

Is Good Economic Policy Good for the Poor?¹

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Abstract:

This paper is concerned with looking at whether good economic policy is good for the poor. Good economic policy as defined by the World Bank, for example, implies that a country has “low inflation, small fiscal deficits, and an open trade regime”. The paper notes the general advocacy position that “good policy is good for growth” and as such it will be expected that “good policy would be good for poverty reduction”. The paper reviews the evidence on this conclusion and suggests that the evidence is mixed. The paper then looks at the effect of policy on the average income of the poor. For a sample of 42 developing countries the paper shows that the income elasticity of the average income of the poor is generally less than unity, contrary to widely circulated claims that it is equal to one. This implies that growth benefits the poor by less than the increase in per capita income. Moreover, for a properly calculated average income of the poor, the paper shows that there does not exist any effect of policy on the poor.

Key Words: good economic policy, average income of the poor, poverty.

1. Introduction:

Poverty reduction is now widely recognized as the overarching objective of development. Such a wide recognition is embodied in the Millennium Development Goals (MDGs) of the United Nations. With the exception of the eighth goal on “global partnership for development”, the remaining seven goals are poverty related². The first MDG requires reducing 1990 poverty by half by the year 2015, where by poverty is meant the head-count ratio and where an international poverty line of US\$1 per person per day, in 1985 PPP, is used. The head-count ratio is the ratio of the number of people falling below this poverty line to total population³.

Given the MDG on poverty, and assuming that the distribution of income does not change substantially over long periods of time, it is an easy matter to show that reducing poverty by half by the year 2015, starting in 2001 as a base year, would require a reduction in the head-

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² For an official statement of the MDGs see United Nations (2001). The websites of the UNDP, World Bank and the IMF all have summary versions for the MDGs and the associated indicators.

³ In technical terms the head-count ratio, denoted as H or P₀, is defined as $H = P_0 = q/n$, where q is the number of poor below a poverty line and n is total population.

count ratio by an annual rate of 4.83 per cent. Given that both the poverty line and the Gini coefficient are assumed constant, it is also easy to show that such a rate of decline of the head-count ratio would require an increase in per capita consumption given by 0.0483 divided by the absolute value of the elasticity of the head-count ratio with respect to mean consumption expenditure⁴. In general, and allowing both the income distribution and the poverty line to change, the required rate of increase in per capita consumption is given by the rate of decline of the head-count ratio divided by the growth elasticity of poverty. Obviously, the lower the elasticity in question the higher is the required rate of growth of per capita consumption⁵.

For a sample of 19 Sub-Saharan African countries the absolute value of the elasticity of the head-count ratio ranges from a low of 0.43 (for Ethiopia) to a high of 2.2 (for Ghana) with an average of 1.0254 and a standard deviation of 0.4879. Thus, achieving the MDG on poverty would require mean per capita consumption expenditure to grow by an annual rate of 4.71 per cent⁶. With an average population growth rate of 2.7 per cent, the achievement of the MDG of poverty reduction would require a GDP growth rate of about 7.41 per cent per annum. Given the historical record of growth in the continent, and given the rate of savings and the magnitude and rates of flow of foreign aid, such a growth target is clearly infeasible⁷.

To further appreciate the infeasibility of achieving the MDG on poverty, note that the incremental capital-output ratio for Sub-Saharan Africa for the period 1995-1999 averaged 5.47. This implies that to achieve the MDG on poverty African countries would need an annual investment rate of about 40.53% of GDP (7.49×5.47). This is clearly beyond the saving capacity of the African economies where the savings rate averaged 22.9 percent of GDP for the period 1975-1984, 19 percent for the period 1985-1989 and 16 percent for the 1990s⁸.

An alternative way of looking at the feasibility of achieving the MDG on poverty is to ask how long would it take Sub-Saharan Africa, growing at the average rate for the second half of the 1990s, to achieve the reduction of the head-count ratio by half. During the second half of the 1990s the annual real growth rate of GDP for Sub-Saharan Africa averaged 3.28 per cent (ranging from a high of 4.8 per cent for 1996 to a low of 2.1 per cent in 1998). With an average population growth rate of 2.7 per cent this means a real GDP per capita growth rate of 0.58 per cent per annum. With such per capita growth, it is an easy matter to show that it will take Sub-Saharan Africa, growing at its currently observed rates, about 120 years to

⁴ Once again, from a technical point of view the head-count ratio, H , can be written in general format as $H = H(y/z, \theta)$, where y , z , and θ are respectively mean consumption expenditure, the poverty line and the Gini coefficient. With the assumption that z and θ are constant the percentage change of the head-count ratio over time, call it $G(H) = (dH/dt)(1/H) = \eta G(y)$, where η is the elasticity of the head-count ratio with respect to mean consumption expenditure (which is negative). The IDG requires $G(H) = -0.047$ and the required growth rate of mean consumption expenditure is thus given by $G(y) = [0.0483/1.0254]$ as stated in the text.

⁵ Using the generalized definition of the head-count ratio in the footnote above it can be shown that the growth elasticity of poverty is given by $\gamma = [(1 - \varepsilon)\eta + \kappa v]$, where ε is the elasticity of the poverty line with respect to mean consumption expenditure, η is the elasticity of the head-count ratio with respect to consumption expenditure (which is negative), v is the elasticity of the head-count ratio with respect to the Gini coefficient (which is positive), and κ is the Kuznets elasticity meaning the elasticity of the Gini coefficient with respect to mean consumption expenditure (which can be positive or negative depending on the stage of development).

⁶ For Ethiopia the required rate of growth of per capita consumption is 11.2 per cent per annum!!

⁷ See the World Bank (2001: 15, table 2-1) where real GDP growth rates for Sub-Saharan Africa are recorded as 2.2 per cent for the period 1975-1984, 2.3 per cent for 1985-1989 and 2.1 per cent for 1990-1999.

⁸ See World Bank (2001: 25, table 2-11).

reduce poverty by half. This is a time horizon that is about nine folds the identified time horizon in the context of the MDG on poverty⁹.

In the context of the MDGs, and for the purposes of deciding on the provision of concessional lending to low-income countries, a Poverty Reduction Strategy Paper (PRSP) process has now been established to guide World Bank and IMF boards in their lending decisions. A PRSP is to be prepared, in collaboration with external partners if the need arises, and owned by countries. The core elements of a PRSP include (i) documentation of the participatory process invoked by the country to solidify the ownership of the development program; (ii) detailed diagnosis of the state of poverty in the country including both money metric dimensions, broader capability deprivation dimensions, and dimensions gleaned from participatory poverty assessments; (iii) rigorous identification and setting of medium-and long-term goals for poverty reduction with relevant, and realistic, indicators of progress inclusive of annual and medium-term targets; (iv) clear specification of appropriate and feasible priorities for public actions¹⁰.

Central to the PRSP process are the stability of the macroeconomic framework; the appropriate choice of fiscal policies and the adequacy and credibility of the financing plan of the development program; the suitability of the structural and sectoral policies and policies for social inclusion and equity; and, the directions of improvements in governance and public sector management. Implicit in these requirements is the expectation that a country will develop, and sustain, a good economic policy environment.

According to the World Bank (1998: 13) a “country with poor policies would be one with high inflation, large fiscal imbalances, and a closed trade regime”. A more comprehensive definition of good policy would be one that takes into account the various elements of what has come to be known as the Washington consensus. According to Fischer (2003: 6) “the policy consensus consists of four elements: policies to ensure macroeconomic stability; market-oriented microeconomic policies; integration into the global economy, particularly on the trade side; and a positive role for the government in establishing, monitoring, and developing the institutional framework of the economy, providing public goods including especially social expenditures, and conducting stabilization policies”¹¹. The justification for this overriding requirement in PRSPs seems to be based on the proposition that “good policy is good for growth” and, in view of the fact that growth leads to poverty reduction, “good policy is good for poverty reduction”¹².

The proposition that “good policy is good for growth” is currently coming under increased scrutiny especially in the context of explaining long-term economic growth of nations (see, for example, Acemoglu et al (2003), Easterly and Levine (2003), and Rodrik, Subramanian, and Trebbi (2002)). For developing countries it has been established that the proposition is derived by extreme values for the policy indicators (i.e. extremely bad policies) implying that countries starting from moderate values for the policy indicators are not likely to see any improvement in their growth performance (Easterly (2003))¹³. Despite these reservations,

⁹ For similar results see the Economic Commission for Africa (ECA) (1999) and Ali (2001-a). Indeed the ECA (1999) was the first to suggest that the required real GDP growth to achieve the MDG on poverty is about 7 percent per annum. See also Collier and Dollar (2001).

¹⁰ See, for example, IMF and IDA (2001).

¹¹ The details of the components of the Washington consensus include: fiscal discipline; public expenditure priorities in education and health; tax reform; positive rates of interest; a competitive exchange rate; import liberalization; openness to foreign direct investment; privatization; deregulation; and, protection of property rights.

¹² An overall assessment, from an African perspective, of the “good policy” packages incorporated in the famous “adjustment programs” is to be found in Mkandawire and Soludo (1999).

¹³ The ranges for moderate values of the policy variables used by Easterly are as follows: inflation rate and black market premium in the closed interval [-0.05, 0.35]; budget deficit [-0.12, 0.02];

however, if good policy is good for growth, then one can conclude that good policy is good for poverty reduction¹⁴.

The proposition that “good policy is good for the poor” is a recently developed one. In its original formulation it was derived from the proposition that “growth is good for the poor” which is an empirical result purporting to show that “average incomes of the bottom quintile tend to rise equiproportionately with average incomes”. Thus, the “poor” are defined as the “bottom quintile”. The policy question is then formulated by noting that such a finding “suggests that a range of policies and institutions that are associated with higher growth will also benefit the poor proportionately” (Dollar and Kraay (2002: 209)). The authors conclude that “a variety of pro-growth macroeconomic policies, such as low inflation, moderate size of government, sound financial development, and openness to trade, raise average incomes with little systematic effect on the distribution of income. This supports the view that a basic policy package of private property rights, fiscal discipline, macroeconomic stability, and openness to trade on average increases the income of the poor to the same extent that it increases the incomes of the other households in society” (Dollar and Kraay (2002: 219)).

This paper deals with the issues pertaining to the effect of macroeconomic policy on the incidence of poverty as well as its effect on the poor. The established methodology for ascertaining the effect of policy on the incidence of poverty is to look at the regression of the head-count ratio as the dependent variable on policy indicators as the explanatory variables. Alternatively, changes in the head-count ratio can be compared to changes in policy variables. The results based on such a methodology are reviewed in section (II) of the paper. The methodology for ascertaining the effect of macroeconomic policy on the poor uses the average income of the poor as the dependent variable and per capita income as the explanatory variable together with policy indicators. As it turned out the definition of the average income of the poor is central to such an investigation. In section (III) the average income of the poor is dealt with while in section (IV) results on the effect of policy on the poor are presented. Section (V) offers a few concluding remarks.

2. Is Good Economic Policy Good for Poverty Reduction?

As noted in the introduction the above question is prompted by the widely shared proposition that good policy, as defined by the World Bank, is good for growth. In view of the fact that growth is known to be good for poverty reduction, then one is entitled to expect good policy to be good for poverty reduction. As noted by a number of contributions to the literature the answer to the above posed question is empirical in nature (see, for example, Agenor (1998) and Ferreira, Pernnushi and Ravallion (2001)). The empirical literature suggests three possible answers to the question posed as a title to this section: yes, uncertain and no. The following sub-sections review the evidence.

2.1. The Answer is Yes:

According to Demery and Squire (1996), and Christiansen, Demery and Paternostro (2003), the answer to the question posed in the title of the section is yes. The answer is obtained by relating changes in head-count ratio between two points in time to changes in macroeconomic policy in samples of Sub-Saharan African countries¹⁵.

overvaluation index [-0.4, 065] with index above zero indicating overvaluation; and, trade less than 1.2 of GDP.

¹⁴ Thus, for example, Fischer (2003: 2) argues that as “far as economics is concerned, the big challenge is poverty, and the surest route to sustained poverty reduction is economic growth. Growth requires good economic policies”.

¹⁵ In Demery and Squire (1996) a sample of six African countries is used: Cote d’Ivoire (national surveys for 1985 and 1988), Ethiopia (regional: 1989, 1994), Ghana (national: 1988, 1992), Kenya (rural: 1982, 1992), Nigeria (national: 1985, 1992), and Tanzania (rural: 1983, 1991). In Christiansen,

A macroeconomic policy index, or score, that combines fiscal, monetary and exchange rate policy indicators in a single index is constructed. Each policy is represented by more than one component in the index. "The overall macro-policy index is a weighted average of these components, the weights being derived from international cross-section growth regressions. These scores are computed for the three-year period prior to each survey, and changes in the index are then computed. The index is computed so that increases (either lower negative values or higher positive values) indicate an improvement in economic policy" (Christianson et al (2003: 329))¹⁶.

Changes in each macro policy indicator are scored on a scale that ranges from -3 (for a highest degree of deterioration in policy to 3 (for the highest improvement in policy). The overall macroeconomic policy index is calculated as the weighted average of the fiscal, monetary and exchange rate policy indices where fiscal policy is given a weight of 36.7 percent, monetary policy a weight of 11.8 percent and exchange rate policy a weight of 51.1 percent.

To appreciate what is involved in this method of calculating the changes in macroeconomic policy stance we reproduce in table (1) the results of Demery and Squire (1996: 45, table 5).

Table (1): Changes in Macroeconomic Policies: Demery and Squire Results

Country	Year of First Survey	Year of Second Survey	Change in Fiscal Policy	Change in Monetary Policy	Change in Exchange Rate Policy	Overall Change in Macro Policy
Cote d'Ivoire	1985	1988	-2	1.0	-2.0	-1.65
Ethiopia	1989	1994	-1	-1.0	2.0	0.50
Ghana	1988	1992	0	0.5	2.5	1.35
Kenya	1982	1992	1	-1.5	0.5	0.45
Nigeria	1985	1992	1	-1.0	3.0	1.79
Tanzania	1993	1991	3	1.0	3.0	2.76

Source: Demery and Squire (1996: 45, table 5).

According to the above results Cote d'Ivoire experienced a large deterioration in macro economic policy between 1985 and 1988, Ethiopia and Kenya experienced small improvements in policies, while Ghana, Nigeria and Tanzania recorded large improvements in policies. The change in the macroeconomic policy indices is then related to the change in the head-count ratio for each country. Demery and Squire (1996) results are summarized in the following table.

Table (2): Macroeconomic Policy and Poverty in a Sample of African Countries: Demery and Squire Results

Country	Change in Macro Policy Index (weighted score)	Change in Poverty (percentage points per year)
Cote d'Ivoire	-1.65	5.30

Demery and Paternostro (2003) a sample of 9 Sub-Saharan African countries with 15 episodes of poverty changes is used: Cote d'Ivoire (1985-88), Mauritania (1987-95) and Zimbabwe (1991-96) with one episode each; Ethiopia (1989-95 and 1994-97), Ghana (1988-92 and 1992-99), Madagascar (1993-97 and 1997-99), Nigeria (1985-92 and 1992-96), Uganda (1992-97 and 1997-2000), and Zambia (1991-96 and 1996-98), with two episodes each. Tanzania, and Kenya, included in the 1996 analysis, were dropped from the sample due to "weaknesses in the underlying survey data".

¹⁶ In the original formulation of the index a score of 1.0 or more is taken to reflect a large improvement in policy; a score of 0-0.9 is to reflect a small improvement in policy and a score below zero to indicate deterioration in policy.

Ethiopia	0.55	-3.60
Ghana	1.35	-1.95
Kenya	0.45	-0.28
Nigeria	1.79	-1.27
Tanzania	2.76	-1.83

Source: Demery and Squire (1996: 45, table 6).

At the time these results, it is claimed by Demery and Squire (1996: 45-46), present “the most compelling evidence to date that improvements in the macroeconomic policy regime of the kind usually associated with World Bank and IMF-supported programs are consistent with a decline in the incidence of poverty overall. Recall that an increase in the index measures improvement in fiscal, monetary and exchange rate policy. The evidence shows that in five countries experiencing progress on these fronts, poverty declined. And in one country where policies deteriorated, poverty increased. These results do not establish causality, but, at least in the six countries for which we have evidence, we can conclude that failure to implement an adjustment program has been doubly harmful to the poor- they lose the benefits that adjustment can bring, and they suffer worse deprivation under likely alternative policy regimes characterized by larger fiscal deficits and overvalued exchange rates”.

The above result is confirmed by the study of Christiansen et al (2003: 328-331). As in the earlier study the authors use secondary information on head-count ratios (including a not nationally representative survey for Ethiopia), while they compute the macro-economic policy index anew. The ultimate result of the relationship between the in the head-count ratios and the changes in the policy index is presented in graphical format (figure 1: 330) and it is not clear how the 15 points in the figure are obtained in view of the information presented in table3 which includes only 12 results on changes in poverty. The said table does not include the change in poverty in Cote d'Ivoire, Ethiopia 1989-95 and Ghana (1988-99). By contrast table 6 (p. 329) includes changes in the policy index for the 15 episodes. Despite this weakness, a summary of the results is presented in the following table where the change in the head-count ratios is explicitly indicated. In the table the head-count ratio of the first survey is subtracted from that of the first survey for each poverty episode.

Table (3): Macroeconomic Policy and Poverty in a Sample of African Countries: Christiansen et al Results

Country	Period of Change	Change in the Head-Count Ratio (percentage points)	Policy Index (weighted average)
Ethiopia	1994-97	35 - 41 = - 6	2.2
Ghana	1992-97	39 - 51 = -12	0.2
Madagascar	1993-97	73 - 70 = + 3	-0.1
	1997-99	71 - 73 = - 2	0.5
Mauritania	1985-95	35 - 58 = -23	2.4
Nigeria	1985-92	43 - 46 = - 3	1.9
	1992-96	66 - 43 = +23	-1.0
Uganda	1992-1997	44 - 56 = -12	0.7
	1997-2000	35 - 44 = - 9	0.3
Zambia	1991-96	80 - 70 = +10	1.6
	1996-98	80 - 76 = - 4	0.0
Zimbabwe	1991-1996	35 - 26 = + 9	0.3

Source: Christiansen et al (2003: tables 3 and 6)

The authors correctly observe that most countries in the sample “experienced improvements in their macroeconomic policy indicators- those for the second period generally being better than those for the earlier period. But there were only marginal improvements in Ghana (1992-99) and Zimbabwe (1991-96) and no change in Zambia (1996-98). Macroeconomic destabilization is observed in two countries- Cote d'Ivoire during the 1980s and Nigeria in the 1990s” (Christiansen et al (2003:330)). The authors conclude: “setting these macroeconomic

trends against the trends in poverty reduction suggests that countries achieving improvements in their macroeconomic balances typically have not experienced increases in consumption poverty- rather the reverse. Nine of the 15 episodes of change indicate both macroeconomic policy improvements and subsequent poverty reduction. In the two cases in which macroeconomic balances substantially deteriorated, poverty increased sharply”.

Despite being a pioneering study in this area of investigation it can easily be shown that the Demery and Squire (1996) results are sensitive to the secondary information on head-count ratios used by the authors. Thus, for example, Ali (1998) has shown that, using comparably generated head-count ratios for a sample of ten SSA countries, there does not exist a systematic relationship between the change in the policy stance index and the head-count ratio¹⁷.

2.2. The Answer is Uncertain:

Agenor (1998: 28-31) reports preliminary results on the relationship between macroeconomic factors and poverty based on cross-country regression for a sample of 38 developing countries and a Sub-Saharan sub-sample of 16 countries. The dependent variable is the logarithm of the head-count ratio. The macroeconomic factors used included: the rate of inflation (consumer prices); the log of the ratio of government consumption expenditure as a ratio of GDP; the log of the ratio of subsidies and other current transfers to GDP (to capture the level effects of changes in public expenditure); the log of the ratio of subsidies and other current transfers to total government expenditure (to capture the compositional effects in public spending); the log of the real exchange effective rate index (defined such that an increase is a depreciation); and, the annual rate of change of the real effective exchange rate. In addition the explanatory variables included as developmental factors the log of GNP per capita in 1987 US\$; the annual growth rate of real GNP per capita; and, the log of the share of urban population in total population. The results are obtained for the averages of the factors over the relevant current and lagged years to account for possible lags.

The results for the whole sample can be summarized as follows: (a) when government expenditure as a ratio of GDP is used to measure the level effects of fiscal policy, “the results suggest that inflation has always a significant, positive effect on the poverty rate. The coefficient of the real growth rate of income per capita is not significant. The coefficient on income per capita is negative and always significant. The urbanization ratio, the fiscal variable, and the real exchange rate (either in level form or in rate of change form) do not have a stable effect; (b) when the ratio of subsidies and other current transfers to GDP is used as the fiscal variable (for a smaller sample of 24 countries) the results confirm the positive and significant effect of inflation on poverty; “all other variables do not appear to have a well-determined effect. The share of transfers and subsidies has the expected negative sign but is borderline significant only where real income per capita is excluded. When both variables are included, the share of transfers and subsidies becomes insignificant”; (c) when the relative share of transfers and subsidies in total expenditure is used to capture the compositional effects of fiscal policy, the results remain similar to the ones reported in (b).

The results for the sub-sample of Sub-Saharan Africa (16 countries) are found to be consistent with the ones for the whole sample where the inflation rate and real per capita income are significant in all regressions. In addition the real exchange rate is found to be borderline significant suggesting that a real devaluation reduces poverty. Agenor’s results for Sub-Saharan Africa where the level of government expenditure is used are summarized in

¹⁷ More recent results, along the same lines, are reported by Cashin et al (2001). In this study the HDI is used as the indicator of poverty while macroeconomic policy indicators included inflation and its variance, budget deficit, government spending, foreign aid as a percentage of GDP, openness measures, black market premium, and institutional variables. The authors conclude that “we have not found significant and robust evidence that any of these variables are individually associated with pro-poor economic growth”.

table (4). All independent variables in the table are averages over the current period for which the head-count index is available and one lagged period. The dependent variable is the log of the head-count ratio and the figures between brackets are the absolute t-values.

Table (4) : Agenor's Results on Macroeconomic Factors and Poverty

Explanatory Variables	1	2	3	4	5	6
Constant	4.38 (3.89)	6.80 (6.32)	4.03 (3.83)	6.80 (6.61)	4.10 (3.86)	6.90 (7.49)
Inflation	0.006 (2.16)	0.003 (1.63)	0.005 (1.98)	0.004 (1.87)	0.005 (1.71)	0.003 (1.65)
Log Gov. Consumption/GDP	-0.079 (0.19)	0.042 (0.15)	-0.146 (0.36)	0.043 (0.16)	-0.151 (0.37)	0.003 (0.01)
Real Per Capita GDP Growth Rate	-0.063 (1.22)		-0.078 (1.59)		-0.060 (1.14)	
Log Real Per Capita GDP		-0.558 (3.59)		-0.556 (4.23)		-0.540 (4.59)
Change in Real Effective Exchange Rate					-0.023 (0.92)	-0.029 (2.00)
Log of Share of Urban Population	-0.180 (0.92)	0.003 (0.02)				
Adjusted R-Squared	0.182	0.573	0.192	0.608	0.182	0.686

Source: Agenor (1998: table 4).

In the above results the significance of the inflation rate, such that an increase in the inflation rate increases poverty, is noted¹⁸. Apart from this no other macro variable is found to be significant apart from the real effective exchange rate. In the last column the change in the real exchange rate is negatively, and significantly, related to the head-count ratio. An increase in the real effective exchange rate, implying real devaluation, is found to reduce poverty. This effect is explained in terms of the possible effects of the exchange rate policy on rural incomes.

In another set of regressions for 8 African countries for which the composition of public expenditure is included it is concluded that the "results also suggest it is not so much the level of the fiscal variable that matters, but rather the changes in the composition of public spending. Most importantly, and in contrast to results obtained for the full sample, 'the results' show that both income per capita and the share of transfers and subsidies in total government expenditure affect significantly poverty along with inflation".

It is perhaps clear from the table that the explanatory power of the estimated relation increases whenever per capita income is included. This should not be surprising in view of the fact that the per capita income is one of two fundamental determinants of the standard poverty measures including the head-count ratio. The other fundamental determinant is of course the Gini coefficient. If the framework attempted by Agenor is the correct one for a search for the causal relationship between macroeconomic variables and poverty then a proper formulation should also include the Gini coefficient, as an explanatory variable, whenever income per capita is included.

¹⁸ A result on inflation is reported in Easterly and Fischer (2001: 25-26). In this paper the authors use the percentage change per year in the head-count ratio as the dependent variable and real GDP per capita growth and the inflation tax rate as the explanatory variables for 64 episodes of changes in poverty in 42 countries. The head-count ratio is defined for each country on the basis of a poverty line that is 50% of the initial mean income of the household survey of the country. The estimated coefficient of the per capita growth rate is -5.24 (with an absolute t-value of 3.7) and the coefficient of the inflation tax rate is 62.55 (with a t-value of 2.03). The authors note that the "inflation tax rate has a significant positive effect on the increase in poverty. The result on the inflation tax rate is not robust to using the percent inflation rate or the log inflation rate, but the inflation tax rate does have appeal as the most appropriate functional form".

2.3. The Answer is No:

Ali (2002) also explored the effect of macroeconomic policy on poverty in a sample of 18 Sub-Saharan African countries. Though the results are reported for the rural sector, the urban sector and the national level, in what follows we only summarize the results at the national level. Moreover, though the results are reported for the three conventional poverty measures in what follows we only review the results for the head-count ratio. Thus, in the regression the logarithm of the head-count ratio is used as the dependent variable.

Representative indicators of the three major macroeconomic policies used in what follows are government expenditure as a ratio of GDP, the inflation rate (consumer price index), the annual rate of change of money supply, the ratio of the parallel to the official exchange rate, and the investment rate. The inflation rate and the rate of change in money supply are used as alternative measures of monetary policy. All explanatory variables are taken as the average of the five years preceding the survey year. In each case the fundamental relationship between the poverty measure and mean consumption expenditure and the Gini coefficient is estimated first prior to adding the policy variables. Table (5) reports the results where figures between brackets are White's heteroscedasticity-consistent absolute t-values.

Table (5): Macroeconomic Policy and Poverty in Sub-Saharan Africa

Explanatory Variable	1	2	3
Per Capita Expenditure	-0.0016 (15.96)	-0.0016 (14.49)	-0.0016 (14.28)
Gini Coefficient	0.0124 (5.40)	0.0141 (6.46)	0.0142 (5.86)
Government Expenditure		-0.0044 (2.06)	-0.0041 (2.08)
Inflation Rate		0.0002 (0.37)	
Money Supply			0.0004 (0.34)
Exchange Rate		-0.0005 (0.44)	-0.0004 (0.34)
Investment Rate		0.0006 (0.14)	0.0001 (0.03)
Constant	4.17 (34.36)	4.17 (26.61)	4.16 (23.34)
Adjusted R-squared	0.94	0.95	0.95

Source: Ali (2002: 16, table 5).

As is clear from the table the structural relationship between poverty and its fundamental determinants holds where the coefficients on real per capita consumption expenditure and the Gini coefficient are statistically significant and with the right signs. The two fundamental determinants of poverty explain more than 90 per cent of the variation in poverty across the countries of the sample and for all poverty measures.

Looking at the effect of policy on poverty the table also shows that policy does not seem to affect poverty in a statistically significant way except for government expenditure. The coefficients of all policy variables are statistically not significant. However, an increase in government expenditure as a ratio of GDP seems to reduce the spread of poverty in a significant way. But then an increase in government expenditure as a ratio of GDP is not considered as "good policy"!

3. On the Average Income of the Poor:

As noted in the introduction, in a recent paper Dollar and Kraay (2002) purported to show that the "income of the poor rises one-for-one with overall growth". They define the poor as the bottom fifth of the population and they note that this "general relationship between income of the bottom fifth of the population and per capita GDP holds in a sample of 80 countries covering four decades".

While defining the poor as the bottom 20 percent of the population is considered as a relative definition of poverty, a strict interpretation, however, will identify this category of population as an inequality indicator defined on the Lorenz curve. Thus the result reported by Dollar and Kraay on the existence of a strict proportionality relationship between the average income of the lowest quintile in the distribution of income and overall average income can be understood as an “inequality-growth” result rather than a “poverty-growth” result. Indeed interpreting their finding as a growth-poverty relationship could result in confusing and, indeed, misleading policy conclusions¹⁹.

A possible way of investigating the relationship in question is to follow the direct approach to the study of poverty suggested by Kanbur (1987-a and b) that requires starting from an explicit measure of poverty²⁰. It can be shown that an expression for the average income of the poor, y_p , can be obtained in a direct fashion from the poverty-gap index, P_1 , and is given by:

$$(1) y_p = z [P_0 - P_1]/P_0$$

where P_0 is the head-count ratio and z is the poverty line.

Recall that in a general formulation of the poverty measures, P_0 and P_1 are functions of the mean income, y , and an index of the inequality in the distribution of income. Now, assuming that the poverty line is a function of mean income while the inequality index is not a function of mean income it is an easy matter to show that the elasticity of the average income of the poor with respect to mean income is given by:

$$(2) d[\ln y_p]/d[\ln y] = \varepsilon + (1 - \varepsilon)(1 - \eta/\rho)$$

where ε is the elasticity of the poverty line with respect to mean income, η is the elasticity of the head-count ratio and ρ is the elasticity of the poverty-gap ratio with respect to income²¹. If the elasticity of the poverty line with respect to mean income, ε , is equal to zero, as in the standard international poverty line tradition that hold the poverty line fixed over time and across countries, then the elasticity of the average income of the poor is give by the expression $(1 - \eta/\rho)$. If, on the other hand, $\varepsilon = 1$ as in the European tradition of specifying the poverty line as a constant proportion of the standard of living (here mean income of society), then indeed the Dollar and Kraay result would obtain as is clear from direct substitution in equation (2).

For the general case where the elasticity of the poverty line with respect to mean income, ε , is positive and less than unity then the Dollar and Kraay result will obtain only under the assumption that η is zero, which indeed is the assumption that they make by taking $P_0 = 0.2$,

¹⁹ For the policy importance of such results see the recent contributions by Kanbur (2001) and Wade (2001) on the controversy that surrounded the World Development Report 2000/2001. For an example of the policy muddles that can result from such misinterpretation see the Economist (2001-a) magazine which decided to celebrate the Dollar and Kraay result as providing “definitive refutation” for the concern expressed by many donor governments and development practitioners about the “quality of growth”. In its 27th May issue the Economist (2001-b: 94) celebrated the results by writing an “economic focus” under the title “growth is good”. Relating the Dollar-Kraay results to the debates about the effects of globalization on inequality the Economist notes that “the findings could not be clearer. Growth really does help the poor: in fact, it raises their incomes by about as much as it raises the incomes of everybody else”. For a discussion of how such a result is used for policy purposes see Ali (2001-a). Ravallion (2003: 6) prefers to look at the conclusion reached by the Economist in the context of “relative” versus “absolute” inequality.

²⁰ As is well known the measurement of poverty involves two steps: identifying the poor, usually through specifying a poverty line, and aggregating the information in a single index.

²¹ This is done by differentiating equation (1) after taking note of the fact that P_0 , P_1 and z are all functions of mean income.

a constant for all countries. Otherwise, one would expect the elasticity of the average income of the poor to be less than unity.

In the light of the above, the question of by how much is the elasticity of the average income of the poor with respect to mean income less than unity, is of course a legitimate research question. Dollar and Kraay (2002: 202) suggest that such a question can be investigated by estimating an equation of the following format:

$$(3) \ln y_p = \alpha + \beta \ln y + \sum_j \gamma_j x_j$$

Where x is a set of control variables that could include policy variables. In the above equation β is the income elasticity of the average income of the poor.

In a recent paper Ali and Elbadawi (2001)²² provided evidence on the income elasticity of the average income of the poor by directly calculating equation (2) for a sample of 48 countries for which they had detailed poverty calculations. The sample is drawn from the high quality data set of Dieninger and Squire (1996). The components of equation (2) are calculated and a t-test for differences from unity for various groups of countries and for the whole sample is performed. In addition, a t-test for differences between the country groups is also performed.

In addition to direct calculations, Ali and Elbadawi (2001) provide regression results for the relationship between the mean income of the poor and economic growth. They estimated the basic specification as in equation (3) above without additional controls but with and without a dummy for Sub-Saharan Africa.

For the purposes of exploring the behavior of the elasticity in question with respect to mean income, they also estimated two additional formats: one is a semi-log specification where the explanatory variable is the mean income of society and its square and the other where the square of the logarithm of mean income of society is added to the basic specification. Each of these additional formats is estimated with and without a dummy for SSA. As in Dollar and Kraay all income magnitudes are in 1985 PPP obtained from Summers and Heston (1991).

The most important results from Ali and Elbadawi (2001) are that for a properly defined income of the poor, the income elasticity of the average income of the poor is less than unity in a statistically significant manner. In particular, the income elasticity of the average income of the poor is statistically significantly different from 0.5 for Sub-Saharan Africa; and that the income elasticity of the average income of poor is related to the level of development in the sense that for higher per capita incomes a higher elasticity obtains. In the following section the effect of economic policy on a properly calculated average income of the poor is explored.

4. The Effect of Economic Policy on the Poor:

Dollar and Kraay (2002: 209) argue that their result that “average incomes in the bottom quintile tend to rise equiproportionately with average incomes” suggests that “a range of policies and institutions that are associated with higher growth will also benefit the poor proportionately”. The policy and institutional measures used in the analysis include inflation and government consumption (considered bad for growth), exports and imports relative to GDP, a measure of financial development and a measure of the strength of property rights and the rule of law (considered good for growth). Adding each of these measures as an explanatory variable in the basic equation shows that none of them is statistically significant. When all five of them are considered jointly only government consumption came out as

²² An earlier version of Ali and Elbadawi (2001) was sent for publication to World Development in 2000 when a version of the Dollar and Kraay (2002) was published as a World Bank working paper. One of the editors of World Development called one of the authors declining to consider the paper for publication on account of the fact that the Dollar and Kraay paper was not as yet published at the time. Our paper remains unpublished today but is available from the authors. Needless to note that a copy of the paper was given to Dollar and Kraay (2002: 221, footnote 4) who acknowledged the points made in the paper albeit in a dismissive way!!!

significant at the 10 percent level of significance such that an increase in government consumption leads to a decline of the average income of the lowest quintile (with a coefficient of -0.746 and a standard error of 0.386).

The authors conclude that we “find little evidence that these policies and institutions have systematic effects on the share of incomes accruing to the poorest quintile. The only exceptions are that there is some weak evidence that smaller government size and stabilization from high inflation disproportionately benefit the poor by raising the share of income accruing to the bottom quintile. These findings indicate that growth-enhancing policies and institutions tend to benefit the poor- and everyone else in society- equiproportionately” (Dollar and Kraay (2002: 197-98).

In what follows we use a sub-sample from the data set compiled by Dollar and Kraay to further explore the issue of the effect of policies on the poor. The sub-sample is chosen such that countries have household budget survey information for the 1990s. For the countries in our sub-sample we calculate the relevant poverty measures where we allow the poverty line to depend on per capita consumption expenditure. On the basis of these poverty results we calculate the average income of the poor as per equation (2) for each country.

The size of the chosen sub-sample is 41 countries: 18 African countries (including Tunisia), 15 Latin American countries, and 8 Asian countries²³. A summary of the relevant poverty indicators is presented in table (6) where figures between brackets are standard deviations. All consumption related magnitudes are in 1985 PPP dollars.

Table (6) : Average Income of the Poor in a Sample of Developing Countries: Descriptive Statistics

Country Group	No. of Countries	Per Capita Consumption (y: \$)	Per Capita Poverty Line (z: \$)	Head-count Ratio (P ₀ : %)	Poverty-Gap Ratio (P ₁ : %)	Per Capita Consumption of the Poor (y _p : \$)
Africa	18	710 (444)	389 (91)	46.08 (16.11)	19.85 (8.71)	227 (61)
Asia	8	1329 (736)	509 (186)	21.95 (10.84)	6.46 (4.59)	367 (128)
Latin America	15	1672 (505)	572 (150)	23.74 (8.29)	9.26 (5.58)	364 (103)
All Countries	41	1183 (680)	479 (156)	33.64 (17.33)	13.36 (9.04)	304 (114)

Source: own calculations as per details in appendix A.

The table clearly shows that the poor are not necessarily confined to the bottom quintile. The spread of poverty is widest in Africa with 46 percent of the population falling below a real average poverty line of US\$32 per person per month (i.e. US\$1.06 per person per day). The average head-count ratio over the countries in the sub-sample is 33.5%. The spread of poverty in Latin America (a head-count ratio of about 24%) is similar to that in Asia (a head-count ratio of about 22%) and in both the head-count ratio is closer to the bottom quintile. The table also shows that the average income of the poor is about US\$30 per person per month in Asia and Latin America and only about US\$19 for Africa; for the whole sample it is about US\$25 per person per month.

For the above sub-sample of countries table (7) provides a summary of the policy variables used in the analysis. With the exception of the rule of law, all policy variables are averages over five years preceding, and including, the survey year. The rule of law variable is an average for 1997-98. Note that the index of the rule of law is a normalized variable with mean zero and a standard deviation of one and is constructed in such a way that higher values

²³ For the details of the data set see the data annex.

correspond to better institutions. Thus negative values for this index indicate below average institutional structure. Note also that the financial depth ratio is defined as the ratio of the assets of the commercial banks to the total bank assets.

Table (7): Descriptive Statistics on Macroeconomic and Institutional Policy Variables

Country Group	Trade/GDP Ratio	Government Consumption/GDP Ratio	Log (1+inflation Rate)	Financial Depth Ratio	Rule of Law Index
Africa	0.2214 (0.1184)	0.1464 (0.0385)	0.1647 (0.1703)	0.6592 (0.1896)	-0.4861 (0.5484)
Asia	0.1187 (0.1139)	0.1503 (0.0674)	0.2423 (0.2593)	0.7342 (0.2671)	-0.0667 (0.5310)
Latin America	0.2999 (0.1883)	0.1266 (0.0534)	0.6283 (0.8349)	0.6516 (0.2126)	-0.4672 (0.4570)
All Countries	0.2428 (0.1511)	0.1401 (0.0500)	0.3451 (0.5556)	0.6708 (0.2107)	-0.3995 (0.5275)

Source: compiled from appendix A.

For the sub-sample we estimated the relationship between the average income of the poor and overall average income in two formats: the Dollar and Kraay logarithmic and the Ali and Elbadawi semi-logarithmic format. The dependent variable is the logarithm of the average income of the poor ($\ln y_p$). For each format the results are reported for the relevant specification with and without controls, where the policy variables are introduced individually and then collectively.

Table (8) reports our results for Dollar and Kraay specification where figures between brackets are White heteroskedasticity consistent absolute t-values.

Table (8): Policy and the Average Income of the Poor: Dollar and Kraay Specification
(dependent variable logarithm of average income of the poor)

Detail	1	2	3	4	5	6	7
Ln income ($\ln y$)	0.4847 (11.71)*	0.4918 (11.06)*	0.4804 (11.04)*	0.4917 (10.84)*	0.4718 (10.61)*	0.4654 (10.04)*	0.4525 (6.58)*
Trade/GDP		-0.1035 (0.46)					- 0.0831 (0.30)
Government Consumption/GDP			-0.7684 (1.30)				- 1.1590 (1.65)
Ln (1 + inflation)				-0.0039 (0.69)			0.0039 (0.07)
Financial Depth					0.1034 (0.94)		0.0244 (0.17)
Rule of Law						0.0796 (1.55)	0.1160 (1.65)
Constant	2.3106 (8.35)*	2.2863 (8.04)*	2.4486 (7.54)*	2.2719 (7.66)*	2.3304 (8.36)*	2.4740 (7.77)*	2.7416 (5.94)*
Adjusted R-squared	0.6914	0.6844	0.6949	0.6852	0.6865	0.6956	0.6863

Source: own estimation. * significant at the 1 percent level;*** significant at 10 percent level.

The first observation to make is that the income elasticity of the average income of the poor is about 0.5 rather than one implying that the poor share in increases in per capita income by about half. The estimated coefficient remains stable across all columns in the table and the r-squared, which explains about 70 per cent of the variations in the basic relationship remains

also stable. None of the policy variables is individually significant so that good policy does not seem to be related to the average income of the poor when policy indicators are looked at individually. However, when all policy variables are included the last column shows that government expenditure and the rule of law are border line significant at the 10% level (with probability of 0.108). Increased government expenditure to GDP ratio reduces the average income of the poor (confirming, albeit tentatively, that disciplined fiscal policy may be good for the poor) while improved rule of law has a positive effect on the average income of the poor. One possible interpretation of the rule of law result is that this variable is an institutional one, with a structural nature, rather than a policy variable that changes on a yearly basis. Such an interpretation would be consistent with the structural nature of poverty.

To further explore the possibility of the effect of policy on the income elasticity of the average income of the poor we estimated the above format allowing for an interaction term between the policy variable in question and average income. None of the policy variables, either on its own or interacted with mean income, came out to be statistically significant (for the results see appendix B).

Table (9) reports our results for the semi-logarithmic format where figures between brackets are White heteroskedasticity consistent absolute t-values.

Table (9): Policy and the Average Income of the Poor: Alternative Specification
(dependent variable logarithm of average income of the poor)

Detail	1	2	3	4	5	6	7
Income (y)	0.00046 (12.14)*	0.00046 (12.03)*	0.00046 (11.51)*	0.00047 (12.21)*	0.00045 (11.15)*	0.00045 (9.94)*	0.00043 (7.78)*
Trade/GDP		0.0608 (0.26)					0.0871 (0.33)
Government Consumption/GDP			-0.7032 (1.24)				-1.1709 (1.67)
Ln (1 + inflation)				-0.0389 (1.02)			- 0.00003 (0.0006)
Financial Depth					0.1005 (0.85)		0.0274 (0.18)
Rule of Law						0.0630 (1.12)	0.0860 (1.08)
Constant	5.1071 (99.14)*	5.0901 (68.91)*	5.2111 (47.37)*	5.1111 (98.72)*	5.0536 (58.79)*	5.1494 (73.78)*	5.2990 (25.85)*
Adjusted R-squared	0.7150	0.7097	0.7171	0.7111	0.7105	0.7151	0.7066

Source: own estimation. * significant at the 1 percent level; ** significant at 5 percent level.

As noted earlier, the semi-logarithmic specification allows the elasticity of the average income of the poor to vary with the level of development as reflected by pr capita income. Using the results in column (1) of table (9) we calculated this elasticity for the countries in the sub-sample. A summary of the results is presented in table (10) where figures between brackets are standard deviations.

Table (10): The Income Elasticity of the Average Income of the Poor by Region

Detail	Number of Countries	Elasticity	Standard deviation
Africa	18	0.3273	0.2048
Asia	8	0.6127	0.3393
Latin America	15	0.7708	0.2328
Sub-sample	41	0.5452	0.3135

Source: own calculations based on column (1) table (9).

The table suggests that the extent of the poor benefiting from growth varies across regions. For Africa the poor benefit the less by about a third of the increase in mean income with an elasticity of about 0.33. In Asia the average income of the poor increases by about 61% of the increase in mean income while in Latin America the poor benefit by slightly more than three quarters of the increase in mean income. For the whole sub-sample the elasticity of the average income of the poor is about 0.54, which is not significantly different from 0.5 implying that the poor benefit by about half of the increase in mean income. The income elasticity of the average income of the poor is statistically significantly different from that for Latin America (with a t-value of 5.85) and from that for Asia (with a t-value of 2.21). However, there is no statistically significant difference in the income elasticity of the average income of the poor between Asia and Latin America (with a t-value of 1.18).

The results for the semi-logarithmic specification confirm those for the Dollar and Kraay specification. The estimated coefficient of mean income remains stable across the columns and the adjusted R-squared remains at about 70 percent. None of the policy variables has any independent, and statistically significant, effect on the average income of the poor. When all policy variables are considered together only government consumption as a ratio of GDP comes close to being statistically significant at the 10 percent level (with a probability of 0.1005). Under this weak significance good policy requires a lower ratio of government consumption expenditure to GDP so that we could say that indeed reducing this variable is expected to lead to an increase in the average income of the poor.

To further explore the possibility of the effect of policy on the income elasticity of the average income of the poor under the semi-logarithmic format we estimated the above format allowing for an interaction term between the policy variable in question and average income. As in the case of the Dollar and Kraay specification, none of the policy variables, either separately or interacted with mean income, came out to be statistically significant (for the results see appendix C).

5. Concluding Remarks:

In a recent paper Rodrik (2001) asked the question as to how much do we know about the impact of policy on poverty? His answer is “not nearly enough”. Following the initial optimism about the possible salutary impact of improvements in macroeconomic policy stance (as measured by a composite policy stance index) on the spread of poverty (as measured by the head-count ratio), subsequent econometric investigation of the causal relationship between various policy indicators and poverty did not arrive at any significant relationship between improvements in policy and poverty. These empirical results, however, continue to suffer from lack of appropriate data on poverty to enable robustness tests to be conducted. As such, therefore, our knowledge about the causal relationships is still at very early stages.

Despite these reservations about our knowledge regarding the impact of policy on poverty we are presented by a strong result, albeit based on a flawed methodology, asserting that a “basic policy package of property rights, fiscal discipline, macroeconomic stability, and openness to trade on average increases the income of the poor to the same extent that it increases the income of other households in society”. In this paper we have shown that for a properly defined income of the poor, and for a fairly decent sample of developing countries, the poor tend to benefit by less than the full amount of the increase in per capita income. Under a properly defined income of the poor there does not exist any statistically significant relationship between a range of pro-growth policy variables and the average income of the poor.

In the context of SSA the uncertainty about the impact of policy on poverty can be understood in the light of the structural nature of poverty in the continent. Such structural nature calls for more efforts in designing policies and programs that will bring about sustained improvements in the welfare of people as measured by per capita consumption expenditure. In the meantime, macroeconomic policies implemented under various reform programs may require protecting the African poor during the transition to higher per capita income development

paths²⁴. Such a requirement, we suggest, is a window of opportunity opened by the “poverty reduction strategy papers” process. The PRSP process allows developing countries, especially SSA countries, to think of their development efforts in a long time perspective.

²⁴ See, for example, Ferreira et al (2001).

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Appendix A: Policy and Poverty Data Set

Country	Per Capita Consumption Expenditure (y; in 1985 PPP \$)	Per Capita Consumption Expenditure of the Poor (yp; in 1985 PPP \$)	Government Consumption as a Ratio of GDP (average over 5 years)	Logarithm One Plus the Inflation Rate (average over five years)	Exports plus Imports as a Ratio of GDP (average over five years)	Commercial Bank Assets as a Ratio of Total Bank Assets (average over five years)	Normalized Rule of Law Index (average for 1997-1998)	Head-Count Ratio (%)	Poverty Gap Ratio (%)	Poverty Line (z; in 1985 PPP \$)	Income Elasticity of the Average Income of the Poor
BDI	540	268	0.1050	0.0652	0.0819	0.66391152	-0.8807	39.51	11.03	372	0.2479
BFA	384	196	0.1505	0.0453	0.153	0.81636584	-0.3501	72.57	34.36	372	0.1763
BOL	1272	350	0.1113	0.3818	0.1283	0.30472532	-0.3545	13.54	2.26	420	0.5839
BRA	2400	403	0.1724	2.6362	0.0912	0.56190395	-0.2221	37.96	18.92	804	1.1016
CHN	660	264	0.1232	0.0978	0.063	0.9343003	-0.04	28.15	8.16	372	0.3029
CIV	792	282	0.1706	0.0164	0.332	0.82175791	-0.3348	21.38	5.16	372	0.3635
COL	2496	483	0.1240	0.2225	0.157	0.90914452	-0.7833	28.56	11.91	828	1.1457
CRI	2172	472	0.1702	0.1575	0.419	0.67074496	0.553	23.57	8.13	720	0.9970
DOM	1860	415	0.0632	0.2559	0.284	0.78190053	0.3796	24.35	8.17	624	0.8537
ECU	1968	476	0.0811	0.3682	0.197	0.55332738	-0.7211	17.93	5	660	0.9033
ETH	264	141	0.1165	0.1218	0.077	0.44868246	0.2691	59.21	20.63	216	0.1212
GIN	552	180	0.1114	0.2172	0.245	0.37242252	-0.7617	46.7	24.12	372	0.2534
GNB	504	160	0.1049	0.4964	0.143	0.51270771	-1.6147	57.91	33.04	372	0.2313
GTM	1776	350	0.0744	0.1359	0.142	0.57048595	-1.1057	32.69	13.21	588	0.8152
GUY	828	250	0.1431	0.5081	0.665	0.19629507	-0.1399	20.14	6.62	372	0.3801
HND	912	206	0.1213	0.1709	0.315	0.81704742	-0.8953	35.42	15.79	372	0.4186
JAM	1404	428	0.1300	0.3034	0.6514	0.8088131	-0.7279	10.45	1.58	504	0.6444
JOR	1908	483	0.2604	0.1039	0.349	0.75738126	0.7084	12.29	2.96	636	0.8758
LSO	1092	189	0.1848	0.1385	0.434	0.60752076	-0.2399	35.78	17.64	372	0.5012
MDG	540	240	0.0833	0.1022	0.145	0.4132815	-0.8247	49.29	17.44	372	0.2479
MLI	396	189	0.1416	0.0817	0.208	0.70619017	-0.4654	70.37	34.56	372	0.1818
MNG	816	267	0.2278	0.7507		0.88217765	0.0391	16.98	4.78	372	0.3745
MRT	660	242	0.1203	0.0853	0.415	0.73245776	-0.5578	44.72	15.59	372	0.3029
NER	336	195	0.1583	-0.0355	0.132	0.7471723	-1.1439	58.09	18.91	288	0.1542
NGA	600	205	0.1238	0.2288	0.143	0.43856534	-1.0975	42.24	19.01	372	0.2754
NIC	1104	239	0.2510	2.4058	0.195	0.49769935	-0.7258	23.62	8.45	372	0.5067
NPL	900	324	0.0860	0.1058	0.058	0.66124547	-0.5578	11.03	1.42	372	0.4131
PAN	1968	320	0.1878	0.0115	0.503	0.75726902	-0.3919	32.45	16.74	660	0.9033
PER	1788	440	0.0692	1.4233	0.162	0.97965842	-0.5217	19.08	5.09	660	0.8207
PHL	1236	315	0.0940	0.1093	0.235	0.82507002	-0.0777	21.76	4.94	408	0.5673
PRY	1632	447	0.0640	0.2352	0.405	0.69803256	-0.6955	14.19	2.7	552	0.7491
SEN	900	205	0.1482	-0.0141	0.283	0.72172081	-0.0973	35.45	15.94	372	0.4131
SLV	1500	180	0.1367	0.2087	0.183	0.66750318	-0.6564	22.18	14.25	504	0.6885
THA	2124	451	0.0962	0.0486	0.276	0.96593428	0.4131	22.21	8.07	708	0.9749
TUN	1692	394	0.1699	0.0693	0.381	0.98866779	0.6476	11.01	3.32	564	0.7766
TUR	2460	597	0.1217	0.5482	0.182	0.7214421	-0.0104	18.13	5.06	828	1.1291
TZA	492	243	0.1713	0.2644	0.123	0.64881051	0.1608	52.75	18.27	372	0.2258
YEM	528	237	0.1930	0.1740	0.088	0.12633815	-1.0082	45.01	16.31	372	0.2424
ZAF	1884	326	0.1976	0.1272	0.293	0.96253926	-0.3514	40.5	19.72	636	0.8648
ZMB	408	214	0.1997	0.5976	0.359	0.3635976	-0.4017	64.01	27.12	372	0.1873
ZWE	744	216	0.2193	0.1209	0.1825	0.78837699	-0.1457	50.98	21.42	372	0.3415

Source: for the policy indicators and the distribution information Dollar and Kraay Data set www.worldbank.org. Poverty measures are our own calculations based on the distribution information from Dollar and Kraay data set. Per capita consumption expenditure figures are rounded to the nearest dollar for presentation purposes.

Appendix B: Policy and Poverty: Dollar and Kraay Specification with Interactions
(dependent variable: logarithm of the average income of the poor)

Detail	1	2	3	4	5
Ln Income (Ln y)	0.4132 (4.39)*	0.6650 (4.15)*	0.4674 (10.11)*	0.3850 (2.52)**	0.4911 (12.16)*
Trade /GDP	-2.8200 (1.01)				
[Trade/GDP][Ln y]	0.3900 (0.96)				
Government Consumption/GDP		8.5751 (1.06)			
[Government Consumption/GDP] [Ln y]		-1.3185 (1.12)			
Ln (1+inflation)			-0.7708 (1.26)		
[Ln (1+inflation)] [Ln y]			0.1004 (1.21)		
Financial Depth				-0.7684 (0.57)	
[Financial Depth][Ln y]				0.1286 (0.65)	
Rule of Law					-0.4358 (0.88)
[Rule of Law][Ln y]					0.0746 (1.04)
Constant	2.8249 (5.55)*	1.1373 (1.02)	2.4490 (8.08)*	2.9125 (2.90)*	2.2897 (8.0097)*
Adjusted R-squared	0.6820	0.6957	0.6823	0.6797	0.6928

Source: own estimation based on the data set in appendix A. *, **, and *** significant at 1, 5 and 10 percent level of significance.

Appendix C: Policy and Poverty: Semi-logarithmic Specification with Interactions
(dependent variable is logarithm of average income of the poor)

Detail	1	2	3	4	5
Income (y)	0.00040 (4.29)*	0.00059 (3.90)*	0.00048 (10.65)*	0.00047 (2.70)**	0.00046 (8.84)*
Trade /GDP	-0.2486 (0.55)				
[Trade/GDP][y]	0.0003 (0.68)				
Government Consumption/GDP		0.6048 (0.44)			
[Government Consumption/GDP] [y]		-0.00097 (0.90)			
Ln (1+inflation)			-0.0072 (0.08)		
[Ln (1+inflation)] [y]			-0.00002 (0.39)		
Financial Depth				0.1281 (0.53)	
[Financial Depth][y]				-0.00003 (0.13)	
Rule of Law					0.0024 (0.02)
[Rule of Law][y]					0.00005 (0.63)
Constant	5.1510 (45.91)*	5.0245 (23.01)*	5.1022 (86.44)*	5.0354 (28.97)*	5.1235 (57.08)*
Adjusted R-squared	0.7052	0.7156	0.7036	0.7028	0.7098

Source: own estimation based on the data set in appendix A. *, **, and *** significant at 1, 5 and 10 percent level of significance.