

# Are Governments Pro-Poor but Short-Sighted?

## Targeted and Social Spending for the Poor During Booms and Busts

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### Abstract

A model is proposed to analyze how targeted public spending for the poor is affected by booms and bust. A Government is said to be pro-poor but also short-sighted if it helps the poor by increasing targeted and social spending faster than economic growth during booms. The reason why despite a pro-poor bias, this is characterized as short-sighted behavior, is that rapidly raising spending during booms does not allow the stocking up of resources for helping the poor during recessions. If a Government is pro-poor and short-sighted, the elasticity of targeted or social public spending to growth will be positive and larger than one during booms, and smaller than one during recessions. If the Government is not pro-poor, the elasticity will always be smaller than or equal to one. The prediction of an asymmetry between booms and busts in the elasticity to growth of targeted and social public spending for the poor is tested with panel data on public expenditures for seven Latin American countries. The results suggest that Governments are indeed pro-poor, or at least pro-social, and also short-sighted.

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## 1. Introduction

Macroeconomic shocks have plagued Latin American countries since the 1980s, with disastrous consequences for the poor (e.g. Glewwe and Hall, 1998; Lustig, 1995, 1999; Ganuza et al., 1999; Wodon et al., 1999). When confronted to macroeconomic shocks, national governments and international organizations have tried to protect the poor through targeted public spending (see Hicks and Wodon, 2000, for a review). For example, temporary public works program providing earnings at or below minimum wages (to ensure self-selection) can be expanded to reduce unemployment. In Argentina, this is done in urban areas through the Trabajar program (Ravallion, 1999). In rural Mexico, the Empleo Temporal program plays a similar role, although it has worked more as a buffer against off-season unemployment than as a counter-cyclical program during macro-economic shocks. Another Mexican program providing protection to the urban unemployed is Probecat, whereby participants receive training and minimum wage pay for a few months (Wodon and Siaens, 1999; see also Revenga et al., 1994). In Bolivia (Jorgensen et al., 1992) and Honduras, investment funds promoting access to social infrastructure in poor areas were created (or ultimately resulted from programs created) in order to offset the negative impact on the poor of otherwise necessary structural adjustment policies.

Despite such programs, it is still believed that Governments fail to adequately protect the poor during crises. Consider the data presented in Table 1. Argentina suffered from an adverse shocks in 1995 (following Mexico). Per capita GDP decreased by 5.32 percent between 1994 and 1995. The share of GDP devoted to targeted social spending also decreased, and the poverty rate increased, leading to an increase in the total number of poor people. The targeted spending per poor person decreased much more than per capita GDP, yielding an elasticity to growth (in this case to a recession) of targeted spending per poor person of about five.

Despite the suggestion in Table 1 that recessions may bring sharp decreases in targeted spending for the poor, it is unclear at the theoretical level whether targeted spending for the poor should decrease or increase during a recession. Whether the poor gain more during a boom than they lose during a recession is also unclear. In Ravallion's (2000) model for example, the possibility of an asymmetry between booms and busts depends on the third derivatives of the utility functions attributed to the rich and the poor, and it is not analyzed. In this paper, we propose an alternative model which is less general than that of Ravallion, but this enables us to provide clear conditions for when there will be an asymmetry between the elasticity of targeted spending for the poor to growth and recessions. Our model suggests that when the economy is growing, the elasticity of targeted public spending to growth will be larger than one if two conditions are met. First, the Government must place a reasonable weight on the welfare of the poor. Second, it must take into account the need to protect the satisfaction of minimum basic needs for the poor, and it must raise the minimum level of basic needs faster than the overall level of economic development. Moreover, during a recession, a pro-poor Government will not reduce the level of basic needs that must be met by the poor, so that the elasticity of targeted spending to growth during a bust will be lower than one. In other words, if the Government is pro-poor in the way described above, the elasticity of targeted spending to growth will be larger than one during booms, and smaller than one during busts. During a bust, targeted spending will not be cut by as much as it increases during a boom. However, if the above behavior can be characterized as pro-poor, it is also short-sighted, because

Using data for seven Latin American countries, contrary to what might be inferred from table 1, we find that Governments tend to be pro-poor, or at least pro-social (and short-sighted), in that the asymmetry between booms and busts in the elasticity of social spending to growth

predicted by our model is confirmed. The results suggest that Governments put high weights on the social goods and the welfare of the poor, and that they also consider as a priority the satisfaction of basic needs, with the minimum level to be reached for basic needs increasing faster than economic growth during booms, and remaining constant during busts.

Despite these encouraging results, the resources available to the poor during crises remain insufficient because additional forces combine to put downward pressure on the amount of public transfers that can reach each poor person during a recession. The problem is not, as argued by critics of structural adjustment mechanisms, that the share of GDP devoted to targeted public spending decreases in order for fiscal restraint to restore macroeconomic fundamentals during a recession. Rather, the problem is due to the GDP setback itself by which targeted spending is reduced during a crisis even if the share of GDP devoted to targeted spending remains constant. This tends to make targeted public spending for the poor pro-cyclical rather than counter-cyclical. Moreover, poverty increases during a crisis, so that the available aggregate resources targeted to the poor have to be distributed among a larger pool of applicants, yielding lower spending per poor person. In practice, despite efforts to maintain targeted spending constant as a share of GDP during a crisis, a one percentage point decrease in GDP reduces targeted public spending per poor person by two percentage points during a recession. Half of this impact (one percentage point) is due to the reduction in per capita GDP which reduces spending even when the share of targeted spending in GDP remains constant. The other half is due to the increase in the number of poor people due to the crisis.

## 2. Are Governments pro-poor? A theoretical model

Consider a country with rich (R) and poor (P) households (or individuals) and public expenditures  $E$ . The public expenditures are used to provide transfers to the poor in the amount of  $E$ , and to pay for other needs such as defense and administration, in the amount of  $F$ . The expenditures are financed through a fixed tax rate on the rich. Denoting the income of the rich by  $X^R$ , we have  $F = \delta X^R - E$ . The equivalent income of the poor after public expenditures is  $X^P + E$ , with  $X^P$  representing the earnings of the poor (we assume that public expenditures have an equivalent income value for the poor equal to their cost<sup>2</sup>). The Government maximizes a social welfare function which depends on the utility levels of the poor and the rich, and on the services provided for areas such as defense and administration which benefit both the poor and the rich. We use equivalent income as a proxy for utility. The Government recognizes that poor households must be able to meet a minimal level of basic needs  $\hat{a}$ . The minimum level of basic needs which must be accessible to the poor may be a function of the level of economic development of the country, which is denoted by  $X = X^P + X^R$ , in which case  $\hat{a} = \hat{a}(X)$ . To take into account basic needs, the social welfare function has the Stone-Geary specification for the poor (it is not necessary to do this for the rich because their income is well above  $\hat{a}$ ). With weights  $\hat{a}^P$ ,  $\hat{a}^R$ , and  $\hat{a}^F$  for the poor, the rich, and services benefitting all, the objective is:

$$\text{Max } W = \mathbf{a}^P \log(X^P + E - \mathbf{b}) + \mathbf{a}^R \log(X^R - \mathbf{t}X^R) + \mathbf{a}^F \log(\mathbf{t}X^R - E) \quad (1)$$

A Government which would not be short-sighted would maximize the above over a substantial period of time, and this would help in saving funds in good times to help the poor in

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<sup>2</sup> Government programs in kind may have a cash value below their cost. This could be reflected with a leakage parameter  $\hat{a}^P$ , with  $0 < \hat{a}^P < 1$ , applied to the expenditures, but it would not affect our results.

bad times. Here, we will assume that the Government is short-sighted, so that it maximizes current welfare only (this may be motivated by electoral reasoning, for example).

In principle, we should impose Kuhn-Tucker conditions so as to have  $X^P + E$  always larger than  $\hat{a}$  (as well as  $(1-\delta)X^R$  and  $F$  positive), but in practice this is not necessary<sup>3</sup>. In (1), there is only one choice variable, namely  $E$ . The first order condition is:

$$\frac{\mathbf{a}^P}{X^P + E - \mathbf{b}(X)} = \frac{\mathbf{a}^F}{tX^R - E} \quad (2)$$

This condition yields the optimal value of  $E$ :

$$E = \frac{\mathbf{a}^P tX^R - \mathbf{a}^F (X^P - \mathbf{b})}{\mathbf{a}^P + \mathbf{a}^F} \quad (3)$$

The spending targeted to the poor is higher when the weight placed on the poor in the social welfare function is higher, and when their income level without transfers is closer to the basic needs level. Targeted spending is lower when the weight placed on defense and administration spending is higher. The weight for the rich does not appear in the condition, because these are simply taxed at the exogenous rate. To see the impact of economic growth on targeted expenditures, we differentiate (3) with respect to income  $X$ . Noting that  $X = X^P + X^R$ , we must have  $X^R/X = 1 - X^P/X$ . Thus:

$$\frac{\partial E^P}{\partial X} = \frac{\mathbf{a}^P t(1 - \partial X^P / \partial X) - \mathbf{a}^F (\partial X^P / \partial X)}{\mathbf{a}^P + \mathbf{a}^F} \quad (4)$$

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<sup>3</sup> For example, if during a crisis the Government can make sure that the poor will be above  $\hat{a}$ , the log specification ensures that it will automatically do so by transferring to the poor what they need. If it not feasible to ensure that both the poor and the rich are above  $\hat{a}$  during a crisis, the problem is ill-defined.

Denoting the income shares of the poor and the rich by  $\tilde{a}$  and  $1-\tilde{a}$ , the elasticity of targeted spending for the poor to economic growth is:

$$\frac{\partial E/E}{\partial X/X} = \frac{\mathbf{a}^P t(1-\partial X^P/\partial X) - \mathbf{a}^F (\partial X^P/\partial X) + \mathbf{a}^F (\partial \mathbf{b}/\partial X)}{\mathbf{a}^P t(1-g) - \mathbf{a}^F g - \mathbf{a}^F \mathbf{b}/X} \quad (5)$$

One interesting case actually observed in Latin America by Wodon (2000) is inequality neutral growth. This implies in our simple framework that the share of total income  $\tilde{a}$  enjoyed by the poor remains constant, which implies  $X^P/X = \tilde{a}$  and  $X^R/X = 1-\tilde{a}$ . Then:

$$\frac{\partial E/E}{\partial X/X} = \frac{t(1-g)\mathbf{a}^P - g\mathbf{a}^F (1-(\partial \mathbf{b}/\partial X)/g)}{t(1-g)\mathbf{a}^P - g\mathbf{a}^F (1-\mathbf{b}/X^P)} \quad (6)$$

In the discussion that follows, we will assume that  $\hat{a}^P$  is larger than  $\hat{a}^F \tilde{a}/[(1-\tilde{a})\hat{\sigma}]$ . For example, if the share  $\tilde{a}$  of the income held by the poor is 0.2, and if the taxation rate  $\hat{\sigma}$  is 0.3, we would need to have  $\hat{a}^P$  larger than  $0.83\hat{a}^F$ . If basic needs are set at some absolute level which is independent of the level of economic development of the society,  $\hat{a}/X$  is equal to zero. Given that  $\hat{a}/X^P$  is less than one, the elasticity is always positive and below one, and it reaches one only when  $X^P$  tends towards infinity, so that  $\hat{a}$  has no relevance any more.

If basic needs depend on the level of economic development, several cases can be considered. First, if  $\hat{a}$  is a fixed proportion of  $X$ , i.e. if  $\hat{a}=\alpha X=(\alpha/\tilde{a})X^P$ , then the elasticity is one (this remains true even if we do not impose any relationship between  $\hat{a}^P$  and  $\hat{a}^F$ ). If  $\hat{a} = c + \alpha X$ , the elasticity is smaller than one if  $c$  is positive, and larger than one if  $c$  is negative. It would make sense to assume that  $c$  is positive, so that the elasticity is smaller than one. For the elasticity to be larger than one, we need to have a non-linear form for  $\hat{a}$  with  $\hat{a}/X > \hat{a}/X^P$ . In the quadratic

case, when  $\hat{a} = \hat{a}_1 X + \hat{a}_2 X^2$ , it can be shown that if  $\hat{a}_2$  is positive, the elasticity will be larger than one. If  $\hat{a}_2$  is negative, the elasticity will be smaller than one, but for  $\hat{a}$  to be increasing over  $X$ , we will need to have  $X < -\hat{a}_1 / 2\hat{a}_2$ . In any case, an elasticity larger than one is an indication that the Government is highly pro-poor, in that apart from the weight given to the poor through  $\hat{a}^P$ , it raises minimum basic needs faster than the level of economic development in the society.

To sum up the discussion so far, we will observe an elasticity larger than one if the Government is pro-poor in that apart from placing a reasonable weight on the poor in the objective function, it raises the level of minimum basic needs faster than the level of economic development. Presumably, the logic for so doing is that more can be allocated to the poor once everybody is better off. Now, an elasticity larger than one is good news for the poor during a period of growth, but in bad times, it may lead to a large reduction in targeted spending. Can a pro-poor Government avoid this? It can by not reducing the level of minimum needs when there is a recession, so that  $\hat{a}/X > \hat{a}/X$  under growth and  $\hat{a}/X = 0$  under a recession. This would be reasonable if when the poor have experienced the higher level of economic well-being in society, it is now expected that this level can be reached again. In other words, assuming that the recession is temporary, there is no need to adjust the expectations for basic needs downward.

### 3. Empirical test for Latin America

In this section, we use data for seven Latin American countries to analyze how the elasticity to growth of targeted spending for the poor behaves during booms and busts. The seven countries are Argentina, Chile, Costa Rica, Dominican Republic, Honduras, Mexico, and Panama. We chose these countries because the data available for them was more reliable than

the data for other Latin American countries. The data covers most of the 1980s and 1990s, but there are differences between countries (see the appendix for the data sources).

For the empirical work, we generalize the model presented above in order to consider a country with many households, and the possibility that some households previously non-poor may become poor because of a recession (and similarly, in a period of growth, some previously poor households may become non-poor). The reason for including this extension is that what matters ultimately is how booms and busts affect how much targeted public spending each poor person receives, rather than how much is given to the poor as a whole. Also, to avoid dealing with population growth, we normalize all income variables per capita. These modifications do not affect the basic premises of the theoretical model.

In order to distinguish different types of public expenditures, we will denote by SP instead of E the targeted spending for the poor. SP stands for social protection. In addition, we denote by H the headcount index of poverty (i.e., the share of the poor in the population), and by N the total population. The targeted public spending per poor person is  $SP/(H*N)$ . This can be expressed as a function of three parameters: a) the targeted budgetary spending as a share of GDP, denoted by  $SP/GDP$ ; b) the level of GDP per capita, denoted by  $GDP/N$ ; and c) the inverse of the headcount index of poverty, denoted by  $1/H$ . The decomposition is:

$$\frac{SP}{H * N} = \frac{SP}{GDP} \frac{GDP}{N} \frac{1}{H} \quad (7)$$

To assess how growth affects how much targeted public spending reaches each poor person, we apply first differences to the logarithm (8), and divide by  $\Delta\text{Log}(GDP/N)$ . This yields:

$$\frac{\Delta \text{Log}\left(\frac{SP}{H * N}\right)}{\Delta \text{Log}\left(\frac{GDP}{N}\right)} = 1 + \frac{\Delta \text{Log}\left(\frac{SP}{GDP}\right)}{\Delta \text{Log}\left(\frac{GDP}{N}\right)} - \frac{\Delta \text{Log}(H)}{\Delta \text{Log}\left(\frac{GDP}{N}\right)} \quad (8)$$

Equation (8) states that the elasticity to growth in per capita GDP of the targeted spending per poor person is one plus the elasticity to growth of the share of targeted spending in per capita GDP, minus the elasticity to growth of poverty, which has been estimated as being equal to minus one in Latin America (Wodon, 2000). In relationship with our theoretical model, to show that Governments are pro-poor, we would need to find that the elasticity to growth of targeted spending as a share of GDP is positive (larger than zero), so that the elasticity to growth of targeted spending itself is larger than one. This corresponds to the case when  $\hat{\alpha}/X > \hat{\alpha}/X$  under growth. Moreover, we would need to show that the elasticity to growth of targeted spending as a share of GDP is negative or zero during a recession, so that the elasticity to growth of targeted spending itself is one or smaller. This corresponds to the assumption  $\hat{\alpha}/X = 0$  during a bust. As mentioned in the introduction, even if the Government is pro-poor, it will still be difficult to protect the level of targeted spending per poor person during a recession. In order to spend more on each poor person during a crisis, we would need to have an elasticity to growth of the share of targeted spending as a share of GDP below minus two, which is unlikely. Simply maintaining the level of targeted spending constant as a share of GDP is difficult if fiscal pressures are strong.

In the empirical work, we will also consider an additional decomposition to highlight the determinants of the elasticity to growth of targeted spending which we will be estimating. This decomposition is done by disaggregating the change in targeted public spending with respect to GDP into three components: a) the change in total public spending TS as a proportion of GDP,

denoted by TS/GDP; b) the change in the share of total public spending allocated to the social sectors, denoted by SS/ST; and c) the change in the share of social spending allocated directly to the poor through targeting, denoted by SP/SS. That is, we write:

$$\frac{\Delta \text{Log}\left(\frac{SP}{GDP}\right)}{\Delta \text{Log}\left(\frac{GDP}{N}\right)} = \frac{\Delta \text{Log}\left(\frac{TS}{GDP}\right)}{\Delta \text{Log}\left(\frac{GDP}{N}\right)} + \frac{\Delta \text{Log}\left(\frac{SS}{TS}\right)}{\Delta \text{Log}\left(\frac{GDP}{N}\right)} + \frac{\Delta \text{Log}\left(\frac{SP}{SS}\right)}{\Delta \text{Log}\left(\frac{GDP}{N}\right)} \quad (9)$$

The estimate of the left hand side of (9) provides a test of whether Governments are pro-poor or not. The estimates of the elasticities on the right hand side suggest how Government acts in order to be pro-poor or not. For example, if we observe that during a boom, the elasticity on the left hand side is positive and statistically significant (the pro-poor case corresponding to an elasticity of SP to GDP larger than one), this can be achieved by increasing total spending TS, the share of social spending SS in total spending, or the share of targeted spending in social spending. If we find that the left hand side in (9) is zero or negative during a recession, this can be achieved by protecting total spending as a share of GDP, reducing total spending as a share of GDP but increasing social spending as a share of total spending, and so on.

The estimates of the elasticities in (9) for the pooled data of seven countries are reported in Table 2. The size of the sample is the same for the estimates of targeted social spending SP and non-targeted social spending SS-SP, because non-targeted social spending is defined as social spending minus targeted spending. The number of observations for education and health spending is a larger because there are countries and dates for which we know the value of social spending, including spending for education and health, but not the value of targeted spending.

When we impose the constraint that the elasticity to growth of targeted spending as a share of GDP is the same during booms and busts, the elasticity is 0.745, which is statistically different from zero at the 10 percent level. This implies that the elasticity to growth of targeted spending itself (rather than the share) is statistically larger than one. However, if we want to test whether the Government is pro-poor, we need to allow the elasticity to differ between booms and busts. When this is done, none of the two resulting elasticities is different from zero, even though the elasticity is larger for booms than for busts. The test of whether Governments are pro-poor based on targeted spending is therefore not conclusive.

Although the data was carefully constructed using both the General Financial Statistics of the International Monetary Fund and country-level data provided by Governments (see the appendix), we believe that the variables used for social spending are more reliable than the variables used for targeted spending. The data for targeted spending is not strictly comparable between countries because while some countries may classify certain programs as being targeted, others may classify these programs as being social, but not targeted. Social spending is more reliable because it includes all targeted expenditures as well as spending for education and health (plus a few small residual categories). Given that social spending on education and health is more pro-poor than non-social spending, we would argue that if the test of whether a Government is pro-poor or not is not definitive using targeted spending data, an alternative test can be obtained using social spending as a proxy for targeted spending.

It is clear from table 2 that we do observe the expected asymmetry between booms and busts in the elasticities for social spending. For all the samples considered, the share of social spending in total spending increases during booms, and is not reduced during busts. This trickles down to the elasticities to GDP of non-targeted social spending as well as health social spending

(which is a subset of non-targeted social spending). Thus, while we can not prove that Governments are pro-poor, we can at least suggest that they are pro-social.

The fact that Governments are pro-social helps in protecting the poor during a crisis, but it is not enough. Despite apparent efforts to maintain targeted and social spending constant as a share of GDP during a crisis, a one percentage point decrease in GDP still reduces targeted public spending per poor person by about two percentage points during a recession. Half of this impact (one percentage point) is due to the reduction in per capita GDP which reduces spending even when the share of targeted spending in GDP remains constant. The other half is due to the increase in the number of poor people due to the crisis. Thus more needs to be done to help Governments shelter the poor from the negative impact of spending cuts during recessions. The good news is that during periods of expansion, the elasticity of social (and more mildly targeted) spending to each percentage GDP growth is larger than two percentage points.

#### **4. Conclusion**

National governments and international organizations have tried to protect the poor in times of economic crisis. If there is one region of the world that has experienced recurrent macroeconomic shocks over the last two decades, it is Latin America. In this paper, we have proposed a theoretical model for explaining the public expenditures decisions made by Governments during booms and busts. The model provides a test for assessing whether Governments are pro-poor, or more generally whether they are pro-social, and at the same time short-sighted. The model was tested with data for seven Latin American countries. The results suggest that Governments do make efforts to protect the poor, or at least to protect social expenditures during crises, and that they increase these expenditures faster than economic growth

during periods of expansions. But they are short-sighted as well, because by raising expenditures which may benefit the poor faster than economic growth during booms, they are not able to save for social protection spending during downturns.

Thus, despite the pro-poor or at least pro-social bias of Governments, targeted and social public spending per poor person are reduced during recessions by two percentage points for each percentage point decrease in per capita GDP. The good news is that during expansions, targeted spending increases by two percentage points, and social spending per poor person increases by more than two percentage points. But it is during crises that the poor need protection the most.

The reason for the failure of targeted public spending to protect the poor are due to two causes. First, when GDP falls, even if targeted spending remains constant as a share of GDP, there will be less money available to distribute to the poor through targeted programs. Second, when GDP falls, poverty increases, which means that targeted spending for the poor must be distributed to a larger number of poor people. These two factors combined make targeted spending for the poor highly pro-cyclical, which leads to a lack of protection during hard times. The same is true for social spending. Our results suggest that additional efforts should be made in order to create better counter-cyclical programs and safety nets to protect the poor during crises.

## References

- Ganuza E., L. Taylor, and S. Morley, 1998, Política macroeconómica y pobreza en América Latina y el Caribe, PNUD-CEAPL-IDB, Ediciones Mundi-Prensa, Madrid, España.
- Glewwe, P., and G. Hall, 1998, Are some groups more vulnerable to macroeconomic shocks than others? Hypothesis tests based on panel data from Peru, Journal of Development Economics, 56: 181-206.
- Hicks N., and Q. Wodon, 2000, Economic Shocks, Safety Nets, and Fiscal Constraints: Social Protection for the Poor in Latin America, in XII Seminario Regional de Política Fiscal: Compendio de Documentos 2000, CEPAL - United Nations, Santiago, Chile, 381-407
- Lustig, N., 1995. Editor, Coping with Austerity: Poverty and Inequality in Latin America, The Brookings Institution, Washington, DC.
- Lustig, N., 1999, Crisis and the Poor: Socially Responsible Macroeconomics, Presidential address to LACEA 1999, Santiago, Chile.
- Poppele, J., S. Sumarto, and L. Pritchett, 1998, Social Impacts of the Indonesian Crisis: New Data and Policy Implications, World Bank, mimeo.
- Ravallion, M., 1999, Appraising workfare, World Bank Research Observer, 14: 31-48.
- Ravallion, M., 2000, The incidence of fiscal contractions: Theory and Evidence for Argentina, mimeo, World Bank, Washington, DC.
- Reventa, A., M. Riboud, and H. Tan, 1994, The Impact of Mexico's Retraining Program on Employment and Wages, World Bank Economic Review, 8: 247-277.
- Secretaría de Programación Económica y Regional, 1999, Caracterización y evolución del gasto público social, Buenos Aires.
- Secretaría del Trabajo y Previsión Social (STPS), 1998, Evaluación del Programa de Becas de Capacitación para Desempleados, Mexico DF.
- Wodon, Q., et al., 1999, Poverty, Inequality, and Policy in Latin America and the Caribbean, World Bank, forthcoming.
- Wodon, Q., and C. Siaens, 1999, Training for the Urban Unemployed: A Reevaluation of Mexico's Probecat, in World Bank, 1999, Government Programs and Poverty in Mexico, report No. 19214-ME, Washington, DC.
- World Bank, 1999a, Government Programs and Poverty in Mexico, report No. 19214-ME, Washington, DC.

World Bank, 2000, Argentina: Poor people in a Rich Country, report No. 19992-AR, Washington, DC.

## **Appendix: Data Sources and Description**

Expenditure data for Argentina, Honduras and Mexico are provided by national sources (see below) while data for Chile, Costa Rica, Dominican Republic, and Panama are from the Government Finance Statistics of the International Monetary Fund (GFS - SIMA version April 2000). For all the countries except Argentina (see below), real GDP per capita was calculated using the real annual GDP in constant local currency units and mid-year population reported in the Global Development Finance and World Development Report (SIMA version April 2000). All real GDP per capita series were indexed to 1994 = 100 for ease of comparison.

### **Argentina**

In Argentina we use annual GDP and budgetary data for the period 1980-1997. Data on budget allocations are provided by the Argentine Ministry of the Economy (Secretaria de Programacion Economica y Regional, 1999). Apart from information on total spending, the Ministry provides consistent series for social spending (education, health, water and sanitation, social assistance and promotion, social provision, labor, housing, and other services for urban areas excluding those expenditures allocated in the social security budget). Within social spending, the data identifies targeted spending as consisting of spending for housing and urbanism, social assistance and promotion, and labor. This includes, among other programs, the public works program Trabajar mentioned in the introduction. The data combines series of spending at different administrative levels (federal, provincial, and municipal), so that the impact of decentralization is taken into account (using only federal expenditures would yield downward biased estimates of spending towards the last few years due to decentralization). Education includes cultural, scientific and technical expenditures. Health excludes health expenditures allocated in the social security budget. Real GDP per capita was derived from the same source, using the Total Expenditures per capita, Total Expenditures in 1997 pesos and Total Expenditures as a share of GDP. All ratios were calculated using expenditures and GDP per capita in 1997 pesos.

Source: Caracterización y Evolución del Gasto Público Social, Período 1980-1997. Tables 1.1- Consolidated Public Spending, 1.2 - Consolidated Public Spending by purpose, 1.6 - Consolidated Social Public Spending by area, and 2.2 - Social Security.

### **Honduras**

The expenditures are for the Central Government only, but the level of decentralization is low, so that this is adequate. The data was provided by the Ministry of Finance and it is not available in a published document. The targeted expenditures exclude the expenditures for the social investment fund (FHIS), but they include all other expenditures directed specifically at the poor. The programs included in targeted expenditures are PRAF (a demand-side program targeted according to malnutrition rates and providing cash stipends for nutrition and school enrollment), the subsidies for electricity (all residential clients with a level of consumption below 300 kwh per month are eligible), the subsidies for urban bus transportation in the capital of Tegucigalpa, and the expenditures for a number of smaller programs. The nominal GDP data for 1985-1998 are also from the Office of the Secretary of Finance. For 1980-1984, nominal GDP is constructed by applying the growth in the nominal GDP in local currency units reported in the Global

Development Finance to the nominal GDP series from Office of the Secretary of Finance. All ratios were calculated using expenditures and GDP per capita in current Lempiras.

Source: Office of the Secretary of Finance (Asesoría Técnica Secretaria de Finanzias), Table for Central Government: Social Expenditures, 1980-1998. Data for 1998 is preliminary.

## **Mexico**

In Mexico, rather than using total spending as a share of GDP, we use programmable spending, which is a large subset of total spending. Social spending (“Desarrollo social”) consists of spending for education, health and social security, labor, regional development-water-environment, and social assistance. We construct the targeted spending category as the sum of social assistance and spending for labor, which includes programs such as Empleo Temporal (public works in rural areas) and Probecat (job training in urban areas) mentioned in the introduction. In Mexico, health spending includes social security expenditures, so that health as a share of social expenditures may be overstated. Prior to 1987, the same decomposition of expenditures does not exist for health and targeted expenditures, so these series begin in 1987, although the series education spending begins in 1980. The data is for the federal Government only. But since the decentralization process in Mexico started only in 1998, we do not have to worry as much about aggregating federal, state, and municipal level spending in our sample.

Source: For Mexico, the data comes from the annual report of the President, which includes data for 1980-1998.

## **Chile, Costa Rico, Dominican Republic, and Panama.**

The expenditure data for these four countries are from the IMF’s GFS. They combine series for Consolidated Central Government, State or provincial government, and Local Government when available. In addition, when data are available on transfer payments from Central government to other levels of government classified by function (Table T), these were added to the consolidated expenditures in education, health and targeted spending. Targeted spending was calculated by subtracting Social Security spending from Social Security and Welfare expenditures. All expenditure data is in nominal local currency units. Expenditure ratios as a share of GDP are calculated using nominal fiscal year GDP reported in the GFS. We chose these four countries among many other Latin America countries in the GFS because the data was of better quality.

Source: Government Finance Statistics (GFS) - Expenditure by Function (Table B: Total Expenditure [line I], Education [line 4], Health [line 5], Social Security and Welfare [line 6], Social Security [line 6.1].)

**Table 1: Targeted Public Spending per Poor Person, 1994-1995, Argentina**

	<i>Real per capita GDP (1994 = 100)</i>	<i>Share of targeted social spending in GDP (%)</i>	<i>Poverty rate (%)</i>	<i>Number of poor people (million)</i>	<i>Targeted spending per poor person (1994 = 100)</i>
1994	100	1.24	21.6	7.5	100
1995	94.68	1.21	27.2	9.6	63.12
% change	-5.32%				-27.88%

Source: Authors' estimates (the poverty rates are based on the World Bank poverty assessment for Argentina).

**Table 2: Pooled regression estimates of the elasticities to growth of public spending**

<i>Elasticity to Growth of</i>	<i>Type of Spending</i>			
	<i>Targeted</i>	<i>Non-targeted</i>	<i>Education</i>	<i>Health</i>
<b>Type/GDP</b>				
Coefficient	0.745 **	0.305	0.348	0.241
T-ratio	(1.888)	(1.343)	(1.352)	(1.238)
Boom only	1.063	0.550 *	0.434	0.548 *
T-ratio	(1.641)	(2.218)	(1.559)	(2.663)
Bust only	0.441	0.071	0.270	-0.037
T-ratio	(1.062)	(0.199)	(0.653)	(-0.125)
<b>TS/GDP</b>				
Coefficient	-0.019	-0.019	0.113	0.064
T-ratio	(-0.094)	(-0.094)	(0.587)	(0.330)
Boom only	-0.084	-0.084	-0.017	-0.065
T-ratio	(-0.426)	(-0.426)	(-0.087)	(-0.336)
Bust only	0.044	0.044	0.229	0.181
T-ratio	(0.129)	(0.129)	(0.697)	(0.541)
<b>SS/TS</b>				
Coefficient	0.375 *	0.375 *	0.416 *	0.400 *
T-ratio	(2.078)	(2.078)	(2.421)	(2.302)
Boom only	0.691 *	0.691 *	0.736 *	0.751 *
T-ratio	(3.938)	(3.938)	(4.343)	(4.339)
Bust only	0.073	0.073	0.130	0.082
T-ratio	(0.256)	(0.256)	(0.496)	(0.310)
<b>Type/SS</b>				
Coefficient	0.389	-0.051	-0.181	-0.223 *
T-ratio	(1.170)	(-1.008)	(-1.399)	(-2.008)
Boom only	0.457	-0.057	-0.285	-0.139
T-ratio	(0.768)	(-0.770)	(-1.391)	(-0.814)
Bust only	0.324	-0.046	-0.089	-0.300 *
T-ratio	(1.030)	(-0.654)	(-0.555)	(-1.983)
<b>NS/TS</b>				
Coefficient	-0.092	-0.092	-0.124	-0.116
T-ratio	(-0.961)	(-0.961)	(-1.321)	(-1.210)
Boom only	0.457	-0.057	-0.285	-0.139
T-ratio	(0.768)	(-0.770)	(-1.391)	(-0.814)
Bust only	0.324	-0.046	-0.089	-0.300 *
T-ratio	(1.030)	(-0.654)	(-0.555)	(-1.983)
Countries <sup>+</sup>	7	7	7	7
Observations	97	97	121	114

Source: Authors'. The elasticities were obtained from regressions of the change in the log of the dependant variable (Type/GDP, TS/GDP, SS/TS, or Type/SS) on the change in the log of real GDP per capita without a constant. As noted in equation (4), the first elasticity is equal to the sum of the next three elasticities. The t ratios are based on White robust standard errors. (\*) indicates statistical significance at the 5 percent level, and (\*\*) at the 10 percent level. <sup>+</sup> Countries include Argentina, Chile, Costa Rica, Dominican Republic, Honduras, Mexico and Panama.