 to responses obtained through reinterviews with those same individuals in the second half of 1998.

This study presents information on changes in a number of dimensions of family and individual well-being: these include expenditure patterns, employment and earnings, education, use of health care and family planning, and health status. In addition to a comprehensive household survey, the study contains an integrated community and facility survey that documents changes in the prices, quality, and availability of health and family planning services at public and private facilities in the communities in which our respondents live. We do this not only because changes in services may affect well-being of the respondents, but also because it is these services that are the most amenable to policy intervention. We conclude with a discussion of respondents' perceptions of how the crisis has affected them and what coping strategies they have adopted to mitigate any deleterious affect of the crisis.

With respect to what respondents say about the crisis, it is clear that rising food prices are perceived as having had the most deleterious effect on well-being. Although some households have benefited from government and nongovernment efforts to make available free or subsidized food, these programs have reached urban residents far more frequently than rural residents.

Accompanying the rising cost of food, there has been a change in patterns of household expenditures. The share of the budget spent on food, particularly staples, has increased. To compensate, households have reduced expenditures on other, predominantly nonessential, goods and services. However, the share of the budget spent on health services and education has also declined, especially for the poorest.

The decreases in expenditures on health and education are reflected in declining school enrollment rates, particularly for children from the poorest households. Use of government health clinics and community health posts has declined sharply as well, and has been accompanied by a substantial drop in the proportion of children under three who have recently received Vitamin A (which protects against blindness and illness). To the extent that investments in education and health care yield positive impacts far into the future, the children who are missing out now may bear the costs of the crisis for years to come.

If policies are to alleviate the impact of the crisis, they must reach the most vulnerable and those most likely to suffer grave consequences in the longer-term. Policies that are not well-targeted will waste resources. Our results identify young children from poor households as being particularly hard hit by the crisis. Interventions that reduce the costs of schooling or public health services or that raise the quality of public health services are likely to be especially profitable investments. While income support and food assistance programs have some potential to alleviate the effects of the crisis, thus far such programs do not appear to have benefited the neediest.

By looking across a range of indicators of well-being, our results show clearly that the effects of the economic crisis are heterogeneous and that households have responded in different ways. Precisely because of this heterogeneity, policymakers must continue both to monitor the crisis carefully and to evaluate interventions. Policies will need to be adjusted as the medium- and longer-term impacts of this crisis emerge.