Assessing Absolute and Relative Poverty Trends with Limited Data in Cape Verde

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CHAPTER 5

Assessing Absolute and Relative Poverty Trends with Limited Data in Cape Verde

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Cape Verde shifted from a socialist to a capitalistic model in the late 1980s. This shift enabled the population to benefit from rapid economic growth, but concerns have been expressed about a potential increase in inequality. Two household surveys with consumption data implemented in 1988–89 and 2001–02 provide information that can be used to assess the impact on welfare of this policy shift. Initial estimates based on these two surveys suggested that there had been an increase in poverty over time, but this was mainly due to the adoption of a relative measure of poverty and to comparability issues between the surveys. The task of assessing the trends in poverty and inequality was also made more difficult because the unit level data of the first survey are not available. For the period 1988–89, the only information at our disposal consists of a number of tables on the distribution of income in the original report prepared 15 years ago on that survey. This makes it necessary to estimate poverty and inequality using group data. In this paper, we use the Poverty module of SimSIP in order to obtain new poverty and inequality trends over time with group data. We find that despite an increase in inequality over time, and thereby an increase in relative measures of poverty, absolute poverty measures have been reduced dramatically thanks to rapid growth.

Cape Verde is a small country constituted by ten islands located 650 kilometers away from the coast of Senegal and with an area of 4036 square kilometers. Out of the ten islands, only nine are populated and more than half of the total population of

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434,625 people according to the 2002 census lives in the Island of Santigo. Due to the particularities of the country's Sahelian climate (dryness and lack of rain), only one tenth of the country's soil is arable. Persistent periods of drought and a shortfall of water supply from rivers and springs makes it difficult for the country to develop a stable agricultural production, and even in the best rain seasons, agricultural production is able to supply only part of the population's food requirements.

After independence in 1975, the economic model of Cape Verde relied on the government to assume a leading role of entrepreneurship in agriculture, industry, and services, giving low importance to the private sector, and creating public enterprises within the key sectors of the economy. These strategies lead to deterioration in competitiveness, low levels of foreign direct investment, and poor overall economic performance. In 1988, the post independence government adopted a new economic model with an outward oriented strategy consisting on privatizing public enterprises and promoting trade liberalization. Government spending shifted rapidly into building economic and social infrastructure, leaving private investment to take the lead in some industries, especially light manufacturing and fisheries.

High unemployment rates in the late 1980s and inequalities between the islands led to a switch in government in 1991. The incoming government continued to decrease the role of the state in the economy and set priorities towards improving education and reducing poverty and unemployment. Also, new legislation and reforms, that still need to be refined and implemented fully, were adopted on various aspects related to foreign investment, privatization, and offshore banking services. The new government also pursued multilateral and bilateral donor assistance in order to improve services for human and capital infrastructure.

As a result of these reforms, remarkable growth has been achieved since the late 1980s. Between 1988 and 2002, real GDP grew, on average, at 6.4 percent and inflation was contained at an average rate of 3 percent per annum. Most of the growth was generated within services, where private sector activities increased dramatically as the state withdrew from the sector following reforms implemented throughout the 1990s. Construction and trade are now the largest sectors of the economy. Together they constitute about 30 percent of GDP (each accounts for about 15 percent of GDP). The fastest growing sectors within services, however, are hotel and restaurant services, transport, and communications. These sectors owe much of their growth to a large expansion in tourism. In 2001, tourist arrivals increased by 50 percent, and the number of visitors has been growing by 10 to 20 percent in subsequent years.

The objective of this paper is to assess the impact of the reforms on poverty, in the specific sense of measuring the reduction in poverty that was achieved in parallel with the implementation of reforms. The shift in policy enabled the population to benefit from rapid economic growth, but concerns have been expressed about a potential increase in inequality. In order to assess the changes in poverty and inequality since the late 1980s, we rely on two household surveys with consumption data implemented in 1988–89 and 2001–02 (these are the IDRF surveys—Inquerito As Despensas E Receitas Familiares). Assessing the trends in poverty and inequality is however difficult because the unit level data of the first survey are not available. For the period 1988–89, the only information at our disposal consists of a number of tables on the distribution of income in the original report prepared 15 years ago on that survey. This makes it necessary to estimate poverty and inequality using group data, which is done using the Poverty module of SimSIP, a set of excel based tools for "Simulations for Social Indicators and Poverty." The advantage of

using the SimSIP poverty module is that it enables the analyst to estimate poverty and inequality measures solely on the basis of grouped data. The next section provides our methodology. The second section describes the main results. We find that despite an increase in inequality over time, poverty has been reduced dramatically thanks to rapid growth. A brief conclusion follows.

Methodology for Poverty Measurement

As noted in Coudouel and others (2002), in order to compute a poverty measure, three ingredients are needed. First, one has to select a relevant indicator of well-being. Second, one has to select a poverty line, that is, a threshold below which a given household or individual will be classified as poor. Finally, one has to select a poverty measure, which is used for reporting for the population as a whole or for a population subgroup only. In this paper, we will rely on the Foster-Greer-Thorbecke (1984) class of poverty measures. The general formula for this class of poverty measures depends on a parameter α which takes a value of zero for the head count, one for the poverty gap, and two for the squared poverty gap in the following expression:

$$P\alpha = \frac{1}{n}\sum_{i=1}^{q}\left[\frac{z - y_i}{z}\right]^{\alpha} \tag{1}$$

The headcount index gives the share of the population or households in poverty. The poverty gap takes into account the distance separating the poor from the poverty line. The squared poverty gap places a higher weight on the poorest households in the sample.

Two poverty lines for the 2001–02 household survey were obtained using INE's methodology. A household is considered as poor if its per capita consumption falls below a relative poverty line equal to 60 percent of the median household consumption per capita in the 2001–02 survey. That is, the method consists in ranking all households according to their per capita consumption, selecting the household at the 50th percentile of the distribution of household consumption, calculating a poverty line corresponding to 60 percent of the consumption level of that household, and considering all households with a lower per capita consumption as poor. For extreme poverty, we use a poverty line equal to 40 percent of the median per capita consumption at the household level. Using these definitions, the poverty and extreme poverty lines used in this note are respectively CV$43,250 and CV$28,833 (Escudos) per capita per year. At the current exchange rate of approximately 109 Escudos per U.S. dollar, this translates in poverty lines of about US$1.09 per day for poverty, and US$0.73 per day for extreme poverty.

Note that if the definition had been based on the level of consumption of the median individual in the population as a whole (instead of the median household), the method would have resulted in lower poverty lines (and thereby lower poverty measures) as poorer households tend to be larger in household size, so that the household in which the median individual is located is poorer than the median household.

In the terminology of poverty measurement, the approach adopted by INE is a relative approach (because the poverty line is defined relatively, in comparison to the standard of living in the country). An absolute approach to poverty measurement would have proceeded differently, by estimating a poverty line corresponding to the cost of basic food and non-food

needs. However, even though poverty was measured by INE in relative terms in 2001–02, we can still obtain absolute trends in poverty over time by adjusting the poverty lines estimated in 2001–02, to reflect the inflation observed between 1988–89 and 2001–02. We can also obtain trends in relative poverty by applying the same method for estimating relative poverty lines using the 1988–89 data. In this paper, we will provide both absolute and relative poverty trends.

Following standard practice, the indicator of well-being is the per capita consumption of the household obtained by aggregating all sources of consumption in the survey and when needed, imputing additional sources of consumption. The estimation of per capita consumption for the 2001–02 survey was done by INE. A key problem was to obtain similar values for 1988–89. Because we did not have access to the unit level data from that survey, grouped data (mean values for different groups of households ranked by increasing consumption levels) had to be used. We used tabulations provided in a report written close to 15 years ago on poverty measurement with the 1988–89 survey. Yet the tabulations were not available in an appropriate format. Instead of providing data on per capita consumption, the only estimates available were in terms of total household consumption, without information on the mean household size.

Specifically, the information we have at our disposal is provided in the first column of Table 5.1. We know the share of total expenditure accruing to each of ten deciles of households (each deciles comprises of ten percent of households). Given that we also have the total level of consumption in the survey, this enables us to compute the total level of consumption in each household decile. What we need to do is estimate the number of individuals in each decile so that we can obtain an approximation of the level of per capita consumption by decile (by simply dividing household consumption by the estimated household size in each decile). Because we do not have access to the 1988–89 survey, we need to work from the mean household sizes in 2001–02, and make a number of assump-

Table 5.1. Consumption Distribution in 1988/99 Based on Assumptions for Fertility Rates

Decile	Percent of total consumption by household decile (1)	Household consumption by decile (2)	Estimate of number of individuals by decile in 1988 (3)	Mean Consumption per capita by household decile (4)
1	2.0	224,129,24	34,542	6,489
2	3.0	336,193,86	33,200	10,126
3	4.0	448,258,48	31,769	14,110
4	6.0	672,387,72	32,042	20,985
5	6.0	672,387,72	31,749	21,178
6	8.0	896,516,96	31,112	28,816
7	10.0	1,120,646,20	30,407	36,855
8	13.0	1,456,840,06	27,414	53,142
9	17.0	1,905,098,54	25,489	74,741
10	31.0	3,474,003,22	19,137	181,536
Total	100.0	11,206,462,00	296,860	37,750

Source: Authors using IDRF, 2001/02 and Inquérito as famílias, Cape Verde 1988–99.

tions in order to obtain estimates of the corresponding mean household sizes by household decile for 1988–89, taking into account demographic trends.

As shown in Table 5.2, data from recent demographic and health-type surveys are available on fertility rates in urban and rural areas for two periods of time: the period 1985–88, which precedes the first survey, and the period 1995–98, which precedes the second survey (INE, 1998). They show that fertility decreased faster in urban areas (from 5.24 to 3.14) than in rural areas (from 6.40 to 4.85). The issue is to find a realistic way to relate these fertility rates to expected changes in household size by consumption decile between both surveys.

Table 5.2. Using Fertility Data to Estimate Normalized Populations by Decile in 1988–89

	Fertility Rates	
	1995–1998	1985–1988
Total	4.030	5.950
Urban (U)	3.140	5.240
Rural (R)	4.850	6.400
U / (U + R)	0.393	0.450

Decile	Share of population by household decile (2001 data) (5)	Share of population adjustment factor (6)	Share of population by household decile (2001 data) adjusted (7)	Estimate for population shares by household decile in 1988/89 * (8)
1	14.26	1.00	14.26	11.64
2	12.93	1.06	13.71	11.18
3	11.71	1.12	13.12	10.70
4	11.21	1.18	13.23	10.79
5	10.57	1.24	13.11	10.69
6	9.88	1.30	12.84	10.48
7	9.23	1.36	12.55	10.24
8	7.97	1.42	11.32	9.23
9	7.11	1.48	10.52	8.59
10	5.13	1.54	7.90	6.45
Total	100.0	-	122.55	100.00

Source: Authors using IDRF, 2001/02 and Inquérito as famílias, Cape Verde 1988–99.

Consider first the 2001–02 survey. The urban (*U*) fertility rate as a share to the sum of the urban and rural rates was 39.3 percent in 1995–98. We also know that households are roughly evenly divided between urban and rural areas. If we assume that the top half of the distribution of households (the richer 50 percent) is somewhat representative of the urban areas because these are richer than rural areas, then we could conjecture on the basis of the independent information on fertility rates that the population share in the top half of the distribution according to household deciles will be equal to 39.3 percent. Luckily enough, this is what we observe in the data, as the actual population size in these five deciles is 39.3 percent.

$$\frac{F_U^{1995-98}}{F_U^{1995-98}+F_R^{1995-98}}=0.393=\sum_{i=6}^{10}Pop_i^{2001-02} \tag{2}$$

Then, our assumption will be that for the previous survey, the population share in the top five deciles should be roughly equal to 45.0 percent, which is the ratio of the fertility rate in urban areas divided by the sum of the fertility rates in urban and rural areas observed for the period 1985–88. In order to obtain this cumulative population share of 45.0 percent, we need to estimate "normalized population shares" by decile, denoted by $NPop_i^{1988-89}$, for each decile so that their sum for the top five deciles represent 45.0 percent of the total population, so that:

$$\frac{F_U^{1985-88}}{F_U^{1985-88}+F_R^{1985-88}}=0.450=\sum_{i=6}^{10}NPop_i^{1988-89} \tag{3}$$

As fertility rates decrease over time, household sizes also decreases, so that for any given household decile, the mean household size should be smaller over time, but the speed of the reduction in fertility is likely to be strongest for the richest deciles (or for the urban households, as noted above). We could assume for example that:

$$Pop_i^{1988-89}=\alpha_i\times Pop_i^{2001-02}, \text{with } \alpha_i=1+\rho(i-1). \tag{4}$$

The problem with (4) is that if we simply multiply the population shares in 2001–02 in each decile by the parameters, we will have a sum of population shares above 100 percent in the survey as a whole. In order to get back to 100 percent as the sum of the population shares in the various household deciles, we need to normalize the population shares as follows:

$$NPop_i^{1988-89}=\frac{1+\rho(i-1)}{N}\times Pop_i^{2001-02}, \text{ with } N=\frac{\sum_{j=1}^{10}(1+\rho(j-1))Pop_j^{2001-02}}{100} \tag{5}$$

As shown in the bottom part of Table 5.2, the value of the parameter ρ that satisfies equations (3) and (5) turns out to be 0.06. Using this parameter, we can compute the population or alternatively the household sizes in each decile in 1998–89. The results are given in the third column of Table 5.1, which gives the estimated number of individuals in each decile, so that the per capita consumption can be computed in column 4. These are the values that we will use for estimating poverty and inequality measures. Note that by reconstructing the household size and population in the 1988–89 survey, we find in Table 5.3

Table 5.3. Consumption in National Accounts vs. Consumption in Surveys

	Total Consumption in National Accounts (1)	Total Population (2)	Total Consumption in Survey (3)	Expanded Sample Size (4)	Ratio of Consumption per capita in survey versus National Accounts (5)
1988	19366000.0	328000.0	11206462.0	296860.0	0.6
2001	69934000.0	446000.0	46463000.0	470687.0	0.6

Source: Authors using 2001–02 and 1988–89 surveys. National Accounts data were provided by INE.

that the share of total consumption in the 1988–89 and 2001–02 surveys in proportion to total private consumption as registered in the national accounts is very similar, at roughly 60 percent, which gives us some confidence in comparing poverty and inequality estimates obtained from both surveys.

Trend in Poverty

Having estimated poverty lines and levels of per capita consumption, we use the Poverty module of the SimSIP family of simulation tools (available at www.worldbank.org\simsip) to compute poverty and inequality measures (for a discussion of the poverty module of SimSIP, see Datt and others 2003). The data used in the simulator is in Table 5.4. To account for inflation (and use the 2001–02 poverty lines for both years), we multiplied the 1988–89 distribution by the national CPI deflator (cumulative inflation between 1989 and 2002 was 86.3 percent). The 1988–89 distribution corrected for inflation (in 2002 constant prices) is presented in Table 5.4, column 3. The distribution of per capita consumption by population decile for the year 2001–02 is directly obtained from the unit level data and presented in column 4 of Table 5.4. These are also the data entered in the SimSIP Poverty module, as shown in Figure 5.1 for 1988–89 (the population shares by household decile are taken from Table 5.2).

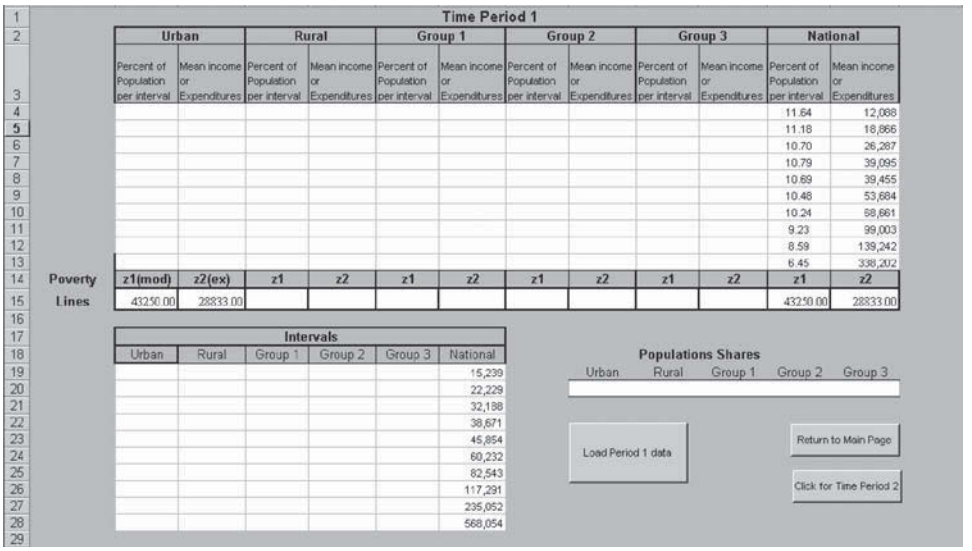
Table 5.4. Distributions of Consumption Per Capita in 2001–02 Constant Currency

Decile	Mean consumption by decile in 1989 current prices (1)	Deflator (2)	1988/89 Mean consumption per capita by household decile in 2001 prices (3)	2001/02 Mean consumption per capita by population decile (4)
1	6,489	1.8630	12,088	15,668
2	10,126	1.8630	18,866	25,316
3	14,110	1.8630	26,287	33,046
4	20,985	1.8630	39,095	41,775
5	21,178	1.8630	39,455	51,498
6	28,816	1.8630	53,684	64,035
7	36,855	1.8630	68,661	79,956
8	53,142	1.8630	99,003	103,241
9	74,741	1.8630	139,242	151,767
10	181,536	1.8630	338,202	421,257

Source: Authors using 2001–02 and 1988–89 surveys. Deflator was provided by INE.

Because for period 1 (1988–89) data on the distribution of consumption is available only at the national level and no other desegregation (such as urban/rural or by sector) is at hand, we leave blank the columns pre-designated for these data. Clicking the "Load Period 1 data" button enables the simulator to load the data. We repeat the same operation for period 2 (2001–02). After data for periods 1 and 2 has been entered, the user must

Figure 5.1. Data Entry Window for SimSIP in Cape Verde, Period 1 (1988–89)



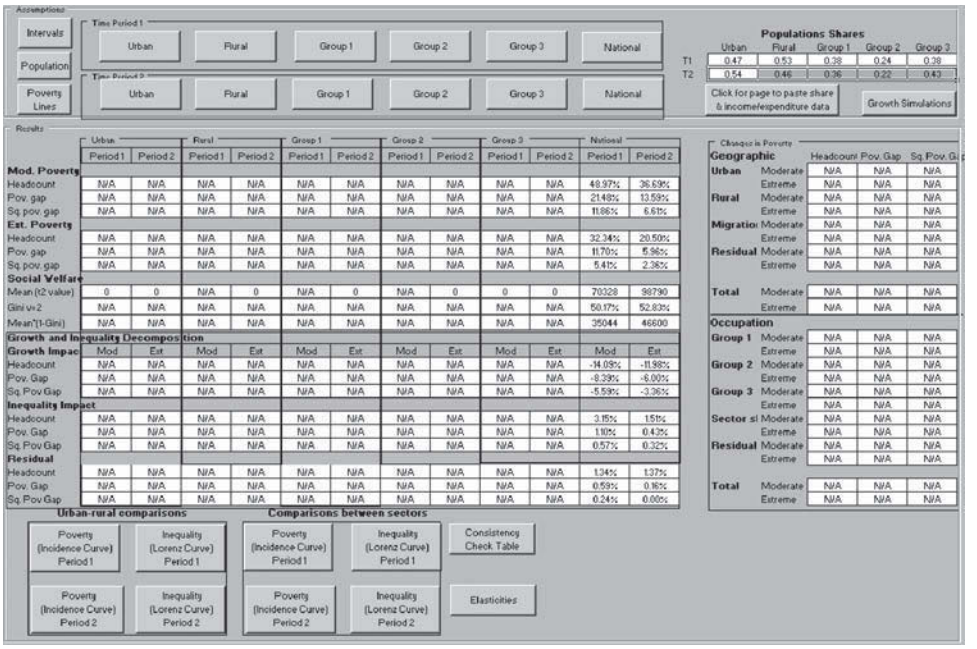
Source: Authors using 1988–89 survey.

click on the "Return to main page" button in order to see the simulation results. Results are automatically displayed, as shown in Figure 5.2, which provides measures of poverty and extreme poverty (head count, poverty gap, and squared poverty gap) as well as other statistics such the mean of the welfare indicator and the Gini coefficient. The simulator also presents the results of a growth and inequality decomposition of changes in poverty that will be discussed below. There are many cells marked "N/A" for not available in Figure 5.2 simply because we did not enter data for urban and rural areas separately, nor did we do this for various groups (groups 1 to 3 in the simulator).

Table 5.5 provides the key results in a more visible way. The share of the population in poverty (head-count index) in 2001–02 was 36.69 percent of the population. This implies that roughly 173,000 people were poor. Out of these, about 93,000 (20.50 percent of the population) lived in extreme poverty (their per capita consumption was below 28,833 Escudos per year).

If we adopt for 1988–89 a poverty line which corresponds to the same value in real terms as the 2001–02 poverty line (in order to compute a trend in terms of absolute poverty), we find that the share of the population living in poverty was reduced from 48.97 percent in 1988/89 to 36.69 percent in 2001/02 (a reduction of 12.28 points, one fourth of the initial level). The share of the population in extreme poverty was reduced from 32.34 percent to 20.50 percent. Other poverty measures such as the poverty gap (which takes into account the distance separating the poor from the poverty line) and the squared poverty gap (which takes into account the inequality among the poor) also decreased dramatically. For information, the survey data also suggest that the share of total consumption devoted to food (which can be considered to a large extent as consisting of basic necessities) was reduced from 50 percent to 35 percent, which is another indication of the large improvement in living standards observed between the two surveys.

Figure 5.2. SimSIP Results for Poverty Trends in Cape Verde, 1988–89 to 2001–02



Source: Authors using 2001–02 and 1988–99 surveys. Deflator was provided by INE.

Table 5.5. Trend in Poverty and Inequality Measures, Cape Verde 1998–99 to 2001–02

	1998–99 Absolute poverty (with 2001–02 relative poverty line)	1988–89 Relative poverty	2001–02 Relative poverty
Moderate Poverty			
Head count	48.97%	31.15%	36.69%
Poverty Gap	21.48%	11.06%	13.59%
Squared poverty Gap	11.86%	5.02%	6.61%
Extreme Poverty			
Head count	32.34%	17.32%	20.50%
Poverty Gap	11.70%	4.36%	5.96%
Squared poverty Gap	5.41%	1.40%	2.36%
Social Welfare			
Mean consumption	70328	70328	98790
Gini index	50.17%	50.17%	52.83%
Mean*(1-Gini)	35044	35044	46600

Source: Authors using SimSIP and 2001–02 and 1988–89 surveys.

If we adopt instead a relative poverty measurement approach for the 1988–89 survey, using an estimate of the median household per capita consumption of 46,570 Escudos, we find that the corresponding poverty lines are respectively 27,941.77 Escudos for poverty, and 18,627.84 for extreme poverty. As shown in Table 5.5, we find that relative poverty increased from 31.15 percent in 1988–89 to 36.69 percent in 2001–02, and relative extreme poverty increased similarly. This increase in relative poverty is due to an increase in inequality, as observed for example with the Gini index rising from 50.17 in 1988/89 to 52.83 in 2001/02. Despite the increase in inequality, social welfare, as captured by the mean per capita consumption times one minus the Gini index, increased substantially, by about a third versus the level in 1988–89.

The simulator also provides information on the changes in (absolute) poverty that are due to growth and those that are due to the increase in inequality (Datt and Ravallion 1992). Denoting by $P(\mu_t, L_t)$ the poverty measure corresponding to a mean income in period t of μ_t and a Lorenz curve L_t, the decomposition is:

$$\Delta P = \left[P(\mu_2, L_r) - P(\mu_1, L_r)\right] + \left[P(\mu_r, L_2) - P(\mu_r, L_1)\right] + R_r \quad (6)$$

The first component is the change in poverty that would have been observed if the Lorenz curve had remained unchanged, while the second component is the change that would have been observed if mean income had not changed. The last component is a residual. As reproduced in Table 5.6, without the increase in inequality, the reduction in the share of the population in absolute poverty would have been larger (14.09 points for instead of 12.28 points).

Table 5.6. Growth-Inequality Decomposition of Changes in Poverty, 1998–99 to 2001–02

	Mod. poverty	Extreme poverty
Growth Impact		
Head count	–14.09%	–11.98%
Poverty Gap	–8.39%	–6.00%
Squared poverty Gap	–5.59%	–3.36%
Inequality Impact		
Head count	3.15%	1.51%
Poverty Gap	1.10%	0.43%
Squared poverty Gap	0.57%	0.32%
Residual		
Head count	1.34%	1.37%
Poverty Gap	0.59%	0.16%
Squared poverty Gap	0.24%	0.00%

Source: Authors using SimSIP and 2001–02 and 1988–89 surveys.

The simulator also enables the user to predict future poverty based on growth assumptions. Here, we report only simulations based on a national growth rate (simulations with different growth rates for different sectors could also be provided). For example, if we wanted to be optimistic, we could first assume 13 years (from 2002 to 2015) of sustained growth at 5 percent per year per capita. If there is no change in inequality, the impact will

be equivalent to multiplying the per capita consumption levels for all deciles by 1.89 [because $(1.05)^{13} = 1.885649$]. The share of the population in (absolute) poverty would then decrease from 36.69 percent to 13.11 percent, as shown in Figure 5.5 (the cells with N/A or #VALUE! in Figure 5.3 are again simply due to the fact that we did not enter in the simulator separate data for urban and rural areas or by sector or "groups").

Figure 5.3. Future Poverty and Growth Simulation Results, Cape Verde

	Urban	Rural	Group 1	Group 2	Group 3	National
Growth Factor						1.885649
Population Share	0.00	0.00	0.00	0.00	0.00	
Population Share	0.54	0.46	0.36	0.22	0.43	

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	Urban		Rural		Group 1		Group 2		Group 3		National (using growth factor)		National (wt. av. UR)		National (wt. av. GI/2/3)	
	Urban		Rural		Group 1		Group 2		Group 3		National (using growth		National (wt. av. UR)		National (wt. av. GI/G2	
	Period 1	Period 2	Period 1	Period 2	Period 1	Period 2	Period 1	Period 2	Period 1	Period 2	Period 1	Period 2	Period 1	Period 2	Period 1	Period 2
Mod. Poverty																
Headcount	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	36.69%	13.11%	36.69%	#VALUE!	36.69%	#VALUE!
Pov. gap	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	13.59%	3.17%	13.59%	#VALUE!	13.59%	#VALUE!
Sq. pov. gap	#VALUE!	#VALUE!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	6.61%	1.08%	6.61%	#VALUE!	6.61%	#DIV/0!
Ext. Poverty																
Headcount	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	20.50%	3.79%	20.50%	#VALUE!	20.50%	#VALUE!
Pov. gap	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	5.96%	0.53%	5.96%	#VALUE!	5.96%	#VALUE!
Sq. pov. gap	#VALUE!	#VALUE!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	2.36%	0.14%	2.36%	#VALUE!	2.36%	#DIV/0!
Social Welfare																
Mean (t2 value)	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	98790	186283	53090	0	0	0
Gini v-2	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	52.83%	52.83%	52.83%	#VALUE!	52.83%	#VALUE!
Mean*(1-Gini)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	46600	87871	46600	87871	46600	87871
Growth and Inequality Decomposition																
Growth Impact	Mod	Est	Mod	Est	Mod	Est	Mod	Est	Mod	Est	Mod	Est	Mod	Est	Mod	Est
Headcount	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	-23.58%	-16.72%	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Pov. Gap	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	-10.43%	-5.37%	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Sq. Pov Gap	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	-5.53%	-2.22%	#VALUE!	#VALUE!	#DIV/0!	#DIV/0!
Inequality Impact																
Headcount	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.00%	0.00%	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Pov. Gap	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.00%	0.00%	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Sq. Pov Gap	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Residual																
Headcount	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.00%	0.00%	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Pov. Gap	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.00%	0.00%	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Sq. Pov Gap	#VALUE!	#VALUE!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	#VALUE!	#VALUE!	#DIV/0!	#DIV/0!

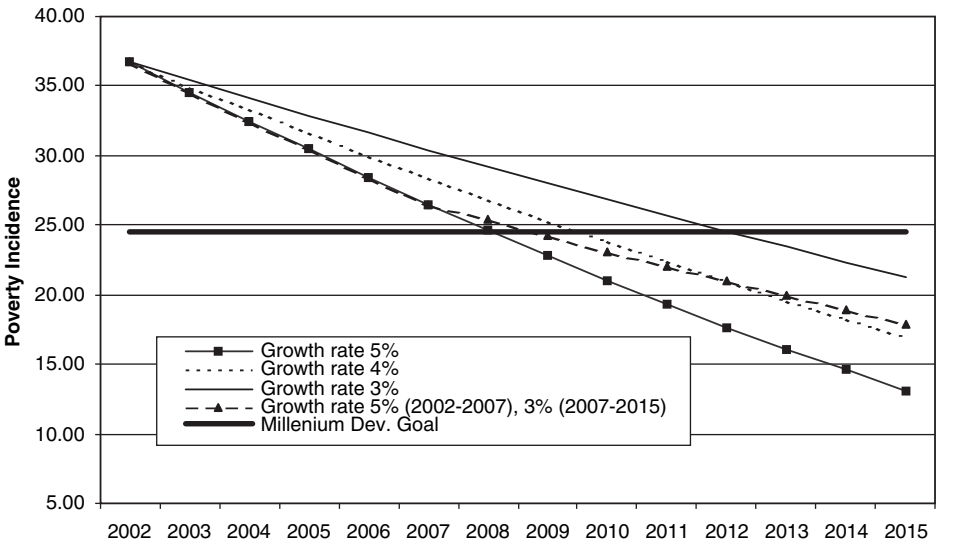
Source: Authors using SimSIP and 1988–89 surveys.

One question is whether the country is likely to achieve the Millennium Development Goal target or reducing poverty by half versus its 1990 level (for which the poverty measures obtained in 1988–89 can be used as proxy). Given the progress achieved so far, the results in Figure 5.4 suggest that if GDP continues to grow rapidly as in the previous years, poverty could easily be reduced by half in 2015 versus the 1990 level. Assuming that growth is evenly distributed among all individuals—assuming no future change in inequality, a possibly optimistic scenario given the mild increase in inequality in Cape Verde between 1988/89 and 2001/02—under a constant growth rate in GDP per capita of 3, 4, and 5 percent per year, Cape Verde would be able to achieve the target of reducing poverty by half set in the Millennium Development Goals by the years 2011, 2009, and 2008 respectively. Even if inequality were to continue to increase a bit, the target of reducing poverty by half in 2015 would still be achieved under these growth assumptions.

Conclusion

Estimating trends in poverty in any country is often a difficult exercise. In Cape Verde, the exercise is made even more difficult than elsewhere because of comparability issues between surveys, and because of the fact that the unit level data for the 1988/89 survey are

Figure 5.4. Simulations for Future Poverty Reduction Under Various Growth Scenarios



Source: Authors using SimSIP and the IDRF, 2001/02.

not available. At the time of the preparation of Cape Verde's PRSP (Poverty Reduction Strategy Paper), concerns were raised regarding the fact that despite substantial growth in the 1990s, poverty apparently had increased according to data from the household surveys implemented in 1998–99 and 2001–02. This was a puzzling result, which put in doubt the contribution of growth to poverty reduction, but was due to the use of relative poverty comparisons as well as issues of comparability between the two surveys.

The analysis provided in this paper confirms that there has been an increase in inequality over time in the country, and thereby an increase in relative poverty, but it also suggests that absolute (as opposed to relative) poverty measures have been reduced substantially. Specifically, the strong economic performance observed in the 1990s (as a result of the implementation of market-oriented reforms and political stability) contributed to reduce the share of the population in absolute poverty from 49 percent in 1988–89 to 37 percent in 2001–02. If GDP were to continue to grow rapidly, the country would easily be able to achieve the Millennium Development Goal of reducing poverty by half in 2015 versus the 1990 level.

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