centralizovanija od svih poznatih (sudeći po koncentraciji vlasništva i ekonomske moći). Pogađanje između vlade i predstavnika privatnog kapitala kritikovano je isto toliko koliko i nedovoljne mere preduzete da se poveća radničko saodlučivanje. Švedski sindikalni pokret se zalaže u velikoj meri za proširenje prava pogađanja lokalnih sindikata, koji organizovani kao »klubovi« deluju u većini preduzeća. Sindikalno članstvo čini obično 90—99%, mada stvarno učešće u klubovima retko prelazi 10% zaposlenih. Opsežno istraživanje Zakona o saodlučivanju, MBL, koji je stupio na snagu 1977. godine pokazalo je nedostatak rezultata u naporima da se poveća uticaj zaposlenih.

Pomenuto je nekoliko primera ovakvih iskustava u Švedskoj, a u nekima od njih početkom sedamdesetih godina učestvovao je i sam autor u svojstvu istraživača. On zaključuje da bi »istinski ofanzivna strategija zahtevala aktivizaciju i mobilizaciju praktično svih zaposlenih u direktno autonomnim oblicima. Samo ukoliko se izbori i sastanci održavaju u toku radnog vremena, kada su stručnjaci i upravljačka struktura odgovorni zaposlenima (mogu biti i zamenjeni od njih) u svakom odeljenju i u svakoj kompaniji, kada je legalno pravo donošenja odluka o krucijalnim ekonomskim pitanjima dato izabranim predstavnicima zoposlenih, može da se postepeno izgrađuje pravo industrijsko demokratsko samoupravljanje.

Umesto široko diskutovanih »fondova plata«, koji su suviše pripisivani postojećoj centralizovanoj političkoj i sindikalnoj strukturi, predlaže se široko zasnovana struktura direktnog predstavljanja. Ova »treća« struktura zastupanja »produkcionog interesa« radnih masa izložena je u trećem delu rada. Pre razvijanja ovog predloga, u radu se tretira potreba kombinovanja planiranja, lokalnog i centralnog, sa tržišnim oblicima koordiniranja proizvodnje i potrošnje. Analizirajući problem dvodimenzionalno: 1. stepena planiranja nasuprot koordiniranju tržišta i 2. oblika svojine — kao što su državno upravljanje, radničko samoupravljanje i privatni kapitalizam, autor tretira kroz deset mogućih i nemogućih kombinacija (neke od njih su samo sumarno spomenute). Često tržišni odnosi, kombinovani sa radničkim upravljanjem, mogu da budu posmatrani samo kao teoretski model koji ima malo šanse da preživi test ekonomske prakse. »Ako radnici, u prelasku iz kapitalizma, preuzmu vlasništvo i upravljanje, biće veoma potrebna koordinacija i planiranje da bi se otklonili toliki nedostaci koji su prisutni u kapitalističkom sistemu.« Nakon diskusije o jugoslovenskom iskustvu autor zaključuje: »Ako se zaista želi pravo samoupravljanje izgleda da je bitan uslov koordinirano planiranje, prenošenje vlasti na lokalne savete i jačanje uloge sindikata u sistemu odlučivanja.« Ovaj argumenat je podržan i rezultatima široke komparative sudije o industrijskoj demokratiji u Evropi. Ovo istraživanje je pokazalo da su kombinacija uticaja javnosti na kompanije, mobilizacija radnika i jasno pravno izražena podrška samoupravljanju bitni faktori koji doprinose radničkoj participaciji i uticaju. Na kraju autor razvija komplikovanu šemu industrijske i ekonomske demokratije, nastojeći da kombinuje planiranje i tržište, političku i ekonomsku demokratiju kao i oblike neposredne demokratije i uticaj sindikata. Da li je to životni sistem ili samo nešto komplikovanija utopistička vizija u duhu »Guild-socijalizma«?

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DEBT ANALYSIS AND DEBT-RELATED ISSUES THE CASE OF YUGOSLAVIA*

*Michèle LEDIĆ***

I. INTRODUCTION

Despite an impressive economic performance in the period since 1960, Yugoslavia is now facing a severe debt problem. In this, it is by no means alone. A large number of countries, at various stages of development, accumulated large external debts during the 1970s. External indebtedness has emerged as one of the major topics in analysis of the international economy. One of the reasons for the rapid growth of international debts during the 1970s lies in the oil-price shocks of 1973 and 1979, together with their consequence for international trade and payments, and also for inflation.

Yugoslavia's debt problems are severe, although, as will be seen, they are less severe than those of some N.I.C. This paper attempts to evaluate the past debt experience of Yugoslavia to determine whether the Yugoslav problem is one of liquidity or solvency. Projections of external debt and debt service till 1990 are given, and the consequences of present debt renegotiation for future borrowing are discussed.

II. EXTERNAL INDEBTEDNESS AS AN INTEGRAL PART OF THE DEVELOPMENT PROCESS

As countries undergo economic development and industrialization, external resources can play an important role in the process of capital formation. In principle, economic development can take place in the absence of international borrowing, but in the early stages of development the domestic resource base is likely to be small. International borrowing increases the resources available by providing savings additional to those generated internally. The growth of exter-

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nal indebtedness is likely to be an integral part of the development process. The debt of the Third World may, therefore, to a great extent simply reflect its stage of development and may as a result become a self-correcting »problem«.

Successful economic development leads to an expansion of the resource base of the country concerned. This resource base enables the country to pay back the debts that were built up during the development process. Since the debts are mainly in foreign exchange, this implies that the development of the traded-goods sector must be a part of the process of growth. Avramović and his colleagues have developed a model of the debt process which could be called a life-cycle model.[1] If external indebtedness enables the country to mobilize its resources, it can increase its national income and expand the traded-goods sector in such a way that, after a period of years, the country becomes less dependent on external finance. In the first stage of the development process, it is normal for a country to borrow enough externally to finance not only the gap between *investment and savings*, but also enough to pay interest on external debt. In the second stage, the volume of gross domestic savings equals the volume of gross demestic investment. The country no longer needs external capital for financing the investment, but is still borrowing abroad to make service repayments on debt accumulated in the first stage.

In the third stage, domestic savings are sufficient to finance all domestic investment, and in addition they have enough to pay for the entire debt service on the accumulated debt. During this stage the country begins to generate a surplus of savings above domestic investment and debt service payments abroad.

An alternative approach to the analysis of external debt as a part of the development process has been formulated by Chenery and his associates[2]. The analytical framework used is based mainly on an empirical model of an open economy that depends on external finance. Relationships between capital inflow, import requirements, savings rates, investment allocation and overall growth for a planned period are considered. The inflow of external capital helps to close two gaps — one between the desired level of investment and the capacity to produce investment goods domestically, and the other, between the rate of investment and domestic savings.

Horvat accepts that the first gap may exist in a developing economy, but the second gap is a financial problem only. In a planned economy, he argues, the gap between investment and domestic savings can be bridged by stopping the growth in domestic consumption for a period of time[3].

A period of rapid growth is expected in which investment, savings and external finance all will increase together for several years. This

[1] See: Avramović D. 1964. »Economic Growth and External Debt«, a study by World Bank staff.
[2] See: Chenery H. 1979. »Structural Change and Development Policy«. Chapter 9. Washington, D. C.: World Bank.
[3] See: Horvat B. 1967. in Adler J. H. (ed.) »Capital Movements and Economic Development«, pp. 229—236.

is found in a number of countries. There are however some limits to the amount of foreign capital available[4] A model incorporating such limits has been applied by McEwan[2]. Growth scenarios were considered on the basis of this model. Three stages were distinguished — the first one of maximum investment and growth, the second, of trade improvement and a third one of balanced growth with no import of foreign capital. The first two periods were assumed to last 20 years, and net capital inflow reached maximum after 15 years. It was shown that external finance had a very high marginal productivity in the early years, but declined as its quantity increased because of limitations on the capacity of the economy to absorb it efficiently. In the model, the most significant measures of the success of development policies are marginal rate of savings (and therefore of domestically financed investment), the absorptive capacity of the economy for investment, and efficiency in the use of the capital.

Chenery argues that external finance may greatly reduce the time needed for a country to achieve a planned rate of growth, but it is important to change policies as growth continues. At the beginning, output must be increased, but then the structure of the economy should be changed to help exports and to prevent bigger deficits in the balance of payments. Exports growth should at least be equal, Chenery suggests, to the planned growth of GNP to reduce dependence on external finance. Policy measures must be undertaken in the field of exchange rates which will enable this export to take place.

At an early stage in the growth process of a developing country it may lead to better results for lenders to link external finance with specific investment projects intended to provide a base for economic growth. As the rate of growth increases, the project approach can lead to problems because the initial large projects have been completed. Then external finance can be used better if the range of activities financed is broad. This should permit the borrowing country to develop a pattern of investment and therefore of production as well in accordance with comparative advantage, and thus to prepare for the period when external finance can be stopped.

Avramović and Chenery assume that external finance goes for investment purposes, but this may not be the case. According to the usual definition, the excess of national investment over savings equals the current account balance. The current account balance is equal to the difference between domestic income and absorption. Absorption is the sum of consumption, investment and government expenditure. A country needs to borrow abroad if it has a current account deficit (unless reserves are such that this is not necessary). Such a deficit could arise from a fall in saving rather than a rise in investment. In this case, resources are not created to enable the traded-goods sector to grow in such a way that the debt can be repaid. On the other hand, there can be cases where, even if the rate of savings is high, a country may suffer from a current account deficit because of the structure

[4] This is »supply-determined« theory of external finance. Riedel J. (1983 — not published) argues that in fact external finance is demand-determined«.

of production, which is such that it cannot generate the type of resources necessary to repay the debt.

In the case of many developing countries, including Yugoslavia, the growth in external debt normally has been accompanied by a considerable increase in investment. The depression in world trade and high interest rates after the oil-price shocks have made foreign borrowing more important than it would otherwise have been. In the case of Yugoslavia investment has not been neglected but has grown more slowly than private consumption.

Yugoslavia's problem (and that of other N.I.C's.) is that investment has been built up but it still is faced in the 1980s with a severe debt problem. An important question is whether this debt burden is a liquidity problem or a solvency problem. Aliber[5] says that a liquidity problem would mean that the borrower would be unable to obtain the foreign exchange to make the debt service payments on schedule. A solvency problem would mean that the interest rate in real terms on the marginal external loan exceeded the increase in national income made possible by this loan.

It will be argued that the immediate problem in the case of Yugoslavia is one of liquidity, and that in the long run it is not a problem of solvency.

III. BACKGROUND TO YUGOSLAVIA'S DEBT PROBLEMS

In the period 1960—1981 Yugoslavia experienced rapid economic growth and structural change. Between 1960 and 1981 GDP grew at an annual rate of about 6% in real terms. The share of investment in GDP was high throughout the period and above 30% in the later years. Population growth was only 1% per annum, and real per capita income more than doubled in the period. Between 1960 and 1981 merchandise exports and imports grew by about 6% and 8% respectively per annum in real terms, although this was slower than in many N.I.C.'s.

Yugoslavia's export performance in the industrial market economies has shown a certain weakness over the period since 1973. In the period since 1973, following the oil-price shock, there was a growing gap between domestic resources and resources needed to enable growth, but at a lower rate. The current account deficit grew in the years following 1973 and 1979 because of oil-price increases and also greater import dependence of Yugoslav industry, as domestic demand continued to expand. The 1979 oil-price shock caused domestic and international repercussions just when Yugoslavia had adjusted to the problems that followed 1973. After 1979 the recession in world trade affected the position of Yugoslavia, together with other developing countries. At the same time, nominal interest rates rose while infla-

[5] See: Aliber R. 1980. »A Conceptual Approach to the Analysis of External Debt of the Developing Countries«. World Bank Staff Working Paper No. 421.

tion decelerated throughout the world, causing real interest rates to rise. This considerably aggravated the debt problem of Yugslavia, together with other debtor countries.

The position became much more difficult after 1979, than in the early 1970s when real interest rates were low, because of the surplus of OPEC funds in the Eurodollar market, and bankers were looking to place their surpluses in a wide variety of countries. Developing countries welcomed, in a way, the entry of private banks into the market partly because their own financial sectors were mostly not efficiently organized, and did not facilitate borrowing by means of bonds etc.. In addition, their desire for investment funds was growing, and following 1973, their current account deficits grew for several years[6].

Until late 1979, however, the position was manageable. It was after 1979 that debt problems became so serious that they became a major topic of concern. The UNCTAD conference in Belgrade in June 1983, was much engaged with methods of solving the debt problems of the developing countries. Table 1 shows the figures for fifteen major borrowers. As shown in Table 1 Yugoslavia's debt service ratio in 1981 and 1982 was smaller than that of many other N.I.C's.

In Yugoslavia serious deterioration in the economic position made it necessary to revise the original Social plan 1981—85. The targets were more modest than in the original plan. A series of stabilization programs were introduced. Restrictive monetary and fiscal policies were adopted to reduce investments and cut inflationary pressures. Other measures were price control, actions to stimulate exports, severe cuts in imports and a more active exchange rate policy. The stabilization commission was set up and it issues reports on different aspects of economic policies and prospects of development.

The current account deficit was reduced from $ 3.7 billion in 1979 to $ 1.4 billion in 1982. The performance of invisibles was below expectations. Yugoslavia's economic growth slowed down after 1979 and GDP actually fell in 1982 by 1%. As the result of import restrictions, the country is suffering from a severe shortage of imported material and components, and output has been adversely affected, particularly of manufacturing.

IV. EVALUATION OF PAST DEBT EXPERIENCE OF YUGOSLAVIA 1973—1982

1. External Debt of Yugoslavia 1973—1982

Yugoslavia has experienced great changes in its current account and capital account in the last decade. The current account balance is shown in Table 2 (and also in Figure 1). After being in surplus in

[6] The policy responses of N.I.C's. in years following 1973 have been examined in the following paper: Balassa B. and Tyson L. 1983. »Adjustment to External Shocks in Socialist and Private Market Economies«. Prepared for the 7th World Congress of IEA, Madrid 1983.

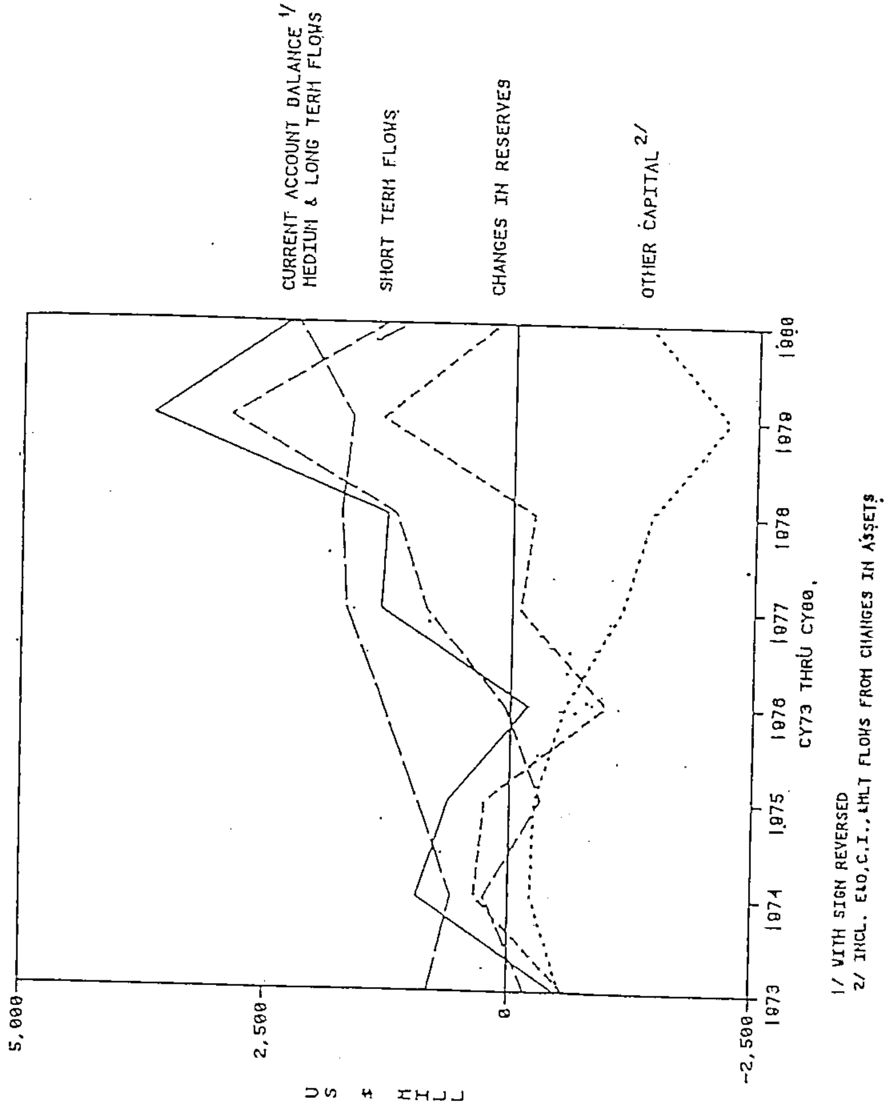


Figure 1. Yugoslavia: Financing of the Current Account 1973—1980

1973, the current account deteriorated in 1974 by $ 1.4 billions as an immediate reaction to the oil-price increase[7]. Measures were taken to

[7] In 1960 energy imports represented 8 percent of merchandise exports, while in 1980 they went up to 40 percent.

save foreign exchange, economic growth slowed down, imports were restricted and, as a result, a small current account surplus emerged in 1976. In the years following, 1977—1979, however, the economy grew at a rate of over 7% (in real terms) per annum. Devaluation in 1974 still left the dinar overvalued. At the same time, due to a relatively inflexible exchange rate policy, recession in the world economy, and the lack of competitiveness of Yugoslavia's exports in developed countries' markets, exports fell in 1977 and 1978 in real terms. Exporters turned to the domestic market where there was an excess of demand. The current account balance turned from surplus in 1976 to a deficit in the following years, reaching a peak in 1979 with a deficit of $ 3.7 billion. Major efforts were then made to reduce domestic demand. This helped, together with import controls, and a much more active exchange rate policy, to reduce the current account deficit in 1980 and 1981. This reduction was due much more to a fall in imports than to a rise in exports. In 1975—81, the export growth rate fell to 4.4% from 4.9% in 1970—75, and the import growth rate fell to 2.1% from 6.0% in 1970—75.

Workers' remittances have always been a substantial contribution to the current account balance, but in the period since the mid-1970s their contribution has fallen. In 1976, net inflows represented 57% of the trade deficit, but in 1980 it was only 25%. This factor has also had an impact on Yugoslavia's current account difficulties. These movements in the current balance caused opposite movements in the capital account. The deficit had to be financed by changes in imports of capital and in official reserves. Official reserves varied during the period. Following 1973, there were big falls in international reserves, but through the years 1976—1978 they increased by $ 1.3 billion. In 1979, they fell by a similar amount partly to finance the current account deficit of that year. On balance, the reserves changed little during the period 1975—1980.

Flows of medium- and long-term external capital were the most important item in financing the current account deficit at the beginning of the period. They more than doubled by 1978 when they were $ 1.7 billion. But there was a significant change within the total. Public debt flows, altered little between 1973—1979, but non-public debt (see next section) flows rose from $ 0.6 billion to $ 1.5 billion. In 1973, flows of non-public debt were over twice those of public debt, but by 1979 the ratio had risen to more than seven times.

This increase in medium- and long-term non-public debt flows was accompanied by an increase in short-term flows from a low figure in 1976 to nearly $ 3.0 billion in 1979. When the second oil-price shock occurred in 1979, there were great changes in flows of external finance. There was a big decrease in medium- and long-term flows of non-public debt and also in short-term flows, mainly because of rationing by foreign private banks. Medium- and long-term flows of public debt rose five times between 1979 and 1980 to reach just over $ 1.0 billion. When the crisis came, private financial institutions abroad greatly reduced their non-guaranteed loans, and as will be seen, increased loans which were guaranteed.

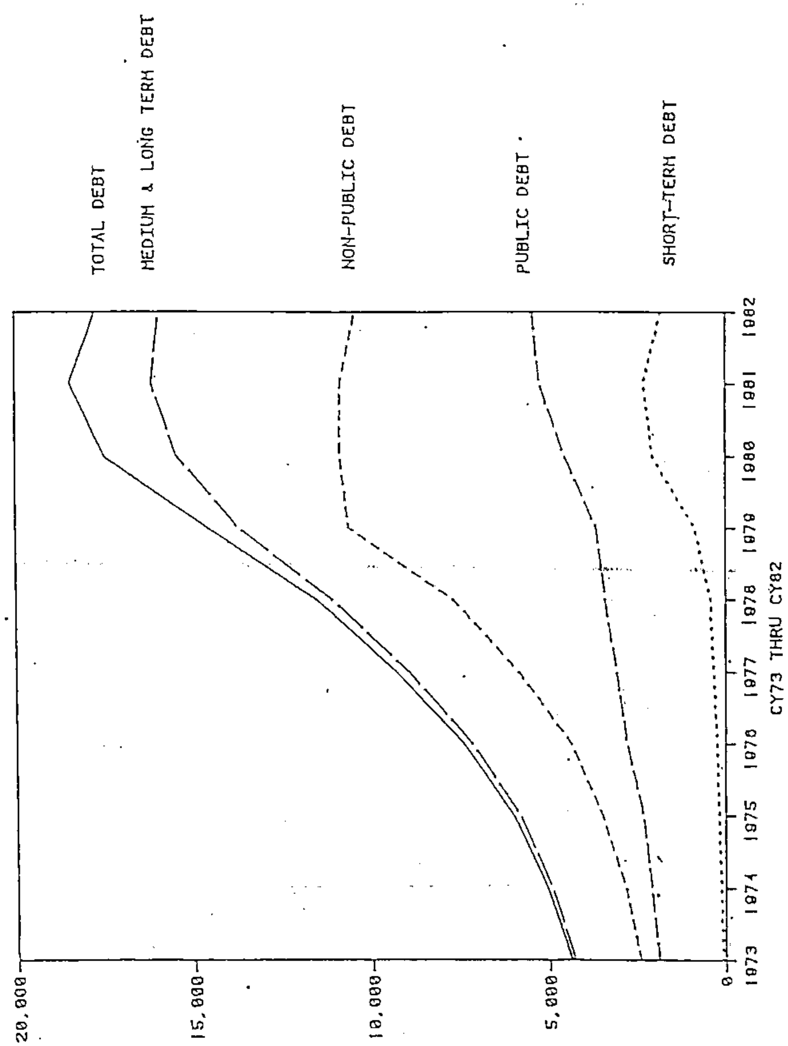


Figure 2. Yugoslavia: External Debt Composition 1973—1982

2. *Public Versus Non-Public Debt*

In Yugoslavia it is not really appropriate to use the terms public/publicly guaranteed and private/non-guaranteed debt. Public debt has the same meaning as defined in the World Debt Tables. Non-public debt (private debt) is not of course guaranteed for repayment by

a public agency, but in Yugoslavia's case it is the external obligation of a socially-owned enterprise.

It is shown in Table 4 and Figure 2 that non-public debt has risen during the period in relation to public debt. Since 1977 it has been twice as great as public debt, and in fact represented 2/3 of the total medium- and long-term debt. In the case of public debt, sources of finance were mainly official until 1979. After that year private sources became relatively more important than before and increased from $ 0.35 billion in 1979 to $ 1.4 billion in 1981. It seems, comparing Table 2 and Table 4, that the increased flows of public debt in 1980 must have come largely from private sources. Non-public debt had an average annual growth rate during the period of 21% in nominal terms, compared with 13% for public debt. In real terms however, the growth rate was over 13% as compared with 3.4% for public debt.

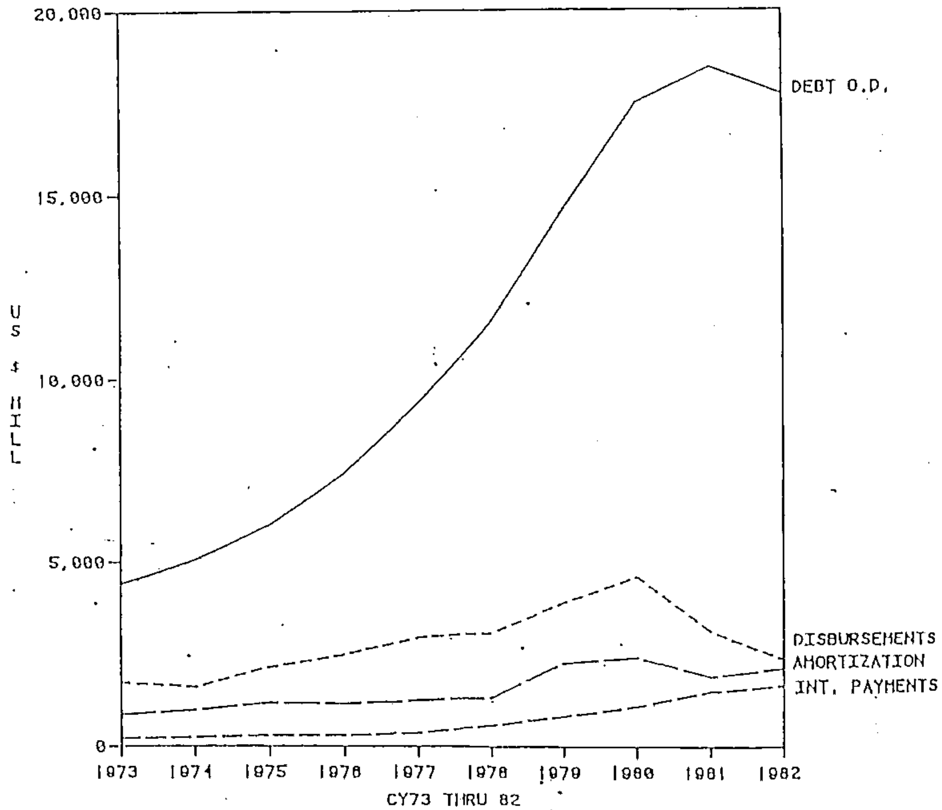


Figure 3. Yugoslavia: External Debt and Debt Service Payments 1973—1982

3. *Debt Service Difficulties*

In the Chenery model the only debt analysis shown is the net capital inflows of external finance. For a more debt-oriented analysis it is also necessary to look at other measures of debt, and in particular at the total debt outstanding and debt service payments (Table 5 and Figures 3 and 4).

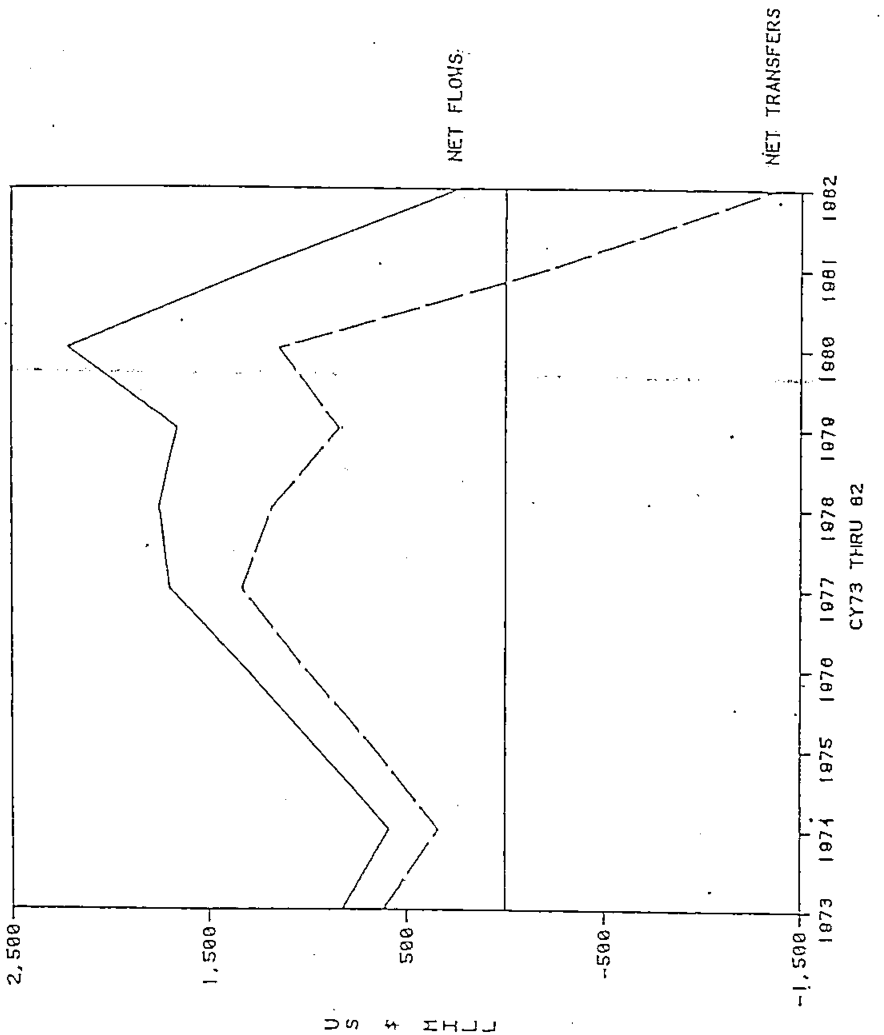


Figure 4. Yugoslavia: Net Flows and Net Transfers of External Debt 1973—1982

The total debt outstanding will grow as long as net flows (disbursements minus amortization) are positive. When disbursements grow rapidly there is going to be a large surplus of disbursements over amortization. This is because there is a grace period before repayment of principal has to start. When disbursements begin to decline, net flows will fall because principal payments on earlier, higher commitments will have to be paid. As long as net flows are positive the debt outstanding will grow. The debt outstanding will stop growing when net flows fall to zero. It follows that in theory the peak of net flows will be reached some time before the peak of the debt outstanding.

These relationships of total value (debt outstanding disbursed), marginal value (net flows) and average value (debt outstanding disbursed per annum) may not precisely apply in the case of a country over a short period of years. This is maybe because commitments and disbursements vary from year to year and principal repayments (amortization) will depend on grace periods and on when maturities take place. In other words, the relationships are not linear.

Table 5 shows the external debt position of Yugoslavia and debt service obligations between 1973 till 1982. The debt outstanding disbursed reached a peak in 1981 and net flows reached a peak a year earlier. Disbursements, on the other hand, reached their peak in 1980, the same year as net flows. The explanation for this is the rise in amortization in 1979 by $ 1 billion.

Interest payments obviously rise with the debt outstanding and in relation to the debt composition, although variations in the interest rate in international markets, as well as the conditions under which the country has access to capital markets, influenced the level of interest payments[8]. Table 5 shows that they rose throughout the whole period. In 1981, they were so large that total debt service payments exceeded disbursements. In Figure 4 it is seen that therefore in 1981 and 1982 net transfers (disbursements minus debt sevice payments) were negative. This takes no account of the return on investments financed by previous borrowing.

In spite of the increase in debt service, the ratio of amortization to the debt outstanding disbursed (Table 5) was 11.5% in 1981 and 13.1% in 1982 in comparison with nearly 20% in 1973—75[9]. Interest payments, on the other hand, rose as a percentage of the debt outstanding to 10.1 percent in 1982. As a result, the ratio of total debt service to the debt outstanding disbursed in 1982 was nearly as high as the figure for the early 1970s.

Finally, we examine roll-over ratios (Table 9). These are constructed using the following symbols:

D = Disbursements: debt raised during the year
A = Amortization: repayment of principal during the year
I = Interest: interest payments during the year

[8] This applies especially to short-term borrowing from private sources on international capital markets.
[9] This ratio is related to medium- and long-term disbursed debt only because principal repayments on short-term debt are excluded.

DS = A + I = Debt service payments
NF = D — A = Net flows of capital
NT = D — DS = Net transfers of capital

The roll-over ratio shows the ratio of the debt that has been raised during the year (D) to the debt repaid in that year (A). It shows how much new money is raised in a year in relation to what has to be paid back to lenders. Measured by

$$D/A$$

Disbursements divided by principal repayments, shows the simple roll-over ratio as defined above. This shows a rise in the years 1976—78 and a fall in recent years down to 1.1 in 1982.

Roll-over ratio measured by:

$$D/DS$$

Disbursements divided by total debt service payments, shows the amount of new external finance that is raised in a year in relation to what has to be paid back to lenders in principal-plus-interest payments. The fall after 1977 reflects the rise in amortization and interest payments in the following years.

The other ratios shown in Table 9 give alternative measures for the roll-over ratio. Measured by

$$\frac{D-A}{D}$$

Shows what is left net (NF), from each unit of disbursement after principal repayments. The ratio shows that during the period this was around 50 percent, and in 1982 it was only 10%. Measured by

$$\frac{D-DS}{D}$$

Shows what is left net (NF), from each unit of disbursement after servicing the debt (DS). After 1977 it began to fall and in 1981 became negative. It means that in 1981 disbursements were smaller than debt service payments, and that in order to service the debt, additional external finance equivalent to 7 percent of disbursements would have been needed. Measured by

$$\frac{1}{1-\frac{A}{D}}$$

Shows how large the disbursement ought to be if, after principal repayments, we would like to have one unit of net flows. In 1982, the ratio was 10, that means in order to have one unit of net flows, after paying amortization, Yugoslavia needed 10 units of disbursements. And finally measured by

$$\frac{1}{1-\frac{DS}{D}}$$

Shows how large disbursements ought to be if, after total debt service payments, we would like to have one net unit of disbursements (net transfers) left. In 1981 the ratio became negative, which in fact means that for each additional unit of net transfers, disbursements declined by 14.3.

4. *Terms of External Public Borrowing*

Data are available for the terms and commitments of external medium- and long-term public/publicly guaranteed debt only (Tables 7 and 8). The lack of such figures for the non-public/non-guaranteed debt is a serious handicap, and as this comes to two-thirds of the total debt outstanding during the whole period, the analysis cannot therefore be accurately done. The figures for public debt commitments, and terms of borrowing on international capital markets still show some important trends. Sources of external public debt commitment vary throughout the years 1973—1982. The main source of finance were official sources with multilateral and bilateral loans. Till 1979 they contributed about 75—90% of all commitments, as is shown in Table 8, and when the peak in the current account deficit was reached, the commitments of the public sector (publicly guaranteed borrowing) turned towards financial institutions on international capital markets. In 1981 some 58% of all commitments that year were made with banks and other financial institutions (Table 8). This shows to what extent Yugoslavia became dependent on private capital from the international capital markets. The amount of external finance that came to Yugoslavia in the form of variable interest rate loans amounted to 37.6% of the disbursed debt in that year (Table 7). Maturity structure changed as well over the period, falling for total loans to 8.9 years as an average maturity in 1980, from 16.8 years in 1978 (Table 7). The average terms of borrowing are given in the table, but the most complex indicator of the overall cost of borrowing is the grant element[10]

[10] See: World Debt Tables, 1983. World Bank. The grant equivalent of a loan is calculated as future service payments discounted at 10 percent. The grant element is a grant equivalent expressed as a percentage of the amount of loan contracted during a year. Loans with grant element over 25 percent and above are considered concessionalenes.

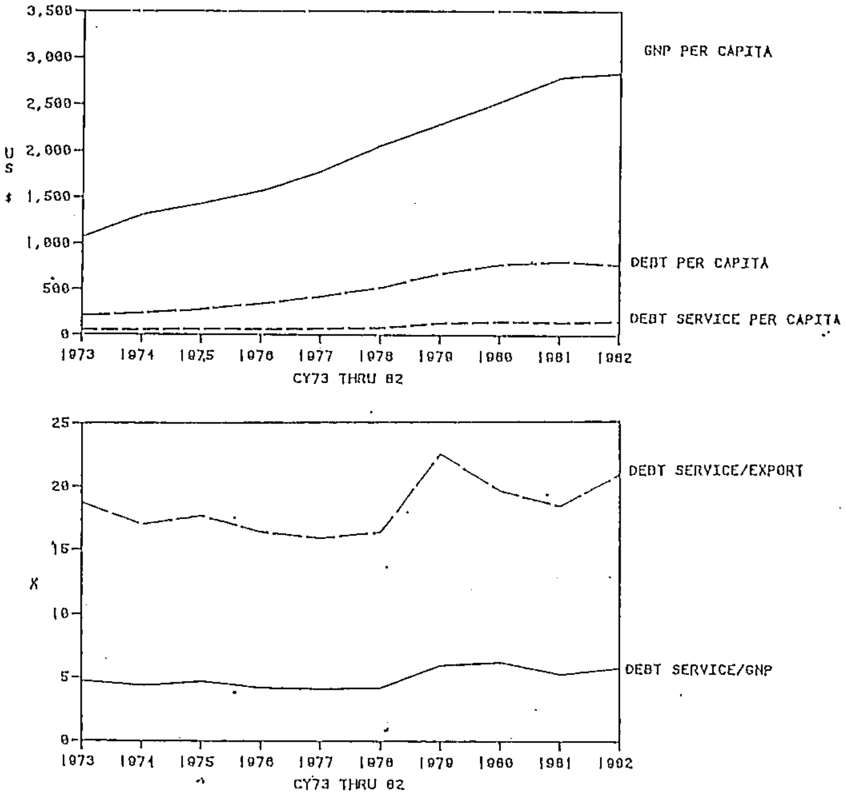


Figure 5. Yugoslavia: Selected Indicators of Indebtedness 1973—1982

V. LIQUIDITY OR SOLVENCY PROBLEM

There is no doubt that serious liquidity problems have arisen for Yugoslavia in the early 1980s. But the question is whether from a long-term point of view it can be said that Yugoslavia will have a solvency crisis.

Table 6 and Figure 5 show ratios which give some indications to help us to answer these questions. Total debt as a percentage of exports rose by over 30% between 1973—79, from 77.5% to 107.1%, but then it fell to 100.4% in 1982. Debt service as a percentage of exports (the debt service ratio) which is one of the most important indicators of a country's ability to repay its debts, rose from 18.7% in 1973 to 22.5 percent in 1979 but then fell to 20.9% in 1982.

Total debt as a percentage of GNP rose from 19.6% in 1973 to 30.9% in 1980 but then fell to 27.9% in 1982. The ratio of debt service to GNP followed a similar pattern.

Compared with other major borrowing countries, as shown in Table 1, Yugoslavia's debt service ratio was lower in the early 1980s.

Yugoslavia had difficulties of access to international capital markets in the early 1980s. This was indicated by its difficulty in borrowing over short-term debt obligations, and in borrowing new money on a medium- and long-term basis. In spite of these difficulties, Yugoslavia has reduced its debt service ratios as mentioned above. This suggests that it has the ability to make adjustments when the liquidity crisis arises.

These problems have been analysed in the last couple of years. Hope found no systematic deterioration in the external debt position of developing countries during the decade 1970—80, although they will be more constrained in their external borrowing in the early 1980s than in the mid-1970s[11]. He does point to three countries — one of them in Yugoslavia — which could encounter difficulties in servicing their debt. The ability to grow during the adjustment period of the early 1980s will be constrained by the need to raise exports rapidly. Hope does not suggest that the problems of adjustment will not be possible to solve in the longer run.

VI. PRESENT DEBT AND ITS RENEGOTIATION

The total debt outstanding disbursed of Yugoslavia at the end of 1982 had reached $ 17.9 billion (Table 4). It had increased at 19.4% in nominal terms per annum and 11.3% in real terms, over the period 1973—1982. Medium- and long-term debt represented 90%, and short-term debt the remaining 10% of the total. Public debt accounted for 31% and non-public debt for 59% of the total debt. The rate of growth of non-public debt, at 13.3% in real terms in 1973—82, was much greater than that of public debt during the same period — 3.4% in real terms.

It will be seen from Table 5, which includes data for medium-, long- and short-term debt, that amortization reached $ 2.1 billion in 1982 and interest payments $ 1.6 billion, giving a total debt service of $ 3.7 billion.

In 1983 the total debt service will reach $ 5.4 billion (Table 10), of which $ 3.8 billion will be principal repayments and $ 1.5 billion interest payments. The consequences of world recession, higher interest rates on international capital markets, shorter maturity periods of loans, many repayments due in the early 1980s, as well as deterioration in the terms of trade and a real slowdown in exports, led Yugoslavia to renegotiate part of the external debt in 1982—83.

[11] See: Hope N.C. 1981. »Developments in and Prospects for the External Debt of the Developing Countries: 1970—80 and Beyond«. World Bank Staff Working Paper No. 488. Washington, D. C.

The renegotiation package involves: 1) the refinancing of $ 2.2 billion principal payments falling due in 1983 on short-term and medium- and long-term debt owed to financial institutions; 2) the rescheduling of $ 1.0 billion of short-term maturities due in 1983; 3) a consortium loan of $ 0.6 billion. In addition to this package, fifteen Western countries have agreed on a loan of $ 1.2 billion. Of this $ 0.6 billion is expected to be drawn during 1983 and the rest during 1984—85. The BIS arranged an $ 0.5 billion bridging loan to be repaid by the end of 1983.

After renegotiation, Yugoslavia's external debt, excluding IMF debt, is expected to reach $ 17.6 billion at the end of 1983. Public debt will come to $ 9.7 billion and non-guaranteed debt of the non-public sector to $ 7.9 billion. Disbursements are expected to be $ 3.5 billion and principal payments $ 3.8 billion, making net flows of — $ 0.3 billion. Short-term debt outstanding is being converted to medium- and long-term debt.

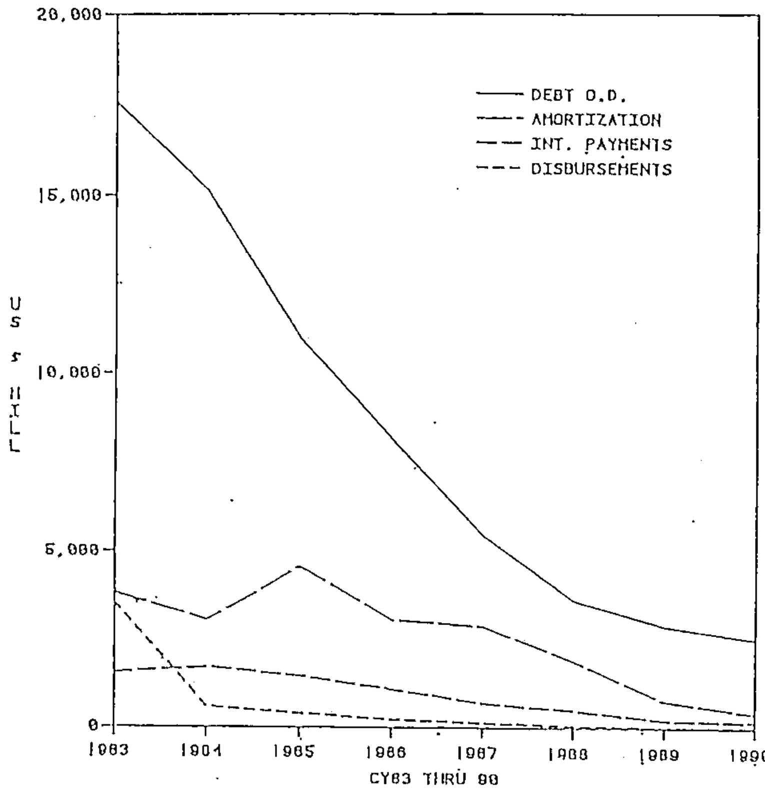
VII. PROJECTIONS OF EXTERNAL DEBT AND DEBT SERVICE PAYMENTS TILL 1990

Projections were made of debt outstanding disbursed and undisbursed, disbursements and debt service payments for the years 1983 to 1990. These figures, shown in Table 10 and Figures 6 and 7, are based on existing loans only. These projections are based on debt outstanding disbursed at 31st December 1983, which means that they take account of the refinancing package but do not take into account any further borrowing. They show a rapid fall in disbursed debt, from $ 17.6 billion in 1983 to $ 8.1 billion in 1986 and $ 2.5 billion in 1990. An even more rapid fall is seen in disbursements, from $ 3.5 billion in 1983 to $ 0.6 billion in 1984. Debt service continues, on the other hand, to rise after 1983. In 1983 it is $ 5.4 billion and reaches a peak in 1985 of $ 6 billion. It falls after this to $ 1 billion in 1989. Amortization payments reach a peak in 1985 and interest payments in 1984.

New commitments, considering the projected balance of payments situation, will be needed in 1984 and the following years. New commitments of public and non-public debt are likely to reach a peak in 1985, and then fall during the rest of the period. Commitments raised as publicly guaranteed will be of greater importance than those raised as non-guaranteed. Commitments raised as publicly guaranteed will most probably come more from private than from official sources in the period 1983—85.

Net flows of public debt are expected to be positive throughout the period, while net flows on non-guaranteed debt are expected to be negative. This means that repayments of the principal of non-public debt will be largely financed by new commitments of publicly guaranteed borrowing.

These projections underline that a substantial capital inflow would be needed in the years ahead. The debt service ratio is however likely to fall due to the emphasis of the stabilization programme on tur-



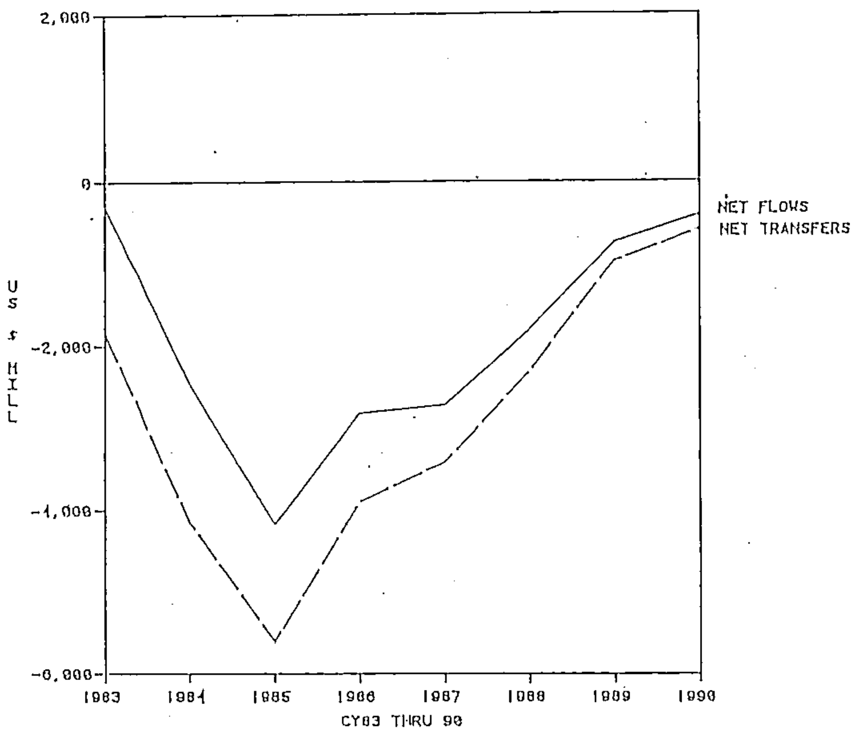
* BASED ON DEBT OUTSTANDING DISBURSED AT 31 DECEMBER 1983.

Figure 6. Yugoslavia: Projected External Debt and Debt Service 1983—1990

ning production towards higher exports, with expected higher export earning in real terms.

VIII. CONCLUDING REMARKS

1. Future borrowing policy must be based on a realistic evaluation of the debt service capacity of an economy in the short and longer run. There are two aspects of debt service capacity — in the short run it is linked to problems of liquidity that avise from balance of payments difficulties and require immediate action. In the longer run, it is linked to profilems of liquidity that arise from balance of payments difficulties and require im mediate action. In the longer run, debt service capacity cannot be separated from economic growth



* BASED ON DEBT OUTSTANDING DISBURSED AT 31 DECEMBER 1983.

Figure 7. Yugoslavia: Projected Net Flows and Net Transfers 1983—1990

indicators, combined with debt burden and debt service analysis. Such an analysis can lead to a strategy for future foreign borrowing related to appropriate measures for solving structural, financial and transfer of resource problems.

2. A liquidity crisis can be overcome in the short term by renegotiation of the existing debt. Experience has suggested that this kind of solution may not really be a long-term solution but may just delay a radical change that will eventually be needed. Several of the countries that have rescheduled their debt did not get any better afterwards in terms of their indebtedness. The question is whether by financing the debt (the gap) we make the gap larger, or does it really pull the country out of its debt difficulties?

3. Although renegotiations with Western governments, banks and international financial institutions are underway to support the stabilization program of the Yugoslav economy, Yugoslavia will remain highly dependent on external borrowing in order to service debt obligations on previous external borrowing. If external borrowing of the projected size proves to be possible, Yugoslavia will have time to make the changes in the structure of the economy that are proposed by the stabilization programme.

4. We cannot answer the question now, whether financing the debt will make the debt larger or will pull Yugoslavia out of its debt difficulties. Much depends on what happens in the world economy as a whole, as well as how fast the Yugoslav economy can adjust to new external developments.

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Table 1:

COUNTRY DEBT AND DEBT SERVICE RATIO — FIFTEEN MAJOR BORROWERS (MEDIUM- AND LONG-TERM DEBT)

	DEBT OUTSANDING DISBURSED (US $ BILLION)		DEBT SERVICE RATIO (IN %)	
	1981	1982	1981	1982
BRAZIL	63.6	71.8	57.0	66.6
MEXICO	53.4	60.1	34.5	52.1
ARGENTINA	22.7	28.9	42.3	86.1
KOREA	20.7	23.2	13.7	14.0
INDONESIA	19.1	19.7	14.0	21.4
INDIA	18.1	19.5	....	....
YUGOSLAVIA	16.1	17.6	18.4	20.9
ISRAEL	15.8	18.0	19.1	18.1
VENEZUELA	15.0	....	9.3	13.5
ALGERIA	14.4	14.4	25.0	29.8
TURKEY	14.2	15.2	27.9	25.3
EGYPT	13.9	18.0	19.3	....
CHILE	12.6	14.0	57.4	55.6
PHILIPPINES	10.3	12.0	18.6	24.8
GREECE	10.0	....	....	....

Legend: .... Data not available.
Source: World Bank DRS and staff estimates.

Table 2:

YUGOSLAVIA — SELECTED BALANCE OF PAYMENTS AGGREGATES 1973—1981 (US $ millions)

	1973	1974	1975	1976	1977	1978	1979	1980	1981
Current Account Balance	501.9	—951.3	—625.3	180.1	—1,345.0	—1,283.3	—3,660.2	—2,290.7	—1,821.0
Medium- & Long-Term Flows	825.8	586.3	949.8	1,313.3	1,696.4	1,752.2	1,650.7	2,216.9	1,250.9
Public Debt	245.2	160.1	290.3	426.1	205.7	198.9	212.9	1,006.2	736.3
Non-Public Debt	580.6	426.2	659.5	887.2	1,490.7	1,553.3	1,437.8	1,210.7	514.5
Short-Term Flows	—183.6	251.4	—319.3	62.3	880.3	1,196.9	2,883.7	1,309.2	765.0
of which Short-Term Debt (Net Flows)	30.0	44.2	65.0	47.0	100.0	82.0	436.0	1,182.0	262.0
Other Capital	—551.6	—233.9	—259.0	—567.4	—1,139.4	—1,434.5	—2,216.5	—1,385.2	....
Capital n.e.i.[1]	—291.0	—89.6	—0.9	—219.8	—265.3	—360.7	—642.0	—381.4	....
Errors & Omissions	—249.2	—91.4	—314.5	—346.4	—785.7	—924.0	—1,608.5	—1,055.8	....
Counterpart Items	—83.4	—52.9	54.6	—1.2	—88.7	—151.5	33.6	79.4	....
Change in Reserves	592.5	347.6	253.8	—988.3	—91.1	—230.4	1,342.4	149.7	....
Use of IMF Credits	—74.4	143.5	19.0	190.2	—128.8	—97.7	293.1	363.2	672.0

Legend: .... = data not available.
Source: World Bank DRS and Balance of Payments.
[1] Capital n.e.i. = net flows (balance of payments — DSR).

Table 3:

YUGOSLAVIA — SELECTED ECONOMIC INDICATORS

	1973	1974	1975	1976	1977	1978	1979	1980	1981
M & LT Flows/CAB	1.65	—0.62	—1.52	7.29	—1.26	—1.37	—0.45	—1.05	—0.69
ST Flows/CAB	—0.37	—0.26	0.51	0.35	—0.65	—0.93	—0.79	—0.57	—0.42
ST Debt/CAB	0.06	—0.05	—0.10	0.26	—0.07	—0.06	—0.12	—0.52	—0.14
Change in Reserves/CAB	1.18	0.37	0.40	5.49	—0.07	—0.18	0.37	0.07	....
Reserves/Imports (Months)	3.4	2.0	1.5	3.1	2.4	2.6	1.5	1.6	....
Reserves/Annual Import	28.0	16.8	12.3	25.5	20.3	21.9	12.7	13.1	....

Legend: .... = data not available.
Source: World Bank DRS and Balance of Payments.

Table 4:

YUGOSLAVIA — EXTERNAL DEBT COMPOSITION 1973—1982 (US $ Millions)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	Average Annual Growth Rate 1973—1982 Nominal	Real[2]
Total Debt	4,377.8	5,061.7	6,023.0	7,419.7	9,304.5	11,547.3	14,584.7	17,494.8	18,454.1	17,886.4	19.4	11.3
Medium- & Long-Term Debt	4,284.0	4,923.7	5,820.0	7,169.7	8,954.5	11,115.3	13,716.7	15,444.8	16,142.1	15,915.7	17.9	9.9
— Public Debt	1,877.0	2,090.5	2,327.3	2,789.9	3,083.9	3,408.5	3,660.4	4,551.1	5,266.0	5,464.9	13.1	3.4
Official Sources	1,381.0	1,644.8	1,928.8	2,370.3	2,689.5	3,021.4	3,310.7	3,634.8	3,896.3	4,120.1	13.0	4.4
Private Sources	496.0	445.7	398.5	419.6	394.4	387.1	349.7	916.3	1,369.7	1,344.8	13.2	1.1
— Non-Public Debt	2,407.0	2,833.2	3,492.7	4,379.8	5,870.6	7,706.8	10,656.3	10,893.7	10,876.1	10,450.8	20.8	13.3
Short-Term Debt[1]	93.8	138.0	203.0	250.0	350.0	432.0	868.0	2,050.0	2,312.0	1,810.0	45.5	37.5
Percentage												
Total Debt	100	100	100	100	100	100	100	100	100	100		
Medium- & Long-Term Debt	97.8	97.2	96.6	96.6	96.3	96.3	94.0	88.2	87.4	89.7		
— Public Debt	42.8	41.3	38.6	37.6	33.2	29.6	25.0	25.9	28.4	30.7		
— Non-Public Dept	55.0	56.0	58.0	59.0	63.1	66.7	69.0	62.3	59.0	59.0		
Short-Term Debt	2.2	2.8	3.4	3.4	3.7	3.7	6.0	11.8	12.6	10.3		

Source: World Bank DRS.
[1] Staff estimates and IMF data.
[2] Using USS GDP deflator for OECD-Horth, 1980 = 100.

Table 5:

YUGOSLAVIA — EXTERNAL DEBT AND DEBT SERVICE PAYMENTS 1973—1982[1] (US $ Millions)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	Average Annual Growth Rate (Nominal) 1973—1982
Debt Outstanding Including Undisbursed	6,086.5	8,225.8	9,466.7	10,368.2	10,611.1	13,222.2	15,985.5	18,742.3	20,195.2	19,328.3	14.0
Debt Outstanding Disbursed	4,377.8	5,061.7	6,023.0	7,419.7	9,304.5	11,547.3	14,584.7	17,494.8	18,454.1	17.886.4	19.4
Disbursements	1,669.4	1,557.0	2,102.0	2,449.8	2,923.5	3,059.6	3,893.0	4,596.7	3,107.4	2,314.7	8.3
Amortization	843.6	970.7	1,152.3	1,138.1	1,227.6	1,306.9	2,237.3	2,380.0	1,862.1	2,082.3	11.8
Interest Payments	825.8	586.3	949.7	1,311.7	1,695.9	1,752.7	1,655.7	2,216.7	1,245.3	232.4	12.4*
Net Transferc	209.3	246.0	289.3	300.9	366.8	578.0	817.4	1,077.4	1,461.7	1,609.0	28.1
Net Transfern	616.5	340.3	660.4	1,010.8	1,329.1	1,174.7	838.3	1,139.3	—216.4	—1,376.6	13.7*
Total Debt Service	1,052.9	1,216.7	1,441.6	1,439.0	1,594.3	1,884.9	3,054.9	3,457.4	3,232.8	3,691.3	16.4
Percentage											
Debt Outstanding Disbursed MLT	100	100	100	100	100	100	100	100	100	100	
Amortization on MLT Debt	19.7	19.7	19.8	15.9	13.7	11.8	16.3	15.4	11.5	13.1	
Interest Payments on MLT Debt	4.9	5.0	5.0	4.2	4.1	5.2	6.0	7.0	9.1	10.1	

* Average annual growth rates for 1973—1980.
[1] Medium-, Long- and Short-Term (MLT and ST).
Source: World Bank DRS.

Table 6:

YUGOSLAVIA — SELECTED INDICATORS OF INDEBTEDNESS 1973—1982

US $	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
GNP Per Capita	1,068	1,317	1,436	1,574	1,792	2,071	2,304	2,536	2,795	2,840
Debt Per Capita	209	239	282	344	427	527	658	783	819	781
Debt Service Per Capita	50	57	67	66	73	86	138	155	147	162
Total Debt/GNP (%)	19.6	18.2	19.7	21.9	23.9	25.5	28.6	30.9	29.4	27.9
Total Debt/Export (%)	77.5	70.5	73.8	84.2	92.6	100.5	107.1	98.9	102.4	100.4
Debt Service/GNP (%)	4.7	4.4	4.7	4.2	4.1	4.2	6.0	6.2	5.3	5.8
Debt Service/Export (%) (Debt Service Ratio)	18.7	17.0	17.7	16.4	15.9	16.4	22.5	19.6	18.4	20.9

Source: World Bank DRS and Balance of Payments.

Table 7:

YUGOSLAVIA — TERMS OF MEDIUM- & LONG-TERM EXTERNAL PUBLIC BORROWING 1973—1982

(Average Terms)	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Total Loans										
— Interest (%)	3.208	6.402	8.496	8.715	8.305	6.123	7.452	15.0	12.522	14.532
— Maturity (Yrs.)	21.2	19.7	15.1	16.5	14.2	16.8	14.9	8.9	11.7	9.6
— Grace (Yrs.)	4.2	6.0	4.1	3.9	3.6	3.7	3.5	3.1	4.0	3.7
— Grant Element	44.7	26.3	8.4	6.6	8.0	23.1	13.2	—19.5	—6.0	—19.8
Variable Interest Rate Loans [% of Disbursed Debt]	6.3	8.7	8.0	8.3	8.3	7.5	5.3	23.6	37.6	—

Source: World Bank DRS.

Table 8:

YUGOSLAVIA — COMPOSITION OF EXTERNAL PUBLIC DEBT COMMITMENTS 1973—1982
(US $ Millions)

		1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Commitments (Public)	US$ Millions	847.0	1,055.1	653.5	223.6	409.3	764.5	286.3	1,197.1	1,684.1	489.9
	%	100	100	100	100	100	100	100	100	100	100
Suppliers Credits	US$ Millions	3.0	—	—	—	—	—	—	—	—	—
	%	0.4	—	—	—	—	—	—	—	—	—
Financial Institutions	US$ Millions	19.4	103.8	175.3	51.4	18.2	—	2.3	695.4	392.1	354.4
	%	2.3	9.8	26.9	23.0	4.5	—	0.9	58.1	23.3	72.4
Multilateral Loans	US$ Millions	104.9	256.5	209.0	153.0	343.5	522.0	284.0	211.0	442.0	135.6
	%	12.3	24.5	32.0	68.5	83.9	68.3	99.0	17.6	26.3	27.6
Bilateral Loans	US$ Millions	719.7	694.8	269.2	19.1	47.6	242.5	0.03	290.7	850.0	—
	%	85.0	65.7	41.2	8.5	11.6	31.7	0.1	24.3	50.5	—

Legend: — = data is zero.
Source: World Bank DRS.

Table 9:

YUGOSLAVIA — EXTERNAL DEBT ROLL-OVER RATIOS

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Roll-Over Ratios (ROR)										
D/A	1.98	1.60	1.82	2.15	2.38	2.34	1.74	1.93	1.67	1.11
$\frac{D-A}{D}$	0.49	0.38	0.45	0.54	0.58	0.57	0.43	0.48	0.40	0.10
$\frac{1}{1-\frac{A}{D}}$	2.04	26.3	2.22	1.85	1.72	1.75	2.33	2.08	2.5	10.0
Roll-Over Ratios (ROR NT)										
D/DS	1.59	1.28	1.46	1.70	1.83	1.62	1.27	1.33	0.93	0.63
$\frac{D-DS}{D}$	0.37	0.22	0.31	0.41	0.45	0.38	0.22	0.25	—0.07	—0.59
$\frac{1}{1-\frac{DS}{D}}$	2.70	4.55	3.23	2.44	2.22	2.63	4.55	4.0	—14.29	—1.69

Note: D = Disbursements; A = Amortization; DS = Debt Service of MLT debt.
Source: World Bank DRS.

Table 10:

YUGOSLAVIA — PROJECTED EXTERNAL DEBT AND DEBT SERVICE PAYMENTS 1983—1990*

Based on Debt Outstanding at 31 December 1983.

(US$ Millions)

	1983	1984	1985	1986	1987	1988	1989	1990
Debt Outstanding Including Undisbursed	19,080.2	16,037.1	11,466.1	8,419.4	5,560.8	3,677.7	2,913.0	2,498.3
Debt Outstanding Disbursed	17,573.2	15,122.6	10,952.4	8,141.7	5,424.8	3,616.9	2,883.7	2,485.6
Disbursaments	3,544.2	592.4	400.8	236.0	141.7	75.2	31.5	16.5
Total Debt Service	5,381.8	4,738.6	6,015.2	4,129.0	3,553.0	2,383.9	994.1	592.5
Amortization	3,838.0	3,043.0	4,571.0	3,046.8	2,858.5	1,883.1	764.7	414.6
Interest Payments	1,543.8	1,695.6	1,444.2	1,082.3	694.5	500.8	229.4	177.9

* Includes: Short-, Medium- and Long-term public and non-public debt. Based on debt outstanding disbursed at 31 December 1983.
Sourced: World Bank DRS.

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AN ANALYSIS AND FORECAST OF DEMAND FOR FOOD IN IRAN

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I. INTRODUCTION

In the last two decades, Iran's per capita food consumption has grown dramatically. During the 1960—77 period, for instance, not only did the rate of growth of food production fail to keep pace with the rate of growth of demand, but the food productivity growth rate in agriculture fell far behind that of other sectors as well.

Given the experience of the recent past, it is reasonable to expect that the size of the food gap (the difference between demand and supply) will grow absolutely and relatively in view of the expanding population in Iran. This gap will be even larger if there is an attempt to increase food consumption in order to improve living standards. In the immediate pre-revolutionary period the government was able, for over a decade, to finance imported food through oil revenues. This policy is no longer viable on a sustained basis. Given that the Iranian economy can basically be characterized as a one-crop (oil) economy, the food-import strategy does not seem to be a viable long-run solution.

This paper addresses itself to an alternative policy. It is argued that, as a matter of development strategy, more attention should be paid to the rate of productivity in agriculture. The model presented here focuses on the demand size of the problem. Given information with respect to the demand growth rate, the minimum required rate of growth of supply can be specified for a given time horizon.

The desirability of development policies designed to promote food self-sufficiency is discussed in the following pages. Next, a simple dynamic model is suggested, and empirical evidence pertaining to the model is presented. Finally, some conclusions and policy recommendations are presented.

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