Economic Restructuring and Poverty/Income Inequality in Latin America

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Abstract

This study uses an econometric approach to evaluate whether structural reforms in Latin America contributed to poverty and income inequality over the period from 1985 to 2000. Data on structural reforms is employed from the Inter-American Development Bank's Structural Policy Index, and poverty and income inequality data is obtained from the World Bank's PovcalNet database. Using a panel data analysis with controls for GDP per-capita and political institutions, the overall openness level is found to be significantly positively related to the percent of the population living under the poverty line, the poverty gap, the Gini coefficient, the income ratio of the richest to poorest deciles of the population, and the mean log deviation. Specific reforms that are significantly positively related to poverty and/or inequality include privatizations and financial deregulation. Trade liberalization, average income, and democratic institutions demonstrate a negative, albeit weak, relationship to poverty and inequality.

Author's Note

1. Introduction

In Latin America and the Caribbean (LA), countries adopted major structural reforms to their economies beginning in the 1980s and continuing through the 1990s. These actions were prompted by serious fiscal problems and encouraged by international scholars and policy-makers as a pathway towards prosperity. Unfortunately, output growth per-capita in LA during these two decades averaged -0.1% and 1.2% annually, compared with 2.4% and 3.3% during the 1960s and 1970s.[1] Furthermore, from 1980 to 2000, the poverty rate increased from 40.5% to 42.5%,[2] and income inequality expanded.[3] Increasing frustration with the reforms led many to criticize this approach to growth. It remains to be answered: Did free-market reforms contribute to higher poverty and income inequality in LA during this period? What were the impacts of specific reforms and what other factors should be considered in evaluating these relationships?

Structural reforms, or structural adjustments, involve the liberalization of trade and finance, the rebalancing of the tax code, the privatization of state

industries, and the deregulation of the labor market. Examples of these reforms include: the lowering of tariff and non-tariff barriers, the removal of restrictions to foreign direct investment (FDI), the adoption of variable exchange-rate mechanisms, the reduction of income taxes, and the implementation of flexible labor contracts.[4] These reforms are expressions of neoliberalism: "the return to the rule of the market, the cutback of the state and of social policies, and the liberation of entrepreneurial energies."[5]

This study employs an econometric approach to evaluate the relationship between three categories of structural reforms (trade, financial, and privatization) and five measures of poverty and income inequality (poverty rate, poverty gap, Gini index, income ratio of top and bottom deciles, and mean log deviation) in LA over the period from 1985 to 2000. The model controls for average income and political institutions, factors that have been shown to affect the extent of poverty and inequality. Special attention is given to data quality and econometric problems that have limited previous studies on this topic. The results suggest that privatizations increased poverty and income inequality and that financial deregulation expanded income inequality in LA during this period. In contrast, trade liberalization may have reduced poverty. Countries with higher average incomes and more democratic institutions experienced less poverty and income inequality.

LA is a region that aggressively pursued structural reforms during the 1980s and 1990s, yet growth moderated and poverty and income inequality grew during this period. The experience of LA contrasts sharply with that of South and East Asia, where poverty decreased from 51.5% to 31.3% and 57.7% to 14.9%, respectively.[6] In response to popular opposition to the reforms, LA governments are reviewing their approaches to development. A more conclusive understanding of the connection between reforms and poverty and inequality is therefore needed. This study seeks to add to the discussion by analyzing the most complete data for the period, using a model with both economic and political variables, and applying a large range of econometric tests. The results underscore the need for a more equitable approach to economic growth.

2. Structural Reforms and Their Consequences

The three categories of structural reforms that may have the strongest relationship to poverty and income inequality (henceforth 'inequality') are trade and financial deregulation, and privatizations. Financial liberalization means the lowering of reserve requirements (% of deposits banks cannot loan out), as well as the removal of interest-rate ceilings, barriers to entry into the financial sector, and other capital controls. The intent of these reforms was to expand the availability of consumer and business financing and attract foreign capital.[7] More FDI and fewer restrictions on capital should improve financing for infrastructure projects, businesses, and consumers – all of which contribute to economic growth and, by extension, lower poverty. On the other hand, the free movement of capital across national borders makes countries vulnerable to a dangerous scenario in which negative signals trigger an exodus of capital. A 'sudden stop' of capital inflows

contributed to the devastating economic crisis that hit Argentina in 2000: over a period of three years, the poverty rate increased by 20%.[8]

Free trade would be expected to improve the welfare of society by allowing countries to specialize in the production of goods in which they have a competitive advantage. Consumers benefit when costly domestic goods are replaced by cheaper imports, thereby raising real incomes and lowering poverty. However, the elimination of trade and tariff barriers exposes domestic industries to increased competition and, hence, short-term unemployment and depressed wages while the economy adjusts to the new environment.[9] Modern theories of trade taking into account capital mobility through FDI can also explain increasing inequality. When corporations set up operations in a developing country, they have strong demand for skilled workers who are in short supply. This leads to a skill premium and can account for an increase in inequality. It follows that the benefits of trade are unequally distributed and can create poverty and inequality even while the average income is rising.

Privatization involves the sale of state enterprises. Following privatization, workforces are usually downsized to improve efficiency.[10] This eventually translates into greater output if workers can find other jobs; however, the immediate effect is more unemployment, poverty, and inequality. Furthermore, there is the potential for corruption in the privatization process when public assets are sold to private consortiums at liquidation prices. Salazar and Pinto explain that, in Chile, the reduction of public employees from 308,000 in 1973 to 130,000 in 1982 helped push the unemployment rate to over 25% by the end of that period.[11] Furthermore, by 1979, ownership of 70% of traded companies was concentrated into the hands of only ten conglomerates.

3. Empirical Evidence

There is little empirical evidence regarding the impact of these and other reforms on poverty and inequality. The majority of papers on structural reforms only evaluate their impact on economic growth. This literature will not be discussed here, but it is worth mentioning that the meta-analysis of Correa indicates that none of the reforms he analyzes has a robust positive relation to growth in LA.[12] The literature that directly evaluates the link between reforms and poverty/inequality in LA includes some recent country studies {Loayza, 2008 (Peru); LeClech, 2007 (Argentina); Moncayo and Garza, 2006 (Colombia); and Spatz, 2006 (Bolivia)} and a computable generalized equilibrium (CGE) model for all LA.[13] The results of the country studies are contradictory and hard to generalize. The major fallback of CGE models is that the results are sensitive to how the reforms are assumed to travel through the economy.

Szekely, Edwards, and Easterly pursue more straightforward statistical tests. Szekely employs a database of 94 household surveys covering 17 LA countries over the period from 1977 to 2000. He also uses the Structural Policy Index (SPI) of the Inter-American Development Bank (IADB) to evaluate the link between structural

reforms and poverty and inequality. The SPI is widely-used in evaluating the growth implications of structural reforms, including the meta-analysis mentioned above. The SPI is the average of five sub-indices: trade, finance, tax, privatization, and labor. Each sub-index is the average of several policy measures, normalized relative to their highest and lowest values. Szekely utilizes the trade and financial indices and the average of the other three indices over the period from 1970 to 1995 with a four-year lag.

The estimation strategy involves a pooling model which, by combining observations across countries and years, gives Szekely 75 observations on the reforms and measures of poverty/inequality including: the percentage of people living under $2 a day, the poverty gap (the average distance below the poverty line), and the log income ratio of the richest to poorest deciles. Using ordinary least-squares (OLS) estimation (fitting a line to the data by minimizing the squared deviations of each observation) and standard significance tests, he concludes that "…except for financial sector reform, the economic reforms of the last two decades have not contributed to increased poverty and inequality."[14]

Edwards asks whether more open countries have greater inequality. He uses a World Bank (WB) dataset on income distribution that covers 77 countries. His inequality measures are the change in the average Gini coefficient between the 1970s and 1980s, and the decade-to-decade change in the poorest quintile's share of total income. The Gini coefficient is a measure of inequality ranging from 0 (everyone has an equal income) to 1 (one person has all of the income). The openness indicators he uses include average tariffs, the WB index of outward orientation, Wolf's index of import outward orientation, and average black market premium. The WB index of outward orientation is a relatively subjective measure of whether a country is "open" or "closed." Wolf's index identifies trade restrictions as deviations in production-factor trade intensity from their predicted values. Finally, the black market premium captures the extent of government intervention in the goods market.

Using these multiple openness indicators, Edwards classifies LA countries as 'reformers' or 'non-reformers.' His estimation involves a simple OLS regression of the change in the inequality measures on the reformer dummy and other controls, including growth and inflation rates. Based on a final sample of 44 countries, Edwards concludes that there is no indication that trade liberalization is associated with increases in inequality.[15]

Easterly investigates how growth affects the poor in countries with many adjustment loans (loans contingent on structural reform) as opposed to countries with few adjustment loans, with less attention to the direct effect of the loans on poverty. The literature on the elasticity of poverty and inequality with respect to growth is interesting and will be returned to later. Nonetheless, Easterly's estimation strategy does permit the estimation of the marginal effect of structural adjustment loans on poverty.

Like Edwards' study, this one is cross-sectional and covers all countries for which data are available (65 in this case). It spans the period from 1980 to 1998 and the structural reform indicator is the average number of new WB or International Monetary Fund adjustment loans per year. The poverty data is based on household surveys compiled by Ravallion and Chen in 1997. The measure used is the log rate of annual change in the percent of the population living below $2 a day. The results indicate that adjustment loans increase the average poverty rate; however, in countries with many loans, poverty rates are relatively higher during economic expansion and lower during contraction.[16]

These three studies provide some suggestive results about the relationship between structural reforms and poverty/inequality. Szekely concludes that financial reform over the period from 1970 to 1995 in LA was responsible for the higher poverty and inequality observed from 1974 to 1999. Edwards and Easterly evaluate the impact of the reforms on a global scale. Edwards was unable to find any relationship between trade reforms and inequality between the 1970s and 1980s. Easterly confirms that structural adjustment loans did not reduce poverty (they increased it) over the period from 1980 to 1998.

These results are interesting but not conclusive and only Szekely's results are specific to LA. Two major limitations of the research on this subject are the absence of data and the imprecision of the structural reform measures. Poverty and inequality data are derived from a common base of household surveys that covers only 25% of potential country-year observations. By stacking the data for LA, Szekely has a total of 75 observations out of potentially about 400. Edwards avoids the mismatch of poverty-inequality and reform data by using the percentage change in the average of each variable by decade, leaving only 44 observations across all countries. Easterly has a panel covering all countries across 19 years with only 126 observations (out of potentially thousands). The measures of structural reforms vary considerably. The SPI – a scale of openness based on multiple policy measures – is more precise than the reformer/non-reformer dummy of Edwards or the loan-count of Easterly. Given the small sample sizes and unlike reform measures, the inability to find a significant relationship doesn't mean there isn't one.

This paper will take an econometric approach closer to that of Szekely. It will employ the overall SPI and three sub-indices (financial, trade, privatizations) as the indicators of structural reforms. Other improvements include more complete poverty and inequality data and another five years of structural reform data (20% more observations overall). Furthermore, the model will control for variation in average income and political institutions, and will offer a range of tests that deal with major econometric problems. Over seven years have passed since those studies were completed. It will be useful to re-evaluate the previous findings and potentially identify some new relationships.

4. Income, Institutions and Poverty/Inequality

Determinants of poverty and inequality are so numerous that it is impossible to consider them all in any study. The theoretical literature suggests that two factors – average income and political institutions – have the greatest impact.

Average income, measured by per-capita GDP (Gross Domestic Product), varies substantially across LA countries. In countries where the average person has a higher income, one would expect less poverty, all-else-equal. The average income tells us nothing about the distribution of that income, though. Now, consider the growth rate of average income. If average income grows, poverty should also decline as long as the poor enjoy a fraction of that growth. The growth rate does have direct implications for inequality. If all groups see the same percentage increase in income, for instance, inequality grows because the poor earn less.

The link between the level of per-capita income and its growth rate with poverty and inequality has been quantified for LA over this period. Easterly estimates that the growth elasticity of poverty – the percentage change in poverty in response to a given percentage change in growth – is negative.[17] This is confirmed by Szekely, who also finds a significant positive growth elasticity of inequality.[18] In general, the literature holds that growth leads to less poverty, but not necessarily more inequality.[19] The differential effects of average income and its growth rate must be considered when estimating the direct effect of the reforms on poverty or inequality.

Political institutions are cited as the second most important factor explaining the extent of poverty and inequality. Democratic institutions correspond to greater spending on public goods; authoritarian institutions, on the contrary, encourage rent-seeking behavior.[20] LA has a history of unrepresentative and authoritarian governments that may have contributed to poverty and inequality. The fact that many military dictatorships were in power in LA at the same time that liberalization occurred is a coincidence that should not be overlooked. It is critical to consider whether structural reforms had an impact on poverty and inequality aside from that of the military regimes.

Data

The connection between structural reforms and poverty/inequality in LA will be evaluated using a sample of 19 countries (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Paraguay, Peru, Trinidad and Tobago, Uruguay, and Venezuela) during the period from 1985-2000.

The data on poverty and inequality was obtained from the PovcalNet database created by the WB Development Research Group.[21] The methodology employed is described by Chen and Ravallion. They combined new and existing

Table I. Descriptive Statistics†				
	Latin America (Survey Year)	Number of Observations	Latin America (Reference Year)	Number of Observations
% of Population under Poverty Line	11.0 (11.0)	97	11.1 (11.7)	84
Poverty Gap	4.1 (5.0)	97	4.3 (5.3)	84
Gini Coefficient	51.1 (6.7)	97	50.1 (6.3)	84
Income Ratio: Top To Bottom Deciles	38.4 (6.5)	97	37.4 (6.0)	84
Mean Log Deviation	0.49 (0.14)	97	0.47 (0.13)	84
Overall Openness Level (SPI)	0.48 (0.10)	262	0.47 (0.10)	89
Financial Openness	0.47 (0.22)	285	0.47 (0.21)	95
Trade Openness	0.77 (0.18)	265	0.77 (0.17)	91
Privatization Index	0.09 (0.16)	285	0.09 (0.15)	95
POLITY Ranking	6.7 (3.6)	285	6.7 (3.5)	95
Per-Capita PPP GDP ($)	4,696 (2,345)	285	4,696 (2,335)	95
GDP Growth (Annual %)	3.1 (3.9)	283	3.1 (2.6)	95
				†Standard deviations are in parentheses.

survey data and recalculated all of the poverty and inequality measures using consistent criteria. The authors are critical of research that relies on multiple sources of data and state that the WB data are consistent and reliable back to 1981.[22] The poverty and inequality indicators which will be used here are the "percent of population living in households with consumption or income per person below the poverty line," the poverty gap, the Gini index, the log income ratio of the richest to poorest deciles of the population, and the mean log deviation (the average difference between the log average income and log individual income).

The measures of structural reforms will be the overall SPI and three sub-indices (trade, financial, and privatizations). Each index ranges from zero to one: the closer to one, the more "open" the country. Data on per-capita purchasing-power-parity (PPP) GDP (in constant 2000 U$D) and the growth rate of GDP were obtained from the WB.[23] The PPP adjustment accounts for the ability to purchase goods and services and not just income. The type of political regime is represented by the POLITY index (Version IV), which is equal to the difference between the sub-indices institutionalized democracy and autocracy. It is coded annually based on multiple rankings that capture the extent of political constraints and competitive participation. Its values range from +10 (strongly democratic) to -10 (strongly autocratic). The descriptive statistics are shown in Table I.

Figure I. Openness and Poverty in Latin America*

*The dashed line shows the fitted values.
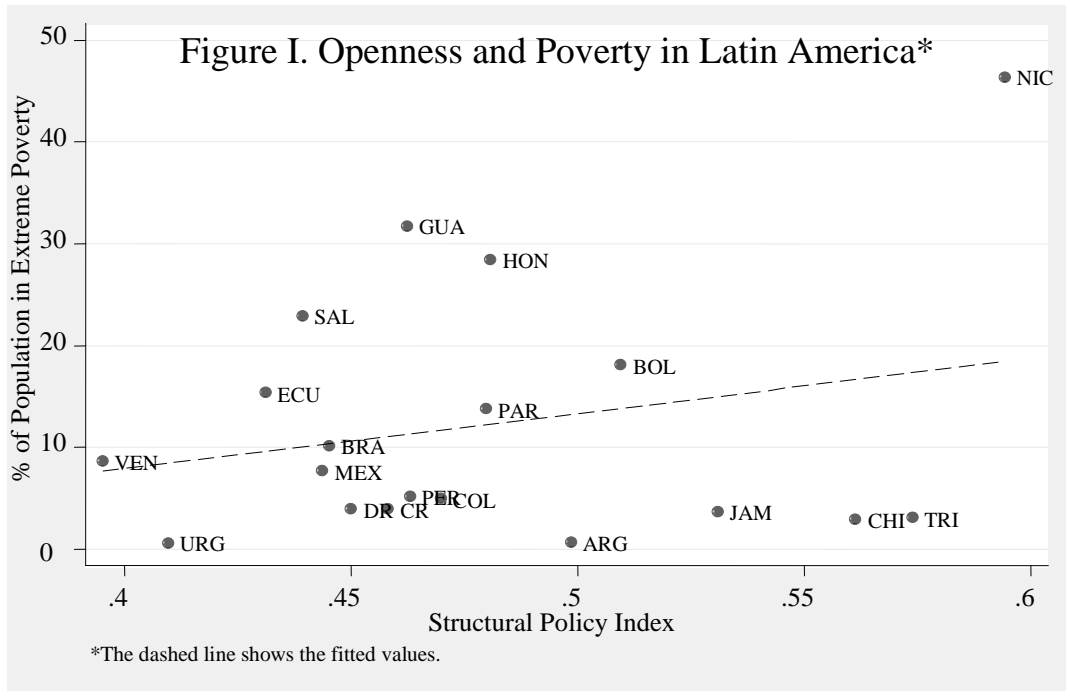
The statistics in the first column of Table I are for all annual data and in the third column, for the data when observations are averaged across five reference periods (1986-1988, 1989-1991, 1992-1994, 1995-1997, and 1998-2000). The reference-year grouping is appropriate because most countries only collected poverty/inequality data once every three years (very few observations are lost). The observations for the reforms, polity, and GDP are lagged one year to allow for a delayed effect on poverty/inequality. The number of observations in each case is presented in columns two and four. For the survey-year data, there are 19 cross-sections and 15 time periods (1985-1999), giving a maximum of 285 observations. For the reference-year data, there are also 19 cross-sections but only five periods of time, a maximum of 95 observations.

It is important to note that the poverty line Chen and Ravallion use to calculate the poverty rate is only $1.08 a day (in 1993 PPP). Very few people live below this level in developed countries but in LA, an average 11% of the population is in 'extreme poverty.' The average poverty gap of 4.1 indicates that the average poor person is living on substantially less than $1 a day. The three inequality indicators reflect a wide disparity of wealth. With an average Gini coefficient of 51, LA is the most unequal region in the world. The means of the reform indices indicate relatively high levels of trade and financial openness, but a low degree of privatization. The political institutions are generally democratic (6.6 on a scale of -10 to +10) and the average income ($4,696) falls within the range of low- to middle income countries. The average growth rate of 3% seems high because it is not adjusted for population growth or changes in purchasing power. The scatterplot of the average SPI index on the average poverty rate for each country over this fifteen-year period is shown in Figure I.

5. Estimation

There are many econometric problems in estimating the relationship between economic reforms and poverty/inequality. For one, LA is very dependent on international factors, such as interest rates and export demand, that may cause poverty and inequality spells. Second, there is the risk of a spurious correlation – poverty/inequality and openness may be unrelated but still both increase over time through some unidentified process. Both of these issues will be addressed. With a pooling model (where one stacks the observations across countries and time periods) there are more degrees of freedom (more observations relative to parameters being estimated) and methods of dealing with these problems.

Equation (1) is the basic model with a single intercept term β_0. The *i* and *t* subscripts indicate the country and the time period, respectively. The variables are as follows: poverty or inequality indicator (POV/INEQ), financial (FIN), trade (TRD), and privatization (PRIV) reform components of the SPI, POLITY rankings (POL), and GDP per capita (GDP).

(1) $POV/INEQ_{it} = \beta_0 + \beta_1 FIN_{it-1} + \beta_2 TRD_{it-1} + \beta_3 PRIV_{it-1} + \beta_4 POL_{it-1} + \beta_5 GDP_{it-1} + \varepsilon_{it}$

Equation (1) will also be estimated with the overall SPI replacing the three sub-indices (FIN, TRD, PRIV). This is by no means a comprehensive set of controls, but given the relatively low number of observations and the high correlations between other macroeconomic measures (like inflation) mentioned in the literature, the model employs the available variation while introducing the least amount of bias.

The theory discussed earlier suggests opposing effects of each reform on poverty and inequality. The best evidence indicates that only financial reform has a notable effect on inequality and, to a lesser extent, poverty. The net effect of trade should be a reduction in poverty but an increase in inequality. Privatization is thought to be positively related to both indicators, but there is little evidence so far. Finally, more democratic regimes and higher average incomes should be associated with less poverty. Some evidence suggests that democracy encourages equality, while faster growth creates inequality.

In order to control for all time-invariant characteristics that differ between cross-sections, equation (1) may be estimated using fixed effects, in which a dummy variable is added for each country. Fixed-effects estimation captures the within-group variation while controlling for everything else, including language, legal origin, racial composition, geography, climate, etc. A modified Wald-Test indicates that using fixed effects is a significant improvement to the model[24].

Given data limitations, it would be better to use a model of random effects and avoid estimating the coefficients on 19 dummy variables. The random effects estimator employs the variation within each country, but also between countries. It recognizes that the many factors not included in the model are correlated across

Table II. Regression Results - Survey Year - Poverty Indicators[†]				
	Poverty Line		Poverty Gap	
Overall Openness Level (SPI)	*15.6 (6.8)		*8.6 (3.7)	
Financial Openness		3.4 (4.3)		1.2 (2.3)
Trade Openness		-0.9 (4.2)		-0.5 (2.3)
Privatization Openness		**6.6 (4.0)		*4.6 (2.2)
POLITY Ranking	-0.39 (0.26)	-0.41 (0.26)	-0.11 (0.14)	-0.12 (0.14)
Per-Capita PPP GDP	*-0.0017 (0.0005)	*-0.0015 (0.0006)	*-0.0008 (0.0003)	*-0.0007 (0.0003)
R-squared	0.20	0.20	0.17	0.18
Number of Observations	90	90	90	90

[†]Standard errors are in parentheses; *significant at 5% level, **significant at 10% level.

countries and accordingly, weighs the observations. The only way to use the random effects model is for the random effects to be uncorrelated with the explanatory variables. The Hausman test indicates that there are no significant biases due to unobserved heterogeneity, so the random effects model will be adopted.[25] The results are presented in Tables II and III for the poverty and inequality measures, respectively. The results are generally robust when using OLS or fixed-effects estimation (not shown).

The results in columns one and three of Table II show that the overall SPI, or level of openness, is positively related to poverty, as measured by extreme poverty or the poverty gap. The coefficients on POLITY and per-capita GDP are negative, as hypothesized, although only GDP is significant. The results in columns two and four show that privatizations are positively related to both poverty measures, but the coefficients on the other two reform indices are insignificant. The results are substantial as well as significant; a country that fully privatizes state industries would have 6.6% more people living in extreme poverty compared to a country that does no privatizations.

The results in columns one, three, and five of Table III also suggest a positive relationship between overall openness and inequality, measured by the Gini coefficient, the income ratio of top-to-bottom deciles, and the mean log deviation. Looking at columns two, four, and six, which estimate the model with three types of reforms, financial openness is positively related to all three measures of inequality. Also, privatizations are positively related to inequality measured by the mean log deviation of income. Across the six specifications, there is no apparent relationship between the political and average income variables and inequality.

Table III. Regression Results - Survey Year - Inequality Indicators					
	GINI Index		Income Difference Between Top and Bottom Deciles		Mean Log Deviation
Overall Openness Level (SPI)	*12.9		*11.9		*0.37
	(5.2)		(4.9)		(0.11)
Financial Openness		*6.4		*7.5		*0.14
		(3.2)		(3.0)		(0.07)
Trade Openness		-1.8		-2.1		-0.04
		(3.1)		(2.9)		(0.07)
Privatization Openness		3.4		1.9		*0.13
		(3.0)		(2.8)		(0.06)
POLITY Ranking	0.03	0.02	0.10	0.09	0.002	0.001
	(0.20)	(0.20)	(0.19)	(0.18)	(0.004)	(0.004)
Per-Capita PPP GDP	-0.0002	-0.0003	-0.0003	-0.0004	-0.00001	-0.00001
	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.00001)	(0.00001)
R-squared	0.38	0.39	0.27	0.29	0.17	0.20
Number of Observations	90	90	90	90	90	90

†Standard errors are in parentheses; *significant at 5% level, **significant at 10% level.

One potential source of bias in the above estimates is autocorrelation (values of the variables in previous periods may be influencing their values in subsequent periods). To allow for this possibility, the model can be estimated with a correction for first-order autocorrelation. However, the lack of consecutive observations across periods in this sample prohibits the use of this process. To overcome this barrier, the data are organized according to the five reference years suggested by PovCal.Net: 1987, 1990, 1993, 1996, and 1999. The data for the other explanatory variables are averaged across the three preceding years to allow for a small lag in policy transmission. To use this correction, fixed effects estimation is required, but this is suitable since the fixed and random effects estimates don't significantly differ. The major drawback is that the observations for the first period are dropped.

The results for the estimation of equation (1) using fixed effects with an AR(1) correction are shown in Tables IV and V. Again, the results are also presented with the overall SPI in place of the three separate reform indices. In addition, these specifications include a control for GDP growth rates instead of per-capita levels (this does not substantially change the results). Theory suggests that faster economic growth may decrease poverty but increase inequality; the impact of the level of per-capita income on poverty and inequality is more ambiguous.

Table IV. Regression Results - Reference Year - Poverty Indicators[†]				
	Poverty Line		Poverty Gap	
Overall Openness Level (SPI)	*23.7 (8.8)		*16.2 (6.5)	
Financial Openness		-1.2 (3.7)		0.1 (2.1)
Trade Openness		-1.6 (4.5)		-2.6 (2.9)
Privatization Openness		*15.1 (3.3)		*10.4 (1.9)
POLITY Ranking	0.23 (0.67)	-0.18 (0.43)	0.31 (0.30)	0.01 (0.30)
GDP Growth Rate	-0.22 (0.22)	-0.07 (0.21)	**-0.19 (0.10)	-0.01 (0.11)
AR(1)	0.20 (0.15)	-0.09 (0.15)	*0.48 (0.15)	0.07 (0.18)
R-squared	0.93	0.95	0.90	0.93
Number of Observations	59	59	59	59

[†]Standard errors are in parentheses; *significant at 5% level, **significant at 10% level.

As with the random-effects model, the results from the fixed-effects model with the correction for autocorrelation in Table IV identifies a positive relationship between the overall level of openness and privatizations with both poverty indicators; indeed, the magnitude of the relationship is greater. The coefficients on GDP are still negative, but cease to be significant in some cases. Interestingly, by using GDP rates instead of levels, trade liberalization becomes significantly negatively related to both poverty indicators when using fixed effects without the AR term (not reported). Similarly, without the autoregressive process, democratic institutions are negatively related to poverty.

The results for the inequality measures shown in Table V also strengthen the findings from the random-effects model. The SPI and financial openness are still positively related to all three measures of inequality, and the coefficient on SPI is larger. The new finding is that privatizations are also positively related to all three inequality indicators (the earlier result was limited to mean log deviation). Again, institutions and GDP do not reveal any significant connection with inequality.

The results from the reference-year grouping with fixed-effects and a correction for autocorrelation confirm the results obtained from the previous panel. Specifically, financial reforms may cause inequality, and privatizations may lead to both greater poverty and inequality. The overall degree of policy openness, the SPI, is robustly connected with both increased poverty and inequality. Consistent with previous evidence, it appears that free trade is poverty-reducing. The evidence on the impact of higher average incomes and more democratic institutions is ambiguous; in some cases they seem to decrease poverty and inequality, but the analysis with the AR term indicates that these processes are path-dependent and not necessarily causally-related.

Table V. Regression Results - Reference Year - Inequality Indicators[†]					
	GINI Index		Income Difference Between Top and Bottom Deciles		Mean Log Deviation	
Overall Openness Level (SPI)	*24.9		*20.0		*0.67	
	(6.5)		(5.6)		0.17	
Financial Openness		*6.6		*7.2		**0.13
		(3.2)		(3.0)		0.07
Trade Openness		-2.2		-2.4		-0.07
		(4.5)		(4.1)		0.10
Privatization Openness		*8.3		**5.1		*0.27
		(2.9)		(2.7)		0.06
POLITY Ranking	0.17	-0.04	0.29	0.04	0.005	0.0001
	(0.51)	(0.48)	(0.45)	(0.43)	(0.012)	(0.0114)
GDP Growth Rate	-0.15	-0.07	-0.14	-0.09	-0.004	-0.001
	(0.17)	(0.17)	(0.16)	(0.16)	(0.004)	(0.004)
AR(1)	0.16	0.09	0.09	0.04	*0.30	0.15
	(0.11)	(0.10)	(0.11)	(0.11)	(0.12)	(0.12)
R-squared	0.91	0.92	0.91	0.92	0.90	0.92
Number of Observations	59	59	59	59	59	59

[†]Standard errors are in parentheses; *significant at 5% level, **significant at 10% level.

6. Conclusion

Previous studies that have evaluated the relationship between structural reforms and poverty or inequality were challenged by a lack of data and imprecise measures of reform. This study uses comprehensive indicators of structural policy and the most complete and consistent poverty and inequality data available. The model is simple but powerful because it controls for average income and institutions. In support of some results by Szekely and Easterly, yet contrary to those of Edwards, this paper finds that the Inter-American Development Bank's overall openness index is positively related to both poverty and inequality. Moreover, the financial openness sub-index is positively related to inequality, and the privatizations sub-index is positively related to both poverty and inequality. These results hold when using three different estimators, different controls, and a correction for autocorrelation. The results fail to discredit the argument that trade liberalization, average income, and democracy are negatively related to poverty and inequality.

Debate is spirited in academic and political circles concerning the effects of recent neo-liberal policies, yet there is little empirical work that has resolved this question. This study seeks to fill that void and concludes that there is reason to be critical of globalization. Structural reforms, in general, and financial deregulation and privatization, in particular, were regressive policies. On the contrary, trade liberalization may have benefited the poor. This is not to say to say that the reforms should not have been made, only that they had some undesirable consequences in the short-term. Further work is needed to understand how economic growth and institutions interact to affect the poor. One thing is certain: a more equitable approach to development will likely characterize future reforms given Latin America's disappointing recent history.

Endnotes

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[20] Robert Deacon, "Public Good Provision under Dictatorship and Democracy," Public Choice, 2009.

[21] World Bank, PovcalNet, http://go.worldbank.org/NT2A1XUWP0.

[22] Chen and Ravillion, 2004.

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[24] The modified Wald-Test allows one to test the null hypothesis that the intercepts for each country are the same based on the sum of squared residuals from regressions with and without this restriction.

[25] The Hausman test compares whether the fixed- and random-effects coefficient estimates differ significantly. For columns two and four in Table II, the Chi-Squared statistics are 4.5 (p = 0.48) and 3.8 (p = 0.58). For columns two, four, and six in Table III, the test statistics are 3.7 (p = 0.59), 4.4 (p = 0.49), and 2.7 (p = 0.75). The tests for the estimations with the SPI similarly fail to reject the null hypothesis.

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