Outline for NBER Pre-Conference on Management of Currency Crises

Structural adjustment, growth, and poverty reduction

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Abstract: Structural adjustment, as measured by the number of adjustment loans from the IMF and World Bank, reduces the growth elasticity of poverty reduction. The poor benefit less from output expansion in countries with many adjustment loans than in countries with few adjustment loans. By the same token, the poor suffer less from an output contraction in countries with many adjustment loans than in countries with few adjustment loans. I speculate about the mechanisms for the apparent smoothing of output cycles for the poor provided by structural adjustment lending, and I throw out some worries about the smaller stake of the poor in aggregate growth under adjustment lending.

[1] Views expressed here are not necessarily those of the World Bank. I am grateful for comments by Aart Kraay, Sergio Schmukler, and Nora Lustig.

Poverty reduction is in the news for both the IMF and the World Bank. The IMF web-site says

In September 1999, the objectives of the IMF's concessional lending were broadened to include an explicit focus on poverty reduction in the context of a growth oriented strategy. The IMF will support, along with the World Bank, strategies elaborated by the borrowing country in a Poverty Reduction Strategy Paper (PRSP). [2]

For its part, the World Bank headquarters has built into its lobby wall the slogan "our dream is a world free of poverty." The recent East Asian currency crisis and its aftershocks in other countries generated intense concern about how the poor were faring under structural adjustment programs supported by the Bank and the Fund. The poverty issue is so red-hot that IMF and World Bank staff began to feel that every action inside these organizations, from reviewing public expenditure to vacuuming the office carpet, should be justified by its effect on poverty reduction.

At the same time, there has been a long standing criticism from the left of Bank and Fund structural adjustment programs as disproportionately hurting the poor:

When the International Monetary Fund (IMF) and World Bank arrive in southern countries, corporate profits go up, but so do poverty and suffering. Decades of promises that just a little more "short-term" pain will bring long-term gain have exposed the IMF and World Bank as false prophets whose mission is to protect those who already control too much wealth and power.[3]

A report published today by the World Development Movement (WDM) shows that the International Monetary Fund's (IMF) new Poverty Reduction Strategies are acting as barriers to policies benefiting the world's poorest people.[4]

Many developing countries suffered ... sustained increases in prosperity, accompanied by dramatic increases in inequality and child poverty ... under the auspices of IMF and World Bank adjustment programmes.[5]

In country after country, structural adjustment programs (SAPs) have reversed the development successes of the 1960s and 1970s, with ... millions sliding into poverty every year. Even the World Bank has had to accept that SAPs have failed the poor, with a special burden falling on women and children. Yet together with the IMF it still demands that developing countries persist with SAPs.[6]

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[2] http://www.imf.org/external/np/exr/facts/prgf.htm
[3] http://www.oneworld.net/campaigns/imf&wb/index.html under "50 years is enough"
[4] http://www.oneworld.net/anydoc2.cgi?url=http://www.wdm.org.uk/presrel/current/PRSPcritique.htm
[5] http://www.oneworld.net/anydoc2.cgi?url=http://www.oxfam.org.uk
[6] http://www.oneworld.org/guides/sap/index.html

This paper examines the effect of IMF and World Bank adjustment lending on poverty reduction. I don't test the effect of structural adjustment on growth, which is the subject of a vast and inconclusive literature.

My main result is that IMF and World Bank adjustment lending lowers the growth elasticity of poverty. This means that economic expansions benefit the poor less under structural adjustment, but at the same time economic contractions hurt the poor less. What could be the mechanisms for such a result? I do not resolve this issue in this preliminary version of the paper, but I speculate that IMF and World Bank conditionality may be less fiscally austere when lending occurs during an economic contraction, while conditionality may require more fiscal tightening during an expansion. If fiscal austerity disproportionately hurts the poor -- say because it is implemented through regressive taxes like sales taxes -- then we get the result that IMF and World Bank adjustment lending lowers the growth elasticity of poverty. Alternatively, adjustment lending could have counter-cyclical effects on variables not captured by output -- like credit, bankruptcies, and unemployment-- which cushion their effect on the poor. Adjustment lending could even include an explicit social insurance mechanism such as an increase in subsidies that cushions the effect of contractions on the poor, but accompanied by a reduction in subsidies in times of expansion. I will speculate on other possible mechanisms at the end of the paper.

I. Data and concepts for paper

I have data for 1980-98 on all types of IMF lending and on World Bank adjustment lending. IMF lending includes stand-bys, extended arrangements, structural adjustment facilities, and enhanced structural adjustment facilities (recently renamed Poverty Reduction and Growth Facilities). The latter two kinds of operations are concessional for low-income countries. World Bank adjustment lending includes structural adjustment loans, sectoral structural adjustment loans, and structural adjustment credits (the latter is concessional for low-income countries). The data are reported in the year that the loans are approved. Hence, my data take the form of number of new Bank and Fund adjustment loans approved each year. It would be preferable to have data

that record also how long these loans are in effect, but the data are unfortunately not available in this format. For any time period I consider in this paper, I consider the average number of new Bank and Fund adjustment loans per year.

Conditionality associated with these loans is well-known: macroeconomic conditions like reducing budget deficits, devaluation, and reducing domestic credit expansion, and structural conditions like reducing trade barriers and privatizing state enterprises. Although the Fund is associated more with the former and the Bank with the latter, in practice neither will proceed with an adjustment loan unless the other is satisfied with progress on "its" area of responsibility.

For data on poverty, I use an updated version of Ravallion and Chen's (1997) database on poverty spells. These authors were careful to choose spells and countries where the definition of poverty was constant and comparable over time and across countries. The source of the data is household surveys. They report the proportion of the population that is poor at the poverty line of $2 per day at the beginning of the spell and the end of the spell (they also report the poverty rates for a poverty line of $1 per day, but I choose to use the former because many countries have a 0 initial value at $1 per day). They also report the Gini coefficients at the beginning and the end, and the mean income in the household survey at the beginning and the end. They report data on 155 spells for 65 developing countries (the Appendix table gives the countries and numbers of spells each). Table 1 gives the descriptive statistics for all the data:

Table 1: Descriptive Statistics on Variables Used

	Change in poverty	Growth	Initial Gini	Initial poverty rate	Adjustment loans per year
Mean	6.0%	-1.1%	39.5	41.2	0.62
Median	-0.1%	0.0%	39.5	36.3	0.50
Std. Dev.	31.5%	11.1%	11.1	29.6	0.60
Observations	149	155	155	154	150

II. Results

Following Ravallion 1997, I regress the change in poverty rate on growth of mean income and the interaction of growth of mean income with the Gini coefficient. The idea of this specification is that if the poor have a low share in existing income (high Gini), they will likely have a low share in newly created income (low growth elasticity of poverty reduction). I also include the level of the initial Gini for completeness. To test the effect of IMF and World Bank adjustment lending, I include the variable measuring number of adjustment loans per year during the poverty spell and also interact this variable with growth.

There is the well known selection bias problem with World Bank and IMF lending. This lending goes to countries that are in trouble, and this trouble could include initial high poverty rates. We could even imagine that World Bank and IMF programs go to countries who are more likely to reduce poverty rapidly. With these concerns in mind, I instrument for World Bank and IMF lending. I follow the practice of the foreign aid literature in using dummies that measure friends of influential donors, including a dummy for Central America, one for Egypt and Israel, and one for Franc Zone countries. I also include continent dummies as instruments for lending, because both the World Bank and IMF have a different department for each continent, and these different departments may have different propensities to make loans. I also include initial income as an instrument of adjustment loan frequency.

The result on expansions strongly reducing the rate of poverty -- or output crises raising the rate of poverty -- is familiar from other studies (Ravallion and Chen 1997, Dollar and Kraay 2000, Bruno et al. 2000, Lustig 2000). Without controlling for other variables, the mean growth elasticity of poverty is about 1.9 (Table 2).

The significant coefficient on the interaction term between the Gini coefficient and the growth rate also confirms the Ravallion 1997 and Bruno et al. 2000 result (Table 2). Ten percentage points higher Gini will lower the growth elasticity of poverty by 0.6 percentage points. A not-often-noticed implication of this result is that the poor will be hurt less by output

contraction in a highly unequal economy than in a relatively equal one, simply because the poor have a low share of output to begin with. The initial Gini also has a direct negative effect on the change in poverty, suggesting a reversion to greater equality if a country begins highly unequal.

The new result in this paper is that, while adjustment lending has no direct effect on poverty reduction, it has a strong interaction effect with economic growth (Table 2).[7] The absolute value of the growth elasticity of poverty declines by about 2 points for every additional IMF or World Bank adjustment loan per year. This means that the poor benefit less from expansions during a structural adjustment program than in expansions without an adjustment program, while they are at the same time hurt less by contractions. Expansion under adjustment lending is less pro-poor, while contraction under adjustment lending is less anti-poor. The welfare of the poor may have increased from the income smoothing effect of adjustment lending. On the other hand, it is disappointing that the poor do not share fully in growth in those cases where there are recoveries that accompany adjustment lending.

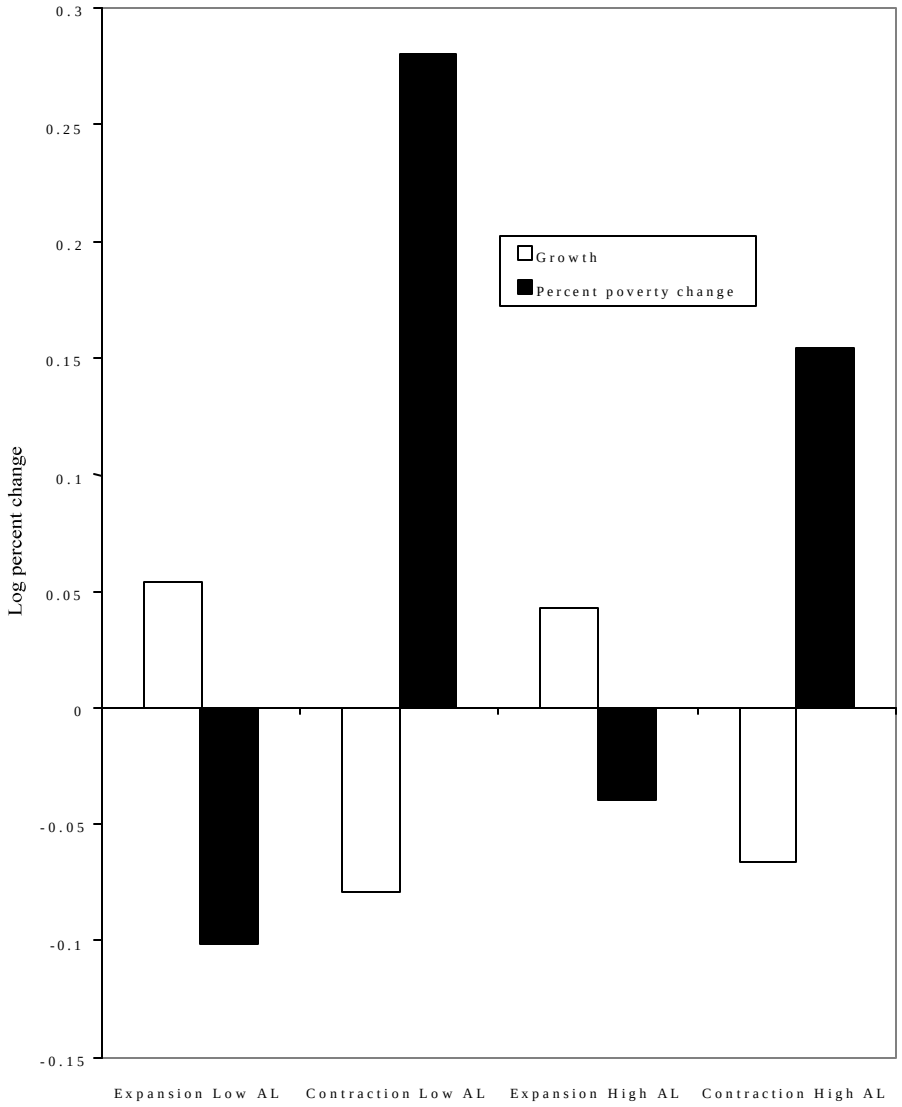
What is the marginal impact on poverty of IMF and World Bank adjustment loans? If we specify a counterfactual of zero adjustment lending to all countries in the sample, we find that the effect of the actual adjustment loans on the number of poor was a net increase of 14 million. This represents an increase of 0.4 percentage points in the population-weighted average poverty rate in the sample. The outcome reflects the net effect of an increase in the number of poor compared to the counterfactual of no adjustment loans in growing countries like India and China, while there was a decrease in poverty compared to the counterfactual in contracting countries like Russia and Ukraine. The unweighted median change in the poverty rate associated with adjustment loans is 0.0.

[7] IMF (1999) found that "In seven SAF/ESAF countries for which data are available, poverty rates declined by an average of 20 percent under IMF-supported adjustment programs, implying an average annual reduction of 5.3 percent" This study did not control for mean growth.

Table 2: Regression results on change in poverty, growth, and adjustment programs				
Dependent Variable: Log rate of change per annum in percent of population below $2/day				
Method: Two-stage Least Squares				
	Regression 1		Regression 2	
Variable	Coefficient	t-Statistic	Coefficient	t-Statistic
C	0.039	1.82	0.382	4.21
GROWTH	-1.892	-8.24	-5.465	-4.61
GINI1			-0.006	-3.65
PROGRAM			-0.116	-1.30
GROWTH*GINI1			0.057	2.68
GROWTH*PROGRAM			2.034	3.44
R-squared	0.316		0.453	
Adjusted R-squared	0.311		0.430	
Included observations:	149		126	
Instruments for PROGRAM: CENTAM EASIA EGYPT FRZ SSA LAC ECA GROWTH*CENTAM GROWTH*EASIA GROWTH*FRZ GROWTH*EGYPT GROWTH*SSA GROWTH*GINI1 GROWTH*LAC GROWTH*ECA LGDPPC				
Variable definitions				
GROWTH	Log rate of growth per annum in mean of household survey			
GINI1	Initial Gini coefficient			
PROGRAM	Number of IMF/World Bank adjustment loans initiated per annum			
CENTAM	Dummy for Central America			
FRZ	Dummy for Franc Zone			
EGYPT	Dummy for Egypt and Israel			
SSA	Dummy for Sub-saharan Africa			
LAC	Dummy for Latin America			
ECA	Dummy for Eastern Europe and Central Asia			
EASIA	Dummy for East Asia			
LGDPPC	Log of initial per capita income (Summers-Heston)			

Figure 1 illustrates the results. Countries with a low level of adjustment lending (AL) as measured by PROGRAM have both greater increases in poverty during contraction and greater falls in poverty during expansions than do countries with a high level of IMF and World Bank

Figure 1: Growth and Poverty Reduction under High and Low Multilateral Lending



lending. (High and low AL here just mean the upper and lower 50% of the sample as measured by program; expansion is the average of all increases in mean income while contraction is the average of all decreases in mean income).

Table 3 uses the coefficients from regression (2) to calculate the poverty elasticity with respect to growth at different levels of the Gini coefficient and adjustment loans per year (AL). The middle cell is close to using the average value for Gini and AL, and we reproduce the familiar elasticity of 2. However, there is great fluctuation around this average for different measures of the Gini and AL. If there are no adjustment loans and inequality is very low, then poverty is extremely elastic with respect to growth (3.8). China in 1990-92 is an example of an observation that would approximately fall in this cell. At the other extreme a highly unequal country receiving adjustment loans sees no effect of growth or contraction on poverty. Colombia in 1995-96 is an example of a country that would roughly fit in this cell.

Table 3: Poverty elasticities with respect to growth for different Gini coefficients and adjustment loan intensity

	Average number of adjustment loans per year during survey spell		
GINI coefficient	0	0.5	1
30	-3.8	-2.7	-1.7
45	-2.9	-1.9	-0.9
60	-2.1	-1.0	0.0

I performed several robustness checks on these results. First, I looked for asymmetries between expansion and contraction in both growth effects and the interaction term with adjustment lending. I found no evidence for any asymmetries. Second, I added the initial poverty rate both in levels and as an interaction term. The initial poverty rate enters with a negative sign in levels -- indicating some tendency of poverty to revert to the mean -- but it leaves the significance of the interaction term between adjustment lending and growth unchanged.

Given all the interest in currency crises, I examine the 4 currency crisis cases that are in the present sample: Mexico (89-95), Indonesia (1996-99), Russia (1996-98), and Thailand (1996-98). All of them had at least one adjustment loan per year during the period before and during the crisis (Table 4). Growth was negative in all cases, but the increases in poverty were fairly modest except for Indonesia. We should not make much out of 4 datapoints in a sample of 126

observations, but it's still interesting to see if we can explain the differential poverty response to currency-output crises with the regression. We can understand Mexico's low poverty-growth elasticity as reflecting its high inequality and its receipt of adjustment loans. Thailand's near zero poverty-growth elasticity could be rationalized as a consequence of its high adjustment intensity and its relatively average rate of inequality. Indonesia fits the story with a slightly below average elasticity associated with low inequality but relatively intense adjustment lending. Russia is an outlier, with a high elasticity despite an extraordinarily high number of adjustment loans per year.

Table 4: Growth, poverty, and adjustment lending in currency crises

Country	Spell	mean growth	rate of change of poverty	poverty wrt growth elasticity	Percent of population below $2/day, beginning	Percent of population below $2/day, end	Gini coefficient, beginning	Average number of adjustment loans per year
Indonesia	96-99	-4.3%	7.5%	-1.73	50.51	63.21	36.45	1.0
Mexico	89-95	-1.9%	1.5%	-0.81	38.80	42.47	55.14	1.0
Russia	96-98	-0.6%	1.3%	-2.16	24.43	25.08	48.03	2.5
Thailand	96-98	-1.8%	-0.2%	0.10	28.25	28.15	43.39	1.5

Further work in the next draft of this paper will proceed in two directions: (1) exploring the mechanisms by which adjustment lending lowers the sensitivity of poverty changes to growth, and (2) testing other ancillary variables to see how they affect poverty or its growth elasticity.

I throw out some hypotheses here. First, conditionality on budget deficits may be tougher during expansions than contractions, since the Fund and Bank may fear deepening a contraction with excessive fiscal austerity. If the poor disproportionately suffer from fiscal austerity, then they will do less well for a given rate of growth in expansions while in contractions they will suffer less for a given rate of mean income decline. Second, the principal means of fiscal adjustment under adjustment programs during expansions may be through regressive taxation like sales taxes, which lower the benefits to the poor of mean income growth. Third, Bank and Fund lending programs may explicitly include "social safety nets" that cushion the effect of a contraction on the poor, while these transfers may be reduced during expansions. Fourth, IMF

and World Bank loans may have counter-cyclical effects that smooth aspects of the cycle not fully captured by the growth rate (such as credit crunches, bankruptcies, and unemployment), cushioning the effects of the cycle on poverty.

III. Conclusions

The results in this paper are suggestive that IMF and World Bank adjustment lending provides a smoothing of income for the poor, lowering the rise in poverty for a given contraction, but also lowering the fall in poverty for a given expansion. Adjustment lending seems to play a similar role to inequality, in lowering the sensitivity of poverty to the aggregate growth rate of the economy. This is bad news during expansions and good news during contractions. If we think of the normal steady state of the economy as being one of positive growth, then adjustment lending is bad news for the growing economy; it means the poor share less in the expansion of the economy. One might think that adjustment lending happens only during non-steady-state output crises, but adjustment lending has been so continuous for some economies, it is hard to speak of it as purely a transitional phenomenon.

From a political economy point of view, lowering the sensitivity of poverty to the aggregate growth rate could be dangerous because it gives the poor less of a stake in overall good economic performance. This might increase the support of the poor masses for populist experiments at redistributing income.

In summary, these results could be interpreted to give support to either the critics or the supporters of structural adjustment programs. To support the critics, growth under structural programs is less pro-poor than in economies not under structural adjustment programs. To back the supporters, contractions under structural adjustment hurt the poor less than contractions not under structural adjustment programs.

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