

# Debt as Sweat: Labor, financial crises, and the globalization of capital

Ishac Diwan  
The World Bank

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## Abstract

The paper investigates how the distribution of income between labor and capital is affected by financial crises. Using an international panel-data of the share of labor in GDP, three sets of empirical regularities emerge: (i) a tendency for the labor share to fall sharply during a financial crisis, recovering only partially in subsequent years; (ii) the decline during a crisis can be partly explained by the extent of leverage in the country, the nature of its financial structure, and the openness of its trade and capital regimes; and (iii) there is a secular fall of the labor share, especially marked for countries that experience financial crises, due to the fact that crises leave distributional scars, and because crises have become more un-equalizing over time. These empirical regularities suggests that labor is not simply a bystander that is hurt unintentionally by financial crises, but rather, that temporary changes in distribution can be a means by which labor partially bails out capital, and thus plays an important role in resolving financial crises. The accumulated evidence is that the main link between globalization and inequality operates over short periods of distributional fights rather than in a more monotonous and spread-out manner.

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# Labor, financial crises, and globalization

## 1. Introduction

Does globalization hurt the common man? Popular wisdom these days seems to assert that it does. Yet, there is no accepted evidence to indicate it clearly. In this paper, I try to make a contribution to the globalization debate by looking at the impact of financial crises on income distribution, and more specifically, on the share of national income that goes to labor. But why the focus on financial crises, and on labor shares?

The new concerns about the impact of globalization and the mobility of capital on inequality has brought the issue of labor's bargaining power during stabilization to the fore. As noted very cogently by Rodrik (1998), the main difference with the earlier globalization period of the 1900 and the current one is that then, capital *and* labor were mobile, while now, financial capital is more mobile while labor is much less mobile. There are two logical implications: (i) the burden sharing of negative shocks between labor and capital would be unequal, with labor bearing the largest burden, since capital could threaten to flee unless it receives the international interest rate, plus a premium to compensate for risk; and (ii) in a world with higher mobility of capital, labor will have to compete harder to attract capital, leading to lower wages and a "race to the bottom".

These two hypotheses are not easy to test empirically. There are both measurement and conceptual difficulties. One of the innovations of this paper is to focus on the share of income going to labor as the main explanatory variable. In my view, the tests of the effect of globalization have been obscured by the focus of the researchers on the wrong variables. Measures of poverty, income inequality, or return to education, are not closely connected to the main change factor that underlies the hypotheses under investigation, namely, the relative incomes accruing to labor and capital. First, standard consumer surveys from which these variables are derived are notorious in their under-reporting of capital earnings. Second, when the measures used are for consumption data, the effect of consumption smoothing (by savings, transfers, and taxes) obscures the underlying changes in income. And third, survey data tends to have low frequency (at best every five years), and thus miss all the short term action. Yet, short term change in distribution, even when reversed later, can operate large wealth transfers among factors of production.

As a result, recent work only addresses our main concern indirectly. The work of Dollar and Kraay (2000) for example shows that poverty fluctuates one to one with output: this however can cover up complex composition effects, with for example labor income falling in relative terms, and traded agriculture rising. The recent work of Milanovic (1999) that shows that rising inequality is much more connected to inter-country inequality than to intra-country changes in inequality, or of Barro (1999) or Banerjee and Duflo (2000) who examine the relations between inequality and growth suffers from the same ills (especially so if the return to capital are better estimated in richer countries). Cohen (2001) sheds light on the positive relation between the return to education and the workings of markets, but his work ignores the larger issues of distribution between labor and capital. Similarly, Galbraith (2000) also focuses on intra labor inequality (using a data set similar to ours), but he does not look at the changes in overall labor incomes in reference to the income accruing to capital.<sup>1</sup>

On the conceptual front, and in spite of their elegance, it is not clear what the globalization hypotheses mean exactly. After all, physical capital is hardly mobile, and investments that are already in place cannot credibly threaten to flee abroad, and so, why wouldn't capital bear a fair share of national losses? We want to explore instead the consequences of the increased mobility of financial claims -- it is the interest rates paid on short term deposits in the local financial sector or short term claims on the state that cannot be easily lowered in order to absorb shocks when the capital account is open, since those claims would not be voluntarily renewed if their returns were threatened to fall below international rates. And it is foreign exchange reserves that get depleted by a run, leading to liquidity crisis, harsh stabilization, and defaults. But then, what are the connections between the mobility of capital, the return to labor, and globalization?

In this paper, I consider that financial crises are episodes of distributional fights, periods where there is intense bargaining over the share of income that goes to labor. If distribution changes tend to occur mainly during financial crises, with possible offsetting effects outside crises periods, looking at changes of distribution from the vantage of crises can then clarify the picture – to put it differently, mixing the two regimes may reveal misleading average behaviors. It is also possible – as in the popular perception – that labor bails out financial capital during crises period by dropping deeply but for a short period. These wealth transfers would not be picked up by longer term trends, yet they could be large enough to justify the current malaise

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<sup>1</sup> Galbraith (2000) also offers a scathing critique of the use of survey data in cross-sectional work.

with globalization. By separating our sample over crises and non-crises periods, we can test whether crises are associated with increased inequality, to what extent these losses (if any) are reversed afterwards (or whether they are due to pre-crises unsustainable changes in distribution), and what are the determinants of these losses. We can also try to see if globalization is connected with more un-equalizing crises, or more frequent crises.

More frontal tests of the globalization hypotheses have been largely inconclusive. The few recent studies that have tried to test directly for the impact of globalization on labor (Harrison 1999, Rama 2001, Rodrik 1998, Diwan 2000), and are thus closest to our work here, do not find clear support for the globalization hypothesis (but nor can they reject it).<sup>2</sup> In general, there seems to be a weak and negative connection between the share of trade in GDP and wages (or the labor share); a stronger (and positive) connection with the capital labor ratio (or more broadly with development); a positive effect for capital controls – but only in the short term; and a lot of variability in these relations across poor and rich countries. In a companion paper (Diwan 2000) that focuses on the medium term behavior of the labor share, I find that larger trade and a more open capital account are associated in poorer countries with increases in the labor share – and the reverse in richer countries. This is what one would expect from a factors endowment perspective. However, I also found that the LS has a large negative trend that cannot be explained by these variables. This is unsettling as it does not explain by which channels time may be negatively affecting labor – and isn't time after all the best proxy for globalization, as meant by popular wisdom?

The paper is organized as follow. Section 2 takes a close look at the behavior of the labor ratio following financial crises and uncovers some strong and unsettling empirical regularities. Section 3 tries to make sense of the findings by exploring the conceptual links between financial crises (and their resolution) and labor's welfare. Section 4 investigates the empirical determinants of losses across a sample of countries. Section 5 asks whether financial crises have become more problematic with globalization and can explain the secular decline in the labor share, and section 6 concludes.

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<sup>2</sup> Harrison (1999) and Diwan (2000) use the LS as their independent variable; Rodrik (1998) and Rama (2001) use average wages in manufacturing. Harrison uses yearly data, while the other three studies focus on the medium term and use 5 year averages. It is worth noting that the labor share is a more complete measure of labor's welfare since it covers a base that is much larger than manufacturing, and also captures the effect of unemployment.

## 2. Evolution of the labor shares around financial crises

I start by describing the data- set that I use, and extracting some basic stylized facts. There are two aspects to focus on: whether there is a secular fall in the share of income going to labor, and whether the burden sharing that takes place between labor and capital during crisis is fair or not.

The variable which I focus on as a measure of inequality is the share of GDP that goes to labor, or more specifically, the compensation paid to resident and non-resident households, drawn from the UN's National Accounts table on use of GDP (table 103). The variable is reported by most countries and is estimated on the basis of surveys of enterprises and government accounts. The estimate is pre-tax.<sup>3</sup> The informal sector should in theory be included in the national accounts, however, as the data sources for this sector are scarce, it will in practice often not be so. And the earnings of self employed persons are not included -- their incomes are considered as accruing to capital. These two considerations present perhaps the most challenging limitations of our approach, since crises can often be associated with migration towards small scale “survival” agriculture and informality. The data set covers 135 countries, and extends from 1975 to the mid-1990s, but is very spotty after the early 1990s (for example, the data is incomplete for Brazil and Argentina, two countries that have had recurrent financial crises), and there seems to be a middle and high income bias, with data for African countries in particular being less available.

### *Stylized results: the evolution of the labor share during crises*

It is useful to start by looking at broad trends in the data, along time, output, and currency crises. We need to start by defining what is a crisis. For our purposes, we are looking for periods where distributional fights are heightened by the credibility of capital mobility, i.e, a situation where financial capital is actually trying to withdraw. It is thus natural that we focus on the path of the nominal exchange rate which comes under pressure in these circumstances. While I have tried various levels of thresholds, the results reported in the paper define a financial crises as a year where the nominal exchange rate falls by more than 25 percent (defined in domestic currency to dollar).<sup>4</sup> I use IMF data on annual exchange rates -- market rate, period average --

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<sup>3</sup> But social contributions that are paid by employers are included.

<sup>4</sup> This has also become a sort of standard practice with the work of Frankel and Rose (1995).

when it exists, or official rate period average otherwise. The focus on the yearly data eliminates many occurrences of large monthly devaluation that are followed by reversals, but which do not show up as large yearly averages.

This gives us 216 financial crisis in all. But given the limitations of the UN data-set, we end up with only 67 financial crises for which reasonable time series for the labor share exists (i.e, more than half of the data is available): 25 in Latin America, 15 in Africa, 4 in the Middle East, 7 in Asia, 16 in the OECD. Crises tend to last several years, and we will use panel regression methods on yearly data; but on the other hand, some variables are not available for some of the countries. All in all, the data set provides a maximum of 278 observations of crises years, and 2042 observations of non-crises years.

Simple regressions of the LS on a time trend and several crisis dummies (that takes a value of 1 during years of crisis and zero otherwise – see Table 1) reveal some initial support for the unequalizing financial crisis hypothesis but not for the simple form of the race to the bottom hypothesis. I find that the effect of crises is very dramatic: the LS falls on average by 0.6 points in the three years preceding a crisis, by 5 percentage points during the financial crisis, and remains below its average by 2.6 percent in the 3 subsequent years. Keeping in mind that the (straight) average LS in our sample is around 47 percent, these losses appear quite large.

Overall the whole sample however, the LS does not have a strong time trend – it only loses on average 0.02 points a year, and once we control for the crises years, this trend is reversed and becomes a gain of 0.01 percentage point a year (or a bit more when more controls are added), indicating that there is some recovery outside of crises. But overall, most of the action seems to occur during crises. This is further confirmed by inspecting the data. There are many cases where the labor share has dropped a little without requiring a crisis. But rarely do we see large reductions in labor shares outside of crises. A simple way around this question is to look at the type of environment where labor shares fall by more than a certain proportion. When the threshold is put at 3 points of GDP, drops of more than this occur 38 times in our sample in the case of Latin America, and of these, 27 were during periods of financial crisis.<sup>5</sup> It could well be however that there is also an underlying trend for the LS to fall outside of crises, but that this effect is offset by other forces (for example, accumulation and development should boost the LS)

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<sup>5</sup> Of the remaining 11 cases, 7 occurred in countries that do not have an own currency, i.e., not prone to financial crises as we defined them. And one case is in Venezuela, during an oil boom.

which we are not controlling for here. A more complete analysis will thus have to repeat the experiment using the proper controls – we do this in section 4, after uncovering some of these controls in section 3.

### *Long term trends by region*

We know relatively little about the historical evolution of labor shares in developing countries, and there have been only a few recent studies in the OECD. This is surprising given the availability of sectoral employment and wage data for a wide range of countries since the 1970s at least. Part of this neglect can be attributed to the prevalence in Anglo-Saxon academic circles of a belief in the so-called Bowley's Law, which says that the labor share in output does not vary much in the short and medium terms, reflecting the relative stability of social forces.<sup>6</sup> However, we know that the LSs have become more variable in more recent periods in OECD countries, thanks to the work of Atkinson (1999), Blanchard (1998), Poterba (1997) and Cohen (1999).<sup>7</sup>

The UN data-set indicates a good amount of variability, both within countries, and across countries. Eye-balling the data, it appears that there are great differences in levels among countries, with shares varying from 20 to 80 percent of GDP, although most of the observations are within a 40 to 60 percent range.

The long term trajectories of labor shares taken from the UN data are displayed in figure 1 which shows regional averages for the main regions of the world – the OECD, Sub-Saharan Africa, Asia, the Middle East and North Africa, and Latin America. The average ratio for the whole world (not weighted) fluctuates within a narrow band (between 44 and 46 percent of GDP), and with a slow negative trend. But the behavior varies by regions<sup>8</sup>:

- A first striking feature is the sharp reversal in labor shares in many OECD countries which after a fast rise in the 1960s and 1970s, start falling after the mid-1970s and early 1980s.<sup>9</sup>

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<sup>6</sup> For early expositions and discussions, see Keynes (1939), Phelps and Hart (1952), Solow (1958).

<sup>7</sup> These studies focus on the medium run, and relate the relative decline of the labor share in most of the OECD countries during the eighties to the adoption by firms of labor-saving techniques in reaction to inflexible labor market conditions following the oil shock of the 1970s.

<sup>8</sup> The transition to market in the post-communist countries is too recent to provide useful data. The presumption however is that the LS collapsed in the 1990s.

<sup>9</sup> Looking at the country level, there are rises in Japan, Canada, and Switzerland, stability in the U.S, and a decline in Belgium, Denmark, France, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden and the U.K, especially after 1975.

- In Latin America, a region that is very prone to financial crises, with waves in the early 1980s and mid-1990s, the path is somewhat similar to Europe, with a rising trend reaching a maximum of 44.5 percent in 1982, followed by a decline that bottoms up at 39 percent in 1991, only to fall again after the mid 1990s.
- In Africa, the labor share has fallen precipitously in the past two decades, dropping from a height of 37.1 percent of GDP in 1975, to about 30 percent in 1990.
- In Asia, labor shares have remained essentially flat with small rises in some countries offset by small declines in others, until the recent crises after 1997.<sup>10</sup>
- In the Middle East, shares have followed oil prices closely: labor shares initially increased fast with the oil boom (from 33.3 percent of GDP in 1976 to 44 percent in 1986, at the height of the oil boom) before stabilizing and falling a bit.

#### *Effect of financial crisis by region*

A cursory look at the time-path of the labor share during a financial crisis suggests that in most cases, it falls at the beginning of a crisis and only partially recovers later. The case of Mexico is a good example (see figure 2). There are three financial crises in our sample, in 1977, during 1982-88, and in 1994. In all cases, the crisis is followed by a steep decline in the labor ratio, followed by a partial recovery (not yet apparent in the case of the 1994 crisis). The 1994 crisis is preceded by a strong rise in the ratio during 1991-94.

To get a sense of magnitudes and check for regional variations, I compute various simple measures of the evolution of the labor share after a crisis for the countries where the labor share drops. In particular, I compute the extent of the initial loss and the following recovery (a and b respectively), the length of the periods of fall and recovery (alpha and beta), the total losses experienced by labor over the episode (A, B), and the number of consecutive years during which the exchange rate depreciates by more than 25 percent (n) – see Table 2 for formal definitions and Figure 3 for an illustration. These computations are reported in the appendix for individual

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<sup>10</sup> The crises of the late 1990s are not covered by our sample. However, various sources indicate that they have led to a steep decline of the labor share, followed in most countries by equally steep reversals 3 years after the eruption of the crisis.

countries and the regional averages are in table 2. In making those computations, I follow simple rules of thumb consistently.<sup>11</sup>

The gross fall (a) (i.e. before the usual partial recovery) averages 6.1 percentage points of GDP per crisis, with wide variations across the regions, from 2.3 points in Asia to 6.7 points in Latin America, and 6.7 points in the OECD, 5.9 points in Africa, and 4.2 points in the Middle East and North Africa. In 36 cases, the gross loss per crisis exceeds 5 points. These figures are surprisingly large – labor shares average about 45 percent of GDP world-wide, and so, variations of 5 points or more represent a more than 10 percent drop in labor incomes – at fixed GDP. In absolute terms, the losses could be much larger if GDP also decreases, as happens usually during crisis. For example, if over the crisis, GDP goes down by 10 percent, then the overall reduction in labor income per crisis would be on average in excess of 20 percent.

The net, or permanent fall (a-b) is often sizable. It averages about 3.3 percentage points of GDP per crisis, and is highest in the OECD (4 points), followed by Latin America (3.9 points), and Africa (2.7 points). In 22 cases, the net loss per crisis exceeds 5 points. Moreover, these declines occur within a relatively short time ( $\alpha + \beta = 6$  years on average for the sample). The length of the periods over which the labor ratio falls corresponds closely to the length of the financial crisis itself (4 to 5 years, see Table 1).

Crises occur more than once in some countries, and so, their overall effect tends to increase over the whole period. I compute the net effect of crises *per country* over the length of the sample (about 30 years) as the sum of the net drops in the labor share over the various crises experienced by each country. On average, the labor share has dropped permanently by 4.5 points of GDP during the crises of the past three decades. These accumulated (net) figures are especially large in Latin America, at 7.4 points of GDP on average per crisis country, with each country averaging two crises over the past 30 years – this actually excludes the most recent post-1995 crises.

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<sup>11</sup> Of course, this ideal shape does not apply in all cases. But surprisingly, it works almost always: We have only 5 cases in the sample where the labor share rises after a financial crisis. They are: Israel 1976-86; Greece 1981; Indonesia 1979 and 1983; and Sri-Lanka 1978. Closer inspection reveals that for Indonesia, the issue is simply one of timing (the ratio actually collapses in 1984). In the other cases, the exceptions are real. For Israel and Greece, they are possibly related to the large subsidies these countries have received from the US and Europe to support their stabilization efforts. In 15 cases in our sample, labor shares end up higher at the end of the distributional crisis episode, compared to the beginning of the financial crisis. In three of the cases (Turkey 78-89, Chile 72-78, and Dominican 85-88), this new height of the share is broken by a deeper collapse amid a new crisis. In two cases

Finally, I also measure the accumulated labor losses, since even when there is a full recovery in the level of the labor share, there is an transfer of assets away from labor over the crisis period. I use a simple measure by adding the points of GDP lost in each period, over the crisis period. In table 1, the variable A indicates the accumulated permanent losses until the end of the dip, while B measures the accumulated transitory losses (compared to the original pre-crisis level; see Table 2 for definition). The area A+B therefore measures the total loss during the distributional crisis episode, and it is a measure of the total effect of crises on labor during the crisis period (expressed as a share of average GDP). Its size is staggering, which goes a long way in explaining why workers fear financial crises so much. The world average is 33.7 points of GDP per financial crisis, the Latin average is 36.8, and the OECD's is 43.2 percent.

#### *Crisis, real exchange rate, and inflation*

A natural suspicion is that the apparent overshooting of the labor shares merely mirrors the overshooting in the real exchange rate that seems to occur in response to currency crises. But it is also possible that the path of the real exchange rate is not too closely connected to that of the labor share, to the extent that the real exchange rate measures the price of a larger group of non-tradable inputs than labor (land, assets in place). To measure how correlated movement in labor shares are with the real exchange rate, I ran a simple OLS of the whole labor share panel on the level of the real exchange rate and the rate of inflation. The results show that the effect of the real exchange rate is positive as expected, but very small, while the effect of inflation is positive, but equally small. However, very little of the variability of the LS is explained by these two variables – the R square of the regression is only 0.01.

### **3. A conceptual discussion of the evidence**

This cursory look at the UN data-set reveals two unsettling empirical regularities in the behavior of the labor share:

- The LS falls during financial crises, and often by a lot, and there seem to be some overshooting, implying that large but transitory transfers from labor to capital take place over

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(Colombia 89-91, Zimbabwe 1985), the occurrence is within a small after-shock to a much larger previous crisis. We do include all these cases in the regional averages.

a few years. But in most cases, the recovery is not total and episodes of crisis bring a net loss to labor.

- There seems to be a tendency for the LS to fall over time in most regions, although possibly mainly (or even only?) during periods of crisis.

These regularities prompt us to look deeper into the structure of the different societies subjected to financial crises, trying to figure out what determines the depth of the plunge, and by doing so, get a better understanding of the nature of the phenomena. Unfortunately, the elegant neo-classical apparatus is of limited help in explaining distribution, let alone how it changes over time and circumstances. Income distribution must be shaped by complex local and national political structures, and looking for some cross-cutting influences connected with capital mobility requires a much more heterodox set of models involving financial runs, wage bargaining, and country risk. Below, we review each of the two empirical regularities, speculating about the possible underlying structures of the financial and labor markets that may give rise to the observed phenomena, and trying to isolate testable hypotheses that can bring the data to bear on these speculations.

### *Capital Mobility and the Race to the bottom*

In a neo-classical model with capital mobility, labor and capital markets are tight, and each factor is paid at its marginal productivity. In such a world, one could still make sense of tendencies for labor shares to vary systematically over periods where capital becomes more mobile. One would expect that capital would flow towards regions where unit labor costs are lower. The wage (interest rate) would fall (rise) in the high capital economies, and vice versa in capital poor ones (and LS would move the same way). In all likelihood, the LS would rise (fall) in poor (rich) countries. But at the same time, the LSs would also fall in societies where labor is less efficient to start with, since local capital can now go looking for higher returns elsewhere. The race to the bottom story stresses this second factor. If the second effect was dominant, capital mobility during the transition would be creating additional competition and lowering wages in societies dominated by rent-sharing behavior. This presupposes a more classical world, where rents predominate, and where social bargaining plays an important role in determining distribution.

If such pressures to lower the LS were present, they could make themselves felt either continuously, leading to a monotonous fall in the LS, or they could be allowed to accumulate first (and be financed by running up implicit and explicit debts) and only burst episodically. A priori, this is not an implausible background to recount recent history -- there have been several important instances in the past 20 years where less « efficient » systems have come under stress, ultimately leading to their demise : think of communism, import substitution, state led growth, development state, the aid support system unleashed by the cold war. It is quite plausible that capital benefited from the increased mobility that resulted from these transformations (as evidenced by the increases real interest rates worldwide) and labor suffered, and it is at least conceivable that increased capital mobility has played a role in precipitating these changes.

### *Unequalizing risk sharing*

The other hypothesis is harder to conceptualize. The main issue here is on shorter term considerations of risk sharing by societies hit by a macro-economic shock – fluctuating oil prices, interest rates, commodities, competitiveness shock, turn around in market sentiment, or financial contagion. As others have argued, capital mobility puts more pressure on the other factors of production to bear more of the macro risks. Advanced societies seem to have dealt with these changes by developing social and institutional innovations that promote broader risk sharing and deconcentrate losses over a larger « loss-base », with the development of equity markets and the democratization of capitalism, with greater flexibility in labor markets and labor arrangements, and, as a second line of defense when losses do end up partly socialized, with better debt management and more flexible tax policy. Most poor and middle income countries however have lagged behind the institutional, social, and political developments necessary to promote broader risk sharing. In many countries, even banking is not yet democratized (let alone capitalism), and the state has been obliged more often to smooth shocks by socializing losses. It is quite plausible that weak democracies, characterized by myopia and a high level of social inequality and polarization, chose to wipe out short term macro losses (or delay needed system reform) by increasing public debt and guarantees to the financial systems and large firms, that is, that public debt would become the first line of defense.<sup>12</sup> The globalization of finance has likely

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<sup>12</sup> There is a rich but small literature that has tried to understand why stabilizations are delayed when crises down the road seemed inevitable. See a recent review in Drazen (2000).

increased the ability of governments to borrow, adding in the 1980s the internal to the older external financial markets.<sup>13</sup> But while possibly reducing short term volatility, this may have at the same time led to more frequent (and harsher ?) debt blow outs.

Episodes of crisis resolution, or of debt overhangs throw us very much outside neo-classical set-ups. Rather than focus on a steady state, the attention becomes turned towards unsustainable situations where financial imbalances must be resolved with broad wealth redistribution in order to pull out of costly system bankruptcy. Resolution require that the accumulated social losses that exceed the ability of the state to hold debt be reduced, i.e, clearly discharged to solvable agents and effectively marked to market.

### *Public sector led crises*

But why should financial crises hurt labor disproportionately? Financial crises are runs out of a domestic currency and into international reserves, out of fear of future inflation (Krugman 1979). Deeper down, they are likely to be connected to circumstances where governments have lost access to credit markets (since otherwise, they could borrow externally to boost reserves, or issue bonds at adequate interest rates to wipe out the excess liquidity, Calvo, 1997). In such cases, they follow public sector solvency crises triggered by some negative shock – internal or external. A slightly different view, which predominated for the case of the East Asian financial crises, is that they could also come in the form of a bad equilibrium in the form of an avoidable “liquidity” crisis -- the probability of which is however thought to be linked to fundamentals.<sup>14</sup> Sharply higher world interest rates led to the 1982 (mainly Latin, but also African and Asian) debt crisis. In the more recent Asian crisis, many analysts seem to favor a liquidity explanation; but most also stress the fear of massive governments bail-outs of a bankrupt private sector (that would lead to a loss of public sector creditworthiness if confirmed). The Russian, Brazilian, Argentinian, or Turkish crises are closely linked to mounting fiscal deficits.<sup>15</sup>

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<sup>13</sup> The failure of stabilization must also be related to the difficulties in reducing debt during good shocks, perhaps because of myopic political systems, but possibly also, because of the difficulty for the state to internalize much of the private gains when they arose.

<sup>14</sup> There are differing views on the role of a weak structure vs. bad equilibria, although this debate is really about degrees – bad equilibria occurring more often in economies with loose private financial capital where the structure is weak to start with -- the controversies being mainly about how weak they have to be to precipitate a possible crisis, and whether they are vicious circles that could be avoided with good policies. See Obstfeld 1995, and Furman and Stiglitz 1998.

<sup>15</sup> See Edwards (2000) for a review of the literature on current account vs. capital account generated crises.

Financial turmoil comes in various degrees, from financial stress that raise country risk, reduces liquidity and investment and leads to recessions, to more extreme forms of debt overhang (e.g. debt blow-out in Russia), the melt-down of the domestic financial system and a collapse of the economy (e.g. Ecuador), and to civil strife (e.g. Indonesia). To pull out of situations of financial stress, adjustment mechanisms include default and debt reductions, cuts in state expenditures, or increases in taxes. It is generally accepted that the inflation tax alone cannot generate sufficient resources to lead to equilibrium when the debt overhang is large,<sup>16</sup> especially when financial capital is mobile, or can insure against risks by going short term, or getting denominated in foreign currency.<sup>17</sup> If governments are not able to raise taxes or default on their creditors sufficiently, public wages will have to take the brunt of the fiscal adjustment. That this has happened in many countries is attested by the low wages paid by countless governments in Latin America and elsewhere.<sup>18</sup>

To illustrate this, focus first on the debt crisis of the 1980s, since many of the crises in our sample belong to this variety. The crisis hit around 1982 when US interest rates shot up, leading to loss of creditworthiness by over-indebted public sectors, mainly in Latin America.<sup>19</sup> The debt crisis was characterized by a reversal of external finance and tough bargaining between governments and foreign creditors, with the private sector somewhat on the side-lines. Governments then faced two macro-economic imbalances: how to generate the foreign exchange needed to service foreign debts, and how to generate the fiscal resources to buy the foreign exchange from the private sector. Real devaluation could take care of the first problem. The fiscal problem however proved less tractable. To generate the fiscal resources and operate the needed internal transfer, governments resorted initially to the inflation tax, and subsequently to direct taxation, privatization, and lower spending. The financial crises were related to money creation (or fear of), with central banks trying to surprise money-holders with unexpected inflation. Ultimately, the money tax did not generate the bulk of the revenues, and costly

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<sup>16</sup> Dooley, 1998, makes the point forcefully.

<sup>17</sup> As a result, the existence of large amounts of short term debt and debt denominated in external currencies exacerbate financial crises. See Rodrik and Velasco (1999); or Kaminsky, Lizondo and Reinhart (1998).

<sup>18</sup> More broadly, the financial bankruptcy of the import substitution system after the debt crisis of the 1980 has led to privatization of public sector enterprises and generally, to a fall in wages for middle skills/middle class workers. Rosa Alonso (2000) sees the current political situation in Latin America through the lense of an alliance between the unskilled and capital, at the expense of the old labor elite.

<sup>19</sup> These countries had borrowed heavily from international commercial banks to smooth out the effects of the oil shock and defer adjustment.

stabilizations were put in place, followed by a combination of deep fiscal adjustment, reforms, and debt reduction agreements financed by the IFIs. This brought the state to intervene in the wage-setting process to impose restraint. For example, stabilization in Mexico in the end of the 1980s had to await the “Pacto” where organized labor accepted lower wages within a foreign finance debt reduction cum domestic reforms package. Similarly, heterodox stabilization in Brazil froze wages. In Turkey, Argentina, or Brazil today, stabilization programs are largely about labor retrenchment, lower pay, or changes in labor market regulation.

To get a sense of whether magnitudes are right, take the typical case of a Latin public sector with a wage bill of 10 percent of GDP. If the wage bill ends up cut by a quarter (after many years of distributional fight and financial instability), this would then generate fiscal savings of 2.5 percent of GDP. In contrast, governments paid out (on average) no more than 2 percent of GDP in net flows a year to their foreign creditors,<sup>20</sup> and so, a large part of the domestic adjustment that was required must have taken place among public sector employees.

#### *Private sector contagion and private sector led crises*

But this is not just a story about public sector debts and public sector wages. Public sector led crises can, through contagion, lead to bank runs and liquidity traps, and in these circumstances, declines in private sector wages (especially in the formal sector) can also contribute to digesting socialized losses. Conversely, private sector losses can also become a fiscal problem and lead to a more classical debt blow-out.<sup>21</sup> Problems that originate in the private sector can get transmitted through the banking system into public liabilities through expectations of future bail-outs. These are after all just another form of public debt – albeit in the form of implicit and sometimes explicit guarantees to banks, depositors, or large firms.<sup>22</sup> The fear is that, to avoid bank runs and financial melt down (caused by a shock in the perception of massive private losses), governments would feel compelled to guarantee banks’ deposits, and perhaps even to be tempted to bail out foreign capital (as recently in Korea and Indonesia, where the state has ended up guaranteeing private sector external debts). Thus, private losses can to some extent

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<sup>20</sup> These are computed in Diwan and Claessens (1992).

<sup>21</sup> In the globalization debate, it has often been argued that premature financial and capital account liberalization (i.e. ahead of legal and political reforms) has allowed well connected individuals to borrow massively from domestic banks and markets for private gains but at the expense of the people who end up paying for the costs of crises – the extreme example is the Suharto kids in Indonesia who had managed together to borrow over \$xx billion locally.

become socialized, especially when private equity is low as was the case in East Asia, and we are back to the problem of the state trying to find ways to “digest” an overhang of social losses, with all the related financial instability. Until the “social” debt is reduced, there is a debt overhang, the financial markets will fear that the government will be tempted to use the inflation tax, and there will be tendencies for the emergence of runs out of local banks and out of the currency, driven by the fear of banking failures and the inflation tax.

Contagion may well also work the other way conceptually, with public sector led crises destabilizing the banking sector, but does this happen in practice? Whether (or how much) in practice a loss of public sector creditworthiness leads to the erosion of the value of deposits guarantee, and thus trigger a bank run, is related to perceptions about the seniority of claimants and the mobility of capital. During the crises of the 1980s, the issue was whether foreign lenders or other domestic claimants would be treated as senior. Governments tried to protect their banking sectors by effectively making foreign loans junior to domestic deposits – the external creditors were few, and repayments were the result of a tough bargain that aimed at protecting the domestic financial system (for private external debts, governments typically bargained on behalf of their private borrowers). This Chinese curtain worked to some extent in isolating the banking system, although there were several large banking failures in Latin America. In addition, capital controls prevented financial assets from fleeing too fast and must have managed through financial repression to lay some of the burden on capital.<sup>23</sup> In the more recent Asian crises however, the problem originated from the private sector and the financial market, and thus, depositors knew that they were at risk. They could flee more easily since capital markets were opened throughout the continent. And the usual identifiable “large shareholder”, the international banks, were harder to isolate (than during the Latin debt crisis) because they were more numerous, their instruments were more market-based, and thus, there was less room for coordination (thus the difficulty in managing to “bail in” external creditors).

In this broader framework, reductions in private sector wages can be “internalized” to wipe-out a part of the socialized losses. The increase in corporate profitability strengthens the banking system, reduces the overall value of state liabilities (by reducing the value of its

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<sup>22</sup> Corsetti, Pesenti, and Roubini (1999) present a model of private sector led run on the currency; Burnside Eichenbaum and Rebelo (1998) measure the implicit deficits implied by the banking failures.

<sup>23</sup> But trade openness, liberal domestic finance, and practices of over and under invoicing had allowed capital to be somewhat mobile, albeit illegally.

guarantees), and thus allows the state to distribute social losses more broadly in society and beyond public sector employees only. That this has happened in the Latin case is attested by the sizable difference between our computed net (average) loss for labor over the overshooting period (3.9 points a year over the crisis period; see Table 1), and the relatively smaller losses that we have estimated in the public sector alone (2.5 points a year).

As the public sector downsizes, the labor market would transmit downward pressures on private wages, and thus increase corporate profitability, helping in restoring financial stability. But can we expect market mechanisms to operate in this way during a private-led crisis, pushing labor costs down to boost corporate profitability and salvage the financial system? For any single firm, pushing labor costs down below market rates does not sound like a feasible response to a fall in profitability. Firms would instead go under and labor would become unemployed, creating downward wage pressures. But the working of the labor market is likely to be too slow to avert a crisis – it usually provides a way out only after a protracted distributive fight, especially in countries where social cohesion is low. Often, corporate clubs do get formed to coordinate the private sector into a well organized bargaining game with unions to bring wages down. Sometimes faced with the prospects of an imminent financial crisis, labor movements have accepted wage cuts that are deep enough to restore firms profitability and avert a bankruptcy of the banking system, under the principle that a small share of a larger pie is better than a large share of a small pie. Fast adjustment in Korea was built on this type of agreement between the government and the labor union, stressing wage restraints and labor retrenchment.

#### **4. Testing some of the implications of the labor bargaining model**

In this section, I focus on how policies and financial and country structure affects the LS, and whether this effect is different during a financial crisis compared to non-crisis periods. I divide the sample in crisis and non-crisis cells (country/year), and I look at short term effects, since monetary phenomena and financial crises tend to have a relatively short duration.

The discussion above suggested that the extent of decline in the labor share during a crisis should be related to the size of the overall loss in the economy and to the underlying bargaining structure. We would expect the behavior of the labor share to drop less when the level of expropriable financial claims is high, and more when the level of non-expropriable claims is high and the capital account is more open. We are also interested in comparing the behavior of the LS

in relation to structure and policy across regimes, since this could shed light on the genesis and dynamics of crises. For example, capital controls could be bad for labor outside of crises, when capital can be attracted by a more liberal regime, but good in times of crises when controls enhance financial repression. Similarly, openness to trade may bring external pressures on labor in normal times, but may allay pressures in times of crises, reducing the debilitating effects of a collapse of internal demand on production.

Before proceeding, it is worth noting that a central difficulty in testing for the impact of globalization on distribution has been the issue of timing. It is quite possible that liberalization and other efficiency improving reforms connected with rising globalization would lower labor shares in the short term, but would lead to larger GDP over time, and perhaps down the road, to a larger labor share. The behavior of the LS in Chile for example seems to fit this pattern: collapsing in the early 1980s, and then rising slowly to above pre-crisis levels in the ensuing decade. What appear as short term losses could thus turn out to be long term gains.<sup>24</sup> While recognizing the difficulty of tracking long term effects, since these tend to be quite diffused, we will nevertheless try to contrast our short term results with what is known about the effect of policies over the longer term.

We focus on four sets of explanatory variables: (i) economic policies: government spending and deficit, capital controls; (ii) financial structure: other domestic liquid claims, illiquid claims, equity; (iii) change in GDP; and (iv) economic environment: time trend, size of trade, size of the rural sector. I ran simple least squares on the whole panel, and on the crises and non-crises sub-panels, using yearly data. In general, and unless otherwise specified, right hand side variables have been lagged to avoid as much as possible endogeneity problems. The results are reported in Table 3.

### *Crises and non-crises regimes*

Is the decomposition of the data into crises and non-crises regimes meaningful? To answer this, compare regressions 1 and 2, which are run over the whole sample, with regressions 3 and 4, which are run over the crises and non-crises sub-samples. The decomposition reveals that the two sub-samples react very differently to the different variables in the regressions. The sign of

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<sup>24</sup> Indeed, even short term losses may be avoided -- the losers can be compensated by taxing the winners, or the nation can smooth out the short term effect of reforms with the use of external borrowings.

several central variables (trade, M1, GDP, the deficit, the rural share) have different signs in the two regimes, and tend to be less significant in the overall sample than in the two sub-samples. Some other variables (external debt, time trend) do not change sign, but the size of their effect is very different across the two regimes. Finally, the F-test does not reject a structural break hypothesis.<sup>25</sup>

### *Impact of policies*

I first look at the effect of capital controls, using an index constructed by the IMF which takes the value of 1 when full restrictions are in place, and zero when no restrictions exist. The index tries to measure the extent of restrictions by looking directly at the policy variables such as the existence of multiple exchange rates, restrictions on current and capital account transactions, and obligations to surrender export proceeds. As expected, the extent of capital control has a positive effect on the labor share in both regimes, but much more so in the crisis regime (see Table 3, columns 3 and 4). Indeed, moving from completely open to completely closed capital account adds a whopping 11 points to the labor share in crisis periods (and 2 points only in non-crises periods).

It is thus not surprising that countries have often resorted to capital controls when faced with financial crises. A regression of the capital control index on a crisis dummy reveals that a large share of the index's variability is due to increased restrictions during crises (the coefficient for crises takes the value of 0.2, which is slightly larger than the standard deviation of the index). But it is also interesting to note that outside crises, capital controls have tended to fall in our sample (and so, overall, the variability of the index has increased over time). Overall the whole period and for the whole sample, capital controls have fallen -- the average index across countries has dropped from a value of 0.65 in 1970 to 0.38 in 1996, and the fall has been across the board, involving both rich and poor countries. Our results for the non-crisis regime thus means that the break-down of capital controls that has occurred in the 1980s has hurt capital, at least in the short term.

It is useful to contrast these results with those found by other studies that have focused on the medium term. Capital account restrictions would seem like a typical policy that may benefit

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<sup>25</sup> Note that unlike the medium term results, crises behavior does not seem different in the North and in the South -- indeed, a poor country dummy in equation 2 is not significant, and so, we do not report results for different sub-

labor in the short term by imprisoning existing capital, but hurt it in the long term by reducing the new flow of investments. Existing results seem to (partially) confirm this. There is strong evidence that capital accumulation is good for labor (Harrison (2000), Diwan (2000), Rama (2001)). What is more difficult to establish is the differential effect of capital controls on investment, and thus on growth, over the longer term. While Rodrik (1998) finds some evidence that capital account openness hurt workers in the medium term, my own work comes up with a more contrasted result: that over the medium term, capital account restrictions are bad for labor in the South -- but that they tend to be good for labor in the North.

On average, government spending had increased fast in the 1970s, but had stabilized (at an average of 30 percent of GDP) worldwide. This masks steep reductions in some countries (especially in Africa and Latin America), and increases elsewhere. How did this affect the labor shares? The effect of (lagged) government spending is found to affect the labor share positively – alternatively, cuts in spending are reflected in reductions in the LS. The effect is about similar in size in both regimes (every one point reduction in government spending reduces the LS by 0.15 points). To a large extent, this must reflect the predominance of labor costs in expenditures, especially in poorer countries. Similar results on the medium term data are found by Rama (2001) and Diwan (2000).

The effect of a (lagged) fiscal deficit (controlling for government spending) is more complex. On average, deficits had shot up in the early 1980s, but have been continuously reduced ever since. How did this affect the labor share? The coefficient is found to vary significantly across regime: in the non-crisis regime, high deficits are good for labor (in the following year) -- presumably because they reflect the presence of a pro-labor regime. However, to the extent that fiscal deficits also reflect the accumulation of debt, they will end up hurting labor in the future (see below). In crises situation however, the relation between fiscal deficits and labor shares is positive (and less significant). During a crisis, deficits end up being paid by labor very fast, since we are in a regime where capital cannot be easily taxed.<sup>26</sup>

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groups of countries.

<sup>26</sup> By contrast, my medium term study reveals that deficits help labor in the North, but end up hurting it in the South.

### *Impact of financial structure*

We expect that the financial structure will be an important determinant of the ultimate burden sharing between capital and labor during a crisis. Labor will lose more when capital returns tend to rise to compensate expropriation risk, as happens when claims are denominated in foreign exchange, or react to short term developments. We thus expect the LS to fall more during crises in countries where external debt and M1 are large to start with, and to fall less (or to rise) when M2, M3, and risk-capital predominate. (We use external debt to GDP, M1/GDP, (M2-M1)/GDP, and (M3-M2)/GDP, all lagged one period). The results strongly corroborate these predictions. The negative impact of external debt and of M1 are especially marked during crisis (and small otherwise, with the effect of M1 changing sign). Similarly, the positive effect of M2 and M3 is large during crisis, and somewhat smaller (especially for the coefficient of M2) otherwise. These results strongly corroborate the bargaining hypothesis – indeed, they are hard to explain in any other way.<sup>27</sup>

It is interesting to note that previous studies (Rodrik and Velasco (1999), Kaminsky et al (1998) among others) find that the presence of short term debts tend to precipitate a crisis. The results here are different but complementary: losses to labor, within a crisis, tend to be large in the presence of liquid financial capital. It thus also seems that since crises occur more often under the same circumstances, they do in fact correspond closely to periods where financial stress could not be easily reduced with the old tools of financial repression.

### *Impact of GDP losses*

Financial crises tend to be associated with collapses in GDP. In our sample, GDP per capita drops on average by 4.7 percent during the year of the crisis, by 7.3 in year 2, by 7.3 percent in year 3, before stabilizing in year 4. There are of course a lot of variations around these averages.<sup>28</sup> These declines are typically attributed to the scarcity of liquidity and new loans and to unemployment. It is likely that “harder” distributional crises are likely to be associated with deeper falls in GDP: the debt workout would take longer, and the financial crisis and capital

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<sup>27</sup> It is notable that in our sample, M1/ GDP rises continuously, while (M2-M1)/GDP remains about constant, that is, a larger proportion of labor losses must have been attributable to this factor.

<sup>28</sup> For a good review of the empirical links between currency crises and output response, see Gupta, Mishra, and Sahay (2000). The work of Rodrik (1998) on the relation between domestic loss-sharing mechanisms and the depths of crises is very relevant here.

flight may be therefore more pronounced; on the other hand, if there is a coordinated resolution where the necessary distribution of social losses is resolved fast, labor is more likely to end up with a smaller share of a pie that has not shrunk that much. This would mean that there would be a negative relation between the movement of the LS and GDP: either the LS falls a lot, and GDP loss is small (quick resolution), or GDP falls a lot and the LS does not (slow resolution).

We thus now also control for the change of GDP (we use  $\log(\text{GDP})$ ). Outside crises, we would expect the LS to rise with GDP growth, which is what we find.<sup>29</sup> Within crises however, we find a negative coefficient, which could be explained by the equilibrium relation between the two variables described above.

### *Impact of structure*

I use three variables: population size, the rural share, and the extent of trade. Here too, the results vary a lot across regimes. We have argued before that a weakness of our approach is the probable presence of a bias in the labor share that is related to the definition of labor, which excludes small independent producers in agriculture and in the informal sector. But earnings by independent producers are available for only a small subset of rich countries in the UN data-base. Instead of using this route to correct the bias, we try instead to do so by controlling for the size of the rural sector.<sup>30</sup> We would expect that in periods of crisis, the LS fall would be partly explained by the expansion of (independent) agriculture, as is thought to happen often (for example, see Pritchett (2000) for evidence from Indonesia). Indeed, the results corroborate this intuition -- the coefficient is negative and significant during crisis (and non significant in non-crises periods).

The population variable is introduced to test whether outside influences become more mute in larger countries. There is a strong support for this: the LS tends to be larger in larger countries. Moreover, the country size effect is more important during crises. That size offers protection is perhaps the best evidence that we have found so far on the impact of globalization on distribution!

Finally, I also test for the effect of openness (lagged export plus imports over GDP). In the whole sample, openness is not significant at usual confidence levels. This however covers up a positive and large impact during crises (and very significant), and a small and negative impact outside of crises. One interpretation is the following: outside of crises, larger trade has relatively

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<sup>29</sup> The result is similar to that usually found in the medium term and reflects mainly the effect of accumulation.

little effect on labor shares. During crises however, the role of trade is crucial. Stabilization-generated recessions hurt labor incomes, and, through the multiplier effect, create new rounds of income.

It is useful to compare our results here with the medium term effect of trade openness, as measured by Rama (2001), Rodrik (1998), Harrison (2000) and Diwan (2000). In all these studies, a similar experiment was run, with slight variations. Harrison (2000) controls for endowments (the capital labor ratio) and finds no evidence of a link between openness and the LS on yearly data. She concludes that accumulation and not globalization drives the labor share. Rama (2001) and Rodrik (1998), using five years averaged data, find that openness to trade as measured by the same trade ratio, has a small, negative, and unstable, effect on wages. In Diwan (2000), I ran the same regression, but divided the sample into rich and poor countries, and find that while not significant for the whole sample, trade openness has a significant and positive effect on wages in poor countries, and a negative effect in rich countries. It is however noteworthy that the size of the trade openness coefficient in the crises regime (0.26) is about 10 times larger in the medium term regressions (where it stood at around 0.02)! It thus appears that while openness may or may not have an impact on the LS in non-crisis periods (and over the medium term), its role on distribution is much more pronounced and large during periods of crises.

## 5. Globalization and financial crises

We get back in this section to trying to explain the long term decline in the labor shares. To what extent, and how, is this decline related to globalization? In section 1, the analysis of the raw data indicated that the labor share had fallen mainly during periods of crises, and had in fact risen slightly in non-crisis periods. Is this picture confirmed by our analysis of the determinants of the labor shares in the two regimes of the last section?

Let us focus first on the *exogenous* effect of globalization that is reflected in the time trend when we control for all the other structural and policy variables (see Table 3, equation 1 and 2). This effect turns out to be negative over the whole sample, indicating that for reasons unexplained by any of the other variables, the labor share has fallen by 0.12 points to 0.15 a year. However, moving to the sub-samples, it also appears that this effect is much larger during crises

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<sup>30</sup> We should do something similar for informal non-agricultural markets, but do not have the data.

periods: in non-crises times, the LS falls by a small 0.07 points per year, while in crises years, it falls by a large 0.7 points per year. In effect, the exogenous decline in the labor share over the long term occurs mainly during financial crises.

One manner in which this can be explained is by hysteresis. It may well be that crises destroy the bargaining power of labor for a while, this alone could explain the overall downward trend observed in the data – in effect, the labor movement would become worn-out over time. We thus rerun the regression controlling for the number of past crises/years experienced by a country. The effect of the hysteresis variable is significant. It is also quite large and its effects are of the same magnitude within and outside crises – the estimated coefficient stands at around -0.5, which applied to an average number of crises years of nearly 4 years (Table 2), yields an average drag on the LS of about 2 points (and much more for countries with a longer history of social conflict), an effect that can conceivably continue to rise over time as more crises hit in the future.

The exogenous effect of time, while now weaker, is however still present, although *only* in the crises countries (i.e, the trend that is left is very small, 0.04 points a year, adding up to less than 0.1 points over a 20 years period). The interpretation, now that the effects due to hysteresis have been separated, is however straightforward: more recent crises have tended to hurt labor more than older ones, as if the mobility of capital has increased over time (and in spite of policies such as capital controls), causing a larger share of losses to be shifted to labor and away from capital.

Now that the exogenous effect of time has been explained, we are in a position to answer the main question posed by the paper: what has been the effect of globalization on the labor share? It is useful to decompose the answer in three parts: what has been the overall impact of globalization on non-crisis periods, on crisis periods, and on the probability of crisis.

Let us start by focusing on non-crises regimes. The apparent constancy of the labor share seems to be hiding different influences. On the one hand, the rise of incomes and the increase in capital accumulation over the period must have contributed to rising labor shares (since the coefficient of GDP is positive in Table 3). But on the other hand, the broad declines in the use of capital controls, the reduction in the size of the state that took place during the 1980s in some countries, and the reduction in government deficits must have had offsetting effects. Presumably, these policies have led to increased growth (or at least, they must have been implemented with this goal in mind). At the same time, the underlying rise in country debt and in liquid claims over

time, which must be partly attributed to globalization, have also led to lower labor shares (but probably without an offsetting positive long term effect on output).

How about the impact of globalization on crisis periods? This is where all the long term reductions in the labor shares occur. (On average, these are only offset by a small positive trend in non-crisis periods). We have seen above that crises seem to be hitting labor harder over time, presumably because of increased (exogenous) capital mobility. Overall, the declines have been exacerbated by cuts in government spending, and by the (endogenous?) effect of increased external debt and M1/GDP, and mitigated by the use of capital controls and by reductions in government deficits and other stabilization measures.

Are there more frequent crises? A proper investigation of this question would require careful analysis. There are however clear indications of a break in the time series in the early 1980s: during the 1970s, there were on average 7 crises per year; after 1982, the average jump to 28 -- see figure 4. The real question however is whether they have increased relative to the underlying volatility.

## **5. Implications and research issues**

Our analysis suggests that the behavior and welfare of labor are intimately related to the resolution of financial crises and perhaps to their genesis. The story that emerges is one where crises are means for societies to “digest” social losses by distributing them among various groups. Because labor has become less mobile over time relative to capital, it has ended up forced to bear a larger share of these losses over time. There is strong evidence of this happening.

The paper raises more issues than it answers. The evidence presented here suggests the importance of developing a new research agenda that would look more carefully at the forces, institutions, and the politics that determine labor incomes before and after financial crisis. There are at least three wide open research issues that stand up: (i) the relation between distributional changes and output effects; (ii) more work on the genesis of crises and the relation to the underlying structure; and (iii) investigating the importance of the corporate effect which is hypothesized to lead to lower wages in the private sector and help in the resolution of the social overhang. To answer these open questions would require theoretical as well as empirical work,

and perhaps more important, comparative case studies of crises episodes, that focus on the economic, financial, social, and political developments all at once.

The analysis, if confirmed by future studies, has also several important policy implications. I outline four such implications here. First, the analysis suggests that crisis prevention should be the main policy tool from a labor perspective. Band-aids and social protection type policies after the fact can at best have symbolic and political value, but are unlikely to be able to change much of the impact of the crisis on distribution. Once a crisis hits, it is too late from the point of view of labor, faced with the grim prospects of either accepting to bail-out the state or the financial system, or to suffer the consequences of a debt blow-out (or financial sector melt-down when the private sector is involved), both equally painful propositions. Labor has in high stake in financial stability and a strong governance of the financial system, since expansions may benefit others while crises hurt it hard. This has important implications for the type of governance system required to avoid financial crises and their debilitating social impact.

Second, if there was an important corporate effect, as hypothesized here, this would have important implications for the work-outs of financial crises. In particular, if these labor-based work-outs take a few years to produce the kind of transfers needed to shore up the private sector (and public creditworthiness), then fast work-outs that sever quickly the links between bad firms and their banks and that fail to internalize these gains are not a useful mechanism to stabilize the economy and exit the crisis.

Third, the analysis has implications for the choice of an exchange rate regime. As capital becomes more mobile, and labor more focused on reducing the occurrence of crises, cooperative behavior becomes crucial as a last line of defense, as it would be in labor's own interest to take losses when they occur, rather than risk a protracted distributional crisis. Since currency devaluation and inflation are important mechanisms to reduce real wages in the short term, then small and vulnerable economies would want to retain the ability to devalue, and thus, the use of a national currency (rather than move towards a dollarized economy or a currency board). Also, the analysis suggests that in socially fragile situations, there may be an important role for capital control in imprisoning financial capital and allowing better sharing of the burden of adjustment (although this is likely to be at the cost of lower future output).

The implications for the global financial architecture are far from obvious. The current approach seems to be built on a combination of better national governance and more international transparency. This approach make sense conceptually, but in practice, it is constrained by the slow speed of political and institutional adjustments. In addition, the occurrence of crises seems to destroy accumulated social and political capital, often leading to social polarization and making a transformation towards participatory democracy harder to achieve. Thus, whether one thinks that sands in the wheels of finance and other forms of taxation of capital flows are necessary or not to stabilize fragile societies ultimately depend on how hopeful one is with respect to the governance agenda.

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**TABLE 1. IMPACT OF FINANCIAL CRISES ON LABOR'S SHARE**

Dependent variable: labor's shares Equation Name	All periods											
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	46.7253	768.0662	47.5503	830.2933	47.4037	366.3289	46.8097	364.6091	52.3982	329.0341		
Time trend	-0.0197	-4.5831			0.0123	1.7958	0.0667	9.5122	0.0306	6.2044	0.0306	6.2044
3 years before crises			-0.5776	-3.0233	-0.6937	-3.6297	-0.3987	-2.2061	[-0.0959]	-0.7299	[-0.0959]	-0.7299
Crises years			-5.0397	-20.8351	-5.2321	-22.4057	-3.5840	-14.9539	-3.0713	-18.9919	-3.0713	-18.9919
3 years after crises			-2.6151	-13.0608	-2.7716	-13.8435	-1.3648	-6.5990	-1.2107	-7.3013	-1.2107	-7.3013
Nb. Of crises-years before current							-0.6851	-18.4583	-0.8881	-24.4673	-0.8881	-24.4673
Sub-Saharan Africa									-16.9022	-104.0245	35.4960	298.6398
MENA									-13.5323	-35.3883	38.8660	104.1968
Europe, North-America and Oceania									[0.1450]	1.0082	52.5433	599.6548
LAC									-4.1532	-24.5246	48.2451	380.4488
Asia											52.39824	329.034
F-statistic	93160.7		14746.4		11256.39		9151.29		9765.431		9765.431	
Adjusted R-squared	-0.0008		0.01311		0.013292		0.01574		0.149027		0.149027	
Number of cross-sections used	133		122		122		121		121		121	
Total panel (unbalanced) observations	2406		2203		2203		2125		2125		2125	

**TABLE 2. MEASURES OF AVERAGE LOSSES FOLLOWING FINANCIAL CRISES**

		Accumulated								
		Loss of C/GDP	Rise of C/GDP	Net loss of C/GDP	Permanent Loss	Transitory Loss	Duration of Losses of C/GDP	Duration of Rise of C/GDP	Duration of the financial crisis	Number of Crisis and countries
		(a)	(b)	(a-b)	(A)	(B)	$\alpha$	$\beta$	n	N
LAC	per crisis	6.72	3.41	3.86	25.41	11.36	3.32	2.81	3.48	25
	per cntry	12.93	5.51	7.42	41.04	18.35	6.38	4.54	6.69	13
AFRICA	per crisis	5.92	3.73	2.69	23.16	5.88	2.60	1.92	2.00	15
	per cntry	6.83	4.04	3.10	26.05	6.37	3.00	2.08	2.31	13
MENA	per crisis	4.20	2.13	2.08	9.15	4.31	2.33	1.33	2.00	3
	per cntry	4.20	2.13	2.08	9.15	4.31	2.33	1.33	2.00	3
ASIA	per crisis	2.30	1.20	1.10	9.79	1.72	1.75	2.25	1.25	4
	per cntry	2.30	1.20	1.10	9.79	1.72	1.75	2.25	1.25	4
OECD	per crisis	6.70	2.88	4.01	32.23	11.01	5.87	2.79	2.40	15
	per cntry	7.73	3.36	4.63	32.23	12.84	6.77	3.25	2.77	13
WORLD	per crisis	6.12	3.12	3.35	24.85	8.89	3.61	2.47	2.65	62
	per cntry	8.24	3.90	4.51	29.70	11.11	4.87	3.09	3.73	46

## Computing the parameters

### 1. Calculations of (a) and (b)

Let

- $(C/GDP)_{t_0}$  the value of Compensations/GDP the year of the beginning of the crisis (or the year just after).
- $(C/GDP)_{\min}$  the minimal value of C/GDP observed after a crisis.  $(C/GDP)_{\min}$  is sometimes the last observation we have in our database, sometimes the last observation before an other financial crisis (in these cases,  $b=0$ ) or the "true" minimal value before a rise of C/GDP.
- $(C/GDP)_{\max}$  is the last rising value of Compensations/GDP, either because it is the last observation in our data base or because an other crisis follow or also because we observed an other fall of C/GDP

then:

$$(a) = (C/GDP)_{t_0} - (C/GDP)_{\min} \quad \text{and} \quad (b) = (C/GDP)_{\max} - (C/GDP)_{\min}$$

### 2. Calculations of $\alpha$ and $\beta$

Let

- $t_0$  is the first year of the crises (or the year just after),
- $t_{\min}$  the year when we observe  $(C/GDP)_{\min}$  and
- $t_{\max}$  the year when we observe  $(C/GDP)_{\max}$ ,

then:

$$(\alpha) = t_{\min} - t_0 + 1 \quad \text{and} \quad (\beta) = t_{\max} - t_{\min} + 1$$

### 3. Calculations of (A), (B) and (A+B)

- If  $b < a$  and  $b > 0$  (see figure 2-a.), then

$$(B) = \sum_{t=t_0}^{t=t_{\max}} (C/GDP)_{t_{\max}} - (C/GDP)_t$$

For all the positive values of  $(C/GDP)_{t_{\max}} - (C/GDP)_t$  and

$$(A) = \sum_{t=t_0+1}^{t=t_{\max}} (C/GDP)_{t_0} - (C/GDP)_t - (B)$$

• If  $b > a$  and  $a > 0$  (see figure 2-b.), then

(A) = 0 and

$$(B) = \sum_{t=t_0}^{t=t_{\max}} (C/GDP)_{t_0} - (C/GDP)_t$$

For all the positive values of  $(C/GDP)_{t_{\max}} - (C/GDP)_t$

• If  $b = 0$  (see figure 2-c.), then (B) = 0

$$(A) = \sum_{t=t_0+1}^{t=t_{\max}} (C/GDP)_{t_0} - (C/GDP)_t$$

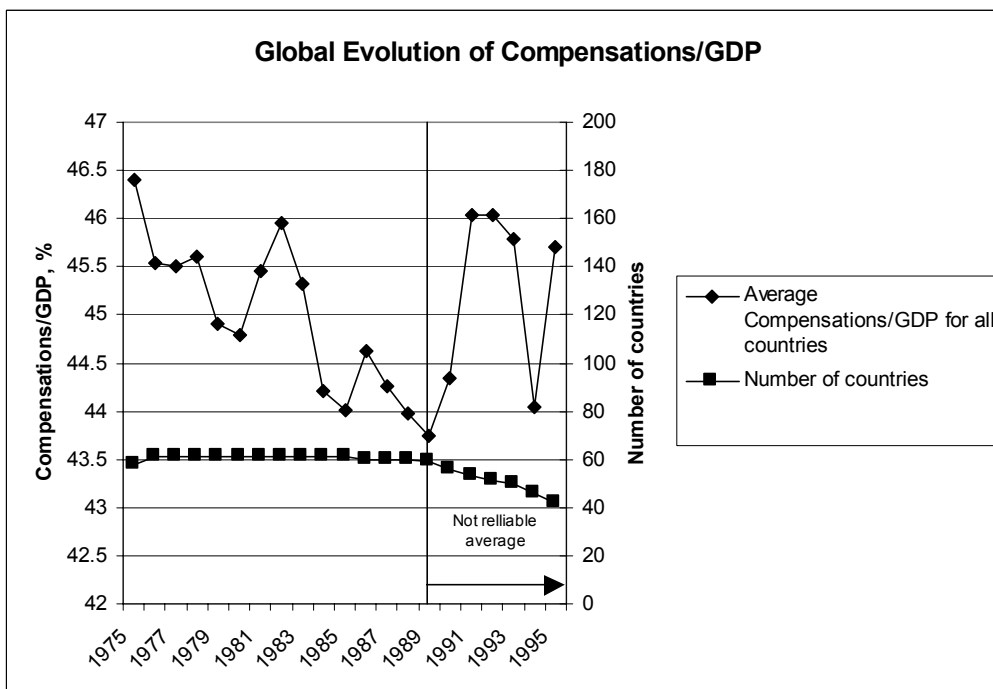
**TABLE 3. DETERMINANTS OF LABOR SHARE IN CRISIS AND NON-CRISIS REGIMES**

Dependent variable: labor's shares	1 All periods		2 All periods		3 Crisis periods		4 No-crisis periods		5 All periods		6 Crisis periods		7 No-crisis periods	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	[1.887099]	1.5292	5.08209	3.65273	44.4459	18.4297	12.3385	9.9578	13.3526	9.3517	47.7327	15.2041	12.3447	7.8447
Log(GNP p.c.)	3.8165	29.4335	3.789201	25.5437	-2.5078	-8.6552	3.2560	24.2620	2.7557	18.1052	-2.3992	-6.8691	3.3426	20.3947
Time trend	-0.1222	-10.2960	-0.14879	-8.9739	-0.6480	-16.5434	-0.0745	-5.2429	[0.000256]	0.0164	-0.3864	-7.3293	-0.0414	-2.6141
Population	0.0000	9.0716	9.64E-08	7.32308	0.0000	17.8034	0.0000	7.3430	0.0000	7.2007	0.0000	14.3061	0.0000	6.7505
Rural share	0.0638	12.9205	0.035331	5.57421	-0.1074	-11.7393	0.0150	2.6573	[0.002608]	0.4090	-0.1413	-9.6963	[-0.007258]	-0.9735
Lagged Trade	[-0.0000944]	-0.0257	-0.00241	-0.6647	0.2703	12.3293	-0.0098	-2.8952	[0.003015]	0.9606	0.1718	8.0867	-0.0060	-2.3101
Capital control Lagged Government expenditures/GDP	3.8895	13.0039	4.211892	13.2053	11.0060	15.0531	2.3264	9.6769	3.0911	11.2748	8.7757	11.4144	4.2050	16.6301
Lagged Government Deficit/GDP (negative if deficit)	0.2407	23.7770	0.195872	18.1493	0.1563	7.1114	0.1621	16.0197	0.2155	18.3233	0.1930	7.9800	0.1379	13.1320
Lagged debt/GDP	-0.3140	-16.5798	-0.33585	-16.538	0.1478	2.7836	-0.4104	-20.7852	-0.3697	-17.7255	0.1489	2.3574	-0.4753	-23.3253
Lagged M1/GDP	-0.0509	-20.9831	-0.03971	-16.811	-0.0714	-11.0897	-0.0361	-19.0528	-0.0461	-17.3424	-0.0682	-10.7334	-0.0271	-13.2183
Lagged (M2- M1)/GDP	0.0245	2.3271	-0.00215	-0.2063	-0.2882	-10.2691	0.0198	1.8655	-0.0411	-3.7193	-0.3717	-12.6614	-0.0561	-4.7186
Lagged (M3- M2)/GDP	0.0178	2.8296	0.029445	4.65647	0.3271	19.6605	[-0.000574]	-0.1043	0.0131	2.2694	0.3521	21.9082	0.0161	2.3600
Dummy for crises yrs			-4.75362	-13.8029										
Dummy for poor countries			0.441157	1.4987										
Nb of crises year prior to current year									-0.6349	-14.7176	-0.5268	-7.6124	-0.6424	-16.6348
F-statistic	2202.816		1488.814		2271.106		3376.661		2798.222		3618.632		2325.461	
Adjusted R-squared	0.200706		0.213691		0.429888		0.14965		0.210366		0.442537		0.149312	
Number of cross- sections used	81		79		38		79		81		38		79	
Total panel (unbalanced) observations	1062		1059		186		875		1062		186		875	

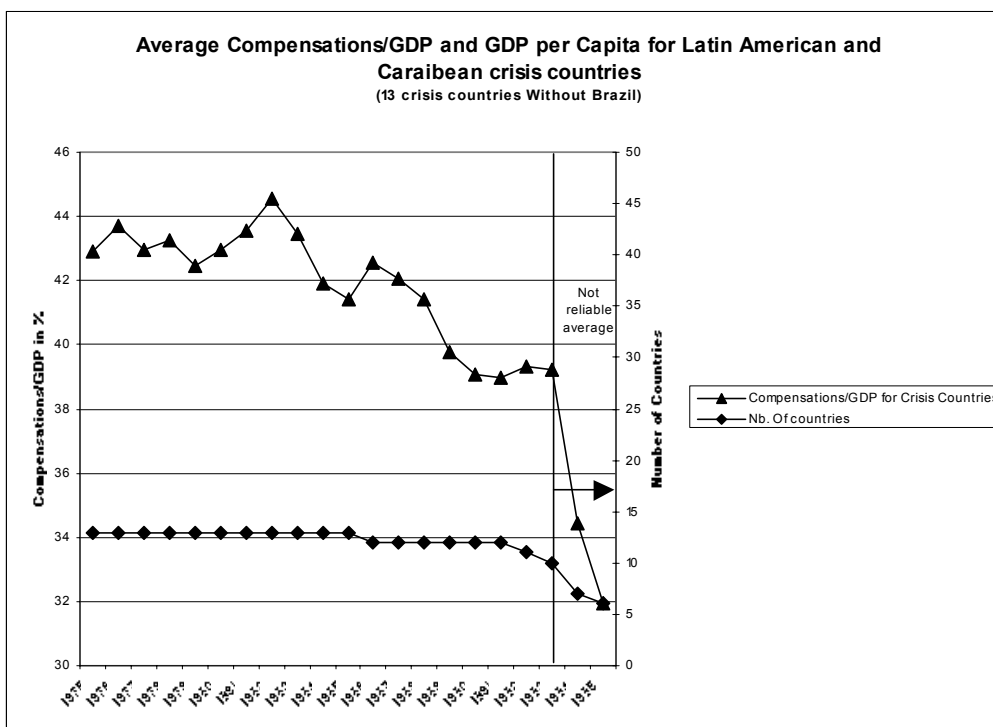


**FIGURE 1**

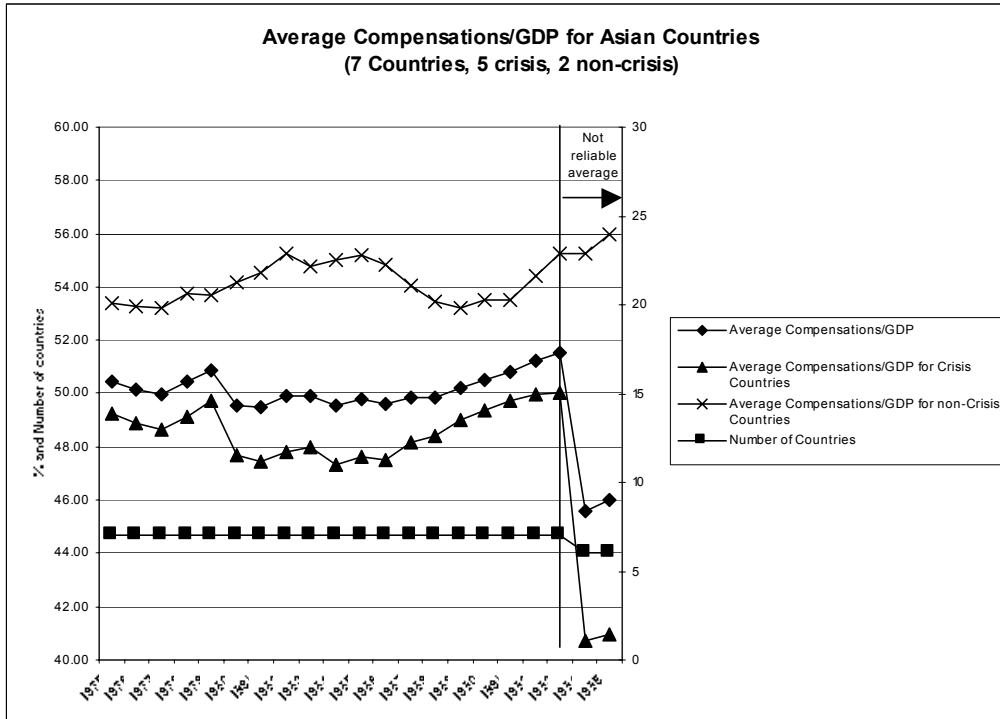
**Figure 1a. Global Trends<sup>31</sup>**



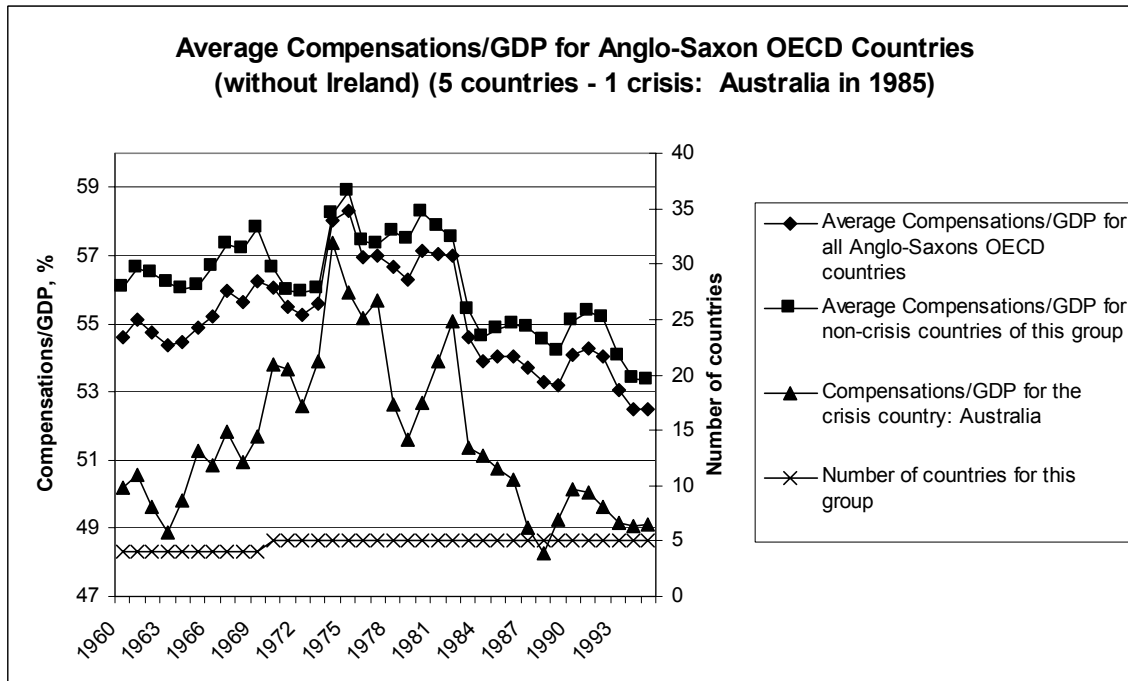
**Figure 1b. Latin America and Caribbean**



**Figure 1c. Asia**  
(Japan is with OECD countries)



**Figure 1d. Anglo-Saxons OECD Countries**



<sup>31</sup> In order to keep a constant set of observations from 1975 to 1990, countries included in these graphs are slightly different from those in the tables.

Figure 1e. Rest of OECD Countries

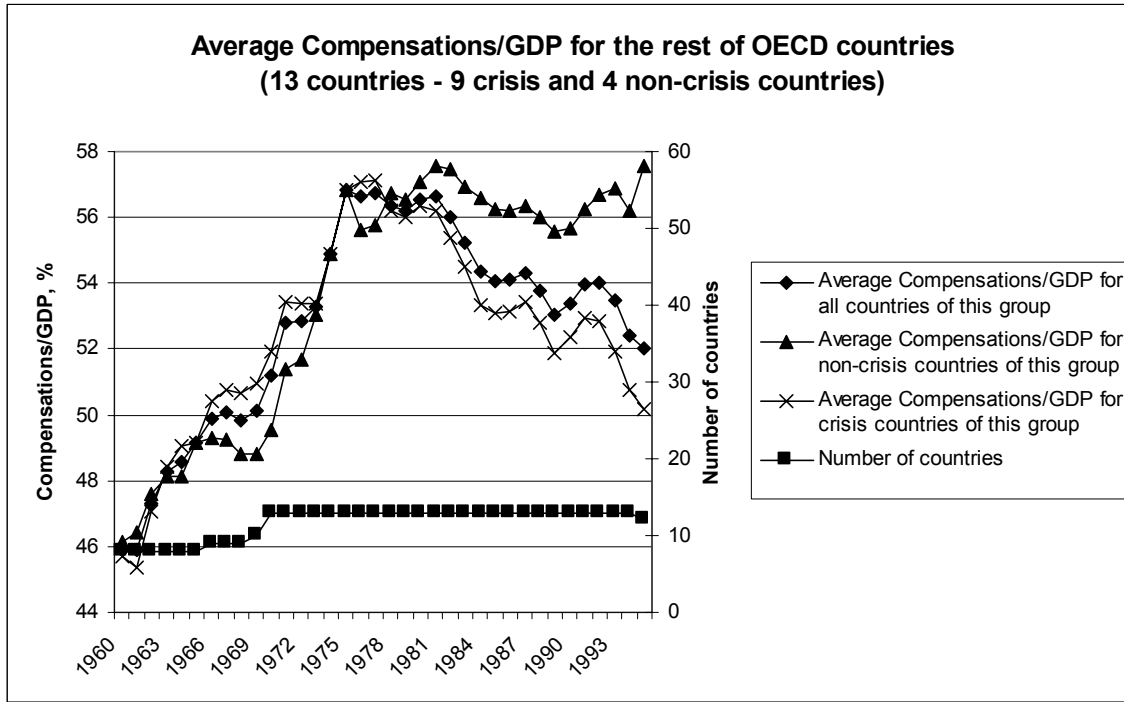


Figure 1f. Middle East and North Africa

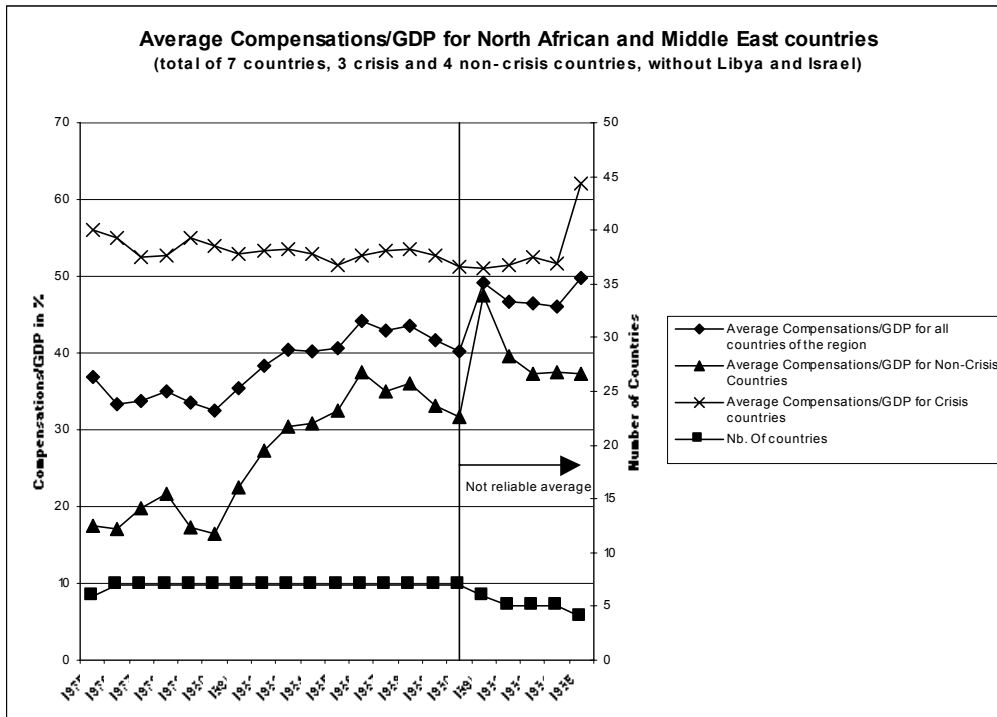
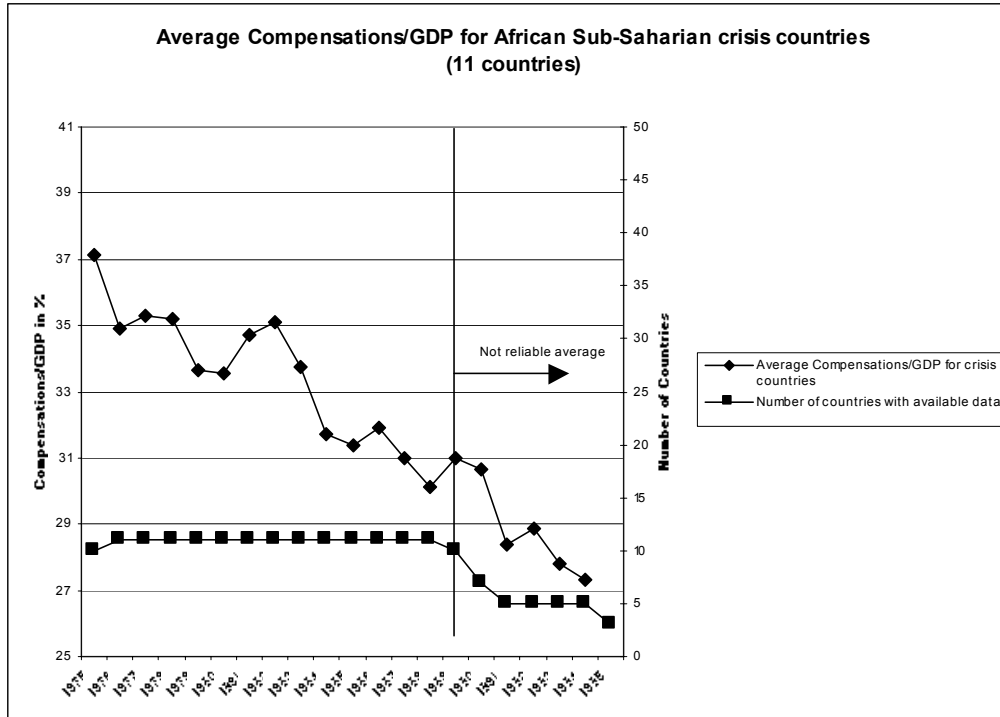


Figure 1g. Sub-Saharan Africa

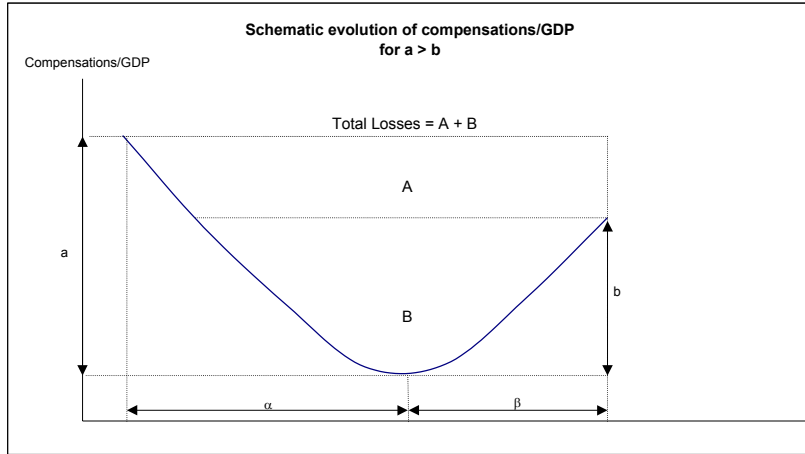


**FIGURE 2**

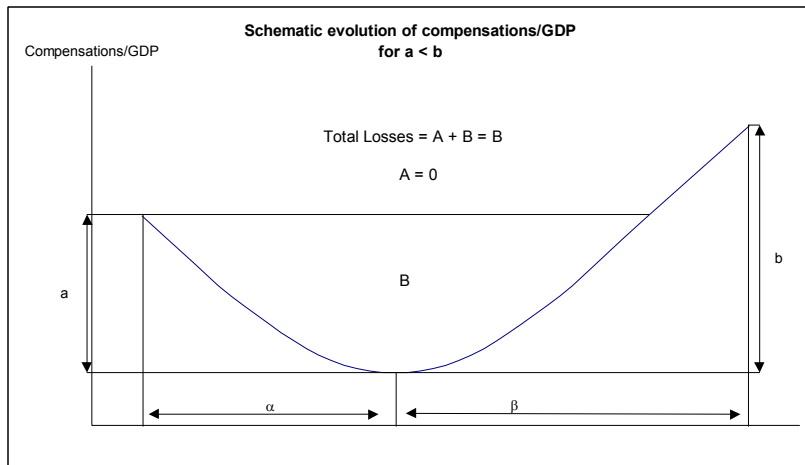


**FIGURES 3**

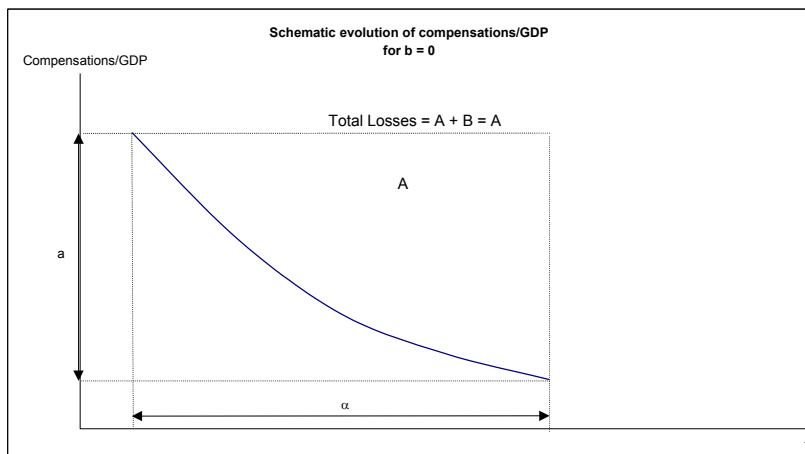
**Figure 3-a.**



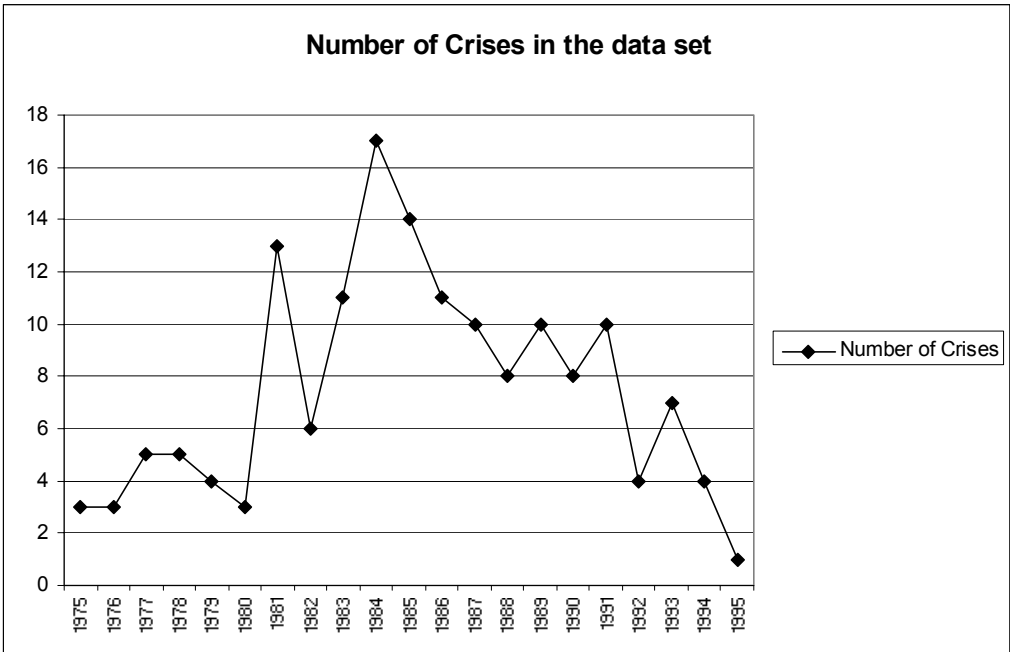
**Figure 3-b.**



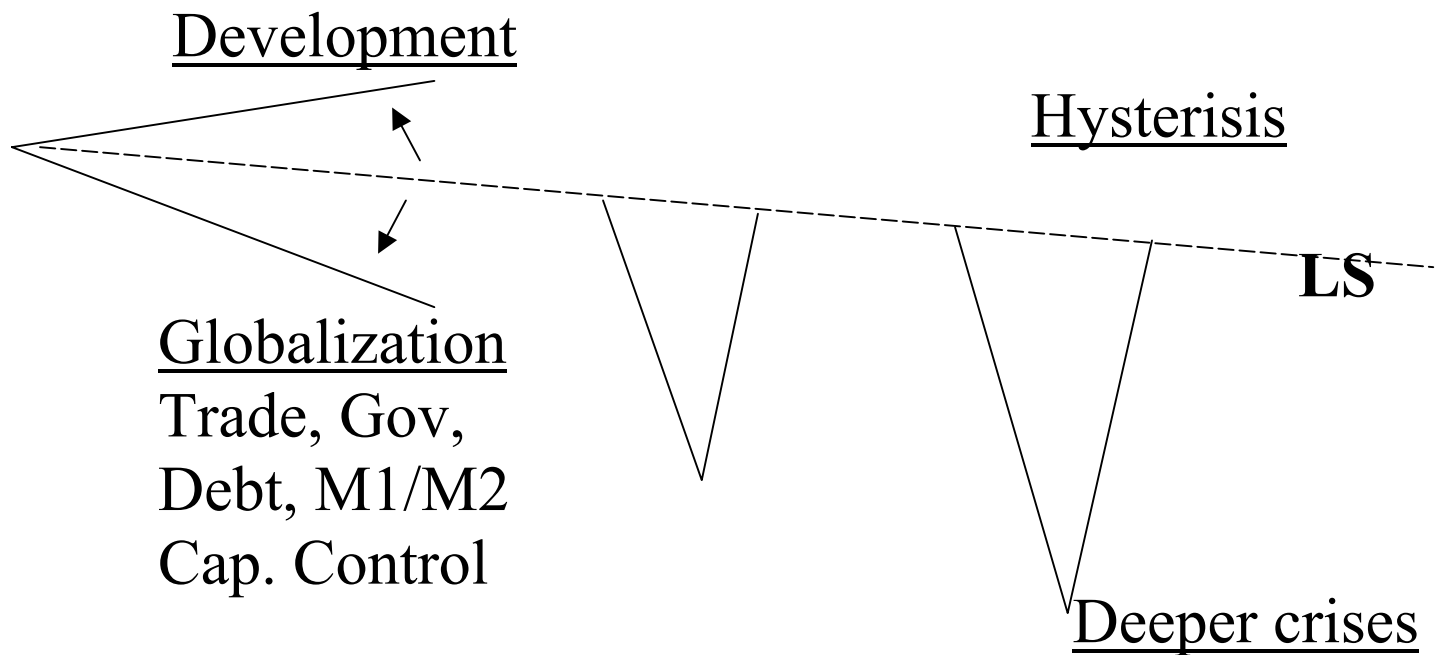
**Figure 3-c.**



**FIGURE 4**



**Figure 5- Changes in Inequality over time**



## ANNEX

### INDIVIDUAL MEASURES OF LOSSES FOLLOWING FINANCIAL CRISES

Countries	Date of the crisis	Permnt Loss	Transit. Loss	Loss of C/GDP	Growth of C/GDP	Nb. Of years of loss	Nb. Of years of rise	Total Loss	Net losses	Crisis duratn
		(A)	(B)	(a)	(b)	(α)	(β)	(A)+(B)	a-b	n
<b>Latin, Central America and Caraibes</b>										
CHILE*	1972-78	97.76	37.27	2.90	6.28	4	3	135.03	-3.38	7
CHILE*	1982-83	19.23		9.35		3		19.23	9.35	2
COLOMBIA*	1984-86	26.22	0.81	5.94	0.33	3	3	27.03	5.61	3
COLOMBIA	1989-91		1.46	0.72	2.11	2	2	1.46	-1.39	3
COSTA RICA*	1981-82		38.00	10.39	11.47	3	8	38.00	-1.08	2
COSTA RICA	1991	6.26	2.18	3.20	1.11	1	2	8.44	2.09	1
DOMINICAN REP.	1985-88		9.87	2.77	3.79	4	2	9.87	-1.02	4
DOMINICAN REP.	1990-91	10.10		5.53		2		10.10	5.53	2
ECUADOR*	1983-84	30.72	2.25	7.96	1.44	3	2	32.97	6.52	2
ECUADOR	1986-93	39.00	4.36	9.12	1.78	6	1	43.36	7.34	8
HONDURAS	1990-91	11.34	2.71	5.20	2.71	2	1	14.05	2.49	2
HONDURAS	1994	15.38		7.22		4		15.38	7.22	1
JAMAICA	1978-79	11.17	9.84	5.18	0.06	2	4	21.01	5.12	2
JAMAICA	1984-85	36.26	1.90	9.16	1.06	6	2	38.16	8.10	2
MEXICO	1977	11.92	1.42	4.23	1.42	4	1	13.34	2.81	1
MEXICO*	1982-88	27.55	59.47	10.62	8.50	6	7	87.02	2.12	7
PARAGUAY	1984-89		30.42	7.63	8.26	6	6	30.42	-0.63	6
PERU	1976-86	27.49	12.31	9.45	4.87	3	4	39.80	4.58	11
PERU*	1988-93	80.41	8.25	11.43	5.36	6	4	88.66	6.07	6
TRINIDAD & TOB.	1986	39.93	1.14	12.82	1.14	4	1	41.07	11.68	1
URUGUAY	1972-79	10.71	1.84	7.19	1.84	1	1	12.55	5.35	8
VENEZUELA*	1984	15.10	5.52	8.18	2.47	2	2	20.62	5.71	1
VENEZUELA	1987	1.49	1.67	2.42	1.67	1	1	3.16	0.75	1
VENEZUELA	1989-90	8.41	5.86	6.08	3.99	2	2	14.27	2.09	2
VENEZUELA	1993-94	7.10		3.42		3		7.10	3.42	2
<b>Average</b>	<b>per crisis</b>	<b>25.41</b>	<b>11.36</b>	<b>6.72</b>	<b>3.41</b>	<b>3.32</b>	<b>2.81</b>	<b>30.88</b>	<b>3.86</b>	<b>3.48</b>
<b>Average</b>	<b>per cntry</b>	<b>41.04</b>	<b>18.35</b>	<b>12.93</b>	<b>5.51</b>	<b>6.38</b>	<b>4.54</b>	<b>59.39</b>	<b>7.42</b>	<b>6.69</b>
<b>Sub-Saharan Africa</b>										
BOTSWANA	1985	5.39	1.29	3.98	1.29	1	1	6.68	2.69	1
BURKINA-F CFA)	1981		0.34	0.33	3.33	1	3	0.34	-3.00	1
BURUNDI	1984		2.29	1.10	2.75	1	3	2.29	-1.65	1
CAMEROON(CFA)	1981		6.08	2.93	4.25	3	4	6.08	-1.32	1
CONGO (CFA)*	1981		25.14	6.29	14.38	4	2	25.14	-8.09	1
KENYA*	1993		1.34	1.34	2.84	1	2	1.34	-1.50	1
NAMIBIA	1984-85	36.52	31.99	12.45	8.41	6	4	68.51	4.04	2
NIGERIA	1986-89	21.98	0.14	7.37	0.14	3	1	22.12	7.23	4
SIERRA LEONE	1983-87	16.04	0.59	8.59	0.59	2	1	16.63	8.00	5
SOUTH AFRICA*	1984-85	3.97	0.67	1.78	3.31	2	1	4.64	-1.53	2
TANZANIA	1984	8.82		4.67		3		8.82	4.67	1

Countries	Date of the crisis	Permnt Loss	Transit. Loss	Loss of C/GDP	Growth of C/GDP	Nb. Of years of loss	Nb. Of years of rise	Total Loss	Net losses	Crisis duratn
		(A)	(B)	(a)	(b)	(α)	(β)	(A)+(B)	a-b	n
TANZANIA*	1987-90	15.63	0.98	6.38	0.98	3	1	16.61	5.40	4
ZAMBIA	1983-86	99.43		25.73		6		99.43	25.73	4
ZIMBABWE	1983	0.62	3.83	4.14	3.83	1	1	4.45	0.31	1
ZIMBABWE	1985		1.74	1.68	2.37	2	1	1.74	-0.69	1
<b>Average</b>	<b>per crisis</b>	<b>23.16</b>	<b>5.88</b>	<b>5.92</b>	<b>3.73</b>	<b>2.60</b>	<b>1.92</b>	<b>18.99</b>	<b>2.69</b>	<b>2.00</b>
<b>Average</b>	<b>per cntry</b>	<b>26.05</b>	<b>6.37</b>	<b>6.83</b>	<b>4.04</b>	<b>3.00</b>	<b>2.08</b>	<b>21.91</b>	<b>3.10</b>	<b>2.31</b>
<b>Middle East And North Africa</b>										
ALGERIA	1989-91	23.79	7.96	8.73	3.45	3	2	31.75	5.28	3
IRAN	1993-94	0.12	1.33	1.39	1.33	1	1	1.45	0.06	2
JORDAN*	1989	3.54	3.63	2.49	1.60	3	1	7.17	0.89	1
<b>Average</b>	<b>per crisis</b>	<b>9.15</b>	<b>4.31</b>	<b>4.20</b>	<b>2.13</b>	<b>2.33</b>	<b>1.33</b>	<b>13.46</b>	<b>2.08</b>	<b>2.00</b>
<b>Average</b>	<b>per country</b>	<b>9.15</b>	<b>4.31</b>	<b>4.20</b>	<b>2.13</b>	<b>2.33</b>	<b>1.33</b>	<b>13.46</b>	<b>2.08</b>	<b>2.00</b>
<b>Asia &amp; Pacific</b>										
INDONESIA	1987	3.30	1.12	1.73	0.85	2	2	4.42	0.88	1
KOREA, REP.	1980		0.99	0.66	1.43	1	2	0.99	-0.77	1
MYANMAR	1975	17.64	0.81	4.62	0.59	3	2	18.45	4.03	1
PHILIPPINES*	1983-84	8.42	3.97	2.17	1.93	1	3	12.39	0.24	2
<b>Average</b>	<b>per crisis</b>	<b>9.79</b>	<b>1.72</b>	<b>2.30</b>	<b>1.20</b>	<b>1.75</b>	<b>2.25</b>	<b>9.06</b>	<b>1.10</b>	<b>1.25</b>
<b>Average</b>	<b>per cntry</b>	<b>9.79</b>	<b>1.72</b>	<b>2.30</b>	<b>1.20</b>	<b>1.75</b>	<b>2.25</b>	<b>9.06</b>	<b>1.10</b>	<b>1.25</b>
<b>OECD and Western Europe</b>										
AUSTRALIA	1985	4.83	3.94	2.84	1.89	4	2	8.77	0.95	1
BELGIUM	1981	44.56	4.58	8.39	2.42	8	2	49.14	5.97	1
DENMARK	1981	9.23	5.82	3.46	2.16	6	2	15.05	1.30	1
FINLAND*	1991-93	29.98		7.95		5		29.98	7.95	3
FRANCE	1981	32.82	4.60	5.31	1.50	8	4	37.42	3.81	1
GREECE	1983-84		0.31	0.31	1.22	1	1	0.31	-0.91	2
IRELAND	1981	102.73	2.63	12.82	1.45	9	4	105.36	11.37	1
ITALY	1981	25.49	3.46	4.26	1.05	8	2	28.95	3.21	1
NETHERLANDS	1981	25.80	5.08	6.74	2.19	5	2	30.88	4.55	1
PORTUGAL	1977	28.21	3.48	8.01	1.83	3	2	31.69	6.18	1
PORTUGAL	1982-84	41.11	22.48	9.20	4.72	7	4	63.59	4.48	3
SPAIN*	1981	35.47	21.01	6.59	3.54	8	7	56.48	3.05	1
SWEDEN*	1991	16.11	2.01	5.66	1.85	5	1	18.12	3.81	1
TURKEY*	1978-89		72.61	9.25	12.39	7	5	72.61	-3.14	12
TURKEY	1991-96	22.63	2.11	9.68	2.11	4	1	24.74	7.57	6
<b>Average</b>	<b>per crisis</b>	<b>32.23</b>	<b>11.01</b>	<b>6.70</b>	<b>2.88</b>	<b>5.87</b>	<b>2.79</b>	<b>38.21</b>	<b>4.01</b>	<b>2.40</b>
<b>Average</b>	<b>per cntry</b>	<b>32.23</b>	<b>12.84</b>	<b>7.73</b>	<b>3.36</b>	<b>6.77</b>	<b>3.25</b>	<b>44.08</b>	<b>4.63</b>	<b>2.77</b>

\*=banking crisis.