INTEREST PAYMENTS AND EXTERNAL DEBT DYNAMICS:

THE CASE OF PERU

by

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INTRODUCTION

One of the most serious problems faced by the Latin American countries in the last years is the debt crisis. For that reason, the economic literature on this topic is abundant. However, most of the work has been concentrated in the global analysis of the debt problem and in the most important cases like Mexico, Brasil, Argentina and Venezuela, due to the magnitude of their debts.

The Peruvian debt is not of significant size, in comparison to those countries, but in relation to its GDP or its international trade, it represents one of the most serious cases in Latin America. The Peruvian case is also interesting because the government is implementing a new solution to the debt crisis by limiting its payments to a 10% of the exports. Historically, the Peruvian debt (with defaults and renegotiations), is an interesting case to be analyzed in determining the factors which affect the debt dynamics. That is precisely the objective of this paper.

The first chapter contains a brief survey of the different approaches to the debt dynamics. This chapter will give us an idea of all the elements which can affect the debt dynamic. In chapter II we will study the Peruvian debt from a historical perspective focusing our attention in the causes of all the debt crises recorded since 1824. Finally, special attention is given to the last two debt crises in chapters III and IV.

CHAPTER I

DEBT DYNAMIC MODELS: A SURVEY

In this chapter we will review the economic literature on external debt dynamic models. I do not pretend to offer a complete survey of the literature. The objective is only to determine which are the main elements that affect the dynamics of the debt and lead to crises or default by reviewing the main articles of the different approaches to the problem.

Since we are dealing with the dynamic of the debt in this paper I will use the concept of debt stability. We say that a debt is stable if there are endogenous or exogenous forces which make its rate of growth (or that of a debt indicator) fall over time. This condition guarantees that the time path of the debt will tend to an determined level. A debt is said to be unstable (and to lead to bankruptcy) if there are forces which make the debt grow without limit. By determining the elements which rule the debt dynamics we can identify the causes of a debt crisis.

The causes of debt crises are usually divided in two groups, external and internal causes. There is some discrepancy about the relative importance of each cause. It is obvious that this point has to be treated empirically, but we can see that a theoretical model which support an empirical test can be biased to one of this causes. Taking into account this point, and for methodological purposes we have divided the relevant literature into three

approaches: the balance of payments approach which, for construction, is very useful to identify the external causes of the debt; the saving-investment and fiscal approaches which allow us to analyze more carefully the internal sources of instability.

A. THE BALANCE OF PAYMENTS APPROACH

This approach has its origin in the traditional way to analyze the external debt of a country by looking at some ratios or indicators of solvency or debt capacity [1]. I call this approach "the balance of payments approach" because it focuses on the external performance of the country, and also because the models are built from the identity of the balance of payments. Simmonsen (1985), Dornbusch and Fischer (1985) and Cline (1985b) are the economists who have recently worked with this kind of models.

The principal indicator used in these models is the external debt-exports ratio. Starting from the balance of payment identity, we can write:

$$(I.1) \quad dD = iD - NICA - DI - K + R$$

where D = total external debt

dD = absolute change in the debt

i = average rate of interest on the debt

NICA = non-interest current account balance

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[1] See McDonald (1982).

DI = direct investment

K = exports of capital

R = change in official reserves

Following Simonsen's analysis, we can group the last four elements of the right expression and call it the resource gap (G). Then, we divide the transformed equation (I.1) by D, and considering that the rate of growth of the debt-export ratio (z) is : $dz/z = dD/D - dX/X$ (X is the total export of goods and services), we get the following relation, after some mathematical manipulation:

(I.2) $dz = (i-x)z - g$

where $x = dX/X$ and $g = G/X$.

Equation (I.2) is just an identity and it does not show any relationship of causality, but it can give us a first idea of the external debt dynamic through the time path of the debt-export ratio. First, we note that for the debt-export ratio to be constant ($z = 0$), it is necessary that $g = (i-x)z$. It means that if the interest rate on the debt is greater than the rate of growth of exports, the only way to avoid an increasing indebtedness is by having a surplus in the part of the balance of payments included in g. Thus, an initial conclusion from this approach is that the debt can increase continuously if the rate of interest rises over the export rate of growth (or the export rate of growth falls bellow the interest rate) and the external performance of the country reflected in g is so poor that:

$g < (i - x)z$.

The first weakness of this model is that it does not show clearly when the economy reaches a critical level of indebtedness, or how much time a positive dz can be sustained. This weakness comes form the ratio used in the model; we need some arbitrary criteria to determine the optimal level of that ratio. Perhaps, ratios like debt-output or debt services-export are better indicators, since they can show more clearly the debt capacity, liquidity or debt servicing capacity of the country.

The second point is that we must see this model as a first approximation to the problem. The model points out the elements which must be considered in the analysis but it does not determine the causes of the problem. A deeper investigation is necessary, and this model can be amplified for that purpose. Dornbusch and Fischer (1985) extended equation (I.2) and showed how this model can incorporate the effects of internal causes like the fiscal and exchange rate policies of the domestic government, and the variation of external variables like the interest rate and international prices. Equation (I.2) can be written as following:

(I.3) $dz = (r + pi - v - px)z - g = (r - v + t)z - g$ [2]

where r = real rate of interest

pi = world rate of inflation

v = rate of growth of the export volume

px = rate of inflation of export prices

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[2] More accurately, the expression in parentheses must be : $[(1+r)(1+pi)]/[(1+v)(1+px)]$.

Thus, equation (I.3) predicts that an increase in the real rate of interest (due, for example to an expansive fiscal policy and a monetary contraction in the U.S.), a reduction in the export volume (due to an international and/or national recession), a deterioration of the terms of trade (due to a relatively higher world inflation respect to the change in export prices or a real appreciation of the domestic currency) will all raise the z ratio, and, if this situation persists, could well lead to a debt crisis.

On the other hand, g captures the effect of factors like a change in relative prices, international or domestic recession, overvaluation of the domestic currency, expansionary domestic fiscal policy, capital outflows, etc. All these factors determine a reduction in the resource gap, that at the same time increases the indebtedness of the country.

As we have seen, this approach is very useful because it gives a schematic view of the problem. We can argue that it is not a model at all, it is just an identity. But it could be a fundamental part of a model or it can be transformed into a model by introducing some behavioral relationships. Cline (1985b) made an attempt in this direction by adding to a model similar to that presented here, one equation which explains the behaviour of exports. In that model, exports are a function of the GDP rate of growth of the members of the Organization for Economic Co-operation and Development (OECD) and the world inflation rate. In that way, Cline find a

simple relation between the debt-export ratio and these two exogenous variables.

One of the consequences of working with a simple model like this is that we can only isolate the channels and the causes of the debt crises and in some extent it is possible to specify some relationships, but with this model we cannot establish a complete relationship between internal causes an the debt, and between external an internal factors. In reality, the same external factors that explain the debt crisis affect the internal economic performance of a country and its macroeconomic policy. We must consider this model as a partial approach, focused only in the balance of payments, and it must be complemented with the analysis of other aspects of the debt like the role of the internal economy and the behaviour of the government.

B. THE SAVING-INVESTMENT APPROACH AND CATASTROPHE THEORY

1. The saving-investment approach

This approach has its basis in the view that the main cause of underdevelopment is the insufficiency of domestic saving and the scarcity of foreign currency. These two factors restrain the growth of the economy because either investment or the import of capital and intermediate goods cannot be financed. In this context the role of external credit is to cover the greater of these two gaps.

This approach can be explained using a Harrod-Domar model where output is directly linked to investment at a fixed proportion and a constant part of that output is saved. Since external savings has to cover the domestic saving-investment gap, there is a positive relationship between this variable and the rate of growth of the output. Now, part of this new output has to be allocated to repay the debt and to cover interest payments. With these elements it is easy to derive the time path of the debt or the debt-output ratio. Using this model, Solomon (1977) shows that the condition for a limit in the debt output ratio is that the rate of growth must be greater than the real interest rate.

But there is something more behind this condition. Avramovic et al.(1964) made a deeper analysis and pointed out two other key variables. The stability of the debt requires that the growth in output generates enough income to repay the debt but also it must increase domestic saving to reduce the saving-investment gap. Then, the first element to be considered is the efficiency in the use of foreign credit in the sense that it must be used in a productive way in order to maximize the rate of growth. This factor is also related to the productivity of capital. In general, the higher the productivity of capital, the greater the increase in output and the availability of resources to pay the debt and to reduce the saving-investment gap. At this point a second element plays an important role: the marginal propensity to save. If this coefficient is not large enough the saving-investment gap will not be reduced and therefore, the country will remain in constant or increasing indebtedness. So the greater the marginal propensity to save, the faster the reduction of the foreign debt.

We can also relax the assumptions about the constancy of the marginal productivity of capital and the marginal propensity to save. With these modifications we can incorporate the possibility that the marginal propensity to save tends to zero as foreign loans increase, or in the other way, that the efficiency in the use of foreign loans do not depend only on technological factors (which are constant in the short run), but also on the allocation of the loans between productive and non-productive activities.

Another important issue in this approach is the participation of the government. One way to introduce the government into this model is, as Kharas (1981) does, by assuming that it is the government who borrows abroad in order to finance its development plans. Implicit in this approach is the idea that the main cause of saving insufficiency in a third-world country is expansive government expenditure policies. The empirical evidence for different countries, shows that increases in debt goes with fiscal deficits in these countries. The government can use foreign resources to finance its current expenditures or investment. Obviously, the impact of foreign credits on the output through the supply side is less than in the case where all the foreign credits finance only investment, but now we have to consider the multiplier effect of government expenditures and the capacity to raise revenues through taxes by the government. All these considerations are going to be analyzed in the fiscal approach in the next section.

Another way to introduce the government, in this approach, is by keeping the assumption that only the private sector borrows abroad but support by

the government in the form of guarantees, assistance in payment negotiations, etc. is required. Freeman (1986) developed a model in that sense. He presents a demand function for government assistance by the firms, which is a function of investment and income. At the same time, assuming different propensities to consume at different income levels, the government affectis the aggregate demand through income transfers (output is demand determined in this model). Aggregate demand is also a function of investment and the level of income. The dynamics of the model are similar to that of the previous one in the sense that indebtedness has a stimulative effect on production. The difference is that, in this model, the incentive comes from the demand side. Thus, the key variables for stability are the coefficients which relate investment with government support, and aggregate demand with income, investment and income transfers. Freeman does not analyze the dynamics propierties of the model and the critical values of the coefficients for it to be stable, but he shows that a higher investment multiplier (in contrast to a higher marginal productivity of capital in the Harrod-Domar model) is the key variable for stability.

2. Catastrophe theory

Since Thom (1972) presented his "catastrophe theory", it has been applied to several problems in the social sciences. Caceres (1985) suggested the application of this theory to the debt crisis. A catastrophe model distinguishses two kinds of variables: behavioural and control. The model is not quantitative but allows to analyze the critical points where a small change in the control variables causes great changes in the behavioural variables: a catastrophe. Such sudden changes can determine different time

paths in the endogenous variables like for example: discontinuities or divergences, bifurcations (the trajectory of the endogenous variables in one way is different to the trajectory in the opposite way) and bimodal (the endogenous variable has two values for only one value of the control variable).

To have an idea of how this theory can be useful in the analysis of the debt crisis I have reproduced, with some modifications, one of the examples presented by Caceres (1985). We can consider investment as a behavioural variable which is a function of the domestic saving and the flow of foreign credit. High levels of investment with low flows of foreign credit typify a situation of solvency, while low levels of investment with high flows of external credit means insolvency or bankruptcy. A combination of high levels of investment and flows of credit could be potentially unstable since it can lead the economy to a catastrophe. Obviously, these three combinations depend on the debt stock, if the stock is low, a temporary high flow of credit does not lead the economy to a bankruptcy. Or in the other case, a low flow of credit could generate a crisis if the debt stock is very high.

To explain these cases we can use a three-dimension graph (see graph I.1 in appendix C), where investment (I) is represented on the vertical axis, while saving (S) and the increase in the stock of foreign debt (dD) are on the horizontal axis.

The upper surface of the graph shows the three regions mentioned above, as well as a fourth region of recovery. Suppose that the economy starts at a

point like E in the region of solvency where high levels of investment have been reached with only low external credits. If from that point investment starts to be financed mainly from external sources, the economy will move toward the region of instability. As the foreign debt increases, domestic saving may decrease because either the marginal propensity to save decreases with the increase in foreign credits or just because the debt service absorbs a greater part of the output (a reduction in the marginal productivity of capital or of the efficiency in the use of foreign credits can be other reasons). At the same time, there could be a feedback in the level of indebtedness if more credits are necessary to service the old debt. That is what makes the southwest region unstable. If that is the case, the economy will slide down (following the direction indicated by the arrow) and, when the economy is over its debt capacity, it will fall in insolvency and investment will be reduced drastically, since it is impossible to get new credits.

There are two ways to leave the area of insolvency. One way, which is called recovery in the graph, is to reduce new foreign credit drastically and then start a recovery by increasing investment, which is financed by domestic saving. Since in a position of insolvency new credits are necessary to pay the old debt. It maybe the only way to move northeast is by a default. Therefore, the initial trajectory of a recovery is a trajectory of default.

The second solution is a renegotiation. Since a renegotiation means a transitory alleviation in the payments, the economy will move in an easterly

direction from the corner of insolvency, and investment will suddenly increase (due to the new availability of resources). Therefore, the economy will "jump" to the higher surface of the graph, to a point like F. However, note that since with a renegotiation the level of foreign credit remains high, the point F will be in the zone of instability. The only way to exit that zone with success is by increasing domestic saving. If this does not happen and the conditions of the renegotiation means a heavy burden for the economy in the following years, then the most probable result is that the country will fall again into insolvency.

What is interesting in this analysis is that there is only one thing that the country must do with certainty: to increase domestic saving. This is the main recommendation of this approach. Together with this measure there are two alternatives: renegotiation, which is the fastest way to recover economic activity, but at the same time it entails more risk; or bankruptcy, which is the slowest way to recover but seems to lead teh economy through a more stable path. However, we have to note that this approach is not incorporating the cost of a default.

3. The Structuralist School

One point missing in the previous analysis is that there is a second bottleneck which restricts the development of the country: the foreign exchange. We know, ex-post, that the external gap (current account) must be equal to the internal gap (saving-investment). However, to achieve this equality some adjustment in the real sector is necessary in order to increase exports relative to imports. Thus, the stability of the debt

depends not only on the marginal propensity to save and on the marginal productivity of capital but also on the rate of growth of exports and imports. If the growth of the economy is import demanding and also inward oriented, the deficit in the trade balance will increase and, according to the balance of payments approach, the debt will rise. It is true that this is just another way to analyze the problem because a low marginal propensity to save is related to a high marginal propensity to import and low supply of exportable goods. However, there is an important difference, we know that in order to improve the external gap it is necessary for a reorientation in the internal economic activity. At this point, the structuralist school has more to say about this adjustment.

First, as Avramovic et al.(1964) have pointed out, at constant prices, the external gap probably has to be greater than the internal gap. What we have here is the typical transfer problem: the increase in exports can deteriorate the terms of trade, and this factor will reduce export earnings. Thus, real exports should increase further in order to compensate that loss. Second, the internal and external gaps are caused by internal rigidities which make more difficult the necessary adjustment to avoid an increasing indebtedness. Basically, there are three rigidities. The first one is related to exports; most of the borrower countries are exporters of raw materials. The demand for these products is highly dependent upon exogenous factors like world demand and international prices. While the production of this sector is weakly integrated to the rest of the economy or uses a more capital intensive technology (like mining, for example) so that any adjustment may cause an increase in unemployment.

The second rigidity regards imports. Usually the domestic sector demands imported inputs and capital in a constant proportion to the level of output. This is a critical point since, for stability conditions a high rate of growth is necessary, but at the same time this growth could worsen the trade balance, thereby generating a new source of instability. Finally, the third rigidity is related to investment. The point is how close is investment related to saving?, and how efficient is this investment?. Political instability and uncertainty in highly inflationary and recessive economies make investment to be governed by "animal spirits" rather than by economic criteria. Besides, serious price distortions bringabout an inefficient allocation of investment.

Thus, from the structural characteristics of the economy, we find several unstable forces which can lead to a debt crisis. Besides, these structural rigidities make any exogenous adjustment to stabilize the time path of the debt very harmful to the domestic economy. A real appreciation for example, or fiscal measures, can cause inflation, unemployment, low real wages and other social costs, without any significant improvement in the balance of payments.

C. THE FISCAL APPROACH

This approach derives from the initial debate about the effectiveness of fiscal and monetary policy. The argument that a fiscal policy not financed

with an increase in the money supply is not effective because it crowds out the private sector leads to the development of Keynesian models in order to analyze the long-run effects of a bond-financed increase in government expenditure. Ott and Ott (1965) and Christ (1968) were the first to analyze this problem using a model without interest payments. After these paper, more emphasis was put on the wealth effect of public debt on consumption and on the demand for money and the overall effects of interest payments. In genereal, the argument was that these factors have a destabilising impact on the economy. Blinder and Solow (1973) and Tobin and Buiter (1976) analyzed these effects and found out that under certain conditions fiscal policy is still effective.

The point is that in analyzing the effectiveness of a bond-financed fiscal expansion, the literature also deals with the public debt and the inherent forces in the economy which can stabilize it. Looking first at a closed economy, we can illustrate how these forces work, by analyzing the following budget constraint:

$$(I.4) \quad E + rD_{t-1} - uY = (D_t - D_{t-1}) + (M_t - M_{t-1})$$

This equation shows that the fiscal deficit (equal to government expenditure (E) plus after-tax interest payments (rD_{t-1}) less tax revenues (uY)) is financed by an increase in public debt ($D_t - D_{t-1}$) and an increase in the stock of money ($M_t - M_{t-1}$). The second term of the left hand expression tells us that the interest payments of the public debt is destabilising because it generates an additional deficit in the following periods. In this

model the only automatic stabilizing force can come through increases in tax revenues. It means that the expansionary effects of the government expenditures, and of the wealth and interest payment effect on consumption, if they are strong enough, can offset the negative impact of the interest payments and reduce the public debt.

In equation (I.4), we can also see that if these intrinsic stabilizing forces are not strong, the public debt can be stabilized by exogenous policy-induced forces. One of these policies, suggested in Tobin and Buiter (1976), is to reduce E as the interest payments increase so that the total expenditure remains constant. The other alternative is to follow an accommodating monetary policy. This policy will keep the rate of interest constant, eliminating the possibility of crowding out, and therefore increasing the expansionary effect of fiscal policy. Now, the deficit will be financed by bonds and money, and both are part of net wealth [3]; therefore, the wealth effect still exists. An accommodating monetary policy is more stabilizing than an accommodating government expenditure because the former is more expansionary.

Turnovsky (1977, Part II), Callimeri, Nguyen and Campbell (1984) and Coulombe (1985) analyze the stability of the public debt in an open economy and find that the public debt is unstable because with the opening of the economy the inherent stabilizing forces found in a closed economy disappear, because part of the deficit can be financed abroad, and the wealth and interest payment effects of the public bonds run out of the economy. On the

[3] If we do not accept the Ricardian Equivalence Theorem.

other hand, Coulombe points out that in an open economy a flexible exchange rate helps to balance the overall balance of payments, but not the current account alone, because this variable also changes according to the movement of capital; then a fiscal deficit partially financed abroad implies a current account deficit, and this disequilibrium will persist as long as the exchange rate can not solve it. With these conditions, all the adjustment has to come through fiscal and monetary policy.

According to Turnovsky (1978) and Van Ewijk (1986), the models studied before are not appropriate to analyze the dynamics of the debt because they do not allow the possibility of growth. These models are restricted to stationary cases where autonomous expenditure, labour supply, and the stock of capital are constant. They argue that in a growing economy there are more possibilities for the stability of the debt. Van Ewijk presents a dynamic model where there is a constant capital-output ratio. Assuming that capacity is always fully utilized, the rate of growth of the economy is determined by the rate of growth of the stock of capital. Because of this characteristic, this model is very close to the saving-investment models. The difference is that Van Ewijk's model incorporates the wealth and income effects of the public debt, the way income is distributed and, what is more important, a balance of payments restriction. The most important conclusion that emerges from this model is that in an economy where the interest rate is exogenously determined and the exchange rate is fixed, if the government fixes the level of expenditure, the condition for stability is that the rate of growth of the economy must be greater than the real interest rate. Interestingly, this condition is similar to Solomon's (1977) condition in a saving-investment

model. However we must say that Van Ewijk's analysis is limited by the assumption of constant purchasing power parity. This assumption does not allow to analyze the relationship between the government budget, the composition of the balance of payments and the exchange rate.

The advantage of the fiscal approach is that it points out some inherent stabilizing forces in the economy and the role of fiscal and monetary policy as stabilizing elements. The problem with this approach is that it does not take into account the transfer problem. Specifically, the model does not deal with the problem of how to translate fiscal revenues into foreign currency, in order to pay the debt. Here, again, we have to take into account all the necessary adjustments in the productive sector in order to generate the necessary increase in the flow of foreign currency.

D. GENERAL COMMENTS

As we have seen, there is a commonality, rather than a discrepancy among the three approaches analyzed above, and the conditions for stability of the debt can be established in these three areas. The balance of payments approach points out the existence of external factors (increase of the rate of interest, world recession, deterioration of the terms of trade, etc.) which increase the debt through increases in interest payments, and the worsening of the resource gap. However, it also shows that there are internal factors which affect the stability of the debt through the resource gap (or, more specifically the trade balance).

The saving-investment approach and the fiscal approach give us a better view of these internal factors. A deficit in the current account is related with a negative private saving-investment gap and a fiscal deficit. The stability conditions are linked with the effect of the foreign credits and the interest payments on these two internal gaps. We know that the interest payment of foreign debt has a destabilizing effect, so that the stabilization forces have to come from the impact of foreign credits on the the two internal gaps.

Foreign credits can finance consumption and investment. We can consider that in the real world both the private sector and the government can consume and invest. The increase in consumption and investment has an expansionary impact on domestic output from the demand side of the economy, and investment also, through the supply side. The increase in output will raise saving and fiscal revenues [4]. Thus, the key variables are the distribution of the flow of credits between consumption and investment, the marginal productivity of capital and the marginal propensity to save (which at the same time determines the expenditure multiplier).

The three approaches do not take in account the transfer problem which has three aspects. The first one is how does the government (or a debtor in general) raise the money to pay its debt, from a growing economic activity? Second, how can this income be translated into foreign currency? This

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[4] An increase in output does not necessarily increase domestic income in the same magnitude, because of the presence of foreign factors. This is also a destabilizing factor, because payments to foreign factors worsen the current account.

implies the problem of how resources can be reallocated to the export sector in order to increase export production? Third how can the increase in export production be translated into export earnings? Analyzing this problem in section I.C we have seen that in underdeveloped countries there are structural rigidities which play a destabilizing role because they do not allow for a rapid adjustment of the internal economy.

The fact is that in countries like Peru, the external debt is mainly a public debt. Public debt is mainly external debt. This rules out any positive wealth and interest payment effect. Therefore the stability analysis has to be based on the variables mentioned above, and in the role of monetary, fiscal and exchange rate policies.

One point not considered in the three approaches is that the supply of foreign credit is not completely elastic. In reality, the international banking system restricts its credit if the risk inherent in the country is high. The inherent risk in a country is a function of the balance of payments position, its macroeconomic performance and political stability. Therefore, we can say that in some way the supply of foreign credits is endogenously determined.

CHAPTER II

HISTORICAL PERSPECTIVE ON THE DEBT

The objective of this chapter is to provide an historical view of the debt in Peru. This will be a brief analysis which starts from the first debt crises of the republican history of the country in 1826. There are not too much data available for that period, but there are historical documents which provide very important information in order to analyze the determinants of the debt dynamic [5]. We will see that low rates of growth, large fiscal deficits, redustions in export earnings and adverse international conditions are permanent factors in all the debt crises. The state of the technology in the international financial system, internal political conditions and the support provided to the creditors by their own government determined the way these crises were solved.

A. 1826 - 1931: A CENTURY OF DEFAULTS

During the independence war Peru had to face large expenditures which exceeded its budget possibilities. In order to finance that expenditure the government issued bonds for 1.8 million pounds (the domestic currency of

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[5] The references used in this chapter, which provide more detailed information about the history of the debt in Peru are: Thorp (1980), Cline (1981), Friedman (1981), Stallings (1985), Central Reserve Bank of Peru (1984 and 1985c) and Economy and Finance Ministry of Peru (1986).

that period) that were allocated in London during the period 1822-1825. The chaotic situation of the domestic economy after the independence war and its incorporation to the new international order, and the difficulties to allocate new bonds in the British financial market were the causes of the first debt crisis. The total debt of the country, in 1826 was 1.8 million of pounds while the debt service represented 20.8% of export earnings [6]. That is why the government decided not to continue paying the debt.

The creditors, a large number of individual holders of the Peruvian bonds, protested for this decision, but they were not helped by the British government. It was in 1848, when the export earnings of the country started to grow faster because of the exportation of bird manure, when the Peruvian government decided to reinitiate the payment of the debt. This measure was motivated for the government's desire to recover the access to the international financial markets.

During the period of prosperity generated by the bird manure the country recovered its credit worthiness in Europe. The government started to accumulate new debt,which at that time, was the largest Latin American debt. The funds were used to finance the construction of a big network of railroads, some irrigation projects and debt payments. Very soon, and before the railroads were finished, the servicing of the huge debt started to absorb all the revenues generated by the exportation of bird manure. By 1875, the absence of new revenues, which were supposed to be generated by

[6] At that time, debt services were equivalent to 55.4% of fiscal revenues (Stallings 1985).

the railroads, the large government expenditures, the fall in the export earnings and the difficulty to get new credits[7] determined the accumulation of a debt of 35 million pounds and a debt service equivalent to the 25.3% of export earnings.

The government, arguing that the national interest was paramount, decided to suspend the payment of the debt service. The British bond holders again protested by closing any access to their financial market. The war with Chile in 1879 interrupted the claims by the British government until 1890. In that year, the Peruvian government and the bond holders arrived at an agreement: the bonds were changed into claims which gave to the holders the right to control and operate the railroads and the maritime transportation through the Lake Titicaca. A concession for the exploitation of the bird manure and 5,000 acres of land were also given to the bond holders.

During the Great Depression of the 1930's, Peru again faced difficulties with the payment of its debt. The total debt of 1931 was US $ 123 million in the form of bonds held by American investors. This debt was accumulated during the last 11 years of Leguia's government and it was contracted to finance an ambitious modernization plan led by the government. Government investment was concentrated in infrastructure which (as in 1876) did not generate the income necessary to pay the debt. Other familiar factors: fall in export incomes, difficult access to American financial markets and government overspending, were also present in this crisis.

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[7] Only 22 million pounds of the total emission of 1872 were received by the government, because the British market was not very receptive to these bonds.

In 1931, the president Sanches Cerro decided formally to suspend debt payments. The generalization of the debt crisis in Latin America, the large number of creditors without significant power and the lack of support by the American government resulted in the protests of creditors not having any effect. Only two decades after, there was an agreement in order to continue the payment of the debt, the old bonds were replaced for new ones with a period of 45 years and a 3% interest rate (the original debt had an interest rate of 7 and 7.5 %).

It is interesting to observe, from these three cases of default, that the only consequence for the country (registered in the documents analyzed in this paper) seems to be reduction of the access to the international financial markets. We must note however, that the situation of default was only temporarilly because after some years, the need for new credits forced the government to renegotiate its debt.

B. 1968-1984: THE PERIOD OF RENEGOTIATIONS

Since 1950, with the expansion of international trade within the Bretton Woods system and the consolidation of the US dollar as the international currency, the international banking system (IBS) started to extend its operations to Latin America on a very small scale. In this new environment, the Peruvian debt started to grow faster. In 1965, the government obtained a credit for US $ 40 million from a group of four American banks. These funds

were used to finance an expansion in government expenditure and investment. In the following years the government had serious difficulties reducing the growing fiscal deficit which led the economy to a crisis by 1967. A huge outflow of capital - a new phenomenon in the context of a debt crisis - and the reduction in the foreign reserves aggravated the balance of payments deficit. In 1968, the debt service was twice as large as it had been in 1965, and it represented 16% of export earnings. In this event, and for the first time in his history, Peru went to seek a renegotiation. For that purpose the government had to sign an agreement with the IMF. This agreement considered a reduction in the fiscal deficit and the restriction of internal credit. The effect of the renegotiation was to reduce the debt service-export ratio to 9%.

C. THE PRESENT DEBT CRISIS

In October of 1968, at the end of the renegotiation process, a military revolution occurred and the new rulers started to implement very important changes in the structure of the country. The government's objective was to eliminate the dependency on the external sector and to develop a strong and modern national economy. In this sense it followed an import-substitution oriented plan of development giving a great protection to the industry by high tariffs, import prohibitions and fixed exchange rates. At the same time, the state started to have more participation in economic activity. With the creation of several public enterprises and the implementation of

large investment projects concentrated in the export sector (oil and minerals) and agriculture, the state became an important economic agent.

The implementation of this ambitious plan demanded large amounts of credit. This great demand faced a particular condition in the supply of loans by the IBS. After 1970, the IBS expanded its operations very quickly. The regulation in the US (limits on the interest rate paid for time deposits and high reserves requirements) caused an outflow of capital from the US and the formation of the Eurocurrency Market (EM). Later, in 1973, with the oil shock, this market received a great flow of capital which increased the supply of loanable funds. Very soon the IBS increased its loans to Latin America. In the case of Peru, the negative reputation of the country as debtor was forgiven due to the good perspectives of the country as a potentially new industrialized and oil exporting country.

The credit in this period, differed from the fixed-interest-rate bonds of the 1930's in that it had floating interest rates plus a spread which was to be adjusted according to the characteristics of the borrowers. Another difference is that now the credits were distributed among different banks. Besides, given theses characteristics, the banks developed an ability to negotiate collectively with each country.

1. Evolution of the problem

Given the economic policy of the government and the characteristics of the IBS during the period 1970-1975, the public debt started to grow very quickly. In 1971, the public debt grew only in 5.5%, but between 1972 and

1975 it grew at an average rate of 32.9% per year. The use of these funds was concentrated in investment projects (50%) with long-term maturity.

Until 1974 the economic program fo the government was working very well, the rate of growth was about 6 percent per year and the inflation was below 10%, one of the lowest in Latin America.

In 1975, the first balance of payments problems appeared. In the real sector of the economy, the growth of the industry largely dependent on the foreign capital goods and intermediate goods, generated a big demand for foreign currency while on the supply of it fell because the exports stagnated due to a fall in the international prices of Peru's exports. On the financial side, it became more difficult for the government to get more funds. At the same time, it was also difficult to service the debt due to the reduction of our exports earnings.

2. The renegotiations

The new government, which ruled the country since 1975, followed an orthodox program in order to solve the crisis. One of the first tasks was to recover balance of payments stability by refinancing the debt. The first renegotiation was relatively easy. Given the characteristics of the credits mentioned before, the banks did not put up any objections and accepted the extension the credits for US $250 million, without the IMF's "seal of approval". The government, on the other hand, had to devaluate the sol by 31% relative to US dollar,and raise taxes and the prices of electricity and

transportation, in order to equilibrate the external and fiscal constrains.

For Peru, the situation was becoming dramatic. In 1977, the government refused to do the adjustments suggested by an IMF commission. At the end of 1977, the situation was even worse, net foreign reserves were US $-1100 million, the balance of trade was negative, GDP fell by -1% and the rate of inflation was rising. Besides, the IMF suspended its credits and sugested the banks to do the same with the credit of US $250 million obtained in the last year.

Finally, in 1978 Peru accepted the IMF conditions taking severe measures: devaluation of the currency (15%), a crawling peg system of daily devaluation, rise in the prices of fuel (60%), increase in the prices of milk and bread (40%), elimination of subsidies, new taxes, increase in interest rates and reduction of government spending. From that negotiation, Peru obtained a one-year roll-over for US$ 185 million.

This loan did not help too much, and the perspectives were still negative. By November of 1978 Peru asked for a renegotiation in the Paris Club. As a result of that meeting, the country got an alleviation of US $211 million for 1979 and US $248 million for 1980, of the services corresponding to the debt with 14 governments members of the Paris Club. The interest rates for these renegotiations varied between 2.7% and 11% according to bilateral agreements with each of the 14 governments. Simultaneously, negotiations with the IBS were initiated. The alleviation with the banks for

the two following years was US $363 million and US $359 million respectively. The interest rate for the alleviation was the LIBOR plus 1 7/8%.

In 1979, the situation became very favourable. Increases in the prices of Peru's main export products generated an unusual and unexpected increase in earnings. The net foreign reserves changed from US$-1.1 billion in 1978 to US$0.6 billion in 1979, and US$ 0.25 billion in 1980. For this reason the government renounced the renegotiations of 1980 with the members of the Paris Club and prepaid the roll-over of 1978, the alleviation of 1979 with the IBS and all the short-term debt of the Central Bank. Despite these repayments, in 1979 the long-run debt increased in US $4715 million, reflecting a net alleviation of US $371 million and the transformation of the short term debt of the public enterprise Petro-Peru into a long run credit.

In 1981, there was a change in the government. The new government, excessively optimist, implemented a new expansionist program. It liberalized international trade, eliminating import prohibitions and reducing tariffs. These measures were disastrous for the domestic industry. Imported goods competed with domestic goods inefficiently produced by the domestic industry causing a deep recession. The balance of trade again became negative. This problem was worsened by the fall in the international prices of our exports, and again in less than 1 year the country was in crisis.

In 1982, the international prices of Peru's export products fell by 25%. The government asked for the IMF assistance and got 200 million SDRs of a Compensatory Financial Service and 650 million SDRs of Amplified Facilities. The conditions for those loans were the reduction of the external deficit by accelerating the rhythm of devaluation and restricting the internal credit from the Central Bank to the government. Also the government accepted to reduce the fiscal deficit to 4.2% of GDP. This aid, plus new credits from the IBS helped to alleviate the debt problem temporarilly.

In 1983, the government continued with the economic program approved by the IMF in 1982. The austerity measures were more severe. The rate of devaluation was accelerated, the government expenditure was reduced as well as the internal credit to the government, the prices of public services and goods produced by public enterprises were adjusted continuously (specially the price of fuel) and wages were controlled. This austerity, together with a natural disasters and reduction in export earnings (due to the fall in the international prices and the protectionism adopted by the US against the Peruvian textiles) caused a dramatic fall of 12% in Peru's GDP.

At the beginning of that year, a drastic fall in the international reserves was expected, due to the concentration of the debt service (equivalent to 68% of the exports). Thus, the government had to ask for a new renegotiation of the debt.

As a result of the renegotiations with the IBS the country got an alleviation of US $309 million for 1983 and US $92 million for 1984. The interest rates corresponding to the amount renegotiated were the LIBOR plus 1 1/2% or the Prime Rate plus 1 1/4% for the short-run credits and LIBOR plus 2 1/4% or Prime Rate plus 2% for the long-run credits. The IBS accepted to maintain the flow of new credits to the country and lent US $450 million.

Peru also renegotiated with the members of the Paris Club in April, 1983. The amount renegotiated was US $459 million for 1983 and US $197 million for 1984, corresponding to 90% of the amortization and interest of the debt of the period May 1983 - April 1984. In 1983 the country also renegotiated its debt with socialist countries. The amount rescheduled was US $256 million. It is important to note that the agreement with these countries considered the possibility to service the debt with exportable goods.

The dramatic fall in GDP reduced fiscal revenues considerably and, as a result of that, the fiscal deficit in 1983 was equivalent to 11.8% of GDP. This gap was financed mainly by foreign credits which were used to restore the areas damaged by natural disasters. For that reason the long-run public debt grew in 24%. The reduction in export earnings and the outflow of short-run capital were compensated by increases in the debt and a drastic reduction of imports (through devaluation and higher tariffs).

In 1984, this critical situation persisted. The alleviation obtained in the renegotiations of the previous year was not enough and a new renegotiation was necessary. That is why at the beginning of the year, after

brief renegotitations, the government arrived at a pre-arrangement with the IBS. According to that arrangement the amounts renegotiated in 1983 for this year were confirmed an additional US $527 million was refinanced. The financial conditions for the renegotiation were better than in 1983: the spreads over LIBOR and Prime Rate were 1 1/4% and 1% respectively for short-run credits; and 1 3/4% and 1 1/2% for long-run debt. A similar pre-agreement with the Paris Club considered an additional alleviation of US $492 million.

All these pre-agreements were conditional on a final agreement with the IMF. But this agreement was never signed because of the failure in meeting the economic targets established by the IMF and in paying the debt not renegotiated.

In April, 1984, the government got an stand-by of US $250 million from the IMF. The fund substituted the amplified facility of 1982 and a compensatory loan for US $79 million. The conditions for the agreement considered certain targets regarding the fiscal deficit, the level of reserves, new foreign credits, the internal credit and level of external indebtedness of the National Bank and Financial Development Corporation (COFIDE), the financial institutions of the government.

The persistence of the negative international factors since 1983 and the internal recession and inflation made it impossible for the government to reach the fiscal deficit target. The IMF's answer was to stop the disbursement of the stand-by. For the same reasons the government could not

pay all the service corresponding to the debt not refinanced. By September the accumulated not-paid service was around US $180 million.

This behaviour continued to 1985. The debt accumulated for non-payment was around US $300 million. For that reason it was impossible to get new credits. Besides, the proximity of the presidential elections made the IBS to postpone all the renegotiations until the new government was established. The projections for the year were very pessimistic. It was calculated that the debt service would absorb all the export earnings for that year. By the middle of the year the government could service the debt for an amount equivalent to 16% of exports only.

3. The 10 percent rule

In July 1985, the new government announced officially its decision of paying the debt service for no more than an amount equivalent to the 10% of its export income (the 10% rule). Besides it rejected any assistance and negotiation with the IMF, and decided to apply its own economic program of reactivation [8].

The 10% rule was adopted as a temporary measure for the period (August 1985 to July 1986) in order to "... stop the negative transference of resources to abroad giving a period of time to put the economy in order to present feasible alternatives of negotiation to our various creditors..." [9]. This measure did not mean a moratorium but only a unilateral decision to

[8] See chapter IV section E.

[9] See the report by the Economy and Finance Ministry (1986).

postpone the payment of the debt. In March 1986 Peru initiated negotiations with a bank's committee, and this situation was practically formalized and even more, some banks accepted payment in Peruvian currency (intis) and products. Peru, in a signal of its willingness to pay its debt, made a payment of US $17.8 million corresponding to the interest owed for 1984.

The 10% rule is also discriminatory. It includes only international organiations and governments (with exception of Latin American organizations and governments), the IBS and suppliers. It does not include socialist countries because they accepted payment in products. There was also a differentiation among the creditors included in the 10% rule. More preference was given to creditors who guaranteed a positive inflow of capital. In this sense, in the period August 85-July 86 almost 75% of the payments within the 10% of the exports were paid to international organizations. Without including the IMF, the debt with all the international organizations was paid almost normally. The IMF, due to the treatment given to its debt, qualified Peru as a non-eligible country to receive new credits from that institution. The second creditors in preference were the governments and official agencies who received 11% of the resources assigned in the 10% rule. The IBS and suppliers received the other 14%.

CHAPTER III

ANALYSIS OF THE DEBT DYNAMIC: 1971-1985

In this chapter we will analyze the dynamic of the debt within the period 1971-1985 which includes the last two debt crises of Peruvian history. We will start the analysis by focusing our attention on the balance of payment in order to determine the relative importance of the interest rate, the rate of growth of exports and resource gap in debt growth. This first approach (which follows Simonsen's methodology) will help us calculate the importance of the external shock in the debt crisis. The role played by the renegotiations of 1977-78 and 1983-84 in the debt crisis will also be analyzed [10].

Looking to the general indicators of the debt showed in table III-1 [11] we get a general idea of the debt evolution. We can notice that the z ratio (total debt/exports) does not have an explosive path. If we set 1976-78 and 1983-85 as the periods of crisis, we can see that during the crisis, the z ratio is higher than average. However, it is also clear that in the second period, when the crisis is worse, the z ratio is smaller than that during the first period. These facts show that the z ratio is only an indicator of

[10] The following references were useful for developing chapters III and IV: Cline (1981), Enders and Mattione (1984), Dornbush (1985a and 1985b), Central Reserve Bank of Peru (1984 and 1985c), Jimenez and Nell (1986), Roca and Priale (1986) and Ffrench (1987).

[11] For tables and graphs see appendix C.

the debt evolution but it is not a clear signal of a situation where the debt capacity or payment capacity of a country is weak.

The debt service-export ratio (SE) and the total debt-GDP ratio (DP) are more clear indicators of a crisis. In table III-1 we see that both ratios have an increasing tendency showing that the debt problem was becoming more serious. From the average value of the SE ratio during the first crisis of 1976-78, (45.9%) we can deduce that a debt service representing more than 40% of exports is very difficult to stand for the Peruvian economy. If that limit is accepted, then Peru has been in a critical condition permanently since 1976 because since that year the SE ratio was over the critical level[12]. During the intermediate period 1979-82 the crisis was not manifested in payment difficulties because some other measures were taken to support the high payments. One of those measures was renegotiations. If we compare the SE ratio which consider the normal service with the SE ratio after renegotiation (see table III-1), we see that in the period of evident crisis 1976-78, 90% of the service was paid normally; in the intermediate period of "veiled" crisis (1979-82) only 83% of the service was paid as a result of renegotiations. In the second crisis (1983-85) the alleviations due to renegotiations were 65% of the total debt service but it was not enough to stand the crisis.

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[12] In 1973 the SE ratio was also over its critical value but, in the context of easy credits the debt was automatically renewed. Usually, in this process long run credits were replaced by credits of shorter maturity which caused a concentration of payments in the following years.

In conclusion we can see that an increase in the z ratio means instability but it does not necessarily turn into a crisis because some adjusting measures or offsetting factors can occur. In the next sections we will try to identify some of these factors.

A. DEBT DYNAMIC

We can observe that during the periods of evident crisis, the z ratio falls or decelerates its growth (see graph III-1). It is also clear that in the years preceding to the crisis and inclusive in the first year of the periods of crisis (1975-76 and 1982-83) the z ratio increases more than the average.

In order to determine the factors which affect the pattern of the z ratio we can use Simonsen's methodology by analyzing the rate of interest (i), the rate of growth of exports (x) and the resource gap (See graph III-1). It is clear that the z ratio has two cycles: 1972-76 and 1977-85. There is a perfect correlation between the z's cycle and the difference between the rate of interest on the debt and the rate of growth of exports: this difference is negative when z declines and positive when z increases. The resource gap (g), on the other hand, has a defined pattern also. During the first cycle of z, g is negative, contributing to increase the indebtedness of the country, but during the second cycle it is positive (excepting 1982), showing that this factor was important in alleviating the last debt crisis.

From this first approach we deduce that the relation between the rate of interest on the debt and the rate of growth of exports had a decisive role in the dynamic of the debt and that the resource gap contributed negatively in the first period (1972-77) and positively in the second period (1978-85), but in any case it was not strong enough to offset the effect of the first factor. A further analysis of these two factors is necessary. We would like to know what is the role of the real interest rate and international prices on the first factor, and the role of a number of factors, which can be classified as external and internal shocks, on the second one.

1. International prices, interest rate and export volume

In table III-2, we present the rate of growth of export volume and prices and the relevant inflation rate for Peru, the real interest rate and the change in the terms of trade. During the first 10 years of the period of analysis the real rate of interest was negative or very low (when positive). High rates of inflation and an excess supply of loanable funds are considered as the causes of this phenomenon. During the late 1970's the supply of credits was more restrictive but high rates of inflation kept real interest rates at low levels. In the last five years the nominal rate of interest rose and at the same time the rate of inflation fell considerably. Many analysts agree that the expansionary fiscal policy and restrictive monetary policy of the U.S. was the cause of this result.

The rate of growth of exports has a more cyclical behaviour than the nominal rate of interest. In the first four years of the 1970's the export

volume fell on average but a rapid increase in export prices and low rates of interest helped to reduce the level of indebtedness of the country. In the first period of expansion of the z ratio, the rate of growth of exports was negative while the interest rate was practically at a constant level. Decreases in international prices were the main cause of this result.

For the second cycle of the z ratio we find the same export price behaviour. It increases during the declining phase of z and decreases during the expansionary phase of z. The difference with respect to the first cycle is that in this opportunity the rate of interest is higher. We note also that export volumes had high rates of growth during all of this period, with exception of 1980 and 1983. Thus, it is clear that it is the rate of growth of export prices which determines the cycle of the debt and that the rate of interest contributed in making the last cycle more serious and in generating the crisis.

2. External and internal shocks and the resource gap

We consider as external shocks the change in the terms of trade, the increase in the rate of interest and change in the world demand for Peru's exports. In our analysis we will estimate the magnitude of the first two shocks only. It does not mean that the third one is not significant. The main reason for excluding the third factor is the difficulty in measuring this shock by the evolution of the export volume without including in it other internal factors and exchange rate policies.

A usual way to estimate the effect of the world demand reduction is by calculating an initial relative participation of the country's exports on the world's exports and assume that this ratio would have been constant during the period if any change in the world demand had not happened. The problem is that in the case of Peru, the external demand shock can be overestimated for years like 1973, 1980 and 1983 where special internal factors caused a drastic fall in the supply of exportable products. On the other hand, it has been observed in the mining sector that, due to the existence of high fixed costs, firms increase their exports during the periods of low international prices.

The terms of trade effect (TTE) has two components: the export price effect and the import price effect which are originated for the deviation of the prices from their respective trend, given trade volumes [13] (these calculations are presented in table III-3). The TTE confirms what we observed about the relation between the debt cycle and the international prices. There is a negative TTE during the periods of evident crisis. During the first crisis, the accumulated TTE was -US $230.5 million and in the second crisis it was -US $1366.3 million. Clearly the TTE was stronger during the second crisis.

But from the point of view of the debt dynamic there is not a direct relation between the TTE and the evolution of the z ratio through the resource gap. We have observed earlier that the variable g was mainly

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[13] The explanations for the calculation of all the external effects are presented in appendix B.

negative during the first cycle of z, specifically during the 1973-77 period. With the exception of the last two years of the period the TTE effect was positive. It means that the resource gap deficit did not come from an adverse evolution of the terms of trade.

In the second cycle, as we already know, for the years 1979-81 the terms of trade had a strong positive effect which helped to restore balance of payments equilibrium and to withstand the debt crisis. In the last two years this changed completely and the TTE became very negative, contrasting with the positive resource gap of those years.

What is very interesting to show is that the accumulated effect of the TTE for all the period of analysis was positive (US $1036.8 million). It means that if international prices had not departed from their trend, the external debt would have been greater than its actual level.

The interest rate effect (IRE) is caused by the deviation of the nominal interest rate from its trend, given the debt stock. This effect is clearly negative. The accumulated IRE was -US $53.1 million and it was concentrated in the period 1978-83, just before the last crisis. In 1984 and 1985 the IRE is positive but small in relation to the negative TTE (see table III-4).

In general the TTE was stronger than the IRE. Then, being the accumulated TTE positive, the total external shock (TES) had a positive impact in the debt dynamic. The debt crisis must be considered as a coincidence of high

rate of interest with the cyclical peak of the debt caused by the fall in export prices.

Since the resource gap deficit of the first cycle of the debt was not explained by external shocks and the resource gap surplus of the second cycle was not offset by the negative external shock of the last years, the internal factors must have an important role on the debt dynamic.

One proxy for the internal shocks can be obtained by substructing the external shocks from the balance of payments behaviour. If after substructing a negative TES, the non-interest current account (NICA) is still negative, it means that internal factors contributed to increasing the indebtedness, and eventually to a debt crisis. But if the NICA becomes positive, it means that the internal factors were offset by the TES. The inverse analysis is true for a positive TES.

Usually internal shocks are related to the adjusting measures taken by the government in order to equilibrate the balance of payments; this policy consists mainly or reducing aggregate demand and devaluating the domestic currency. The relation is derived from the balance of payments and fiscal approaches and from the idea that the crisis is caused by an excess demand for goods. If we consider the saving-investment approach and the role of these two variables on the debt dynamic, the internal shock can not be related to government behaviour only, but also to other factors like economic growth, the marginal propensity to save and to import, the

productivity of capital and so on. All these aspects of the problem will be analyzed in the next chapter.

For the moment we will put our attention on the overall internal shock as it was defined before. Graph III-2 shows the external shock-adjusted debt indicators compared with their respective normal values. The adjusted NICA shows what we said before: the external shock affected the magnitude of the deficit (surplus) but did not change the sign of it, with exception of 1980. In periods when the TES is negative, the adjusted NICA is usually positive showing that there were some internal adjustments which helped bring about a positive result. In those years (1971-72, 1978 and 1984-85), external shocks are the main causes of the increase in the debt and the debt crisis. In 1977 and 1982, when the TES is also negative, internal factors contributed to worsen the resource gap deficit (the adjusted NICA is negative).

In the periods when the TSE is positive, most of the time the adjusted NICA is negative (1973-76 and 1980-81). This could be an indicator that during periods of relative prosperity the country (or the government) over-increases its expenditures, while when export prices decline it has to cut expenditures drastically. Only 1977 and 1982 are the exceptions for periods of depression, and 1979 for the period of prosperity.

In conclusion, in the crisis of 1976-78, there was a combination of an initial negative internal performance of the country with a later worsening of external conditions. During the second crisis of 1983-85, there was mainly a negative external shock which was stronger than all the internal

efforts of the country to adjust to the adverse environment. With respect to the debt dynamic, the negative resource gap of the first cycle is explained mainly by a negative internal performance of the country expressed in a negative adjusted NICA. The declining phase of the second cycle is due to an extraordinary positive external shock combined with the effects of the internal measures taken after the first crisis. The excessive optimism caused by this factor led the country to follow expansionary policies which in turn, explain the initial increasing phase of the second cycle; finally, a negative external shock is the only cause of the increase of the z ratio in the last two years.

Graph III-2 also presents the adjusted z ratio and the SE ratio. We note that until 1979 the external shocks did not significantly change the ratios with respect to their normal values. It is after 1979 that the external shock is more important (during the period 1979-83). It confirms that the external shock had an overall positive effect on the debt.

One final interesting point is that, during its second cycle, the z ratio did not reach the same levels as in the first cycle. However, the second crisis was more serious than the first one. Since what differentiates both cycles is the interest rate, it means that, whatever are the determinants of the level of z are, these levels are not compatible with the interest rates of the second cycle.

B. THE EFFECTS OF REFINANCING

The relation between borrowers and lenders is also important for the debt dynamic, especially when a country has difficulties paying its debt. Four alternative results can be obtained from this kind of situation. The lenders can accept to give more credits to the country at market conditions, there could be a renegotiation, the borrower can decide to limit its payments to his possibilities or, in the limit case, the country can declare a moratorium. The first two alternatives are a result of negotiations and agreements between the two parties, and the last two alternatives are unilateral decisions taken by the borrower.

In the Peruvian case, in the last two decades the first three alternatives have happened. In the first years of the 1970's, specifically between 1973 and 1975, Peru had some problems in paying its debt. It was just the beginning of the period of great increase in the indebtedness in most of the Latin American countries and the banks did not interpret the Peruvian case as a serious problem of liquidity. Then, in the context of easy credit the country did not have any problems in getting new credits to sustain the rhythm of internal growth and the level of expenditure. We already know that since 1976 the behaviour of lenders has changed drastically and the supply of credits was reduced. So the other alternative was to renegotiate the debt. This was the alternative used between 1977-84. It seems that in 1985, after on-going renegotiations, it could not continue being the best alternative given the seriousness of the crisis, and the government decided to limit its payments (the 10% rule).

For the debt dynamic, the first two alternatives are similar in the sense that they generate new credits for the country. As a flow of credits its dynamics are ruled by the same factors which rule the dynamics of the overall debt. But they can have different effects due to the different conditions of the credits. In the particular case of Peru, the new credits received during 1975 in order to service the "old" debt, had a similar cost, in terms of interest rates, but the period of maturity of these credits was shorter than that of the credits received in the previous years. This fact is shown in table III-5 where the composition of the new credits gootten by the period of maturity is presented. We can see that in 1975 the relative participation of credits with less than 5 years of maturity increased to 42.8% of the total concerted credits. This wrong debt policy of the government is considered as one of the causes of the debt crisis of the next three years since it concentrated the debt service in that period.

The renegotiations for 1979-80 had better conditions in terms of the period of maturity: 7 1/2 years for 1979 and 6 1/2 years for 1980, with 3 years of grace, for the debt renegotiated with the Paris Club; and 4 and 6 years (including 3 years of grace) for the debt renegotiated with the IBS. But the interest rates for those credits were higher than the market interest rate due to the fees and spreads. The higher interest rate did not cause too many problems in the following years because positive external shocks permitted to repay part of the credits obtained in those renegotiations.

When a country has continuous problems of liquidity, it is considered as a risky borrower by the banks, so when it asks for new renegotiations the banks try to cover that risk by increasing the spreads on the interest rates. The renegotiations of 1983 and 1984 were subject to these conditions, as we have seen in the previous chapter. In terms of equation (I.2), renegotiations affect the debt dynamic through the average interest rate. Renegotiations give a temporary alleviation in payments, but in the following years the resulting higher interest rates will effectively increase the debt and also the cost of servicing that debt. Table III-6 gives us an idea of the effects of the renegotiations of 1983-84. We see that in the first three years there is a positive net alleviation of the payments, but at the same time that renegotiation caused a concentration of the service in 1984 and 1985 (specially because of interest payments), and a negative alleviation begining in 1986.

If the debt problem is just a temporary problem of liquidity, the net alleviation of the first years and the internal adjustment can help to solve the crisis, and the negative alleviation of the following years can be covered without too much problem. But if there is a problem of insolvency, or a persistent situation of crisis, as in the case of Peru, that negative net alleviation represents a future problem for the country because it will need to ask for new credits or renegotiations. Then, the debt acquires its own dynamics and the country falls into a vicious circle of indebtedness. As we will see in the next chapter, there is evidence to suggest that the last debt crisis in Peru is in part explained by this factor.

Finally, to put a limit on the debt payments also represents a temporary alleviation in the sense that it frees resources which would have otherwise been devoted to pay the debt. The difference is that in this alternative there is not any additional cost in the short run (apart of the reduction in the supply of new credits). Besides, it is possible that the amount of resources freed by this alternative can be greater than the new resources obtained in a renegotiation. Then, this alternative can be more stabilizing than the first two. Since this is only a temporary measure, the country will have to renegotiate the debt with its creditors in the following years; thus, in the long run the impact on the debt dynamics will depend on the conditions of those renegotiations.

CHAPTER IV

INTERNAL ASPECTS OF THE DEBT DYNAMIC

In the previous chapter we analyzed the overall impact of the internal shock as a residue of the external shocks. We found that it played an important role in the debt dynamic. In this chapter we will analyze those internal factors using the saving-investment and fiscal approaches as a theoretical framework. We know that problems like the saving behaviour of the agents, the productivity and efficiency of capital, the characteristics of the import function and the effect of the government's behaviour over the economic activity through its fiscal policy and stabilization programs in general are so complex that each one can be one topic by itself; for this reason we will limit the analysis to the impact of these factors over the debt dynamic only, without making a deeper analysis.

A. THE SAVING-INVESTMENT PROCESS

In graph IV-1 [14], saving and investment rates (as percentages of GDP) are depicted. From this graph we deduce that investment followed a cyclical behaviour, not consistent with the increasing debt. It is clear also that saving does not follow the same pattern as investment, on the contrary it has an anti-cyclical pattern respect to the investment cycle. The saving-

[14] For graphs and tables see appendix C.

investment approach assumes that the external debt will have a positive effect on the economy if these resources are translated into investment, and at the same time the economy starts to generate its own saving which will gradually replace the external saving.

That fundamental condition is not present in the Peruvian case. We see that the increase in investment is funded by external saving and that this source replaces the domestic saving. In the period 1971-75 investment increased and relatively high rates of growths were obtained, but this increase in output was not translated into an increasing saving rate. The effect of this fact over the debt dynamic can be well explained by catastrophe theory. In 1975 investment was at its highest level, but financed mainly with foreign resources. The economy was in the unstable region of graph I-2. Since foreign credit was replacing domestic saving, by 1976 the accumulated debt was impossible to service, so the country fell into a crisis. This crisis was not expressed in a drastic fall on investment because refinancing permitted the availability of certain resources for this activity.

The adjusting measures taken by the government during that period helped to increase the level of saving. With the positive external shock of 1979-80, the economy had the opportunity to follow a recovery path, but again domestic saving fell and foreign indebtedness increased, and the economy moved back to the unstable zone. This time higher rates of interest and the high cost of refinancing precipitated the economy towards a new crisis.

The analysis of this process has to be complemented with the study of the demand side of the economy. Imports and the fiscal deficit are important aspects of this phenomenon, and they are analyzed in the next sections.

B. THE PROPENSITY TO IMPORT

In the saving-investment process, one source of instability comes from the propensity to import. If the propensity to import is high, the saving-investment gap (and the external gap) will increase when the output increases or when new credits come in.

In graph IV-2 we see that in the first years of the 1970's the import-GDP ratio (MP) had a relatively constant value of about 11%. It is since 1974, when the external debt started to increase, that this coefficient jumped to a higher level. It is important to note that during most of the 1970's the Peruvian government adopted an import substitution strategy and gave a high protection to domestic industry through import prohibitions and tariffs. At the same time it gave facilities to import intermediate and capital goods by fixing the exchange rate and facilitating foreign credits. That is why in 1974-75 the rapid increase in imports was explained mainly by the import of intermediate and capital goods [15]. This behaviour coincides also with the rapid increase in investment and output.

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[15] See table 5 in appendix C.

The development of an industry highly dependent on imported inputs serves as an argument for some structuralist economists to point out that the main cause of country's external problems is the lack of an integrated productive system, in the sense that there are no sectors which can produce the inputs and capital goods necessary for a self-sufficient growth. Then, the faster the economic growth the greater the demand for imported inputs and capital goods. Under such conditions, the availability of foreign currency is a very important factor for economic growth. For this reason, the domestic economy as a whole is very sensitive to the evolution of export earnings and, more specifically, to international prices. This factor constitutes the first channel of interdependency between external and internal shocks. Changes in exports affect the macroecomic performance of the country, not only because it is part of aggregate demand, but also because it restricts the supply side of the economy through the availability of foreign currency.

During the crisis of 1976-78, imports as a proportion of GDP fell. The restriction in the supply of foreign credit affected the level of investment and also the import of intermediate and capital goods. At the same time output fell. The positive external shock of 1979 helped to recover the level of imports but with certain lag with respect to the increase in output. 1980 is the starting point of a very important change in the structure of Peru's international trade. As part of the stabilization program and taking advantage of the positive international environment, the government initiated a process of trade liberalization by reducing gradually tariffs and eliminating some import prohibitions. This process was completed in 1981 with the total elimination of the import prohibitions.

The impact of this measure was a great increase in imports of consumer goods, helped by the overvaluation of the currency in those years. Imports, as a percentage of the GDP reached the highest levels of the last 20 years, while saving was declining. Since 1982 the government has tried to reverse this process by accelerating the devaluation of the currency and increasing tariffs. The adjustment of the last three years was so strong that imports reached levels comparable with 1972.

In conclusion, there is an important difference between the evolution of imports in the increasing phase of the first debt cycle (previous years to the first crisis) and that of the second cycle. In the first case the instability (increase in the propensity to import) comes from an increase of the derived demand for intermediate and capital goods, as a result of internal economic expansion, while in the second case the instability comes form increases in imports of consumer goods. Structural deficiencies in the productive system in the first case, and wrong policy measures in the second one, are the causes of this different behaviour.

C. PUBLIC DEFICIT

The government played an important role in the saving-investment process. Since 1973 the government took a more active part in the economy as investor. Public investment was, in part, a substitute for private investment. The private sector, despite the protectionism of the government,

was discouraged to invest because of the reformism and the labour policies of the government [16]. But this increasing participation of the government in the investment side did not match with and equivalent participation in the saving side. Then the result was an increasing deficit.

The fiscal deficit as a percent of GDP increased from -1.5% in 1971 to-10.1% in 1976 (see table IV-1). When the crisis was evident, the main objective of the stabilization programs suggested by the IMF and followed by the government was to reduce this deficit. The problem with this policy was that all the effort was concentrated in the reduction of investment while public saving continued to be negative (see table IV-1). This kind of result is caused by the fact that the government has to face political pressures when it attempts to reduce its expenditure or to increase taxes. Reductions in the number of employees or wages, social services and military expenditures always cause a protest by the affected sectors. Therefore, the more flexible item in the fiscal budget is investment.

The austerity of the years after the first crisis, together with the increase in the international export prices helped to get a positive saving[17]. The government, with an excess of optimism, increased its expenditures and investment in 1980-82, then, despite the positive external shock, the fiscal deficit started to increase again. However, since 1982

[16] Using communist arguments, the government expropriated important foreign owned firms in the mining sector and executed a land reform. In the labour sector, it established the labour stability and gave the workers participation in the property and management of firms.

[17] The positive external shock increased the tax revenue of the government through international trade taxes.

international export prices have fallen and GDP, due to the recessive measures taken by government and the natural disasters of 1983, also fell. The government did not adjusted its expenditures and investment to the new conditions and the deficit reached its highest level as percentage of GDP in 1983 (-12.1%) [18].

The high dependence of the tax revenues on the international trade is considered as another channel of interdependence between external and internal shocks. During the export boom of 1979-80, the tax revenues coming from international trade was 30% of the total tax revenues of the central government. Actually due to the low levels of international prices the income from this item is only 21% of the total government's revenue.

Despite the negative external shock of the last years, the government did a great adjustment in its budget and got a positive current account saving and a lower deficit. Summarizing this section we can say that the negative saving-investment gap is correlated with the fiscal deficit. However, we can not attribute all the responsibility of it to the government. There were periods of high expenditures like in 1973-76 and 1980-82, which were the main causes of the deficit. However, external shocks also affected the fiscal budget, directly by reducing tax revenues from international trade and indirectly by restricting domestic economic activity [19].

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[18] The government could not reduce its expenditures and investment because it had to finance the reconstruction of the areas damaged by the inundations caused by incessant rainfall in 1983.

[19] See Schydlowsky and Wicht (1979).

It is also interesting to analyze the dynamics of the public debt from the financial side of the fiscal budget. It is very difficult to determine whether the public debt is inherently stable just by analyzing the existing data because several exogenous factors have affected its dynamics. Government expenditures and tax policy are some of those factors. From the financial side of the fiscal budget, we can analyze other factors like the debt policy and monetary policy of the government.

The last column of table IV-2 presents the relative participation of foreign credits in financing of the deficit. These data reveal that the government had a preference for foreign credit - specially in years when it was easy to get it - and that it was only temporarily replaced by domestic credit (basically, printing money) [20]. In the first column of table IV-2 we have the coefficient of indebtedness of the public sector (total public debt as percent of GDP). We can see that the rate of growth of this coefficient has been increasing since 1981, showing that the debt was following an explosive pattern.

This pattern can be explained by three factors:

i. The facilities given by the lenders at the beginning of the 1970's.

ii. The own dynamics of the debt mentioned in the previous chapter. These dynamics can be detected in two facts. First is the increasing interest payments of the public debt as percent of GDP (see second column in table

[20] In 1979 and 1985 domestic credit was negative because the government was asked to deposit in the Central Bank, domestic currency for an amount equivalent to the debt service refinanced in those years as it would be paying the debt normally. Those amounts increased considerably because the government also assumed the debts of the public enterprises.

IV-2). In 1984 this ratio was 67% and in 1985 it was 1.7 times the deficit. It means that by 1985, despite all the fiscal adjustments made by the government, the fiscal budget was in deficit due only to interest payments. This can be considered as a third channel of influence of the external sector over the internal economic performance of the country. The second fact is the composition of the disbursed credits by their use (see table IV-3). While during the early 1970's most of the credit were allocated to investment, in the last four years the amount of credit originating from refinancing and then returned to the lenders without any internal effect, increased in relative importance.

iii. The restrictive monetary policy followed since 1983 forced the government to rely mainly on foreign credit. As we have seen in the analysis of the fiscal models, a restrictive money supply is destabilizing because, given a non-controlled deficit, the government is forced to use foreign credits, and also because the restriction of the money supply is recessive.

D. STABILIZATION PROGRAMS

The adjusting measures taken by the government in order to adapt the economy to the international and national environment affect the debt dynamic. In Peru, stabilization programs started to be implemented in 1977 after an IMF mission visited the country and suggested some measures. General characteristics of those programs include restrictions of the aggregate demand by reducing government expenditures, subsidies and real

wages, devaluations, price adjustments, money supply restriction and international trade liberalization.

Many articles have evaluated the stabilization programs in Peru [21]. In this section we will not make a complete analysis of the stabilization programs. Rather, drawing from conclusions obtained in previous papers we will analyse the consequences of the stabilization programs on the debt dynamic.

Many analysts agree that the interpretation of the Peruvian crisis as one caused by excess demand for goods is not completely right because it is very difficult to explain why in a economy with excess demand there is an excess capacity in the industrial sector. One interpretation of the problem is that there is not a global excess demand for goods but only a partial excess of demand for certain goods. These goods, as we have seen in a previous section, could be intermediate and capital goods (some agricultural products and luxury goods demanded by the high-income class can also be considered). This phenomenon is explained by the import-substitution oriented industrialization implemented by the government since 1968, which gave excessive emphasis to the import-dependent industrial sector and diverted its attention from the agricultural and export sector [22]. Then the excess of

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[21] See for example, Sheahan (1978), Stallings (1978), Thorp (1978; 1980), Schydlowsky and Wicht (1979), Cline (1981) and Roca and Priale (1985).

[22] In fact, there was a big investment in these sectors. But, in the case of agriculture, investment was concentrated in a few large projects which did not have a great impact on production. In the export sector, investment was oriented to traditional products instead of to the export diversification, maintaining the dependency on external shocks. Most of the investment was allocated to the exploitation of oil (construction of a

demand is only for foreign currency, and it explains the negative current account.

The fiscal deficit, as we saw before, is not necessarily caused by excessive expenditures; since it can also be affected by the external shocks. Besides, the government faces some rigidities in its expenditure which restrict the possibilities of a rapid adjustment [23]. There is a debate in this area, because it is not clear what is the relative importance of external shocks and fiscal policy on the fiscal deficit. In the previous section, we concluded that there were periods of clear expansion of fiscal expenditures (1973-75 and 1980-81), but there were also periods when, external factors offset all the fiscal adjustments, as in 1984-85.

In relation to the effects of the stabilization programs, the main critique is centred on the fact that the programs did not consider the structural problems of the country. The programs were successful in equilibrating the balance of payments because they were specially designed for that purpose, but these also caused serious internal problems.

The first one was a recession caused by restrictions of the demand. But besides restrictions in government expenditures and money supply and reductions of real wages, devaluation is considered as a recessive element also. Given the importance of imported inputs in domestic production, a

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pipeline) but the area exploited was not as productive as had been expected.

[23] See Morrison (1982).

devaluation shifts up the aggregate supply curve. This fact together with the induced fall in real income cause a reduction in the domestic output.

There is a controversy regarding the sensitivity of exports and imports to a change in the exchange rate. In the most favorable case, Cline (1981) found that there is a small but statistically significative influence of the real exchange rate over these two variables. In the case of imports, the national income is the most powerful explinators variable. Therefore, if a devaluation is successful in reducing imports, as it has been since 1983, it is mainly due to the reduction in national income that it caused. That is why a devaluation is seen as the main instrument to transfer resources from the country to the borrowers.

Devaluation also causes inflation due to the induced increases in the cost of production, the exacerbation of inflationary expectations (most of the domestic prices are indexed to the exchange rate) and the reduction of the demand for money. Due to controls over interest rate and the high level of inflation, devaluation caused a distortion in the rate of return on financial assets and generated speculation in financial markets. Domestic assets denominated in foreign currency were preferred to those denominated in domestic currency. 60% of the money supply was denominated in US dollars and this currency was replacing the sol in its functions of money. Speculative activity increased since 1982 and attracted many resources affecting productive activities. In these conditions the credit policy of the Central Bank did not have much effect on the real sector, and any

attempt in order to reactivate the economy was invalidated by this phenomenon.

Thus, if it is true that in the short run, from the point of view of the balance of payments approach, the stabilization programs had a positive effect on the debt dynamic since it reduced the resource gap deficit, in the long run, considering the saving-investment process, it could not be a stabilizing element because it affected negatively an important condition for debt stability : the rate of economic growth.

E. THE CURRENT ECONOMIC PLAN

It is too early to evaluate the new economic program implemented by the present government. Besides, the available data do not allow us to undertake amore detailed analysis. However, we will present the characteristics of that plan and its consequences for the debt dynamic.

The main objective of the government was to reactivate the economy. They think that aggregate supply is repressed by reduced domestic demand and by distortions in the financial sector. At the same time the government thinks that there is a trade-off between growth and debt payments. In ligh of this the external policy of the government was to limit debt payments, with the idea that with higher rates of growth the country would have more possibilities to pay his debt in the future. At the same time it fixed the exchange rate in order to avoid all its internal effects. Previously, the

government had devaluated the domestic currency by 17.2%, trying to gain a margin of parity for the period that the exchange rate would be kept fixed. It also set multiple exchange rates. At the same time it increased tariffs and prohibited the import of some goods and encouraged exports by subsidies.

On the internal side, the government considered that the control of inflation was a necessary condition for reactivation. Inflation is interpreted as being caused by the increases in costs (especially devaluation), and by expectations. Price controls, together with the control of basic costs : exchange rate, interest rate, taxes and wages, was adopted. Later, the fixed price regime was changed into a more flexible administrated price system.

In order to increase aggregate demand the government initially raised wages. This increment in wages was financed by reduction in interest rates[24], taxes and, implicitly, in profit margins. There is no clear monetary and fiscal policies, but it seems that, following a post-Keynesian program, the money supply is not restricted (in fact some special credits have been given to agriculture) and the government expenditures are considered an important element in the reactivation program.

In table IV-4, the main economic indicators of the country are presented. They give us an idea of the initial impact of the reactivation program. It

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[24] The financial costs (interest payments) are an important part of prices in the industrial sector. Thus, a lower interest rate reduces costs significantly.

seems that the economy answered well to the incentives given by the government and the real rate of growth rose from 1.9% in 1985 to 8.5% in 1986. As a result of price controls, the inflation rate fell from 158.3% in 1985 to 62.6% in 1986. Saving has not yet shown a recovery, while investment has increased slightly.

All the costs of the reactivation are borne by the fiscal and external sectors. The fiscal deficit in 1986 was equivalent to 6% of the GDP. This ratio is high if we consider that an important part of the interest on the debt has not been paid. The trade balance is negative while the inflow of new credits is still positive showing that the supply of credits has been reduced, not too much as it was expected by many analysts, but enough to cause a reduction in the reserves by -US $459 million.

As far as the debt dynamic is concerned, the economic recovery gives a better basis to pay the debt in the future. Now the country is paying the debt for approximately 17% of exports. The problems can come from the balance of payments conditions. The negative effect of the resource gap deficit is currently being offset by a reduction in foreign reserves, but this is only a temporary solution. Unless a new positive external shock occurs, some adjustment have to be made in order to reduce the non-current account deficit.

Finally, the future evolution of the debt depends on the new renegotiations the country has to have with its creditors. Limits on the debt payments were explicitly considered by the government as a temporary

solution. The need for new credits for internal development requires the normalization of relations with lenders in the short run. The conditions of those new agreements will play an important role in the debt dynamic. It will be also important to observe how the economy will respond to the new credits after the changes in internal conditions and the new economic orientation of the government.

CONCLUSIONS

The theories about the debt dynamic provide different conditions for debt stability, depending on the point of view adopted. However the different approaches being not discrepant at all, makes it necessary to integrate the different theoretical points of view.

The balance of payments approach's conditions for stability are derived from an identity, therefore, they have to be accepted by definition. This approach does not account for the internal aspects of the debt dynamic. Thus, we can consider that the balance of payment approach deals with the short-run conditions of the debt dynamic. The fiscal approach also focuses on one identity: the fiscal budget, but it has a long-run perspective since it accounts for the interrelation between stocks (debt) and flows (income, expenditure, tax revenue, etc.) and the forces which rule the flow and stock equilibria. In the same way, the saving-investment approach can also be considered as a long-run analysis since it deals with the dynamics of the saving-investment process in relation to economic growth.

Applying these theoretical conclusions to the case of Peru we can get the following conclusions:

1. From the historical perspective on the Peruvian debt problem, we can detect some common factors which were present in all the debt crises since the last century. The in the export earnings due to price and demand

shocks, and the difficulty to get new credits were the external factors present in all the debt crises, while low rates of growth and fiscal deficits were the internal factors which aggravated the crises.

In the last debt crisis, changes in the international environment and in the internal structure of the economy create some differences relative to past crises. In that sense, the increase in interest rates and the treatment given to the debt crisis by the creditors (renegotiations) are new elements in the external side of the problem. Overvaluation, in a world with flexible exchange rates is also a new factor. The evolution of the country from a non-industrialized and raw-material exporter to a semi-industrialized and still raw-material exporter also makes a difference. The dependence on imported intermediate and capital goods and the importance of international trade as a source of fiscal revenues determined new channels of interdependence between the external and internal sectors.

2. The last two debt crises in Peru give us more information to do a deeper analysis of the debt dynamic. First, we have observed that the debt, represented by the z ratio, has a cyclical pattern. We observed that the debt cycle is closely related to the difference between the debt interest rate and the growth of exports, showing that the debt cycles are related to external factors. When this difference is negative, the z ratio decreases, and when it is positive the z ratio increases. On the other hand, the resource gap played a different role in the last two cycles. In the first one (1972-77), teh resource gap was negative and contributed to increase the debt, while in the second one (1978-85) the resource gap was mainly positive

and helped to reduce the debt.

3. The difference between the interest rate and rate of growth of export is explained mainly by the variations in the export prices. Therefore, we can make a more specific conclusion and say that export prices are the main determinant of the debt cycle. The real interest rate played a different role in the two cycles. In the first cycle, a combination of low nominal interest rates and a high rate of inflation, encouraged the demand for foreign credits but at the same time reduced the debt growth due to the low interest payments. During the second debt cycle the nominal interest rate increased, due to the monetary and fiscal policies in the US, and the rate of inflation fell. Then, the interest rate contributed to accelerate the debt growth.

4. The behaviour of the resource gap can be explained by external and internal shocks. The external shocks, which are caused mainly by changes in the terms of trade and interest rates, affected the resource gap negatively only in certain years (1971-72, 1978, 1982 and 1984-85). In the other years the external shock had a positive effect. The most important conclusion derived from the estimation of the external shock is that in general, for the period 1971-85 it had a positive effect on resource gap. It means that the debt would have been greater if international prices and interest rate had followed a stable pattern. We can thus conclude that internal shocks had an important influence in years where external shocks were positive.

5. Analyzing the internal shocks form the perspective of the saving-

investment process, we conclude that the growth induced by the foreign credit did not generate the necessary domestic saving to reduce the saving-investment gap and hence the need for more external credit. What happened instead was a substitution of domestic saving by external saving during the periods of expansion. The reason is that with the external debt domestic expenditure also increased.

6. Expenditures increased through imports. In the first period of expansion, imports grew due to the need of imported inputs and capital goods by the industrial sector, while in 1980-82 it was the import of consumer goods which increased due to a trade liberalization shock and to the overvaluation of the currency. Import behaviour is an indication that during the first debt cycle foreign resources were used in a productive way while in the second cycle there was an over-consumption.

7. The fiscal deficit was another important internal factor. The government was the most active investor during the 1970's, but at the same time, due to an excessive increase in its current expenditures, it did not generate its own saving to finance that investment. Due to the facilities given by the lenders during the 1970's, the government expanded its expenditures without any control. This was especially true during 1973-75 and 1980-82. However not all the responsibility of the fiscal deficit can be given to the administration. The negative external shocks also affected the fiscal budget through the reduction of the tax base (less international trade and lower national income), in 1977-78 and 1984-85. These external shocks were more important in 1984-85 when, despite the reduction in the government

expenditure there was a deficit due to the reduction in tax revenues and the external debt interest payments.

8. The public deficit was financed mainly by external credits and so, there is a close relationship between this variable and the debt dynamic. From this side, we can observe that the debt growth was affected by three elements : the initial facilities given by the lenders, the restrictive monetary policy of the 1980's and the own debt dynamics generated by the increase in interest payments and the renegotiations.

9. The borrower-lender relationship also affected the debt dynamic in the Peruvian case. The solutions given to the crises in the last two decades (new credits and renegotiations) helped to alleviate the crisis in the short run, but it postponed the problems to the future and aggravated the crisis because the future effect of those solutions was to increase the debt interest rate and to concentrate the payments in the following years.

The first difficulties in debt payments were solved by new credits with shorter periods of maturity, this fact lead to the first crisis of 1976-78. The solution to that crisis was a renegotiation. The effects of that renegotiation were offset by the positive external shocks of 1979-80, but after that, the second crisis occurred. Two consecutive renegotiations tried to solve the problem in 1983-84. The increasing debt and the high interest rate concentrated the payment in 1985 and 1986 so that it was practically impossible to continue servicing the debt.

The lesson from this experience is that a renegotiation, or new credits, by itself is not a solution to the debt problem, since these new resources are going to be ruled by the same factors affecting the debt dynamic. These measures are only temporary alleviations and must be taken together with other adjusting measures.

10. There is a relationship between the debt dynamic (z ratio) and the debt crisis (defined as periods of liquidity problems or insolvency). A debt crisis happens when the z ratio is in its cyclical peak. This relation is obvious because the same elements present in the cyclical peaks (low export prices, high interest rates, fiscal deficits, overvaluation, low rates of growth and so on) are also the causes of the debt crisis.

It is interesting to note that the z ratio alone can not show how serious a crisis is, and so, it is not a good indicator of an optimal level of indebtedness. For that purpose, it is necessary to relate this ratio to the level of interest rates. For example, during the second crisis, the z ratio reached lower levels than in the first one, however the second crisis was more serious. This is because the z ratio of the second crisis was not compatible with the higher interest rates of those years.

11. The stabilization programs adopted by the government since 1978 aimed at the reduction of excess demand, giving emphasis to the short-run conditions of the debt. In that sense, the stabilization programs were successful in reducing the resource gap deficit (a necessary condition to reduce the debt from the balance of payments point of view). But in the internal aspect, the

program failed in reducing the fiscal deficit and caused a recession. In this way the program did not satisfy the long-run conditions of the debt, and so the large deficit and low rates of growth (and the renegotiations) led the country to the unstable point of low domestic saving and high external debt, and then to the situation of default.

The new program adopted by the actual government gives more emphasis to the long-run conditions of the debt dynamic. The government thinks that to pay the debt normally implies recession and the impossibility to pay the debt in the future. Then, the alternative is to reduce the debt payments for certain periods until the economy gets higher rates of growth. In the first 18 months of the new government, the program seems to work well in terms of economic growth and inflation rate. The problem now is that the short-run conditions are not being satisfied. The fiscal deficit is still high and the balance of payments is negative. It means that some adjustments have to be made in the future. A devaluation of the currency and the re-establishment of relations with lenders are necessary to avoid a loss of foreign reserves. The future evolution of the debt dynamic depends on those adjustments.

APPENDIX A

DEFINITION OF VARIABLES

Debt interest rate

It is an average interest rate calculated by dividing the total debt service by the debt stock of the previous period. This rate differs from the market interest rates because it is a weighted average of interest rates corresponding to credits with different conditions. It also includes fees and spreads.

Debt service-export ratio (SE)

This is the ratio of the total external debt service to export of goods and services. The total debt service can be measured as the amortization and interest that should be paid normally (SE before renegotiation) or as the service effectively paid (incorporating the renegotiation alleviation). Throughout the paper, the first indicator has been used, because it gives a better idea of the debt crisis.

Debt service-export ratio (adjusted)

There is also an external shock adjusted SE ratio. The service corresponding to this ratio is calculated by applying the trend interest rate (see appendix B) to the debt stock after substracting the total external shock. For simplification, this ratio does not account for the repercussions of the external shocks on the debt amortization.

Exports and Imports

These variables consider the export income and import payments for goods and services calculated at FOB prices.

Export prices

It is a price index of the traditional exports of the country, weighted by their participation in the total traditional exports in each year.

Import prices

This index is approximated by an international price index relevant to Peru. That index considers the consumer price index of the main trade partners of Peru weighted by the participation of each country in total imports.

Inflation rate

It is calculated using the international price index relevant to Peru (see import prices).

Non-interest current account (NICA)

It is defined as the total current account less financial services. In that sense it considers all the transactions of goods, net payments to factors (non-financial services) and transfers.

Non-interest current account (adjusted)

The NICA is adjusted by the terms of trade effect in order to have an idea of the importance of internal factors on the non-interest current account.

Resource gap

It incorporates the trade balance, non-financial services, transfers, direct investment, exports of capital and changes in foreign reserves. In other words, it measures the difference between inflows and outflows of resources (without including interest payments) which must be covered by external credits.

Variation of the real exchange rate

The devaluation required to maintain the real exchange rate constant is equal to the difference between the internal and external inflation rates. The variation of the real exchange rate is the difference between the required devaluation and the devaluation effectively observed.

The internal inflation rate is calculated using the domestic consumer price index, while the external inflation rate is calculated using an international price index adjusted by the variation of the exchange rates between the respective domestic currencies and the US dollar.

z ratio (total debt/exports)

It is a quotient between the total external debt and exports of goods and

services. The total debt includes the external debt of the Central Reserve Bank which is not accounted for in the balance of payments.

z ratio (adjusted)

It deals with the external debt after substracting the total external shock and the exports adjusted by the export price effect.

APPENDIX B

THE CALCULATION OF THE EXTERNAL SHOCK

A. THE TERMS OF TRADE EFFECT

1. The export price effect (EPE)

The export price effect is caused by the deviation of export prices from its trend, given export volume:

$$EPE_t = (EP_t - EP^o{}_t) \times EV_t$$

where EP_t is the current export price, $EP^o{}_t$ is the trend export price and EV_t is the export volume. If the export price is above the trend price, EPE is positive and when it falls below trend, EPE is negative.

The trend of the export price is calculated by a double log equation with respect to time. For an annual data for 1971-1985, we got the following result:

$$\text{Log } EP^o{}_t = 1.8214 + 0.5286 \text{ Log } t$$

t statistics: (19.796) (6.0647); r = 0.8653

This methodology implies two assumptions:

a. The quantity traded in period t at the current price is assumed to be the same if the price were equal to the corresponding trend price. It means that the quantity is chosen regardless of the price.

b. The marginal cost of supplying the current export volume is less than the rate of growth of the trend export price. This assumption enables us to avoid deduction of excess costs (incurred in supplying that export volume) from the EPE.

2. The import price effect (IPE)

It is calculated with the same methodology used in the calculation of the EPE:

$$IPE_t = (IP^o_t - IP_t) \times IV_t$$

given the import volume (IV), the import price effect is caused by the difference between the trend import price (IP^o_t) and the actual import price (IP_t). In this case a current price greater than its trend price has a negative IPE, while a current price below trend has a positive IPE.

The double log function of the IP^o_t, estimated for the same period 1971-85 is:

$$\text{Log } IP^o_t = 1.8197 + 0.5342 \text{ Log } t$$

t statistics: (73.5173) (19.9773); r = 0.9841

Assumption a in the calculation of the EPE is also valid in this case.

3. The terms of trade effect (TTE)

The TTE is just the sum of the export and import price effects:

$$TTE_t = EPE_t + IPE_t$$

B. THE INTEREST EFFECT (IE)

As the export and import price effects, the IE is caused by the deviation of the debt interest rate from trend, given the stock of debt:

$$IE_t = (r^o_t - r_t) \times D_{t-1}$$

In this case, when the current interest rate (r_t) is less than its trend level (r^o_t), there is a positive effect and in the opposite case the IE is negative.

The trend of the debt interest rate is also calculated in relation to time using a double log equation. The result, for a data for 1971-85, is:

$$\text{Log } r^o_t = 0.3069 + 0.5912 \text{ Log } t$$

t statistics: (4.9286) (8.7892); r = 0.9242

Since we have worked with the average debt interest rate, we are

incorporating the effect of changes in the debt structure (by sources and period of maturity) and the spreads.

C. THE TOTAL EXTERNAL SHOCK

The total external shock is the summation of the TTE and the IE. We can assume that since external shocks affect the stock of debt, there is additional interest paid (if the shock is negative) or saved (if the shock is positive). Then the total external shock (TES) should include the accumulated interest calculated over the total shock.

APPENDIX C

TABLES AND GRAPHS [1]

A. TABLES

1. Chapter III

TABLE III-1 : INDICATORS OF THE EXTERNAL DEBT EVOLUTION

	DEBT SERVICE/EXPORTS		TOTAL DEBT/	TOTAL DEBT/
	before renego.[a]	after renego.[b]	EXPORTS	GDP
1970	18.8	16.7	3.0	59.2
1971	28.5	26.1	3.4	54.0
1972	26.2	19.6	3.3	50.3
1973	41.3	22.7	3.1	44.5
1974	30.9	19.4	2.9	45.3
1975	36.4	27.4	3.6	45.9
1976	39.7	38.8	4.3	53.9
1977	41.3	41.3	4.1	68.2
1978	56.8	44.8	3.9	86.9
1979	45.4	23.6	2.2	67.2
1980	50.9	43.0	2.1	55.7
1981	62.8	58.9	2.4	48.0

[1] The tables and graphs presented in this appendix have been elaborated by using statistical data provided by the Central Reserve Bank of Peru (see refecences about this institution). I would like to thank Jorge Cortez and Laura Calderon, Central Bank staff members, for sending me that information.

TABLE III-1 ...continuation.

1982	56.2	53.6	2.8	55.8
1983	68.1	40.9	3.4	77.0
1984	86.9	40.5	3.5	78.9
1985	79.9	26.5	3.7	95.5

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a. It considers all the debt service which should be paid if any refinancing would have not happened.
b. It considers the debt service effectively paid.

TABLE III-2 : INTEREST RATE, INFLATION AND EXPORT GROWTH

	RATE OF GROWTH OF THE EXPORT VOLUME	EXPORT PRICE INFLATION	IMPORT PRICE INFLATION	REAL INTEREST RATE	CHANGE IN THE TERMS OF TRADE
1971	-3.4	-8.8	7.1	-3.4	-14.8
1972	5.2	2.6	9.2	-5.4	-6.1
1973	-12.1	54.6	15.0	-9.0	34.4
1974	3.1	31.6	11.3	-5.4	18.3
1975	-0.2	-4.5	10.3	-4.4	-13.4
1976	1.5	-3.0	2.2	3.7	-5.2
1977	23.1	-0.4	9.4	-3.2	-8.9
1978	10.6	3.4	12.5	-4.4	-8.1
1979	10.9	57.3	10.0	1.0	43.0
1980	-11.3	24.3	12.3	-2.3	10.6
1981	2.0	-14.9	5.4	4.9	-19.2
1982	18.8	-14.6	0.1	10.6	-14.8
1983	-16.3	9.1	2.3	7.3	6.3
1984	14.9	-10.9	0.8	8.4	-11.6
1985	6.8	-9.4	2.2	5.2	-11.4

TABLE III-3 : THE TERMS OF TRADE EFFECT *
(millions of US $)

	EXPORT PRICE EFFECT	IMPORT PRICE EFFECT	TERMS OF TRADE EFFECT
1971	-51.5	-109.1	-160.6
1972	-306.7	16.2	-290.5
1973	63.3	40.6	103.9
1974	338.7	101.8	440.5
1975	105.3	126.4	231.7
1976	-87.6	262.9	175.3
1977	-280.2	218.2	-62.0
1978	-400.1	56.3	-343.8
1979	906.9	-29.1	877.8
1980	1559.3	-293.8	1265.5
1981	740.5	-392.0	348.5
1982	14.2	-197.4	-183.2
1983	187.8	-91.7	96.1
1984	-399.8	10.8	-389.0
1985	-1116.6	43.2	-1073.4

* For explanation see appendix B

TABLE III-4 : TERMS OF TRADE EFFECT AND INTEREST RATE EFFECT *
(millions of US$)

	TERMS OF TRADE EFFECT	INTEREST RATE EFFECT	EXTERNAL SHOCK	EXTER. SHOCK (plus interest)
1971	-160.6	-3.6	-164.2	-164.2
1972	-290.5	22.2	-268.3	-273.7
1973	103.9	-3.8	100.1	87.2
1974	440.5	-4.1	436.4	441.0
1975	231.7	21.0	252.7	276.5
1976	175.3	25.0	200.3	216.9
1977	-62.0	73.8	11.8	24.6
1978	-343.8	-8.6	-352.4	-350.6
1979	877.8	-195.8	682.0	646.9
1980	1265.5	-121.3	1144.2	1207.0
1981	348.5	-172.7	175.8	303.7
1982	-183.2	-145.3	-328.5	-350.0
1983	96.1	-23.1	73.0	38.7
1984	-389.0	100.2	-288.8	-285.2
1985	-1073.4	388.3	-685.1	-706.5

* For explanation see appendix B

TABLE III-5 : PUBLIC DEBT : CONCERTED CREDITS BY PERIOD OF MATURITY.
(structure)

	1 to 5 years	5 to 10 years	10 to 15 years	more than 15 years
1971	27.6	12.2	30.3	29.9
1972	25.2	34.8	18.4	21.6
1973	9.8	54.1	22.3	13.8
1974	8.5	34.5	51.1	5.9
1975	42.8	29.7	21.5	6.0
1976	24.3	22.6	33.1	20.0
1977	39.3	15.4	30.8	14.5
1978	36.3	19.6	19.8	24.3
1979	31.1	9.6	41.9	17.4
1980	9.7	13.1	54.2	23.0
1981	14.7	16.8	46.9	21.6
1982	5.4	45.2	28.5	20.9
1983	8.5	35.9	23.2	32.4
1984	13.0	14.8	32.7	39.5
1985	0.2	16.8	61.1	21.9

TABLE III-6: NET ALLEVIATION FROM THE RENEGOTIATIONS OF 1983-84*
(millions of US $)

	ALLEVIATION	AMORTIZATION	INTEREST	NET ALLEVIATION
1983	1024	---	37	987
1984	1507	148	212	1147
1985	649	171	340	138
1986		64	341	-405
1987		175	318	-593
1988		252	290	-542
1989		370	257	-627
1990		632	197	-829
1991		592	119	-711
1992		378	61	-439
1993		298	15	-313

* Corresponding to the long-term public debt

2. Chapter IV

TABLE IV-1 : ECONOMIC INDICATORS OF THE PUBLIC SECTOR
(% of GDP)

	CURRENT ACCOUNT SAVINGS	INVESTMENT	DEFICIT
1971	3.4	4.6	1.5
1972	2.5	4.9	2.9
1973	1.7	5.5	4.5
1974	2.7	8.2	6.9
1975	0.1	8.9	9.7
1976	-1.1	8.2	10.1
1977	-2.8	6.4	9.7
1978	-0.7	5.5	6.1
1979	4.9	5.4	1.1
1980	3.0	7.3	4.7
1981	0.6	9.0	8.4
1982	-0.1	10.5	9.3
1983	-2.7	10.3	12.1
1984	1.4	8.7	7.2
1985	4.0	n.a.	2.9

TABLE IV-2 : EXTERNAL PUBLIC DEBT INDICATORS
(percent)

	PUBLIC DEBT/ GDP	INTEREST/ GDP	NET CREDIT FLOW/ FISCAL DEFICIT
1971	14.6	0.7	19.8
1972	14.7	0.7	56.1
1973	16.1	0.8	69.3
1974	18.9	0.9	67.2
1975	22.5	1.3	51.2
1976	25.9	1.2	34.8
1977	34.3	2.1	48.7
1978	47.9	3.2	34.5
1979	41.5	3.1	239.6
1980	35.1	2.5	43.4
1981	30.8	2.3	25.1
1982	34.0	2.7	78.6
1983	41.6	3.8	56.7
1984	57.5	4.8	77.7
1985	72.7	4.9	161.1

TABLE IV-3 : EXTERNAL PUBLIC DEBT : DESTINATION OF THE DISBURSED CREDIT (structure)

	INVESTMENT	FOOD	REFINANCING	DISBURSEMENT (mill. US $)
1971	36.4	14.1	14.1	184
1972	31.8	26.6	26.6	286
1973	45.4	10.6	37.8	672
1974	64.5	4.0	20.8	1035
1975	58.9	5.9	14.8	1077
1976	58.7	8.2	31.3	796
1977	40.7	8.0	51.4	1067
1978	32.3	9.1	27.1	1075
1979	22.7	6.7	57.2	1623
1980	39.6	10.8	24.1	1580
1981	63.8	7.8	9.6	1700
1982	66.5	4.5	5.3	2043
1983	38.9	6.7	40.1	2554
1984	53.8	7.0	32.7	1525
1985	47.5	7.6	23.4	859

TABLE IV-4 : MAIN MACROECONOMIC INDICATORS: 1986

Real rate of growth	8.5
Rate of inflation	62.9
Saving/GDP	10.0
Investment/GDP	14.2
Fiscal deficit/GDP	6.0
Trade balance (mill. of US $)	-16.0
Financial services (mill. of US $)	-831.0
Long term capital, net flow (mill. of US$)	603.0
Change in reserves (mill. of US $)	-459.0
Rate of devaluation :	
average 86/average 85	27.6
Dic 86/Dic 85	0.0

B. OTHER TABLES

TABLE 1 : DETERMINANTS OF dz

	dz	AVERAGE INTEREST RATE [a]	EXPORTS RATE OF GROWTH	RESOURCE GAP/EXPORTS	
				NICA/X	OTHERS [b]
1971	0.4	3.4	-11.9	8.5	4.9
1972	-0.1	3.3	8.0	7.7	-6.1
1973	-0.2	4.7	16.8	-0.8	-7.7
1974	-0.2	5.3	35.7	-32.2	-17.3
1975	0.7	5.4	-4.7	-71.8	34.8
1976	0.7	6.0	-1.5	-40.6	21.7
1977	-0.2	5.9	22.6	-16.4	-2.9
1978	-0.2	7.5	14.4	20.0	-2.2
1979	-1.7	10.0	74.5	44.9	-17.9
1980	-0.1	9.7	10.3	17.4	-9.4
1981	0.3	10.6	-13.2	-17.6	28.2
1982	0.4	10.7	1.4	-14.1	-7.2
1983	0.6	9.8	-8.6	6.9	7.5
1984	0.1	9.3	2.4	24.7	-22.9
1985	0.2	7.5	-3.2	29.1	-13.8

a. Corresponding to the Peruvian debt (see appendix A).
b. See table 2.

TABLE 2 : THE RESOURCE GAP (OTHERS)
(% of exports)

	DIRECT INVESTMENT (1)	OTHER CAPITALS[a] (2)	CHANGE IN RESERVES (3)	TOTAL (1)+(2)-(3)
1971	-4.7	2.5	-7.1	4.9
1972	2.1	-3.8	4.4	-6.1
1973	3.6	-10.3	1.0	-7.7
1974	7.9	-9.8	15.4	-17.3
1975	18.1	-16.4	-33.1	34.8
1976	10.0	-38.9	-50.6	21.7
1977	2.6	-22.1	-16.6	-2.9
1978	1.0	*	3.2	-2.2
1979	1.7	18.0	37.6	-17.9
1980	0.6	5.6	15.6	-9.4
1981	3.1	12.6	-12.5	28.2
1982	1.2	-5.4	3.0	-7.2
1983	1.0	5.4	-1.1	7.5
1984	-2.3	-14.1	6.5	-22.9
1985	-1.5	-3.7	8.6	-13.8

a. Includes short-run capitals, errors and omissions.
* Between 0.05 and -0.05.

TABLE 3 : EXTERNAL SHOCK-ADJUSTED DEBT INDICATORS

	Z	DEBT SERVICE/ EXPORTS a	NICA/ EXPORTS
1971	3.2	26.8	22.5
1972	2.3	22.2	26.0
1973	2.9	43.0	-9.0
1974	3.6	37.7	-69.1
1975	4.1	40.0	-90.6
1976	4.4	39.1	-48.4
1977	3.8	39.5	-11.8
1978	3.4	48.4	29.4
1979	3.1	51.7	30.3
1980	3.8	72.8	-14.9
1981	3.7	71.7	-30.4
1982	3.4	52.8	-9.6
1983	4.1	71.1	4.6
1984	3.6	81.0	31.6
1985	3.9	69.4	44.7

a. It does not take into account the effect of external shocks on the amortization of the debt.

TABLE 4 : SAVING AND INVESTMENT RATES
(% of GDP)

	SAVINGS (1)	INVESTMENT (2)	GAP (1)-(2)	GDP (rate of gr.)
1971	14.5	15.0	-0.5	5.1
1972	13.8	14.2	-1.2	5.8
1973	13.6	15.7	-2.1	6.2
1974	11.9	18.9	-7.0	6.9
1975	8.0	19.7	-11.7	2.4
1976	10.0	17.7	-7.7	3.3
1977	8.7	14.8	-6.1	-0.3
1978	12.8	14.4	-1.6	-1.8
1979	21.1	14.3	6.8	4.3
1980	17.1	17.7	-0.6	2.9
1981	13.6	22.1	-8.5	3.1
1982	14.7	22.6	-7.9	0.9
1983	11.6	17.0	-5.4	-12.0
1984	14.6	16.1	-1.5	4.7
1985	14.3	13.8	0.5	1.9

TABLE 5 : RATE OF GROWTH OF IMPORTS

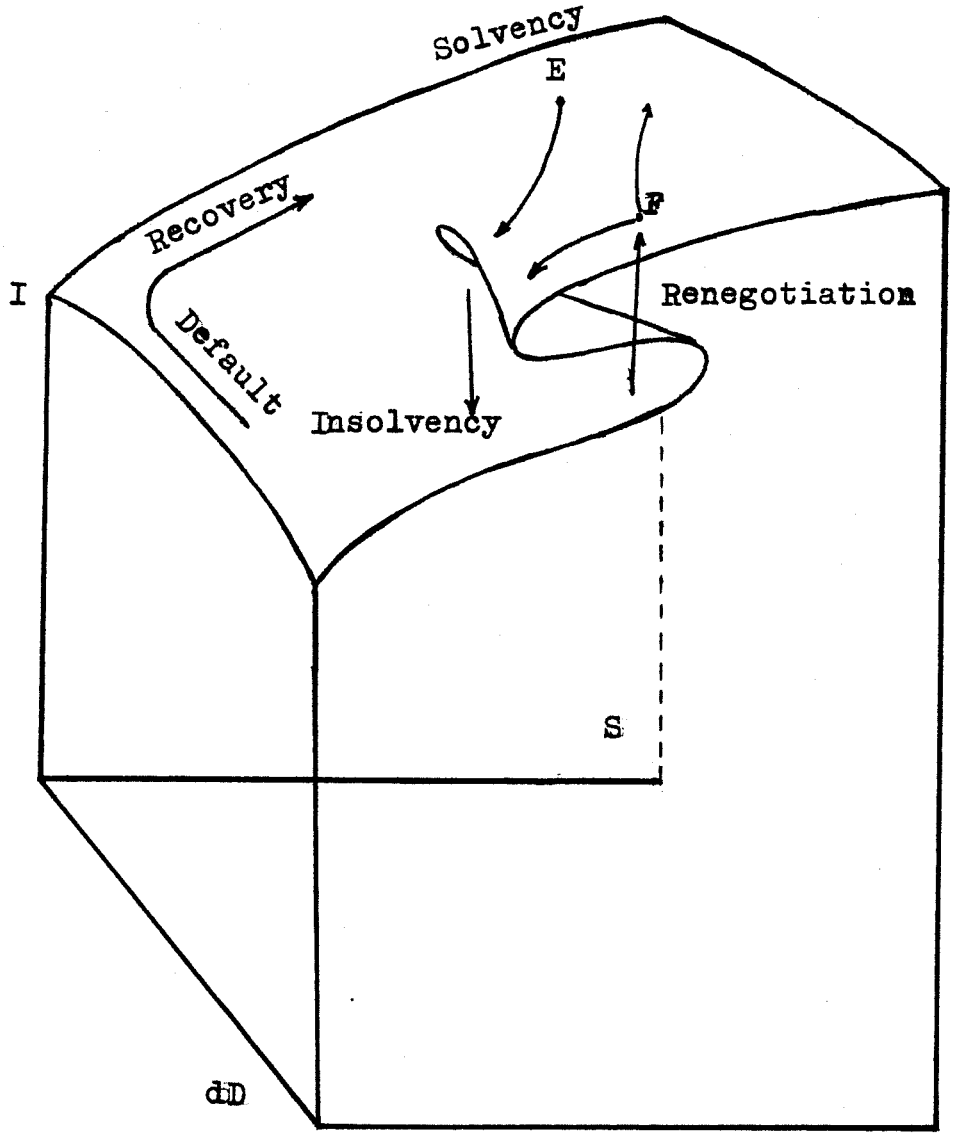
	CONSUMER GOODS	INTERMEDIATE GOODS	CAPITAL GOODS	OTHERS
1971	4.5	28.2	-5.6	-46.4
1972	8.4	1.0	*	36.4
1973	25.9	-13.7	33.9	3.2
1974	-0.2	113.6	72.7	5.9
1975	22.5	15.6	18.1	1.2
1976	-33.5	-22.3	-17.9	8.7
1977	-0.2	-9.2	-28.0	90.6
1978	-0.4	-27.6	-23.9	-40.1
1979	45.1	11.2	26.2	-35.2
1980	148.0	13.3	54.9	46.8
1981	41.6	13.3	26.8	21.2
1982	-19.8	-5.8	-3.1	42.1
1983	-26.5	-24.1	-37.7	-16.8
1984	-27.5	-8.3	-15.0	-63.4
1985	-40.1	-13.7	-18.2	36.9

* Between 0.05 and -0.05.

C. GRAPHS

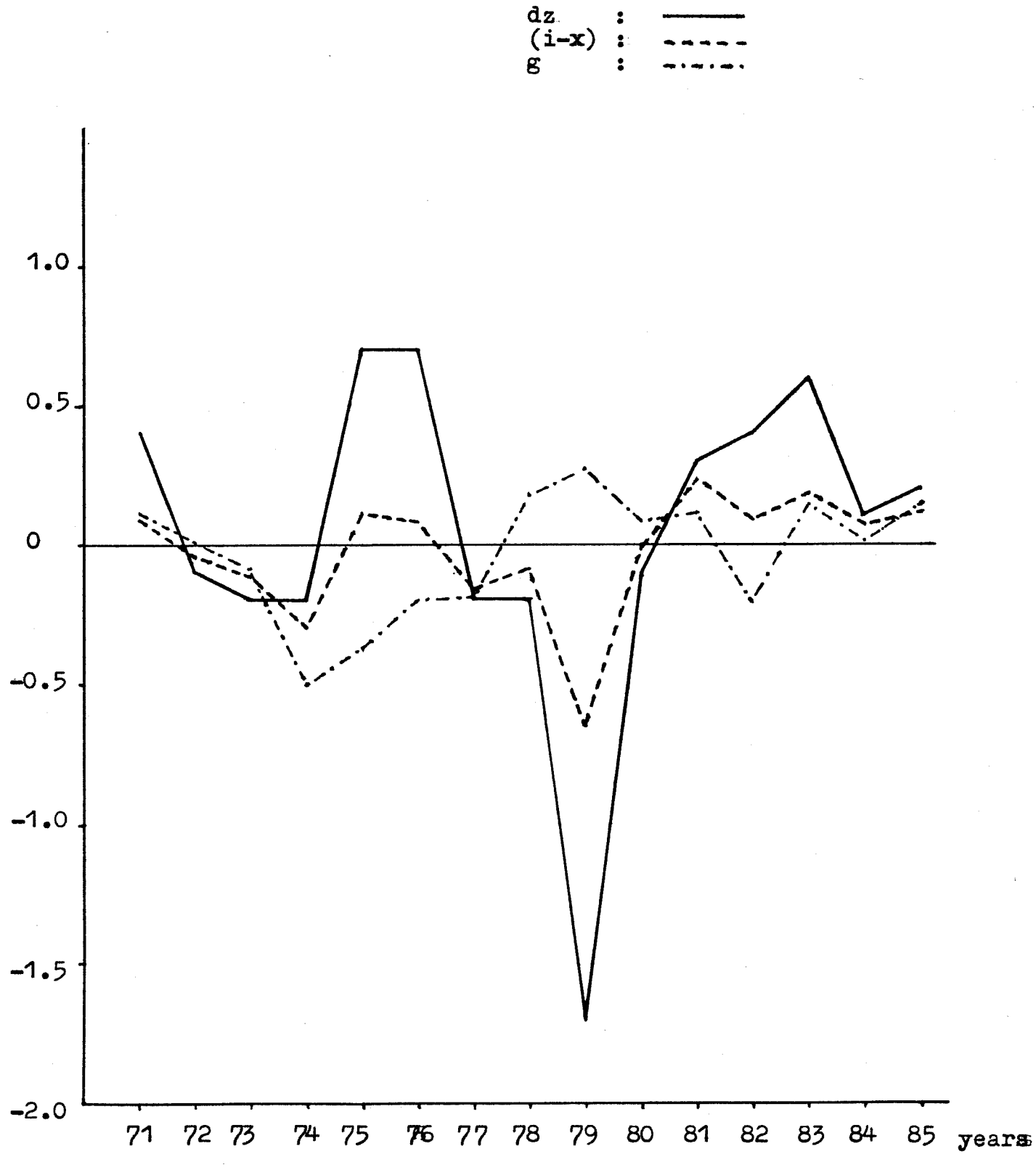
1. Chapter I

GRAPH I-1: THE CATASTROPHE THEORY AND THE DEBT CRISIS



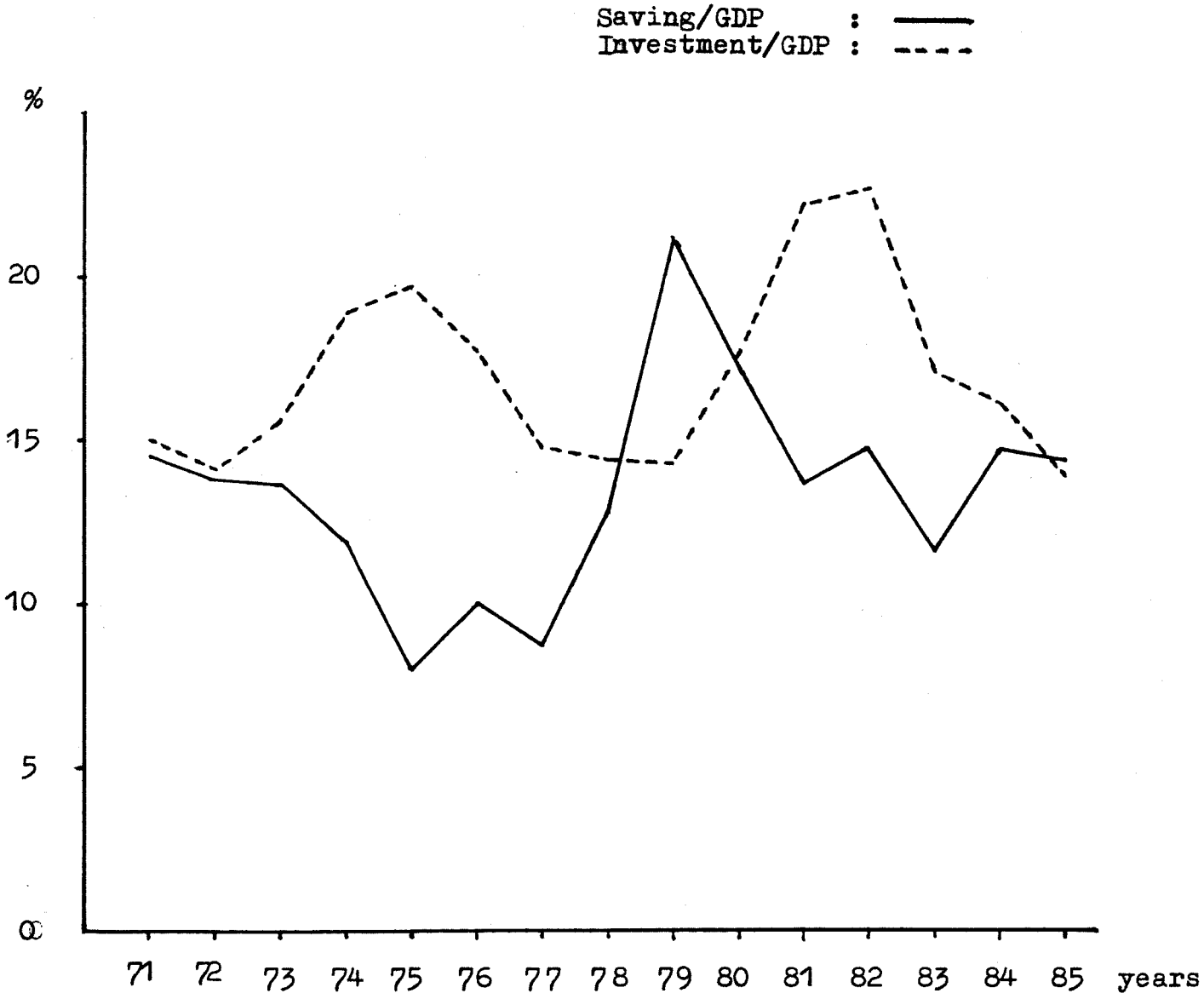
2. Chapter III

GRAPH III-1 : DETERMINANTS OF THE z RATIO

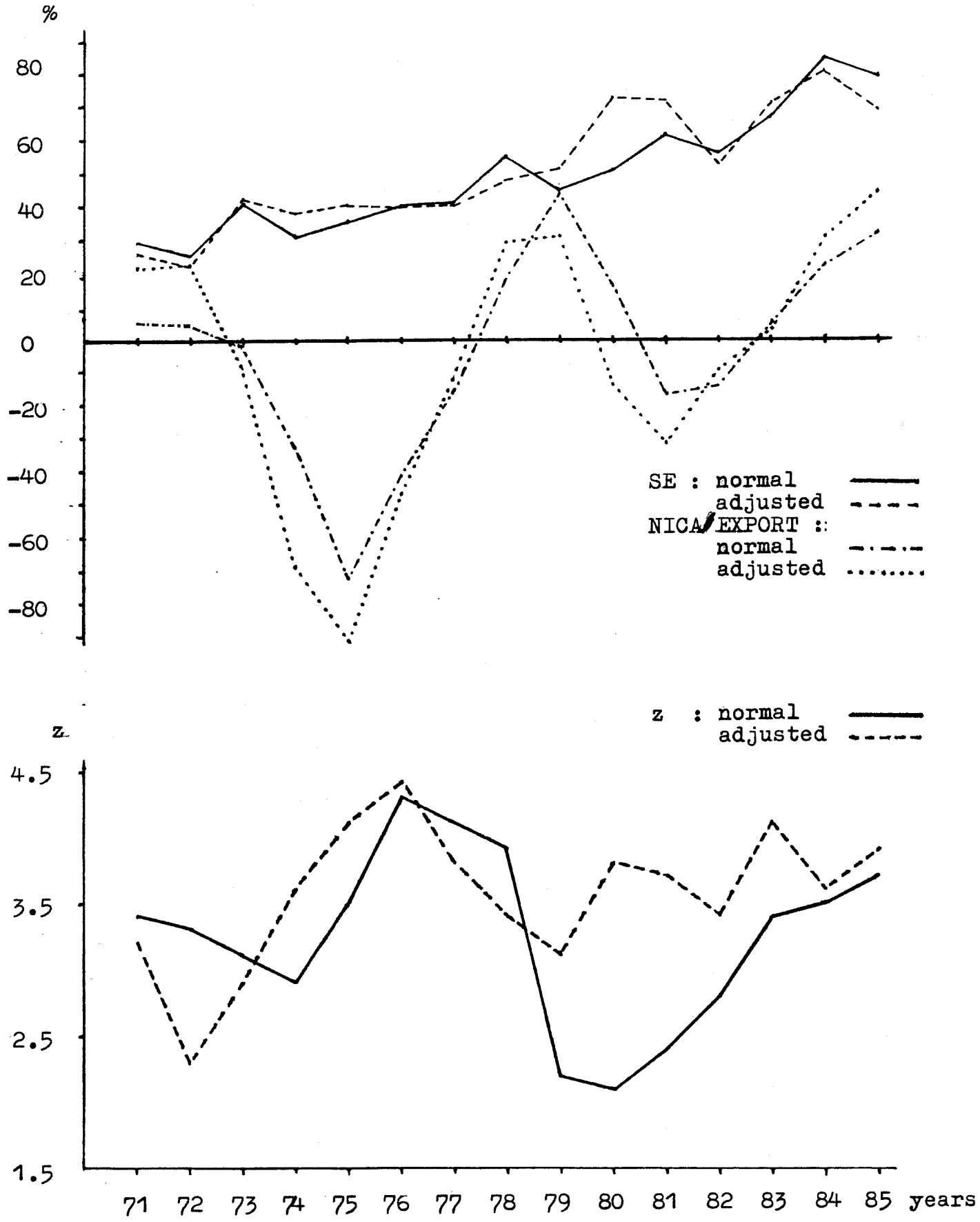


3. Chapter IV

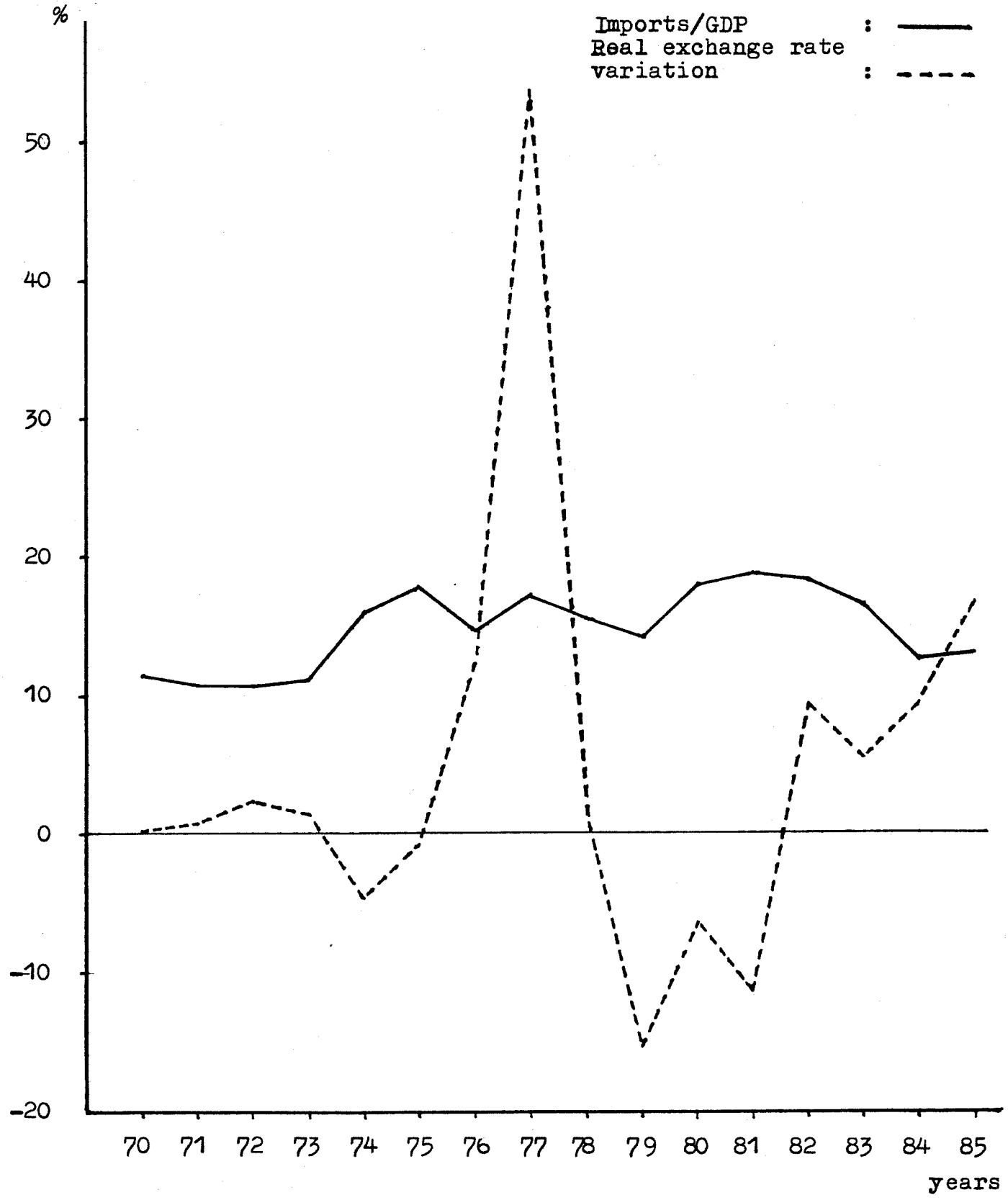
GRAPH IV-1: SAVING AND INVESTMENT
(% of the GDP)



GRAPH III-2: EXTERNAL SHOCK ADJUSTED DEBT INDICATORS



GRAPH IV-2: IMPORTS AND REAL EXCHANGE RATE



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