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ABSTRACT

Financial factors have been assigned strategic importancein economic development. But very different factors have been isolated in the respective experiences: in Asia unrepressed financial markets in mobilizing saving and allocating investment have been given prominence. In Latin America the central question is the role of inflationary finance, the scope for deficits to enhance growth and, increasingly, the feedback from high and unstable inflation to poor economic performance. This paper reviews and contrasts the two approaches and concludes that the strong claims for the benefits of financial liberalization are not supported by evidence. Financial factors are important, but probably only when financial instability becomes a dominant force.

The scope for inflationary finance is small and the risks are larger than commonly accepted. When hyperinflation takes over and foreign exchange crises disrupt the price system, and shorten the economic horizon to a week or a month, normal economic development is suspended. Moreover, difficult to reverse capital flight puts savings outside the home economy. Attention should focus on these extreme cases and explore deeper the thresholds at which financial factors become dominant and the channels through which this occurs. Superior growth performance, in this perspective, may be more a reflection of adaptability than financial deepening.

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FINANCIAL FACTORS IN ECONOMIC DEVELOPMENT[1]

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Financial factors have been assigned strategic importance in economic development. But very different factors have been isolated in the respective experiences: in Asia the role of an unrepressed financial markets in mobilizing saving and allocating investment is emphasized. In Latin America the central question is the role of inflationary finance, the scope for deficits to enhance growth and, increasingly, the feedback from high and unstable inflation to poor economic performance. This paper reviews and contrasts the two approaches. Our analysis concludes that the strong claims for the benefits of financial liberalization are not supported by evidence. But we equally note that the scope for inflationary finance is small and the risks are larger than commonly accepted.

To place our topic in perspective we note that growth in per capita income derives from two ingredients: accumulation of physical capital and more efficient use of resources. The efficiency of resource use is supported by the application of superior techniques, but also importantly by policies and institutions. Financial factors in economic development exert their influence through both channels: they affect the extent to which saving become available,

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[1]We are indebted to Eliana Cardoso for helpful discussions.

but they also influence the efficient intermediation of these saving to the highest return investment opportunities.

Economic history is rife with allusions to joint stock companies as a decisive innovation in the implementation of capitalist production and distribution. Alex Gerschenkron, and authors since, have emphasized the importance of finance. The Stanford School -- John Gurley, Edward Shaw and Ronald McKinnon-- have given prominence to finance as a determinant of successful economic development. But although their views have become dogma, there is little evidence to support a pervasive claim. Korea in the 1963-82 period experienced an average growth rate of output per capita of 4.8 percent, 1.6 percent are due to capital accumulation and 3.2 percent to more efficient utilization of resources. No growth accounting exercice is available that would teach us how much of this growth can be attributed to a favorable financial environment. The role of financial factors thus remains largely speculative.

We argue here that financial factors are important, but probably only when financial instability becomes a dominant force in the economy. In this respect financial factors operate much in the same way as the foreign trade regime: unless it is very distorted indeed, it probably does not make much difference to the level of per capita GDP. This view is supported by Edward Denison's guesstimate (Denison (1985)) that all trade restrictions in the US in 1957 accounted perhaps for a as much as 1.5 percent of the <u>level</u> of GNP. The impact on the <u>growth rate</u>, by implication, may be almost negligible. Of course, an extra 1.5 percent of GNP is well worth having, but it would be misplaced emphasis to put in most cases the trade regime or finance on a par with capital accumulation, technology, scale economies or education.

But while we believe that there is no significant gain in economic performance between a situation of stable real interest rates of -1 or +2 percent, the financial regime can become a dominant determinant of performance when it deteriorates significantly. Argentina, for example, is sliding back as the economy is becoming increasingly dominated by inflation and finance and the same is true in Peru.

When hyperinflation takes over and foreign exchange crises disrupt the price system, and shorten the economic horizon to a week or a month, normal economic development is suspended. Moreover, difficult to reverse capital flight puts savings outside the home economy. Attention should focus on these extreme cases and explore deeper the thresholds at which financial factors become significant or even dominant and the particular channels through which this occurs. This strand of argument leads to a discussion of the limits of deficit finance, the risks of an overexposure to external debt service and the differential flexibility of countries in adjusting rapidly and smoothly to a change in financial resources. Superior growth performance, in this perspective, may be more a reflection of adaptability than financial deepening.

Our point is best brought out by a comparison of Asia and Latin America in the period 1960-80 and in the 1980s.(See, too, Appendix I).

Table 1 Economic Performance in Asia and Latin America
(Annual average percent)

	Inflation	Per Capita Growth	Inv't./GDP	F.Deep'g
1960-80:				
Asia	8.2	2.6	20.4	70.4
L.America	27.6	3.3	21.5	25.8
1980-87:				
Asia	6.0	3.0	26.5	44.9
L.America	102.3	-0.9	20.2	-8.3

Note: Financial deepening (F.Deep'g.) is measured by the cumulative percentage change in the ratio of M_2 to GDP. In the 1980s the change refers to 1980-86.

Finance does matter for the mobilization of resources, but this aspect ordinarily accounts for little in the change of growth. The more important fact is macroeconomic: poor finance leads to inflation and external bottlenecks and they in turn bring about restrictive macroeconomic policies and these slow down growth and investment. A protracted period of poor macroeconomic policy in turn casts a shadow over the future because it slows down or diverts abroad the supply of capital and the incentives to invest and innovate in the home economy.

1. THE FINANCIAL REPRESSION PARADIGM

Financial repression as an impediment to economic development is a central paradigm. If growth takes investment then three conditions must be met: Firms (and/or the government) must be willing to invest, savings must be available and these savings must be channelled to those who plan to invest and face the most attractive investment opportunities. The financial structure and institutions can support or disrupt this process. A repressed system, especially

in conjunction with high and unstable inflation, is said to interfere in a number of ways with development.[2]

• Saving vehicles are underdeveloped and/or the return on saving is negative and unstable. There are two immediate consequences: First, the low and possibly negative real return on saving depresses the saving rate. Second, any saving that does get done tends to go into self-finance, relatively unproductive assets (primarily inflation hedges) or into foreign exchange.

• Financial intermediaries who collect saving do not allocate these saving efficiently among competing uses. As a result of interest rate regulation on the lending side there is rationing which easily involves a reduction in the productivity of investment.

• Firms are discouraged from investing because poor financial policies reduce the returns or make them excessively unstable. In particular unstable inflation, price controls and overvaluation of foreign exchange add to business risk and as a result depress the investment in productive assets. Beyond depressing investment, an unstable financial business environment and the rationing implicit in a repressed system also induce the socially wasteful use of resources for rent seeking.(See Anne Krueger (1974) This is the case because financial repression creates a ready environment in which firms can secure large transfers from the public sector.

A good morality tale is a story of sin and redemption. Taiwan is the example of unbroken promise: real interest rates uninterrupted positive and

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[2]See especially McKinnon (1973), Lanyi and Saracoglu (1983) and Fry (1988) for discussion and references.

averaging 6.7 in the 1960s compared to Japan's -0.8. Korea, as we shall now see shifted from repressed financial markets to financial reform, a shift that coincided with and perhaps was instrumental in bringing about a dramatic change in economic development.

The Korean Example:

Korea had experienced low growth and increasing financial instability in the post-Korean war period. In 1963-64 the performance further deteriorated. Sharply higher inflation, in conjunction with a ceiling on interest rates, reduced real asset returns. The ratio of M_2 to GDP declined by almost 5 percentage points. A broad-based fiscal, financial and external balance reform was introduced. The program was based on recommendations by John Gurley, Hugh Patrick and Edward Shaw who noted (reproduced in Park and Cole (1983,p.298-303):

> "Adequate mobilization of capital in Korea will require a major overhaul of the financial system...While financial reform is crucial to achieve the Korean objective of stable growth, our judgment is that tax reform will have to shoulder an even larger burden than financial reform to raise the ratio of domestic saving to national income within the coming few years. The financial system will need recuperation from past repression and abuse. This is no excuse for delay in financial reform. Indeed it only makes more necessary the need for financial reform now.

And under the heading "Prerequisites for Financial Reform and Development" they list the following items:

- Persuade savers that they will not be taxed by inflation
- Maintain the equilibrium value of the foreign exchange rate of the won; do not allow it again to become overvalued.
- Release domestic interest rates on deposits so that savers are induced to save and in financial form, and so that funds can be allocated to investment on a more rational basis.

Table 2 shows that saving, investment, financial deepening and growth all showed a dramatic improvement. Much of the credit is commonly attributed to the shift toward positive real deposit rates.

Table 2 The 1965 Korean Financial Reform

	1960-64	1965-69	1970-74
Real Curb Loan Rate	31.1	44.4	28.2
Real Deposit Rate	-0.7	14.3	3.6
M_2/GDP	12.3	21.2	35.0
Nat'l. Saving Rate	4.9	12.9	17.4
Gross Fixed Inv./GDP	12.2	21.4	22.6
Taxes/GDP	9.3	12.0	13.8
Growth	5.5	10.0	9.2

Source: Cole and Park (1983) and Bank of Korea

Lessons? That Korean economic performance sharply improved after 1965 is beyond question. The discussion (see Cole and Park (1983)) remains open, however, on the question whether financial reform was the chief or essential agent of change. Scepticism focuses on the fact that high real deposit rates, to some extent at least, only moved resources from the curb market to the banking system. That resource allocation was improved as a result, or that saving increased in response to the higher yield on bank deposits, has not been shown.

Efficiency of investment selection by the banking system in the 1970s continues to be questioned in Korea so that there is no presumption that the shift toward organized financial markets represented a clear improvement rather

than only a redirection of saving flows and possibly an increase. The large scale investment in heavy and chemical industries in the 1970s was certainly facilitated by the mobilization of resources in the formal financial system. These investments were supported by credit subsidies and it is widely recognized today that they were a mistake because of their low productivity. If this view is correct financial deepening which mobilized the resources for this mistake must have had negative aspects. It is also the case that increased saving is a reflection of the fiscal correction, real depreciation which promoted export growth and guarantee programs on foreign borrowing with the resulting capital inflows.

The immediate question is what lessons to draw from the repression paradigm and the specific example of Korea. Should financial policy focus on generating significantly positive real returns on deposits thus seek to generate high rates of growth in the real size of the banking system? Are growth, financial deepening, positive real interest rates and the productivity of investment tightly correlated in historical and cross-sectional experience? The answer is clearly no. Paying positive real interest rates on deposits is not a universal panacea for growth as some of the financial repression literature might lead one to believe. Only when financial instability becomes large and persistent are there tight connections between financial reform and growth performance.

II. SOME KEY RELATIONS RECONSIDERED

In this section we comment briefly on the theoretical propositions and empirical evidence developed in support of the financial repression paradigm. [3]

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[3] Fry (1988) contains a review of the literature.

It is fair to say that the financial repression paradigm in some ways seems like supply side economics,-- a kernel of truth and a vast exaggeration.

1. Positive Real Deposit Rates raise the Saving Rate. It is well-known from the theory of saving that the offsetting income and substitution effects of increased interest rates imply that the net impact on saving must be ambiguous. In a framework of target saving increased real interest rates reduce the necessary saving effort. It is surprising, therefore, to find so strong a belief in the saving mobilization of higher rates. In the US case, with the best data and innumerable attempts to document the sign of the effect there has been virtually no study that can claim success. Evidence from other industrialized countries points in the same direction: no discernible net effect.

In the case of developing countries the lack of data and their very poor quality make it much harder to establish the facts. Fry (1988) reports a cross section time series regression of 14 Asian countries in which the real deposit rate is a significant, although quantitatively unimportant determinant of saving. It takes a ten to 25 percentage point increase in the real deposit rate, depending on the estimate, to raise the national saving rate by one percentage point! Giovannini (1985), by contrast, does not find a significant relation between saving and real interest rates for Asian countries. Reynoso (1988) finds evidence for a Laffer curve with no significant effects of changes in the real interest rate around the zero level.

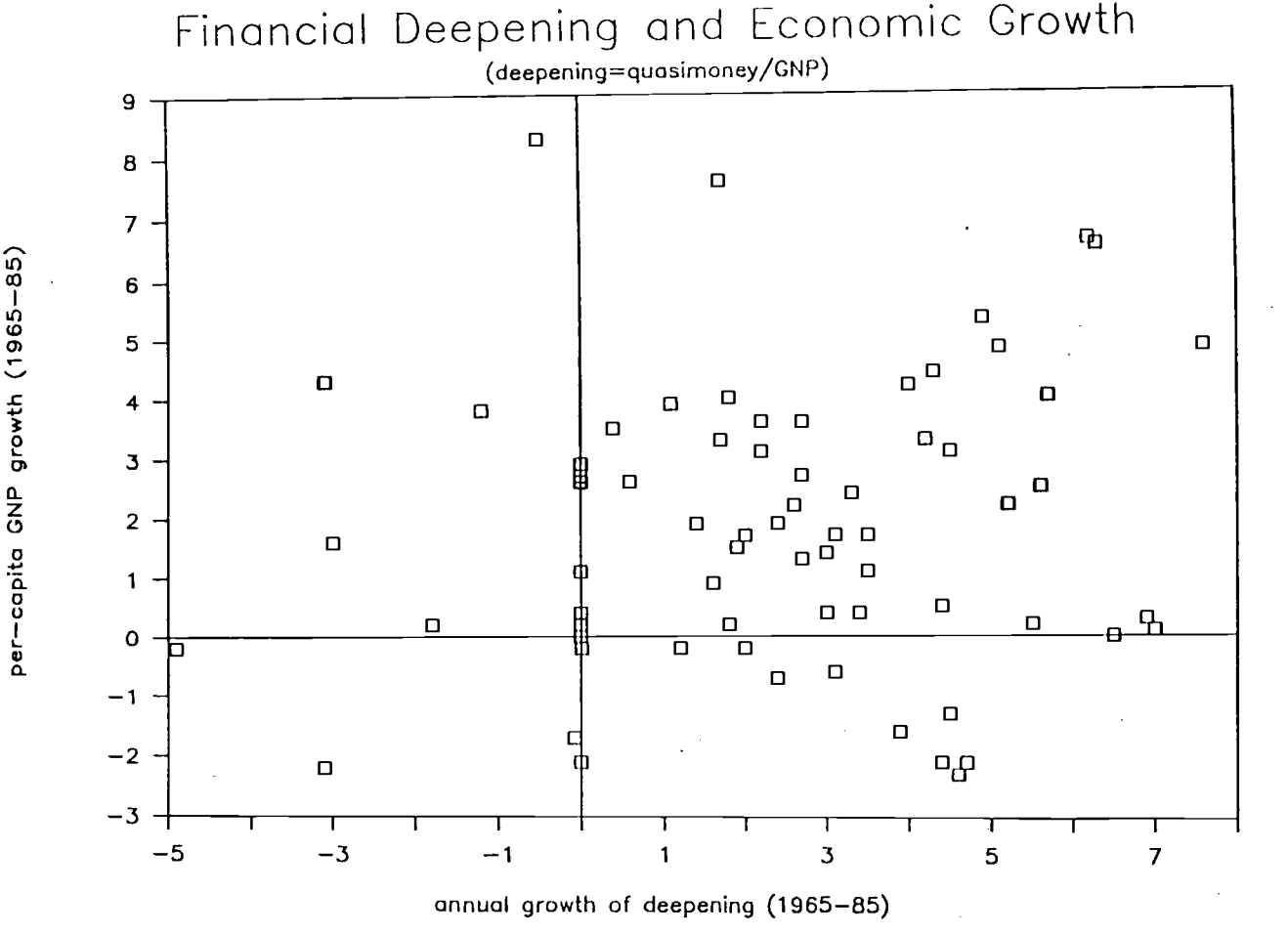
In some case studies major stabilization programs do, however, appear to affect the saving rate. There are some ready explanations. First, during

financial crisis saving is channelled into foreign assets via misinvoicing of trade. Accordingly, in these cases national account data easily underestimate true saving. Second, stabilization is associated with fiscal reform which directly raises the national saving rate. Third, durable purchases are recorded as consumption. Therefore in a period of financial instability a shift into durables, and following stabilization a sharp reduction in durable purchases, has the appearance of a dramatic increase in saving. In fact, however, true consumption (measured by nondurables and the services of durables) need not have changed much.

2. Financial Deepening and Growth are Positively Related

We saw already above, in Table 1, that the correlation of growth and financial deepening measured by the change in the M_2/GDP ratios is not tight. Figure 1 shows a cross-section of countries; it is apparent that by judicious choice of sample any partial correlation can be generated.

A first and important point is that financial deepening need not correspond to the M_2/GDP ratio. Deposits in non-bank institutions are an important outlet for financial saving and so is the money market. Between 1970 and 1987 the M_2/GDP ratio in Korea was practically stagnant (41.3 compared to 39.1), but the M_3/GDP ratio doubled from 46 to 94.4 percent. The focus on M_2/GDP ratios misrepresents the picture. Brazil has a market for financial assets which is, of course, not part of the narrow Ms. The shift to high inflation is reflected in a decline of M_2 relative to GDP (from 19.4 to 12.9 in the 1975-87 period), whereas a comprehensive measure, including the financial market, shows


Financial Deepening and Economic Growth
(deepening=quasimoney/GNP)
per-capita GNP growth (1965-85)
annual growth of deepening (1965-85)
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-5
-3
-1
1
3
5
7

growth from 37.5 to 47.5 percent. The point of these examples is that differences in financial structure create an obstacle to any simple analysis of the relation between financial development and economic growth.

3. Increased Real Rates Raise Investment

The theory here is difficult to pin down. The only immediate link is the potential one discussed above: higher real deposit interest rates raise saving and hence the equilibrium rate of investment.

An additional channel suggested by McKinnon (1973) involves complementarity of money and capital: because investment projects are lumpy, investors must accumulate their investment balances in the form of deposits until the required principal is reached. The more attractive the return on deposits the more willing investors are to engage in the accumulation process. It is difficult to see that this view is very different from one that looks straightforward at the effect of real interest rates on saving. After all, the economic choice is a consumption saving choice. Econometric tests that introduce the saving or investment rate in the real money demand equation to test this theory are peculiar at best.

4. Increased Real Deposit Rates Promote Growth

Once again, the immediate channel is that higher real interest raise domestic saving and hence increase the available supply of resources for investment. But there are two additional channels that can be considered. The first deals with external resources: an elimination of ceilings on active and

passive interest rates, can bring about an inflow (or reflow) of external saving. While large firms always have the possibility of borrowing abroad, this is not the case for smaller economic units. The removal of ceilings allows the domestic financial system to draw in resources that would not otherwise be available. We make a distinction here between the rechanneling of domestic saving between informal and formal financial markets and the net availability of external saving. The latter have a more difficult task finding their way via an informal market. Accordingly financial reform does have a potential in raising external finance.

The second link to growth comes through the quality of investment. It is commonly argued that a repressed financial system allocates saving inefficiently. Rationing leads to financing of below average quality investments. The argument is suspicions because economic agents have powerful incentives to merge with banks to seize the underpriced saving, they would not have an incentive to invest inefficiently. Indeed, a large part of the growth of informal markets is a reflection of the laundering for improved efficiency of credits obtained from the repressed financial system.

A popular test of the real interest rate-growth linkage is Table 3 developed by Lanyi and Saracoglu. Countries are classified by the level of real deposit rates to discern a linkage between the interest rate regime and the growth performance.

Table 3 Real Deposit Rates and Growth: 1971-80

I.Positive		II. Moderately Negative		III. Severely Negative	
Taiwan	9.2	Thailand	6.9	Turkey	5.1
Singapore	9.1	Colombia	5.8	Peru	3.4
Korea	8.6	Kenya	5.7	Zaire	0.1
Malaysia	8.0	Morocco	5.5	Ghana	-0.1
Philippines	6.2	Pakistan	5.4	Jamaica	-0.7
Sri Lanka	4.7	Greece	4.7	Argentina	3.0
Nepal	2.0	Portugal	4.7	Brazil	8.1
Colombia	5.1	Burma	4.3	Uruguay	3.0
		S.Africa	3.7		
		Zambia	0.8		
		Venezuela	4.1		
		Mexico	7.4		

Note: The exact dividing line between countries (like exam grades) is somewhat arbitrary, e.g. Brazil could be placed in the center group if -9 percent real interest were considered moderate.
Source: Lanyi and Saracoglu (1983) updated by and the authors.

5. Investment, Inflation and Growth: The impact of increased real interest rates on the efficiency of investment has been tested by relating the incremental capital output ratio to real deposit rates. Even though these relations frequently can be established (See Fry (1988)), it is not clear what they reflect. Consider the neoclassical growth model. We can write the growth rate of per capita income, y, as follows :

$$y = \alpha(\beta/\sigma - n) \qquad (1)$$

where α is the distributive share of capital, β is the share of investment in income, σ is the capital/output ratio and n is the growth rate of the labor

force. Which is the factor influenced by financial repression and how long does it take for financial repression to affect the parameter? If the capital/output ratio is raised the average investment has been less efficient-- the impact on growth could be significant: Let α=.7, β=.2 and consider two alternatives, of σ=2 and 3 respectively. With an n=0.025 in one case the growth rate is 2.9 percent in the other 5.3 percent. Thus the productivity of the capital stock does make a large difference. But that is not the right guide to the benefits of financial liberalization: a more efficient allocation of investment has only an extremely gradual effect on the average capital output ratio, taking decades rather than a year or two. Moreover, the cumulative change may fall very much short of our example.

To discern a growth effect it is better to focus directly on financial stability. In a cross section of 41 countries, using averages for the period 1965-85 we explain growth of pere capita income with the investment rate and the rate of inflation. Specifically we are interested in the effect of high inflation on growth.

$$y = \underset{(-1.41)}{-1.67} \quad \underset{(1.35)}{+.0005\,Y} \quad \underset{(2.33)}{+\,.15\,K} \quad \underset{(-1.80)}{-0.016p} \qquad R^2 = 0.30$$

where y, Y, K and p are respectively the growth rate per capita, the level of per capita income in 1965, the cumulative change in the capital labor ratio and an inflation dummy. The inflation rate dummy applied to inflation rates in excess of 20 percent. The regression supports the view that high inflation interferes with growth.

The impact of high inflation rates offers a natural transition to the alternative perspective on financial factors in economic development, namely the role of inflation and deficit finance. So far we have asked whether a liberalized financial system has a greater chance to mobilize resources for growth, or to allocate them more efficiently. We have concluded that the empirical support for that proposition is episodic. There is much stronger support for a different proposition: deficit finance is a hazardous means for promoting growth. To document this assertion we now turn to the conceptual links between inflation, growth and the budget and to a discussion of the instability of inflationary finance. The importance of the topic resides in the fact that Latin America has overused deficit finance and, as a result, has experienced a major development setback. Interestingly, financial liberalization was one of the factors that made the Latin American experience with deficit finance particularly disastrous.

III. BUDGET DEFICITS AND INFLATION

The discussion of inflation and its link to development finance in developing countries raises three sets of issues. The first is why inflation in Asia is moderate whereas in Latin America it is at best chronic and often acute. The second issue is to have a better understanding of the disturbancesc and practices that set off an inflation process. The thirds issue is to understand the factors that make inflation beyond a certain threshold an accelerating process. The experience of Latin America is one of inflation rates accelerating to 1000 and more percent even though the government deficits that are being financed are not far larger than those in Asia. It is therefore important to

identify the source of inflation differentials to get a better understanding of the limits of inflationary finance and of the disturbances and institutions that make these limits especially tight.

Inflation represents the interaction of four factors: deficit finance which governs growth of the money supply, financial institutions which determine the demand for money, shocks to the budget and a policy ability to react to these shocks by corrective fiscal measures. The combination of these four elements may imply moderate and stable inflation, or it may imply near-hyperinflation. Which of the two is, of course, critical for economic development because, as we shall argue, high and unstable inflation leads to a drying up of resources available for development because asset holders are unwilling to accumulate domestic claims and firms are not prepared to accumulate productive assets in the inflating country.

1. Inflation Policy

Two major difference between developing countries in Asia and in Latin America are their fiscal and inflation performance and the very different distribution of income. Latin America chronically experiences deficits and inflation while Asian deficits tend to be limited to the ability to finance the government in a noninflationary manner. The difference in income distribution influence the ability to achieve rapid adjustment of fiscal and real exchange rate positions when these are needed to avoid bottlenecks. The relatively equal income distribution in Asia contrasts sharply with the extreme inequality in Latin America. These may not be the only reason for the differential ability to adjust, but they certainly seem to be an important element.

It is important to recognize that differences in performance are not merely a reflection of differences in fiscal discipline. Korea, for example, has run large fiscal deficits and has experienced external shocks and debt service problems as recently as 1981. In this respect there was no major difference with, say, Brazil. The difference lies primarily in the adjustment to the shock. In one case the adjustment was startlingly rapid, in the other case the hyperinflation consequences are still being acted out.

Consider a simple model of the adjustment problem. We want to sketch a model of the extent to which a government offsets or dampens an inflationary shock. Let the government minimize a loss function, L:

$$L = (\pi-\pi^*)^2 + \lambda A^2/2 \qquad (2)$$

where π denotes the actual rate of inflation, π^* the historical rate and A is adjustment effort. The actual inflation is the historical rate plus the shock less the impact of adjustment effort on inflation.

$$\pi = \pi^* + \Delta - \sigma A/2 \qquad (3)$$

Then the inflation rate under the optimal adjustment effort will be

$$\pi = \pi^* + \alpha\Delta \quad ; \quad \alpha = \lambda/(\lambda+\sigma^2/2) \qquad (4)$$

We are interested in the coefficient α which would differ across countries. The higher the marginal political cost of adjustment (λ) and the less effective

adjustment is in dampening the inflationary impact of shocks (i.e. the smaller σ) the less adjustment effort will be supplied and the higher is therefore the rate of inflation. This will tend to raise the inflation rate over time (π^* increases) and thus different countries' inflation performance will drift apart over time. The main task now is to identify the shocks and the channels through which they exert inflationary consequences.

2. The Instability of the Inflation Process

A high inflation process has two characteristics. The first is that there will be indexation arrangements that link current inflation to past inflation. The other is that a significant part of the budget deficit will be financed by money creation. Accelerating inflation is closely linked to these two arrangements. We consider first the inflation-budget linkage.

In the tradition of Mundell (1971) the budget deficit is a fraction g of real income and the demand for highpowered money be a linear and increasing function of inflation. A fraction β of the deficit is financed by creating money. This gives us a relationship between the growth rate of highpowered money μ and the budget deficit:

$$\mu = \beta g(\rho + \eta\pi) \tag{5}$$

where ρ and η are parameters of the velocity equation. In steady state, with a growth rate of output y and a unitary income elasticity we obtain an inflation rate equal to:

$$\pi = (\beta\rho g - y)/(1 - \beta\eta g) \qquad (6)$$

The model makes three basic points: First, the link between inflation and the budget deficit financed by money creation is highly nonlinear. A minor increase in the deficit, when the deficit is high, raises in a major way the inflation rate required to finance the budget. Second, the financial structure affects the inflationary impact on money-financed deficits. The more sophisticated the financial structure the higher the coefficients ρ and η and accordingly the higher the inflation associated with a given deficit. To put the point another way, inflationary finance thrives on a repressed financial system. We return to this point in the context of financial liberalization below.

The third point is the role of growth in dampening the inflationary impact of deficit finance. A percentage point decline of the growth in income raises inflation by a multiple that is higher the higher is the deficit and the more responsive is velocity to inflation. A major downward shift in real income growth can therefore be an important contributing factor to increased inflation.

Table 4 (and Table A-2 in the appendix) shows the revenue from money creation obtained in Asia and Latin America.

Table 4 Seigniorage, Growth and Inflation

	Seigniorage[1]		Growth		Inflation	
	A.	L.A.	A.	L.A.	A.	L.A.
1960-78	1.4	3.2	5.9	6.1	7.9	28.4
1979-86	1.5	4.5	4.9	2.5	9.3	116.6

Note: The two groups are the income weighted average of 6 countries in Asia and in Latin America. See Table A-2 for countries in each group.
[1]Percent of GDP
Source: Fischer (1982) updated by the authors

The second institutional characteristic mentioned above is indexation. Indexation is important for two reasons. The first is that adjustment of relative prices becomes very difficult. With a given periodicity of wage indexation adjustment the easiest means of cutting real wages is to allow an acceleration of inflation. In this manner, over the indexation period, the real wage is eroded more rapidly and hence its real value declines. But indexation arrangements also become a source of inflation acceleration when the periodicity of adjustments shortens. When an inflationary shock-- say devaluation or subsidy removal-- reduce real wages beyond a threshold, the response is often to shorten the indexation interval. For a given average real wage, a cut in the interval to half doubles the rate of inflation.

This shortening of adjustment intervals is an important driving force of accelerating inflation. Adjustment periods decline from annual to half-yearly, three monthly, monthly and then the entire economy converges on the dollar. As every lagging agent in the economy shortens the lags, trying to catch up with the average, the average explodes.

The nonlinearity of the inflation to the budget (reflecting the endogeneity of financial structure), and the shortening of indexation periodicity are the two main channels through which inflation tends easily to accelerate once it reaches high levels. The third factor is the endogeneity of real tax revenue. Because the tax structure is less than fully indexed high inflation erodes the real value of government revenues. Attempts to index taxation and speed up collection can help dampen this process, but they have virtually no chance to offset the impact of a 200 percent inflation.

Each of these three factors is altogether inconsequential at rates of inflation of 20 or even 30 percent, but each becomes decisive at 100 or 200 percent. This helps explain why so many countries in Latin America, have recently moved to extreme rates of inflation. It remains to identify what disturbances initiate the process and why high inflation tends to become so unstable and explosive.

3. Factors and Practices Which Promote High Inflation

Apart from the obvious lack of fiscal discipline, we note here three factors that have been important in promoting major inflation. Their importance is enhanced by the fact that they tend to come jointly.

The Debt Service Shock: In the 1970s many developing countries borrowed heavily and as a result accumulated debt service burdens. In the early 1980s the world macroeconomic shock triggered a halt to lending. As a result the policy of paying interest on old loans by borrowing new money, and the automatic rolling of principal, were interrupted. Debtor countries had to start making transfers abroad. This raised two difficulties: in the budget the automatic financing of debt service by foreign loans was replaced by the need to finance at least part of the debt service domestically. Changes in taxes and current spending were unpopular and as a result most of the adjustment took the form of either cuts in public sector investment or else of financing the deficit domestically. To the extent that the deficits were financed by money creation (to avoid crowding out or bankruptcies associated with high interest rates) high inflation was the

result. In many countries where some inflationary finance had been the rule, the extra money financing of deficit proved an express lane to extreme inflation. Bolivia is a case in point, as is Argentina.

Over and above the budget and external transfer problem, a debt service shock has a secondary burden. The real depreciation that is required to generate a trade surplus will raise the real value of external debt service in terms of the tax base. Thus for a country that has debt service of 6 percent of GDP, a 20% real depreciation increases the debt service burden by 1.2 percent. The point is simply that a dollar of interest payments now costs more tax dollars. Thus depreciation (except in cases where the government is a net earner of foreign exchange).

Financial Liberalization: An immediate reaction to accelerating inflation is agitation in the financial sector to liberalize: financial repression, it is argued, worsens the social costs of inflation. Allowing banks to offer interest bearing liabilities would permit the financial system to perform its intermediation task and thus minimize the costs of living with inflation. But liberalizing the financial system may imply reducing the government's revenue from money creation and that in turn means increasing even further the rate of inflation. There may be a costs to not liberalizing, specifically the possibility of capital flight, but the alternative of liberalization may also be very perilous.

The link that runs from financial liberalization to inflation is already shown in eq.6 above. Financial liberalization offers asset holders interest

bearing returns; nonbank financial institutions (financeiras) will now be allowed to offer checkable interest bearing liabilities (the "overnight"), using the proceeds to hold shortterm commercial paper or government debt. Accordingly there is financial disintermediation as deposit resources shift from traditional intermediaries (the banking system) to the money market. The demand for the monetary base is reduced both because banks lose deposits. A reduction in the demand for real monetary base raises the rate of inflation consistent with financing a given budget deficit. Thus financial liberalization raises the inflation rate unless there is an accompanying reduction in the budget deficit. Jorge Hierro (1988) has documented the quantitative importance of this effect. Of course, if liberalization in addition involves bankruptcies of financial institutions, as is often the case, the financing requirements also increase.

Thus there is a tradeoff between financial repression and seigniorage; a period of fiscal crisis may not be the right time to bring about financial liberalization. Of course, that choice may not really exist: if a country fails to liberalize the financial market, offering interest bearing domestic assets, there is capital flight or dollarization with the same or worse consequences for inflation and intermediation.

Exchange Losses and Quasi-Fiscal Deficits: A third major source of accelerated inflation is the widening in fiscal deficits resulting from exchange losses on exchange rate guarantees or exchange rate operations more generally of the Central Bank or from the interaction of inflation and financial subsidies. Attempts to take advantage of secondary market discounts on the country's

external debt by buybacks or debt equity swaps adds another important sources of increased financing requirements.[4] In some cases in Latin America the widening of financing requirements resulting from these operations amounted to several percent of GDP.

In 1982-87 Argentina's quasi-fiscal deficit averaged 1.7 percent of GDP. An important share of this deficit stemmed from exchange rate guarantees given in 1982 when the government could not afford the repayment of private debts that was hastened by the expectation of further depreciation. Exchange rate guarantees rather than high interest rates seemed the cheaper way at the time; in retrospect they were the source of a massive increase in inflation.

Peru's quasi-fiscal deficit in 1985-87 averaged 2.1 percent of GDP (in addition to the regular deficit in the budget) and represents primarily two operations. One is large credit subsidies implicit in credits conceded at low interest rates. But the major part of the quasi-fiscal deficit arose from multiple exchange rates involving a massive discrepancy between buying and selling rates for foreign exchange. In addition to the obvious misallocation of resources these quasi-fiscal deficits, because of their sheer size and the fact that they are financed by printing money which nobody wants to holds, are extremely inflationary.

IV. EFFECTS OF DEFICITS AND HIGH AND UNSTABLE INFLATION

Large budget deficits and their financing by high and unstable inflation have three major effects on economic development. First and most obviously the

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[4]See Blejer and Chu (1988).

appropriation of resources by the government reduces absorption available for the private sector. If resources were used by the public sector to finance investment, and if crowding out via the inflation tax displaced primarily private consumption, this process might well be conducive to development. That, in fact, was the view already questioned by Mundell (1971) in the discussion of inflation taxation for growth.

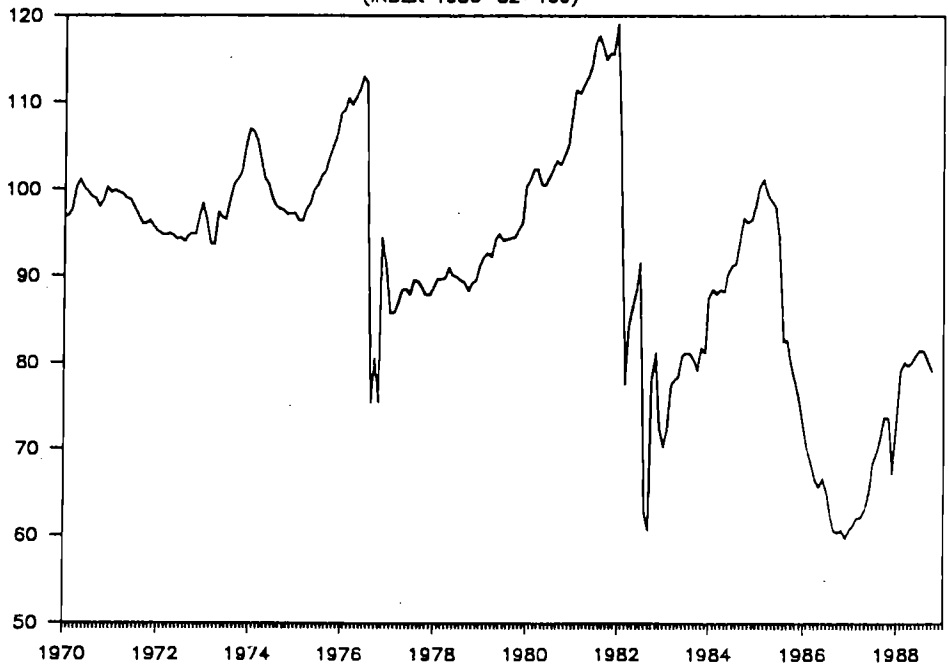
The Latin American experience of the 1980s highlights the narrow limits to inflationary finance and the dramatic costs when inflationary finance goes wrong. These costs arise primarily in two respects, capital flight and misallocation of resources due to uncertainty.

1. Capital Flight and Dollarization

The combination of financial repression and high inflation creates an atmosphere were asset holders seek protection by holding dollar denominated assets, if that is possible, or else shift their assets abroad. The timing of a wave of capital flight may well be linked to an obvious overvaluation of the exchange rate as, for example in Argentina in 1979-80 or in Mexico ar the end of the 6-year presidential terms as shown in Figure 2. But even without such a trigger, a history of large negative returns on assets produces capital flight. Figure 3 shows cumulative the performance of a deposit in Argentina (translated at the official exchange rate) relative to a US deposit and the same comparison is made for Mexico. It is clear that Argentina does not offer a favorable long run financial return and the same has been the case for Mexico in the past decade. Steady capital flight is the inevitable result.

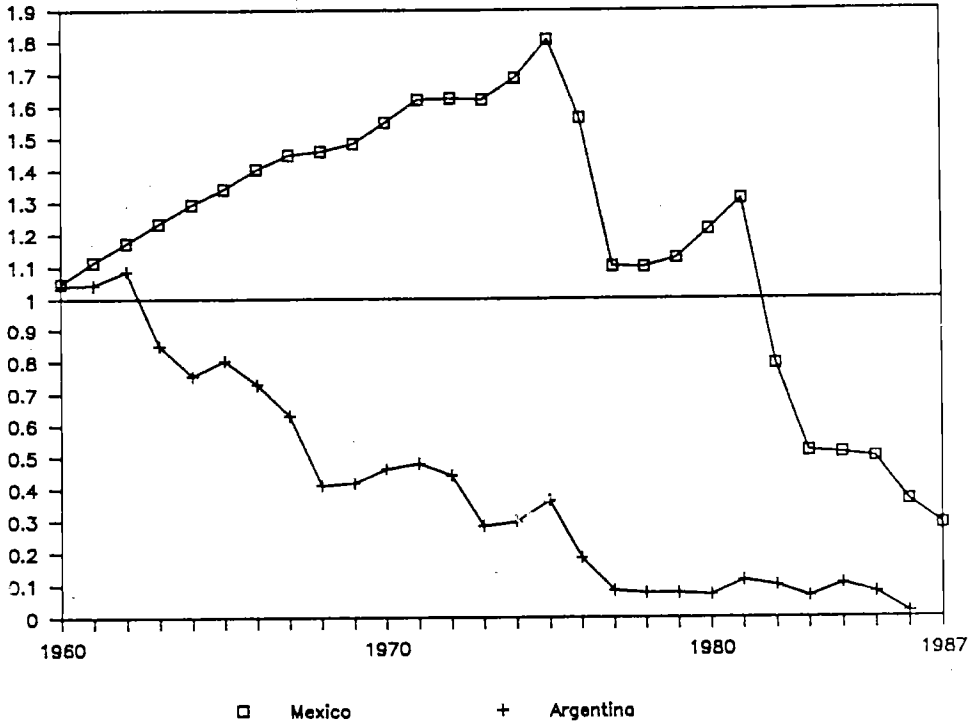
THE MEXICAN REAL EXCHANGE RATE

(INDEX 1980–82=100)



Source: JP Morgan

RETURN OF 1.00 DEPOSIT RELATIVE TO US.



A recent estimate reported in Table 5 shows the extraordinary size of capital flight from Latin America. To judge the size of capital flight it is worth recalling that total Latin American debt in 1987 equalled $300 billion.

Table 5 Capital Flight: 1975-85
(Cumulative, Billion Dollars)

Africa	28.5
Asia	18.3
Western Hemisphere	106.6

Source: Deppler and Williamson (1987)

Capital flight and dollarization raise two kinds of issues. The first is the speed and pervasiveness with which they take place once finance becomes unstable. The second issue is how these phenomena influence economic development.

Dollarization and capital flight are clearly substitutes. If a government allows the banking system to offer dollar denominated (or dollar-indexed) deposits this becomes a means to avoid the actual shift of assets abroad. Available data on the dollarization process in Mexico and Peru give us insight into the dynamics. The shift into dollar deposits is not a once-and-for-all process triggered by a dramatic event. On the contrary, the shift can be well approximated by a combination of a traditional portfolio choice model based on relative rates of return and a dynamics that is represented by the logistic process. This point is highlighted in Figure 4 which shows the share of evolution of dollar deposits in total deposits in Peru.[5]

If the shrift into safe assets is a gradual process, associated with a learning process, two aspects are worth recording. The first is that

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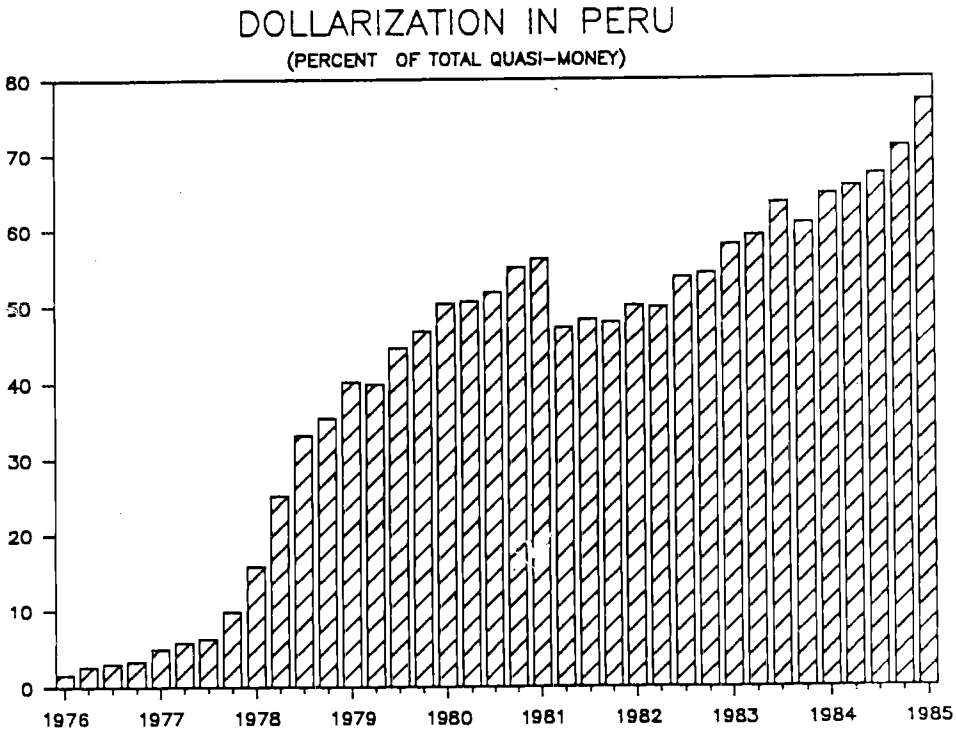
[5]For a further discussion see Dornbusch and Reynoso (1988).


DOLLARIZATION IN PERU
(PERCENT OF TOTAL QUASI-MONEY)
80
70
60
50
40
30
20
10
0
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985

dollarization is not an instant reaction to the slightest policy mistake. In the contrary, there is substantial inertia in asset holdings. But it is also the case that once the learning has taken place, a reversal is difficult to bring about. A return to moderate rates of inflation is not rapidly rewarded by a complete reflow into local currency assets.

When dollar deposits are not available, and when more pervasive economic and political instability are an issue, the response is a shift into foreign currency assets in the form of currency or real and financial assets located abroad. For example in Peru, where access to new dollar deposits was eliminated, the large divergence between inflation and depreciation and the return to deposits made capital flight irresistible: the depreciation rate averaged 57 percent per quarter in 1987 while the deposit rate averaged only 5.4 percent! There are no reliable estimates of foreign holdings of US currency, but some indication of foreign deposits in the banks of industrialized countries is available. Table 6 shows the large size of dollar holdings abroad of countries who have experienced financial instability.

Table 6: Cross-Border Bank Deposits:1987 Per Capita Deposits
((Dollars Per Capita by Nationality of Depositors)

Argentina	277	Philippines	24
Brazil	85	Egypt	65
Mexico	225	Korea	14
Peru	89		
Venezuela	745		

Source: IMF, International Financial Statistics.

The table highlights the interesting difference between Argentina and Brazil. Brazilian capital flight, until recently, was relatively moderate because the domestic financial market was allowed to adapt. The fact that there was a relatively indexed short-term money market prevented a massive flight of capital which occurred in other Latin American countries. But even in Brazil a form of capital flight was apparent in the shortening of maturities in financial markets to the point where today the entire public debt has a one-day maturity. the next step, increasingly apparent, is the flight from the overnight market to the dollar.

Governments who face the risk of capital flight must make a strategic decision whether to contain the flight by high interest rates on domestic assets, creation of dollar-linked domestic assets (i.e. Mex-dollars) or whether it is preferable to continue financial repression and attempt, even with little success, to contain flight capital by controls. There are a number of considerations that bear on the choice of policy, most obviously the question whether controls could, in fact stop capital flight an issue that is viewed with almost pervasive scepticism. Of course, if capital flight can be prevented the country does not use a trade surplus to acquire external capital and thus more resources remain available for domestic absorption. In this sense domestic dollarization is preferable and even high interest rates might be. But they have their own risks. Both create an easily-accessible domestic substitute for assets that yield seigniorage and in this way they raise the inflationary impact of a given deficit.

Moreover, an increase in interest rates would raise the domestic deficit and thus aggravate financing requirements. The strategic question then is

whether the reduction in seigniorage is lower in the case of capital flight or when domestic dollarization is permitted. The answer is presumably that because of large transactions costs involved in capital flight a country may be better off accepting capital flight rather than instituting dollarization. Furthermore, domestic dollar deposits also create the risk that if a major depreciation is required sometime the banking system is likely to suffer and this may lead to a tendency to overvalue the exchange rate. Mexico's experience with domestic dollar deposits illustrates these considerations.

Brazil's experience illustrates another point: High interest rates are not a suitable substitute for fiscal correction. High interest rates on a debt in local currency (or indexing of the domestic debt to goods or foreign exchange) can postpone the consequences of a continuing large budget deficit, but it cannot make them disappear. The steady accumulation of domestic debt, and the shortening of maturities to virtually a spot market creates a situation where in the end the entire public debt is matched by interest bearing, checkable deposits. Seigniorage has virtually vanished and the precariousness of the public debt is a standing opening to a funding crisis which arises when the government cannot roll over the debt.

2. Resource Allocation

High and unstable inflation also has a major cost in terms of resource allocation. The inflation-induced distortion of the economy is not limited to the fact that every day or month new menus must be printed. The uncertainty about inflation, and the policy reactions to accelerating inflation, are the major source of distortions.

Productive factors will be devoted to exploiting financial (and hence by definition zero sum) opportunities rather than to innovate in production and trade. The planning horizon of firms shrinks and the risk of controls as a device to slow down the accelerating inflation forces economic agents into a defensive posture where investment in productive assets in the corporate sector becomes overly risky. Firms increasingly hold paper assets and individuals overaccumulate foreign assets or consumer durables. The uncertainty which persuades firms to hold paper assets rather than investing in real resources translates into trade surpluses that finance capital flight or premature debt reduction.

CONCLUDING REMARKS

Discussion of the financing of economic development has emphasized three channels: external resources that can be tapped by a favorable investment climate or direct borrowing in the world capital market, liberalization of financially repressed systems to enhance private saving and finally development financed by public sector deficits. We have argued here two points: First, that the evidence on the beneficial effects of removing financial repression remain open to challenge. The evidence is episodic except when asset returns are significantly negative. But we also emphasize that the scope for deficit finance as an engine of economic development is extremely limited and extraordinarily hazardous. When overdone inflationary finance acquires a dynamic of its own that can set back the development effort by a decade or more.

Latin America today is a striking example of the risks of budget deficits and of earlier excessive reliance on external finance. But it would be

mistake to conclude from this experience that financial liberalization would have promoted high growth. On the contrary, financial liberalization (including the promotion of capital flight at the official exchange rate) in the face of poor fiscal positions continues to be a major factor in accelerating inflation and instability. Argentina is an example of a country altogether destroyed by excessive inflation which has put an end to net investment and has led households to shift their assets abroad. Brazil is on that same path and Mexico may be narrowly avoiding.

Having faced a decade of financial instability mobilization of resources for growth in Latin America is, of course, extremely difficult. The path that will return the region to rapid long run growth is awesomely orthodox: realistic exchange rates, balanced budgets and a favorable investment climate. Economists in the heterodox mode (and their progressive friends) might easily reject this advice, arguing that the working poor cannot be made to bear the burden of a decade of mistake s. But the evidence suggests that without an early return to orthodoxy they will bear an even larger burden because capital is mobile while labor is not.[6]

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[6]Some observers note that the labor-capital distinction describes the choices for fiscal adjustment in an overly narrow fashion. They note that taxation of immobile land has as yet not been used on any scale to avoid accumulating heavy tax burdens on labor.

APPENDIX

Table A-1 Indicators of Economic Performance
(Percent per year)

	Inflation	Growth p.c.	Inv./GDP	Nica/GDP
1960-80:				
Korea	14.3	6.3	23.4	-8.0
Philippines	9.7	2.8	22.9	-2.2
India	7.0	1.2	22.4	-1.3
Argentina	78.9	1.7	17.6	-0.1
Brazil	40.3	5.4	22.7	-1.8
Mexico	9.5	3.3	21.3	-1.0
1980-87:				
Korea	8.9	7.1	29.4	-0.9
Philippines	16.1	-2.1	22.1	-0.7
India	9.4	3.1	24.4	-3.5
Argentina	279.3	-2.5	14.2	3.5
Brazil	153.3	0.4	18.7	3.8
Mexico	69.5	-1.4	20.2	5.5

Note: Nica is the noninterest current account measured by net exports (excluding factor payments) in the national accounts.
Source:

Table A-2 Seigniorage, Growth and Inflation for Selected Countries

	1960-78			1979-86		
	Growth	Inflation	Seign.[1]	Growth	Inflation	Seign.[1]
Korea	9.3	13.8	2.2	6.8	10.8	0.5
Singapore	9.2	3.8	2.5	6.5	3.4	1.7
Malaysia	7.8	3.2	1.2	5.5	4.3	1.2
India	3.8	6.8	1.0	4.1	9.1	1.9
Philippines	5.7	8.4	0.8	1.2	17.9	1.1
Pakistan	3.7	7.6	1.4	6.7	7.5	2.0
Argentina	3.3	57.2	6.2	-0.5	282.3	11.1
Brazil	8.3	36.5	3.2	4.2	131.3	2.4
Uruguay	1.9	51.7	4.8	0.5	54.4	4.8
Mexico	6.6	8.0	1.6	2.7	55.3	5.4
Peru	4.6	15.2	2.6	0.8	91.0	8.4
Venezuela	5.6	3.3	1.1	-0.2	12.6	1.2

[1] Seigniorage is defined as the change in highpowered money as a percent of GDP.

Source: Fischer (1982) updated by the authors

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