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AVOIDING CHRONIC AND TRANSITORY POVERTY: EVIDENCE FROM EGYPT, 1997-99

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ABSTRACT

This paper uses a panel data of 347 households in Egypt to measure changes in household consumption between 1997 and 1999 and to identify causes behind the changes. Per capita consumption decreased for the households during this time and, while not dramatic, it occurred at all points along the distribution. Over the two-year period, the number of households that fell into poverty was over twice as large as the number of households that climbed out of poverty. About two-thirds of overall poverty was chronic (average consumption over time was below the poverty line), and almost half of all poor were always poor. We use quantile regression methods to identify the factors that explain total, chronic, and transitory poverty. While our analysis ably documents the extent of transitory poverty, it does not explain well the determinants of this type of poverty. The predominantly chronic nature of poverty in the sample, and our ability to identify associated characteristics, strengthens the case for targeting antipoverty interventions such as food subsidies.

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1. INTRODUCTION

The injection of the time dimension into the study of poverty creates many analytical possibilities. Aspects of poverty that were hitherto obscured come into view. For example, we can identify households that are more likely to be in poverty no matter when or how often we survey them. The welfare paths along which households move and why they do so also become clearer. With the addition of the dynamic perspective, the study of poverty moves from two to three dimensions. In the developing world, and in Africa in particular, the study of income mobility and poverty dynamics has been stymied by a lack of data sets for which there are repeated observations of a given set of households. This has begun to change, albeit slowly. In a recent overview paper, Baulch and Hoddinott (2000) bring together recent studies on poverty dynamics in the developing world.

This paper adds another panel study to the small set of studies from Africa. It is the first panel survey study of poverty dynamics in Egypt and of any country in North Africa. The analysis rests on a panel data set from eight governorates. Specifically the analysis uses data from 347 households that were first surveyed in early 1997 as a part of the national sample of 2,450 households (the Egypt Integrated Household Survey or EIHS[1]), and that were surveyed again in early 1999. The paper decomposes poverty in Egypt over the 1997–1999 period into chronic and transitory poverty. The paper then uses regression methods to identify the determinants of chronic and transitory poverty.

[1] As described in Datt, Jolliffe, and Sharma (1998).

The study of the dynamics of poverty in an Egyptian context is important for a number of reasons. First, good macroeconomic performance over the past five years does not seem to have made a dent in Egypt's poverty rate. Per capita GDP at purchasing power parity has grown from $2,590 in 1993 to $3,050 in 1997 (World Bank 1999). Yet, a recent review of poverty rates in Egypt by El-Laithy and Mukherjee (1999) highlights the uncertainty as to whether poverty rates have fallen at all.[2, 3] Is the poverty rate unmoved because a large percentage of households below the poverty line remain stuck there, or does the rate mask roughly equal numbers of households moving into and out of poverty? If the answer is more the former, then policies that facilitate asset accumulation would appear to be logical priorities. However, if the answer is more the latter, then policies that stimulate insurance policies and safety nets might be better priorities.

A second reason to study the dynamics of poverty in Egypt is that the analysis should shed light on the main policy factors responsible for the exit from poverty. If education is key, then reform in the education sector should focus more on access. If education appears to play no role, perhaps it is a signal that educational quality needs to be improved. If access to land is important, then policies should be instituted to increase

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[2] The studies use essentially the same data sources, but they use different methods and assumptions in constructing a poverty line and in constructing real total expenditure or income. This results in some studies that find poverty increasing between 1990/91 and 1995/96 (see El-Laithy [1996], Cardiff [1997], and for the 1996 Egyptian Human Development Report (EHDR) in El-Laithy and Osman [1996] in urban areas at the lower poverty line) and some that find a decline (EHDR 1996, upper poverty lines and EHDR 1996, lower poverty line in rural areas).

[3] Note that some may be tempted to use panel data sets to track poverty rates over time, but because the original cohort becomes less representative of the total population over time (for example, the households age), one cannot make statements about change in poverty. The shorter the period between surveys, the less of a problem this is, but to be totally confident, additional households need to be sampled in subsequent surveys to restore the sample to a representative subset of the population.

access. If access to land is unimportant, however, it may signal that a more concerted effort should be placed on increasing nonfarm income sources.

Third, the results will shed light on a debate that is taking place throughout North Africa on how to target food-price subsidies and other poverty interventions (Tuck and Lindert 1996). Food price subsidies for cereals are currently universally available in many countries of the region. Several countries have made explicit attempts to reduce the attractiveness of universally subsidized cereals and make them more self-targeted. There is less scope for expanding the self-targeting nature of food subsidies in Egypt, given the relatively low-income inequality (World Bank 1999) and that the income elasticities of subsidized foods are close to zero (Alderman and Lindert 1998). Future efforts at reducing leakage to the nonpoor will require administrative targeting via some proxy means test (see Ahmed and Bouis 2002). If most poverty in Egypt is transitory, it will be more difficult to undertake such targeting, because it is more difficult to predict income using proxies. If most of the poverty is chronic, however, the prediction of income using proxies will be easier and more durable.

Finally, the study will illustrate the potential and limitations of panel studies.[4] The governments in the region are much less prone to undertake panel data collection than are

[4] For Egypt, the cross-section study of the correlates of poverty is by Datt and Jolliffe (1999), who base their analysis on the 1997 EIHS. For rural areas, they find that years of schooling, the completion of primary school, the ownership of cultivated land, the value of livestock, and work in the recreation and community sector to have positive effects on real per capita consumption, while female headedness, household size, the number of children, and unemployment (male and female) had negative effects. For urban areas, they found that years of schooling had an even larger positive effect on real per capita consumption than in the rural areas, as did the value of livestock. Household size and female unemployment had a negative impact on real per capita consumption. One could undertake such an analysis for the Household Income and Expenditure Surveys (HIES) collected by CAPMAS, but with a much more restricted set of household and community determinants, given that the HIES does not collect much information outside of incomes and expenditures. If the HIES were more broad-based in the information it collects, one could get an invaluable moving snapshot of the determinants of poverty over time.

their counterparts in Asia. The benefits of the recent South African panel data set from KwaZulu-Natal (May et al. 2000) have, for example, persuaded the national statistical authorities to begin the construction of a national panel (Stats SA 2000).

Section 2 of the paper describes the data set collected in 1997 and 1999 and uses the 1997 EIHS data to analyze the ways in which these 347 households were different (if at all) from the representative sample of households drawn from 20 governorates in 1997. In Section 3 we describe the changes in welfare experienced by the 347 households in the two years, and we classify them according to the permanence of the poverty they experienced. In Section 4 we use quantile regression methods to identify the factors that explain total, chronic, and transitory poverty. Section 5 summarizes the results and discusses their implications.

2. THE 1997 DATA AND THE 1999 SUBSAMPLE

In this section we describe the EIHS data collected in 1997 and the subsample collected in 1999. We investigate the representativeness of the follow-up subsample by comparing it with the main sample using 1997 data. We also assess the seriousness of any shortfall or attrition in the planned number of subsample interviews. Many of the results from these analyses are presented in appendix tables.

THE EGYPT INTEGRATED HOUSEHOLD SURVEY (EIHS) 1997

The 1997 EIHS sampled 2,450 households selected from 20 governorates (out of a total of 26) using a two-stage, stratified selection process. The first stage of the

selection process randomly selected 125 primary sampling units (PSU) with probability proportional to estimated size. In the second stage, 20 households were randomly selected from each PSU. The design also stratified selection on the following five regions of Egypt: Metropolitan, Lower urban, Lower rural, Upper urban, and Upper rural. The total population of these 20 governorates constitutes about 98 percent of the total population of Egypt. The sample frame used for the selection process was supplied by the Central Agency for Public Mobilization and Statistics (CAPMAS). The sample is representative of the 20 governorates.

THE 1999 EGYPT INTEGRATED HOUSEHOLD SURVEY SUBSAMPLE

For the 1999 EIHS subsample, budget constraints restricted data collection to 19 PSUs. We selected PSUs from all five regions in proportion to their frequency per region in the 1997 EIHS. Roughly one out of six PSUs were targeted per region, but they were not selected randomly. Given the desire to select one out of six PSUs from every region of the country, we chose PSUs to sample as many governorates as possible (eight). The selection of governorates at random is inappropriate for such a small number selection (n = 20) and so selection was purposive to get representation in terms of regions and poverty levels in 1997. The selected PSUs and their location are given in Appendix Table 10. Appendix Table 11 compares the EIHS 1997 and EIHS 1999 subsample distribution of PSUs by region and by governorate. We explore the consequences of our choices in terms of the representativeness of the 1999 sample in the next subsection.

As in 1997, the goal in 1999 was to resurvey 20 households per PSU to give a total subsample of 380 households. However, 32 households (8.4 percent of the target households) could not be resurveyed, because members of some households were absent when the enumerators visited, and some households moved away from the original PSU. Only two households refused to participate in the resurvey. We explore the consequences of this attrition in the following subsection.

THE REPRESENTATIVENESS OF THE 1999 SUBSAMPLE

To make the subsequent results more generalizable, we would like the subsample of 380 households to be representative of the larger sample of 2,450 households. The previous section of the paper indicates that this is not guaranteed, given the purposive sampling strategy. But how serious a problem is the nonrepresentativeness? This section seeks to address that question by examining the 1997 values of real per capita consumption and other variables for the subsample versus the entire sample, using simple two-way tables and regression analysis.

Table 1 presents the differences in mean real per capita consumption in 1997 between the subsample (n = 374 when 1997 missing values are dropped) in column (1) and the remaining households (n = 2,075) for rural and urban households in column (2). The mean levels are approximately 10 percent lower for the sample of 374 households, although the differences are not significantly different at the 5 percent level. However, only 347 of the 374 households could be resurveyed, due to attrition losses. How different are the 347 from the 27 households that could not be resurveyed? A comparison

of column (3) and column (4) in Table 1 shows that the rural households that could not be resurveyed in 1999 were slightly poorer, on average, but that the urban group is less poor, on average. Again none of the differences in real per capita consumption are significant at the 5 percent level.

Table 1—Real per capita consumption in 1997 for subsample households, broken down by whether we were able to resurvey them in 1999, compared to the full sample

	Real per capita consumption in 1997				
	(1) EIHS 1997 households excluded from 1999 subsample	(2) EIHS 1997 households in 1999 subsample	(3) EIHS 1997 households in 1999 subsample: surveyed	(4) EIHS 1997 households in 1999 subsample: could not be surveyed	(5) Total households (from 1997 EIHS)
Rural	230.0	206.6	207.0	198.3	226.6
N	1,130	196	186	10	1,326
Urban	307.6	286.9	278.6	365.7	304.3
N	945	178	161	17	1,123
Total	265.3	244.8	240.2	303.7	262.2
N	2,075	374	347	27	2,449

Table 1 focuses only on differences in real per capita expenditure and does not control for a number of potentially confounding factors. Therefore we further explore representativeness and attrition in the context of multiple regression. Column (1) of Appendix Table 12 presents logit regression results that seek to distinguish between the subsample (n = 374) and remaining households (n = 2,075), using the 1997 data. The results show that the two groups are not different in terms of real per capita consumption in 1997, thus confirming the result in Table 1. Only two of the variables are significantly different between the two groups at the 5 percent level. Controlling for the other

observable factors, the subsample households are less likely to be employed in the construction or manufacturing sectors (relative to the omitted category of agriculture). In terms of attrition (selected households that could not be located or that refused to be interviewed), column (2) of Appendix Table 12 uses logit regression to look for variables that might be significantly different between the two groups (n = 347 and n = 27) but finds none at the 5 percent level. Thus we conclude that the subsample is not very different from the larger sample. We also conclude that attrition bias cannot be found in terms of measurable characteristics.

3. CHANGES IN WELFARE BETWEEN 1997 AND 1999

This section now focuses exclusively on the subsample of 347 households and compares the welfare of these households in 1997 and 1999. Table 2 indicates that between 1997 and 1999, average per capita consumption declined for the total sample

Table 2—Real per capita consumption in 1997 and 1999 for the subset of households

	Real per capita consumption	
Sample	**1997**	**1999**
Rural	207.0	193.5
N	186	186
Urban	278.6	234.8
N	161	161
Total	240.2	212.7
N	347	347

Note: Consumption on 1999 was deflated over time using a food price Laspayres index constructed from cluster average food prices reported by the 347 households and weighted by their consumption shares. No nonfood prices were available, and no community-level price data were available. The use of self-reported prices is unsatisfactory due to the quality and bulk purchase effects embodied in them. However, we were unsatisfied with using government reported deflators, because they could not be disaggregated at all. Details of the price index used are provided in Appendix Table 13.

(240.2 to 212.7), and the decline is observed for rural and urban households, but more strongly for urban households. Nevertheless, the declines are not strong enough to be significantly different from zero at the 5 percent level.

The mean is just one aspect of a distribution. How different are the distributions of per capita consumption in 1997 and 1999 for these 347 households? Table 3 describes the various percentile points in the distribution for the two variables. From this table it is clear that it is not just the mean that shifted downward—the entire distribution did so. Nevertheless, the shift in the distribution hides much of the movement across the distribution. To begin describing the upward or downward mobility of households based on their consumption levels in 1997 and 1999, a transition matrix is presented in Table 4.

Table 3—Describing the distribution of 1997 and 1999 per capita consumption

	Percentile of per capita consumption				
Year	**10**	**25**	**50**	**75**	**90**
1999	72.6	109.8	173.1	266.3	388.1
1997	94.8	128.2	194.0	285.9	403.4

Table 4—Transition matrix for households between 1997 and 1999 in relation to the poverty line[a]

	Households with per capita consumption in 1999			
Households with per capita consumption in 1997	**Below z**	**Between z & 2z**	**Above 2z**	**Total**
Below z	66	20	2	88
Between z & 2z	43	78	29	150
Above 2z	6	40	63	109
Total	115	138	94	347

[a] z is per capita consumption corresponding to the poverty line of 129.19 as described in Datt, Jolliffe, and Sharma (1998). The methodology to estimate the poverty line is the costs of basic needs approach with region-specific poverty lines (Ravallion 1994).

The transition matrix maps changes in household fortunes from 1997 to 1999 in relation to the poverty line. For example, we see that of the 88 households that were below the poverty line in 1997, 2 had consumption more than twice the poverty line in 1999, and 20 moved up to consumption levels above the poverty line but below two times the poverty line. On the other hand, of the 115 households below the poverty line in 1999, 49 were above the poverty line in 1997. The 207 households on the diagonal did not move between categories. The 51 households above the diagonal had improved consumption, while consumption worsened for the 89 households below the diagonal.

Table 5 further categorizes the households into three distinct groups: (1) households that had a per capita consumption below the poverty line in both periods (always poor), (2) households for which per capita consumption falls below the poverty line in one of the two years (sometimes poor), and (3) households with a per capita consumption that is never below the poverty line in any year (never poor).

Table 5—Number of households, by poverty status in the subsample

Poverty status	Rural	Urban	Total
Always poor	43	23	66
Sometimes poor	42	29	71
Never poor	101	109	210
Total	186	161	347

From Table 5 it is clear that 19 percent of all households are always poor—23 percent in rural areas and 14 percent in urban areas. Overall, 20 percent of households were sometimes poor—22 percent in rural areas and 18 percent in urban areas. Of the

households that were poor at one time, 48 percent were always poor—44 percent in urban areas and 51 percent in rural areas.

How do these results compare to others from Africa? The ratio of always-poor households to sometimes-poor households (0.93) is higher than 11 of 13 such ratios reported for a number of developing countries in Baulch and Hoddinott (2000). Poverty that is persistent appears to be relatively high in Egypt. Table 6 explicitly places the Egyptian results in context by reporting the Egyptian results alongside the African studies reported by Baulch and Hoddinott (2000). There are inherent difficulties in comparing these studies. They include factors such as different countries, levels of representativeness of samples, methods for calculating the poverty lines, duration of spells, and numbers of repeated observations. Nevertheless, the Egyptian results appear to be in line with other African estimates, being at the high end in terms of the proportion of poverty that is persistent.

Table 6—A comparison of the Egypt results with others from Africa

Source	Study location	Number of observations in panel	Study dates	Percent of households			Percent of always poor as a percent of ever poor
				Always poor	Sometimes poor	Never poor	
Carter (1999)	South Africa	2	1993 and 1998	22.7	31.5	45.8	42
Dercon and Krishnan (2000)	Ethiopia	2	1994 and 1995	24.8	30.1	45.1	45
Grootaert and Kanbur (1995)	Côte d'Ivoire	2	1985 and 1986	14.5	20.2	65.3	42
Grootaert and Kanbur (1995)	Côte d'Ivoire	2	1986 and 1987	13.0	22.9	64.1	36
Grootaert and Kanbur (1995)	Côte d'Ivoire	2	1987 and 1988	25.0	22.0	53.0	53
Haddad and Ahmed (present paper)	Egypt	2	1997 and 1999	19.0	20.4	60.6	48

Source: Adapted from Baulch and Hoddinott (2000). Note that the welfare measure is expenditure per capita in every case.

The analysis so far has relied on the categories of "sometimes poor" and "always poor." How do we convert these categories into chronic and transitory poverty? One could simply classify the "always poor" as the chronic poor and the "sometimes poor" as the transitory poor. One problem with this approach is that the "sometimes poor" category becomes very heterogeneous when there are more than two observations per household. For example, if we had six observations per household, is it equally valid to label a household as transitorily poor if it falls below the poverty line one time out of six as it is when the household falls below that line five times out of six? This problem is addressed empirically by Jalan and Ravallion (2000), who employ a method for constructing chronic and transitory poverty based on Ravallion (1988). Specifically, nontransient welfare is proxied by the intertemporal mean of per capita consumption. Chronic poverty occurs when mean consumption falls below the poverty line. Transitory poverty is the difference between overall poverty (the squared poverty gap measure) and chronic poverty.[5] Note that this definition of chronic poverty goes beyond the classification of "always poor." Individuals or households that are sometimes poor can have a mean consumption below the poverty line and hence be chronically poor.

Table 7 presents the estimates of chronic and transitory poverty by region. The contribution of chronic poverty to the overall total is 66.7 percent; to rural poverty, it is 67.9 percent; and to urban poverty, it is 63.9 percent. In terms of broad regions, the metropolitan region has the lowest percentage of chronic poverty, followed by the lower regions, with the upper regions having the highest proportion of chronic poverty. In terms

[5] This method is not valid for the headcount and poverty gap measures but is valid for the squared poverty gap measure as discussed by Jalan and Ravallion (2000).

of the 1997 poverty profile of Egypt, the poorer regions—Upper Urban and Upper Rural—have the highest percentages of chronic poverty. In comparison to other studies from the developing world that have used this method, the overall contribution of chronic poverty to the total ($\alpha = 2$) is high. For four provinces in Southern China, the figure is 50.6 percent (Jalan and Ravallion 2000) and in a rural Pakistan sample, it is 18 percent (McCulloch and Baulch 2000).[6, 7]

Table 7—Total, chronic, and transitory poverty, by region

	Component of poverty (P2)					
	Total		Chronic		Transitory	
Region	Absolute value	Percent of total	Absolute value	Percent of total	Absolute value	Percent of total
Metro	0.02715	100	0.01533	56.5	0.01182	43.5
Lower Urban	0.01975	100	0.00991	50.2	0.00984	49.8
Lower Rural	0.02699	100	0.01756	65.1	0.00943	34.9
Upper Urban	0.04073	100	0.02982	73.2	0.01091	26.8
Upper Rural	0.07449	100	0.05114	68.7	0.02335	31.3
All rural	0.05358	100	0.03636	67.9	0.01722	32.1
All urban	0.02999	100	0.01917	63.9	0.01082	36.1
Total	0.04355	100	0.02905	66.7	0.01450	33.3

4. DETERMINANTS OF POVERTY COMPONENTS

The previous section described the changes in welfare or consumption for the 347 households between 1997 and 1999. This section explores the factors behind these

[6] These studies are not strictly comparable, because they use more than two rounds of data.

[7] In a rural Ethiopia sample, chronic poverty ranges between 75 and 92 percent of the total, but it is reported only for the poverty gap measure ($\alpha = 1$), and so it is not comparable (Dercon and Krishnan 2000).

changes. Before describing the econometric methods used and the results obtained, we explain the explanatory variables used in the regressions.

EXPLANATORY VARIABLES

The explanatory variables used in the regressions were developed by Datt and Jolliffe (1999) for their analysis of the determinants of poverty in Egypt in 1997. We use the values of the variables in the initial time period. The variables are summarized in Table 8. Household variables cover demographic composition (household size, the number of individuals below the age of 15, the number above age 60, the age of the head of household, whether the household head is declared to be a female); human capital (the average number of years of schooling of household members); physical capital (the area of cultivated land that is owned and the value of livestock); and occupation (whether the

Table 8—Explanatory variables used in the regression equations

Variable description	Mean	Minimum	Maximum
Household size	6.00	1	15
Number of household below age 15	2.25	0	9
Number of household above age 60	0.369	0	7
Age of household head in years	48.24	18.78	109.58
Household members, mean years of schooling	6.08	0	17
Log, value of livestock owned	2.313	0	9.695
Log: Area cultivated land that is owned by the household	0.517	0	7.783
Industry: Manufacturing	0.156	0	1
Industry: Construction	0.055	0	1
Industry: Trade and service	0.144	0	1
Industry: Community & recreation	0.248	0	1
Industry: Other nonfarm employment	0.179	0	1
Industry: Agriculture	0.219	0	1
Urban = 1, rural = 0	0.466	0	1

Note: n = 347 for all variables.

primary occupation of the primary income earner, typically the household head, is in manufacturing, construction, trade and services, community and recreation, agriculture, and other nonfarm sectors).

The main difference between the variable set used here and those used by Datt and Jolliffe (1999) is that we restrict ourselves to household characteristics and exclude community (that is, primary sampling unit) characteristics. We do this because the sample of households at our disposal (n = 347) proves too small to incorporate community characteristics.

DETERMINANTS OF TOTAL, CHRONIC, AND TRANSITORY POVERTY

Using this information we estimate the determinants of total, chronic, and transitory poverty. We follow the approach of Jalan and Ravallion (2000). Our dependent variables are (1) the squared poverty gap measure for each household, (2) the chronic component, and (3) the transitory component. Our dependent variable will have zero values for households above the poverty line. The presence of zeros in the dependent variable is indicative of censoring of an underlying variable and requires Tobit estimators, but as Jalan and Ravillion indicate, these estimators are sensitive to the misspecification of the error term (i.e., if it is not distributed normally and its variance is not constant). As in Jalan and Ravallion, we circumvent the censoring problem by doubling the poverty line and recalculating total, chronic, and transitory poverty. We thus increase the pool of chronic and transitory-poor households and decrease the number of never-poor households. By doing this, 70 percent of the households had some chronic

poverty and 73 percent had some transitory poverty. These numbers are similar to Jalan and Ravallion (2000). However, this means that our goal should be to estimate the dependent variable around the 70th quantile, not around the mean, as OLS would do. The model is therefore estimated by quantile regression (70th quantile).[8]

The results are presented in Table 9.[9] Larger households are more likely to experience poverty and chronic poverty, but not transitory poverty. Similarly, households containing more members under age 15 are more likely to be poor and chronically poor. Older household heads are less likely to be poor and chronically poor. Households containing more members over age 60 are more vulnerable to transitory, but not chronic, poverty. The value of livestock assets helps households reduce total and chronic poverty. The amount of owned land suitable for cultivation is negatively associated with total and chronic poverty, but is positively associated with transitory poverty.

The mean years of schooling of the household members has a significant and negative association with all forms of poverty (although only at the 9 percent level for transitory poverty), with the estimated coefficient for chronic poverty being 30 times the estimated coefficient for transitory poverty. Location in an urban area has no association

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[8] One alternative to this investigation of the determinants of chronic and transitory poverty is multinomial logit with never, chronic, and transitory as the categorical outcomes. Results from this estimation procedure are very similar to the results in Table 9 in magnitude, but are weaker in terms of statistical significance. This is perhaps not surprising, given that the multinomial logit procedure does not capture all the information available on the dependent variable (i.e., given the availability of the underlying continuous variable).

[9] The qreg command in STATA (v6) is used. The equality of the estimated coefficient on average years of schooling (which has the most precisely estimated coefficient) estimated at the 50th, 70th, and 90th quantiles could not be rejected, indicating that the estimates are not too sensitive to the quantile selected. When bootstrapped standard errors are generated instead of the estimates derived from the estimated variance-covariance matrix under the qreg procedure, the standard errors increase somewhat, but the main results hold. This indicates that heteroscedasticity is not a large problem (STATA 1999).

Table 9—Determinants of total, chronic, and transitory poverty: Quantile regressions (70^{th} quantile)

Explanatory variables	Total poverty	Chronic poverty	Transitory poverty
Household size	0.012424 (3.55)**	0.012942 (3.08)**	0.000293 (0.37)
Number of household members below age 15	0.026589 (5.08)**	0.027103 (4.39)**	-0.001171 (1.07)
Number of household members above age 60	0.011927 (0.90)	0.009799 (0.61)	0.004924 (2.13)*
Age in years of household head	-0.002498 (4.29)**	-0.002599 (3.81)**	-0.000092 (0.74)
Log: Area of cultivated land that is owned by the household	-0.015992 (3.42)**	-0.015450 (2.79)**	0.002755 (2.59)**
Log: Value of livestock owned	-0.006972 (2.73)**	-0.006590 (2.19)*	-0.000308 (0.54)
Household members, mean years of schooling	-0.020087 (12.78)**	-0.018982 (10.19)**	-0.000623 (1.71)
Industry: Manufacturing = 1	-0.043844 (2.04)*	-0.050566 (1.95)*	0.000618 (0.12)
Industry: Construction = 1	-0.036204 (1.26)	-0.029720 (0.86)	0.001134 (0.16)
Industry: Trade and service = 1	-0.033786 (1.63)	-0.026622 (1.07)	-0.004985 (0.99)
Industry: Community & recreation =1	-0.060617 (3.34)**	-0.062766 (2.83)**	-0.001576 (0.34)
Industry: Other nonfarm = 1	-0.085343 (4.10)**	-0.092771 (3.74)**	-0.003599 (0.73)
Urban = 1, Rural = 0	0.011178 (0.77)	0.005947 (0.35)	-0.006005 (1.88)
Constant	0.393111 (11.50)**	0.380087 (9.56)**	0.025799 (3.16)**
Observations	347	347	347

Notes: Agriculture is the omitted industry employment sector. Absolute value of Z-statistics is in parentheses.
* significant at 5 percent level; ** significant at 1 percent level.

with chronic poverty but has a negative association with transitory poverty (at the 6 percent level). Finally, the sector containing the primary occupation of the primary income earner is important. Being in the manufacturing sector, the community and recreation sector, and in the other nonfarm sector means that households are less likely to experience total poverty and chronic poverty compared to households employed in the agriculture sector. But the sector of employment of the primary income earner demonstrates no significant association with transitory poverty.

Several things are worth noting about these results. First, the results for total poverty and chronic poverty are similar. This echoes the results of Jalan and Ravallion (2000) for southern China. Second, note that fewer variables have estimated coefficients that are significantly different from zero in the transitory poverty regression. We are better able to predict chronic poverty than transitory poverty. This is in line with the studies cited in Baulch and Hoddinott (2000).

Third, note that the determinants of total poverty are similar to those derived from the cross-section estimates of Datt and Jolliffe (1999). But two of the variables that are found to be positively associated with transitory poverty here—the number of household members above 60 and the amount of cultivated land owned—were either not significant in the cross-section regression (number of individuals above age 60) or had the opposite sign (cultivated land owned).

Fourth, the significance of the negative association of years of schooling with both components of poverty is not sensitive to specification.[10] We are unable to decompose this result into the returns from high quality schooling, from credentialism, and from the self-selection of innately intelligent individuals into longer periods in school. Nevertheless, given the strength of the relationship estimated between schooling and poverty reduction, an in-depth investigation of the access and quality of public schooling in Egypt would appear to be worthwhile. Despite the strong result for years of schooling on poverty reduction, the relationship between education and employment in Egypt is complex. For example, Assaad, El-Hamidi, and Ahmed (1999) use the EHIS to conclude that, for men, the employment returns are highest for basic education in rural areas and for university education in urban areas. For women, the returns to more education in urban areas are especially poor as public-sector jobs have dried up. Furthermore, the private-sector jobs that are currently being created are culturally inappropriate for women and in any case do not require high levels of education. However, no matter how complex the relationship, improving access to education, and raising the quality of educational services would seem to be crucial components of an Egyptian poverty-reduction strategy, particularly a long-term one.

Fifth, the other significant correlates of transitory poverty—living in an urban area (less likely to experience it, but significant only at the 6 percent level), more household members over age 60, and more owned cultivated land (more likely to

[10] Several additional econometric models were tried (including OLS and multinomial logit). In addition, several different quantiles were used in the quantile regressions, with full interaction terms for the rural/urban breakdown.

experience it)—offer some clues as to the nature of risk faced by these households. Recall that these are households that had a mean consumption level above the poverty line but fell below the line in one of the years. On average, urban livelihoods are probably less risky—being based more on wage work (although being in an urban area may be a risky business for the very poor, should they lose wage employment), while the holding of cultivatable land seems to open up the holder to income risk. The fact that households containing more members over age 60 are vulnerable to transitory but not chronic poverty suggests that the social security and welfare aid program in Egypt may not be performing well. Assaad and Rouchdy (1998) state that "Although the social security and welfare aid system is the largest social assistance program in Egypt, very little is known about its delivery system and its success in reaching the most needy" (57). Our results are consistent with the need to review the effectiveness of this system.[11] The result on the ownership of land can be viewed in a number of ways.[12] Seasonality is not an issue in Egyptian agriculture, given the almost exclusive reliance on irrigation from the Nile, but the result may reflect landowners' inability to insure completely against weather or pest shocks. Another land-related shock during this period was a major land reform that came into effect in 1997 and gave landlords increased power to terminate the usufruct rights of

[11] The introduction of a squared term for the head of household to test whether the elderly variable is picking up life-cycle effects does not eliminate the significant positive result on the elderly variable in the same regression. The estimated coefficient on the square of age is positive, but not close to significance.

[12] Seventeen percent of rural households own some land that is cultivated as do 7 percent of urban households, so the urban households are not treated any differently from a regression viewpoint. When the land-owned variable is dropped, the urban result on transitory poverty still holds.

tenants. Unfortunately, we have no information on shocks in the data set with which to further explore this result.[13]

Finally, the total and chronic poverty-reducing sectors of the economy appear to be in the manufacturing, community, and recreation activities and in residual nonfarm activities not covered by the other categories. The "community and recreation" category includes public-sector jobs in administration and defense, social services, and jobs in recreation/cultural amenities and services. The residual nonfarm category consists largely of personal/household services. These sectors likely provide more steady income flows and help families avoid chronic poverty, although they have no association—positive or negative—with transitory poverty.[14] The findings on nonfarm income are consistent with the observations of Adams (1999) on the importance of this type of income for decreasing income inequality in Egypt. The findings are also consistent with Singerman's (1995) conclusions as to the importance of informal networks to livelihood generation in Cairo. Also note that despite its contraction, employment in the public sector still reduces the likelihood that a household will experience chronic poverty.

[13] For all variables that prove important to transitory poverty, we would like to split the transitory sample into upward and downward transitions. However, this proves impossible due to small sample sizes.

[14] An alternative specification was tried by including variables describing the type of employment that household members were engaged in during the previous 12 months. Variables were constructed that summed up the number of people above age 10 in the household by type of primary occupation in the last 12 months: casual labor, salaried, own business, student, and looking but unable to find work. These were added to the regression analysis. None of these variables were significant at the 5 percent level, with or without the industry variables.

5. CONCLUSIONS AND IMPLICATIONS

This paper used data from a 1999 survey of 347 households that were first surveyed as a part of the EIHS in 1997. The households represent 19 PSUs and are drawn from seven governorates in all regions of Egypt. The analysis indicated that the subsample was not very dissimilar from the full sample of 2,450 households and that the failure to interview all 380 households in the 19 PSUs was not likely to do violence to subsequent analyses of the 347 households.

As a sample, per capita consumption decreased for these 347 households. However, the decrease was not dramatic—from a mean 240 to 213 LE per capita per month, but it occurred at all points along the distribution. The reductions in consumption were relatively large for the Upper Rural and Metro regions. The fortunes of some households improved over the two-year period—22 climbed out of poverty, but more worsened (49 fell into poverty). The most striking aspect of poverty for these households was the low mobility between consumption groups. In fact, 60 percent of the households did not move out of their three consumption groups (below the poverty line, between the poverty line and twice the poverty line, and above twice the poverty line). This is reflected in the high proportion—67 percent—of overall poverty that is chronic (average consumption over time is below the poverty line). Moreover, almost half of all poverty is persistent (that is, persistently below the poverty line or "always poor").

We attempted to identify the determinants of total, chronic, and transitory poverty using quantile regression. Our efforts were hampered by the small sample size relative to the measured change in consumption that occurred over the two periods. Nevertheless,

we were able to identify some factors that influence total, chronic, and transitory poverty. These factors include the average years of schooling of adult household members (which reduces both forms of poverty, but chronic poverty most strongly), the value of land and livestock (but not for transitory poverty), the number of children under age 15 and household size (both of which increase total and chronic poverty), the location of residence (with urban households less likely to experience transitory poverty), and employment activity in manufacturing, community, and recreational and other nonfarm sectors (which reduces total and chronic poverty).

The predominantly chronic nature of poverty in our sample, and our ability to identify associated characteristics, highlights the need for the Egyptian government to improve the asset accumulation process for the poor. Unfortunately we cannot distinguish between the different processes that deter accumulation (e.g., whether shocks undermine the accumulation process or no accumulation is taking place). The chronic nature of poverty also has implications for the targeting of anti-poverty interventions such as oil and sugar subsidies. If most poverty were transitory, it would be more difficult to justify such a targeted approach, because the target would keep shifting. The nature of poverty as revealed in our sample of households therefore is consistent with an administrative approach to the targeting of anti-poverty interventions.

Our analysis documents the extent of transitory poverty, but it does not explain well the determinants of this type of poverty. This is in line with other similar quantitative work. Our estimates would certainly have benefited from a larger sample size and more rounds of data, but we suspect that more qualitative work would have the

largest payoff in terms of identifying the trigger events that plunge people into or elevate them out of poverty. Nevertheless, the findings that urban households are less likely to experience transitory poverty and that households that had older members or own cultivated land are more likely to experience it have some implications for the design of insurance mechanisms in rural areas. As Morduch (1999) notes in a more general context, the appropriate role for governments is to facilitate the provision of insurance from the private sector.

Finally, this analysis has demonstrated the possibilities opened up by a longitudinal data set. On the one hand, the paper has demonstrated the limitations of a small data set when the change in welfare has been small—not many of our explanatory variables do any explaining. On the other hand, even from this small data set, we can get an insight as to the structure of poverty and understand why some households improved their welfare while others did not. The returns to introducing a longitudinal component to poverty data collection in Egypt and elsewhere in Africa would seem to be quite large.

APPENDIX TABLES

Table 10—Sample frame for 1999 subsample resurvey

Region	Region Code	Governorate	Governorate Code	Primary Sampling Units (PSU)	PSU Code	Urban=1 Rural=0
Metro	1	Cairo	1	El Sabteya	104	1
				Shagaret Mariam	106	1
				Masaken El Ameria	107	1
Lower Urban	2	El Sharkia	7	Mashtool El Souk	134	1
		El Gharbia	10	Nasser	156	1
		El Beheira	12	El Mahmoudia	167	1
Lower Rural	3	El Sharkia	7	Sheibat El Nikaria	137	0
				Mashtool El Kady	139	0
		El Gharbia	10	Kafr Dima	159	0
		El Beheira	12	Badr	169	0
				Kombaniat Abou Keir	172	0
Upper Urban	4	El Menia	17	Thaleth	196	1
		Asyout	18	Al Walidiah	204	1
		Sohag	19	Sakolta	211	1
Upper Rural	5	El Menia	17	Beni Ali	200	0
				Talah	202	0
		Asyout	18	Shotb	207	0
				Nagea Sabae	206	0
		Sohag	19	Aldayabat	214	0

Table 11—Distribution of primary sampling units (PSUs), by region and by governorate, 1997 and 1999

		PSUs in 1999 subsample	PSUs in 1997 EIHS
Region	1	3	19
	2	3	18
	3	5	34
	4	3	20
	5	5	34
Governorate	1	3	11
	2	0	7
	4	0	3
	5	0	7
	6	3	7
	7	0	12
	8	0	4
	9	2	6
	10	0	5
	11	3	6
	12	0	2
	13	0	17
	14	0	3
	15	0	5
	16	2	7
	17	3	7
	18	2	6
	19	1	8
	20	0	2
All Egypt		19	125

Table 12—Logit estimates to assess representativeness of the subsample and the extent of attrition bias

Explanatory variable	Dependent variable (1) 1 = in subsample, 0 = not in subsample	Dependent variable (2) 1 = did not attrit from subsample 0 = did attrit from subsample
Real per capita expenditure	-0.000464	-0.000495
	(1.44)	(0.63)
Household size	0.016112	-0.084249
	(0.53)	(0.68)
Number of household members below 15 years	-0.020254	0.243595
	(0.44)	(1.34)
Number of household members above 60 years	0.011380	0.131767
	(0.10)	(0.41)
Age of head of household in years	-0.001282	-0.010495
	(0.34)	(0.80)
Dummy: Female-headed household = 1	-0.187315	0.036334
	(1.09)	(0.06)
Average years of schooling, household members	0.007481	0.019676
	(0.47)	(0.35)
Mother or father: Primary schooling or more = 1	-0.137068	0.227050
	(0.89)	(0.40)
Log: Owned cultivated land	-0.074563	-0.240205
	(1.72)*	(1.72)*
Log: Livestock value	-0.000424	0.172769
	(0.02)	(1.69)*
Industry: Manufacturing = 1	-0.395656	1.020709
	(2.18)**	(1.22)
Industry: Construction = 1	-0.516705	0.232389
	(1.98)**	(0.21)
Industry: Trade and service = 1	-0.196893	-0.388722
	(1.08)	(0.64)
Industry: Community & recreation = 1	-0.077621	-0.205251
	(0.48)	(0.38)
Urban = 1	0.122262	-0.568126
	(0.89)	(1.20)
Constant	-1.446430	3.109337
	(5.72)***	(3.22)***
Observations	2,449	374
Log Likelihood	-1,039.04	-90.24
Pseudo R^2	0.0073	0.0694

Notes: Absolute value of Z-statistics in parentheses. * significant at 10 percent level; ** significant at 5 percent level; *** significant at 1 percent level.

Table 13—Primary sampling unit-level food price index, 1999 (Base: 1997 = 100)

Region	Region Code	Governorate	Governorate Code	Primary Sampling Unit (PSU)	PSU Code	1999 Price Index
Metro	1	Cairo	1	El Sabteya	104	106.6
				Shagaret Mariam	106	107.1
				Masaken El Ameria	107	99.8
Lower Urban	2	El Sharkia	7	Mashtool El Souk	134	107.3
		El Gharbia	10	Nasser	156	102.4
		El Beheira	12	El Mahmoudia	167	100.5
Lower Rural	3	El Sharkia	7	Sheibat El Nikaria	137	106.8
				Mashtool El Kady	139	111.1
		El Gharbia	10	Kafr Dima	159	107.8
		El Beheira	12	Badr	169	106.2
				Kombaniat Abou Keir	172	106.8
Upper Urban	4	El Menia	17	Thaleth	196	109.0
		Asyout	18	Al Walidiah	204	112.1
		Sohag	19	Sakolta	211	114.4
Upper Rural	5	El Menia	17	Beni Ali	200	100.0
				Talah	202	111.7
		Asyout	18	Shotb	207	119.4
				Nagea Sabae	206	110.1
		Sohag	19	Aldayabat	214	118.4

Notes: PSU-level food price index for 1999 is a weighted aggregate Laspeyres' price index with 1997 as base year. Regional food budget shares used as weights. These weights are derived from Bouis, Ahmed, and Hamza (1999), based on data from the 1997 EIHS.

REFERENCES

Adams, R. (1999). *Nonfarm income, inequality and land in rural Egypt*. PRMPO/MNSED. Policy Research Working Paper 2178. Washington, D.C.: World Bank.

Ahmed, A. U., and H. E. Bouis. (2002). Weighing what's practical: Proxy means testing for targeting food subsidies in Egypt. Food Consumption and Nutrition Division Discussion Paper 132. International Food Policy Research Institute, Washington, D.C.

Alderman, H., and K. Lindert. (1998). The potential and limitations of self-targeted food subsidies. *World Bank Research Observer* 13 (2): 213-229.

Assaad, R., and M. Rouchdy. (1998). Poverty and poverty alleviation strategies in Egypt. Report to the Ford Foundation. Humphrey Institute of Public Affairs, University of Minnesota, Minneapolis, Minn.

Assaad, R., F. El-Hamidi, and A. U. Ahmed. (1999). The determinants of employment status in Egypt. Revised draft. International Food Policy Research Institute, Washington, D.C.

Baulch, R., and J. Hoddinott. (2000). Economic mobility and poverty dynamics in developing countries. *Journal of Development Studies* 36 (6): 1–24.

Bouis, H. E., A. U. Ahmed, and A. S. Hamza. (1999). Patterns of food consumption and nutrition in Egypt. International Food Policy Research Institute, Washington, D.C.

Cardiff, P. (1997). The 1995/96 household income, expenditure and consumption survey: Final analysis report. Paper prepared for the U.S. Agency for International Development/Egypt and U.S. Bureau of Census, Washington, D.C.

Carter, M. (1999). Getting ahead or falling behind? The dynamics of poverty in post-apartheid South Africa. Department of Agricultural and Resource Economics. University of Wisconsin, Madison, Wis.

Datt, G., and D. Jolliffe. (1999). Determinants of poverty in Egypt: 1997. Food Consumption and Nutrition Division Discussion Paper 75. International Food Policy Research Institute, Washington, D.C.

Datt, G., D. Jolliffe, and M. Sharma. (1998). A profile of poverty in Egypt: 1997. Food Consumption and Nutrition Division Discussion Paper No. 49. International Food Policy Research Institute, Washington, D.C.

Dercon, S., and P. Krishnan. (2000). Vulnerability, seasonality and poverty in Ethiopia. *Journal of Development Studies* 36 (6): 25–53.

El-Laithy, H. (1996). Structural adjustment and poverty. Paper presented at the International Conference on Structural Adjustment, University of California, Los Angeles, California.

El-Laithy, H., and S. Mukherjee. (1999). *Review of poverty in Egypt: Estimates, methods, and comparability.* Egypt Food Security Project Paper No. 6. International Food Policy Research Institute, Washington, D.C.

El-Laithy, H., and M. Osman. (1996). Profile and trend of poverty and economic growth in Egypt. Research Papers Series, Egypt Human Development Report; United Nations Development Programme/Institute of National Planning.

Grootaert, C., and R. Kanbur. (1995). The lucky few amidst economic decline. Distributional changes in Côte d'Ivoire as seen through panel data sets, 1985-88. *Journal of Development Studies* 31 (4): 603-619.

Jalan, J., and M. Ravallion. (2000). Is transient poverty different? *Journal of Development Studies* 36 (6): 82–99.

May, J., M. Carter, L. Haddad, and J. A. Maluccio. (2000). KwaZulu-Natal Income Dynamics Study (KIDS) 1993–1998: A longitudinal household data set for South Africa policy analysis. *Development Southern Africa* 17 (4): 567-581.

McCulloch, N., and B. Baulch. (2000). Simulating the impact of policy upon chronic and transitory poverty in rural Pakistan. *Journal of Development Studies* 36 (6): 100-130.

Morduch, J. (1999). Between market and state: Can informal insurance patch the safety net*? World Bank Research Observer* 14 (2): 187-208.

Ravallion, M. (1988). Expected poverty under risk-induced welfare variability. *Economic Journal* 98: 1171-1182.

Ravallion, M. (1994). *Poverty comparisons.* Chur, Switzerland: Harwood Academic Publishers.

Singerman, D. (1995). *Avenues of participation: Family, politics and networks in urban quarters of Cairo.* Princeton, N.J.: Princeton University Press.

STATA. (1999). *Reference manual: P-St. Release 6.* College Station, Texas, U.S.A.: Stata Corp.

Stats SA. (2000). Statistics South Africa. Government of South Africa, Pretoria. http://www.statssa.gov.za

Tuck, L., and K. Lindert. (1996). *From universal food subsidies to a self-targeted program*. World Bank Discussion Paper No. 351. Washington D.C.

World Bank. 1999. *World development indicators.* Washington, D.C.

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