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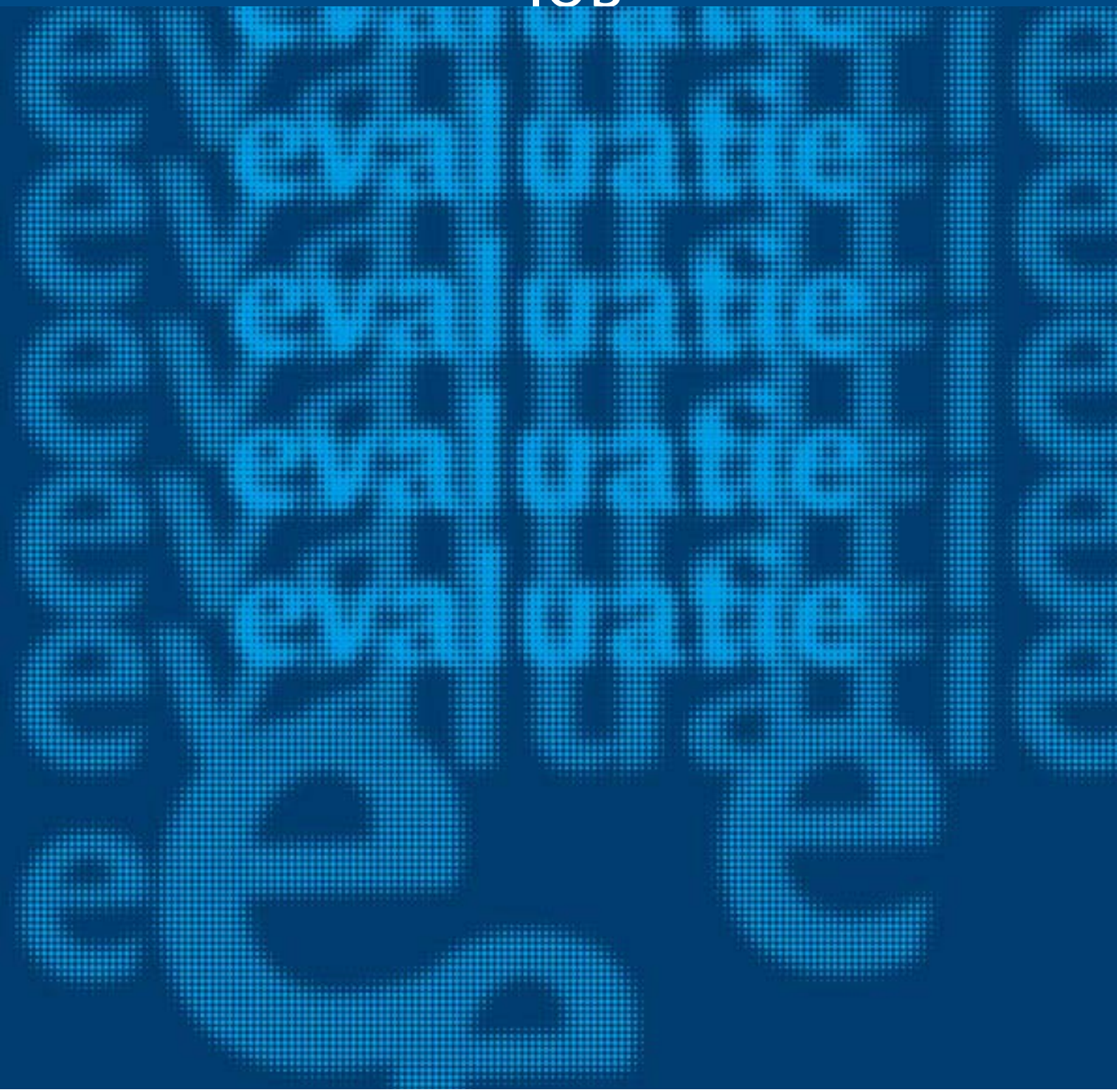

THE DEBT CRISIS, INTERNATIONAL RESPONSES, AND RESULTS OF DEBT RELIEF

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INSPECTIE ONTWIKKELINGSSAMENWERKING EN BELEIDSEVALUATIE

THE DEBT CRISIS, INTERNATIONAL RESPONSES, AND RESULTS OF DEBT RELIEF

REPORT OF A LITERATURE SURVEY AND AN ECONOMETRIC ANALYSIS

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PREFACE

This report contains the findings of a literature survey and an econometric study undertaken as part of a comprehensive evaluation of the Netherlands debt relief policy and of the results of international debt relief during the 1990s.

The study started in 2001. The initial results of the literature survey were presented to a Conference of the Latin American Studies Association in Washington in September 2001, whilst the preliminary findings of the econometric study were submitted to a Conference of UNU-WIDER on debt relief, held in Helsinki in August of that year. On the basis of the comments received during these conferences the design of the econometric study was further elaborated. These papers and the more elaborated design were subsequently commented upon by the Reference group set up for the evaluation, in particular by the external members of this group. Further adjustments were then made, and a draft report was presented to the Reference Group in July 2002. After another round of comments and discussions the report was finalised in January 2003.

The research was carried out by Dr. A.G. Dijkstra and Dr. C.L.M. Hermes, who are responsible for the contents of this report. It is published in the series of IOB 'Working Documents', comprising consultant studies of interest to a wider public.

Rob D. van den Berg
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MAIN FINDINGS

The debt crisis of the 1980s broke out when interest rates suddenly rose and commodity prices fell at the end of the 1970s. Both debtor country policies and creditor lending behaviour have led to the debt crisis. In particular, in the 1970s creditors supplied more loans than was justified on the basis of a rational analysis of expected returns. Commercial banks engaged in high-risk lending at low interest rates because they had excess supplies of money, and because regulation and supervision was lacking. Bilateral governments (both aid agencies and Export Credit Agencies, ECAs) expanded lending in order to stimulate exports and employment in their own countries.

All three types of creditors (commercial, official bilateral and official multilateral) first thought that debtor countries only had a liquidity problem and that new lending would provide the solution. However, this view of the problem appeared to be wrong. Commercial creditors were much faster than official creditors in recognising that debts would not be paid. From the mid-1980s, they stopped involuntary lending and wrote off their claims. From 1989 onwards, the Brady plan formalised the market-based debt reductions and led to large-scale debt stock reductions. Bilateral creditors began to apply debt forgiveness from 1988 onwards, but only to a limited extent. Until the initiative for the Heavily Indebted Poor Countries (HIPC) was launched in the late 1990s, bilateral creditors only provided some debt service relief, thus maintaining the fiction that debtor countries only had a liquidity problem. The most important reason why commercial creditors were earlier in recognising that debtor countries were insolvent, was that private lenders were subject to accounting rules that forced them to write down questionable debts.

Although in the 1980s commercial creditors were partly bailed out by official creditors, they also bore part of the cost of their irresponsible lending themselves, so the risk of continued moral hazard was minimal. Most ECAs were fully compensated by their aid agencies, however, and multilateral institutions were preferred creditors. In the 1990s, both the ECAs and the International Financial Institutions have to some extent been bailed out with bilateral aid money, and this is likely to have implied continued moral hazard in their lending decisions.

The slow recognition during the 1990s that debtor countries had a solvency problem was also responsible for the fact that countries with high debts received more aid. Donors suffered from adverse selection in their allocations of aid and debt relief, with possible negative consequences for aid effectiveness and negative incentives for policies of recipient countries.

In Latin America, debt relief in the form of stock relief provided around 1990 seemed to have important effects on private investment and on creditworthiness. For Mexico, the channel proved to be reduced uncertainty on government policies. Sub-Saharan African countries only received flow relief during the 1980s and 1990s. Arrears continued to increase as they only paid part of the debt service due, but lengthy negotiations were necessary on the share of debt service to be paid, and on the amount of aid to be received.

In the 1990s, the economic situation of several debtor countries can be described as follows: high debt, low debt service paid to debt service due ratios, and low growth and investment rates. In this report it is hypothesised that, at least for the 1990s, it is the problem of the *volatility* of debt service payments, rather than the level of the external

debt as such, which compromises economic growth. The nature of the debt service payment system in the 1990s has influenced the year-to-year variation in debt service payments of debtor countries. Debtor countries only pay a small percentage of what they owe and must regularly negotiate with their creditors about the terms of debt service repayments. Moreover, in several cases the outcomes of negotiations may be that debtor countries suddenly must resume payments on debts they had not serviced for a long time. The outcomes of these negotiations are difficult to predict, contributing to uncertainty about the annual debt service payments due. These characteristics make it difficult for the government of the indebted country to know exactly how much is available for expenditure. This may seriously reduce the effectiveness of government policies and increase uncertainty about the implementation of reforms, which in turn act as a disincentive for the private sector to invest and compromises economic growth. The outcomes of the empirical analysis suggest that this premise may be correct. The volatility of debt service payments appears with a negative and statistically significant coefficient in the standard economic growth models. Essentially, the debt overhang effect may have taken a new shape in the 1990s: a high debt may affect economic growth through the volatility of debt service payments.

These findings may have implications for donor countries and creditors: debt stock reduction may help to stimulate sound macroeconomic policies and regain growth in debtor countries. By providing a once-and-for-all stock reduction the volatility of annual debt service payments will be reduced. This will limit the need for lengthy negotiations on the terms of debt payments and on new loans and grants. More importantly, it will help governments to more carefully plan revenues and expenditures related to different government policies by making them more predictable. This, in turn, will stimulate private investment and restore economic growth.

1 INTRODUCTION

This report is one of the background papers for the Evaluation of Dutch Relief, commissioned by the Policy & Operations Evaluation Department (IOB) of the Ministry of Foreign Affairs of The Netherlands. The overall objective of this evaluation is to assess the efficiency, effectiveness and relevance of Dutch debt relief granted to developing countries in the 1990s.

Within this broader framework, this report has two objectives. First, it aims to put the Dutch debt relief policies in perspective by analysing the origins of the debt crisis and the international responses to the crisis. Secondly, and complementary to the country studies undertaken for this Evaluation, it assesses the effectiveness and relevance of debt relief at a more general level.

The analysis presented in this report reflects an extensive study of the literature, of available data on debt and debt relief, and of a cross-country empirical study focusing on the ways in which a large debt may hamper economic growth. Knowledge about these channels provides clues for the modality of debt relief that can most effectively promote growth and development.

The main objective for debt relief is to enhance economic growth by making debts more sustainable. The next chapter therefore investigates the definitions of sustainable debt and how in theory debts may become unsustainable. This provides the background for the analysis of the actual origins of the debt crisis in the 1980s and 1990s, which are dealt with in chapter 3. The international responses to the debt crisis are then described in chapter 4. Chapter 5 surveys the results of debt relief efforts so far, also on the basis of a literature study.

Chapter 6 analyses the relationship between a large and unsustainable debt and economic growth. In particular, it deals with the channels through which such a large debt may hamper growth. It summarises the relevant literature on these channels, and then presents our own empirical research. Chapter 7 makes some remarks on the possible results of the HIPC initiative on the basis of our findings.

2 DEBT AND SUSTAINABILITY

2.1 Introduction

According to neo-classical theory, international borrowing and lending are efficient responses to different rates of return to capital. The developed countries experience low rates of return to investment, while less developed countries lack capital. Consequently, developing countries have a high return on investment , which means that they have a high return to diverting resources from current production of consumption goods to production of capital goods (Krugman & Obstfeld, 1997). If markets work well, the price of capital, i.e. the interest rate, reflects these differences in rates of return. Interest rates will be higher in capital-scarce countries than in countries where capital is relatively abundant. This means that international lending and borrowing will promote the equalisation of interest rates around the world. Both lenders and borrowers gain from the transaction. From the higher rates of return, borrowing countries will be able to pay their debt service as scheduled. These countries will continue borrowing until their relative scarcity of capital has been overcome, and rates of return are equalised. They may then even become net lenders in the international capital market.

In a “normal” situation, debts, or in fact, increases in debts, should lead to more investment and to economic growth. However, in the past there have been several episodes in which borrowing countries could not service their debts, for example, in the 1880s, in the 1930s, and again in the 1980s and 1990s. Debts became unsustainable. This raises two questions: first, what is an unsustainable debt and how can it be identified? And secondly, what are the causes for a debt to become unsustainable? This chapter examines these two questions.

2.2 Definitions of sustainable debt, solvency and liquidity

A large debt in itself does not need to be a problem. But a debt and a debt service that have become too large to pay, is a problem. But when is a debt service burden too large? This question cannot be answered without looking at other economic variables. The payment capacity will depend on the size of Gross Domestic Product (GDP) and, since we are dealing with international borrowing, also on a country’s exports. Thirdly, as the evaluation focuses on public and publicly guaranteed debts, government revenues are also an important variable. Furthermore, the question what a sustainable debt is depends on judgements: what amount of debt service is considered “bearable” depends on how the need to service debt will be compared with other objectives, such as investing to enhance economic growth. Debtor countries may make another assessment of “capacity to pay” than creditors, while there may also be a difference of opinion among creditors, in particular between those with sizeable and long-term investments in the country and those with less exposure. For this reason, different answers to the question of what a sustainable debt is, have been given in the literature.

Theoretically, it is possible to distinguish a temporary payment problem from a more structural, long-term problem. The former is called a lack of liquidity, and the latter a lack of solvency (Cline, 1995). For a country with a liquidity problem, the current payment obligations are larger than the country’s ability to pay (Bowe & Dean, 1997). In the long run, these countries can be solvent, i.e. their expected growth and export growth are such that they are able to meet their future debt payments.

Since liquidity focuses on current payment obligations, indicators may include the debt service/exports ratio and the debt service/revenue ratio. However, Cline argues that only interest payments matter in these ratios, and not amortisation. Principal repayments reduce

both the assets and the liabilities of a country (Cline 1995: 27-28). He considers a ratio of 15% a 'relatively comfortable' threshold for the interest/exports ratio.

Another indicator for liquidity is the extent of accumulation of arrears, for example in relation to debt service (due), since if countries accumulate arrears, they can be assumed to lack liquid means to pay debt service (Boehmer & Megginson, 1990). Boehmer also uses other indicators for liquidity, such as comparing the difference between exports and imports with debt service and with the level of international reserves: "net exports"/debt service and "net imports"/reserves.

In practice, it will often be difficult to establish the difference between illiquidity and insolvency. In fact, Krugman argues that countries that appear solvent will not become illiquid since they will continue to have access to new loans. If they do not have access to new loans, they will become illiquid and will then also become insolvent (Krugman, 1988: 267).

A sustainable debt is usually defined as a debt that can be serviced without affecting long-run growth possibilities of the economy. In the long run, debt service can theoretically be sustainable if the following holds (Gillis et al., 1996: 414):

$$\frac{D}{X} = \frac{a}{(g_X - i)}$$

Where D = debt, X = exports, a = the trade gap (M – X)/ X, M = imports, g_X = the growth rate of exports, and i = the average interest rate on debt.

This means that as long as the growth rate of exports is higher than the interest rate, a sustainable debt/exports ratio can be accompanied by a trade gap a (i.e. by increasing debt). If it is lower, it can be argued that the country has a solvency problem. It will have to stop contracting new loans and will have to maintain a trade surplus in order to service its debts. This will probably affect economic growth negatively.

Similarly, the debt/GNP ratio can be sustainable in the long run if (Gillis et al., 1996: 415):

$$\frac{D}{Y} = \frac{(v - s)}{(g_Y - i)}$$

Where Y = GNP, g_Y = the growth rate of Y, v = I/Y, the investment ratio, and s = S/Y, the savings ratio.

As long as g_Y is higher than the interest rate, a sustainable debt/income ratio can be accompanied by a continuing and constant savings gap (v – s> 0). If g_Y is below the interest rate, the country must maintain a savings surplus, which will also affect the growth rate.

For the government, we can assess sustainability in relation to the tax capacity (Fishlow, 1988: 220-1). In the long run, the debt burden is sustainable if:

$$\frac{D}{T} = \frac{(G - T)/T}{r_T - i}$$

Where T = tax income, G = government expenditure, r_t = growth rate of taxes.

If the interest rate is higher than the growth rate of taxes, the government must have a surplus (G-T) < 0 for debt service to be sustainable. The debt payment capacity of the government of course also depends on the presence of any domestic public debt.

This long-run sustainability analysis can be used to assess ex post whether the lending and borrowing decisions were rational. The crucial role of the interest rate points to the importance of the extent of concessionality of the debt. The sustainability analysis can also be used to predict ex ante whether debt payment problems will arise that will affect growth. However, this requires estimates not only of future interest rates, but also of growth rates of GDP, exports and tax revenues. In particular in poor countries, with highly volatile exports and output, this is a difficult exercise (Claessens et al., 1997).

Empirical studies often focus on simpler indicators of debt sustainability, for example, the year in which countries begin to accumulate arrears or start to request reschedulings of their debt service. Given the negative consequences of accumulating arrears and rescheduling – in particular, the resulting loss in international creditworthiness – it can be assumed that countries will only do so if continued debt payments are likely to affect their growth potential.

Cohen (1997) has attempted to define indicators that predict debt payment difficulties. First, he established that the lower economic growth of Latin America in the 1980s was due to the risk of a debt crisis, measured as the probability of rescheduling (Cohen, 1997). The next step involves the search for indicators that can adequately predict rescheduling. It turns out that the debt/GDP ratio is a good conditional predictor of payment problems – 'conditional' meaning that other variables had to be included in the model. The debt/exports ratio was a better unconditional predictor of the probability of rescheduling. And even better was the debt/tax revenue variable. Cohen then goes on to establish critical values for these indicators above which the debt has the largest negative effects on economic growth. These critical values proved to be 50% for the debt/GDP ratio, 200% for the debt/exports ratio, and 300% for the debt/tax ratio (Cohen, 1997). Cohen calls these indicators 'solvency' indicators. This concept comes close to the concept of long-run sustainability as defined above. In both cases, what matters is whether the debt stock can be serviced without affecting economic growth.

In the context of the debt initiative for the Heavily Indebted Poor Countries, the HIPC initiative, other thresholds for debt sustainability have been defined. The original HIPC initiative, launched in 1996, aimed to reduce the debt to a 'sustainable' level, meaning that countries would be able to service their future obligations in full, without resorting to arrears, reschedulings or debt relief, and without compromising economic growth. This level of 'sustainable' debt was then defined as a Net Present Value (NPV, see Box 2-1) of debt of 200-250 per cent of exports, leading to an actual debt service of between 20 and 25 per cent of exports (Andrews et al., 1999). The exact level for each country would be determined depending on 'vulnerability factors' such as concentration and variability of export earnings, the fiscal burden of external debt service, the debt/GDP ratio, the resource gap, the level of international reserves and the burden of private sector debt. Countries with very open economies (exportGDP ratio of more than 40%) and with fiscal revenues of more than 20% of GDP, would be eligible for HIPC with a debt/government revenues ratio of 280%.

Box 2-1. Net Present Value of Debt and Concessionality

The net present value (NPV) of a debt is the sum of the discounted amortisation and interest payments on the debt. In the case of a commercial debt, this sum will be equal to the nominal value of the debt. A lower interest rate, a longer maturity period and a longer grace period may all lead to a NPV of debt that is lower than the nominal value. The loan then has a "grant element", defined as the proportion by which the NPV is lower than the nominal value. If the grant element is at least 25%, the loan is said to be "concessional" and qualifies as development assistance (definition of the Development Assistance Committee, DAC, of the OECD). In this definition, an interest rate of 10% is assumed to be the market interest rate.

In 1999, the enhanced HIPC initiative (HIPC 2) was announced, which implied lower targets for 'sustainable debt', with less country variation. The new sustainability criterion was a NPV of debt to export ratio of 150%. Countries with a higher debt/exports ratio would qualify for HIPC 2. Countries with an export/GDP ratio of more than 30% and a revenue/GDP ratio of at least 15%, would also qualify with a NPV of debt/revenues ratio of 250% (Andrews et al., 1999: 10).

The HIPC 2 thresholds, determined somewhat arbitrarily, are a bit lower than Cohen's sustainability thresholds (Table 2-1). One difference is that while Cohen departs from the nominal value of the debt, the analysis for the HIPC countries includes the Net Present Value (NPV) of debt. Given that a large part of the debt of HIPC countries is concessional debt, the use of net present values instead of face values seems justified. On the other hand, the HIPC analysis is applied to public and publicly guaranteed debt only. Although private debts are usually small for HIPC countries, it does not seem justified to exclude them from the debt to export ratio.

Table 2-1. Critical debt sustainability ratios, in per cent

	Cohen	HIPC 1	HIPC 2
Debt/GDP	50		
Debt/exports	200	200-250	150
Debt/revenues	300	280	250

Source: Text.

Cohen attempted to give some theoretical and empirical basis for his critical ratios by examining the actual debt and debt service flows of debtor countries, in particular, Latin American countries. However, these ratios are on the high side if we want to apply them to the current highly indebted countries, often located in Sub-Saharan Africa, for three reasons:

- They are based on the probability of rescheduling. This was perhaps a good indicator of payment problems for commercial bank debt, but much less so for official debt. Countries will not easily default on commercial interest payments (Hermes, 1992: 89-90) – in practice, they will announce that they cannot pay and a rescheduling will then follow. In the case of official debt service, silent defaulting (i.e., without announcing it or requesting for rescheduling) is much easier and will also occur earlier.
- The critical values for the Cohen ratios are chosen in such a way that they maximise the negative effect on economic growth – based on the actual experience of Latin American countries. This means that lower values for these ratios will also reduce

economic growth, albeit to a lower extent.
- The structure of the economy also matters for the sustainability of debt. Countries that are dependent on one or two primary export commodities for their export income are much more vulnerable in this respect (Humphreys & Underwood, 1989). Although vulnerability was taken into account in HIPC 1, it was not in HIPC 2.

In this light, even the HIPC 2 criteria for sustainable debt, although lower than Cohen's ratios, can be considered as high, taking into account the poverty and the high vulnerability of most HIPC countries. In addition, the HIPC ratios refer to NPV of debt and to public debt only, on both counts leading to lower figures than the debt figures used by Cohen.

A different way of approaching the sustainability issue is to define it as the ability to service the debt without compromising "international human rights", or "human development". This approach is taken, for example, by Hanlon (Hanlon, 2000) and by Sachs (Sachs, 2002). Both authors base their sustainability criteria on 'development', implying that debtor countries must be able to achieve the internationally agreed DAC targets on human development, also called the Millennium Development Goals. Hanlon defines "essential social government spending" that is needed to achieve these targets, and estimates possible available revenue in poor countries. In addition, he assumes that about half of grants can be used to pay debt service. He finds that instead of the USD 100 billion of debt cancellation that has been proposed in the context of HIPC (HIPC 1), a cancellation of USD 600 billion would be required (Hanlon, 2000: 896). In addition, about USD 15 billion of additional aid is needed.

Sachs argues that previous debt relief efforts have maintained low-income countries in a "poverty trap", in which governments could not spend sufficiently to finance the investments in physical and human infrastructure that are necessary for take-off. Although the HIPC initiative is more generous, for many countries it is probably still not sufficient to achieve the Millennium Development Goals. HIPC 2 results in an average reduction of debt service from about 4% of GNP to about 2% of GNP, while a WHO study finds that in order to achieve the millennium goals in health only, low-income countries in Sub-Saharan Africa would need 8% of GNP in foreign aid (Sachs, 2002: 279). Sachs proposes that countries make a (country-specific) "business plan" for how to achieve the goals, and that the international community then provides the combination of debt relief and aid that can achieve the goals.

Of course, such computations depend on even more assumptions (for example, on future tax revenues and on the amount of social spending that is needed to achieve the DAC targets) than the more limited definitions of debt sustainability. In addition, they assume that the countries' governments are committed to policies that enhance achievement of the DAC targets – which may also be problematic. But they rightly point to the need to recognise that the HIPC sustainability criterion may not be sufficient for these highly vulnerable low-income countries.

2.3 How do debts become unsustainable?

Having elaborated on possible debt sustainability thresholds, we now focus on the question how it is possible that debts become unsustainable. Essentially, debt payments problems may arise because of two reasons:

- Expectations and assumptions on the future do not hold, or
- There are market failures and distortions in international financial capital markets.

When lending and borrowing, actors make assumptions on the future, in particular, on the expected rates of return to investment. In the case of sovereign borrowing, expectations on future exports and government revenues are important. These two will tend to be related to GDP. If the loans carry variable interest rates, assumptions must also be made on the future

behaviour of the interest rate. We will see below that unexpected rises of the interest rates, and unexpected falls in developing countries' export volumes and prices both played an important role in the debt crisis of the 1980s.

The second reason why debts may become unsustainable is that international financial markets do not always work according to neo-classical assumptions. In general, three types of distortions can be distinguished: Interest rates are not fully determined by supply and demand factors, lenders' decisions are not always based on expected returns, nor, thirdly, are borrowers' decisions.

International interest rates do not always reflect expectations about rates of return or relative scarcities of capital. In general, interest rates in developing countries will tend to be higher than those in developed countries (in keeping with theory), but those rates are also partly determined by policies that may either aim to stimulate economies in industrialised countries or to calm them down. Episodes of low interest rates will induce overlending to developing countries, while the reverse will occur at high interest rates.

Secondly, lenders' decisions are not always based on expected returns. In the absence of sufficient banking regulation and supervision of, in particular, the international activities of commercial banks, these banks may expect to be bailed out in case of unfavourable outcomes. They tend to engage in more risky lending. In addition, private lenders often display 'herd behaviour'. Individuals working in banks or finance companies prefer to follow the stream than to evaluate the risks and benefits of a transaction independently. Herd behaviour may be rational, given the cost of information (Willett, 2000), and the asymmetric sanction structure: If they make a mistake while following the stream, they will not be blamed; however, if they are wrong while deviating from the stream, sanctions are likely to be severe (Griffith-Jones, 1996). At the same time, official creditors often lend for other reasons than expected profitability. Those reasons may include the promotion of exports from their own companies, foreign policy considerations, or humanitarian reasons. Finally, both private and official creditors will be inclined to further involuntary lending once there is a threat of non-repayment. In all these cases, the chances of non-repayment and of debts becoming unsustainable are higher than if decisions are based on expected returns.

Thirdly, borrowers' decisions not always rational either. This holds, in particular, for sovereign borrowers (governments). Politicians may engage in overborrowing as they suffer from time-inconsistency: what is a beneficial or profitable policy in one period, may not be so in the next. In general, politicians are myopic: they are concerned with maximising benefits in the short term, since they try to satisfy their electorate in order to be re-elected. This leads them to borrow in order to increase current expenditure, and they are much less concerned about the possibilities for repayment.

In the case of sovereign debts, there is an additional source for distortion. The fact that loans are contracted or guaranteed by governments of countries means that there is no collateral, and that creditors cannot go to court in case of failure to pay. Other sanctions and rewards are needed to induce countries to pay the debt (Eaton & Fernandez, 1995).

The next chapter examines these market failures, distortions and "expectation failures" as causes for the debt crisis of the 1980s.

3 CAUSES OF THE DEBT CRISIS OF THE 1980S

3.1 Introduction

This chapter aims to analyse the causes of the debt crisis. It examines possible market failures and distortions on both the supply and the demand side of the credit market in the 1970s, and looks at the changing circumstances around 1980. The chapter then continues by discussing the consequences of the high debts for the debtor countries. The main argument is that in the build-up of the debts during the 1970s, market failures and distortions on the supply side played an important role.

The origin of the increasing debts of developing countries is usually traced to the oil price increase of 1973. Industrialised countries and non-oil exporting countries began to incur large trade deficits due to this price shock. Between 1970 and 1974 the price of a barrel of oil increased from USD 1.30 to USD 10.00 (Hermes 1992: 50). Oil-exporting countries began to have large surpluses (Table 3-1).

Table 3-1. Current account balances, in USD billions

	All industrial countries	Developing countries	
		Fuel exporters	Non-fuel exporters
1970	6	-2	-9
1971	9	1	-11
1972	6	2	-5
1973	11	6	-4
1974	-27	65	-22
1975	7	33	-31
1976	-15	31	-18
1977	-20	20	-13
1978	11	-5	-21
1979	-27	53	-32
1980	-64	94	-52
1981	-23	32	-68
1982	-27	-20	-59

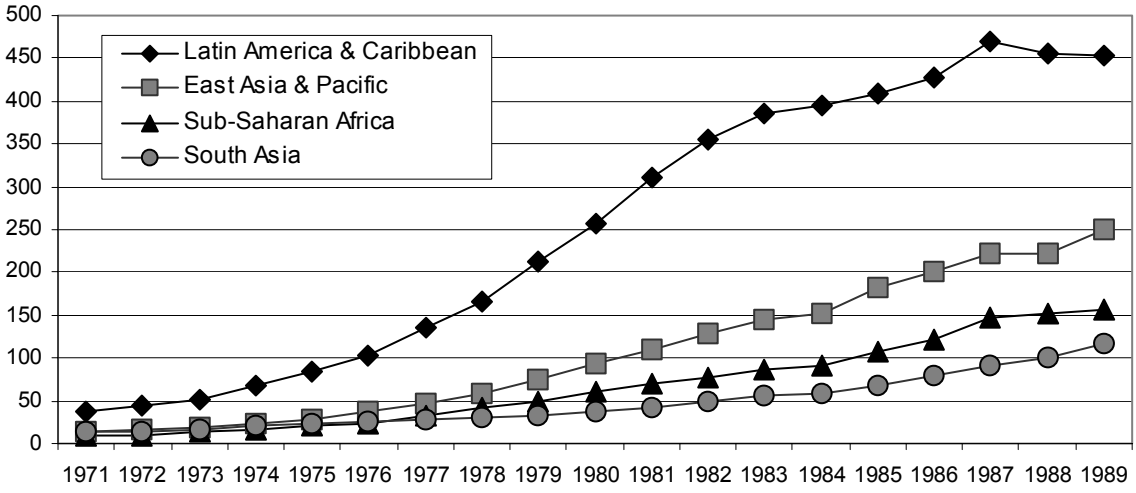
Source: Dooley (1994).

Residents and governments of oil-exporting countries were not willing or able to absorb all increased income in rising import demand, nor were they anxious to invest their money abroad (Dooley, 1994). Instead, they put their “petrodollars” as deposits with commercial banks in industrialised countries. These banks were confronted with a large supply of funds, and with limited demand for loans from the industrialised countries given the recession. On the other hand, demand from developing countries was extensive. Trade surpluses and deficits were matched by capital flows. The result was a rapidly increasing debt stock in the developing world in the 1970s, especially in Latin America and the Caribbean, but also in the other regions (Figure 3-1).

In industrialised countries, effective demand declined as a result of the rising oil prices. At the time, governments reacted by stimulating their economies by fiscal and monetary policies. They were not concerned about rising inflation. While interest rates would probably have been low anyway because of the oversupply of petrodollars, the stimulating government policies did nothing to stop interest rates from falling. As a result, interest rates were very low and inflation rates rose. In real terms, interest rates were often negative. In

1973 the real interest rate was at –7%, in 1974 –16% and in 1975 –5% (Nafziger, 1993). This government intervention in interest rates in the industrialised countries during the 1970s was the first type of distortion as identified in chapter 2. Sections 2 and 3 of this chapter examine market failures and distortions on the supply and of the demand side of the 1970s international loan market, respectively, while the fourth section analyses the resulting crisis in the debtor countries.

Figure 3-1. Total debt stock (EDT) by region, 1970-1989, in nominal USD billions



Source: World Bank (2001).

3.2 Distortions on the supply side

The most important lenders to developing countries in the 1970s were commercial banks in industrialised countries and exporting firms of these countries that insured the risk of their loans with official export credit agencies (ECAs). Commercial bank loans were the main vehicle for the financial flows to Latin America and Asia, while ECAs played a major role in the flows of credit to Sub-Saharan Africa.

3.2.1 Commercial banks

Before the 1970s, loans to developing countries had mainly been extended through governments of industrialised countries or through international financial institutions. In the 1970s, the US government, in particular, did not want official governments or institutions to play that role, but it did favour the recycling of petrodollars to developing countries. Commercial banks took on this task, but with the "approval, encouragement and implicit support" of governments of industrialised countries (Dooley 1994: 4). They saw the lending of funds to developing countries as profitable new business. Many countries, especially in Latin America (because that was the region US banks were most comfortable with), faced flat supply curves of credit instead of the usual upward sloping supply curves. This has been called a 'market failure' leading to over-indebtedness of Latin American countries (Devlin, 1989:121).

The specific lending conditions would later be considered among the causes for the problems that arose. First, the banks charged very low interest rates. International interest rates were low at the time, but the banks also charged low mark-ups on LIBOR (London Inter Bank Offer Rate) for credit risk. Second, they did not care about the high concentration

of their loan portfolio in a few countries, while such concentration rates were forbidden for domestic loans. Third, they used floating rates of interest, meaning that interest rates were tied to the six-month LIBOR and that they were automatically adjusted twice-yearly. This was a rational strategy in the 1970s when inflation was high. Banks were thus protected against sudden increases in inflation, but this indexing also increased the risk of non-repayment.

Why were banks lending on such a large scale, with high risks and low risk provisions? The banks themselves downplayed the risks, arguing that 'countries could not fail'. Another explanation is that the lenders were subject to 'herd behaviour'. In particular, they wanted to do what others were doing in order to maintain market share with the accompanying advantage that they would remain 'too large to fail'. Probably, banks also suffered from 'disaster myopia', meaning that they tended to ignore really bad outcomes (Devlin, 1989).

Dooley (1994) gives yet another explanation, arguing that the behaviour of the banks was rational since they expected to be bailed out by their governments in case of negative outcomes. They had taken on the task of recycling petrodollars on behalf of their governments, and for that reason they expected their governments to take on the risks. Since they had loan concentrations in countries that would never be allowed domestically, they had every reason to sound naive about the risks ('countries cannot fail'). In his view, the market failure was the lack of regulation and supervision of international lending activities, combined with the perceived (implicit) official guarantees of this international lending. This seems a plausible explanation for the banks' lending policies in the 1970s and is a clear case of market failure.

3.2.2 Bilateral lenders

Bilateral donors (=individual countries) provided two types of loans to developing countries in the 1970s, aid loans and guarantees on commercial loans. Concessional loans from governments are by definition part of the aid flow. Official Development Assistance (ODA) is defined as grants and loans with a grant element of at least 25%.[1] The reasons for giving aid include humanitarian ones such as the combating of poverty in recipient countries, but also the promotion of domestic commercial and economic interests, as well as political-military-strategic reasons (Hoebink, 1988; White & McGillivray, 1995). In any case, the expectation of earning profits is not among the reasons, and the lending decisions are not based on an appraisal of costs and benefits.

Concessional loans give rise to lower debt service than non-concessional loans and in that sense, the risk of creating unsustainable debts is lower. However, later developments have shown that it is not absent. Hence, we can argue that this is a government-induced distortion of the market on the supply side, which may cause unsustainable debts later on. If the loan is given for humanitarian reasons (need), the distortion may be even more serious than in the cases of commercial or strategic reasons: the fact that rates of return are lower in the recipient country than in other countries may be the most important justification for the loan. Almost by definition, these loans are directed to countries with a higher risk of non-repayment. This can be called "adverse selection".

The second way in which governments in industrialised countries extended loans to developing countries is by providing guarantees for export credits extended by commercial banks on behalf of firms in the home countries. Most industrialised countries had (and have) Export Credit Agencies (ECAs) for this purpose. The reasons for giving these guarantees include the promotion of exports, the creation or protection of domestic employment, and the maintenance of good diplomatic relations (Daseking & Powell, 1999). In the 1970s, the

[1] See Box 2.1.

promotion of exports and employment was deemed particularly necessary given the recession in the industrialised countries due to the high oil prices. The value of export credits increased rapidly during the 1970s, from USD 2 to USD 18 billion (Humphreys & Underwood, 1989: 46). These guaranteed credits were non-concessional loans (non-ODA). Despite this, the risks were not seen as very high given that commodity prices were at high levels during the 1970s. Governments saw export credit guarantees as a contingent liability, not as a cost to the budget (Daseking and Powell 1999). Nevertheless, lending for other reasons than expected high rates of return also carried risks and can be considered another manifestation of government-induced distortions of the credit market.

3.2.3 Multilateral lenders

After the first oil price increase, several countries that later became problematic debtors resorted to a Standby agreement of the IMF for temporary balance of payments support. In 1974 the IMF created a new instrument, the Extended Fund Facility (EFF). Although the loans provided under this facility were larger and had a longer maturity, they were still non-concessional. IMF loans were relatively small, however, and were not considered part of the debt crisis that broke out in the 1980s.

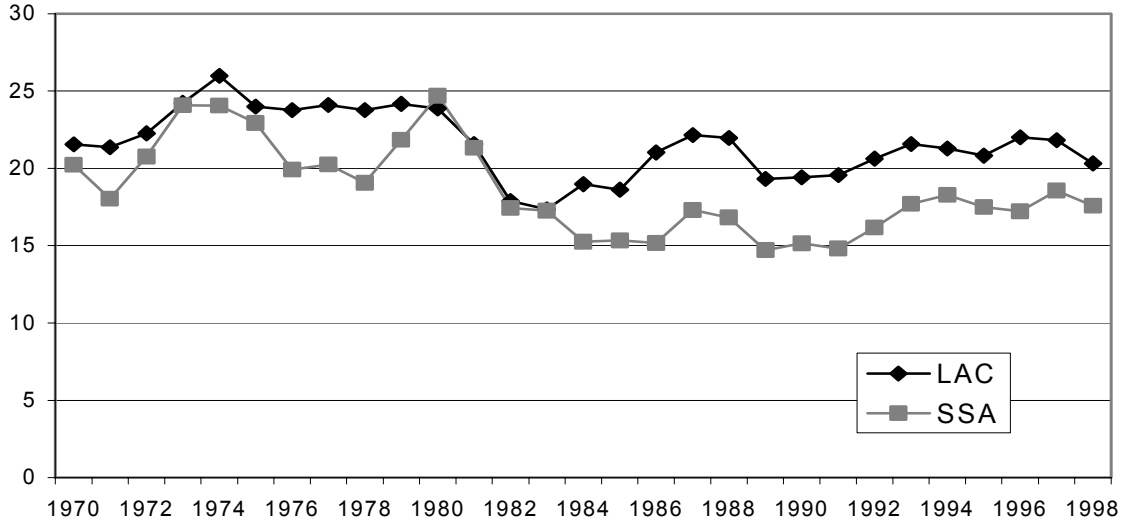
The International Bank for Reconstruction and Development (IBRD or World Bank) and the regional development banks gave project loans to developing countries in the 1970s. These loans had market interest rates but carried long maturities, so there was a small grant element involved (see Box 2-1). The poorest countries in terms of income per capita had access to credits from the International Development Association (IDA, part of the World Bank group) at concessional interest rates. Volumes of both IBRD and IDA lending were still small in the 1970s, but they increased rapidly. For example, both IDA and IBRD lending to Sub-Saharan Africa (SSA) increased from about USD 70 million in 1970 to about USD 300 million in 1979. IDA lending to Latin America and the Caribbean (LAC) was negligible in the 1970s, but annual IBRD disbursements increased from about USD 350 million in 1970 to about USD 1100 million in 1979 (World Bank, 2001). This rapid rise in World Bank lending is probably related to the dominant development view at the time, namely, that large investment projects carried out by governments would enhance growth and development, and that external financing of these projects was fully justified and would easily be repaid later on. Some unjustified optimism (leading to market distortion) may have been involved here, but it was small as compared to the distortions involved in commercial and bilateral lending.

3.3 Distortions on the demand side

Distortions on the demand side may occur if borrowers are not using the money well. Since governments were usually taking the loans, it is perhaps better to speak of government failures or policy failures. Policy failures may occur when politicians are myopic and prefer current consumption to investment, thus ignoring future repayment needs, or when they do not care about the efficiency of investment. The literature on the causes for the debt crisis also points to broader policy failures in developing countries in the 1970s, such as maintaining import substitution policies for industrialisation for too long, and, partly in consequence, overvalued exchange rates. Finally, capital flight can also be considered a wrong use of resources, although this is usually a private response and cannot be called government failure.

A lower investment rate would be a first sign of the wrong use of resources. However, Figure 3-2 shows that there was no decrease in investment for LAC or SSA during the 1970s. To the contrary, there was an increase in investment around the mid-1970s, which was maintained until 1981, although with fluctuations in the case of SSA. At least, it appears that newly borrowed resources have not only been used for consumption.

Figure 3-2. Investment as percentage of GDP, Latin America and the Caribbean (LAC) and Sub-Sahara Africa (SSA), 1970-1999



Source: World Bank, World Development Indicators.

Several authors found that Incremental Capital Output Ratios (ICORs) were high in SSA, pointing to a low efficiency of investment (Humphreys & Underwood, 1989; O'Connell, 1989).

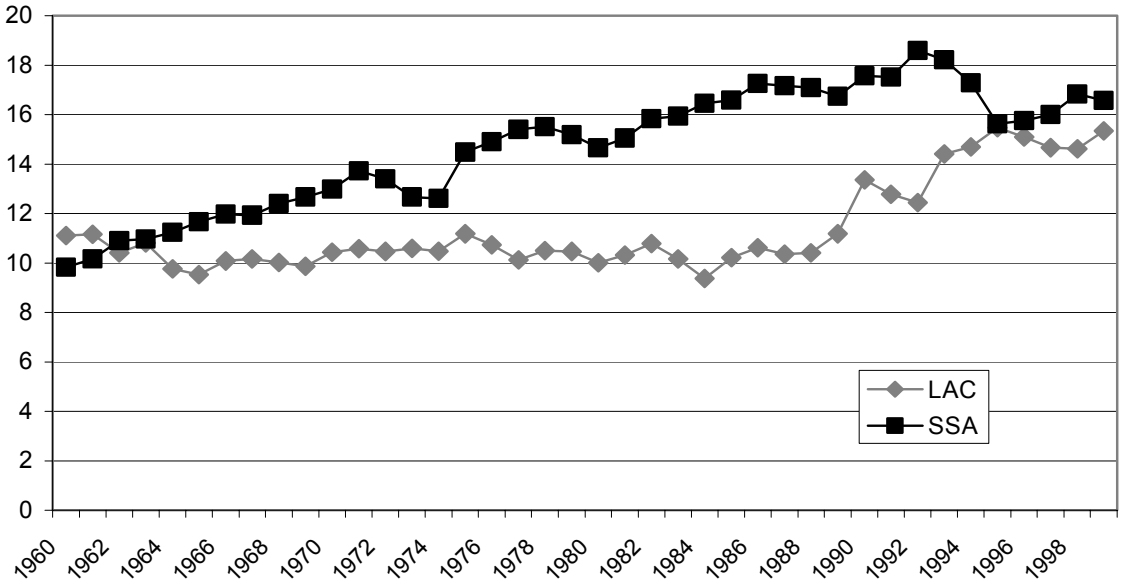
There is evidence that in both Latin America and Africa, state investment expanded in the 1970s. This may have implied over-investment based on too optimistic expectations. In SSA, the public sector expanded, as did the number of state enterprises. This was in line with the then dominant view on development, namely that governments had to take on infrastructural and even productive investments, given that there were serious market failures. In SSA, 54% of non-agricultural employment was in the public sector (Nafziger, 1993). At the same time, accounting in state firms was very weak, and prices were often set below the level of variable costs. This can be expected to have reduced X-efficiency in these firms. For SSA, figures confirm that government consumption has increased during the 1970s, but this was not the case in Latin America (Figure 3-3).

The fact that most LAC and SSA countries carried out import substitution policies to promote industrialisation and maintained these policies during the 1970s is often considered one of the reasons why the debt crisis affected Latin America and Africa more than Asia. The protectionist trade policies and overvalued exchange rates stimulated imports and hampered exports.[2] However, during the 1970s Brazil and Mexico were considered two of the six 'tigers' – countries characterised by rapidly increasing industrial exports. This means that at least these two countries succeeded in promoting exports in this period. Furthermore, the negative consequences of import substitution policies depend on the kind of policies that are carried out. As long as exports are also stimulated and exchange rates are not largely overvalued, these policies themselves are not harmful. In Central America, for example, import substitution policies in the 1960s and 1970s were accompanied by continuous high export growth (Bulmer-Thomas, 1987). In most Latin American countries, exchange rates were originally not grossly overvalued, but the rising inflation rate in the late 1970s

[2] See for example, Balassa et al. (1986).

combined with fixed exchange rates led to overvalued exchange rates by the end of the decade and in the early 1980s (Hermes, 1992: 67).

Figure 3-3. Gross government consumption as percentage of GDP, Latin America and the Caribbean (LAC) and Sub-Sahara Africa (S1999



Source: World Bank, World Development Indicators 2001.

In many SSA countries, however, policies were biased against agriculture and against exports during the 1970s (Lipton, 1977). This was due to overvalued exchange rates, price controls, and interest rate controls, among other policies. Overvalued exchange rates in Africa were in the interest of local elites, as they were in a position to import cheap consumer goods (Nafziger 1993: 62). Foreign aid (so including the concessional aid loans extended by multilateral and bilateral donors) was often used by the elites to control state power and to enrich themselves. As a result of aid, there was no need to increase taxes, and in most countries expenditure for health and education did not increase. Projects were often poorly conceived, and extensive presence of donors and projects put a heavy demand on the limited capacity of governments (Nafziger 1993).

When these countries borrowed to purchase goods from industrialised countries (with aid loans, or with commercial loans guaranteed by creditor governments), the inappropriate use of resources may be directly related to the source of the loan. It is unlikely that transactions that benefited firms in industrialised countries always represented the best use of resources from the viewpoint of the importing country. The fact that aid loans and guaranteed export credits were tied to specific projects and imports, may be one of the causes for the high ICOR in aid dependent Africa (O'Connell 1989).

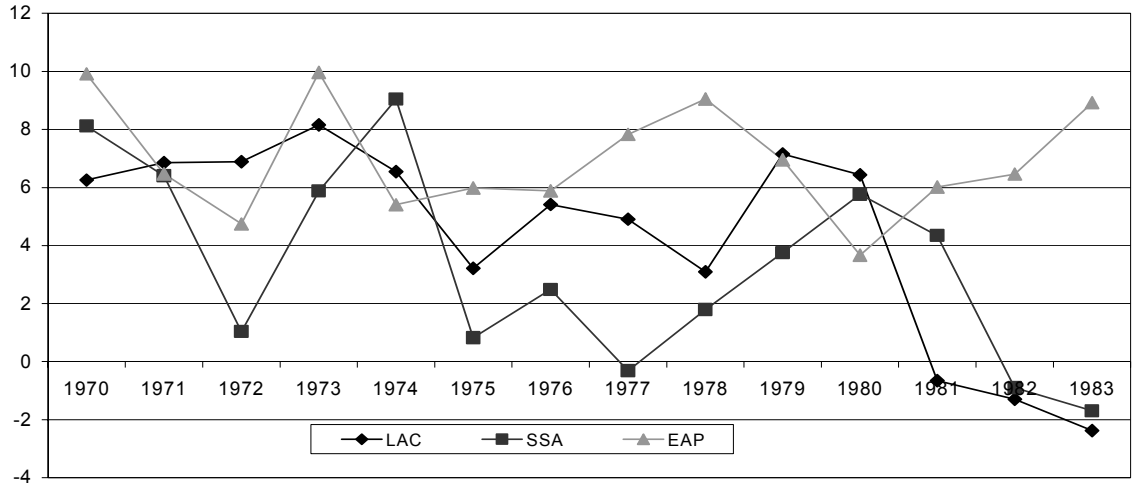
It was only during the 1980s that data became available of the capital flight that had occurred during the 1970s (Dooley 1994). The exact volume is difficult to quantify, since a large part of it was probably illegal. In any case, since the mid-1970s citizens of developing countries put large amounts of money in bank accounts in industrialised countries. This held true, in particular, for Latin America where large budget deficits, high inflation, and over-valued currencies caused economic uncertainty and fear that investments in domestic

currency would lose value. But rich African citizens also invested their money abroad. Overvalued currencies were an important reason, as were political instability and wars in some countries. During the 1970s outgoing flows had been matched by incoming flows, but in the 1980s capital became scarce and the capital flight became visible (Hermes 1992).

Easterly (2001) points to inappropriate overborrowing by the developing countries as a possible market distortion on the demand side. He argues that the debt crisis was caused by the lower growth rate after 1975, in particular during 1975-1994, as compared with the period 1960-1975 (Easterly, 2001). In his view, countries should have adjusted their pace of borrowing to this lower growth rate after 1975 and then could have avoided the debt build-up. With hindsight this is of course an easy conclusion. However, as argued above, increased borrowing began when developing countries faced an increase in import prices. Until 1974, growth rates in these countries had been high (Figure 3-4). And between 1974 and 1978, prices of the most important export commodities of developing countries were still at high levels (Humphreys and Underwood, 1989). In fact, growth rates recovered in the late 1970s, in particular in SSA countries. In this light, it is not surprising that developing countries saw the lower growth rate since 1975 as a temporary phenomenon, and that general expectations about future export income were optimistic. In addition, Easterly overlooks another aspect of reality that proved different from expectations, namely the sudden and unexpected increase in the interest rate around 1980. As will be shown below, the rise in the interest rate caused the explosion of the debt after 1979, especially for Latin American and Caribbean countries. In our view, most of what later could be qualified as 'overborrowing' by developing countries can be explained by wrong expectations and by the oversupply of funds itself.

In sum, distortions on the demand side also played a role in the huge increases in debts in the 1970s. However, borrowing countries did use the loans to increase their investment rates, and borrowing was in most countries a rational reaction to high import prices, low interest rates and high exports and export commodity prices.

Figure 3-4. Growth rates of GDP in Latin America (LAC), Sub-Sahara Africa (SSA) and East Asia and the Pacific (EAP), 1970-1983



Source: World Bank, World Development Indicators, 2001.

At the same time, the efficiency of investment probably declined during the 1970s. But this

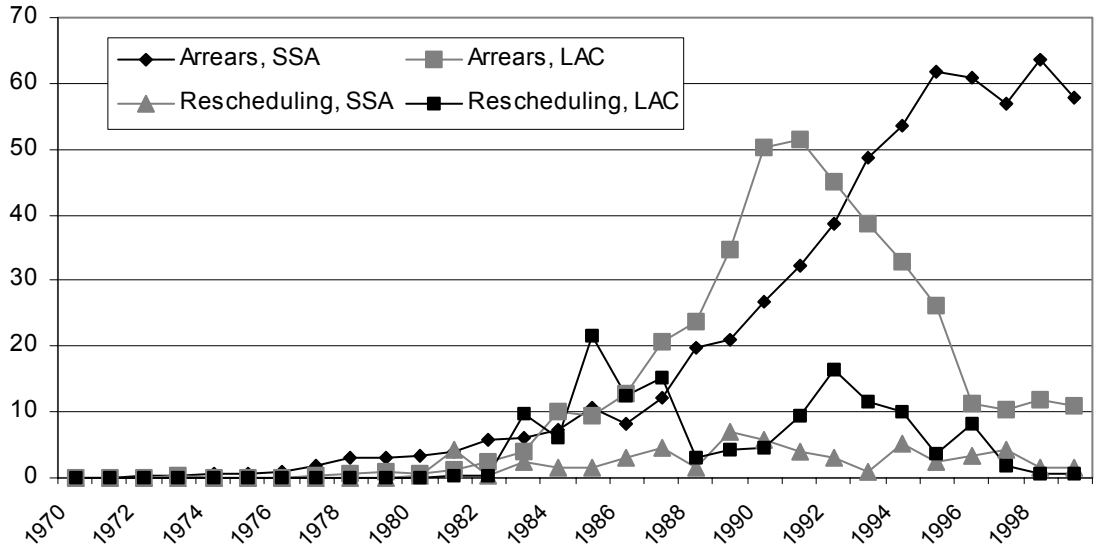
was partly the result of the low interest rates and the oversupply of funds itself, and, in Sub-Saharan Africa, of the fact that many of the investment projects were tied to particular supplies from industrialised countries.

3.4 The unfolding of the crisis

The 'debt crisis' is usually said to have begun when the government of Mexico announced that it could no longer service its international debt. Mexico was indeed the first large country that did so in 1982, and from then on creditors became concerned about the risks they had taken. By the end of 1982, US banks proved to have invested 187% of their capital in developing countries, and 119% in Latin America. For the nine major banks, these percentages were 288% and 177% (Bowe and Dean 1997: 6). The banks were clearly insolvent while this money was at risk. Since banks all over the world also owe large amounts of money to each other, failure of some banks could have triggered a world-wide banking crisis and the collapse of the international financial system (Hermes 1992: 83).

Signs of an emerging crisis were already visible several years earlier. A first sign that countries had difficulties in servicing their debts, is the build-up of arrears. As Figure 3-5 shows, arrears gradually increased during the 1970s and they were higher for SSA than for LAC – while total LAC debts were much larger (see Figure 3-1). In fact, the debt crisis began earlier in SSA than in LAC. Between 1976 and 1982, ten African countries rescheduled debt 24 times. In 19 cases, this concerned rescheduling of official debt (Nafziger 1993). In 1981, rescheduling was also larger in SSA, but after the Mexican announcement, the amounts involved in LAC rescheduling increased steeply.

Figure 3-5. Arrears and rescheduling in Sub-Sahara Africa (SSA) and Latin America and the Caribbean (LAC), in USD billions



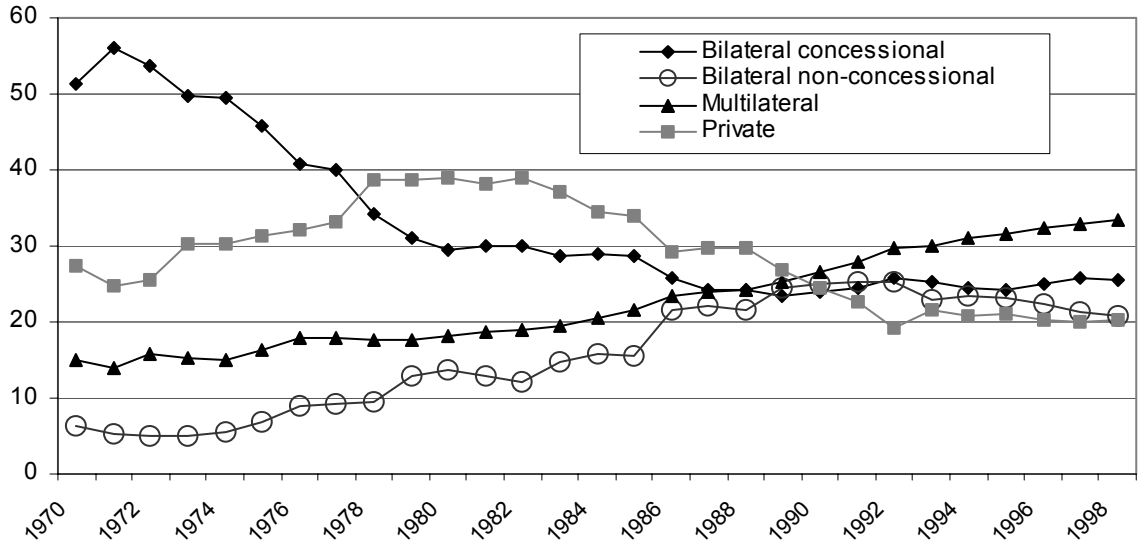
Source: World Bank (2001).

The large debts contracted during the 1970s became a problem around 1980, when the international environment changed drastically. In 1979, the oil exporting countries

increased the oil price again.[3] This time the reaction of the industrialised countries was different. The first priority was the reduction of inflation, and especially for the US government. Monetary policies became restrictive. At the same time, the US government maintained a very large budget deficit. This unusual combination led to the skyrocketing of interest rates. Other industrialised countries followed the US in increasing their interest rates. As most commercial bank loans had been contracted at floating interest rates, this led to a sudden increase in debt service payments. This was the first shock that hit the developing countries. The second shock was a deep world-wide recession, which was the consequence of the oil price increase and the restrictive monetary policies of the industrialised countries. Demand for export products from developing countries decreased and prices plummeted.

The two causes of the debt crisis, the rising interest rate and the world recession had a different relative weight for LAC and SSA. Since most SSA debt was official debt, it carried fixed interest rates. In 1980, only 39% of the total public debt was private debt (Figure 3-6) while for LAC the share of commercial debt was 53% and that for other private debt 16%, so in total almost 70% was private debt (Figure 3-7). According to Humphreys and Underwood (1989), only 5% of the debt of low-income African countries had a variable interest rate, against 66% of the debt of middle income countries in 1982. The interest rate shock was therefore not as severe for SSA as for LAC.

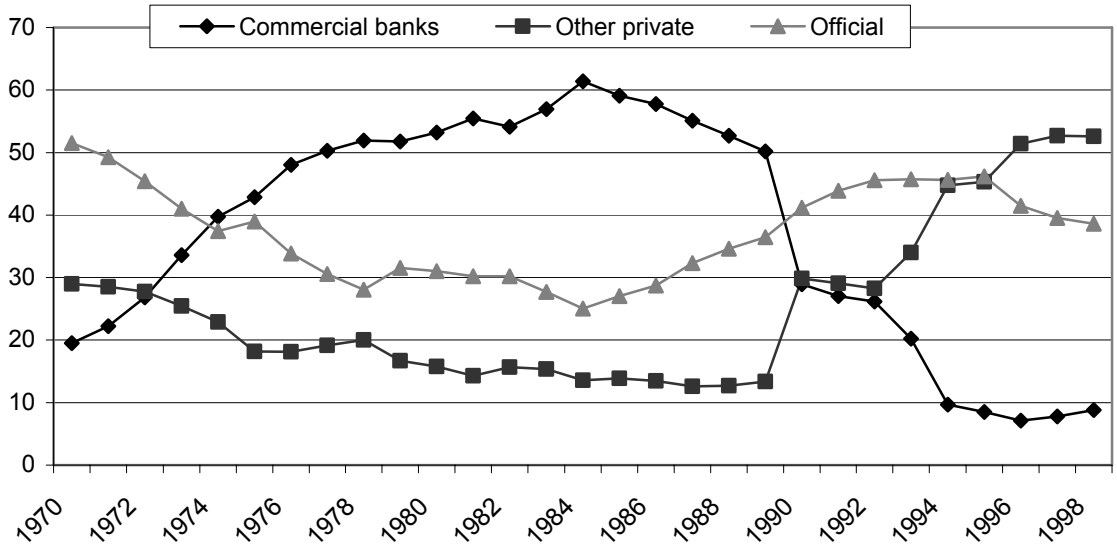
Figure 3-6. Sub-Sahara Africa (SSA): Composition of public debt, in per cent



Source: World Bank (2001).

[3] Due to high inflation, the oil price had fallen in real terms in preceding years. This is also evident from the current account figures in Table 3.1.

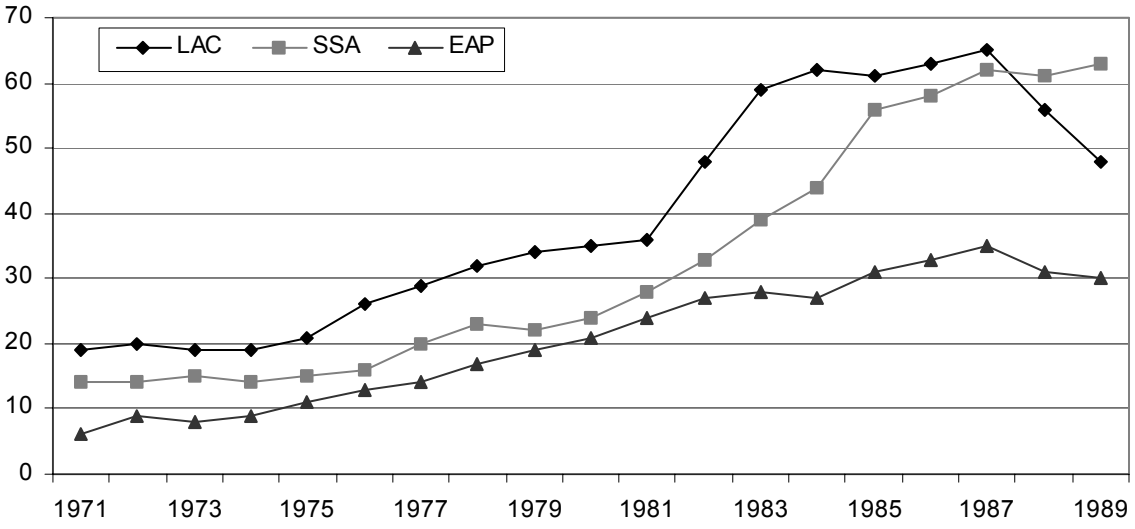
Figure 3-7. Latin America and the Caribbean (LAC): Composition of public debt, in per cent



Source: World Bank (2001).

Between 1981 and 1983, the debt/GNP ratio exploded in LAC from about 35% to 60% (Figure 3-8), mainly due to the rise in interest rates and the new lending that was necessary in order to service the debts. In SSA, there was a slightly more gradual increase from about 25% in 1980 to about 60% in 1986. For SSA, the world recession and the commodity price slump is probably a more important explanation for the rising debt stock than the interest rate shock. Average debt/GNP levels in East Asia and the Pacific and in South Asia, although not very different from those of SSA by 1980, remained at much more sustainable levels during the 1980s.

Figure 3-8. Debt/GNP ratio by region, 1971-1989, in per cent



Source: World Bank (2001).

The reasons for the better performance of those countries include more prudent macroeconomic policies, including earlier adjustment to the changed macroeconomic situation, and the fact that they (together with Latin American countries Brazil and Mexico), on average, had promoted industrial exports earlier so that they were no longer heavily dependent on exports of primary products.

3.5 Conclusions

The debt crisis of the 1980s broke out when interest rates suddenly rose and when commodity prices fell. The former was more important for LAC, the latter for SSA. Both events were unexpected for lenders and borrowers alike.

As to the origins of the debt crisis, i.c. the build-up of large debts in the 1970s, market failures and distortions on the supply side played an important role. Commercial banks engaged in high-risk lending at low interest rates because they had excess supplies of money and because they felt certain that their governments would bail them out. Regulation and supervision of these overseas lending activities were lacking. Bilateral governments lent because they wanted to stimulate exports and employment in their own countries. The target countries for these lending activities were chosen on the basis of recipient need, or of domestic political or commercial interests, and not because of expected returns to investment or expected repayment capacity.

Policies in the borrowing countries can also be blamed when it comes to the origin of the debt crisis (the build-up of the debt). We showed that investment rates did not go down, but that the efficiency of investment decreased in the 1970s. However, this was partly the result of the low interest rates and the oversupply of funds, as well as of the fact that (in SSA) bilateral loans were tied to supplies from industrialised countries.

4 CREDITOR REACTIONS TO THE CRISIS

4.1 Introduction

This chapter deals with the reactions to the debt problems by the three types of creditors. *Commercial* creditors were important in the debt crisis of the 1980s, which was mainly a problem for middle income countries, most of them located in Latin America and the Caribbean.[4] *Bilateral* creditors were much more involved in Sub-Saharan Africa and in the poorer countries. *Multilateral* creditors, and especially IMF and World Bank were active in both regions and in both poor and middle income countries.

All creditors first thought that countries faced temporary liquidity problems, and that new lending and some rescheduling of debt service would enable them to pay their debt service later on. When this proved to be insufficient, creditors began to apply debt forgiveness. Commercial creditors began to write off debt claims in the mid-1980s, while debt forgiveness formally began with the Brady plan in 1988. For bilateral creditors, the forgiveness phase began at a very low level around 1988. The extent of forgiveness gradually increased during the 1990s. Forgiveness on multilateral debts began with the announcement of the first initiative for the Heavily Indebted Poor Countries (HIPC) in 1996, and it was followed by the more far-reaching enhanced HIPC initiative in 1999.

The next three sections give an overview of these creditor reactions, including the different attempts to solve the crisis by providing more financing and by the different debt relief initiatives. The modalities of debt relief in these three cases are very different, however, and this will have consequences for their effectiveness (to be dealt with in chapter 5).

Section 4.5 then deals with the consequences of the combinations of new financing, rescheduling, and debt relief for the inter-creditor distribution. It examines the extent to which bailing out has taken place, and the extent to which (particular types of) creditors were or are likely to be subject to moral hazard. Section 4.6 examines another aspect of creditor and donor policies, namely the effectiveness of the policy conditions attached to debt relief efforts. This effectiveness proves to be low, and in practice adverse selection in the allocation of debt relief and aid proved to occur. Section 4.7 concludes, focusing on the similarities and differences in the reactions from the different types of creditors.

4.2 Commercial creditors

4.2.1 The financing and rescheduling phase

Until 1982, banks had responded to payments difficulties with new lending. However, after the Mexican announcement banks applied a combination of rescheduling, thereby preserving the net present value of their claims but giving some liquidity relief, and some new lending. This new lending was in fact involuntary or 'defensive' lending since it was only meant to allow countries to pay their debt service. Co-ordination among banks was necessary since there was a risk that individual banks would "free ride" on the new lending of other banks. The IMF attempted to co-ordinate among the banks and to achieve 'concerted lending' by all banks. The IMF itself only provided financing if the country would be current with debt service to all commercial banks. At the same time, banks began to raise equity and to lend more to firms in industrialised countries so that on the whole, they gradually reduced their exposure in developing countries (Bowe & Dean, 1997).

The dominant belief in these early years (1982-1984) was that countries were not

[4] In fact, the term debt *crisis* only came into use in the early 1980s when the stability of the international financial system was threatened.

insolvent and that they only had a liquidity problem. Around 1984, the banks' perceptions began to change and it was more and more difficult to get new lending from them. In fact, banks did not provide new money on a net basis, since they received more in interest and principal payments than the amounts they provided as new loans. To the extent that there was new money, it was given by official creditors (Dooley, 1994).

In 1985, the US government proposed the Baker plan, named after the then Secretary of the Treasury James Baker. This plan involved increased lending by both official and commercial creditors to the 15 highly indebted middle-income countries. It was still based on the idea that debtor countries were temporarily illiquid, and that large packages of new money would be sufficient for these countries to grow out of the debt crisis. According to the Baker plan, both official and private creditors would provide USD 20 billion. Official money would be conditional on carrying out adjustment programmes under the co-ordination of the IMF.

In practice the Baker plan raised resources but less than originally foreseen. From 1986 to 1988, almost USD 16 billion was coming from official sources and USD 13 billion from the banks (Bowe & Dean, 1997). Official money was sometimes not given or was delayed because countries were not meeting the IMF requirements with respect to reforms. However, as before, the new money from the banks did not mean that exposure rose to the same extent (Cline, 1995). In Dooley's view, the efforts of commercial banks were focused on lowering their exposure and to have the bad risks financed by official creditors to the extent possible (Dooley, 1994). This was in keeping with their *ex ante* expectations (see Chapter 3). In fact, the banks were bailed out by their governments, but more slowly than they had anticipated.

Contrary to dominant ideas at the time, the banks were not much interested in developing countries' compliance with IMF and World Bank programmes, since the results of improved performance and payment would also accrue to other creditors. Official transfers to those countries were welcomed by the banks, but they were not perceived as linked to good performance i.c. compliance with reforms, but more as depending on the level of misery of those countries (Dooley, 1994).

According to Cline, the liquidity relief provided under the Baker plan would have been sufficient to solve the debt crisis if circumstances had remained the same. In practice, the Baker plan proved insufficient because many circumstances changed (Cline 1995). Cline points to seven factors, but they can be taken together in four groups.

First, external circumstances changed for the debtors. The most important of those was the collapse of oil prices around 1985. This meant that several large debtors (Mexico, Ecuador, Nigeria, Venezuela) could not service their debts as envisaged. Arrears began to increase steeply from 1985 onwards (see also Figure 3-5). Another factor was the moratorium on its debt service That Brazil announced in 198. Both capacity and willingness to pay were therefore less than anticipated among several important debtor countries.

Second, banks began to change their policies. Since banks increasingly came to perceive debtor countries as insolvent, they began to make provisions for bad loans. At the same time, banks began to attach different values to claims on the same debtor country. This allowed for a secondary market in debt claims to come into existence. During the 1980s, the prices on this secondary market were far below face value, reflecting the low expectations that the debts would ever be repaid. Brazil's moratorium reinforced the banks' attempts to make provisions for bad loans.

Thirdly, official policies changed. There was a growing pressure for debt reduction instead of liquidity relief. Politicians in the US were concerned about falling exports to the debtor

countries, especially to Latin America, since these countries had to accomplish trade surpluses. In Europe, there was concern about the consequences of the high debt service for the fragile 'new democracies' in Latin America. US policymakers were also worried about the rising share of official creditors in the debt stocks of developing countries and the implicit bailout of private banks that had taken place.

A fourth factor, of a slightly different nature, was that academic work began to stress the negative incentive effects on debtor countries of a large 'debt overhang'. The debt problem was no longer seen as a liquidity problem to be solved with new lending (which had been the thrust of the Baker plan), but instead, outright debt reductions were seen as necessary.

4.2.2 The start of forgiveness: the Brady plan

At the end of the 1980s and in the early 1990s, there was a lot of discussion in the academic literature on whether debt reductions were indeed the solution for the debt problem, and whether official money should be involved in this debt reduction. Those who were convinced that the debt overhang (Krugman 1988; Sachs 1989; see also chapter 6) was reducing the incentives for growth and investment, argued that debt reductions were in the interest of both the debtor and the creditor. However, they also argued that voluntary debt reductions by private creditors themselves would not come about on a sufficient scale because of the co-ordination problem involved. Official money would therefore be needed. One prominent proposal was to establish an International Debt Facility with the IMF and the World Bank, financed from official money, that would buy up the debt of each debtor country at a country-specific discount (Kenen, 1990; Sachs, 1990).

Others, like Bulow and Rogoff (1990) questioned that the high debt was hampering growth, since, for example, most of the growth slowdown in Latin America occurred in the early 1980s. They consider the use of taxpayers' money to buy up debt of Latin American countries as an improper use of aid money, the debtor countries are middle-income countries and they could be better off if their own rich people would not send their capital abroad. Furthermore, Bulow and Rogoff argued that these kind of officially financed debt reductions are not in the interest of debtors since they hamper access to new private capital. They will also lead to moral hazard on the side of the debtors.

All these factors, but in particular the growing provisions of commercial banks and the lowering of the secondary market prices of the debt, cleared the way for proposals that would imply market based debt *reduction* instead of providing new loans. The International Debt Facility never got off the ground, but another, similar proposal for debt reduction with involvement of official money was implemented. In March 1989, the new Secretary of the US Treasury, Nicholas Brady, announced the Brady plan. This plan involved market-based debt reduction by commercial banks, meaning that the amount of forgiveness would be in proportion to the secondary market prices for the debt of a particular country. Official involvement consisted of providing money for debt buybacks and for the collateralization of exit bonds, usually US Treasury bonds (Bowe and Dean 1997: 10). By June 1989, USD 34 billion had been earmarked for buybacks and collateralization: USD 12 billion each from IMF and World Bank, and USD 10 billion from the Japanese Export Import Bank.

The participation of IMF and World Bank was conditional on macroeconomic adjustment policies. The banks were expected to give a substantial amount of debt reduction, but they were not forced to go as far as the secondary market prices would suggest. It was also hoped that banks would provide new lending. Negotiations were carried out on a country-by-country-basis. Participation of all banks in the reduction was ensured as the larger commercial creditors to a country no longer protected the ones with smaller claims (Bowe & Dean, 1997: 11) Similarly, IMF lending was no longer conditional upon countries being current with debt service to commercial banks. Banks that did not participate in the Brady

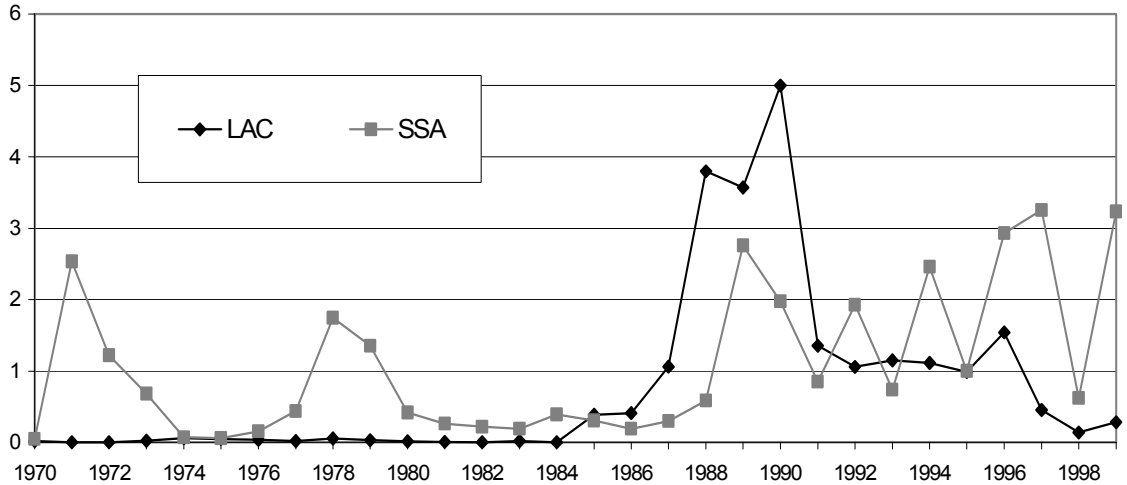
deal did not receive any repayment.

Mexico was the first country for which negotiations were held. Banks could chose between exit and non-exit. 'Exit' involved the acceptance of a "Brady bond" with a price just above the secondary market price. This meant that old debts were exchanged against new debts with a lower face value, but with collateral in the form of zero coupon US Treasury bonds. Banks that would chose the 'non-exit' option were expected to 'free ride' on the higher secondary market prices that would be the result of the exit strategy of their colleagues. For this reason they were required to provide new financing as a fixed percentage of their outstanding claims (Bowe & Dean, 1997).

By 1994, Brady plan agreements had been concluded with eighteen countries (Cline, 1995). Most banks chose the exit option. Only 2% of original exposure was lent as new money by commercial banks. The amount of forgiveness per Brady deal amounted to 30-35% of total commercial bank debt, but was higher for low-income countries. Since commercial debt by then constituted about half of total LAC debt (Figure 3-7), about one-sixth of these country's total debt was forgiven. By 1996, 26 countries had benefited from a Brady deal (Bowe and Dean 1997). Nine of these deals were with low-income countries and were not 'Brady deals' in a strict sense. In 1989, the World Bank (IDA) had opened a Debt Reduction Facility (DRF) of USD 100 million for debt buybacks or debt conversions on behalf of Severely Indebted Low-Income Countries (SILICs). For these countries, buybacks of commercial bank debt were co-ordinated by the World Bank and financed from donor money. In addition to IDA, bilateral donors usually also contributed to these buybacks.

In Dooley's view, the fact that the US Treasury did not want to force banks to grant a certain amount of debt reduction led to protracted negotiations and to little actual reduction (Dooley 1994). Figure 4-1 shows that the relative amount of debt reduction for LAC in 1989 was slightly lower than in 1988 (about 4% of the total debt stock) while it reached a peak of about 5% in 1990. After that, annual percentages of debt forgiveness were only between 1 and 1.5%. The debt forgiveness of before the Brady plan was mainly in the form of debt equity swaps. There were no buybacks or exit bonds yet, since these modalities required the debtor to dispose of fresh foreign exchange (Bowe and Dean 1997).

Figure 4-1. Forgiveness as percentage of total long-term debt in Latin America and the Caribbean (LAC) and Sub-Sahara Africa (SSA)



Source: World Bank GDF 2001.

For SSA countries, the Brady plan led to an even smaller peak of debt forgiveness in 1989 of almost 3% of the total debt stock. In later years the relative forgiveness was in the range of 1-2% of debt stocks, only to reach close to 3% again in 1996 and 1997 – but this forgiveness was no longer in the context of the Brady plan and probably mainly applied to official bilateral debt (see below). These figures show that the total amount of debt reduction induced by the Brady plan was indeed limited, although percentages were of course higher for individual countries.

For most debtor countries, the Brady deals indeed proved to be an exit strategy for commercial debt. From then on, debt service on the reduced or converted commercial debt could be paid. This is in itself an indication that the debt relief efforts were successful. The only exceptions are some heavily indebted poor countries that, even after a debt reduction orchestrated by the World Bank's debt reduction facility (6th dimension), still did not service the remainder of their commercial debt.

4.3 Bilateral creditors

4.3.1 The financing and rescheduling phase

As explained before, a large part of developing countries' debt around 1980 was with bilateral governments, and this held especially for SSA countries. In 1980, the share of bilateral concessional debt in total SSA debt was 30%, while the share of non-concessional debt, which is the debt to the ECAs of the industrialised countries, was 14% (Figure 3-6). However, during the 1980s the two debt stocks showed diverging trends, resulting in equal shares of 25% of total SSA debt in 1990. The relative decrease in concessional debt can be explained by the increasing use of grants instead of bilateral aid loans, and by some forgiveness on ODA loans. The rising share of non concessional debt – in a rising total debt stock in the 1980s, so it was an absolute increase – is due to the responses to the debt crisis of bilateral creditors, to which we now turn.

Several SSA countries had to reschedule their bilateral debt already during the 1970s, – often due to adverse terms of trade movements. The payment problems intensified during the 1980s. While after 1982 commercial creditors by and large stopped new lending and began to reduce their exposure in developing countries, the reaction of bilateral creditors, united in the 'Paris Club',[5] was different. From the late 1970s onwards, flow reschedulings on the bilateral "commercial" (non-ODA) debts were agreed upon at 'classic terms'. This implied that current payments due on debts contracted before a certain date (the so-called 'cut-off date') were postponed, but the interest on those payments was capitalised so that there was no reduction in the net present value (NPV) of the debt stock.[6] Between 1976 and 1988, 27 countries that are now classified as Heavily Indebted Poor Countries (HIPC) concluded 81 of these non-concessional reschedulings. These reschedulings increased the nominal value of the debt stock, involving in total USD 23 billion in delayed payments (Daseking & Powell, 1999: 5). The usual procedure was that debtor countries first had to have an agreement with the IMF on specific adjustment policies.

In addition to these reschedulings, industrialised countries continued their non-concessional lending to debtor countries through their export credit agencies (ECAs). New loans got priority over old claims, since Paris Club reschedulings always only applied to 'pre-cutoff date' debt. In sharp contrast with commercial creditors, all industrialised countries' ECAs

[5] The Paris Club is a group of countries that co-ordinates the dealing with debt problems of developing countries. It exists since 1956 and has a Secretariat in Paris. Representatives of the creditors countries come to Paris to negotiate with representatives of a particular debtor country.

[6] Debt service on ODA loans, if not forgiven, was usually rescheduled at terms similar to the original loan, so at concessional rates.

continued to report the full face value of the debts. As their claims were fully guaranteed by their governments, they did not make provisions for bad loans (Daseking & Powell, 1999). As Daseking and Powell argue, this combination of restructuring old debts and providing new non-concessional loans was in the interest of the creditor governments for various reasons. The provision of new non-concessional loans allowed a continuation of export promotion. By allowing payments on old debts to be postponed, there was no pressure on aid ministers to provide additional finance for the adjustment programmes in LDCs. On the other hand, aid ministers were not very eager to increase aid flows if these would just be used to reimburse their ECAs. Debtor countries also seemed to benefit (in the short term), since they did not have to pay debt service on old debts to the ECAs, and had access to some additional aid money and to new loans – albeit non-concessional ones.

4.3.2 The start of forgiveness

As Figure 4-1 also shows, there was already some forgiveness for SSA countries in the 1970s and early 1980s. Several bilateral donors began to apply debt forgiveness on the concessional (ODA) loans (Humphreys & Underwood, 1989: 53).

In the late 1980s, several bilateral creditors began to realise that providing cash flow relief by rescheduling debt service flows, as they had done so far, would not be enough, and that part of the debt would never be paid. In 1987, the UK Finance Minister made a first proposal to forgive part of debt service due of the SILICs on non-concessional loans. The proposal also aimed to reduce new non-concessional (ECA) lending to debtor countries with payment problems. However, the views on debt forgiveness differed widely among creditor governments. The UK wanted to forgive on debt service in the form of granting lower interest rates, the French wished to reduce NPV of debt stocks by forgiving part of the payments due, and the US did not want to grant any reduction in NPV terms (Daseking & Powell, 1999).

At the summit of the Group of 7 (G7)[7] in Toronto in 1988, a compromise was reached in the form of three options. The first and third option of these 'Toronto terms' implied a forgiveness of one-third in the NPV of the debt service due (as always, only on loans contracted before a certain date, the pre-cut-off date debt), to be achieved through interest rate reduction (option a), or through direct forgiveness of part of debt service due (option c). Option "b" involved a lengthening of the maturity without any reduction in NPV. Since the latter would imply a continuation of risky exposure, the three options were considered 'broadly comparable'. Between October 1988 and 1990, 20 low-income countries benefited from these Toronto terms.

All Paris Club reschedulings obliged the debtor countries to seek comparable treatment from other, non-Paris Club creditors and from commercial creditors. If that could not be achieved, debtor countries usually did not pay debt service to those private or official non-PC creditors. In addition to debt to the OECD countries, many poor debtor countries had debts with, for example, the former Soviet Union,[8] other former East European countries or Asian, Latin American, or North African middle income countries. These debts were usually not paid, unless at some point an agreement was reached. Such agreements, although reducing the nominal value of debt stocks, usually led to increases in debt service actually paid.

Another condition for a Paris Club agreement was that the debtor country had to have an agreement with the IMF. Usually, the Paris Club agreement only covered past debt service arrears and debt service obligations that were due during the period of the IMF

[7] The group of seven richest countries: United States, Japan, United Kingdom, France, Canada, Germany, and Italy.
[8] In 1997 Russia became a member of the Paris Club.

arrangement, so for a limited number of years. After that, the country had to conclude a new IMF agreement and only then could it negotiate a new Paris Club forgiveness deal.

Table 4-1. Paris Club reschedulings by type of terms for HIPC countries[1], 1976-1998

Paris Club terms	Dates	Number of		Type	Amount (USD billion)	
		Reschedulings	Countries		Consoli-dated	Covered by stock operations
Non-concessional	before Oct 1988	81	27	Flow	23	
Toronto (33%)	until Jun 1991	28	20	Flow	6	
London (50%)	until Dec 1994	26	23	Flow	9	
Naples (67%)	until Dec 1996	34	26	Flow, incl. 7 Stock	15	3
Lyon (80%)	until 1999	5	4	Flow, incl. 2 Stock	3	1

[1]Excluding Nigeria.
Source: Daseking & Powell, 1999: 7.

At a Commonwealth Finance Minister's meeting in Trinidad in 1990, the UK minister of Finance proposed to increase the share of forgiveness on debt service on pre-cut-off date debt to 67%. However, these proposed Trinidad terms were not accepted by the Paris Club members. At a G7 meeting in London the next year, a NPV reduction in debt service due on pre-cut off date debt of 50% was accepted: the 'London terms'. Between 1991 and 1994, 26 reschedulings were signed under London terms. At the 1994 G7 summit in Naples, the share of forgiveness on debt service flows was lifted to 67%. London and Naples terms still included the three different options of the Toronto terms: the upfront flow reduction, the debt service reduction option and the commercial or long maturities option (Boote & Thugge, 1997: 12).

Under London and Naples terms, agreements included a "goodwill clause" meaning that creditors opened the possibility for a debt stock reduction on eligible (pre-cutoff date) debt, provided that these low-income countries had performed well under an IMF programme for at least three years, and had paid debt service to PC creditors on time for the same period (Boote & Thugge, 1997). These stock arrangements were seen as an exit rescheduling, after which debtor countries would be able to pay future debt service without needing additional debt relief. In practice, no stock deals on London terms were agreed. Thirty-four reschedulings under Naples terms were signed, seven of which included debt stock forgiveness. There were only few stock deals because they were subject to heavy conditionality.

After the launching of the HIPC initiative in 1996, the G7 agreed on 'Lyon terms' for countries eligible for HIPC (Andrews et al. 1999). These implied a 80% flow reduction when countries would reach the HIPC Decision Point, and a 80% stock reduction on eligible debt when countries would reach the HIPC Completion Point (see next section). In addition, it was recommended to creditor countries to forgive all ODA debt on a voluntary basis. Five reschedulings were agreed upon under Lyon terms, involving four countries. Two of these agreements were stock deals.

In the context of the 'Enhanced HIPC Initiative' of 1999, the amount of bilateral forgiveness had to be increased again in order to achieve equal burden sharing with the multilateral creditors. Under the ever greater pressure from non-governmental organisations campaigning for debt relief, the G7 at their 1999 summit in Cologne agreed on a bilateral

forgiveness percentage of 90: the Cologne terms. For the countries eligible for enhanced HIPC this meant a 90% flow reduction, which they would receive at the Decision Point. At their Completion Point they would receive a 90% stock reduction on eligible debt. Individual creditors sometimes went beyond that and promised 100% stock reduction on eligible debt.

Annual debt forgiveness for SSA countries was about 3% of the total debt stock during the 1990s - much higher than for LAC (Figure 4-1). Daseking and Powell (1999) attempt to compute the present value by end 1997 of all debt forgiveness via 'traditional mechanisms' to HIPC countries (excluding Nigeria). In the context of the HIPC initiative, "traditional debt relief mechanisms" include the Paris Club debt relief efforts before Lyon terms, the debt relief granted by non-Paris Club bilateral creditors on comparable terms, and debt relief efforts on commercial debts. The most accurate estimate of total debt relief to these countries amounts to USD 30 billion (Daseking & Powell, 1999: 26).

Although this is a large number, the fact that ever-greater forgiveness percentages were necessary indicated that previous efforts were not successful. Forgiveness always applied only to part of the bilateral debts and only to debt service during a limited period. Almost all poor countries that had reschedulings with the Paris Club, had to return a few years later. The creditor governments maintained the fiction that debtor countries only had a temporary liquidity problem, and that they would be able to pay their debt service later on. It was only with the HIPC initiative that these perceptions began to change.

4.4 Multilateral creditors

4.4.1 The financing phase

In the early 1980s, when debtor countries were still seen as illiquid and not as insolvent, there was a clear market failure argument for official intervention, in particular intervention by the IFIs. Private lending was limited because of free rider behaviour of banks. Concerted lending was seen as the solution for the debt crisis, and official participation would be necessary to overcome the co-ordination problem. The idea was that new commercial lending would come about once countries had concluded an IMF programme with the accompanying conditionality. IMF conditionality usually focused on fiscal and monetary policies that would restrict demand. It typically also included a devaluation that would lead to expenditure switching. At the same time, the IMF would not conclude a programme if countries had non-rescheduled arrears with commercial creditors. Countries would therefore only have access to new loans if they would be current with their commercial creditors. As shown above, this latter condition was dropped with the start of the Brady initiative. What remained, however, was that countries had to be current with debt service to the IMF and multilateral creditors themselves. The IMF and the World Bank were *preferred* creditors.

As the debt crisis intensified in the 1980s, the World Bank and the IMF more and more became 'lenders of last resort'. The decision of the International Financial Institutions (IFIs) to lend was not based on an estimate of expected repayment capacity, but on the expectation that without IMF and World Bank loans, countries would not be able to pay their debt service to commercial creditors.

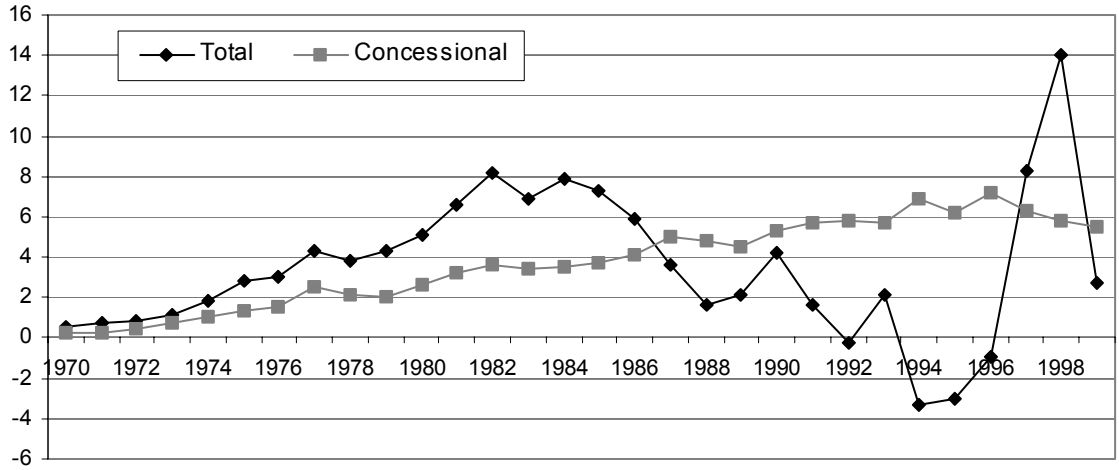
Box 4-1. Concessional lending facilities of the IFIs

The IMF created the Structural Adjustment Facility (SAF) in 1986 and the Enhanced Structural Adjustment Facility (ESAF) one year later. An ESAF loan was given in exchange for a three year adjustment programme established in co-operation with the World Bank and the recipient country. These loans carry a 0.5% annual interest rate, and a maximum maturity of ten years with five years grace period. ESAF loans are financed from loans and grants by member countries, including some developing countries (Bakker 1996). The World Bank expanded its concessional loans to these countries through IDA. IDA loans carry a zero interest rate (except for some administration costs), a 20-40 year maturity and a 10 year grace period. The IDA credits are financed by grants from member countries. Once in every three years, replenishments for the IDA fund are necessary (Bakker 1996). The regional development banks (Inter-American Development Bank, African Development Bank and Asian Development Bank, respectively IDB, AfDB and ADB) also depend on grants from bilateral donors for similar concessional loans to the poorest developing countries.

With the increased IFI exposure in debtor countries during the 1980s, the IFIs became more and more concerned about repayments on their own claims, especially in the poorest countries. In this sense, the IFIs also engaged in defensive or involuntary lending, just like commercial banks did in the early 1980s: they extended new loans in order to ensure that countries could repay to the IFIs themselves. For this reason, they began to make their lending more concessional, especially for the poorest countries (See Box 4-1).

Net transfers of concessional loans from the multilateral institutions have increased over the 1980s and 1990s, while total net transfers were much lower and even became negative in the 1990s (Figure 4-2).[9] All current HIPC countries (except Nigeria) are now IDA-only countries, meaning that all their new World Bank and regional development bank loans are at IDA terms. However, many of these countries still obtained IBRD and other non-concessional loans in the 1970s and 1980s, and payment on these non-concessional loans continued to be a heavy burden in the 1990s.

Figure 4-2. Multilateral net transfers to all developing countries, concessional and total, in USD billions



Source: World Bank, GDF 2001.

[9] The peak in 1998 in total net transfers must be related to the Asian crisis.

This official lending was given on the condition that adequate macroeconomic policies and microeconomic reforms would be carried out. It was supposed to trigger other new finance, and the policy reforms and new finance would allow the country to repay the loans.

Originally, there was great optimism that these policies would be implemented and that growth rates would soon be restored (Toye 1994). However, on both counts expectations were not born out by reality. There is a lot of evidence that the 'ex ante' conditionality of the IFIs did not work: governments did not implement the agreed reforms, and to the extent they did, it was because of domestic political-economic forces, not because of donor pressure (Dijkstra 2002; Dollar and Svensson 1998; Killick et al. 1998). In addition, growth rates, especially in the Severely Indebted Low Income Countries, remained low.

The evidence with regard to the signalling or catalytic function of IMF and World Bank agreements is mixed. Collier et al. (1997) argued that it is logically impossible to combine the setting of policy conditions *ex ante* with the signalling function. The need to set conditions for future policies implies that current policies are inadequate, so the fact of an agreement with the IMF is, if anything, an indicator of bad policies. As argued above, for commercial creditors the presence of an IMF agreement or compliance with it was not that important. Commercial creditors simply attempted to get as much money out of the countries in repayment as they could, adjusted the value of their claims and reduced their exposure, and then choose the exit option in the Brady deals. A recent empirical study also shows that an IMF agreement does not lead to increased inflows of private capital (Bird & Rowlands, 2000).

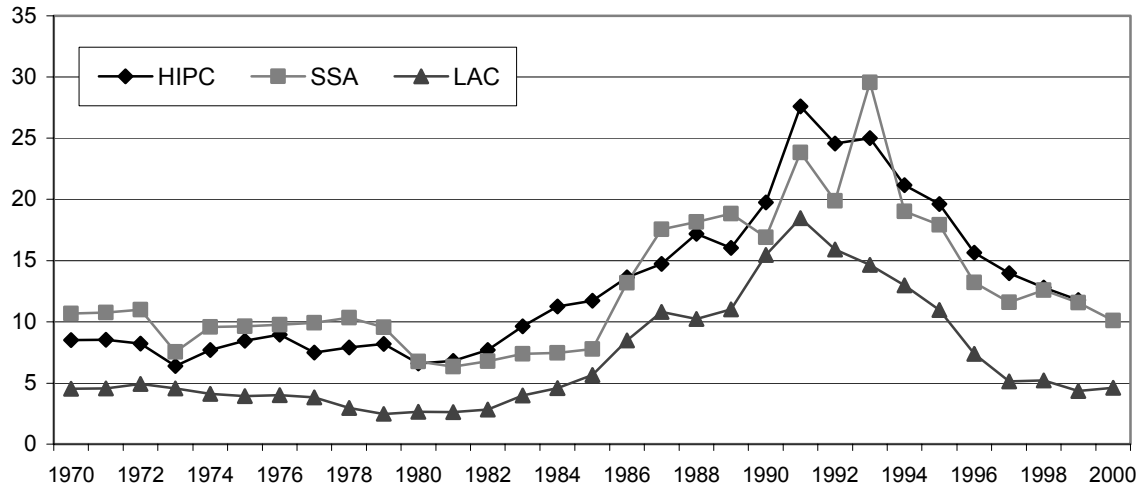
On the other hand, the presence of an IMF agreement proved to be very important for access to bilateral financing, both for relief on old debts and for new concessional finance. First, the Paris Club would only convene a meeting if the debtor country had an IMF agreement in place. Consequently, bilateral debt relief was directly linked to the existence of an IMF agreement. The impact of an IMF agreement on debt rescheduling in general has also been confirmed empirically (Marchesi, 2000). Second, an IMF agreement had a large influence on access to bilateral aid, in particular, programme aid.[10] Most bilateral donors make their programme assistance conditional on the recipient country's policies. The existence of an IMF agreement is an easy indicator of "good policies" for bilateral donors and is therefore usually a necessary (although not always sufficient) condition for the provision of programme aid.[11] In practice, programme aid could then be used for paying the debt service to the IFIs.

The central role of the IMF and the multilateral institutions in the perceived solution of the debt problem through the provision of new loans and through the screening of the debtors' policy environment led to ever higher debts to these international institutions. During the 1990s it became clear that the IMF and the multilateral creditors had become part of the debt problem. On average, 25% of the debt of the HIPCs is now with multilateral creditors. Although a large part of these debts is concessional, it does mean a heavy burden to the debtor countries. For HIPC and SSA countries, the share of debt service to the World Bank in total debt service rose to about 25% in the early 1990s (Figure 4-3). For individual countries, the share of multilateral debt in total debt, and the share of multilateral debt service in total debt service, was often much higher.

[10] According to the definition of the Development Assistance Committee (DAC) of the OECD, programme aid is not linked to projects. It includes balance of payments support, budget support and debt relief. It also includes structural adjustment loans from the multilateral institutions.

[11] The decision to provide project aid was usually not conditioned on good policies: projects have a longer time frame and recipient countries' policies are considered less important for the success of projects, since in the donors' perception they have more influence over the use of project funding.

Figure 4-3. Share of debt service to World Bank in total debt service, for HIPC, SSA and LAC countries



Source: World Bank, GDF 2001.

4.4.2 The start of multilateral forgiveness

Although before the launching of the HIPC initiative the IFIs did not consider any forgiveness or rescheduling on their own claims, some mechanisms were already in place to reduce the burden of debt service to these institutions. The World Bank opened the 5th dimension window, meant to relieve the debt service burden on IBRD debt for countries that had become IDA-only. Funds for this debt relief came from IDA reflows (the repayments on IDA credits) and from bilateral donors. Unfortunately, the exact amounts of these bilateral contributions are unknown.

Another way in which bilateral donors helped to relieve the multilateral debt burden before HIPC, occurred when debtor countries had accumulated arrears to the IFIs. Since they had to clear these arrears before they got access to new IFI loans, and since these new loans, and especially an IMF agreement, were a condition for bilateral debt relief and for new concessional finance, bilateral donors often helped to clear these arrears. This could be in the form of providing grants to pay these arrears, or of providing loans (bridging finance) that would be paid back from the new loans that the debtor country obtained from the IFIs as soon as the arrears were cleared. These bilateral contributions can be considered to have bailed out the multilateral creditors. If they were in the form of grants, the net effect was that the country would receive fresh resources (in the form of loans) from the multilaterals. If they were loans, they did not lead to fresh resources for the debtor country since new multilateral loans had to be used for their repayment.

After prolonged discussions, the initiative for the Heavily Indebted Poor Countries (HIPC) was finally launched in 1996. For the first time, the multilateral institutions would also provide debt relief on their own debt. The HIPC initiative aimed to an exit strategy. It was meant to reduce the debt to a 'sustainable' level, implying that countries would be able to service their future obligations in full, without resorting to arrears, reschedulings or debt relief, and without compromising economic growth. This level of 'sustainable' debt was originally defined as a NPV of debt of 200-250 per cent of exports (Andrews et al, 1999; see also chapter 2).

Other conditions for eligibility for the initiative included that countries were poor, with per capita annual incomes below USD 925 (the limit for getting IDA credits), and that they had a track record of at least three years of compliance with IMF and World Bank adjustment programmes. After these three years, they could reach the Decision Point for HIPC assistance, at which point a detailed debt sustainability analysis would be carried out. If considered eligible, the amount of debt forgiveness would then in principle be determined. However, in the original HIPC framework, countries needed to be on track with the IMF and World Bank programmes for another three years before reaching the Completion Point when the provision of actual debt relief would start. Between the Decision and Completion Points, they would get relief on debt service on pre cut-off-date debt from Paris Club creditors (at Lyon terms). Only at the Completion Point they would begin to receive debt relief from the multilateral institutions. In practice, some flexibility was applied with respect to the application of the second three-year period. For the seven countries that reached their Decision Points in 1997 and 1998, two reached their Completion Points in 1998 and three others were due to reach it in 1999 (Andrews et al. 1999).

Box 4-2. Differences between HIPC 1 and HIPC 2

- *The eligibility criteria, in terms of debt sustainability criteria and requirements for track records were relaxed, so that more countries would qualify. The criterion became a debt-to-export ratio of 150%. Countries with an export-to-GDP ratio of more than 30% and a revenue-to-GDP ratio of at least 15%, would also qualify with a NPV of debt/revenues ratio of 250%;*
- *The lower thresholds for sustainability imply that more debt relief would be granted;*
- *Countries would already receive interim multilateral debt relief at Decision Point*
- *Countries had to write a Poverty Reduction Strategy Paper (PRSP) in order to qualify for the Decision Point. The strategy would have to be the result of a participatory process;*
- *Instead of another 3-year period between Decision and Completion Points, there would be a "floating" Completion Point, and the reaching of the Completion Point would be conditional on some country-specific structural reforms, including measures related to poverty reduction and the monitoring of poverty.*

Source: (Andrews et al., 1999).

Nevertheless, the HIPC initiative was criticised for not going far enough in relieving the debt burden of the poorest countries. In 1999, the "Enhanced HIPC initiative" was announced. Box 4-2 lists the most important differences with the earlier framework.

When the enhanced HIPC was announced, the IMF changed the name of ESAF into PRGF (Poverty Reduction and Growth Facility). All countries (also non-HIPCs) had to write a PRSP in order to have access to the PRGF. The PRSP replaces the Policy Framework Paper (PFP) that was used for ESAF. The PRSPs must be "endorsed"[12] by the Boards of both IMF and World Bank (IMF and World Bank, 1999). The country is expected to revise the PRSP every three years, and to present to the Boards annual "progress reports" on the implementation of the PRSP. The IMF monitors macroeconomic policies as outlined in the PRSP, and the World Bank is supposed to assess and monitor the structural reforms and the poverty reducing policies. In principle, concessional lending by both institutions will only go ahead if both of these conditions are found to be complied with satisfactorily. This means that there is now a kind of mutual "cross conditionality" between the two Bretton Woods Institutions.[13]

[12] They are endorsed, not approved, but they can be rejected. Endorsement means that the Boards can indicate in what areas they do not agree with priorities of the country's PRSP, and this "could be taken into account in subsequent revisions of the PRSP … and in the annual progress reports" (IMF and World Bank 1999: 17).
[13] Interview with IMF staff member for this evaluation, March 2001.

In sum, the enhanced HIPC initiative would lead to more debt relief for more countries and it would be provided faster. At the same time, donors and creditors wanted to be sure that the money released from debt service would be used for combating poverty in the recipient countries. The requirement to write and implement a PRSP is an increase in conditionality for debt relief, as compared to the original framework. Under HIPC 1, having a past track record of policy performance was the only requirement (conditionality ex post); with the enhanced proposal, conditionality ex ante has again been introduced. This runs counter to the by now internationally accepted view that ex ante conditionality is not effective (see above).

In order to calculate the amount of HIPC assistance, a debt sustainability analysis is carried out at the Decision Point. Staffs of the recipient country's Central Bank, the IMF and the World Bank agree on the amount of debt due, its NPV and then compute the factor by which it must be reduced in order to reach a NPV of debt-to-export ratio of 150%. The export figure used in this ratio is the average over the past three years. This analysis leads to a "common reduction factor". Bilateral and multilateral creditors are all expected to reduce the NPV of their debts by this same factor. Paris Club creditors will achieve this by applying Cologne terms (90% forgiveness) on pre-cut-off date debt, including the stock treatment at the Completion Point. It is assumed that other, non-Paris Club bilateral creditors will reduce their debts according to the same conditions. Most Paris Club creditors have raised the forgiveness percentage to 100, and also apply this on post-cut-off date debt as far as bilateral aid loans are concerned (IMF and IDA 2002: 59). For multilaterals and the IMF, the debt relief comes about by reducing annual debt service payments, on the debt stock as identified at the Decision Point, by the agreed reduction factor over the next 15 or 20 years. The provision of this debt relief begins at the Decision Point. If circumstances so indicate, a new debt sustainability analysis is made at the Completion Point, in order to see if the reduction factor is still sufficient to bring down the NPV of debt-to-export ratio to 150%.

By December 2000, 22 countries had reached the Decision Point under the enhanced HIPC initiative. This large number was partly due to a successful NGO campaign, especially by Jubilee 2000, to have as many countries qualify for the HIPC initiative in 2000 as possible. Given the pressure for debt relief, the Boards of IMF and World Bank have accepted "*Interim* PRSPs" from many of these countries. Interim PRSPs have generally not been composed in a participatory manner, and sometimes data or detailed cost projections were also lacking. By April 2002, 26 countries have reached the Decision Point, while four countries (Mozambique, Bolivia, Tanzania and Uganda) have reached the Completion Point (IMF and IDA, 2002).

4.5 Inter-creditor distribution: bailing out and moral hazard

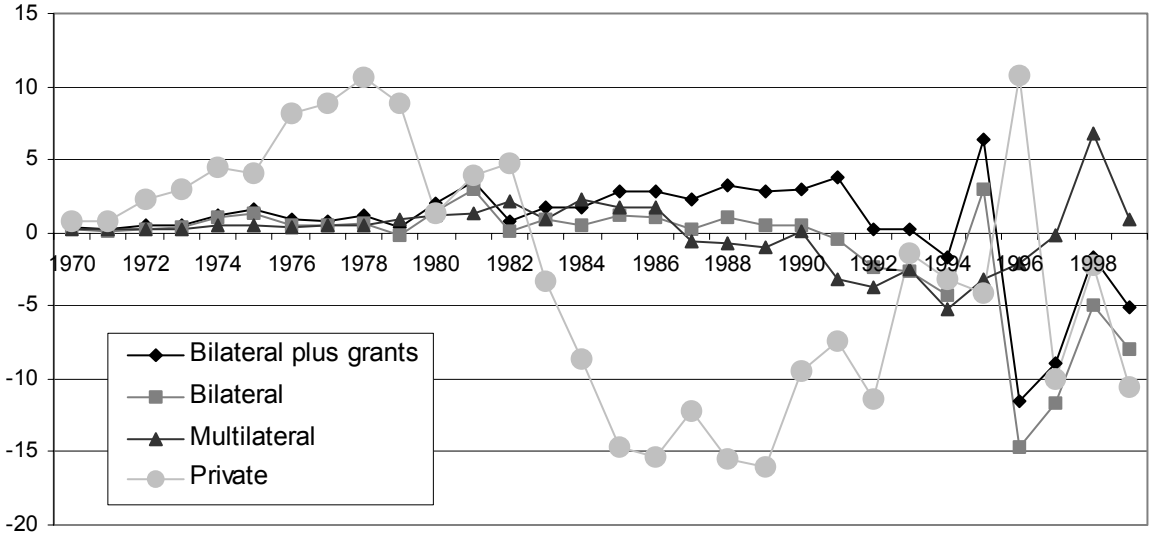
4.5.1 Bailing out

In section 4.2. we already argued that commercial creditors were partially bailed out by official creditors in the 1980s. The banks had official creditors provide the bulk of the new resources, while they attempted to get as much money paid back as they could. This bailing out can be made visible by looking at the net transfers on debt (new disbursements minus amortisation and interest payments) by type of creditor. For bilateral creditors, grants must be added in order to get the full net resource flow.[14] If net transfers on debt for one group of creditors are negative, while they are positive for another group of creditors, debtor countries may have used net inflows from the latter group to pay debt service to the

[14] Grants excluding technical assistance is used here. Since the IFIs only provide grants in exceptional cases and in small amounts, all grants are assumed to originate from bilateral donors.

former group. Figure 4-4 shows that net transfers from private creditors were negative for LAC countries since 1983, and continued to be negative until 1996. Official transfers were positive during the 1980s. Multilateral net transfers continued to be positive until 1987, and bilateral transfers including grants were positive until 1994. During the height of the debt crisis of LAC, 1982-1990, private creditors were clearly bailed out by official creditors. Figure 4-4 also shows that the total net resource flow to LAC was negative during those years: Latin American and Caribbean countries were paying more in debt service than they received in new concessional and non-concessional disbursements.

Figure 4-4. Latin America and the Caribbean (LAC): Net transfers on public debt by type of creditor, in USD billions



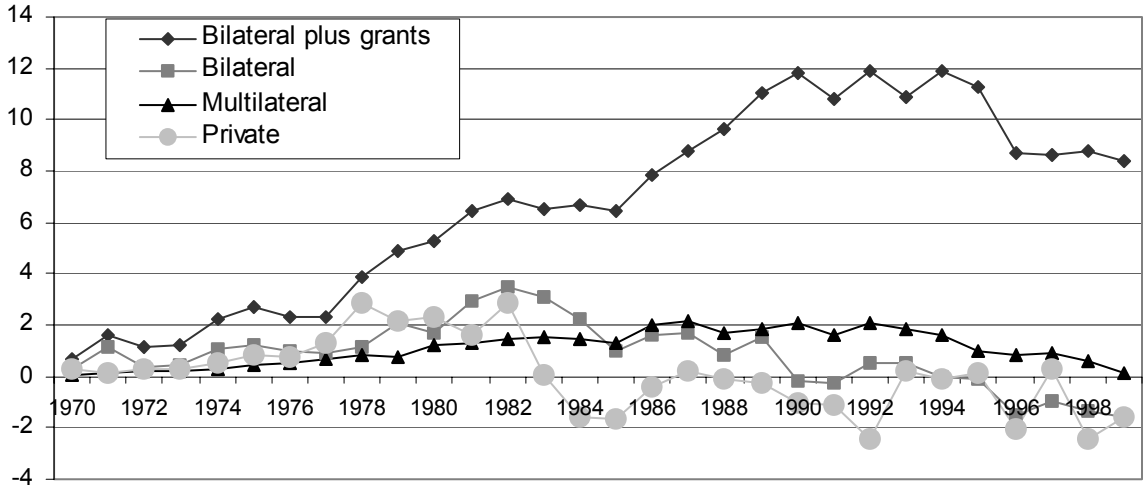
Source: World Bank (2001).

For SSA, net transfers from private creditors were also negative from 1983 onwards, while official transfers were positive (Figure 4-5). This implies that private creditors of SSA were also bailed out by official creditors. But the distribution between official creditors was more uneven than in LAC. Multilateral net transfers continued to be positive during the whole of the 1980s and 1990s, but they were at a low level and became very small in the late 1990s. Bilateral net transfers (excluding grants) continued at a positive level until 1990, but were around zero until 1995 and then became negative. This confirms the continued lending of the ECAs of industrialised countries during the 1980s, while net lending became low or even negative in the course of the 1990s. At the same time, bilateral net transfers *including grants* increased sharply during the 1980s and continued at high levels during the 1990s. Due to these large bilateral aid flows, the total net resource flow to SSA has always remained positive.

Figure 4-5 also shows that in the late 1990s, ECAs have been repaid from bilateral aid money. In fact, in many cases, ECAs have been bailed out by bilateral aid money already before the net flows became negative. Although some ECAs made provisions against bad debts (Serieux 2001: 328), not all of them did. In several countries, among which the Netherlands, the ECAs received 100% of the NPV of their debts: they received the forgiveness share of debt service due from other creditor country budgets, and they were

paid fully with capitalised interest on the restructured parts of the debt service due. Bilateral aid loans, on the other hand, were forgiven straightaway or restructured at concessional terms, so that their NPV claims were reduced.

Figure 4-5. Sub-Sahara Africa (SSA): Net transfers on debt by type of creditor, in USD billions



Source: World Bank (2001).

Net transfers from multilateral lenders were still positive during the 1990s. By providing concessional loans to SSA countries instead of the less concessional loans in earlier periods, the multilaterals and the IMF have to some extent engaged in rescheduling and in "bailing out themselves". Yet, it can be argued that in the 1990s and for SSA countries, multilateral creditors and the IMF were also bailed out by bilateral official creditors and donors. Only part of the new money from the multilateral institutions consisted of programme aid that could be used to pay the mandatory debt service to those institutions. It was not sufficient to cover all multilateral debt service. For this reason, it was important that bilateral programme aid and debt relief came about. As shown above, the agreements with the IFIs served to catalyse bilateral aid and debt relief, so that multilateral debt service could continue to be paid. Multilateral creditors received debt service due in full – at least, until the beginning of the HIPC initiative. In fact, bilateral aid money has provided the means to pay all types of creditors: private, multilateral and commercial bilateral (ECAs).

4.5.2 Moral hazard

To the extent that there was bailing out, moral hazard may have been involved. This moral hazard will be greater, the larger the extent of bailing out is, and the more lenders know beforehand that they will not have to bear the costs of risky lending. Earlier, we concluded that there may have been some moral hazard involved when commercial banks took their lending decisions in the 1970s: they expected to be bailed out later. However, after the unfolding of the crisis, commercial banks recognised early on that debts would not be repaid. They wrote down their claims and reduced their risky exposure. The fact that they also bore part of the costs of their risky lending of the past reduced the risk of continued moral hazard.

Both ECAs and multilateral creditors have to some extent been bailed out by bilateral

governments. Multilateral creditors and ECAs (at least those that did not have to make provisions for bad loans) did not have to take any losses themselves, and so were subject to moral hazard. They were induced to continue lending to problematic debtor countries because they did not suffer the negative consequences from this lending.

The IMF and the World Bank could lend regardless of the repayment capacity of the recipient as long as they gave the seal of approval (and they do so by concluding new loan agreements), bilateral donors provided the money to repay these loans.

Why would the IFIs have an interest in continued lending? One obvious reason is that they are creditors themselves and so have an interest in seeing their past loans repaid. This will be dealt with in the next section. But there may also be another reason for the drive to continue lending. Ultimately, the IFIs are financing institutions, and they want to grow like any other institution. Killick et al. (1998) point to bureaucratic and institutional pressures on the staff of these organisations to continue lending. Both the staff in these institutions benefits from larger lending volumes (career perspectives, status and power within the institution) and the institutions as a whole: they also get more influential and powerful. Some empirical studies confirm the tendency of these organisations to grow in terms of staff and lending volume, regardless of objective needs of recipient countries (Vaubel 1991; Vaubel 1996). Both World Bank and IMF proved to engage in "hurry-up" lending: they exhaust their budgets just before discussions on quota enlargement by member countries are due (IMF) or just before the replenishments for the concessional (IDA) credits are discussed (World Bank).

4.5.3 HIPC and the inter-creditor distribution

The financing of debt relief given by the IMF and the multilateral banks has been a topic for intense debate. Within the HIPC framework, the multilateral banks and the IMF contributes for the first time from their own capital. However, bilateral donors also contribute to the forgiveness on multilateral debts, and detailed inspection of the ways the IFIs have provided for financing of the HIPC initiative shows that in the medium term, the financing of HIPC will have to come from bilateral donors again (Box 4-3 and Box 4-4). At the same time, HIPC is likely to lead immediately to new loans from the IFIs. The IFIs can expect to be preferred creditors again. They will again be subject to moral hazard, and the bilateral donors can be expected to provide debt relief or aid, so that the new loans can be repaid.

Box 4-3. The financing of HIPC: the World Bank

The World Bank co-ordinates the relief for all multilateral development banks and has created a HIPC Trust Fund for that purpose. This IDA administered Trust Fund is filled by contributions of the multilateral banks themselves and by contributions of bilateral donors. These contributions may be general, or earmarked for a recipient country or for a particular (non-World Bank) multilateral creditor. Total cost for multilateral creditors is expected to amount to USD 17.6 million in 2001 NPV terms, out of which 8.1 billion is for the World Bank (IMF and IDA 2002). By April 2002, bilateral pledges to this fund had reached more than USD 2.5 billion, and they are used for financing debt relief by the non-World Bank multilateral creditors. The World Bank has pledged USD 2.15 billion out of IBRD net income and surplus to this Trust Fund, to be used for debt relief on IDA loans through the end of the 13th IDA replenishment period. For debt relief on IDA debt after the 13th IDA replenishment period, bilateral donors are expected to consider additional financing in the context of the IDA 14 replenishment (IMF and IDA 2002: 17). This means that World Bank own financing for HIPC is only guaranteed in the short term. In the medium term, bilateral donors are expected to finance IDA debt relief, or else HIPC will reduce the availability of new IDA resources.

Box 4-4. Financing of HIPC: The IMF

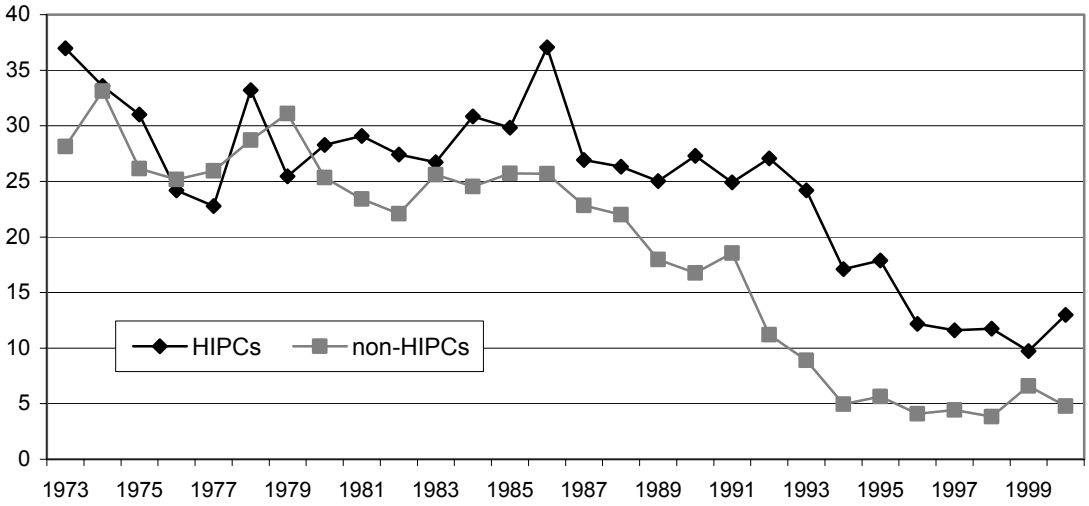
The cost of HIPC relief for the IMF is estimated at USD 2.7 billion in 2001 NPV terms, or SDR 2.2 billion on a cash basis (IMF 2002). The IMF will finance a large share of this from its own resources. But it has also created a PRGF-HIPC Trust to which bilateral donors have contributed an amount of SDR 1.2 billion. This Trust is not only used for financing grants that cover debt service to the IMF, but also for new PRGF lending. So far, bilateral contributions have been used for HIPC but in the future they will also be used for the PRGF. In order to cover its own contribution to debt relief, the IMF was originally going to sell part of its gold reserves. However, this idea was subsequently blocked by major gold producing countries. Then the IMF decided to proceed with 'off-market gold sales'. This implies the symbolic selling and then repurchasing of part of the IMFs gold reserves, thus increasing the price at which these gold reserves are valued in the books. The investment income on the net proceeds from this artificial gold selling are then used for HIPC. So far, off-market sales of 12.9 million ounces of gold have been completed, and the expected income from this amounts to SDR 1.8 billion (IMF 2000). As of end-2001, SDR 0.3 billion had been accumulated. In addition, the IMF has provided SDR 0.4 billion for HIPC from other sources.
According to Felgenhauer (2000), the off-market gold sales imply moral hazard for the IMF, since the department that granted the concessional loans to the now HIPC countries is not directly faced with the consequences of its unjustified lending. Although this is true, the alternative would probably have been even higher bilateral contributions. In that case, moral hazard is even more likely.
Another important consequence of the off-market gold sales is that they reduce the proportion of IMF assets that is liquid, i.e. loanable. As in the case of the World Bank, it is likely that additional bilateral contributions are needed in the future in order to maintain the resources for new concessional lending from the IMF.

4.6 Conditionality and adverse selection

As already argued above, the IFIs were not very effective in promoting good policies. Bilateral creditors would only provide debt relief if countries had a programme with the IMF, but in practice, such a programme was no guarantee that good policies were implemented. In this sense, the IFIs did not fulfil their screening function effectively. Policies often deteriorated during an IMF programme (see also Killick & Stevens, 1997: 169). Several studies have pointed to the possibility of adverse selection: more new loans, debt relief and aid flows were going to countries with worse policies (Collier & Gunning, 1999; Killick & Stevens, 1997: 162; White & Dijkstra, 2003).

Empirically, it has been shown that more aid flows were going to countries with higher debts. UNCTAD found that in 1997 and 1998, there was a strong correlation between debt service paid and official disbursements to the least developed countries. There was a similarly high correlation between multilateral debt service paid and multilateral disbursements (UNCTAD 2000: 124). Birdsall et al. (2001) have also established that countries with high debts and especially with high multilateral debts, received a larger net resource inflows. In addition, for these high-multilateral debt countries, there proved to be a negative relationship between the quality of their policies as measured by the World Bank CPIA index, and the size of the net flow. While in the 1980s transfers to countries with less adequate policies were lower, in the 1990s countries with less adequate policies received more resources: adverse selection. Birdsall et al. conclude that donors are caught in a 'debt trap'. They give more grants and more concessional loans to countries with worse policies, thereby maintaining the debt service problems of these countries. This loss of selectivity proved to hold more for the IMF and for bilateral donors than for the World Bank (IDA). This can probably be explained by the fact that it is the IMF, much more than the Bank that gives the seal of approval to highly indebted countries. A large part of IDA loans is for projects, and these loans are probably more independent from the debt service needs of recipient countries. Bilateral donors seem to follow the IMF more in this respect than the World Bank does.

Figure 4-6. Share of programme aid in total aid, in per cent



Source: OECD, International Development Statistics CD-ROM, 2002.

In general, the IMF agreement in heavily indebted countries was more important for programme aid than for project aid. In the 1980s, balance of payments support was the dominant form, while in the 1990s budget support gradually became more important. As can be seen from Figure 4-6, programme aid (then mainly balance of payment support) was a relatively popular form of aid in the 1980s, mounting to 25-30% of total aid for both HIPC and non-HIPC countries. In the 1990s, the share of programme aid fell but much more precipitously for the non-HIPCs than for the HIPCs. This also confirms that more programme aid was given to countries that needed it most because of their heavy debt servicing requirements.[15]

In sum, Birdsall et al. (2001) rightly point to the "debt game" in which donors can no longer be selective. They continue financing highly indebted poor countries simply because they are highly indebted, and thus they are caught in a debt trap. However, it is more accurate to conclude that bilateral donors are caught in the debt trap of the multilaterals.

4.7 Conclusions

Looking back over the reactions of commercial, bilateral official and multilateral official creditors, all three first thought that debtor countries only had a liquidity problem and that new lending would provide the solution. In all three cases, this turned out to be insufficient, and forgiveness or write-offs proved necessary. However, there are differences between the groups of creditors in the *speed* with which they recognised that debtor countries had a solvency problem, and in the *modalities* of debt relief provided.

The main difference is between commercial and official creditors. Commercial creditors recognised very quickly that debts would not be paid, in other words, that the debt crisis was

[15] The general decline in programme aid in the 1990s is probably related to the decline in balance of payments support, and in particular import support. This was a popular aid modality among donor countries because of the opportunity to promote their own exports, but it was linked to the existence of foreign exchange controls in recipient countries. Once countries liberalised their foreign exchange regimes, a much larger share of programme aid became freely spendable and became subject to policy conditionality, i.c., the presence of an IMF agreement. Since IMF agreements were more likely to be concluded with heavily indebted countries, programme aid was also more popular in HIPCs.

not liquidity but a solvency problem. By the mid-1980s they already began to write down their claims on debtor countries, and they took their losses. They stopped involuntary lending to the problematic debtor countries, thereby reducing their exposure, while at the same time expanding their lending to industrialised countries. Official creditors, on the other hand, continued lending, and (for a long time) only provided limited amounts of liquidity relief.[16]

Some characteristics of the private credit market that are lacking in the official market contributed to dealing more effectively with the debt problem. First, private lenders were subject to accounting rules, which forced them to re-value their claims at prices below their nominal value. Secondly, the market provided alternative lending options. However, these "market-based solutions" partly shifted the costs of the crisis to other participants, namely debtor countries and official creditors. The Latin American countries experienced large negative transfers during the 1980s, and official creditors partly bailed out the commercial banks, so that their losses were less severe than they would have been without the new lending of official creditors. Nevertheless, this bailing out was a once-and-for-all phenomenon, since banks also experienced losses themselves and therefore were not tempted to start new lending to risky debtor countries. The Brady plan formalised the market-based debt reductions. Debtor countries with a Brady deal could reduce their stock of debt substantially, partly with official money, but they had to service the remaining debt – which they did. For the creditors, the deal was therefore also profitable.

The reactions of official creditors were different. The Export Credit Agencies (ECAs) of bilateral creditors continued net lending during the 1980s. Until 1988, bilateral creditors only rescheduled debts with the debtor countries, thus providing some relief on current debt service payments but maintaining the full net present value of all claims. From 1988 on, bilateral creditors began to apply debt forgiveness, but only on a limited scale. One-third of the debt service due on part of the debt (the pre cut-off-date debt) and due during a limited period was cancelled. The remainder had to be paid or was rescheduled on market terms. During the 1990s, official creditors applied a combination of new aid and increasing percentages of forgiveness on part of the debt service due (first 50%, then 67%, later in some cases 80%). All this amounted to liquidity relief only, however, and implies that official creditors were late in recognising that these heavily indebted poor countries did not have a liquidity problem but a solvency problem. Although the Paris Club envisaged stock reductions from 1992 onwards, conditions were heavy and stock reductions on pre-cut-off date debt were only provided to some 7 countries after 1996. The fact that new debt reschedulings had to be concluded every few years for all these countries, at ever higher forgiveness percentages on the debt service due, underlines the limited effectiveness of this liquidity relief.

The fact that official creditors were later than commercial creditors in providing debt relief and in acknowledging that the debt would not be repaid fully, has been explained from two causes. First, the countries that had accumulated these official debts were relatively unimportant for the world financial system. Secondly, the fact that it was official debt meant that creditors were not subject to banking rules that prescribed more realistic valuing of claims. In most creditor countries, ECAs were fully compensated by their creditor governments and did not write off any of their bad debts. Official creditors could therefore maintain the fiction of a temporary liquidity crisis (Serieux 2001).

[16] Surprisingly, around 1990, it was expected that it would be easier to solve the debt problems of the low-income countries than those of the middle-income countries, precisely because the low-income countries owed most of their debts to governments and multilateral institutions "... who appear unlikely to try to enforce substantial repayments." (Rogoff, 1990). The opposite proved to be true.

Official creditors have partly bailed out the commercial banks in the 1980s, and bilateral aid money has partly bailed out the ECAs and the multilateral institutions in the 1990s. However, from the start of the debt crisis commercial creditors also bore part of the cost of non-repayment themselves. This reduced moral hazard. On the other hand, ECAs in most creditor countries did not bear any costs of non-repayment, and the IFIs were preferred creditors and as such always the first to be repaid. This increased moral hazard for these two groups of creditors.

The slow recognition over the 1990s that debtor countries had a solvency problem also had other negative consequences. Countries with high debts and especially with high multilateral debts, proved to receive more aid. Donors suffered from adverse selection in their allocations of aid and debt relief, with possible negative consequences for aid effectiveness. This adverse selection may also have negative incentive effects on policies of recipient countries: the existence of an IMF agreement may actually lead to policy deterioration, since recipient governments know that lending and aid will continue anyway.

Multilateral creditors only began to consider debt relief in 1996 with the first HIPC initiative. This first initiative was expanded to the HIPC 2 in 1999, involving deeper, broader and faster debt relief. HIPC 2 implies the recognition that these poor debtor countries are insolvent: the NPV of both bilateral and multilateral debt stocks are reduced in order to make the debts sustainable.

With the HIPC initiative, it is also the first time that multilateral creditors themselves finance part of the debt relief. However, an inspection of the sources of this financing shows that the own contributions are limited and are so far only guaranteed for the first years. Since multilateral debt relief in the context of HIPC is provided in the form of a constant share of annual debt service obligations over the next 15 or 20 years, continued provision of this promised debt relief requires new bilateral contributions, or it will be at the cost of new concessional loans from these institutions. At the same time, HIPC will clear the way for new loans to these debtor countries from the multilateral creditors. In other words, it is very likely that moral hazard in multilateral lending continues.

5 THE EFFECTIVENESS OF DEBT RELIEF EFFORTS

5.1 Introduction

The theory behind the logical framework for this evaluation is that debt relief can have positive effects on economic growth through two channels:

- The reduction of the debt service *flows* (actual debt service paid) may lead to additional imports and public expenditure; increased imports may include investment goods, or intermediate goods leading to increased use of existing capital stock, and government spending may imply higher public investment and/or more social expenditure;
- The reduction of the net present value of the debt *stock* may increase creditworthiness of the country (according to the debt overhang hypothesis), and thereby lead to more private investment and inflows of private capital;

In this chapter, we will analyse whether the different mechanisms as described in chapter 4 gave rise to flow and stock effects. We analyse first the experience of Latin American and Caribbean countries (LAC) with debt relief on commercial debt, and then that of Sub-Saharan African countries (SSA), with bilateral debt relief in the 1990s.

In most publications on the effectiveness of debt relief, all types of debt relief are taken together. The usual assumption is that all types of debt relief free resources for the recipient governments (flow effect), and that the question is therefore relevant whether these “resources” go to countries with good policies (Easterly, 1999; Killick & Stevens, 1997), or good governance (Neumayer, 2002), so that the money is used well.

However, as chapter 4 has shown, there are many different modalities of debt relief, and they do not all have flow and stock effects. If “debt relief” only implies a rescheduling of debt service at market terms, it is still liquidity relief but of course it does not reduce the debt stock and cannot be called “debt forgiveness”. Debt forgiveness can be defined as actually reducing the net present value of (future) debt payments. Forgiveness may imply a reduction of debt service due, of arrears (past due interest or principal), or may reduce the stock of the debt, leading to lower future payments, in principle. Relief on past due interest and on current debt service due can be called *liquidity relief*, and relief on past principal due and on stocks can be called *stock relief*. The type of debt and the type of creditor also matter: is it relief on a debt to a preferred creditor, or on a debt that would not have been paid in the absence of debt relief? What are the sanctions available to the creditor in case of default?

Liquidity relief on a debt that was not serviced before, does not free resources for the debtor government, while stock relief on a debt that was not paid before may imply that debt service paid actually *increases* after the deal (this occurred with respect to debts to non-Paris Club creditors, see section 4.3.2). Another case in which liquidity relief does not free resources is when this debt relief substitutes for aid from the particular creditor/donor. All this means that it is too simplistic to speak on the use of “debt relief resources” or “debt relief savings”, since in many cases there are no savings at all for the recipient country.

Debt relief may also lead to increases in debt service paid during a certain period under study for other reasons. For example, earlier (Paris Club) reschedulings that led to a postponement of debt service for a couple of years but must now be paid, or new loan inflows lead to increased payments. The latter may either form part of a debt deal that focuses on increasing liquidity for the debtor country, or may be the result of increased

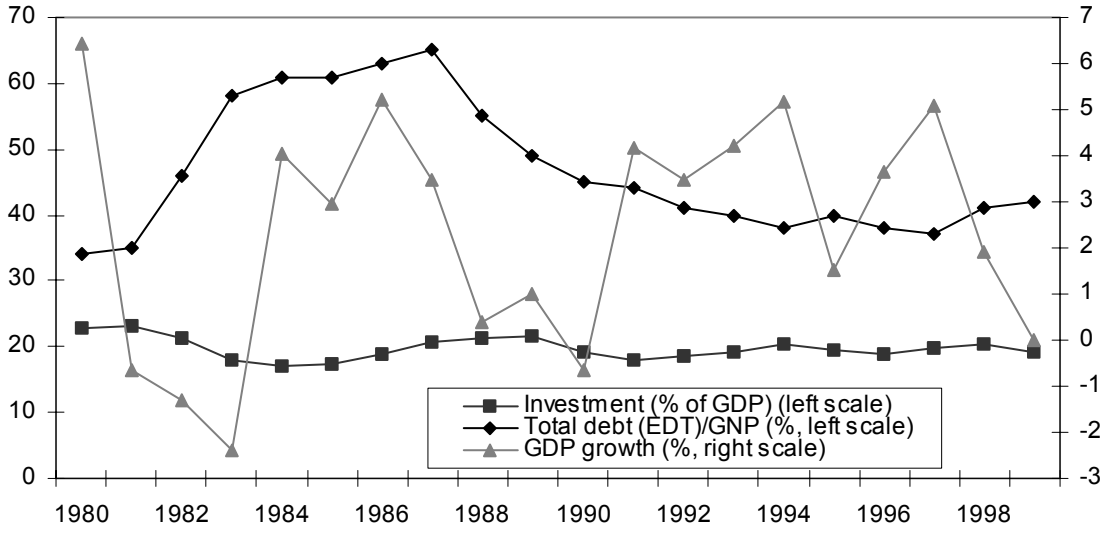
creditworthiness due to stock relief.

To the extent that debt relief reduces the present value of debt stocks, it may lead to increases in private investment and to increased creditworthiness. Creditworthiness can be said to have improved if there are inflows of foreign private capital, in the form of foreign direct investment, portfolio equity flows, bonds or new loans. Another indicator for creditworthiness are the prices of debt claims on the secondary market. However, during the 1990s, the secondary market has become too thin for those prices to be a meaningful indicator. In addition, there is no such market for official debt claims. For this reason, this indicator is only used for Latin America and for the 1980s and early 1990s in the discussion below.

5.2 The impact of debt relief of the 1980s on Latin American debtor countries

There was some recovery in Latin America in the 1990s. Growth rates of GDP were higher in the 1990s than in the 1980s, achieving some 4%, on average, between 1990 and 1999, but were still volatile (Figure 5-1). Investment levels were also slightly higher in the 1990s. However, the increase in growth has been far from spectacular. Nevertheless, neo-classical growth models do not need a Latin American 'dummy' anymore for the 1990s, as they did for the 1980s (Fernandez-Arias & Montiel, 1997). The question now is to what extent this recovery can be related to debt forgiveness.

Figure 5-1 Debt, investment and growth in Latin America and the Caribbean (LAC), 1980-1999

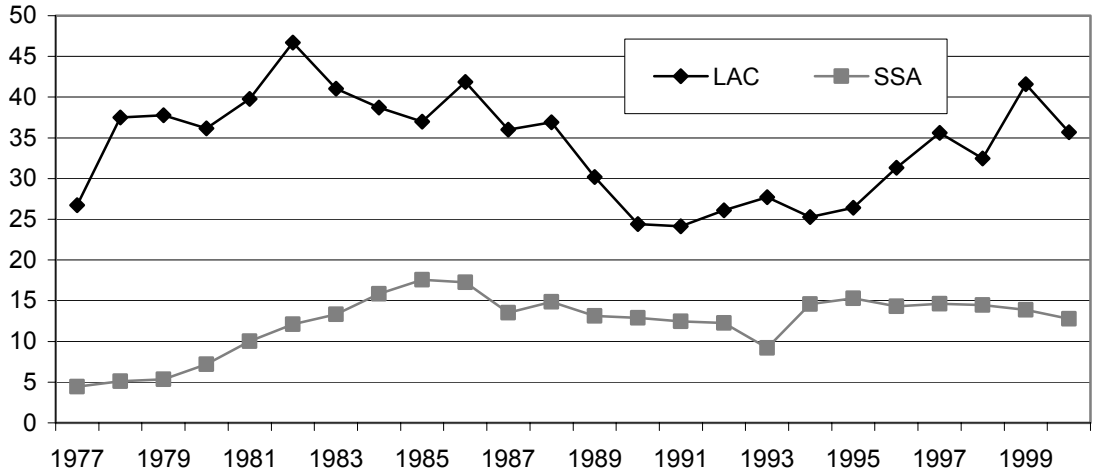


Source: World Development Indicators, 2001.

The debt-to-GNP ratio for Latin America declined after 1987 (Figure 5-1). At the aggregate level, there also seems to have been some impact of debt relief on debt service payments, especially from the relief granted in the years 1988-1990. The debt service/exports ratio fell from 37% in 1988 to 24% in 1991 (Figure 5-2). This is partly due to a recovery of exports, from USD 148 billion to USD 188 billion. But debt service itself also fell, from USD 55 billion in 1988 to USD 45 billion in 1991. Actually paid debt service slowly began to rise again after 1991. This is the result of two developments, that both can be seen as positive effects of the debt relief efforts. First, arrears began to decline precipitously after 1991 (Figure 3-5 above). This means that these countries have been able to pay an increasing share of their debt

service due.[17] Secondly, LAC countries have benefited from new inflows of private capital.

Figure 5-2 Debt service paid as percentage of exports of goods and services, Latin America and the Caribbean (LAC) and Sub-Sahara Africa (SSA), 1977-2000



Source: World Bank (2001).

We now review the empirical studies that attempt to assess the impact of debt relief in Latin America, bearing in mind that most of this debt relief was debt forgiveness in the form of stock relief. The stocks of debt have been reduced, and the question is whether this has had any positive effects on growth through a reduction of the debt overhang, and/or whether it had positive liquidity effects through a reduction of debt service payments. The fact that actual debt service payments rose in Latin America after 1991 already shows that it is difficult to empirically separate the stock and flow effects. The discussion begins with an analysis of debt buybacks and then continues with the impact of Brady deals. We will show that the stock effect of debt relief, or the impact on creditworthiness is generally considered more important than the flow effect of these debt relief agreements.

5.2.1 Flow and stock effects of debt buybacks and Brady deals

Debt buybacks have been criticised as benefiting the creditors more than the debtor (Bulow & Rogoff, 1988). The price at which debtor countries buy is considered too high and especially if compared with alternative uses. Usually, the secondary market price rises after the debt buyback: the value of the remaining claims rises since expected payments on these remaining claims increase due to the lower debt stock. Debtor countries have to pay the post-buyback average secondary market price, while the value of the country's remaining debt service falls by the marginal price, which is much lower. In Bolivia, the average pre-buyback secondary market price was 6 cents to each dollar, and the post-buyback price was 11 cents. Bulow and Rogoff also argue that buybacks are too costly for sovereign debtors since they cannot use assets that would be seized by creditors in case of default.

Although Sachs admits that buybacks are usually costly to the debtor, he argues that these have to be compared with the costs of default. These costs may include the reduced access to trade credits and to borrowing for investment purposes, and bargaining costs. He

[17] From 1990 onwards, the ratio of debt service paid to debt service due (including arrears) began to increase for this group of countries.

considers the Bolivian buyback particularly beneficial, for two reasons. First, the country was not forced to pay the arrears in debt service of the years of before the buyback, and second, the buyback was financed by donors and was accompanied by large new credits from IMF and the World Bank (Sachs, 1988). While Bolivia had paid 6% of its GDP annually in debt service in 1982-1984, with the buyback it received 5% of GDP in new resources.

Most Brady deals also involved a combination of debt relief, debt conversion and new capital inflows. As already stated above, it is therefore difficult to separate empirically the flow effect of debt relief. One study that does examine the liquidity effect of debt relief and in fact compares it with the debt overhang effect has been carried out by Morisset (1991). He builds a macroeconomic model for Argentina consisting of eight behavioural relationships and 14 identities. The model fits quite well for the 1962-1986 period. Simulation results confirm a liquidity effect of the reduction of the debt stock on public investment. However, the incentive effect on private investment is larger. This is an indirect effect and it mainly comes about via a portfolio shift. The Brady deal leads to more demand for domestic assets and this leads to increases in loanable funds and to a reduction of the interest rate. Other channels for indirect positive effects on private investment include the lower public borrowing leading to less crowding out, and a lower expected tax burden (Morisset, 1991).

In Mexico, the Brady deal also proved to have positive effect on private investment (Claessens et al., 1994). This paper shows that debt relief provided through this deal (implying a NPV debt reduction of USD 12 billion) seemed to have had a positive effect on growth. Based on monthly data for 1988.4-1990.12, they find that it was not the reduction in the *size* of the expected net transfer on debt, but the reduction in the *variance* of the expected net transfer that was the important factor in stimulating private investment. This reduced variance brought about a decrease in the exchange rate risk, measured as the interest differential between peso denominated Treasury bonds and dollar denominated Treasury bonds. The reduced variance of debt payments reduced the exchange rate risk, since investors perceived that reduced volatility of debt payments would also reduce the uncertainty with respect to the extent to which the government would finance these payments by domestic borrowing and/or by money creation, which in turn would adversely affect the exchange rate. There was also some reduction in the country risk, measured as the interest differential between Mexican dollar denominated Treasury bonds and US Treasury bonds, but this only explains 4 percentage points of the total fall in peso interest rates of 20 percentage points. In itself, the drop in domestic interest rates led to a saving in domestic debt servicing of 4% of GDP (Claessens et al., 1994: 6).

The authors conclude that it was the reduced uncertainty with respect to government policies, in particular exchange rate policies, that had both a direct positive effect on private investment, and an indirect positive effect on investment through lower interest rates. The resulting increase in private investment in turn led to the higher economic growth rates. However, it has also been stressed that the reforms previously carried out by the Mexican government were a precondition for the success of the debt reduction (Claessens et al., 1994; Oks & Van Wijnbergen, 1995). These reforms included privatisation of the banks and of many other state firms, and liberalisation of foreign trade. While reforms plus debt reduction thus seem to have had positive effects on investment and economic growth, Oks and Van Wijnbergen (1995) cast some doubts on the sustainability of that growth. This was because higher growth was accompanied by a large current account deficit and by a fall in domestic private savings.

5.2.2 Creditworthiness

There is a general consensus in the literature that the Brady agreements played a role in the restoration of creditworthiness in Latin American countries. Perceptions in financial markets changed dramatically, leading to the return of flight capital and to new voluntary lending

(Bowe & Dean, 1997; Cline, 1995). However, it is also recognised that new inflows were probably also due to the lower world interest rates in the 1990s or other exogenous factors (Bowe & Dean, 1997: 57).

Indicators for increased creditworthiness include the amount of capital inflows, but also the prices of debt claims on the secondary market (Acharya & Diwan, 1993; Boehmer & Megginson, 1990; Dooley et al., 1994).[18] According to Dooley et al., they are more sensitive than the flows itself, and they reflect expectations on governments' capacity to service debts. The rising of secondary market prices means that debtor countries can have cheaper loans – the yields for these loans fall. Brady deals have led to a generalised increase in the secondary market prices of debt between 1989 and 1993 (Bowe & Dean, 1997). However, in this period world interest rates also fell and this may have contributed to lower prices.

Before the decline in world interest rates around 1990, secondary market prices were determined by factors related to circumstances and policies of the debtor countries. Boehmer and Megginson (1990) empirically tested a model for the determinants of secondary market prices, in which they included several variables related to ability and willingness to pay. Within ability to pay, they distinguished between liquidity measures (ratio of net exports to debt service, and ratio of net imports to hard currency reserves), and solvability indicators (debt-to-GDP and debt-to-exports ratio). Willingness to pay was measured as the level of payments arrears. This model was tested before the implementation of the Brady deals. Solvency and willingness indicators (arrears) proved to be significant in determining the secondary debt prices, while liquidity indicators were not.

Another study established the importance of debt buybacks as signalling commitment or willingness to pay debt service (Acharya & Diwan, 1993). Countries with buyback or debt conversion programmes in place proved to have more inflows of new loans and could pay lower interest rates on those loans, and their debts had higher secondary market prices.

Dooley et al. examine the role of the decline in world interest rates in the rise in secondary market prices after the Brady deals (Dooley et al., 1994). They included the following variables in their model: the actual debt reduction (reduction in debt-to-GDP ratio and in debt-to-exports ratio), the international interest rate, the domestic interest rate, and the real exchange rate. The outcome was that both variables for the debt stock reduction were significant, but the world interest rate as well. In simulations with this model the impact of economic reform, proxied by the primary budget surplus, proved not to be a significant factor. The authors conclude that in the early 1990s, many countries were considered creditworthy again irrespective of whether they had carried out economic reforms. Like Oks and Van Wijnbergen (1995, see above), they question the sustainability of the recovery of the early 1990s. Once world interest rates increase again, secondary market prices will fall and the wave of private flows to Latin America will come to an end. The negative effect of the interest rate increase will be reinforced by its impact on the real exchange rate (depreciation) and domestic interest rates. Countries that have carried out reforms are in a better condition to face the reversal of capital inflows than other countries.

Hernández and Rudolph (Hernandez & Rudolph, 1995) investigate the determinants of private capital flows directly, and they also examine external and internal factors. The external factor is again the US interest rate (Treasury Bill rate). In the group of domestic

[18] Of course, a small rise in secondary market prices immediately after a buyback or a Brady deal is due to the deal itself, since a lower debt means that expected repayments on remaining claims increase. It does not necessarily imply that the country has become attractive for new lenders. However, if secondary market prices rise more and continue to rise, this increase can be seen as indicator for increased creditworthiness.

factors, they look at investment/GNP, saving/GNP, export growth, exchange rate instability, and the debt stock, measured as the ratio of the debt stock minus international reserves, and GNP. This means they have not examined the impact of debt stock reductions. They find a significant influence of almost all domestic factors: investment, saving, instability and debt stock. The US interest rate proved to be insignificant. They show that this surprising result can be partially, but not fully, explained by including a longer time frame (1986-1993) than other studies do, and to the inclusion of FDI, which constitutes the largest inflow in this period.

5.2.3 Conclusion

On the whole, the debt crisis was largely over for Latin American countries in the 1990s. They had become creditworthy again, had access to new private capital flows and managed to pay most of the debt service due. Yet, debt service payments in per cent of exports were still high, as Figure 5-2 shows.

The flow effect of the debt relief to Latin America proved to be difficult to establish. First, countries were in arrears so it is not clear what they would have paid in the absence of debt relief. Second, debt relief increased creditworthiness and thus led to new inflows of foreign capital. As a result, the debt service flow need not diminish. Nevertheless, the reduction of uncertainty about future debt flows seems to have played an important role. This was shown to have been the case for Mexico. The large debt service due in this country created uncertainty for the private sector. It was not the size of the transfer that mattered, but the uncertainty on government policies to meet the transfer. In particular, monetization or domestic financing of budget deficits could bring about balance of payments crises. Given that arrears in Latin American countries were very high by the end of the 1980s, we could add here that there was also uncertainty about the amount of debt service that would actually need to be paid. Debt relief on the stock of debt that was the crux of the Brady deal which thus reduced both uncertainties.

The most important effect of debt relief efforts, from individual buybacks via more concerted ones such as the Bolivian to the more comprehensive Brady deals, seems to have been the restoration of creditworthiness. In fact, one way of measuring this proved to be the secondary market price of debt claims, that went up enormously in the early 1990s. These price increases reflect the higher expected payments on debt. Studies showed that prices were determined by ability (solvency indicators like debt-to-GDP and debt-to-exports) and willingness to pay (measured by arrears). It is somewhat surprising that the relatively low amounts of debt stock forgiveness had such a large impact on the secondary market prices of debt. One reason for this is clearly the improved external environment in the early 1990s. In particular, the lower world interest rates proved to be an important factor in the rise of secondary market prices.

The new inflows were of other types than the previous ones. With respect to debt creating flows, portfolio capital took the place of syndicated bank loans. Other important inflows included Foreign Direct Investment (FDI).

There is some conflicting evidence on the role of reforms on this improved creditworthiness. Adjustment had short-term negative effects on especially public investment, but reforms were important for investment and growth. Previous reforms do seem to have played a role in rising investment in Mexico after the implementation of the Brady deal. Domestic reform-related factors like the investment and savings rate and the stability of the exchange rate, also proved to be important for the access to total private capital inflows, including FDI. However, whether or not countries had reformed seemed to have little influence on inflows of portfolio capital in the early 1990s.

5.3 Impact of bilateral forgiveness on debtor countries in Africa, in the 1990s

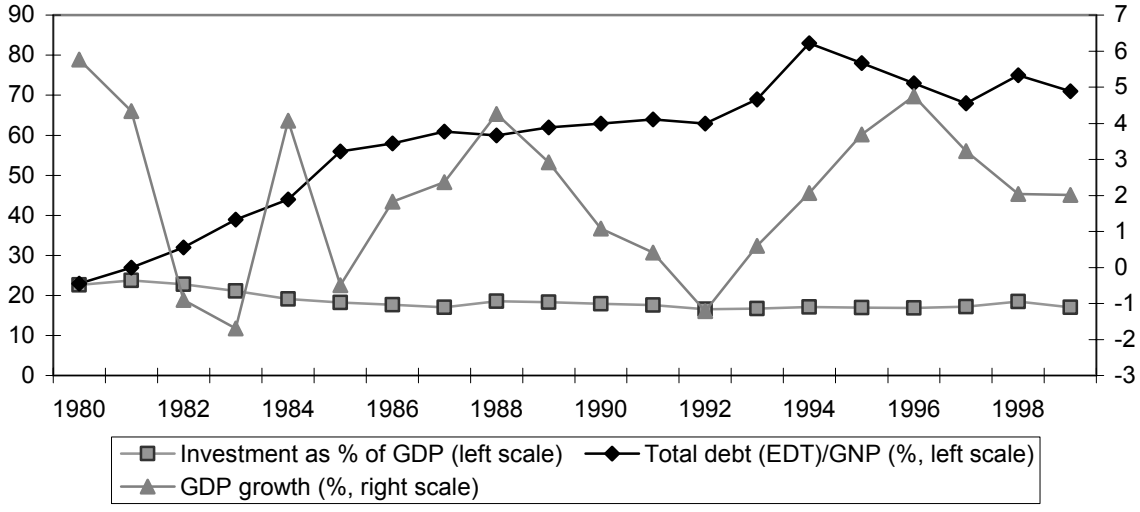
Since commercial debts were of relatively little importance for Africa, the few Brady deals that were concluded for SSA were of limited size and cannot be expected to have had an important influence. Most debt relief to SSA countries was in the form of liquidity relief provided by the Paris Club. From 1988 onwards this included debt forgiveness at increasing percentages, but only on part of the debt service due and always for a limited period only.

5.3.1 Flow effects

Compared to the estimated NPV debt stock of all 41 HIPC countries by the end 1997 of about USD 157 billion, bilateral debt forgiveness of about USD 30 billion (see chapter 4) appears to have been substantial. As a result of the concessional reschedulings and the larger share of grants in new financing, the present value of debt stocks for the HIPCs began to fall after 1992 (Daseking & Powell, 1999: 12). The (nominal) debt to GNP ratio of Sub-Saharan African countries rose until 1994 to 80% and then began to fall slightly (Figure 5-3). Bilateral debt forgiveness has probably played some role in maintaining low actual debt *service* ratios in SSA countries (Figure 5-2). This is also evident from the fact that from 1986 onwards, the ratio of actual debt service paid to exports for the HIPCs was *lower* than for the moderately indebted low income countries after 1986 (Daseking & Powell, 1999).

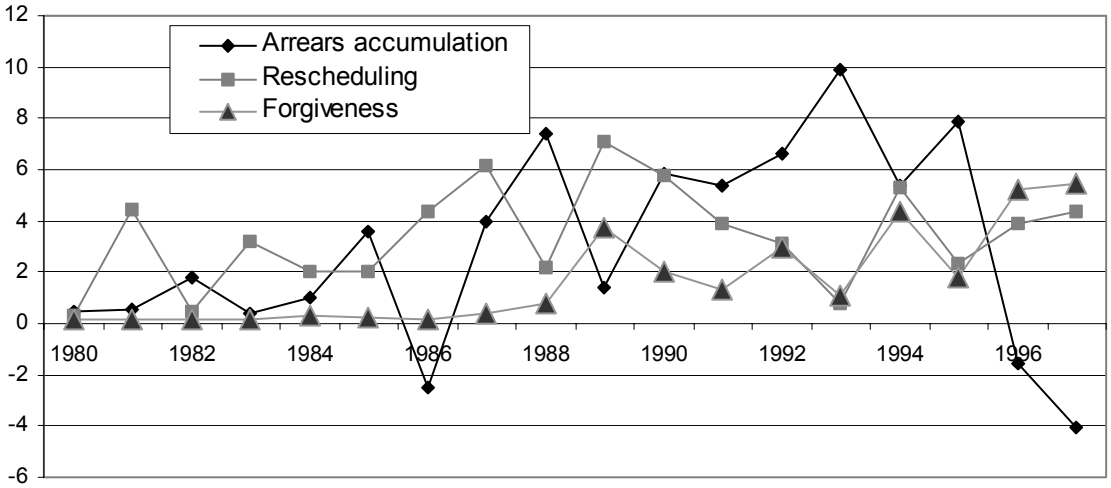
Despite these positive indicators, there is also evidence that the effectiveness of bilateral debt forgiveness has been limited. In general, investment rates in SSA did not increase during the 1990s, and average growth was low (Figure 5-3). Although the debt service to exports ratio has been kept at a relatively low level in SSA countries (15%), the effect of arrears *accumulation* on low debt service ratios was in most years larger than that of forgiveness (or rescheduling), as Figure 5-4 shows. Total arrears continued to increase until 1995 and then reached the enormously high figure of about USD 60 billion. They then remained stable over the rest of the 1990s (Figure 3-5). Arrears constituted about 27% of the total nominal debt stock over the years 1995-99 for SSA countries. For the heavily indebted SSA countries, this figure must have been even higher. Given the heavy arrears accumulation until 1995, we can doubt whether the bilateral debt service forgiven would always have been paid in the absence of debt relief.

Figure 5-3. Sub-Sahara Africa (SSA): Growth, investment and debt-to-GNP ratio, 1980-1999



Source: World Development Indicators, 2001.

Figure 5-4. Sub-Sahara Africa (SSA): Arrears accumulation, rescheduling and forgiveness in USD billions, 1980-1997



Source: World Bank, Global Development Finance 2000.

A further question that can be raised is to what extent debt relief has been additional to aid flows. If not, this would further reduce the flow effect of debt relief. At the aggregate level, it is possible to get an indication of additionality by examining whether aid flows and debt relief flows move together or show opposing trends. If aid is additional to debt relief, there should not be a negative relation between the two.

Birdsall et al. (2001) investigate this aggregate additionality by including debt relief (debt service reduction and debt stock reduction) in a multivariate regression, with "net transfers" (defined as net transfers on debt plus grants) as dependent variable. The coefficient for the debt relief variable will then reveal the relationship between debt relief[19] and net transfers. They run regressions for a full sample of African countries and for samples only including high debt, low debt, high multilateral debt and low multilateral debt countries. All coefficients prove to be close to zero, but none of them are significant. One can conclude that at least, there is no significant negative coefficient, so that additionality of debt relief and aid cannot be ruled out.[20]

To the extent that debt relief efforts did have a flow effect, this flow effect is not different from the flow effect of aid, in particular, of programme aid. Freely spendable programme aid, for example in the form of budget support, also frees resources for the recipient government in the same way as debt relief does (that is if it is relief on a debt that would have been serviced anyway).

However, the fact that the net resource flow to highly indebted poor countries has always been positive does not imply that these countries have been able to service their debt easily.

[19] Since "debt relief" includes stock reductions, debt relief does not necessarily imply an increased flow of resources for the recipient country.

[20] The authors conclude that "it seems ... " that debt reduction in the 1990s "crowded out other forms of disbursements and did not constitute an 'additional' source of funds to poor countries" (Birdsall et al. 2001: 18-19). However, given that they subtracted debt reductions from net transfers, a *negative* coefficient (and not a zero) would be necessary to indicate non-additionality.

A large part of aid disbursements constituted project aid. In 1998, project aid to Sub-Saharan Africa amounted to USD 13 billion, and general budget support only USD 3 billion. The amount of debt service paid from the budget was about USD 9 billion (Birdsall et al., 2001). If project money is not fungible, this means that SSA countries had to finance USD 6 billion from their own budgets. This can be expected to have squeezed recurrent cost budgets for, for example, health and education.

With a simple model that assumes non-linearity of the relationship between investment, saving and output, Sachs (2002) shows that low-income countries can remain in a "poverty trap" where income growth is zero or negative if they begin at a very low level of income. They are particularly vulnerable if they have a heavy debt burden. In this situation, governments do not have sufficient income to invest in physical and human infrastructure, which would be necessary to lift the countries' growth rates to sustained positive levels. This is illustrated by showing that out of the 59 countries that had at least one Paris Club rescheduling between 1975 and 1996, 39 were still having these reschedulings between 1996 and 1999, while 12 other countries are "in remission", meaning that they were subject to an IMF arrangement between 1996 and 1999. Only 8 out of the 59 have therefore been "cured". The average growth rate of the 39 countries in "chronic crisis" was only –0.2% during the 1990s. Sachs concludes: "The guiding principle of official debt relief in the past twenty years has been to do the minimum possible to prevent outright disaster, but never enough to solve the debt crisis" (Sachs, 2002: 274-5).

Sachs et al. (1999) also point to the problems that servicing the debt causes for fiscal management and for economic performance in general. The size of the debt service flow may not be high in relation to GDP (as compared to the net transfers of the heavily indebted middle-income countries in the 1980s), but it is high in relation to freely spendable fiscal revenues. They focus, in particular, on the negative consequences of the volatility of the debt service payments. They examine a sample of 17 HIPCs and show that for the 1990s the year-to-year variation in debt service payments is large for these countries. At the same time, governments have insufficient means to service the debt and/or are uncertain about the amount available every year to pay the debt service. First of all, the government revenues from taxes and other sources are relatively low. Second, development aid – one of the important sources from which debt service payments have been paid during the 1990s appears to be highly volatile itself (see Gemmell & McGillivray, 1998; Pallage & Robe, 2002; Bulír & Hamann, 2001, for evidence on this). Therefore, Sachs et al. argue that it is the high volatility of debt service payments that has negative consequences for fiscal management and for the government's capacity to meet social needs. This may ultimately also have a negative impact on investment and growth.

It seems that the combination of limited debt relief, a continuation of high debts, and high (project) aid has not been effective in promoting development. One study finds that there is only a weak link between aid and investment in Africa, while the link between investment and growth is also weak (Dollar & Easterly, 2001). The UNCTAD 2000 Report shows that there is a high correlation between investment and growth for developing countries in general, but that this correlation disappears for the least developed countries. Since the least developed countries do show a strong correlation between domestic savings and growth, the explanation for the limited effect of investment on growth must be found in the limited effectiveness of foreign savings (UNCTAD, 2000: 43). This could be due, among other things, to the lack of donor co-ordination in project aid (UNCTAD, 2000: 176). Aid is given in a fragmented way, and often a substantial part of aid flows is not registered in national budgets. Despite this, donors usually require recipient countries to provide recurrent expenditure for investment projects financed by the donor, thus limiting domestic control over government budgets further and probably hampering the effectiveness of public spending.

5.3.2 Stock effects

The continued arrears accumulation and large stock of arrears over the 1990s also imply that there has been no increase in capacity or willingness to pay, and that creditworthiness of SSA countries was probably still low by the end of the 1990s. Serieux shows that private investment in heavily indebted poor countries is at a low level (2001: 324). In his view, this can partly be explained by the fact that the large and unsustainable debt constituted a source of present and future instability. Debtor governments were not stimulated to carry out good policies because the benefits would most likely accrue to the creditors. This in turn had a negative effect on private investors: a classic debt overhang situation.

As Figure 4.5 shows, private net transfers to SSA (excluding FDI) were negative in most years during the 1980s and 1990s. In LAC, the effect of debt relief proved to be a return of flight capital, and increases in portfolio investment and in Foreign Direct Investment (FDI). Since most SSA countries only have incipient financial and capital markets, attracting large amounts of portfolio capital is not a feasible option in the short term. Therefore, FDI and returning flight capital are the most feasible for SSA countries. Although FDI in itself does imply lending with a risk of non-repayment, improved creditworthiness will play a role in the decision since it may become easier for these foreign firms to access loans from abroad, both short term trade credits and investment credits. Surveys of foreign investors have revealed that the risk of policy reversals, the risk of the exchange rate becoming inconvertible and civil wars are the most important factors hindering investment in Africa (Collier & Pattillo, 1999). A reduction in future debt service payments may reduce the risk of exchange rate controls.

There is a large potential for returning flight capital for SSA. The region has the lowest value of capital per worker as compared to other regions, but the highest share of private wealth held abroad, namely 40% (Collier et al., 2001). Econometric estimates show that at very high levels of the debt-to-GNP ratio there is a relationship with capital flight. For example, reducing the debt-to-GNP ratio from 297% to 60%, reduce the share of wealth held abroad by 33 percentage points. Collier et al. (2001) also estimated the potential effects of the original HIPC initiative on returning flight capital. This effect proved to be large for Guyana (proportion of wealth held abroad would reduce by 10.2 percentage points), since it had both a high debt and a high number for private capital per worker. In the African countries Burkina Faso and Uganda the effect would be more limited. The impact on returning capital flight is difficult to establish from balance of payments statistics, since this category is least well recorded in balance of payment statistics. Country studies in Bhinda et al. (1999) found that capital flows were often hidden in ‘errors and omissions’ or in ‘private transfers’ . In practice, inflows of capital were therefore probably somewhat larger than officially recorded.

5.3.3 Conclusions

Debt relief to Sub-Saharan African countries in the 1990s was mainly in the form of liquidity relief. Growth rates were low and debt-to-GDP ratios remained high. Arrears continued to grow until 1995, and also after that year they remained at a very high level. It can be expected that part of the debt relief provided would not have been paid in the absence of debt relief. Arrears accumulation proved to be a greater source for debt service reduction than rescheduling or debt service forgiveness. On the other hand, there appears to be is no hard evidence that debt relief substituted for aid. But it can be doubted whether the system of maintaining high debts, providing large aid flows and giving some relief on debt service was effective in promoting growth and development.

As SSA countries continued to have large debts and large arrears, creditworthiness did not improve. Net private capital flows remained negative, and private investment was low. Although stock effects in terms of returning flight capital and increases in FDI are potentially

important, they hardly materialised so far.

We can hypothesise that the low rates of investment and growth in Sub-Saharan Africa are at least partly due to the large debt. The large and unsustainable debt stocks bring about that these countries maintain large arrears and do not pay all debt service due. They received debt relief, but only in the form of partial reductions in debt service flows. Yet, as Sachs et al. (1999) have shown, actually paid debt service constituted a high percentage of government revenues in heavily indebted poor countries. In addition, the amount of paid debt service and the aid flow from which it can be paid are subject to a high degree of volatility. It appears that debt relief in the form of liquidity relief has not been very effective in SSA countries. Chapter 6 will further examine the relationship between high debt and growth and the modality of debt relief that is most appropriate for promoting economic growth.

6 DEBT, ECONOMIC GROWTH AND THE RELEVANCE OF DEBT RELIEF

6.1 Introduction

This chapter discusses the link between external debt and economic growth. This link has been extensively debated, both in academic and policymaking circles. Theoretical and empirical research seems to point out that a high external debt generally has a negative impact on growth. Yet, the exact nature of this relationship is still largely unclear. It is important to have a better understanding of the nature of this relationship, however, since policy responses both from donor countries and creditors to the debt problems of debtor countries may depend on it.

This chapter aims at contributing to the discussion on the nature of the relationship between debt and growth by showing that the relationship between debt and growth has changed during the 1990s. In particular, we show that it is the *volatility* of debt service payments to GDP ratio, rather than the *level* of external debt to GDP, that has a negative influence on economic growth. The volatility of debt service payments to GDP is related to the level of outstanding debt to GDP, however. We explain this relationship as follows. First of all, we show that during this decade many debtor countries with high levels of external debt to GDP have considerably reduced the amount of debt service they actually pay as compared to their debt service due. Second, we suggest that during the 1990s these debtor countries have been increasingly involved in lengthy and time-consuming negotiations about the terms of annual repayments, arrears and the amount of debt relief. The outcomes of these negotiations, in terms of the amount of debt service to be paid, are uncertain for debtor countries. In addition, with respect to parts of their outstanding debts, countries may have not have been paying for some time; yet, this may suddenly change if and when negotiations on these debts are concluded. These developments have contributed to the volatility of annual debt service payments to be made by debtor countries. In turn, this volatility has a negative impact on growth.

The discussion on the relationship between debt and growth may be important in relation to donor country and/or creditor policies regarding debtor countries. In particular, it may be important for donor countries and/or creditors to know whether it is the liquidity effect or the debt overhang that dominates the impact on economic growth rates, since this may shed light on the need for and the modality of debt relief.

If the liquidity effect dominates, new lending may be the appropriate response, perhaps combined with relief on debt service payments. However, if countries are insolvent, new lending should be avoided and countries should receive debt relief and new grants. If the negative incentive effect of a debt overhang dominates, a reduction of the debt stock is more appropriate than new lending or liquidity relief. In order to avoid moral hazard, a once-and-for-all debt relief should be aimed for (Easterly, 1999).

This chapter is organised as follows. Section 6.2 discusses the existing theoretical and empirical literature on the relationship between external debt and growth. Section 6.3 presents a simple empirical analysis of this relationship for a sample of 102 developing economies, based on the traditional literature that stresses the existence of stock and liquidity effects of a high external debt. The results from this analysis show that while during the 1970s and 1980s the level of debt to GDP ratio appears to be an important determinant of growth, this is no longer the case for the 1990s. In section 6.4 we elaborate on this finding by presenting an alternative interpretation and analysis of the relationship between debt and growth. In particular, we focus on the importance of the volatility of debt service payments to GDP ratio and the adverse effects this may have on economic growth in the 1990s. The

empirical results of our analysis in this section seem to confirm our premise. Section 6.5 discusses the policy implications that follow from the outcomes of the empirical analysis.

6.2 Debt and economic growth: A survey of existing literature

6.2.1 Theory: liquidity versus debt overhang effects

Since the beginning of the 1980s the relationship between external debt and economic growth has received a lot of attention in academic research. One of the main issues in the debate on this relationship concerns the apparently negative impact of a high external debt on economic growth. During the 1980s and 1990s, many debtor countries experienced low (or even negative) growth and investment in combination with high levels of debt and debt service payments. Basically, the negative relationship between debt and growth has been explained by pointing at two main channels through which the two variables are related.

The first channel stresses that debt has a negative liquidity effect on growth. Debtor countries have to pay (high) debt service payments, which limits the amount of resources available for investment in education, health, infrastructure and public investment in general. Moreover, high debt payments may lead to import compression due to the reduced amount of capital inflows available. These liquidity effects, in turn, may negatively influence private investment, and thus the growth potential of the country (Serieux and Samy, 2001).

The second channel focuses on the negative effect of a high stock of debt on growth. This effect is also referred to as the so-called debt overhang hypothesis. This hypothesis has long dominated the discussion on debt and growth. According to the debt overhang hypothesis (Krugman, 1988; Sachs, 1984 and 1989) a high outstanding external debt and the accompanying expected high debt service payments act as a disincentive to private investment for the following reasons. First, if the government of a country has a high debt, investors perceive this debt burden as a future tax on the returns to their investment. In order to pay for the debt, the government may need to raise tax rates, which will reduce after-tax returns on investment. Second, high debt and the related high future debt service payments also increase the possibility that the government in the future may use inflationary financing. The expected higher inflation works as a disincentive on investment. Third, a high debt and the related debt payments may lead to reducing capital inflows (and possibly even to net capital outflows). This may trigger exchange rate depreciation. The uncertainty about changes in the exchange rate reduces incentives for investment. Finally, a high external debt works as a disincentive for the government to carry out economic reforms and invest in productive activities. This is because the returns on such activities will be used to repay outstanding debt instead of directly improving the economic welfare of residents. Since such economic reforms may have adverse effects on the welfare of certain interest groups, it may be difficult to sell these reforms. Thus, a high debt will reduce incentives for good policies. This, in turn, may lead investors to adopt a wait-and-see strategy: they first want the government to carry out necessary reforms before taking new investment decisions. For all these reasons, investors may postpone investment plans until the debt burden has been reduced and the fear of rising taxes, increased inflation and exchange rate depreciation is lowered, and the government is carrying out the necessary policy reforms.

6.2.2 Review of empirical studies on liquidity and debt overhang effects

Several empirical studies have investigated the channels through which debt and growth may be related. Some studies explicitly focus on either one of both channels, others have analysed both channels at the same time and have tried to distinguish between them. Most authors seem to emphasise the debt overhang effect, however.

Elbadawi et al. (1997) provide a comprehensive empirical study of the debt overhang effect.

They investigate this effect in a cross-section regression analysis, using data for 99 developing countries for the 1960-1994 period. The analysis looks at the relationship between debt and growth, as well as between debt and investment. They find evidence for a so-called debt-Laffer curve, indicating that at low levels of debt it has a positive effect on growth and investment, while at high levels, debt has a negative effect. The shape of this curve is determined by the fact that the observed external debt for a particular year consists of current debt inflows and past (year t minus one) debt accumulation. Current debt levels may stimulate growth, since they – at least partly – increase resource availability; past debt accumulation, however, has a negative impact on growth, since it reflects (future) obligations to repay, reducing the available resources. Elbadawi et al. also find evidence for the liquidity effect: the debt service payments to exports ratio appears with a negative sign in the growth equation.

Desphande (1997) concludes that a debt overhang exists for 13 severely indebted countries, using data for the period 1971-1991. Kaminsky and Pereira (1996) find evidence for a debt overhang for Latin American countries, once social inequality and its impact on government policy and consumption is explicitly taken into account. With high social inequality governments are too weak to resist the demands of strong pressure groups, impeding the implementation of reforms.

Other studies give less support to the existence of a debt overhang. In a very early study on this issue, Claessens (1990) finds a debt-Laffer curve for a limited number of countries: only Bolivia, Nicaragua, Zambia, Sudan, Peru and Côte d'Ivoire appear to be on the right and downward sloping side of the debt-Laffer curve – where the market value of the debt is lower than the nominal value. Cohen (1993) finds no evidence for the general existence of a debt overhang, using data for a sample of 81 developing countries. In a later study by the same author it is found that the poor growth performance of Latin American countries is explained well by the likelihood of a debt crisis (Cohen, 1997). Moreover, in the same study Cohen also finds that for African countries a high debt is not a major cause for low levels of economic growth in the 1980s and early 1990s. For these countries, variables related to economic mismanagement, such as high government deficits and black market premiums, low investment and ethnic division are more important in explaining lower growth rates. In a comprehensive review of the literature on the debt crisis, Bowe and Dean (1997) argue that there is some evidence for the existence of adverse effects of high debt on investment and growth. In single-country studies a relationship between the debt stock and investment is sometimes found. Yet, they also argue that low investment is often better explained by the fall in export prices and the high interest rate.

The above discussion on the empirical evidence of the debt overhang effect shows that there appears to be no consensus on the importance of this effect. Diwan and Rodrik (1992) provide an argument why the debt overhang effect may be less important in practice, at least when it comes to being a disincentive for private investment. They argue that the relationship between private investment and debt payments by the government is rather indirect; private investors consider these payments as exogenous. Serieux (1999) states that since the tax system in many developing countries is underdeveloped, private investors will not consider the threat of a rise in future tax payments as the most important barrier to investment decisions.

Others have pointed out that the negative impact of high debt on macroeconomic policies of the government, which in turn reduce investment incentives, may be more plausible. According to Desphande (1997), high debt reduces incentives for good policies, especially if there is involuntary lending and if actual debt service payments depend on negotiations between creditor and debtor. Uncertainty about government policies, such as exchange rate policies and policies regarding capital flows, do have an influence on private investment.

Adedeji (1999) postulates that for Africa a large debt overhang discourages investment through uncertainty about inflation, currency stability and future taxation.

A number of papers have been published that investigate the liquidity effect of high external debt. In the aforementioned study by Cohen (1993), it is shown that for a set of 81 countries there is a strong negative relationship between debt repayment outflows and investment. According to Cohen, a rise of the debt service-payments-to-GDP ratio by one per cent leads to a reduction of the investment-to-GDP ratio by 0.3 percentage points.

Weeks (2000) also investigates the relationship between debt service payments and economic growth, focusing on the Latin American region. In his analysis he starts by specifying a simple growth model for Latin American countries in which growth is constrained by investment and is determined by expected capacity utilisation. In turn, capacity utilisation depends on imports. Imports are constrained by the sum of exports and FDI (including portfolio flows) less debt service payments. When estimating this model, using data for the period 1970-1994 and using five-year averages, the coefficient for debt service payments is negative and highly significant in explaining growth. In order to further investigate the importance of debt service payments in retarding growth, Weeks aims at simulating the counterfactual by using data for East-Asian countries, instead of Latin American data, for the variables in the model. This analysis clearly shows that debt service payments are the most important factor in explaining the lower growth rate for Latin American countries. This is especially true for the 1970s. Thus, Weeks shows that the high debt service payments are the major reason why Latin American growth rates have lagged behind those of the East-Asian countries.

Serieux and Samy (2001) explicitly investigate the importance of liquidity effects of high external debt on investment and growth. Using a panel data set for the period 1970-1999 for 53 lower and lower-middle income countries they find strong evidence for the importance of what they call the import compression effect. A large debt negatively affects growth since high debt service payments reduce the amount of foreign exchange available for buying imports necessary for production. They find only limited support for the debt overhang effect, since the debt-to-exports-ratio has a statistically significant negative effect on growth, while the debt-to-revenues and the debt-to-GDP-ratios have not.

The above-mentioned studies seem to suggest that the liquidity effect of debt may be an important determinant of investment and growth. Yet, not all studies come to this conclusion. Perasso (1992) attempts to distinguish empirically between the liquidity effect and the debt overhang effect of external debt on investment. Next to the debt service payments, he explicitly looks at the impact of debt on domestic policies by taking into account the real exchange rate. Moreover, he considers the importance of world demand as an important determinant of domestic investment. In the empirical analysis, Perasso uses information for 21 Severely Indebted Middle-Income Countries (SIMICs) as identified by the World Bank for the period 1985-1988. The results show that, while debt service payments do play a role, exchange rate policies are more important as a determinant of investment.

In general then, based on the review of empirical research presented above, the following observations can be made. First, it appears that the evidence on the debt overhang effect is rather mixed. Second, there have been fewer studies of the liquidity effect; yet, available evidence shows that liquidity effects appear to be quite important.

6.3 Debt and economic growth: An empirical analysis

This section presents an empirical study on the relationship between debt and growth. The analysis uses information of 102 developing economies for the period 1970-1998. The selection of countries is determined by the availability of data on the crucial variables in the

study, *i.e.* growth and debt variables. Annex A1 presents details on the data set we have used for the analysis in this section.

Table 6-1 shows information on debt and economic growth for the countries in our sample. The data have been averaged over three periods, 1970-1979, 1980-1989 and 1990-1998. The table shows that for developing economies on average debt-to-GDP ratios have been increasing from almost 30 per cent in the 1970s to over 80 per cent in the 1990s. In the 1990s, this ratio was the highest for the Sub-Saharan African and Latin American countries. For the countries in Sub-Saharan Africa the ratio was four times higher in the 1990s as compared to the 1970s. For the Latin American countries it was 2.7 times higher. For Sub-Saharan Africa the rise of the debt-to-GDP ratio during the 1990s was due to the fact that debt stocks rose, while at the same time GDP stagnated (or even declined somewhat). The Latin American countries experienced economic growth during the 1990s. Yet, capital inflows were high during this decade and this contributed to rising external debt and higher debt-to-GDP ratios for the countries in this region. For some regions, the figures in the table at least seem to hint that there is a relationship between debt and growth: while growth has gone down from the 1970s to the 1980s and 1990s in Sub-Saharan Africa, Eastern Europe and the Middle East, debt ratios have gone up during the same period.

Table 6-1: Average GDP per capita growth rates and total debt-to-GDP ratios

	GDP per capita growth rate (%)			Total debt to GDP ratio (%)		
	1970s	1980s	1990s	1970s	1980s	1990s
All Dev. Economies	2.4	0.3	0.9	28.7	64.8	84.1
Sub-Saharan Africa	1.4	-0.5	-0.3	28.4	77.4	112.0
Latin America	2.4	-0.3	2.0	30.1	70.9	81.9
South Asia and Oceania	3.7	1.9	1.9	27.2	46.2	56.3
East Asia	4.8	3.6	3.9	24.3	42.8	40.9
Eastern Europe	5.5	2.6	1.1	10.7	34.3	51.6
Middle East and North Africa.	4.0	0.2	1.3	30.8	60.7	74.2

In order to determine the relationship between debt and growth we follow the existing empirical literature on this issue and estimate a standard growth equation. In particular, we estimate a standard growth regression model, including variables that proxy for the external debt burden. The regressions are based on an unbalanced panel data set. In the regressions the dependent variable is the real GDP per capita growth rate (*GRO*).

The estimation strategy can be described as follows. We begin the analysis by determining a base regression model including explanatory variables that have been found important in explaining growth in many other growth studies (see, *e.g.*, Barro, 1991; and Sala-i-Martin, 1997). We use the following specification for the base model:

$$GRO = \alpha + \beta_1 LGDP + \beta_2 INVGDP + \beta_3 SEC + \mu \qquad (1)$$

in which *LGDP* is the logarithm of GDP per capita at the beginning of the period, *INVGDP* is the average total investment to GDP ratio and *SEC* is the secondary school enrolment ratio at the beginning of the period. *LGDP* is included to take into account conditional convergence effects. If these effects occur the coefficient of this variable should be negative. *SEC* is included to measure the initial stock of human capital. The argument to include this variable is that the higher the stock of human capital, the higher the growth potential of a country, so we expect to find a positive coefficient for this variable. *INVGDP* is a measure for the build-up of physical capital. As many studies have shown, this variable is positively

related to growth (see, *e.g.*, Levine and Renelt, 1992; and Sala-i-Martin, 1997). Yet, including this variable in the growth regression model may lead to problems with regard to interpreting the empirical results. If *INVGDP* is included this variable measures the level of investment effect on growth, while all other variables in the regression model only measure the efficiency of investment on growth. If *INVGDP* is excluded all remaining variables in the model measure the level and efficiency effect on growth. In order to be able to analyse whether the other variables included in the analysis have a level and/or efficiency effect on growth, we also specify a base model excluding *INVGDP*:

$$GRO = \alpha + \beta_1 LGDP + \beta_2 SEC + \mu \qquad (2)$$

Next, we add variables to the base model that measure the external debt burden. In particular, we want to determine whether external debt has a liquidity effect or a debt overhang disincentive effect, or both. *DEB* is the total external debt-to-GDP ratio; *TDS* is the total debt service-to-GDP ratio. The first variable is a proxy for the debt overhang disincentive effect; the second measures the liquidity effect of external debt. Based on the literature survey in section 6.2, we expect a negative coefficient for both these debt variables. Thus, we estimate the following models:

$$GRO = \alpha + \beta_1 LGDP + \beta_2 INVGDP + \beta_3 SEC + \beta_4 DEB + \beta_5 TDS + \mu \quad (3)$$

$$GRO = \alpha + \beta_1 LGDP + \beta_2 SEC + + \beta_3 DEB + \beta_4 TDS + \mu \qquad (4)$$

Finally, we add a number of conditioning variables to the growth model, taken from a pool of variables that have been found to be important in other cross-country regression analyses on the determinants of economic growth. They are included to account for possible omitted variable bias. In particular, the following conditioning variables have been included in the regressions. *GCRI* is a measure of political risk; the higher the value of this variable, the higher the political risk, so we expect a negative coefficient for this variable. CRE is the private credit extended by commercial banks to GDP ratio at the beginning of the period, which is an indicator of financial sector development. Several studies have shown that financial sector development is an important determinant of economic growth (King and Levine, 1993a, b, and c). Finally, BMP is a measure of the black market premium on the official exchange rate. This variable is a proxy of the trade distortions in a country: the higher the value of this variable, the stronger the trade distortions are, leading us to expect a negative coefficient for this variable. So the following extended growth models are estimated:

$$GRO = \alpha + \beta_1 LGDP + \beta_2 INVGDP + \beta_3 SEC + \beta_4 DEB + \beta_5 TDS + \beta_6 GCRI + \beta_7 CRE + \beta_8 BMP + \mu \qquad (5)$$

$$GRO = \alpha + \beta_1 LGDP + \beta_2 SEC + \beta_3 DEB + \beta_4 TDS + \beta_5 GCRI + \beta_6 CRE + \beta_7 BMP + \mu \qquad (6)$$

Table 6-2 presents the results of the empirical analysis.[21] All equations have been estimated using the ordinary least squares (OLS) methodology with fixed effects to allow for country-specific intercepts, and with time dummies for the 1980s and 1990s. The standard errors of the regressions are based on White's heteroskedastic adjusted standard errors.

[21] We do not show the estimation results of the basic model in order to reduce the number of equations presented in the Tables.

Table 6-2. External Debt and Economic Growth, 1970-1998, using OLS

	(1)	(2)	(3)	(4)	(5)	(6)
LGDP	-0.0781***	-0.0630***	-0.0825***	-0.0683***	-0.0642***	-0.0535***
	(-12.47)	(-9.49)	(-13.56)	(-10.58)	(-9.57)	(-7.68)
INVGDP	0.0011**		0.0012***		0.0009***	
	(4.13)		(4.38)		(3.59)	
SEC	0.0003**	0.0003*	0.0002*	0.0002	0.0004**	0.0004**
	(2.19)	(1.75)	(1.81)	(1.16)	(2.59)	(2.09)
DUM80	-0.0044	-0.0110***	-0.0048	-0.0121***	-0.0177***	-0.0206***
	(-1.19)	(-2.73)	(-1.32)	(-2.93)	(-5.78)	(-6.45)
DUM90	0.0070*	0.0027	0.0076*	0.0032	-0.0087**	-0.0092**
	(1.67)	(0.60)	(1.87)	(0.72)	(-2.20)	(-2.13)
DEB	-0.0003***	-0.0002***	-0.0003***	-0.0003***		
	(-5.89)	(-3.33)	(-6.61)	(-4.05)		
TDS	-0.1852**	-0.2674***			-0.3446***	-0.3678***
	(-2.61)	(-3.47)			(-4.75)	(-5.09)
GCRI	-0.0139***	-0.0210***	-0.0144***	-0.0224***	-0.0188***	-0.0236***
	(-2.85)	(-4.16)	(-2.99)	(-4.33)	(-3.49)	(-4.47)
CRE	0.0006***	0.0005***	0.0006***	0.0005***	0.0006***	0.0006***
	(4.65)	(3.99)	(4.09)	(3.09)	(4.61)	(4.03)
BMP	0.0107	0.0059	0.0304*	0.0335*	-0.0681***	-0.0515***
($x10^{-4}$)	(0.61)	(0.30)	(1.87)	(1.80)	(-4.60)	(-3.38)
Adj.R^2	0.752	0.698	0.745	0.680	0.752	0.668
N	189	192	189	192	189	192
F-stat.	73.1	66.0	79.7	70.4	73.1	67.3

NOTE: See annex A1 for explanations of the abbreviations used. The estimation technique used is OLS. All equations have been estimated using fixed effects. The dependent variable is GDP per capita growth (*GRO*). Adj. R^2 is the adjusted R^2. N is the total number of observations. White heteroskedastic adjusted t-values are given between parentheses. F is the F-statistic. *) denotes significance at the 10 per cent level; **) denotes significance at the 5 per cent level; ***) denotes significance at the 1 per cent level.

The results in Table 6-2 show that *DEB* has a statistically significant negative coefficient in the models presented in equations (1) and (2), indicating that a high level of external debt relative to GDP has a negative incentive effect on growth as described in the debt overhang literature. This result holds with or without *INVGDP* in the model, indicating that a large debt-to-GDP ratio has both a level and efficiency effect on growth. The results for *TDS* are similar. This indicates that higher levels of debt service-to-GDP have a negative liquidity effect on economic growth.

Equations (3)-(6) show the results of the same analysis; this time, however, DEB and TDS are included separately in the equations. For the equations that include only DEB or TDS the results are basically similar to those in equations (1) and (2). Again, DEB and TDS are statistically significant with the expected negative sign in both specifications, i.e. with and without including INVGDP.

The problem with estimating growth equations using OLS with fixed effects may be that the exogenous variables in the models discussed above are correlated with the error terms and the country-specific intercepts. Moreover, these variables may be endogenous themselves. To solve these kinds of problems, recently some econometric analyses of determinants of economic growth have used instrumental variable approaches (see, e.g., Beck and Levine, 2002; Lensink, 2002). Such an approach controls for the fact that the explanatory variables may be correlated with the error terms and country-specific intercepts, and it deals with possible endogeneity problems. To solve these problems in our study, we also estimate our models using an instrumental variable approach. In particular, we have used the system generalised methods of moments (GMM) estimator, based on Arrelano and Bond (1988).

The system GMM estimator uses lagged differences of the exogenous variables as instruments. Moreover, time dummies are used as additional instruments.[22]

Table 6-3 presents the results of the GMM estimation of the same models as were discussed in Table 6-2. The GMM estimations are generally similar to the OLS estimations. Most importantly, the GMM estimations underline the negative incentive effect of a higher level of external debt-to-GDP ratio on economic growth. There are also some interesting differences between the OLS and GMM estimations, though. First, in contrast to the OLS results, INVGDP and GCRI are never significant in the GMM estimations. Second, and perhaps most important in the framework of our study into the relationship between debt and growth, TDS is also never significant. This result suggests that the liquidity effect of external debt does not seem to hold.

Table 6-3. External Debt and Economic Growth, 1970-1998, using GMM

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.122**	0.144***	0.117**	0.119***	0.080	0.133**
	(2.08)	(2.85)	(2.30)	(2.99)	(0.84)	(2.44)
LGDP	-0.0185**	-0.0194**	-0.0160*	-0.0154**	-0.0109	-0.0160**
	(-2.13)	(-2.59)	(-1.74)	(-2.32)	(-1.20)	(-2.33)
INVGDP	0.0006		0.0002		0.0003	
	(0.58)		(0.32)		(0.24)	
SEC	0.0002	0.0005*	0.0003*	0.0004**	0.0002	0.0006*
	(0.52)	(1.69)	(1.76)	(2.14)	(0.33)	(1.79)
DUM80	-0.0090	-0.0118	-0.0141	-0.0184	-0.0189	-0.0181**
	(-0.78)	(-1.04)	(-1.06)	(-1.30)	(-1.42)	(-2.04)
DUM90	-0.0124*	-0.010	-0.0132*	-0.0145*	-0.0185	-0.011
	(-1.67)	(-1.39)	(-1.78)	(-1.75)	(-1.53)	(-1.10)
DEB	-0.0002**	-0.0001**	-0.0001***	-0.0001***		
	(-2.37)	(-2.11)	(-3.08)	(-3.73)		
TDS	0.121	-0.165			-0.176	-0.501
	(0.39)	(-0.65)			(-0.31)	(-1.32)
GCRI	0.039	-0.014	-0.0011	-0.029	0.017	-0.069
	(0.56)	(-0.20)	(-0.019)	(-0.45)	(0.09)	(-0.62)
CRE	0.0008**	0.0009***	0.0008***	0.0009***	0.0007	0.0009***
	(2.07)	(3.33)	(3.32)	(4.04)	(1.04)	(3.42)
BMP	-0.00003**	-0.00003**	-0.00003**	-0.00003**	-0.00003	-0.00004**
	(-1.99)	(-2.64)	(-2.06)	(-2.45)	(-0.85)	(-2.17)
M1	-3.481	-4.144	-3.010	-3.961	-3.674	-4.201
	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000	p=0.000
Sargan	7.769	7.390	8.541	6.873	14.363	10.478
	p=0.456	p=0.389	p=0.387	p=0.333	p=0.232	p=0.106

NOTE: See annex A1 for explanations of the abbreviations used. The estimation technique used is GMM. See annex A2 for a detailed description of the GMM estimation technique used and for an explanation of the M1 and Sargan test statistics. The dependent variable is GDP per capita growth (*GRO*). *) denotes significance at the 10 per cent level; **) denotes significance at the 5 per cent level; ***) denotes significance at the 1 per cent level.

Next, we investigate whether the relationship between external debt and growth varies for different time periods. The significance of several of the time dummies in both the OLS and GMM estimation results at least suggests that indeed there may be differences in regression results for different time periods. Unfortunately, we cannot use the system GMM estimator to analyse the relationship between debt and growth for the three different time periods, since

[22] Annex A2 provides a detailed description of the system GMM estimator technique we have used in this study. We thank Robert Lensink for assisting us with this part of the econometric analysis.

this estimation approach requires a panel data set.[23] We do acknowledge this approach has its limitations and that it is not optimal from an econometric point of view, so we need to be careful when interpreting the results. Nevertheless, in our view it is interesting to investigate whether the behaviour of the relationship between debt and growth is different for different time periods, even though this is based on a simple OLS analysis. As will be shown below, in order to be able to investigate the main argument of this report – namely that it is the volatility of debt service payments to GDP ratio, rather than the level of external debt to GDP, that has a negative influence on economic growth – we need to focus on differences in the relationship between debt and growth for different time periods rather than focus on this relationship for the entire 1970-1998 period. Recall from section 6.1 that the main purpose of this chapter is to show that the relationship between debt and growth has changed during the 1990s.

Table 6-4 shows the results of estimating the extended growth model for the three different time periods. Again, the standard errors of the regressions are based on White's heteroskedastic adjusted standard errors.

Table 6-4 External Debt and Economic Growth, 1970s, 1980s and 1990s

	(1)	(2)	(3)	(4)	(5)	(6)
	1970s		1980s		1990s	
Constant	0.1259**	0.0753	0.0895**	0.1058***	-0.0597*	-0.0480
	(2.15)	(1.41)	(2.43)	(2.66)	(-1.90)	(-1.33)
LGDP	-0.0191**	-0.0074	-0.0155***	-0.0154**	0.0068	0.0075
	(-2.07)	(-0.94)	(-2.81)	(-2.50)	(1.43)	(1.45)
INVGDP	0.0022***		0.0012***		0.0009**	
	(4.28)		(3.04)		(2.53)	
SEC	0.0005**	0.0004	0.0004**	0.0005**	0.0002	0.0002
	(2.25)	(1.39)	(2.15)	(2.54)	(1.11)	(1.19)
DEB	-0.0008***	-0.0005*	-0.0003**	-0.0003***	0.00003	0.00002
	(-3.03)	(-1.69)	(-5.43)	(-5.40)	(0.33)	(0.22)
TDS	-0.0500	-0.0512	0.0653	0.1123	-0.2736**	-0.2852**
	(-0.32)	(-0.25)	(0.65)	(1.08)	(-2.45)	(-2.45)
GCRI	0.0083	0.0021	-0.0101	-0.0192	-0.0050	-0.0105
	(0.98)	(0.26)	(-0.63)	(-1.24)	(-0.60)	(-1.26)
CRE	0.0005	0.0008*	0.0003	0.0003	0.0003	0.0004
	(1.03)	(1.65)	(1.29)	(1.56)	(1.14)	(1.31)
BMP	-0.0002*	-0.0002*	0.000001	0.000002	0.000004	0.00003
	(-1.95)	(-1.82)	(0.63)	(0.62)	(0.10)	(0.84)
Adj.R^2	0.384	0.183	0.392	0.291	0.357	0.235
N	57	59	72	72	60	61
F-stat.	5.4	2.9	6.7	5.2	5.1	3.6

Note: See annex A for explanations of the abbreviations used. The estimation technique used is OLS. The dependent variable is GDP per capita growth (*GRO*). Adj. R^2 is the adjusted R^2. N is the total number of observations. White heteroskedastic adjusted t-values are given between parentheses. F is the F-statistic. *) denotes significance at the 10 per cent level; **) denotes significance at the 5 per cent level; ***) denotes significance at the 1 per cent level.

The estimations produce the following results. First, while for the 1970s and 1980s a high

[23] In principle, other approaches such as 2SLS are available to carry out the analysis for each time period and at the same time deal with possible endogeneity problems. We have tried to use 2SLS estimations but our efforts failed because there appeared to be no powerful enough instruments in the data set. Therefore, for the analysis of individual time periods we have no other choice than to use simple OLS.

debt-to-GDP ratio seems to have a negative effect on growth, this is no longer the case for the 1990s. These results for DEB are also found when we do not include TDS at the same time into the equation (not shown). With respect to the debt service-to-GDP ratio, the results are different: for the 1970s and 1980s, TDS does not seem to be related to growth, whereas for the 1990s there is a clear negative relationship to growth. When we exclude DEB in the estimation, TDS appears to be significant with a negative coefficient in the equations for all three decades (not shown). These results suggest that during the 1970s and 1980s the debt overhang effect appears to be dominating, while in the 1990s the liquidity effect is more important. When we estimate the model without including *INVGDP*, the results with respect to DEB and TDS remain basically similar. Again, we acknowledge that our interpretations based on the empirical findings in the table should only be seen as indicative, given the estimation technique used and the rather weak outcomes for some of the models estimated.

6.4 Debt and economic growth: A reinterpretation of the debt overhang effect

The results shown in the previous section may need further explanation. Why have debt service payments, rather than the level of debt outstanding, become so important in impeding growth during the 1990s? What has changed with respect to the relationship between debtors and creditors, and debt payments between them that may help to explain the previous observations?

In this section we focus on the nature of the debt service payments in the 1990s. As was already hypothesised at the end of chapter 5 of this report, we argue that the debt overhang effect may have taken a new form during this decade. In particular, a high level of debt may hamper economic growth through the volatility (or instability) of the annual debt service payments. The volatility of these debt service payments may hamper much needed (changes in) government policies, which in turn reduces the incentives to private investors and compromises economic growth.

A few recent studies inspired our focus on the volatility of debt service payments. Sachs et al. (1999) showed that the volatility of debt service payments is very high for the heavily indebted poor countries. They hypothesise that this will affect fiscal management and economic growth. For Mexico, the reduction of the *variance* in the debt service payments proved to have important positive effects on private investment and growth, rather than the reduction of the size of the transfer (Claessens et al., 1994; see also chapter 5).

Our interest in the volatility of debt service payments and its effect on growth is also inspired by some recent papers that have investigated the importance of the volatility of certain government revenue variables in determining government policy, private investment and economic growth. Lensink and Morrissey (2000) show that instability of annual aid receipts negatively influences the effectiveness of development aid, reducing the positive growth effects of aid. Gemmell and McGillivray (1998) show that aid flows are highly volatile and that this volatility influences government spending and taxation. Bleaney, Gemmell and Greenaway (1995) show that the volatility of government revenues is associated with expenditure instability and with instability in the sources of deficit finance.

Basically, what this latter group of studies shows is that the volatility of government revenues reduces the effectiveness of government policies. Although these studies may not be directly linked to external debt problems, in our view there is an indirect link. While these studies look at the impact of instability in revenues, we aim at investigating the impact of instability of one of the expenditure categories of the government, *i.e.* debt service payments. Highly volatile annual debt service payments increase uncertainty for the government about the implementation of its policies. The government in fact may have no clear idea of the amount of money available for carrying out economic reforms, investment in infrastructure and spending on health and education programmes, once the annual debt

payments fluctuate. The uncertainty may also lead to erratic monetary policies. Therefore, if governments do not have a clear picture of the annual debt service payments, carrying out sound policies becomes extremely difficult. The uncertainty with respect to the government policies in turn will adversely affect private investment and may even stimulate capital flight (Hermes and Lensink, 2001). Erratic government policies, lower private investment and increased capital flight will all contribute to lower (and perhaps even negative) rates of economic growth.

6.4.1 The volatility of debt service payments: simple correlations

We first discuss the measurement of the volatility of debt service payments. In this study we use the coefficient of variation of the debt service payments to GDP ratio as the indicator of volatility (*VOLTDS*). The coefficient of variation is the standard deviation divided by the average of the variable of interest. The coefficient of variation is calculated for each of the three decades. Table 6-5 shows basic information on this variable.[24] The table shows that the average value of the volatility of debt service payments was significantly higher for the 1970s as compared to the 1980s and 1990s. The volatility in the 1980s is also significantly higher than in the 1990s. If we delete extreme outliers in the data set[25], the picture remains the same for the 1970s as compared to the 1980s and 1990s; yet, the volatility figures for the 1980s and 1990s are more comparable (0.38 and 0.34 respectively).

Table 6-5. Basic Statistics with respect to the volatility of debt service payments to GDP (*VOLTDS*)

	Total	1970s	1980s	1990s	Total*	1970s *	1980s*	1990s*
MAX	3.162	3.162	2.391	1.191	1.228	1.228	1.034	1.191
MIN	0.031	0.031	0.107	0.047	0.031	0.031	0.107	0.047
MEDIAN	0.346	0.384	0.377	0.260	0.336	0.376	0.374	0.260
MEAN	0.424	0.545	0.407	0.342	0.391	0.458	0.386	0.342
STDEV	0.341	0.475	0.276	0.223	0.226	0.257	0.190	0.223

* Calculations based on data after deletion of four extreme outliers for the 1970s and one for the 1980s.

Next, we show a correlation matrix for the different debt variables used in this study. This correlation matrix is shown in Table 6-6. The table shows correlation coefficients for four variables: DEB, TDS, VOLTDS and CHDEBT, which is the change of the total debt to GDP ratio during a decade. CHDEBT is included in the analysis to investigate whether and to what extent the volatility of debt service payments is related to the extent to which the level of outstanding debt changes during a certain period. If external debt rises from $1 billion to $1,000 billion, the volatility of debt service payments will be higher than if debt rises from $100 billion to $1,000 billion.

Table 6-6. Correlation matrix of debt variables, entire period (1970-1998)

	DEB	CHDEBT	TDS	VOLTDS
DEB	1.00	0.006	0.445	-0.015
CHDEBT		1.00	-0.233	0.501
TDS			1.00	-0.191
VOLTDS				1.00

[24] Annex C provides information on this variable for individual countries for the three decades.
[25] For the 1970s, four observations have been deleted with values of over 1.8; in the 1980s, one observation has been deleted with a value of 2.4.

The correlation coefficients in the table have been calculated for the entire period 1970-1998, as well as separately for the three decades. For the entire period (Table 6-6), DEB and TDS seem to be rather strongly correlated (0.45). The same holds for VOLTDS and CHDEBT (0.50). VOLTDS and TDS appear to be negatively correlated, but the correlation coefficient is relatively low (-0.19). There seems to be no correlation between DEB and VOLTDS (-0.015).

When we look at the correlation matrices for the different decades (Table 6-7, 6-8 and 6-9), the picture appears to be quite different. First, the correlation between DEB and TDS is very high for the 1970s (0.71); for the 1980s and 1990s the correlation falls, but remains rather high (0.43 and 0.45, respectively). One explanation for this may be that during the 1970s debtor countries in general paid their debt service on outstanding debt, whereas during the next two decades, countries ran into problems, leading to a weaker correlation between external debt and debt service paid. This is at least to some extent confirmed when we look at information on the ratio between debt service paid and debt service due (excluding principal arrears). In the 1970s, the average ratio for all countries in our sample is 95 per cent, which means that most countries paid what they were supposed to pay. In the 1980s this ratio drops to 86 per cent, whereas for the 1990s it further falls to 72 per cent.[26] What is more important, however, is that the standard deviation of these ratios substantially increases over the decades, from 12 per cent in the 1970s to 27 per cent in the 1990s. This indicates that in the 1990s there is a strong variation in the debt paid/due ratio between countries: whereas some countries pay their debt service, others pay far less than is due. Analysis of the correlation between DEB and the debt paid/due ratio indicates that for the 1980s and 1990s countries with a high debt to GDP ratio generally pay less than is due (correlation coefficients are -0.53 and –0.61, respectively); there appears to be no correlation between both variables for the 1970s (0.02). Annex D provides an overview of debt service paid to debt service due ratios for individual countries for the three decades.

Second, the correlation between CHDEBT and VOLTDS is high for the 1970s and 1980s (0.55 for both decades), but disappears for the 1990s. So, while during the 1970s and 1980s, the volatility of debt service payments is associated with changes in the level of debt, in the 1990s this is no longer the case. This may indicate that there are other reasons for the volatility of these payments during the 1990s than the changes in the level of debt. Some recent papers have discussed the background of the volatility of debt service payments in the 1990s. They point out that during the 1990s an increasing number of debtor countries have to negotiate regularly with bilateral and multilateral donors about the terms of debt service repayments (Sachs, *et al.* 1999; UNCTAD, 2000). This is particularly true for those countries that only pay a small fraction of total debt service due. The governments of these countries can, at least to some extent, decide on what amount of debt service due will be paid. However, this amount also depends on the outcomes of the negotiations about the payments terms, which are difficult to predict, thus contributing to the volatility of the annual debt service payments. Part of the debt service due may be forgiven and another part postponed. The uncertainty about debt payments is thus at least partly explained by the way the debt servicing system is organised (Sachs, *et al.*, 1999). In addition, a substantial part of the debt service payments actually made is paid for by new loans and grants from bilateral donors. Yet, for governments of debtor countries it remains highly uncertain how much is exactly available from own and external sources to pay debt service. Again, this may involve lengthy negotiations between donors and recipient country governments. Moreover, part of the grants is earmarked for special purposes, since most donors do not want their aid

[26] The ratios are lower when using debt due including arrears; yet the overall picture remains the same, see also annex D.

money to be used for payment of debt service.[27] These characteristics of the debt servicing system in turn contribute to erratic patterns of debt service payments actually made, reflecting the uncertainty with respect to the sources available for servicing the debt. Thus, it is pointed out that the nature of the relationship between debtor countries – and in particular those countries that have low debt service paid to debt service due ratios – and their creditors changed quite dramatically during the 1990s and that this may have been an important source for the volatility of debt service payments.

Table 6-7. Correlation matrix of debt variables, 1970s

	DEB	CHDEBT	TDS	VOLTDS
DEB	1.00	-0.226	0.707	-0.211
CHDEBT		1.0	-0.262	0.546
TDS			1.00	-0.179
VOLTDS				1.00

Table 6-8. Correlation matrix of debt variables, 1980s

	DEB	CHDEBT	TDS	VOLTDS
DEB	1.00	0.326	0.428	0.053
CHDEBT		1.00	-0.098	0.552
TDS			1.00	-0.361
VOLTDS				1.00

Table 6-9. Correlation matrix of debt variables, 1990s

	DEB	CHDEBT	TDS	VOLTDS
DEB	1.00	-0.167	0.449	0.416
CHDEBT		1.00	-0.368	0.004
TDS			1.00	-0.088
VOLTDS				1.00

Third, the correlation between TDS and VOLTDS shows an interesting pattern: while for the 1970s the negative correlation is rather low (-0.18), it rises considerably for the 1980s (-0.36), but then almost disappears for the 1990s (-0.09). This suggests that the volatility of debt service payments in the 1990s may be high, even if TDS is low, and vice versa.

Finally, the correlation between DEB and VOLTDS also differs quite considerably for the three decades. In the 1970s, the correlation between these two variables is negative but it is relatively low (-0.21). In the 1980s, there seems to be no correlation between the two variables (0.05). Yet, in the 1990s, the correlation coefficient becomes positive and is rather high (0.42), indicating that countries with a high debt to GDP ratio have higher volatility of debt service payments.

The main conclusions that may be drawn from the correlation matrices are the following. In general the correlation coefficients seem to indicate that the characteristics of the debt problem have changed during the 1990s as compared to the 1970s and 1980s. In particular,

[27] Note that, if this is the case, then having net positive resource transfers as such does not mean that there cannot be a debt service problem (Sachs, *et al.*, 1999).

the figures seem to indicate that, at least in the 1990s, many countries did pay much less debt service than they were obliged to pay, confirming data on the amount debtor countries actually paid as compared to how much they should have paid. Moreover, the changing relationship between debtors and creditors during this period may have been a cause for the volatility of debt service payments in the 1990s, rather than the change in the level of the debt to GDP ratio. Finally, in the 1990s countries with high levels of debt also have higher volatility of debt service payments.

6.4.2 Empirical analysis of the relationship between the volatility of debt service payments and economic growth

After having discussed the correlations between different debt variables, we focus on the relationship between the volatility of debt service payments and economic growth. As was argued at the beginning of this section, we hypothesise that the volatility of debt service payments has a negative impact on growth. We start the discussion by providing a simple bivariate analysis of the relationship between growth and the volatility of debt service payments. Table 6-10 presents the results of this analysis. The results show that while VOLTDS is not significantly related to growth for the entire period – a result that is also found for the 1970s and 1980s – there is a statistically significant negative relationship between VOLTDS and growth for the 1990s. These results may support our premise on the negative relationship between debt service payments volatility and growth. This negative relationship only holds for the 1990s, in which the volatility of debt service payments was not related to the change in debt (Table 6-9), so that the volatility is not due to predictable changes in debt service payments. This outcome may be interpreted as supportive evidence for our previous statements on the nature of the relationship between debtors and creditors, i.e. that this relationship has changed during the 1990s in the sense that debtor countries have become uncertain about the annual debt payments due to the fact that, although they pay only a small percentage of what they are due, this percentage may change during the next debt payments negotiations. This leads to volatile annual payments, which in turn negatively influence growth.

Table 6-10. The relationship between VOLTDS and growth, simple bivariate regressions (dependent variable: GRO)

	Coefficient	t-statistic	adjusted R^2	N
Entire data set*	0.0030	0.52	0.15	252
1970s	-0.0032	-0.53	-0.01	78
1980s	0.0105	1.00	0.001	98
1990s	-0.054**	-2.97	0.18	76

* Based on a pooled data set, using OLS; the other equations have been estimated using simple OLS.
** Significant at the 1 per cent level.

Next, we also present a simple bivariate analysis of the relationship between total investment and the volatility of debt service payments. As indicated previously, the volatility of payments is expected to also have a negative impact on investment decisions of both the government and the private sector. Table 6-11 presents the results of the simple bivariate analysis. A similar picture emerges as shown in Table 6-10: while VOLTDS is not significantly related to investment for the entire period, and for the 1970s and 1980s, there is a statistically significant negative relationship between VOLTDS and investment for the 1990s. This result may be interpreted as supportive evidence for our argument that the volatility of debt service payments is negatively related to investment. As explained, this may be due to the fact that uncertainty about annual debt service payments leads to uncertainty about government policies, which in turn negatively influences both public and

private investment.

Table 6-11. The relationship between VOLTDS and total investment, simple bivariate regressions (dependent variable: INVGDP)

	Coefficient	t-statistic	adjusted R^2	N
Entire data set*	-0.006	-0.46	0.60	274
1970s	0.020	0.69	-0.005	76
1980s	0.029	0.95	-0.000	99
1990s	-0.118**	-2.84	0.06	99

* Based on a pooled data set, using OLS; the other equations have been estimated using simple OLS.
** Significant at the 1 per cent level.

The next step in the empirical analysis is to estimate the extended model for economic growth as specified in equation (5) and add our measure of the volatility of debt service payments to see whether in this extended model we still find a relationship between volatility and growth for the 1990s as was found in the simple bivariate analysis. In particular, we are interested to see whether the volatility of debt service payments has a negative impact on growth for other reasons than simply because of a rising level of the debt to GDP ratio. In order to rule out this possibility we add CHDEBT to the growth equation.

Based on what we have discussed and found so far, we expect to find the following. In general, we do not have specific expectations on the effect of CHDEBT on economic growth. On the one hand, a quickly increasing debt could imply a heavy burden on the economy, on the other, a quickly rising debt could imply rapidly increasing resources and could have a positive influence on economic growth. The latter effect is unlikely, however, if the rising debt stock is due to an increase in arrears – which is more likely to be the case in the 1980s and 1990s than in the 1970s. For the whole period, it is doubtful whether we should expect a statistically significant negative effect of VOLTDS on economic growth, since our argument on the uncertainty of debt payments mainly holds for the 1990s, the period in which many debtor countries paid much less than 100% of what they were due. The most important result that we expect to find, is a statistically significant negative coefficient for VOLTDS for the 1990s, while this will not be the case for the 1970s and 1980s. If this effect is found for the 1990s even if including CHDEBT, the (unpredictable) volatility of debt service payments has an isolated adverse effect on growth, which we interpret in terms of the changing nature of debtor-creditor relations in the 1990s.

We estimate the following two equations (i.e. with and without INVGDP):

$$GRO = \alpha + \beta_1 LGDP + \beta_2 INVGDP + \beta_3 SEC + \beta_4 DEB + \beta_5 TDS + \beta_6 VOLTDS + \beta_7 C1HDEB + \beta_8 GCRI + \beta_9 CRE + \beta_{10} BMP + \mu \quad (7)$$

$$GRO = \alpha + \beta_1 LGDP + \beta_2 SEC + \beta_3 DEB + \beta_4 TDS + B_5 VOLTDS + \beta_6 CHDEB + \beta_7 GCRI + \beta_8 CRE + \beta_9 BMP + \mu \quad (8)$$

Table 6-12 (including INVGDP) and Table 6-13 (excluding INVGDP) present the results of the empirical analysis. The Tables show the results of both OLS with fixed effects and GMM regressions for the entire 1970-1998 period, as well as simple OLS regressions for individual time periods.

Table 6-12. Debt service payments volatility and economic growth (including INVGDP), using OLS with fixed effects, GMM and simple OLS

	(1)	(2)	(3)	(4)	(5)
	1970-1998	1970-1998	1970s	1980s	1990s
	OLS (with FE)	GMM	OLS	OLS	OLS
Constant		0.103	0.1242**	0.0882**	-0.0421
		(1.40)	(2.23)	(2.34)	(-1.38)
LGDP	-0.0770***	-0.0177*	-0.0199**	-0.0146**	0.0073*
	(-12.55)	(-1.81)	(-2.20)	(-2.55)	(1.71)
INVGDP	0.0012***	0.0003	0.0022***	0.0013***	0.0006***
	(4.12)	(0.61)	(4.36)	(3.28)	(3.40)
SEC	0.0003**	0.0002 (0.66)	0.0005**	0.0004**	0.0003*
	(2.11)		(2.12)	(1.40)	(1.82)
DUM80	-0.0051	-0.009			
	(-1.33)	(-0.83)			
DUM90	0.0054	-0.0077			
	(1.21)	(-0.61)			
DEB	-0.0003***	-0.0002***	-0.0008***	-0.0003**	0.00009
	(-5.78)	(-2.72)	(-3.17)	(-5.23)	(1.37)
TDS	-0.1263*	0.1971	-0.0408	0.0435	-0.4816***
	(-1.70)	(0.48)	(-0.25)	(0.43)	(-5.30)
VOLTDS	0.0091	0.028	0.0042	-0.0092	-0.0669***
	(1.39)	(0.43)	(0.25)	(-0.54)	(-3.98)
CHDEBT	-0.0017**	0.0009	-0.0019	-0.0032**	-0.0162***
	(-2.04)	(0.52)	(-1.36)	(-2.21)	(-2.82)
GCRI	-0.0141**	0.0319	0.0050	-0.0119	-0.0104*
	(-2.90)	(0.32)	(0.62)	(-0.76)	(-1.76)
CRE	0.0006***	0.0009**	0.0004	0.0002	0.0005***
	(4.65)	(2.36)	(0.82)	(1.02)	(3.79)
BMP	0.000003	-0.00003	-0.0002	0.000006*	0.00009***
	(1.25)	(-1.47)	(-1.63)	(1.91)	(3.29)
adj.R^2	0.754		0.356	0.495	0.585
N	186		56	71	59
F-stat.	59.7		4.0	5.9	9.2
M1		-3.809 p=0.000			
Sargan		6.967 p=0.729			

Note: See notes to tables 6.2 and 6.3.

The results in Table 6-12 show that, when using OLS with fixed effects, CHDEBT has a statistically significant negative sign for the whole period, next to DEB and TDS (equation (1)). The coefficient for VOLTDS is not significant. This latter result is also found when we use GMM. Yet, in this case CHDEBT and TDS are no longer statistically significant (nor are INVGDP and SEC, a result we also found in Table 6-3). A similar picture as in the OLS estimation for the whole period emerges for the 1970s and 1980s – although CHDEBT is not significant for the 1970s, suggesting that an increase in debt may also have positive effects on growth, especially if not due to rising arrears. Yet, for the 1990s the picture changes, as was expected. While DEB is no longer significant, TDS, VOLTDS and CHDEBT all have a statistically significant negative coefficient in the equation for this period. The main results on DEB, TDS, VOLTDS and CHDEBT in Table 6-12 are generally confirmed by the outcomes given in Table 6-13 (in which we have excluded INVGDP from the model).[28]

[28] Note, however, that the results in Table 6-13 are weaker. In particular, the specification for the 1970s is

Table 6-13. Debt service payments volatility and economic growth (excluding INVGDP), using OLS with fixed effects, GMM and simple OLS

	(1)	(2)	(3)	(4)	(5)
	1970-1998	1970-1998	1970s	1980s	1990s
	OLS (with FE)	GMM	OLS	OLS	OLS
Constant		0.1244*	0.0821	0.1087**	-0.0385
		(1.82)	(1.51)	(2.51)	(-1.21)
LGDP	-0.0611***	-0.0196**	-0.0082	-0.0143**	0.0086*
	(-9.22)	(-2.03)	(-1.04)	(-2.16)	(1.93)
SEC	0.0003*	0.0003 (1.22)	0.0004	0.0005**	0.0004**
	(1.71)		(1.31)	(2.36)	(2.10)
DUM80	-0.0120***	-0.005			
	(-2.89)	(-0.41)			
DUM90	0.0005	0.0035			
	(0.11)	(0.32)			
DEB	-0.0002***	-0.0002**	-0.0005*	-0.0003**	0.0001*
	(-3.19)	(-2.58)	(-1.78)	(-4.84)	(1.77)
TDS	-0.2428***	-0.077	-0.0523	0.0834	-0.5281***
	(-3.07)	(-0.29)	(-0.26)	(0.76)	(-5.78)
VOLTDS	0.0052	0.0447	0.0073	-0.0144	-0.0787***
	(0.65)	(0.79)	(0.39)	(-0.75)	(-4.38)
CHDEBT	-0.0018**	0.0012	-0.0019	-0.0026	-0.0149**
	(-1.99)	(0.36)	(-1.18)	(-1.56)	(-2.40)
GCRI	-0.0220***	-0.021	-0.00009	-0.0203	-0.0144**
	(-4.38)	(-0.33)	(-0.01)	(-1.32)	(-2.27)
CRE	0.0005***	0.0009***	0.0008	0.0003	0.0005***
	(3.88)	(3.37)	(1.47)	(1.21)	(4.22)
BMP	0.000002	-0.00003**	-0.0002	0.000006*	0.0001***
	(0.88)	(-2.07)	(-1.43)	(1.68)	(4.11)
adj.R^2	0.754		0.130	0.298	0.533
N	186		58	71	60
F-stat.	59.7		2.0	4.3	8.5
M1		-1.982 p=0.05			
Sargan		4.388 p=0.884			

Note: See notes to tables 6.2 and 6.3.

These results seem to confirm our hypothesis that the volatility of debt service has a negative effect on growth, which is not caused by the change in the level of the debt to GDP ratio; this effect is picked up by CHDEBT. As indicated above, we believe that the volatility of debt service payments is due to the changing nature of debtor-creditor relations in the 1990s, leading to uncertainty about government policies, which in turn has a negative impact on growth in this decade. The uncertainty variable appears to have both an efficiency (Table 6-12) and a level effect (Table 6-13) on growth.

6.4.3 The volatility of debt service payments and a high level of external debt

Having analysed the relationship between the volatility of debt service payments and economic growth, we focus on linking this relationship to the level of the external debt of a

statistically very weak. Moreover, CHDEBT is not statistically significant in both the specifications for the 1970s and 1980s. Finally, in the specification for the 1990s, DEB appears with a statistically significant positive sign, a result that is difficult to explain within the context of our analysis of the relationship between debt and growth.

country. The simple analysis of correlation coefficients in section 6.4.1 indicated that for the 1990s there is a high correlation between the debt to GDP ratio and the volatility of debt service payments. This indicates that in the 1990s countries with a high debt to GDP ratio also have a high volatility of debt service payments. The correlation between the two variables was mildly negative for the 1970s, whereas there was no correlation between both variables for the 1980s.

Table 6-14 presents further information on the relationship between the level of debt to GDP and the volatility of debt service payments. In the table countries have been grouped based on the average level of the debt to GDP ratio for each decade. Countries with a value of DEB below the average are in the "low debt" group; countries with a value of DEB equal to or above the average are in the "high debt" group. The table shows that while in the 1970s countries with a low level of debt had a higher volatility of debt service payments than countries with high debt, this has clearly changed for the 1990s. In the 1990s, the average value of VOLTDS for the "low debt" group is 0.30; for the "high debt" group this 0.43.

Table 6-14 Average values of VOLTDS for high and low debt countries

	High	low	high*	low*
1970s	0.44	0.63	0.41	0.50
1980s	0.38	0.42	0.38	0.39
1990s	0.43	0.30	0.43	0.30

Note: "high" means equal to or above average level of debt to GDP ratio; "low" means below the average level of the debt to GDP ratio.

*Calculations based on data after having deleted four extreme outliers for the 1970s and one for the 1980s.

The relationship between the level of debt to GDP and the volatility of debt service payments may be explained as follows. As discussed previously, the nature of the debtor-creditor relations appears to have changed in the 1990s. Countries with a high debt only pay a small part of the debt service due. They have to negotiate regularly with bilateral and multilateral donors about the terms of debt service repayments and the amount of new loans and aid that is made available to finance annual debt service payments. The outcomes of these negotiations are difficult to predict and this contributes to the volatility of the annual debt service payments due (Sachs, *et al.* 1999; UNCTAD, 2000). Yet, countries with high levels of debt to GDP will have more problems with paying their debt obligations as compared to countries with lower debt levels. Consequently, these countries are involved in such negotiations on a larger scale and therefore they will be confronted by higher uncertainty about debt payments.

Table 6-15. The relationship between VOLTDS and DEB, simple bivariate regressions (dependent variable: VOLTDS)

	Coefficient	t-statistic	adjusted R^2	N
Entire data set*	-0.0009	-1.39	0.04	280
1970s	-0.022	-0.43	-0.01	81
1980s	-0.0005	-0.72	-0.002	99
1990s	0 0009**	4.46	0.11	100

* Based on a pooled data set, using OLS; the other equations have been estimated using simple OLS.

** Significant at the 1 per cent level.

We further explore the relationship between high debt and the volatility of debt service

payments and present the results of a simple bivariate regression analysis, in which the relationship between VOLTDS and DEB is investigated. The results of this analysis are shown in Table 6-15. The table shows that while for the entire data set and for the 1970s and 1980s there is no relationship between DEB and VOLTDS, both variables are related for the 1990s. DEB has a statistically significant positive coefficient for the 1990s. This result may be expected based upon the above discussion about the relationship between the level of debt to GDP and the volatility of debt service payments: the higher the debt to GDP ratio, the higher the volatility of debt service payments.

The above analysis can be seen as a reinterpretation of the debt overhang hypothesis, at least when it comes to explaining what happened during the 1990s. Our analysis in fact shows that the level of debt is an important determinant of economic growth. Yet, it is not so much the level of debt itself that has a negative impact on growth (see Table 6-2, Table 6-3, Table 6-4, Table 6-12, and Table 6-13); rather, a high level of debt has a negative impact on growth through its effect on the volatility of debt service payments (Table 6-15), which is shown to be a direct determinant of growth in the 1990s (Table 6-12 and Table 6-13).

6.5 Policy implications for donor countries and creditors

As was discussed in the previous sub-sections, during the 1990s many countries with high external debt have paid only a small share of debt service due. Moreover, these countries have become involved in regular and lengthy negotiations with creditors and donors about the terms of debt service repayments, as well as about the refinancing of debt payments by new loans and/or development aid. The volatility of debt service payments appears to be due to a high level of external debt, which is only partially serviced, while the extent of servicing depends on negotiations. The outcomes of these negotiations are difficult to predict for governments, contributing to the volatility of the actual annual debt service payments. This volatility appears to have a negative impact on growth and total investment.

The outcomes of the analysis in this chapter may have important implications for donor and creditor policies. An important policy implication is that debtor countries may gain in terms of increased growth performance if the volatility in the debt service payments can be reduced. This may be achieved by reducing the level of the debt. As was shown in the analysis, the level of debt to GDP and the volatility of debt service payments are positively linked. Debt stock reduction may lead to lower levels of debt to GDP, which will make the remaining debt and debt service due more sustainable, and will make long and uncertain negotiations about debt service repayment and refinancing redundant. Consequently, the volatility of debt service payments may decrease, which according to our analysis should have a positive impact on investment and economic growth. Thus, donor countries should seriously consider providing debt stock reduction, rather than debt service relief. Debt service relief may reduce payment problems in the short run, yet payment obligations remain in the longer term and so does the uncertainty about the amount of payments to be made.

We acknowledge that the results of our analysis in this chapter should be treated with some caution. We realise we have used relatively simple estimation techniques, especially for the analysis by decade. Moreover, we were confronted with severe data limitations. Finally, we have used a rather simple measure of the volatility of debt service payments. Nevertheless, in our view the analysis provides suggestive evidence for the importance of debt service volatility as a determinant of growth for high debt countries and does support policy initiatives that are directed towards debt stock reduction. Further research may explore the importance of debt service volatility as a determinant of growth by using more advanced techniques and better data and (volatility) variables.

7 SOME REMARKS ON THE POSSIBLE RESULTS OF HIPC

The HIPC initiative implies the recognition that countries are insolvent. HIPC will lead to a reduction in the debt stocks of the Paris Club creditors, and also in the net present value of the debt stocks to the multilateral creditors. It is hoped that other private and bilateral creditors will also reduce debt stocks to the same extent. It is a positive development that for the first time these debt stock reductions are envisaged. This may reduce uncertainty on future debt payments and may lead to a reduction in volatility.

However, given the high vulnerability of the HIPC economies, projections on income growth and export growth (on average, 5-6 percent) seem to be far too optimistic. Although HIPC first leads to a reduction in the net present value of the debt to 150% of exports, if optimistic projections fail to materialise, this ratio will soon increase again. The current tendency of the multilateral institutions to start new lending to HIPCs right away, enhances the probability of creating higher debt-to-exports ratio and thus unsustainable debts again in the future. It can be expected that the multilateral institutions will then again be preferred creditors, so that there will be pressure on bilateral donors to help cover the debt service. This will increase the volatility of and the uncertainty about debt service payments again. The practice of new lending by the multilaterals will also maintain moral hazard among multilateral lenders and is not likely to end the loss of selectivity that some authors (Birdsall et al. 2001, for example) expect from HIPC.

The HIPC initiative also recognises that multilateral debts constitute an important part of the debt burden of the poorest countries. Moreover, it is the first time that the multilateral institutions contribute with their own funds to debt relief. This implies some redistribution of the costs of debt relief from commercial and bilateral creditors to multilateral creditors. However, given that at least part of HIPC relief is financed from bilateral aid budgets and that this part can be expected to increase in the future, this will probably reduce overall aid flows to developing countries and imply a redistribution from non-HIPC to HIPC countries. Furthermore, the poorest countries will receive more of their aid in the form of loans, not grants.

Other questions can be raised on the conditions attached to the HIPC initiative. First, as argued above, serious doubts can be raised on the effectiveness of this conditionality *ex ante*. If governments are not committed to poverty reduction, a PRSP is not likely to influence overall government policies. Second, judging from the IMF and World Bank "joint staff appraisals" of the PRSPs or Interim PRSPs, many of them give too little attention to achieving economic growth. They are more narrowly focused on improving health and education. Without raising economic growth in general, improvements in health and education cannot be sustainable. Third, given the relative neglect of economic growth in PRSPs, the tendency of multilateral and bilateral donors to base financial assistance on the PRSPs will reinforce the focus on social spending at the cost of a broader development perspective.

If the conditions for HIPC not only involve the elaboration of a PRSP but also the monitoring of the use of "HIPC savings", there may be additional negative consequences. HIPC will then function like a "debt for human development swap", in which donors set conditions for the use of the granted debt relief. This means that donors micromanage the use of these "resources". Earlier studies have shown that this is not only ineffective due to the fact that money is fungible, but also very inefficient (White and Dijkstra 2002).

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ANNEXES

ANNEX A1: DESCRIPTION OF THE DATA SOURCES FOR THE EMPIRICAL STUDY (CHAPTER 6)

BMP	=	black market premium
CHDEBT	=	change of the external debt to GDP ratio
DEB	=	total external debt to GDP ratio
DUM70	=	dummy variable for the 1970s
DUM80	=	dummy variable for the 1980s
GCRI	=	proxy for the number of government crises
GRO	=	GDP per capita growth
INVGDP	=	total investment to GDP
LGDP	=	logarithm of GDP per capita at the beginning of the period
CRE	=	initial private credit from commercial banks to GDP ratio
SEC	=	initial gross secondary school enrolment
TDS	=	total debt service payments to GDP
VOLTDS	=	coefficient of variation of the debt service payments to GDP ratio

Data sources:
Data on *BMP*, *GCRI*, *INVGDP*, *CRE* and *SEC* have been taken from Easterly and Yu (1999).
Data on *GRO* and *LGDP* are given in Easterly and Yu (1999), but are originally taken from Penn World Table 5.6.
All data on debt are obtained from World Bank (2000), CD-ROM version.
All variables have been averaged over 1970-1979, 1980-89 and 1990-98.

ANNEX A2: DESCRIPTION OF THE SYSTEM GMM ESTIMATION TECHNIQUE (CHAPTER 6)[29]

As was discussed in the main text of chapter 6, estimating our models using OLS may be problematic due to measurement and endogeneity problems. Therefore, we also estimate our panel based models (i.e. the estimations for the 1970-1998 period) using an instrumental variable approach. The instrumental variable estimation technique controls for the fact that the explanatory variables are likely to be correlated with the error term and the country-specific effect, and deals with possible endogeneity problems. More specifically, we estimate the growth models with the system generalised methods of moments (GMM) estimator, using DPD98 for Gauss (Arellano and Bond, 1998). A method of moments estimator derives the coefficients from the so-called moment restrictions, i.e. restrictions on the covariances between regressors and the error term.

The system GMM estimator combines the differenced equation with a levels equation to form a system GMM. Blundell and Bond (1998) show that, under certain conditions, the system estimator provides more efficient estimators than a regression in first differences.

Lagged levels are used as instruments for the contemporaneous differences and lagged differences as instruments for the contemporaneous levels. The following example may explain matters. This example is (at least partly) adopted from Beck and Levine (2002).

Following the growth regressions methodology we specify growth equations of the following form:

$$y_{it} - y_{i,t-1} = \alpha y_{i,t-1} + \beta X_{i,t} + n_i + e_{i,t}$$

where y is the logarithm of real per capita GDP; *X* a set of explanatory variables, η is an unobserved country-specific effect and ε is an error term. To get rid of the country specific effect we take the first difference of the growth equation in levels. This gives:

$$(y_{it} - y_{i,t-1}) - (y_{i,t-1} - y_{i,t-2}) = \alpha(y_{i,t-1} - y_{i,t-2}) + \beta(X_{i,t} - X_{i,t-1}) + e_{i,t} - e_{i,t-1}$$

However, we now introduce a new problem since the new error term $e_{i,t} - e_{i,t-1}$ is, by construction, correlated with the lagged dependent variable. This makes OLS an invalid estimation technique and calls for an instrumental estimation method, such as the system GMM estimator.

If the error terms are not serially correlated, Arrelano and Bond argue that the following moment conditions can be used:

$$E\left[y_{i,t-s}(e_{i,t} - e_{i,t-1})\right] = 0 \text{ and}$$
$$E\left[X_{i,t-s}(e_{i,t} - e_{i,t-1})\right] = 0 \text{; for } s \geq 2; \; t=3,\ldots T$$

This implies that, for $s \geq 2$; t=3,…T, $y_{i,t-s}$ and $X_{i,t-s}$ are valid instruments *for* $(y_{i,t-1}-y_{i,t-2})$ and $(X_{i,t}-X_{i,t-1})$.So, the whole history of the series (in levels) can be used as instruments for the first-differences. With respect to the levels equations, the following moment conditions are proposed:

[29] This annex has been prepared with the help of Robert Lensink. We would like to thank him for his contribution to the econometric analysis in the report.

$E\left[(y_{i,t-s} - y_{i,t-s-1})(\eta_i + e_{i,t})\right] = 0$ and
$E\left[X_{i,t-s} - X_{i,t-s-1})(\eta_i + e_{i,t})\right] = 0$; for *s=1*

So, valid instruments for the regressions in levels are the lagged differences of the corresponding variables. Here only the most recent difference is used as instrument. Additional lagged differences would be redundant since they are already covered by the instruments for the first differences.

The system GMM estimator is a two-step GMM estimator. In the first step, homoscedasticity and independent error terms are assumed. In the second step, these assumptions are relaxed by using a consistent variance-covariance matrix that is constructed from the first step residuals.

However, the two-step estimator has weak small sample properties: the standard errors are biased downwards. The estimator becomes problematic, especially when there is a small number of cross-section units, in relation to the number of instruments, i.e. the number of time series units. In our case this may potentially be a problem, although we have 102 cross-section units (countries) in our dataset. This might result in biased asymptotic inference. We address this problem by presenting coefficients and t-values using a two step GMM estimates, based on robust, finite sample corrected standard errors (Windmeijer, 2000). Windmeijer (2000) shows how the two step standard estimates can be corrected, and that is the approach we have followed.

In the estimations we control for time effects by adding time dummies. These time dummies are used as additional instruments.

The reliability of the system GMM estimation procedure depends very much on the validity of the instruments. We consider the validity of the instruments by presenting a Sargan test. The Sargan test is a test on overidentifying restrictions. It is asymptotically distributed as χ^2 and tests the null hypothesis of validity of the (overidentifying) instruments. P-values report the probability of incorrectly rejecting the null hypothesis, so that a P value above 0.05 implies that the probability of incorrectly rejecting the null is above 0.05. In this case, a higher P-value makes it more likely that the instruments are valid. The consistency of the estimates also depends on the absence of serial correlation in the error terms. This will be the case if the differenced residuals display significant negative first order serial correlation and no second order serial correlation. We present tests for first-order serial correlation related to the estimated residuals in first differences. The test statistics are asymptotically distributed as standard normal variables. The null hypothesis here relates to “insignificance” so that a low P-value for the test on first-order serial correlation suggests that the disturbances are not serially correlated. The serial correlation tests (M1 in the table) refer to the one-step GMM estimates. Since we only have three periods in our dataset we are not able to produce second order serial correlation tests. The estimation results shown in Tables 6-3, 6-12 and 6-13 (in which the GMM results are presented) suggest that the errors are not first-order serial correlated. Moreover, the instruments seem to be reliable.

ANNEX B1: LIST OF COUNTRIES USED IN THE EMPIRICAL STUDY (CHAPTER 6)

For the estimations in chapter 6, data for the 102 countries listed below have been used.

Algeria; Angola; Argentina; Bangladesh; Barbados; Belize; Benin; Bhutan; Bolivia; Botswana; Brazil; Bulgaria; Burkina Faso; Burundi; Cameroon; Cape Verde; Central African Republic; Chad; Chile; China; Colombia; Democratic Republic of Congo; Republic of Congo; Costa Rica; Côte d'Ivoire; Czech Republic; Dominica; Dominican Republic; Ecuador; Egypt; El Salvador; Ethiopia; Fiji; Gabon; The Gambia; Ghana; Grenada; Guatemala; Guinea; Guinea-Bissau; Guyana; Haiti; Honduras; Hungary; India; Indonesia; Iran; Jamaica; Jordan; Kenya; Korea; Lesotho; Liberia; Madagascar; Malawi; Malaysia; Mali; Mauritania; Mauritius; Mexico; Mongolia; Morocco; Mozambique; Nepal; Nicaragua; Niger; Nigeria; Oman; Pakistan; Panama; Papua New Guinea; Paraguay; Peru; The Philippines; Poland; Romania; Rwanda; Samoa; Senegal; Seychelles; Sierra Leone; Solomon Islands; South Africa; Sri Lanka; S$^{t.}$ Kitts and Nevis; S$^{t.}$ Lucia, S$^{t.}$ Vincent and the Grenadines; Sudan; Swaziland; Syria; Tanzania; Thailand; Togo; Trinidad and Tobago; Tunisia; Turkey; Uganda; Uruguay; Vanuatu; Venezuela; Zambia; and Zimbabwe.

The number of observations for individual equations presented in the Tables may not be equal to three times the number of countries due to missing data for some countries for one or more sub-periods.

ANNEX B2: LIST OF COUNTRY CODES USED IN THE ANNEXES C AND D

AGO	Angola	GNB	Guinea-Bissau	PAK	Pakistan
ARG	Argentina	GRD	Grenada	PAN	Panama
BDI	Burundi	GTM	Guatemala	PER	Peru
BEN	Benin	GUY	Guyana	PHL	Philippines
BFA	Burkina Faso	HND	Honduras	PNG	Papua New Guinea
BGD	Bangladesh	HTI	Haiti	POL	Poland
BGR	Bulgaria	HUN	Hungary	PRY	Paraguay
BLZ	Belize	IDN	Indonesia	ROM	Romania
BOL	Bolivia	IND	India	RWA	Rwanda
BRA	Brazil	IRN	Iran, Islamic Rep.	SDN	Sudan
BRB	Barbados	JAM	Jamaica	SEN	Senegal
BTN	Bhutan	JOR	Jordan	SLB	Solomon Islands
BWA	Botswana	KEN	Kenya	SLE	Sierra Leone
CAF	Central Afr. Rep.	KNA	St. Kitts and Nevis	SLV	El Salvador
CHL	Chile	KOR	Korea, Rep.	SWZ	Swaziland
CHN	China	LBR	Liberia	SYC	Seychelles
CIV	Cote d'Ivoire	LCA	St. Lucia	SYR	Syrian Arab Republic
CMR	Cameroon	LKA	Sri Lanka	TCD	Chad
COG	Congo, Rep.	LSO	Lesotho	TGO	Togo
COL	Colombia	MAR	Morocco	THA	Thailand
CPV	Cape Verde	MDG	Madagascar	TTO	Trinidad and Tobago
CRI	Costa Rica	MEX	Mexico	TUN	Tunisia
CZE	Czech Republic	MLI	Mali	TUR	Turkey
DMA	Dominica	MNG	Mongolia	TZA	Tanzania
DOM	Dominican Rep.	MOZ	Mozambique	UGA	Uganda
DZA	Algeria	MRT	Mauritania	URY	Uruguay
ECU	Ecuador	MUS	Mauritius	VCT	St. Vincent and the Gren.
EGY	Egypt, Arab Rep.	MWI	Malawi	VEN	Venezuela
ETH	Ethiopia	MYS	Malaysia	VUT	Vanuatu
FJI	Fiji	NER	Niger	WSM	Samoa
GAB	Gabon	NGA	Nigeria	ZAF	South Africa
GHA	Ghana	NIC	Nicaragua	ZAR	Congo, Dem. Rep.
GIN	Guinea	NPL	Nepal	ZMB	Zambia
GMB	Gambia, The	OMN	Oman	ZWE	Zimbabwe

ANNEX C: VOLTDS FOR INDIVIDUAL COUNTRIES

	1970s	1980s	1990s		1970s	1980s	1990s		1970s	1980s	1990s
AGO	n.a.	0.11	0.66	GNB	1.81	0.27	0.51	PAK	0.22	0.20	0.20
ARG	0.27	0.18	0.42	GRD	0.38	0.33	0.30	PAN	0.78	0.54	0.58
BDI	0.89	0.58	0.12	GTM	0.32	0.44	0.35	PER	0.21	0.58	0.47
BEN	0.35	0.47	0.21	GUY	0.75	0.23	0.73	PHL	0.25	0.12	0.14
BFA	0.09	0.19	0.17	HND	0.90	0.21	0.13	PNG	0.30	0.28	0.20
BGD	1.04	0.22	0.17	HTI	0.38	0.22	1.00	POL	n.a.	0.48	0.36
BGR	n.a.	0.88	0.51	HUN	2.14	0.24	0.18	PRY	0.08	0.50	0.56
BLZ	0.77	0.43	0.19	IDN	0.35	0.38	0.35	ROM	n.a.	0.40	0.73
BOL	0.21	0.45	0.13	IND	0.15	0.38	0.11	RWA	0.99	0.28	0.26
BRA	0.36	0.24	0.43	IRN	n.a.	0.48	0.77	SDN	0.27	0.60	0.60
BRB	0.60	0.31	0.18	JAM	0.33	0.33	0.24	SEN	0.47	0.20	0.28
BTN	n.a.	2.39	0.21	JOR	0.59	0.39	0.23	SLB	3.16	0.79	0.44
BWA	0.31	0.41	0.22	KEN	0.37	0.14	0.23	SLE	0.36	0.63	0.87
CAF	0.38	0.37	0.45	KNA	n.a.	0.43	0.17	SLV	0.19	0.35	0.20
CHL	0.56	0.18	0.20	KOR	0.16	0.31	0.48	SWZ	0.68	0.36	0.40
CHN	n.a.	0.44	0.07	LBR	0.30	0.49	n.a.	SYC	1.76	0.98	0.24
CIV	0.34	0.21	0.15	LCA	n	0.50	0.13	SYR	0.25	0.65	0.84
CMR	0.39	0.24	0.21	LKA	0.26	0.18	0.21	TCD	0.45	0.60	0.48
COG	0.40	0.29	0.80	LSO	0.37	0.45	0.17	TGO	0.77	0.39	0.35
COL	0.25	0.43	0.26	MAR	0.45	0.14	0.22	THA	0.35	0.19	0.16
CPV	n.a.	0.18	0.30	MDG	0.59	0.54	0.54	TTO	0.57	0.50	0.26
CRI	0.29	0.41	0.16	MEX	0.48	0.25	0.41	TUN	0.30	0.20	0.18
CZE	n.a.	0.69	0.31	MLI	0.31	0.46	0.30	TUR	0.34	0.32	0.17
DMA	n.a.	0.60	0.14	MNG	n.a.	n.a.	0.25	TZA	n.a.	0.11	0.20
DOM	0.30	0.21	0.19	MOZ	n.a.	1.03	0.33	UGA	n.a.	0.21	0.29
DZA	0.59	0.14	0.32	MRT	0.69	0.28	0.20	URY	0.50	0.40	0.50
ECU	0.71	0.27	0.18	MUS	0.46	0.30	0.19	VCT	0.47	0.37	0.22
EGY	0.24	0.18	0.39	MWI	0.27	0.21	0.30	VEN	0.63	0.16	0.25
ETH	n.a.	0.41	0.51	MYS	0.62	0.51	0.15	VUT	n.a.	0.56	0.30
FJI	0.43	0.34	0.45	NER	1.12	0.25	0.29	WSM	0.03	0.28	0.21
GAB	0.57	0.38	0.33	NGA	0.39	0.59	0.41	ZAF	n.a.	n.a.	1.03
GHA	0.28	0.57	0.19	NIC	0.23	0.83	0.79	ZAR	0.35	0.40	1.19
GIN	n.a.	0.30	0.31	NPL	1.13	0.45	0.05	ZMB	n.a.	n.a.	n.a.
GMB	0.85	0.58	0.22	OMN	1.23	0.58	0.23	ZWE	0.45	0.51	0.37

ANNEX D1: DEBT PAID – DEBT DUE RATIOS (EXCLUDING ARREARS) FOR INDIVIDUAL COUNTRIES

	1970s	1980s	1990s		1970s	1980s	1990s		1970s	1980s	1990s
AGO	n.a.	76.77	36.63	GNB	55.61	55.57	11.92	PAK	100	99.99	94.06
ARG	100	85.21	73.71	GRD	100	79.74	46.93	PAN	100	80.51	43.41
BDI	100	99.08	74.95	GTM	100	90.17	68.98	PER	100	59.36	42.11
BEN	54.41	56.21	57.19	GUY	95.38	56.69	43.53	PHL	100	95.63	92.78
BFA	100	82.89	65.81	HND	99.95	83.69	67.95	PNG	100	100	99.80
BGD	97.80	99.97	96.14	HTI	98.94	85.68	54.47	POL	n.a.	34.71	57.01
BGR	n.a.	100	61.48	HUN	100	100	100	PRY	99.58	84.37	88.65
BLZ	100	94.08	88.89	IDN	99.10	100	97.56	ROM	100	100	99.85
BOL	99.48	67.98	64.49	IND	100	100	100	RWA	100	92.54	58.67
BRA	99.95	95.01	72.47	IRN	n.a.	69.34	92.21	SDN	91.05	32.70	0.80
BRB	99.84	94.68	98.08	JAM	99.97	93.77	76.03	SEN	99.89	91.17	73.68
BTN	n.a.	100	95.14	JOR	92.49	95.38	61.04	SLB	100	100	87.16
BWA	99.90	99.69	97.20	KEN	100	94.04	84.40	SLE	94.12	57.93	33.15
CAF	66.42	72.89	25.96	KNA	n.a.	98.89	92.94	SLV	100	97.46	88.12
CHL	97.21	100	99.89	KOR	100	100	100	SWZ	100	99.90	96.57
CHN	n.a.	100	100	LBR	99.49	49.57	1.25	SYC	100	98.22	89.31
CIV	100	90.57	52.81	LCA	n.a.	99.79	97.71	SYR	99.99	90.70	25.20
CMR	98.52	89.72	40.36	LKA	99.98	99.77	87.64	TCD	74.07	36.73	51.33
COG	83.35	86.59	23.15	LSO	100	100	91.18	TGO	93.47	79.52	39.29
COL	100	99.96	99.68	MAR	99.98	92.22	86.40	THA	100	100	99.98
CPV	n.a.	90.24	70.18	MDG	99.75	74.85	26.69	TTO	100	94.57	92.24
CRI	99.98	75.40	85.88	MEX	100	99.65	98.72	TUN	99.99	99.91	99.75
CZE	n.a.	100	99.73	MLI	78.08	86.80	59.18	TUR	99.77	99.84	99.99
DMA	n.a.	96.39	95.37	MNG	n.a.	n.a.	94.50	TZA	28.46	20.01	19.07
DOM	98.75	81.84	51.61	MOZ	n.a.	54.19	18.07	UGA	89.75	85.43	56.69
DZA	100	100	81.27	MRT	96.18	72.63	47.48	URY	99.99	100	99.74
ECU	99.95	85.65	57.34	MUS	99.91	99.75	99.16	VCT	100	96.37	95.98
EGY	89.47	62.10	74.44	MWI	100	96.33	90.99	VEN	99.96	99.90	95.95
ETH	98.56	98.83	26.81	MYS	100	100	100	VUT	100	100	92.22
FJI	99.72	99.92	100	NER	96.52	92.00	48.20	WSM	98.46	94.06	99.82
GAB	100	90.90	49.93	NGA	99.53	86.92	37.58	ZAF	n.a.	n.a.	100
GHA	82.46	92.51	85.91	NIC	93.92	39.81	12.99	ZAR	80.88	72.01	6.64
GIN	65.23	65.78	49.08	NPL	100	98.03	95.44	ZMB	n.a.	n.a.	n.a.
GMB	100	84.93	98.75	OMN	98.02	100	99.91	ZWE	91.25	99.93	98.10

ANNEX D2: DEBT PAID – DEBT DUE RATIOS (INCLUDING ARREARS) FOR INDIVIDUAL COUNTRIES

	1970s	1980s	1990s		1970s	1980s	1990s		1970s	1980s	1990s
AGO	n.a.	56.15	16.33	GNB	47.46	19.59	3.99	PAK	100	99.89	92.18
ARG	100	74.81	70.89	GRD	100	66.95	20.41	PAN	100	74.68	34.35
BDI	97.23	86.19	55.96	GTM	100	78.80	36.34	PER	100	48.86	31.15
BEN	24.71	33.75	28.77	GUY	81.24	26.97	29.87	PHL	99.99	89.59	92.13
BFA	99.89	67.98	42.42	HND	99.76	58.90	55.53	PNG	100	100	99.80
BGD	97.27	99.36	93.68	HTI	80.39	70.35	47.69	POL	n.a.	23.96	54.64
BGR	n.a.	99.99	50.77	HUN	100	100	99.99	PRY	91.98	73.67	67.84
BLZ	100	85.73	77.13	IDN	94.24	99.50	95.42	ROM	100	100	99.52
BOL	93.63	50.85	60.25	IND	100	100	99.99	RWA	100	88.54	33.18
BRA	97.97	90.55	64.49	IRN	n.a.	45.03	84.25	SDN	80.11	12.79	0.34
BRB	99.84	89.89	97.32	JAM	99.92	79.66	62.06	SEN	99.81	89.71	65.78
BTN	n.a.	100	84.33	JOR	72.15	89.38	45.42	SLB	100	100	75.48
BWA	99.71	99.49	93.41	KEN	99.72	92.82	73.71	SLE	82.84	36.17	22.60
CAF	35.89	52.41	12.83	KNA	n.a.	98.89	90.33	SLV	99.99	93.90	85.85
CHL	91.22	100	99.89	KOR	100	100	100	SWZ	100	99.82	89.40
CHN	n.a.	100	100	LBR	98.97	33.73	0.48	SYC	100	88.78	49.07
CIV	99.97	81.04	38.08	LCA	n.a.	99.29	96.51	SYR	99.98	72.34	10.34
CMR	97.51	80.91	27.36	LKA	99.61	99.77	78.04	TCD	39.97	11.89	28.99
COG	56.93	69.50	11.84	LSO	100	99.90	75.28	TGO	75.91	59.40	31.90
COL	100	97.82	96.08	MAR	99.90	81.43	81.61	THA	100	100	99.98
CPV	n.a.	78.78	34.12	MDG	98.42	51.58	12.04	TTO	100	91.75	79.69
CRI	99.92	57.95	73.83	MEX	100	99.28	98.72	TUN	95.79	99.03	99.03
CZE	n.a.	100	98.31	MLI	13.32	52.48	18.55	TUR	99.25	99.44	99.99
DMA	n.a.	93.66	87.50	MNG	n.a.	n.a.	80.48	TZA	25.49	10.07	9.38
DOM	94.86	65.59	34.63	MOZ	n.a.	30.31	7.67	UGA	74.22	61.65	30.07
DZA	99.99	99.98	81.25	MRT	89.79	50.11	24.34	URY	99.95	100	99.74
ECU	99.93	81.81	46.63	MUS	98.96	99.03	97.28	VCT	100	93.93	93.77
EGY	80.48	44.04	71.21	MWI	100	91.44	79.37	VEN	99.00	93.45	82.94
ETH	97.28	94.90	8.08	MYS	100	100	100	VUT	100	100	92.22
FJI	99.46	99.92	100	NER	93.19	88.70	31.86	WSM	97.33	88.23	99.47
GAB	99.97	88.77	42.27	NGA	97.92	80.58	23.81	ZAF	n.a.	n.a.	100
GHA	50.89	83.93	75.37	NIC	87.15	30.96	6.35	ZAR	67.28	49.10	2.83
GIN	24.92	31.46	20.84	NPL	100	96.10	88.01	ZMB	n.a.	n.a.	n.a.
GMB	100	71.06	93.10	OMN	87.35	99.44	98.65	ZWE	72.53	99.72	97.03

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