



Pakistan Policy Note 8

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Recovering Strong Positive Trends in Poverty and Opportunity

Household survey data point to declining poverty over the past decade, despite some difficulties with data from three provinces. Indeed, Pakistan has turned economic growth into poverty reduction. In Punjab (the largest province, where the data appear more reliable and are thus analyzed in more detail), poverty has fallen considerably, from 33.5 percent in 2001/02 to 16.4 percent in 2007/08, after adjusting for higher food prices. This improvement was driven largely by increasing returns in the nonfarm sector, in both urban and rural areas. Over the period, the growth of per capita consumption of the bottom 40 percent of Punjab's population exceeded GDP per capita growth. Subsequently, over 2007/08–2010/11, per capita real consumption growth in Punjab was stagnant, and the equality of opportunity for primary education completion rates seemed to improve but alongside a slowdown in the rate of improvement in indicators for water and sanitation and for primary enrollment. Nationwide, the rate of improvement for gas and electricity deteriorated. Institutionally, there is a need for an independent expert committee to work with the Pakistan Bureau of Statistics to strengthen poverty monitoring.

This note sheds some light on the last decade's poverty trends in Pakistan. Based on the Household Income and Expenditure Surveys in 2001/02, 2004/05, 2007/08, and 2010/11, the broad trend appears to be one of substantial poverty reduction. However, given data concerns, it is premature to draw conclusions beyond this broad trend (see Box 1 below). Nevertheless,

data from Punjab are mostly free of anomalous results, so this note provides more detailed analysis for that province.

In addition to providing information on poverty headcount rates, the note introduces a possible measure of shared prosperity applied to the consumption growth of the bottom 40 percent of the population. This measure—an indicator the World Bank is testing for application worldwide—recognizes that consumption growth in the bottom 40 percent will matter most in building shared prosperity. (It differs from the Gini coefficient, which pays attention to the equitable distribution of wealth but not growth at the bottom of the curve.)

As changes in social indicators are also important, this note updates the Human Opportunity Index for 2010/11. It builds on earlier work that explored the trend in equality of human opportunity between 1998/99 and 2007/08. Historically, Pakistan has done better in reducing consumption-based poverty measures than in improving social indicators.

Trends

National

Poverty reduction in Pakistan, as in most countries, is aligned closely with its growth in per capita income. While there are data concerns, the overall poverty rate appears to have fallen steeply over the

past decade (Figure 1). China and Indonesia cut poverty substantially while their GDPs per capita increased sharply. Poverty reduction is strongest at the initial phase of growth, and as a country moves up the growth scale over time, it takes a greater increase in GDP per capita to achieve a given percentage point reduction in poverty, with an even bigger impact in moving down at the lower levels of poverty. The line for Pakistan between 2001/02 and 2007/08 is quite steep, indicating a much stronger proportional reduction in poverty for the improvement in GDP per capita—an experience similar to those of other countries. Many other countries, either over their entire period or over a limited period, also experienced significant reductions in poverty relative to their gains in GDP per capita. Further progress will require not only sustained growth but also stronger growth.

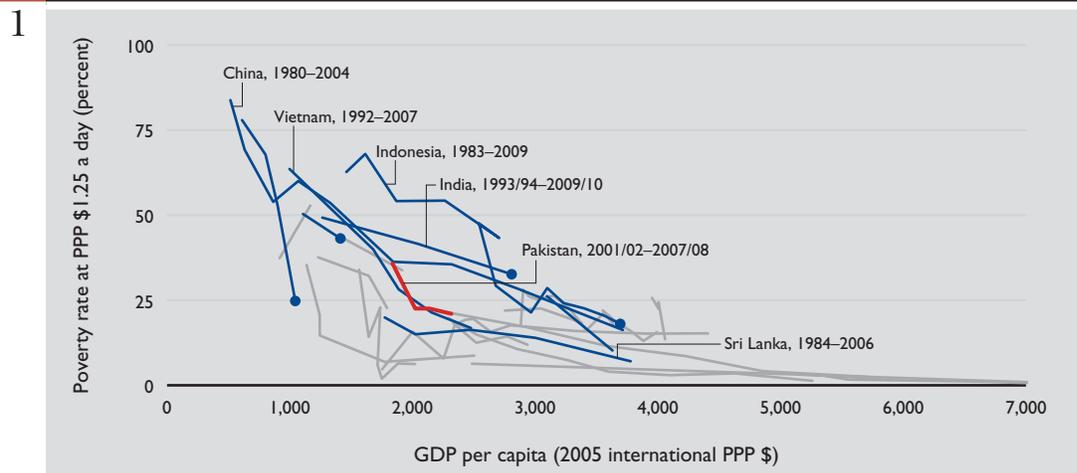
This sharp reduction in poverty over a short period also suggests that poverty in Pakistan is highly elastic to growth. Figure 2 compares the elasticity of poverty reduction with respect to growth across countries. From 2001/02 to 2007/08, Pakistan had high elasticity—well above the mean and toward the upper end of the distribution of developing countries.

However, while Pakistan is doing well converting growth into poverty reduction, it is struggling to sustain that growth. Since 1985, only once has

Pakistan’s GDP per capita in 2005 international \$ PPP grown at least 3 percent a year for four consecutive years (2004–07)—and never has it for five consecutive. Unsurprisingly, countries that have been better at reducing poverty tend to be better at generating sustained growth (Figure 3).

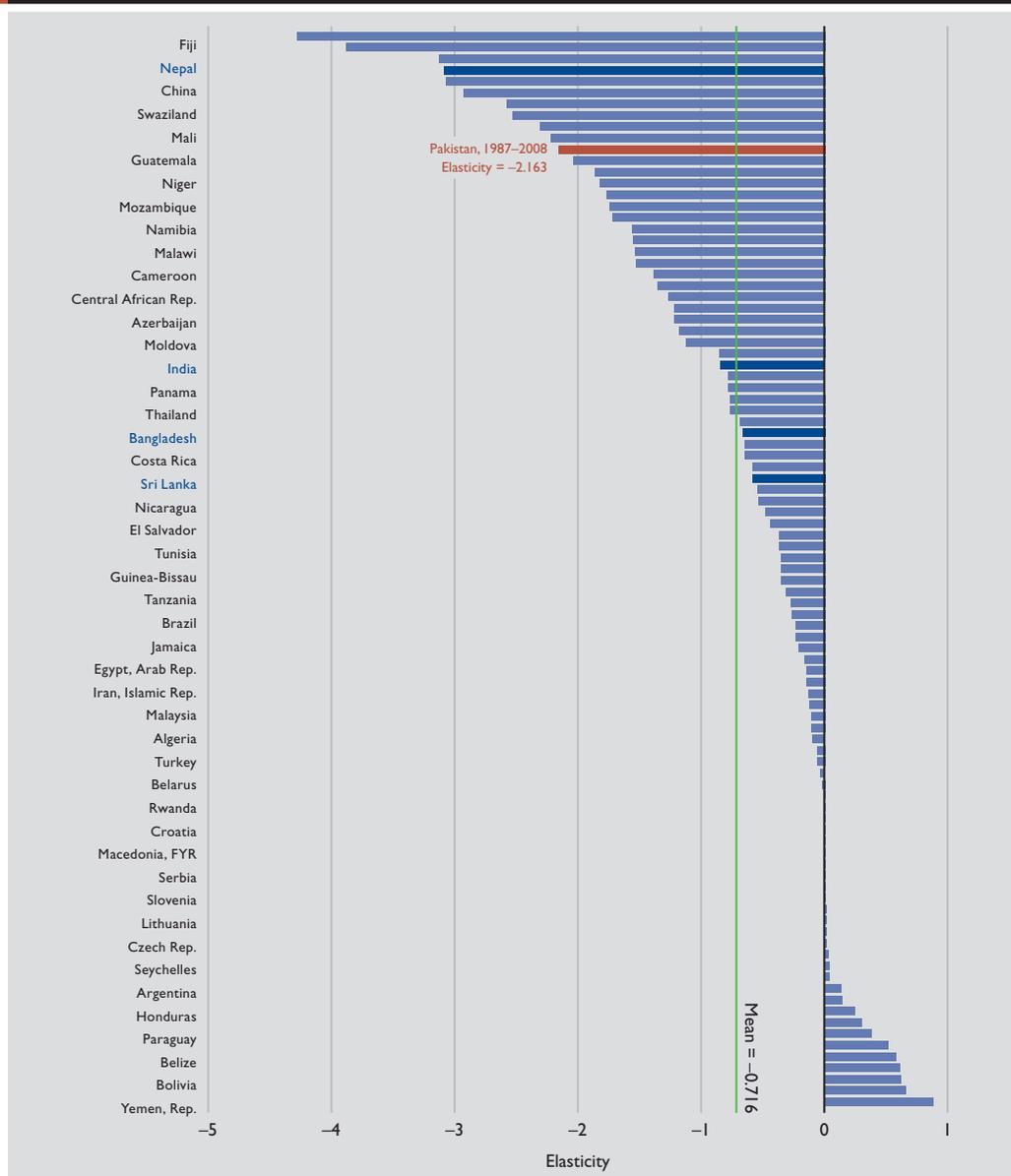
This observation—that Pakistan is successful in reducing poverty when GDP grows but cannot sustain that growth—has two important policy implications. First, with more growth interruptions, an adequate social protection system becomes more important. The poor are vulnerable to shocks—be they of natural disasters, health, or macro policy. An adequate system would ensure that when shocks hit, the poor and vulnerable can still maintain the investments they need to increase their incomes and their children’s welfare. With the advances in the Benazir Income Support Programme, Pakistan has made solid progress in developing such a system in recent years. The second policy implication is that a renewed effort to address the problems that work against sustained growth would be well justified for faster poverty reduction. This effort should lead to policy priorities for poverty reduction (such as more focus on the macro environment) different from those in countries better able to sustain growth but unable to convert that growth into rapid poverty reduction.

Figure 1 Time path of the relation between poverty and GDP per capita, Pakistan and selected countries



Note: Each line represents the history of a country. For China, India, Indonesia, Sri Lanka, and Vietnam, the time paths are shown over a longer period; for other countries performance is shown only since 2000.
 Source: Author’s calculations. Poverty data are from PovcalNet, and GDP per capita data are from the World Development Indicators database.

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Note: The elasticities are calculated over the entire range for which data are available (which varies for each country). Thus only one elasticity is presented per country. The figure only shows countries with at least six years between the first and last observation. The distribution is trimmed by dropping observations where the elasticities were less than -2 and greater than 2 .

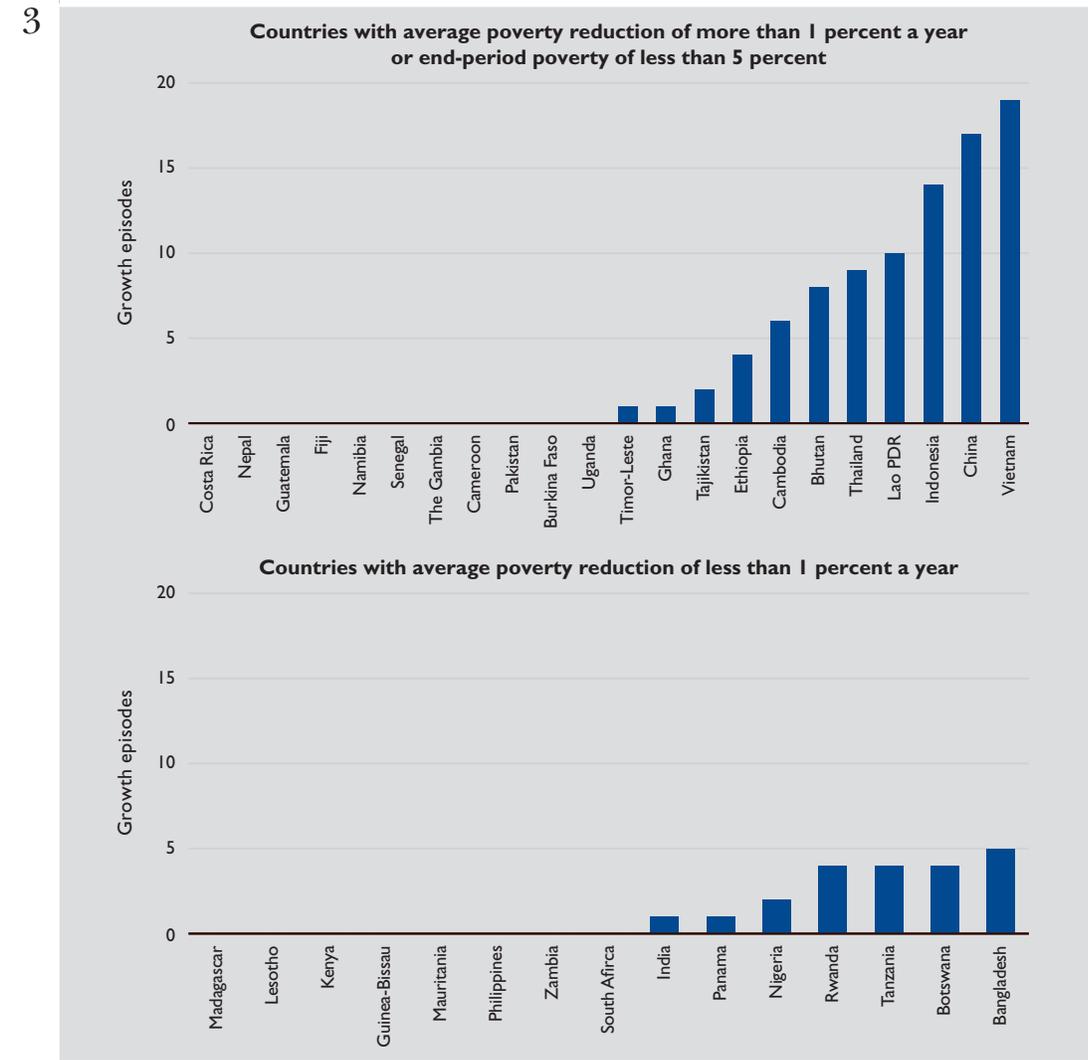
Source: Author's calculations. Poverty in the poverty elasticity calculations is the \$1.25-a-day poverty headcount in international 2005 \$ PPP from PovcalNet. Growth is calculated for GDP per capita (international 2005 \$ PPP) from the World Development Indicators database.

In Punjab, overall

Given other provinces' data concerns, the focus is on Punjab, the only province free of anomalous results (Box 1). As the largest province, Punjab can provide some insight into the country as a whole. But even here it is necessary to adjust for increasing relative prices of food on the poverty line. The official poverty line uses the general consumer price index to adjust the

consumption base, but starting in 2006/07 the index for food and other essential items began to grow faster than the general consumer price index. Table 1 illustrates how the poverty line, in both urban and rural areas, would change once such an adjustment is made. The overall trend remains strongly toward poverty reduction, from 33.5 percent to 14.6 percent rather than to 11.8 percent. And rural poverty remains much higher than urban poverty,

Figure 3 Number of growth episodes when GDP per capita grew at least 3 percent a year for five consecutive years



Note: The top panel shows the distribution of episodes of five consecutive years of growth above 3 percent for countries that started with poverty rates of more than 20 percent and that have averaged at least a 1 percentage point reduction a year or that had poverty rates below 5 percent at the end of the period. The bottom panel shows the distribution for countries that had initial poverty rates of more than 20 percent and averaged less than a 1 percentage point reduction a year. Source: Author's calculations based on World Development Indicators database.

Box 1 Concerns over poverty data in three provinces

1 Pakistan's household survey data has the potential to provide useful evidence for guiding policy decisions on reducing poverty. Yet examining the poverty data from four recent Household Income and Expenditure Surveys at three-year intervals (2001/02, 2004/05, 2007/08, and 2010/11) reveals some data concerns that need to be resolved before a more detailed assessment can be made.

These concerns include large reductions in rural poverty in Sindh combined with a decrease in food expenditure as a proportion of the total; large swings in poverty in Balochistan and Khyber Pakhtunkhwa (they are conflict-prone, so systematic data capture from all regions needs to be confirmed); the exclusion of many durable consumer goods from the estimate of total expenditure (which can understate improvements in poverty reduction as income grows, as well as the impact of an economic downturn); and the need to update the poverty line to account for changes in relative food and nonfood prices (as when food prices increase, higher expenditure will be required to generate the same minimum calorific intake).

Until these problems are resolved, it will remain difficult to drill down to more detail using the national poverty estimates—hence the spotlight on Punjab, the only province free of anomalous results. Clearing up the concerns on national poverty data requires a review of the data collection practices in each province for each survey year. This can be done only with staff from the Pakistan Bureau of Statistics, who would have detailed information on field practices.

Table

Illustrative example of the effect of adjustment of poverty line to the increase in food prices relative to the general consumer price index, Punjab

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	Adjustment of original poverty line using general consumer price index				Adjustment of original poverty line with adjustment for increased relative food prices in poverty line			
	Nominal poverty line	All Punjab	Urban	Rural	Nominal poverty line	All Punjab	Urban	Rural
2001/02	723.4	33.5	24.4	37.1	723.4	33.5	24.4	37.1
2004/05	878.6	24.3	17.3	27.5	888.2	25.0	18.2	28.1
2007/08	1,141.5	14.1	9.0	16.5	1,179.3	16.4	10.8	19.0
2010/11	1,671.7	11.8	5.3	14.9	1,771.4	14.6	6.5	18.4

Source: Author's calculations based on Household Income and Expenditure Surveys 2001/02, 2004/05, 2007/08, and 2010/11.

but some rates of poverty reduction would be somewhat slower, particularly in the most recent period. This adjustment is only illustrative, however.

Ideally, the poverty line should be recalculated, using either the 2007/08 or 2010/11 Household Income and Expenditure Survey, at which time the government should also discuss the choice of price index to adjust the poverty line for inflation. It would be useful to have an expert committee pursue these proposed changes and resolving some of the anomalous results, work with the Pakistan Bureau of Statistics, and recommend ways that more reliable, regular, and timely poverty data can be produced and made available to the public.

In Punjab, by income group

Overall poverty reduction is important, but it is equally important to disaggregate the data to see the impacts at different incomes. Figure 4 presents the growth in consumption at each income group for the province as a whole and for urban and rural populations for the three growth periods. During the first growth period (2001/02–2004/05), poverty reduction was spurred by good consumption growth among all income groups, though the wealthy tended to benefit more. In the second (2004/05–2007/08), overall growth in consumption remained strong but was most pronounced in the lowest income groups. In the third (2007/08–2010/11), growth was far lower among all percentiles, as positive growth in urban areas was outweighed by negative growth across all percentiles in rural areas, hence the reduced rate of poverty

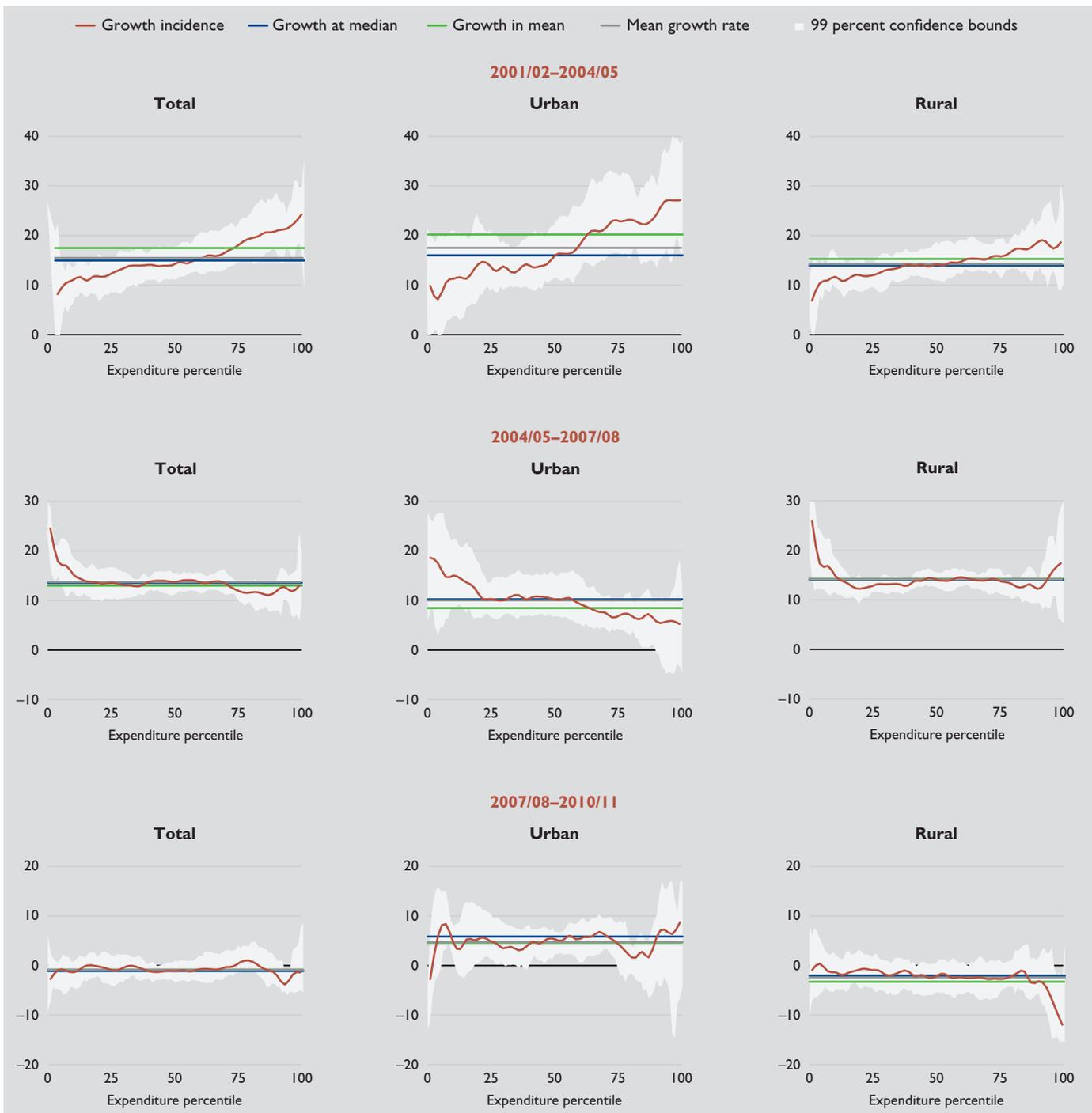
reduction. These growth incidence curves should be viewed with an appreciation of population movement to urban areas. Indeed, although the share of the rural poor stayed roughly constant at 85 percent, overall poverty rates would have been higher without the migration from higher poverty rural areas to lower poverty urban areas.

The bottom 40 percent can fully benefit from growth. Another indicator of whether the lower income population is benefiting fully from growth and poverty reduction is to look at the growth rate of the lower 40 percent of the population—a proxy measure of shared prosperity. Table 2 presents information on the growth of consumption of that 40 percent relative to the entire distribution and to the growth rate of real GDP per capita. During the first two periods, growth of the bottom 40 percent exceeded the growth of GDP per capita. Only in the last period did growth of that 40 percent fall below the growth of per capita GDP—yet it still stayed above that of the entire distribution. Thus for Punjab at least, it would appear that the bottom 40 percent can fully benefit from growth.

The end of growth tends to signify an end to poverty reduction. The problem seems to be more the history of overall inconsistent growth with short periods of positive (but not terribly high) growth not being sustained over long periods (see Table 1 and Figure 2). One final observation: the bottom 40 percent tends to be more rural than the top 60 percent. However, this does not mean that the bottom 40 percent are all in rural areas and the top 60 percent are all in urban areas (Table 3).

Figure 4 Growth incidence curves (for three-year periods), Punjab

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Note: The growth rates are over the entire three-year period (not annualized). The time periods are the same so that the growth can be compared directly. The scales of the various growth incidence curves are different to show more detail. Thus, in comparing the figures, please note the scale of the y axis.

Source: Author's calculations based on Household Income and Expenditure Surveys 2001/02, 2004/05, 2007/08, and 2010/11.

Human Opportunity Index

An opportunity can be defined as a good or service important enough to be made available to all, regardless of background. In most societies, basic

education, health, and infrastructure services are considered opportunities. An opportunity is said to be distributed according to a principle of equality of opportunity if circumstances exogenous to the individual—such as birth

Table 2 Mean real consumption and growth in mean real consumption per adult equivalent of bottom 40 percent of population and total population

	National Growth of GDP per capita (constant local currency units; percent)	Punjab Growth of mean real per capita consumption expenditure	
		All households (percent)	Bottom 40 percent (percent)
2001/02–2004/05	3.2	5.0	3.9
2004/05–2007/08	4.5	4.8	5.2
2007/08–2010/11	1.1	–0.6	0.1

Source: GDP per capita from the World Development Indicators database; growth rate of mean real per capita consumption expenditure—author's calculations based on Household Income and Expenditure Surveys 2001/02, 2004/05, 2007/08, and 2010/11.

Table 3 Distribution of population in bottom 40 percent and top 60 percent of real monthly consumption per capita

(percent)	Bottom 40 percent		Top 60 percent	
	Urban	Rural	Urban	Rural
	2001/02	22	78	34
2004/05	23	77	37	63
2007/08	23	77	37	63
2010/11	20	80	40	60

Source: Author's calculations based on Household Income and Expenditure Surveys 2001/02, 2004/05, 2007/08, and 2010/11.

place, gender, ethnicity, income, and education of parents—have no bearing on how the opportunity is distributed in the population. The Human Opportunity Index (HOI) combines the overall coverage rate of the opportunity with a “penalty” for the share of access to opportunities distributed unequally.¹

Opportunity is picking up. Figures 5 and 6 measure the education and sanitation opportunities for children in Pakistan. Opportunity is growing in both urban and rural areas, a very positive sign. Urban children have more absolute opportunity than rural children, but the rate of growth in rural areas is growing faster. The slowing rate of opportunity in sanitation is worrying, however, as it can have implications for stunting.

There is a mixed picture of opportunity by province. Figures 7 and 8 provide the same information but for the other provinces. It is important to look at both the level of coverage and HOI as well as their growth to judge whether there may be cause for concern. In primary completion, there appears to be a problem in Sindh. The level is still low, and the rate of growth is low and showed little improvement in 1998/99–2007/08 and 2007/08–2010/11. By contrast,

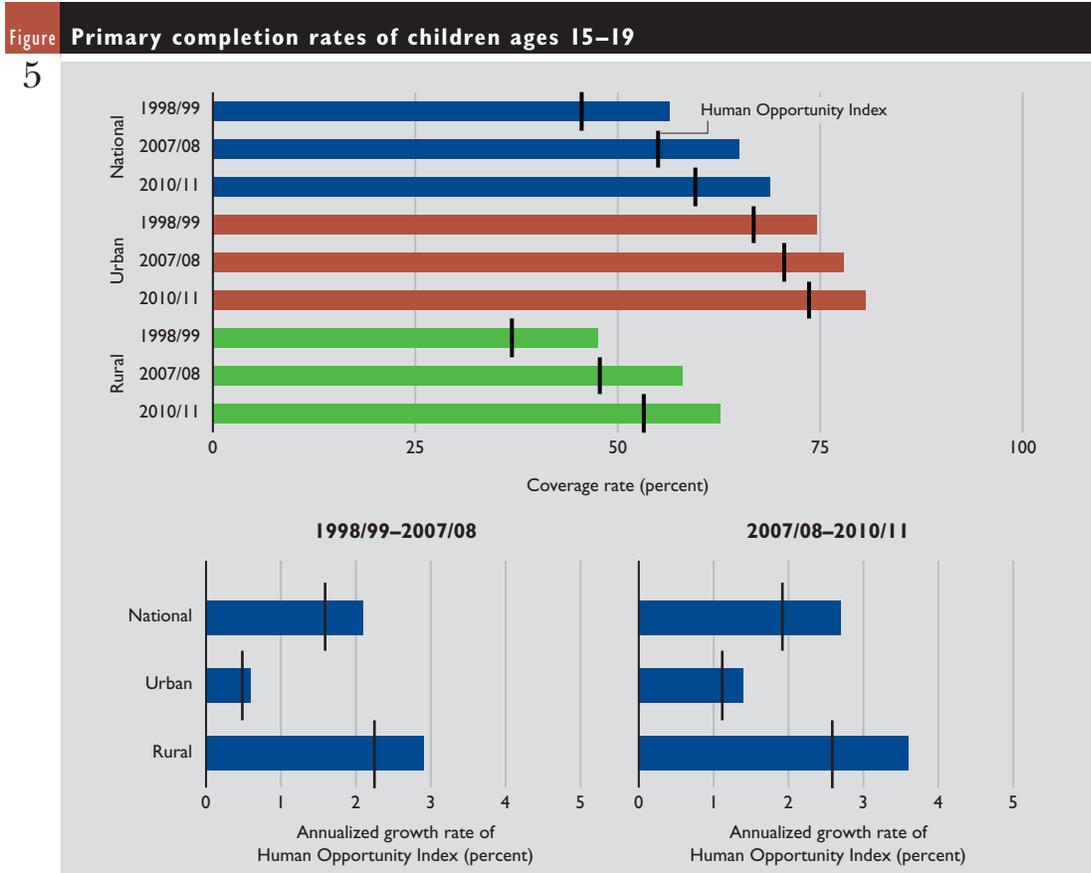
while Balochistan and Khyber Pakhtunkhwa were behind Punjab and Sindh, the pace of progress in the two provinces has picked up. In sanitation, there are striking differences in the pace of improvement, with good recent progress in Balochistan and Sindh but decreases in HOI in Khyber Pakhtunkhwa and Punjab.

Improvement is slowing some. Table 4 provides a summary of all the indicators that could be readily analyzed using the Social and Living Standards Measurement Survey. In general, the annual pace of improvement in the indicators has slowed over the latest period relative to 1998/99–2007/08, apart from the primary completion rate. The slippage is seldom much, but in sanitation, gas, electricity, and primary enrollment the reduction is noteworthy—especially as Pakistan has not reached full coverage in these areas.

Rather than repeating similar figures for all the indicators, the interested reader can go directly to a website and explore interactive “dashboards.”²

Conclusions

Pakistan has a rich set of data that suggest a decline in poverty over the past decade. The data contain



Note: The top panel shows the coverage rate for each year (shown by the bar) and the value of the inequality-adjusted coverage rate, the Human Opportunity Index (shown by the line in the bar). The closer the line to the end of the bar, the smaller the penalty. The two bottom graphs show the growth rate of the Human Opportunity Index, with the line in the bar showing the division between growth in coverage and growth in equality.
 Source: Pakistan Social and Living Standards Management Surveys 1998/99, 2007/08, and 2010/11.

some concerns and need to be considered with caution, but the data for Punjab are free of some of the other provinces' anomalous results. The Household Income and Expenditure Survey data for Punjab tell us that between 2001/02 and 2007/08 poverty declined rapidly, especially for the rate of growth of real GDP per capita. Much of this decline was driven by increases in returns in the nonfarm sector in urban and rural areas, which reflects an increase in the relative price of labor. The rate of poverty reduction, however, appears to have slowed since, and without population movement from rural to urban areas, poverty would have been worse.

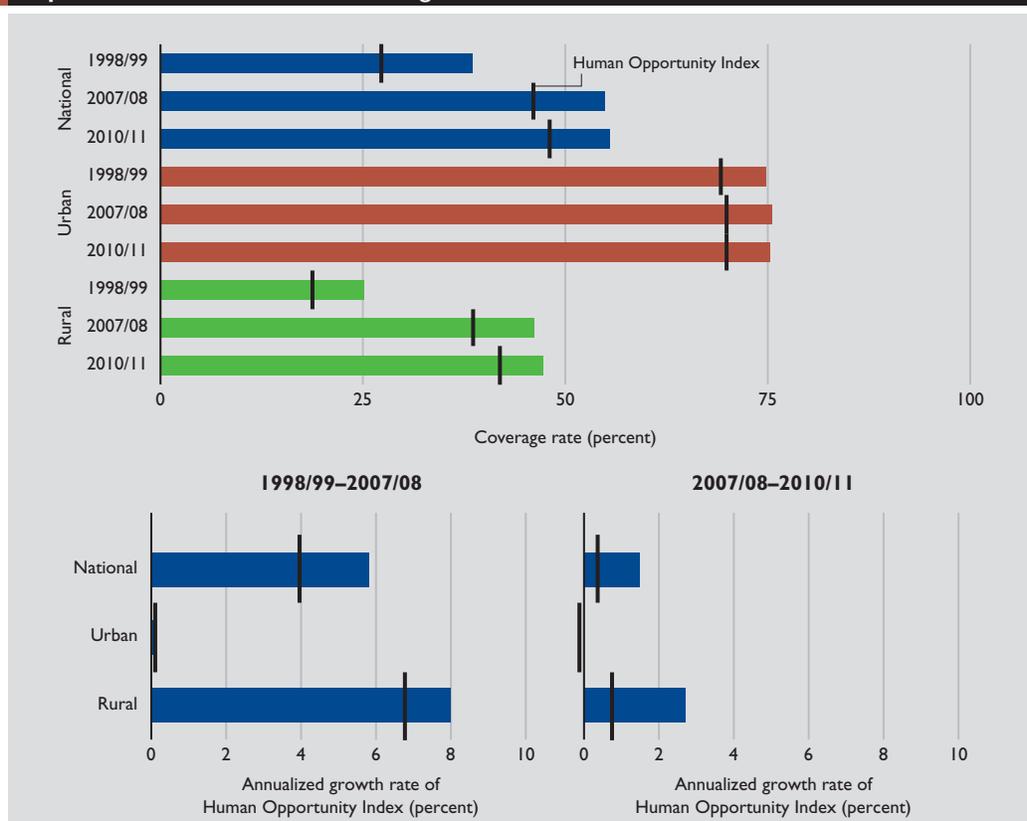
Over 2001/02–2007/08, growth of mean per capita consumption of the lowest 40 percent of the population increased faster than real per capita GDP. When growth in per capita GDP declined, growth rates in per capita mean consumption expenditure and poverty reduction also declined.

International comparisons suggest that Pakistan has been a good performer in turning growth into poverty reduction. Pakistan has demonstrated that it can reduce poverty even at the relatively low rates of growth of 3.2–4.5 percent—but not at growth of GDP per capita of 1 percent. Countries that are more successful in reducing poverty tend to be better at generating sustained growth. The issue for Pakistan will thus be sustaining growth. It has had only one period of four—and unlike many other developing countries, never five—consecutive years of growth of GDP per capita in international \$ PPP above 3 percent. Because it is subject to stop-go growth and to many natural disasters, it has to ensure a strong safety net program as part of an overall poverty reduction strategy—like the Benazir Income Support Programme—though this is no substitute for sustained growth.

Results from the Household Income and Expenditure Surveys data on trends in social indicators can be

Figure Improved sanitation for children ages 0–16

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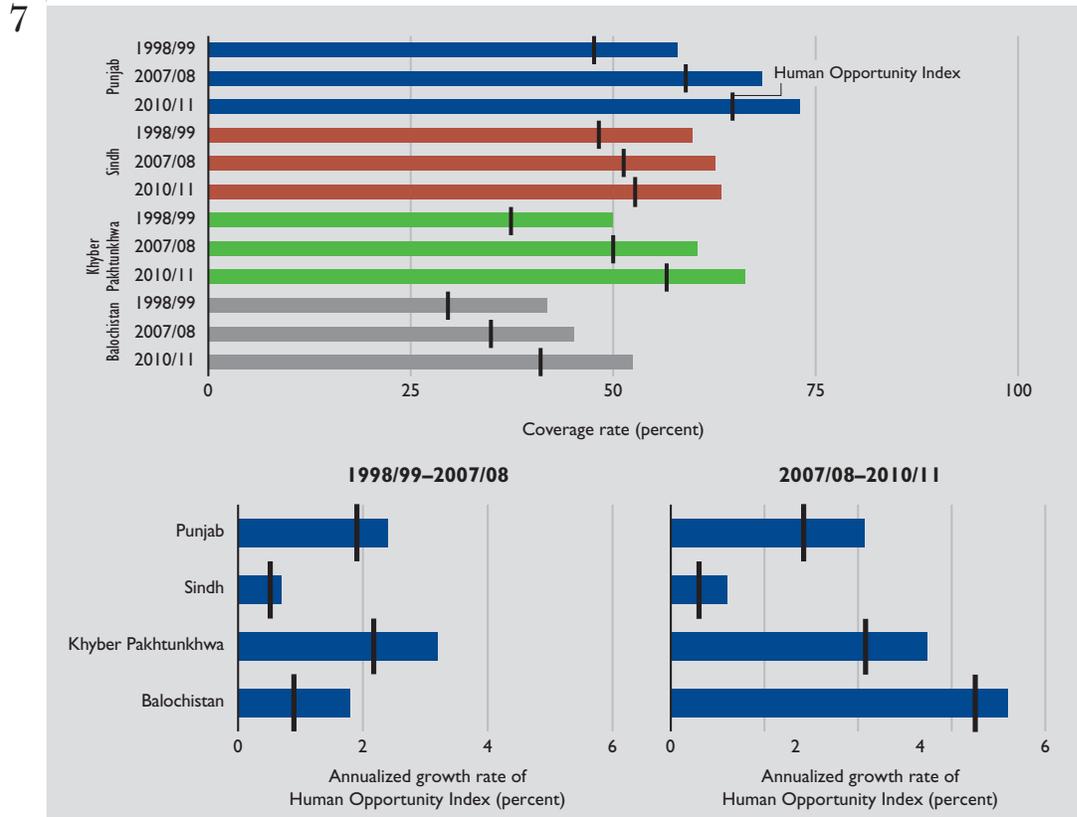
Note: The top panel shows the coverage rate for each year (shown by the bar) and the value of the inequality-adjusted coverage rate, the Human Opportunity Index (shown by the line in the bar). The closer the line to the end of the bar, the smaller the penalty. The two bottom graphs show the growth rate of the Human Opportunity Index, with the line in the bar showing the division between growth in coverage and growth in equality. Source: Pakistan Social and Living Standards Management Surveys 1998/99, 2007/08, and 2010/11.

used immediately to guide policy, though more work is required to increase confidence in the poverty estimates. The analysis for this note could be carried out readily outside Punjab, as soon as some potential problems are resolved. Until then, some caution should be exercised in generating national figures on poverty. The problems would be best addressed by an independent task force of experts consisting of representatives from the Pakistan Bureau of Statistics and from the community of poverty researchers.

The HOI can be useful in identifying whether there has been progress in coverage and equality of service provision. Analysis of level and growth together provides an indication of where increased efforts are needed. The pace of improvement in sanitation has declined. This is likely to have

important implications for the pace of improvement in nutrition outcomes, because there is increasing evidence that sanitation plays a very important role in affecting stunting—particularly in South Asia. There has been some good news with improvements in gender equality—and the HOI analysis provides a useful metric to gauge whether inequality in social indicators is narrowing. Finally, the last three years have seen some sizable differences in the improving social indicators. Sindh has been lagging in its primary completion rates, and Khyber Pakhtunkhwa has been lagging in coverage of improved sanitation. Policy makers and interested readers can explore the details of performance of the social indicators through interactive dashboards that have been prepared to complement this note (see *References*).

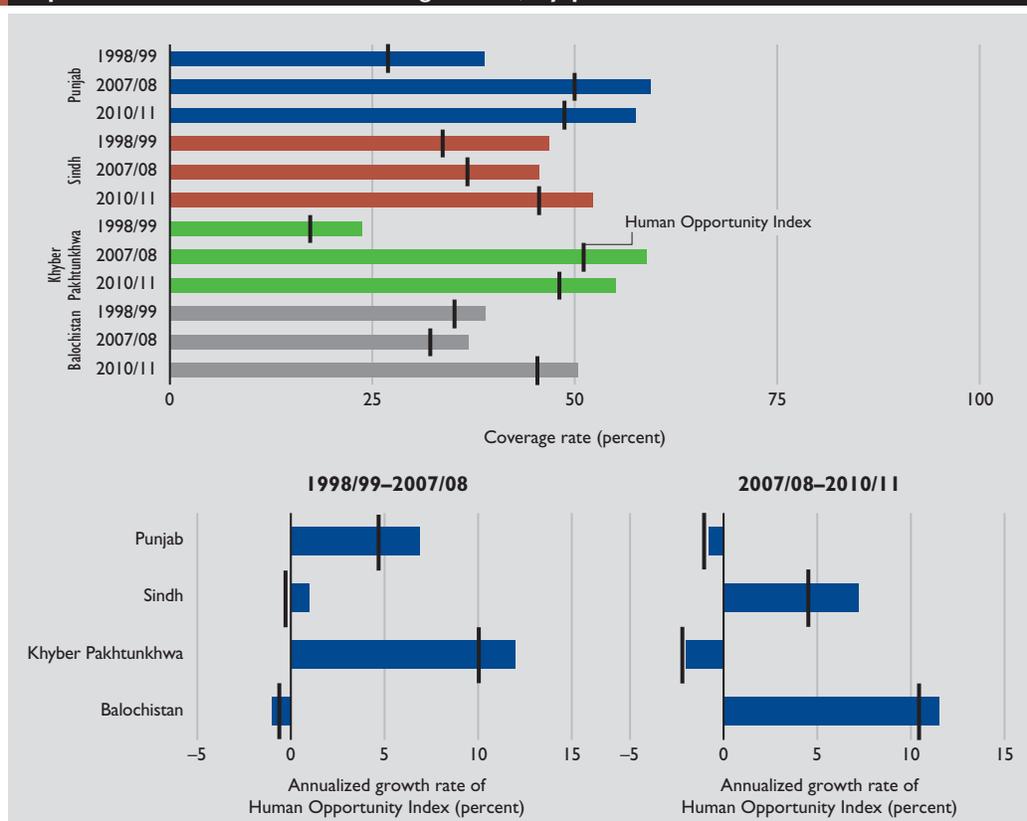
Figure 7 Primary completion rates of children ages 15–19, by province



Note: The top panel shows the coverage rate for each year (shown by the bar) and the value of the inequality-adjusted coverage rate, the Human Opportunity Index (shown by the line in the bar). The closer the line to the end of the bar, the smaller the penalty. The two bottom graphs show the growth rate of the Human Opportunity Index, with the line in the bar showing the division between growth in coverage and growth in equality.
 Source: Pakistan Social and Living Standards Management Surveys 1998/99, 2007/08, and 2010/11.

Figure 8 Improved sanitation for children ages 0–16, by province

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Note: The top panel shows the coverage rate for each year (shown by the bar) and the value of the inequality-adjusted coverage rate, the Human Opportunity Index (shown by the line in the bar). The closer the line to the end of the bar, the smaller the penalty. The two bottom graphs show the growth rate of the Human Opportunity Index, with the line in the bar showing the division between growth in coverage and growth in equality.
Source: Pakistan Social and Living Standards Management Surveys 1998/99, 2007/08, and 2010/11.

Table 4 Trends and average annual change in Human Opportunity Index

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	1998/99	2007/08	2010/11	Average annual change in Human Opportunity Index (percent)	
				1998/99–2007/08	2007/08–2010/11
Education					
Primary enrollment	47.8	66.6	68.5	3.7	1.0
Secondary enrollment	41.8	55.0	59.0	3.1	2.3
Primary completion	45.6	55.0	59.7	2.1	2.7
Secondary completion	18.6	24.5	26.6	3.1	2.6
Health					
Percentage of births assisted by traditional and formal birth attendants	71.1	80.2	80.6	1.3	0.2
Percentage of births assisted by formal birth attendants	12.7	30.4	37.4	9.7	6.9
Institutional birth	10.8	27.7	34.9	10.5	7.7
Any postnatal care	6.0	15.7	21.1	10.7	9.8
Ever immunized	76.6	94.1	95.3	2.3	0.4
Full immunization (card and self-reported)	43.2	68.9	71.0	5.2	1.0
Full immunization (card)	25.4	45.1	25.1	6.4	–19.6
Free of diarrhea in last 30 days	86.8	88.6	87.6	0.2	–0.4
Infrastructure					
Gas	7.0	14.2	15.9	7.9	3.8
Electricity	61.7	84.7	87.6	3.5	1.1
Sanitation	27.3	46.0	48.0	5.8	1.5
Water	71.5	84.6	82.5	1.9	–0.9

Source: Author's calculations based on Household Income and Expenditure Surveys 1998/99, 2007/08, and 2010/11.

Notes

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1. Recently developed at the World Bank, the HOI has been estimated for more than 20 countries in Latin America and Africa.
2. Links to the dashboards can be found in the *References* section of this note.

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