



LUND
UNIVERSITY

Lund University
School of Economics and Management
Department of Economics
Bachelor's thesis
October 2004
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The Limitations of Debt Relief

A critical study of the theoretical and empirical support for debt relief
as a development assistance instrument

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Abstract

From the early 1990s and onwards the use of debt relief as a method of providing development assistance has become increasingly popular, especially since the launch of the HIPC initiative in 1996. This thesis aims to investigate the general theoretical and empirical support of the growth enhancing properties of debt relief with regard to low income countries. Focus is put on evaluating the harmful affect of national external debt and, more specifically, on the debt overhang hypothesis. The extent to which debt relief is given in addition to existing and normal levels of foreign aid (*additionality*) is also studied. It is concluded that the size of the external debt stock does not appear to be a significant determinant of relevant macroeconomic variables – inflation, real interest, domestic savings, and private, public and foreign investments – suggesting that the importance put on the size of the external debt stock might be overstated.

Key words: debt relief, foreign aid, debt overhang, investments, additionality.

This thesis is available on-line at anderspetersson.com.

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1 Introduction

Throughout the 1990s and culminating in the run up to the millennium, a broad and powerful coalition of politicians, prominent social scientists, political activists, religious leaders and various celebrities became increasingly influential in their demand for far-reaching debt relief for severely indebted low income countries. The idea of people not well off enough to feed themselves paying back loans to people of high technology and great wealth could not be ignored. The implicit argument was made that poor countries suffer from impeding debt burdens, and debt relief is thought of as a development assistance instrument increasing the net flow of capital to low income heavily indebted countries. In the public discussion the importance, or even existence, of debt burden impediments is not questioned but assumed. In reality though the problem of capital scarcity in poor countries is caused by a number of factors of which indebtedness is only one. The focus of the debate should be on whether debt relief is a superior way of delivering financial assistance. The debt servicing cost paid by poor countries to rich countries should not divert attention from the net flow of capital between the developed and the developing world.

On these grounds advocates of debt forgiveness could be accused of neglecting one of the main causes of underdevelopment – capital shortage – especially since the poverty reducing and growth enhancing properties of debt relief remains to be proven.¹ In any case, the development assistance quality of debt relief has to be examined more thoroughly.

¹ Debt relief is widely thought to have alleviated the economic crisis in Latin America during later half of the 1980s. But the bearing of that experience on the low income countries in focus of current day's debt relief is limited since the differences are many: the creditors are not private, the net flow of resources from creditor to debtor is in general positive, the loans are more concessional in nature and the debt servicing payments smaller (Bird & Milne 2000: 201; Bird & Milne 2003).

The public discussion on debt relief never left the realm of moral imperatives to address, not the question of whether to assist in development processes, but the question of how it is most effectively done. Instead of a sober weighing of what approach to take towards aid and what instruments to use in its implementation, came a political and public rallying around an agenda for the realization of the policy of debt relief.

Perhaps self-evident enough, NGOs are not merely a representation of interest but also a collection of self interest. The debt relief NGOs not merely wanted poverty reduction or growth enhancement for low income countries but also the power and influence to make these initiatives important on a world scale:

The high moral appeal of the argument that poor people in developing countries should not suffer from malnutrition and lack of basic health and education because their governments have to pay back loans to the industrialized world is used by NGO for their own purposes. Complicated questions such as who will really reap the benefits of these funds and whether they might not provoke counter-incentives to good government policies tend to be overlooked by public opinion. Therefore, through campaigns on debt relief, NGO can easily gain publicity which in turn helps them to raise funds for their other activities.
(Michaelowa 2003: 467)

This slightly more complex view of NGO agenda and interest is only to show that the mere suggestion of debt relief from these organizations should perhaps not be the only reason for actually applying the policy. The moral weight of these organizations must not stop us from discussing the real and complicated benefits and risks associated with debt relief.

The reasoning behind debt relief is largely based on the debt overhang hypothesis (DOH). It is believed that an oversized national debt hampers economic development through rising inflation, rising interest rates and lowered investments. This thesis does not set out to question the importance of investments for growth. On the contrary the relationship between foreign direct investments (FDI) and life expectancy in Sub-Saharan Africa during the 1990s is as clear as it gets in economic studies: investments breed productivity and productivity breeds income. The question is rather, does the size of the national debt

adversely affect the economy, and if so, is debt relief the most efficient way to fight these effects. This thesis will focus on the first part of that question and also study to what extent debt relief diverts resources from other forms of development assistance (principally foreign aid).

Much has been done internally in the low income countries to increase investments to the developing world: privatization, market and trade liberalization, capital control deregulations and debt relief. Debt relief has come to take a more prominent position as a tool for capital accumulation and essentially poverty reduction in part due to the perceived failures of many deregulatory and structural adjustment reforms during the 1980s and 1990s. But paired with this growing interest in and practice of debt relief there has also been an increase in reports critical of its practice. It is suggested that debt relief has turned out not to fulfill the many promises made on its behalf in the early 1990s and onward, and many are questioning the effectiveness of debt relief as a form of development assistance.² For even though investments and capital are fundamental building blocks of Western wealth it is perhaps not what the developing world lacks the most. Property rights, basic infrastructure, rule of law, political stability and peace are preconditions for investments and requirements for returns. Perhaps having a big debt is not as much an illness as it is a symptom. Perhaps focusing on and contenting oneself with debt relief averts attention from the greater restrictions on growth and development.

1.1 Purpose and Question

The volume of development assistance has decreased significantly during the 1990s and even though the numbers are improving it is still crucial to use these resources in the most efficient fashion. The importance of evaluating different approaches to aid is growing and the potential loss from backing the wrong initiative or implementing the wrong policy is also rising.

² See for example Bird & Milne 2000.

This thesis will try to answer these questions raised by the discussion about the poverty reducing and growth properties of debt relief:

- What is the theoretical quality of the case for debt relief as an instrument for development assistance?
- Does debt relief divert resources from other forms of development assistance?
- Is external debt harmful for the economies of low income countries?

The focus will be on the debt overhang hypothesis and its relevance for low income countries, both empirically and theoretically, specifically how the debt stock to GDP ratio relates to private, public and foreign investments. The aim is to be able to draw some conclusions on the merits of debt relief.

1.2 Data and Method

The research in this thesis is in two main parts. The first one is theory developing to its nature and will examine the existing theory critical of debt relief. I will analyze the contemporary research body and distill a comprehensive presentation of the weaknesses in the case for debt relief. The main arguments will be discussed and a coherent theory laid out. The second part will be devoted to empirical studies of the effectiveness of debt relief and its relationship to other types of aid.

1.2.1 Country Sample

This thesis will concern itself with low income countries. There are several reasons for this. Of course these countries are the ones most severely ravaged by poverty and all the other curses of underdevelopment. They also have a strong connection to the topic of this thesis: of countries classified by the World Bank as severely indebted (48 countries) the majority (28 countries) is classified as low income countries. Thus, severe indebtedness is

primarily a low income problem, though far from exclusively so. And since the low income group is a big one (64 countries according to the World Bank) far from all, not even half of all, low income countries have the gravest kind of debt problems. Selecting low income countries will therefore create a sample that attracts the most debt relief attention, consisting of countries similar in income but varying in their degree of indebtedness.

This layout constitutes what methodologically is termed *most similar design*. However, it is important not to overstate the similarity of this design. The 64 countries are spread out over four continents and have great social, political and economical differences. Never the less, 39 of them are located in Sub-Saharan Africa (SSA) with some degree of similarity when it comes to challenges and circumstances. This sample is appropriate yet another reason: it includes all but three (Guyana, Honduras and Bolivia) of all countries included in the Debt Initiative for Highly Indebted Poor Countries (HIPC) and will potentially lend this study to some evaluating of this unprecedented debt relief initiative under the control of the World Bank and the International Monetary Fund (IMF).

This study will due to its heterogeneous country sample inevitably suffer from some degree of external variable disturbance. The countries are too different from each other to discover perfect variable relationships; but since that is the case with any empirical study, this is not a reason to cancel, only to be cautious in making far-reaching assumptions based on the results. Analyzed correctly though, this study has the potential of telling us something about the general importance of indebtedness and the effectiveness of debt relief. The inclusive nature of HIPC – the large number of countries included in the initiative and the great differences between them – is in itself a indicator that the world community envisions the debt situation for the low income countries as a grave problem and, more importantly, that debt relief is a general prescription to fight that problem. Through selecting such a wide sample of countries, the belief that large debt is a general problem and debt relief a general solution, can be tested.

Timor-Leste, though one of the world's low income countries, will not be included in the sample for obvious reasons. For a full list of countries included refer to appendix 1.

1.2.2 Time period

This study spans from 1980 to 2002. The 1980s are important because they witnessed a massive surge in low income country debt to GDP ratio and it is worth investigating what repercussions this had on the various economies. The 1990 are equally important, primarily for evaluating the debt relief attempt made in this decade, but also to track the debts' relation to the growing GDP of the low income countries. Perhaps it would be interesting to look also at the 1970s, but data on that time period are scarce. Furthermore, this study is limited in scope.

1.2.3 Statistical Data

Testing the relationship between indebtedness and macroeconomic performance, with a focus on the theory of debt overhang, require statistical data from each of the sample countries on debt stock, indebtedness, growth, investments and a number of other variables. To make things manageable I will limit the empirical part of this study to two parts. The first part will analyze the relationship between official development assistance (ODA) and debt forgiveness grants flowing from the developed world. The second will analyze the damaging effects of large external debt in low income countries by looking at external debt stock, inflation, real interest rate, savings and investments.

In some instances the statistics available have been insufficient. Primarily, this is a problem when measuring indebtedness. Not only is the term hard to define and quantify, statistics are also scarce. I have therefore been forced to use debt stock figures as a proxy for indebtedness and debt burden, even though it does not take in to account the concessionality, maturity or payback requirements of the debts – only the size. Even after appropriate method adjustment some of the regression ran in the study has had a limited number of observations; please refer to appendix 2 for details on the regression.

The main sources of data are the Global Development Network Growth Database³ of the World Bank (managed by William Easterly and Mirvat Sewadeh) and the Organisation for Economic Co-operation and Development's Development Assistance Committee's International Development Statistics⁴.

1.3 Clarifications

There are quite a few examples of development economics papers that are rendered unnecessarily hard to grasp due to unclear or inconsistent terminology. I will try to avoid such confusion by defining key terms in this subsection.

Debt stock: The accumulated amount of national debt. In this thesis it will be expressed as a fraction of GDP.

Net present value of debt: A measurement of indebtedness introduced by the World Bank during the 1990s to better take into account the burden of debt. Depending on the concessionality and payback rate of the loan, the net present value of debt can differ between countries with the same nominal amount of debt stock.

Development assistance: Any form of assistance, including foreign aid, credits and debt relief given by any country, countries or organizations.

Debt relief: Any form of relief, long or short termed, of the debt burden, including debt servicing cancellations, debt rescheduling, debt swaps, debt forgiveness etc.

Debt forgiveness: Debt relief that actually lowers the net present value of debt.

Debt sustainability: A measurement of a country's debt payback capacity, measured by the debt in relation to its ability to pay, in terms of GDP or export earnings. The thresholds for debt sustainability under the original HIPC initiative were set to 200–250%

³ Available online at <http://www.worldbank.org/research/growth/GDNdata.htm>

⁴ Available online at <http://www.oecd.org/dataoecd/50/17/5037721.htm>

for the net present value to debt to exports ratio and 20–25% for the total debt service to exports ratio. Under the Enhanced HIPC the thresholds were reduced to 150% and 15–20%, respectively.

Concessional lending: Describes loans given on terms more advantageous for the debtor than market terms would have been, typically through multilateral or bilateral lending. By the same logic, non-concessional lending is the same as market lending.

1.4 Thesis outline

The second chapter of this thesis will give a short history of how the low income severely indebted countries became severely indebted and the attempts made for debt relief. The third chapter will develop a theoretical framework for discussing the merits of debt relief. Chapter four will present and interpret the findings of the empirical tests. The chapter concluding the thesis is wittily called ‘Conclusion’.

2 A Brief History of Severe Indebtedness and Debt Relief

Of course there is no such thing as a brief history of 64 low income countries. All the same, since some of the discussion in this thesis will be based on these countries' historical experiences and relations with the developed world it is necessary to have at least a general understanding of their economic history. This chapter does not in any way aim to be comprehensive, merely orientating.

2.1 The Debt Crisis

During the 1970s and the 1980s much of the developing world found their external debt rapidly growing to unprecedented levels. This was due to a confluence of circumstances and actions.

The war between an Arabic coalition and Israel in October of 1973 marked the beginning of the first oil crisis. The Organization of Oil Producing Countries (OPEC) responded by stopping oil exports to the Western world, causing oil prices to rise sharply. This monopolistic price setting increased the revenue to oil producing countries, creating a surplus of petrodollars in Western banks.

The considerable inflow of fresh capital ready for investments brought about a favorable interest rate paired with high world commodity prices in the late 1970s (creating relatively sizeable export earnings for the developing world) made it possible for parts of the developing world to get loans to invest in primary goods production. But although the

investments were supposed to be productive, a decline in unrefined product prices reduced the yield of the invested capital. Instead tightened monetary policies in the U.S. and the resulting strong dollar made loans pegged to the dollar extremely costly to service. The simultaneous decline in world demand for goods mainly produced by developing countries combined with a general world recession brought export incomes into decline. The developing world's terms of trade also worsened drastically as a result of the relative price changes brought about by the shifting demand patterns.

Considerable responsibility for the growing crisis must also be borne by the regimes of many developing countries. Corrupt leaders borrowing for personal embezzlement and shortsighted politicians unconcerned by the adverse long term effects on the economic potential of their countries were responsible for adding domestic incapability to unfavorable world market events.

By the early 1980s as many countries were stuck with smaller incomes, bigger debts, unfavorable exchange rates and diminished terms of trade, debt had become a burden too heavy to bear. Responding to an inability of many indebted low income countries to service their debts, private creditors began limiting their exposure by reducing lending.

2.2 The Unsustainable 1980s

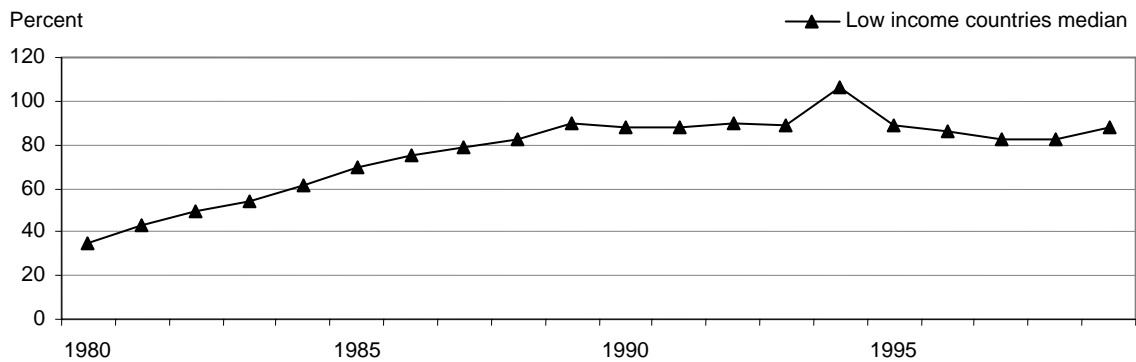
Debt relief, just like debt itself, has been around for centuries. The current discussion, though, has its roots in the early 1980s. The first record of its materialization is the United Nations Conference on Trade and Development (UNCTAD) meetings in 1977-1979, resulting in \$6 billion in debt write-offs to 45 poor countries; still however, awareness of and demands for debt relief were limited (Easterly 2001: 4).

Actions on debt were market orientated for most of the 1980s. Throughout the decade there were disagreements on whether the debtor's inability to service their debt was due to illiquidity or insolvency. The conventional wisdom was long that the countries would be able to service their debt given time. By 1987, however, the market had proven the

analysts wrong as the secondary market in sovereign debt gave clear indications that lenders should not expect complete debt repayments: Brazilian debt traded at 75 percent of actual value, Polish at 45 percent and Zambian at 20 percent (Evans 1999: 268).

But because the greater part of poor countries' debt was owed to governments and multilateral organizations – and not to the private sector – market solutions did not have the potential to completely rectify the situation. Instead negotiations with the OECD community began to play a more important role. Already in the early 1980s, in an effort to lighten the burden of debt servicing, official lenders initiated debt rescheduling combined with new lending, for the most part connected to adjustment programs. But the rescheduling was non-concessional, which allowed the debt stock of low income countries to grow substantially during the entire 1980s while remaining sustainable in the short run (Ndikumana 2004: 327). Debtors were in general able to service their debts as well as finance development needs out of the adjustment loans, but during the same period the average external debt to GDP ratio rose from 46% in 1980 to 120% in 1990.⁵

Figure 1: **Low income countries median external debt stock to GDP ratio**



(Source: Global Development Network Growth Database, the World Bank)

Faced with the growing unsustainability of many low income countries' debt situation, discussions on more drastic measures of debt relief were begun in 1987 within the Paris

⁵ Global Development Network Growth Database, the World Bank

Club⁶, in G7 minister meetings and elsewhere (Evans 1999: 272). The United Kingdom was the main advocate for debt relief, supported by France and Canada and opposed mainly by Germany, the United States and Japan. Among the opponents there was a widespread opinion that it was unfair to let some countries off and not others, that creditors could not afford the cost, that the behavior would spread to middle-income debtors, that the sanctity of contract would be compromised and that IMF conditionality would be weakened (Evans 1999: 270). A compromise was reached in the Toronto terms (the result of the G-7 summit in October 1988 in Canada) giving creditors three options to choose from: 1) long-term rescheduling, 2) a lower interest rate and 3) a partial write-down of debt stock. In practice, however, the terms materialized as \$6 billion in rescheduling (Bird & Milne 2003). Gradually the opponents of debt forgiveness found their situation to be politically costly and in a series of subsequent G-7 and similar summits (most notably in Trinidad, London, Naples and Lyon) the terms of debt forgiveness and debt rescheduling became increasingly generous and concessional in nature (Easterly 2001: 6). Under the Lyon terms (agreed on in 1996) the reduction in net present value of debt had reached 80 percent, from a third or less under Toronto terms (Evans 1999: 272). During this process the World Bank and the IMF had been successful in limiting debt relief to official donors, but by the mid-1990s pressure started to build up on the Bretton Woods institutions as well.

2.3 The Debt Initiative for Highly Indebted Poor Countries

Clearly the most well known debt relief policy is the Debt Initiative for Highly Indebted Poor Countries. The initiative was launched by the World Bank and the International Monetary Fund in September of 1996. The initiative was the first coherent strategy to deal with multilateral debt and also to approach the problem of debt with an explicit poverty reduction agenda. The goal of the initiative was to make the severe indebtedness

⁶ The Paris Club is a group of creditor governments that have met in Paris since 1956. The purpose of the meetings has been to reschedule debt for countries with debt servicing difficulties.

of many low income countries sustainable, to write down debt and reschedule paybacks to make the present value of debt more manageable in terms of GDP and national export revenue. The understanding was that an unmanageable debt burden hampered economic development and that with the right economic policy domestically and concessional arrangements from donors, the debt could be reduced.

The HIPC initiative stipulated that an economic policy framework was to be worked out between the WB and IMF on the one hand and each HIPC country on the other, to address the matter of indebtedness. Only after adhering to these policy recommendations for six years the promises of debt write downs would be realized. The eligibility preconditions stated that only poor countries with a debt to export ratio of 200-250 percent after attempts of debt rescheduling had been made were considered eligible for the program (Michaelowa 2003: 462). As a result of the harsh requirements, the developing world was not overly enthusiastic about the new initiative and the amount of debt relief (which was smaller than it is now) was generally seen as not worth the work. Only four countries reached completion point⁷ under the original HIPC initiative: Bolivia, Mozambique, Tanzania and Uganda.

In 1999 a G7 meeting in Cologne largely changed the setup of the initiative. The Enhanced HIPC (E-HIPC) initiative was created dropping the condition of the six years of agreed economic policy and widened the eligibility by reducing the debt to export ratio requirement to 150 percent. Instead of the relatively high degree of conditionality in the original HIPC initiative a different approach was introduced. A national participation process in the indebted countries should in discussion with the IMF and the World Bank result in a Poverty Reduction Strategy Paper (PRSP). This strategy was then to be implemented for the duration of one year before debt relief was applied. Lessened debt conditions and policy requirements for eligibility, combined with increased debt relief per country, increased the expected pay out of the initiative from 12.5 billion to 30 billion US\$.

⁷ The final stage of the HIPC process.

The Enhanced HIPC initiative was very popular in the developing world as the political effort required to receive debt relief was considered to be lower and the potential gains, in terms of debt relief, higher (Michaelowa 2003: 463). Presently 27 countries have reached the HIPC decision point⁸ and will according to the World Bank receive debt relief of US\$ 52 billion “over time” (World Bank DevNews Media Center).

2.4 The Historical Origin of Debt

Although the oil crises along with various macro economic policy and investment decisions and international economical trends were the immediate cause of the debt crisis, there are also historical conditions to explore, and where one chooses to focus one’s attention will greatly affect both diagnose and prescription. I will go in to more detail below; for now, suffice it to say that production structure and alignment as well as economical and social relations with the world are not a created in a vacuum. That is especially true for the developing world, forced during colonial times towards primary goods production and peripheral economic importance, sometimes abandoning a relatively advanced production and refinement (Geda Fole 2003).

⁸ The decision point is the first stage of the HIPC process that qualifies countries for debt relief.

3 The Rationale of Debt Relief

The goal of this thesis is to evaluate debt relief as an instrument of delivering development assistance. This question in itself makes the implicit assumption that development is preferable to underdevelopment and that the process of development can be precipitated (or impeded) by factors external to the domestic situation. And although these are both perfectly interesting questions this thesis aims to answer neither of them; rather, the assumption is made that the answers to both are affirmative. Instead this chapter sets out to examine the rationale of debt relief on a theoretical level: is it efficient, is it *the most* efficient of tools and does it have any sizable theoretical downsides? I will draw on the existing body of research in development assistance, growth and debt, and add my own considerations to form a broad theory on the development assistance properties of debt relief.

The analysis in this chapter is broken down in subsection by subject, and will discuss a number of problematic issues concerning debt relief: the validity of the debt overhang hypothesis, the diversion of resources from ODA to debt relief and from efficient recipients to inefficient recipients, unfortunate incentives imbedded in debt relief, the risk adherent in large sized projects, the structural and historic origin of the debt build-up, and finally the political sensitivity of the HIPC initiative.

3.1 Grants, Loans or Debt Relief?

One of the main principles behind HIPC when it was initiated was the condition by creditors that any money used for debt relief would be a supplement to existing and

normal levels of other forms of development assistance (Killick 2004: 6). This condition has become known as *additionality*: to what extent debt relief is provided in addition to foreign aid. There are several reasons for insisting on a high level of additionality. Most important is the mere matter of relative size. World aggregated official development assistance averaged \$62 billion annually in nominal terms between 1990 and 2002.⁹ The world's expenditures on debt forgiveness during the same years averaged only \$3.4 billion (also in nominal terms).¹⁰ Since the ODA expenses are 18 times greater than the debt forgiveness expenses for this period, the latter should not be a substitution for the former. Also, the reduction in net present value of debt from debt relief has been less than 50% for 22 of the 27 countries in the HIPC initiative that have reached completion point, suggesting that progress towards sustainability is slow (Ndikumana 2004: 326). There is an obvious risk that focusing too closely on the \$3.4 billion of debt relief money draws attention from the \$62 billion of ODA money and a much needed discussion on how to manage an efficient distribution of foreign aid. It is also important to underline that there is a fundamental difference between aid and debt relief from the debtors point of view. Debt relief will, if properly applied, render the servicing of debt less burdensome, but given the relatively limited servicing costs compared to foreign aid, debt relief will not involve a substantial addition to the national budget. Hence it must be seen as a long term investment not as an instrument for short-term growth (Bird & Milne 2000: 201).

Theoretically, any debt relief that constitutes a reduction of net present value of debt must be seen as a reduction of Western assets. Assets are diverted from the developed to the developing world in a fashion not, from an aggregated Western perspective, unlike foreign aid. And although the financing of foreign aid and debt relief is a complicated affair, there is, on a theoretical level, no reason to think debt forgiveness will not draw resources from other development assistance flows (Bird & Milne 2003: 50). All the more so when public opinion is usually unfavorable to foreign aid expenditures, creating a political problem for anyone trying to raise the total sum of economic assistance flows to the developing world.

⁹ OECD DAC online database, table 1.

¹⁰ Ibid.

The empirical evidence for additionality (or lack thereof) is limited, but in the case of Latin America, debt relief efforts during the 1980s were followed by a surge in capital inflow (Bird & Milne 2000: 201). These observed experiences will be further discussed below, but from a theoretical point of view low levels of additionality demand strong evidence that debt relief is a more efficient way of delivering development assistance than aid is for debt relief to be justified. Such evidence is presently far from convincing enough to justify any diversion of resources from official development assistance to debt relief. In the absence of evidence of superior effectiveness, one has to consider the existence of secondary political motives (see chapter 3.7).

3.2 Indebtedness and Economic Performance

The main rationale for debt relief is that an unsustainable debt burden constitutes an impediment to growth through a two-tier mechanism: 1) big debt deters new investments through the debt overhang effect, and 2) big debt means big debt services.

According to the debt overhang hypothesis, investments are discouraged if the debt burden is heavy enough to make the debtor unable to service the debt and involuntary lending – i.e. lending outside of market mechanisms – takes place. Put another way, the debt overhang effect is what occurs when the benefits from new investments are believed to go to existing creditors and not to the new investors. For example, consider a low income country with a \$100 debt and an \$80 GDP looking to finance a project. The project has a startup cost of \$10 and an anticipated yield of \$20. Even though an investor could make a \$10 profit on the project, the investment is far from certain since the country is too indebted to make the payout to the new investor. Instead, the existing creditor will benefit, since the liquidity of the country will have increased from \$80 to \$100 making debt payback more plausible, and since the old creditors are first in line for debt paybacks they will benefit immediately; the new investors will have to wait their turn. The investment complications of the real world will make the procedures less clear,

but the mechanism is the same. The indebtedness of the principal will in this manner create a risk for the agent looking to invest, generating an investment threshold.

Thus, alleviating the indebtedness will increase investments, encourage growth and in time increase the country's capacity to service the remaining debt stock. As a result both debtors and creditors could stand to benefit from the debt relief practice. This relationship is usually represented by a Laffer curve where the expected debt repayment of a debtor on the far side of the curve maximum would improve if debt relief were to be given.

The capital flight in form of debt service payments mentioned in the opening of this subsection will limit the amount of domestic capital that can readily be used for investments. Assuming a constant demand for capital, the outflow of capital will cause an increase in interest rates, further lowering the expected returns to investments.

Debt relief aims to address both the debt overhang effect and the problem of capital outflow through debt service payments. But there are reasons to believe that the impact of debt relief will be limited: 1) the importance of factor accumulation is disputed, 2) the role of national debt in explaining poor economic performance might be overstated, and 3) debt relief initiatives focus exclusively on external debt.

Traditionally, and largely even now as well, development economists agreed that investments, and factor accumulation in general, are a fundamental part of achieving growth. However, more recent works by among others William Easterly and Ross Levine argue that when explaining differences in growth and wealth across countries, the focus should be put on total factor productivity (TFP). The concept of TFP is elusive, but “range from changes in technology (the instructions for producing goods and services) to the role of externalities, changes in the sector composition of production, and the adoption of lower-cost production methods” (Easterly & Levine 2001: 178). Regardless of the exact definition the implications for debt relief would be that its use as a more or less universal tool for most of the highly indebted low income countries are not empirically well-grounded.

Moving past the TFP argument, the case is often made, implicitly or explicitly, by economists, politicians and activists that the reduction of debt burdens is central to achieving growth in heavily indebted countries: a big national debt hampers investments and lower growth rates. In reality however, the connection between the size of the debt and the levels of investments in a country is not very clear. This is especially true in less developed countries where weakly defined and insufficiently enforced property rights, great vulnerability to world market fluctuations, frequent policy failures, political instability and an endless range of other deterring factors make the return to capital investments precarious. Hence it might be appropriate to question not the existence of a debt overhang effect, but the *relative importance* of that effect in relation to other deterring factors.

Advocates of debt relief might retort that debt service capital freed up by debt relief is used domestically to rebuild and to remove greater impediments to investments. In practice however, this is not the case. The HIPC initiative, due to its aim for poverty reduction, prioritizes relatively short term solutions to poverty. The Operation Evaluation Department at the World Bank (OED) assessment of the HIPC program in 2003 reports that out of the resources released by the debt relief, 65% has been devoted to social security and only 7% to infrastructure (Killick 2004: 4). The process of improving institutional quality, creating political stability, ensuring the rule of law and so on is a complicated one and in general debt relief does not appear to be directed towards solving these issues.

The focus of debt relief has always been external debt. This includes the HIPC initiative which both defines debt relief entitlement and debt sustainability in terms of external debt. It is true that many developing countries have small domestic debts, but it's not true for the entire HIPC group. Nicaragua, for example, has a domestic debt to GDP ratio of 65% (in 2001) which is a significant amount, especially since it is largely linked to the American dollar (Edwards 2003: 529). Hence, allocating resources to alleviate the burden of external debt does not necessarily solve the issue, since service has to be financed for domestic loans as well.

3.3 Resource Diversion towards Inefficient Recipients

There are strong reasons to suspect a link between a country's past economic policy performance and degree of indebtedness. Specifically, it has been shown that the HIPCs have had weaker policy performance compared to other less developed countries (LDCs) (Easterly 2001). This is an important notion since it has been shown by among others David Dollar and Paul Collier (1998) that the quality of national policy is an important component in efficient resource allocation:

The efficiency of foreign aid could be doubled through simple but radical changes in how assistance is allocated. That is, the current volume of aid could lift 30 million people per year out of poverty, rather than the 16 million that we estimate that it actually does. The key to this gain is to allocate aid to countries that are poor, and among poor countries to favor ones with reasonably good economic policies. (Collier & Dollar 1999.)

The appropriation of resources to countries with a poor policy performance record is inefficient and, according to Collier & Dollar, is responsible for keeping 14 million people per year poor. And in the case of lacking additionality the use of indebtedness as criteria could actually divert resources from efficient poor countries to inefficient poor countries.

To be sure, countries troubled by an inability to efficiently implement policy should not be left without assistance. All the same, using indebtedness and debt sustainability as key criteria singles out a group of countries that should not be expected to suddenly overcome problems of incapable bureaucracies, weak implementation facilities, corruption and so forth. In fact, we know that the problem still exists: the Transparency International survey of corruption in 2000 puts 9 out of the 15 included HIPCs in the bottom quartile (Thomas 2001).

The argument from this point of view is that development assistance should be assigned to receivers that are capable of using the resources efficiently and that the policy of debt relief is clearly in risk of deviating from that goal.

3.4 Programmatic versus project based assistance

Discussing the general effectiveness of economic development assistance, it soon becomes necessary to distinguish between programmatically based and project-based efforts. This is especially important when addressing the economic risk of failed assistance. Tony Killick describes the present state of the research field: “The pendulum of professional opinion about effective aid modalities has swung away from an earlier concentration on project-based assistance in favour of more programmatic forms, most notably sector-wide or direct budget support and the associated modality of debt relief” (Killick 2004: 5). Often the argument for advocating programmatic macro assistance is one of *ownership*; the importance of local governments being committed to and having a stake in the progress – the theory being that a local government that is more closely involved in the formulation and implementation of a project will be less prone to bad governance and inefficiency. Though this argument appears to be a valid one, it involves a risk on behalf of the creditor. Simply the fact that more money is involved raises the stakes of success or failure, increasing the potential cost of making wrong decisions since the number of transfers is fewer and the amount per transfer greater. The alternative for the donors would be to enter into smaller but more numerous arrangements decreasing the risk associated with each project.

3.5 The Lack of Regard for History

Any policy recommendation given on any economic problem will have to be based on one’s perception of the economic problem at hand, but also on its origin. This is true also

for the research on indebtedness. There are, very generally speaking, two contending theories on the origin of low income countries' debt (Geda Fole 2003). One focuses on the economic policy performance of low income countries. This view holds that it is the low quality of economic policy in the developing world that is responsible for the debt build-up in the first place, and that is presently keeping growth levels low and poverty levels high. The market should be trusted to allocate resources free from the impediments of an intrusive state, especially given the corrupt and bureaucratic nature of many of these countries – privatization, deregulations and trade liberalization are effective measures to ensure growth and development. At least to some degree this is the view of the World Bank, the IMF and much of the Western world, especially since the increase in explicit conditionality during the 1980s. The historical focus is on the economic experiences of the 1970s and the developing world's political decisions to accumulate debt.

The alternative view focuses on consequences of and reasons for the resource gap between the developing and the developed world. Internationally, the developing world is left in the periphery, with mostly primary goods production, unfavorable terms of trade and irrelevant leverage when it comes to political economy. Domestically, it struggles with underdeveloped infrastructure, weak institutions, lacking research capability and little human capital. These are the factors hampering the economic potential. The problem is not an overly regulated market but rather the shortage of resources devoted to development and the unfairness of the world market. This description is often based on a historical focus on the point in time when the structure of economic exchange between the developing world and the rest of the world was dramatically changed. During and after colonial times developing countries were forced to rely on primary goods for exports and imported manufactured goods. It is this specialization that has made the developing countries vulnerable to world market price changes and unable to create structures for production of advanced goods or higher levels of productivity. In its extension this is the source of the debt problem; the debt build-up and the resulting inability to sustain the loans is a consequence of international power relations.

One's historical point of view will thus affect the importance one puts on debt relief. The orthodox view will perceive debt as a result of bad policy and rectifying it will be seen as

important to economic development. The heterodox school of thought on the other hand perceives the large debt stocks as a symptom of a structural problem to which debt relief is not a solution and perhaps not even helpful.

Given the process of debt increase in the 1970s and 1980s and the historical circumstances forming the international political economy during centuries it has to be concluded that the dominating orthodox theory is somewhat lacking in historical insight. Of all factors influencing the emergence of the debt crisis and the subsequent ongoing process of development, only a few are internal to the developing world and fewer still are under the control of local governments. An unfavorable geographic location, weak terms of trade, specialization in primary goods, a poor trade situation and the complicated relationship between nation and state are only some of the factors punctuating economic capacity and which are extremely hard for local government to influence. Unsustainable debt must be seen as a consequence of these circumstances and it should be addressed accordingly, through capacity building aid and fair trade practices. Coming to terms with the behavior behind unwise borrowing (and lending) during the 1980s is to large degrees another matter.

3.6 Adverse Incentives

Debt relief programs can easily be seen as rewarding countries that in the past have had insufficient understanding of the problems of indebtedness and in practice an unrealistic public spending policy. This could possibly be argued also for other types of development assistance. The difference however is that foreign aid is given to underdeveloped regions to counter a situation of deprivation not necessarily caused by past policy. The debt on the other hand has a clearer causality connection to past policy.

In discussing incentive structures it is important to remember that the borrowing governments in the 1970s and 1980s are not still in power and were generally less legitimate, less democratic and more corrupt compared to current leadership. This does

not invalidate the argument but it is important to know that the behavior incentivized against is in some cases 30 years old.

Debt relief does not only affect countries receiving it or countries eligible. Giving some countries debt relief after years of sometimes wasteful spending could send the wrong signals to other countries, rendering them less inclined to make sound public policy decisions. For these countries the perceived cost of future indebtedness might decline as they see the possibility for their debts to be written down, in practice creating an interest rate rebate.

Conditionality, obviously, is a method used by creditors to get around all these problems of moral hazard.

The track record for conditional development assistance is not encouraging for the believers and the conventional wisdom is that it doesn't work: "The one point on which there is agreement is that rarely, if ever, are all conditions fully implemented within the time period of the aid agreement. In this sense conditionality does not work." (Morrissey 2004: 168-169). This indicates a limited ability by donors to, in the case of debt relief, influence countries to long-run adherence to a policy of budget balance if that is not the genuine will of the countries.

The use of conditionality grew more frequent during the 1980s and 1990s with the increase in the volume of ODA in general and also an increased interest in large scale structural adjustments (Killick 2004: 13). The structural adjustment loans were conditioned on a broad collection of factors: matters of domestic taxation, budget balance, privatization and trade liberalization were all included in two thirds of all World Bank programs in the 1980s (Morrissey 2004: 157). A sizable body of research trying to evaluate the use of conditionality was developed in the later half of the 1990s. Generally the evidence in favor of incentivized or conditioned policy is not impressive in the absence of genuine intentions from political leadership or bureaucracy (see for example Greenaway & Morrissey 1993 or Morrissey 2004). It has been determined that in cases where the interest of the Bretton Woods institutions came in conflict with national interest, the latter nearly always prevailed (Crawford 1997).

In the case of the original HIPC program (1996-1999) the indebted countries were forced to adhere to stringent public policies agreed upon in advance with the IMF and the WB. Debt relief was only provided after a six year period of agreed public policy. And to further limit the moral hazard risk with countries hoping to get debt relief, only poor countries with a debt to export ratio of 200-250 percent were considered eligible for the program. As discussed above, the launch of the Enhanced HIPC initiative in 1999 softened the conditionality and increased both the number of countries eligible and the potential debt write-offs to be gained.

It is easy to imagine a scenario where a country after having kept to World Bank or IMF influenced policy and having got their debts written down they for any number of reasons have a political change and return to a policy of borrowing. And if their agreements with official lenders prohibits them to initiate new multilateral or bilateral loans they will be left with the only alternative of private domestic or international lenders, in all probability giving the new loans less of a concessional nature, possibly leaving the country even worse of than before the initiation of debt relief.

This concern is especially valid in countries with political instability or short life expectancy, since the future repercussions of unsustainable debt can be seen as a problem for the next generation. William Easterly (2000) argues that because of the short life expectancy, in general as well as politically,

[...] if the discount rate is unchanged before and after debt relief, the government will respond to debt relief by new borrowing until the old ratio of net worth to consumption is restored. In the same vein, if the terms of lending are made more favorable by substituting concessional for non-concessional debt then countries will reborrow to maintain the net present value of debt service. Alternatively, the country could run down assets to restore the old ratio of net worth to consumption. (Easterly 2000: 9.)

Theoretically, the result of debt relief could be increased borrowing or, if that can be prevented, a run down of assets in order to obtain the previous consumption to asset ratio. This would quite obviously result in an equally unsustainable situation.

If donors aim at inspiring responsible governance, the opposite policy might be the most productive: A recent paper from the IMF suggests that new lending is preferable to grants for a number of reasons (Clements, Gupta, Pivovarsky, Tiongson 2004: 47). This thesis does not set out to compare grants and loans, but rather to compare two different forms of grants – traditional foreign aid and debt relief grants – nonetheless it is important to be aware of the weaknesses of development grants. First, increased dependency on grants does not inspire to evolve domestic sources of income, mainly taxation. And because grants are much more volatile than tax income, the practice of giving aid in form of grants risks to make an often already unstable public revenue situation even more unpredictable. Also, a situation where the majority of revenue comes from outside grants can shift the focus of national policy from domestic challenges to rent seeking activities aimed at donor countries. Such a shift makes it harder for politicians to prioritize and implement hard changes domestically. The example of tax evasion is perhaps the most obvious: Costly investments necessary to enhance one's taxing capabilities might not be perceived as worthwhile if tax income only accounts for a small portion of the government's budget. These unfortunate incentives associated with foreign aid grants are less pronounced in the practice of new lending, since taking loans is accompanied by a greater sense of responsibility and financial limitation. This is to say that foreign aid grants in general have serious weaknesses, and debt relief grants have the same weaknesses and quite a few others (as is discussed throughout chapter 3).

3.7 The Politics of Debt Relief

The political pressure from non-governmental organizations (NGOs) during the 1990s, especially in the run up to the new millennium with the Jubilee 2000 coalition¹¹, created political incentives for Western governments to implement debt forgiveness. It is not overly cynical to suggest that such a politically attractive motive could make the poverty reduction and growth properties of debt relief less important in the decision making

¹¹ Inspired by the Old Testament notion of a year of jubilee, occurring every 50 years, releasing people of debt and setting the slaves free (Leviticus 25).

process. Even more so if it were perceived that the indebted countries would not be able to repay the loans in the foreseeable future anyhow (Michaelowa 2003: 464). Given the previously described weaknesses of debt relief, this is worrisome and creates a dual problem. First, it is clearly unfortunate that the needs of politicians are interfering with the needs of poor people. Second, debt relief policy might not be susceptible to change in the event that it is found to be inefficient.

3.8 Summary

To summarize the main weaknesses of debt relief:

- Debt relief runs the risk of drawing resources from foreign aid.
- Forgiveness of debt can induce bad governance that can not be easily countered by conditionality
- Up to a point, a large national debt is not particularly harmful to economic growth
- Current debt relief efforts overlook domestic debt
- Debt relief constitutes resource diversion to recipients with poor policy records
- The large scale of debt relief projects makes the risks associated with them great
- Debt relief does not address the structural problems causing the debt crisis
- Debt relief is in part motivated by the domestic politics of Western countries

Let's now turn to some investigations into the empirical support for these claims.

4 Results

This thesis is too narrow in scope to cover empirical testing of all the theoretical claims made in chapter 3. Instead I have focused on 1) the existence of additionality and 2) the importance of the debt overhang effect. I have chosen these two tests partly because of the availability of statistical data but primarily because they are both fundamental to the case in favor of debt relief. Without additionality the practice of debt relief must be proven to be more efficient than the practice of traditional foreign aid in order to be justified, and without a considerable damaging effect on national growth and development caused by large national debts there is less of a reason to assign debt relief much importance.

4.1 Additionality

A complete study of additionality would have to include a detailed donor-by-donor analysis of expenditures. Such a detailed examination is beyond this thesis – instead I will analyze aggregated annual ODA and debt forgiveness spending.

The theory predicts, as was discussed in chapter 3.1, that spending on debt relief should reduce spending on foreign aid. To test this prediction I will analyze the ODA and debt forgiveness grants data first from a donor and then from a beneficiary point of view.

4.1.1 Creditor side

The data on debt forgiveness grants is limited and I will therefore only analyze the five biggest contributors, namely the G5 countries (France, Germany, Japan, United Kingdom and United States). There are continuous data for these countries and since they are the main contributors I believe the result can be extrapolated to the general debt relief community with a reasonable degree of accuracy.

Formally the connection between debt reduction expenditures and foreign aid would according to the theory be:

$$s = a + b \quad \textbf{(Equation 1)}$$

where s is the amount of the government budget devoted to development assistance, a is debt reduction expenditures and b official development assistance. The equation represents a zero sum game where increasing one flow will invariably decrease the other, because of the fixed budget condition suggested by the theory described above. Since s is not observed in this study I will assume it to be fixed. Therefore, adding an intercept (c) and a coefficient (β_1), econometrically this involves testing:

$$a = c + \beta_1 b \quad \textbf{(Equation 2)}$$

Any negative coefficient ($\beta_1 < 0$) would suggest a general lack of additionality, while a coefficient of $\beta_1 = -1$ would suggest a perfect zero sum relationship. But let's start with some graphical representations of the data. The data on debt forgiveness are limited and so I have been forced to confine the sample to nominal terms and to include only the years 1992 to 2002. To be able to compare this to ODA expenditures I have plotted that data with the same limitations. The deflated data on DAC¹² aggregated ODA 1980-2003 is added for reference purposes only.

¹² The OECD's Development Assistance Committee (DAC) includes all donor countries and international organizations.

Figure 2: **Aggregated DAC ODA** (constant 2002 prices)

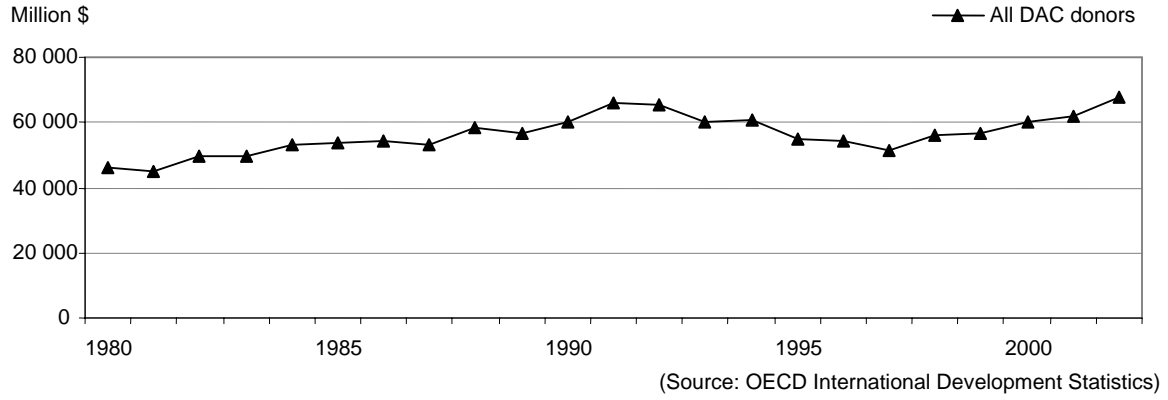


Figure 3: **G5 ODA flow** (nominal terms)

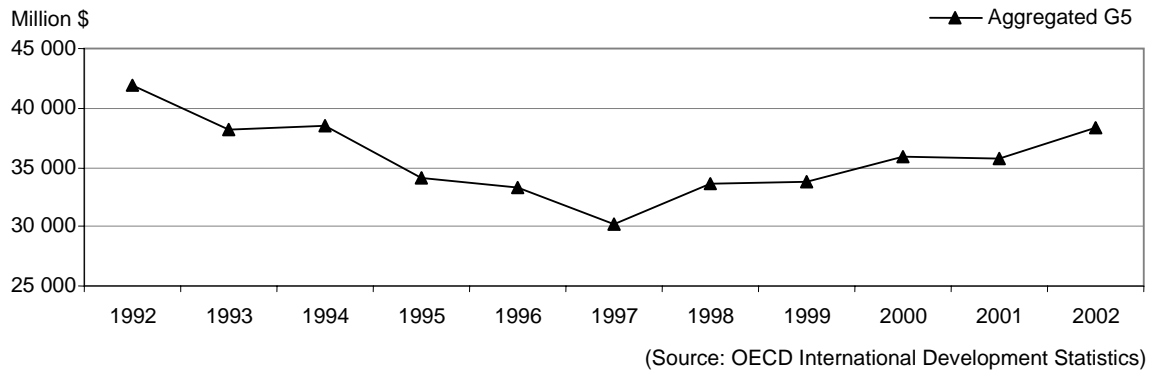
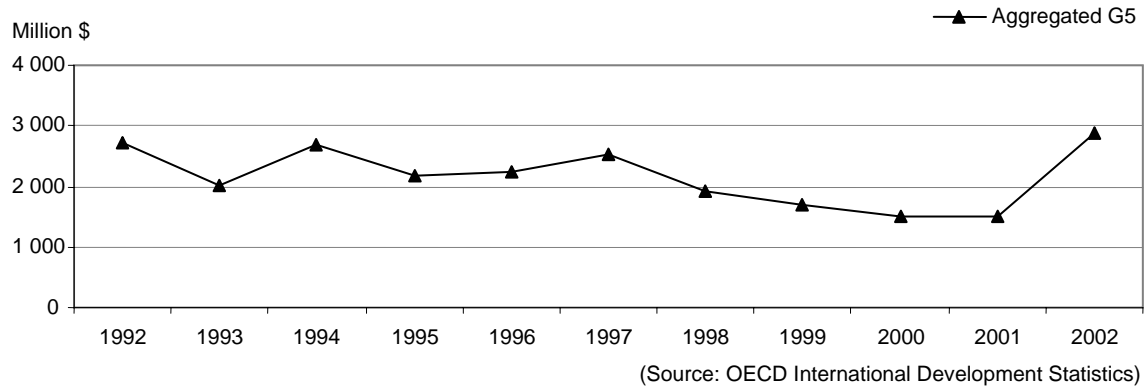


Figure 4: **G5 debt forgiveness grants** (nominal terms)



Judging from the diagrams there is no obvious evidence of an inverted relationship between ODA expenditures and debt forgiveness grants as the theory would have us believe, at least not before 1997. During the period 1992-1997 the ODA is in steady decline while the debt forgiveness grants are relatively stable. In 1997-2001, however, the trends of the two flows are inverted, with rising ODA expenditures and falling debt forgiveness grants.

Turning to the econometric test, the G5 sample for 1992-2002 returns a positive relationship between ODA and debt forgiveness (with an ODA coefficient of 1.9) and with a convincing statistical significance (p-value: 0.0007, R^2 : 0.20). Expanding the sample to include all donor countries for which data are available (18 OECD countries, with some gaps in the data), the ODA coefficient is similar (1.2) but with a higher explanatory value (p-value: 0.0000, R^2 : 0.28). Hence, the regression estimates propose a positive correlation between debt reduction expenditures and aid. For complete regression results see appendix 2.

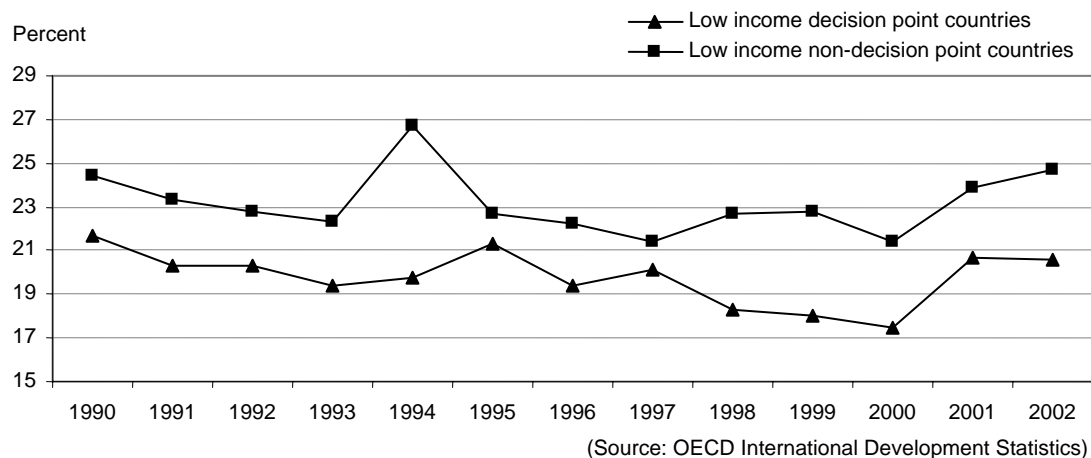
The strong statistical significance and explanatory value give some grounds to suggest a link between debt forgiveness and ODA expenditures. However this relationship is positive, quite the opposite of what the theory on additionality predicted. Nevertheless, the decline in world aggregated ODA (see figure 2) during the 1990s – a decade of numerous debt relief initiatives – raises questions about additionality. Similar finding

have been presented by Léonce Ndikumana (2004). The positive trend in ODA from 1997 and onwards is encouraging but too short to have been proven sustained.

4.1.2 Debtor side

From a debtor point of view the question is whether countries that receive much debt relief receive less ODA. To look into that I've created two country groups, one containing low income countries that presently have reached decision point in the HIPC program (including the 13 low income countries that have reached completion point) and the other containing *all* low income countries not included in the first group. For a complete listing of countries see appendix 1. The data shows that the ODA flow to decision point countries started to decline approximately at the same time as the HIPC initiative was launched in 1996, from \$13.8 billion in 1995 to a low point of \$10.4 billion in 2000. However, the flow to the other low income countries also declined in a similar fashion, giving no clear evidence of additionality. Turning to the groups' relative share of world development the picture gets slightly clearer:

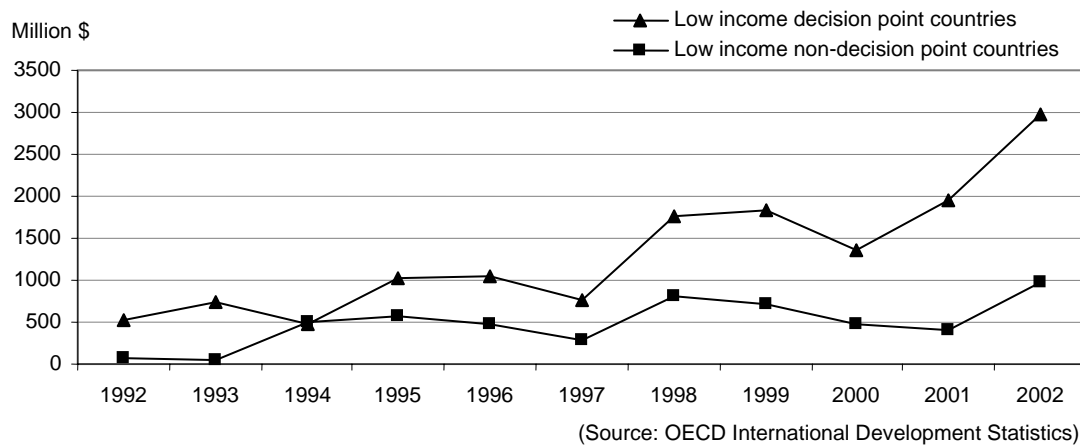
Figure 5: **Share of ODA, low income decision point countries and low income non-decision point countries**



As shown in the diagram above, the decision point countries' share of total ODA fell from 21.3% in 1995 to 17.5% in 2000, reaching its lowest figure since 1984. The second group's share is relatively stable, with the exception of year 1994.

As seen below, the debt forgiveness flow during the same period is, not very surprisingly, increasing for countries that reached completion point under the HIPC program while the trend for the remaining low income countries, while positive, is increasing less sharply.

Figure 6: Debt forgiveness grants to low income decision point countries and low income non-decision point countries



The inverse relationship between the ODA trend and the debt forgiveness trend during the 1990s supports the tested theory's claim of non-additionality. However, the sharp increase in both ODA and debt forgiveness grants in the year 2000 and onwards for both groups is not consistent with the theory. On the whole, the debtor side analysis is, due to limited data, too shallow to allow for any inference about distribution of resources between HIPC and non-HIPC poor countries.

4.1.3 Conclusion

The results on additionality are not clear cut. Perhaps the most interesting aspect is that, from a donor perspective, there is a positive statistical relationship between ODA and debt forgiveness grants during the 1990s, a relationship that contradicts the zero sum hypothesis put forward in chapter 4.1.1. It is also worth pointing out that during the limited time of 1997 and onwards, G5 ODA and debt forgiveness grants show inverted trends.

From the debtor perspective the limited data provides no solid ground for reliable conclusions.

4.2 Debt Overhang Effect

The debt overhang effect is the single most important argument in favor of debt relief; it is also the most fundamental. The debt overhang hypothesis suggests that an oversized national debt hampers development by two closely linked mechanisms. First, severe indebtedness causes domestic capital that could have been used for investments to flow out of the country in form of debt service payments. Second, this capital flight along with the crowding out effect of governmental borrowing raises the interest rate, which in turn hampers investment. The outcome of both these effects is of course a domestic lack of capital, with a resulting high price tag.

As discussed earlier in the thesis there are reasons to believe that high interest rates and lack of capital are not as important impediments to growth in developing countries as they are in developed countries. The quality of institutions (political, financial and social), political stability and rule of law are examples of features whose importance for the economic development of a country cannot be overestimated and are not apparently helped by debt relief (because of the allocation of resources freed by debt relief to social security, as discussed above).

In an attempt to analyze the relationship between debt relief and growth I will focus on the connection between debt stock on the one hand and inflation, interest rate, foreign direct investments, domestic investments and domestic savings on the other. It should be emphasized that this thesis will not lay out a complete investment theory but rather seeks to develop a general understanding of the connection between debt stock and investments. The sample is the same as in chapter 4.1: low income countries excluding Timor-Leste. I will analyze the data both graphically and econometrically.

4.2.1 Visual analysis

Starting graphically I will summarize the data in a median time series since the diverse data are not suitable for a summation based on the average.

Below are graphical representations of five macro economic variables and we will analyze how external debt (see figure 1) relates to each of them (inflation, real interest rate, foreign direct investments, domestic savings and domestic investments).

Figure 7: **Low income countries median consumer price inflation**

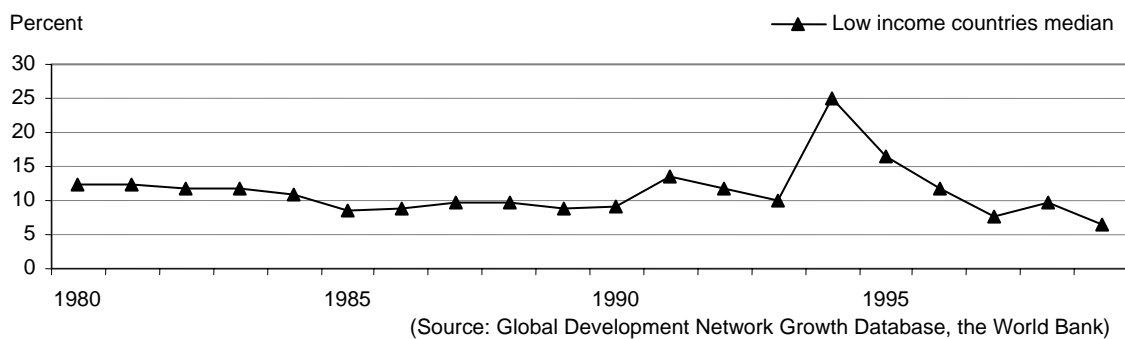
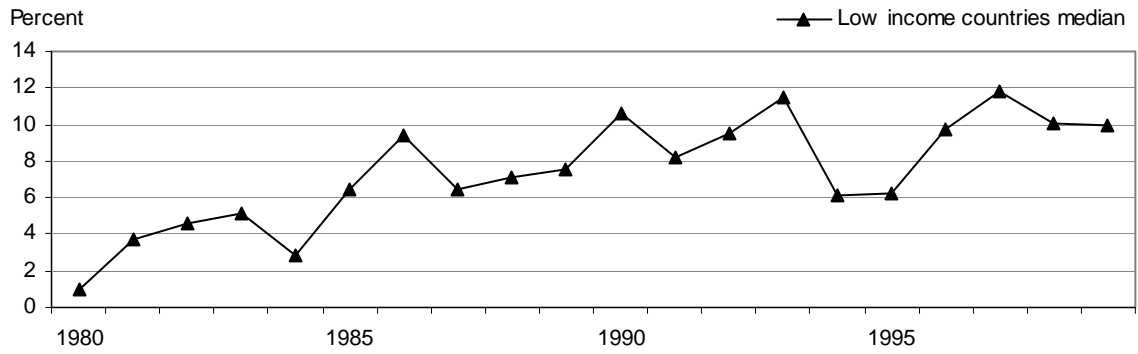
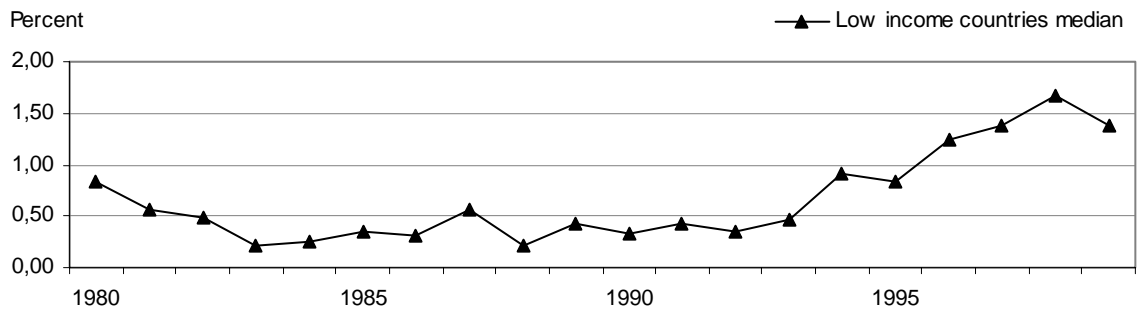


Figure 8: Low income countries median real interest rate



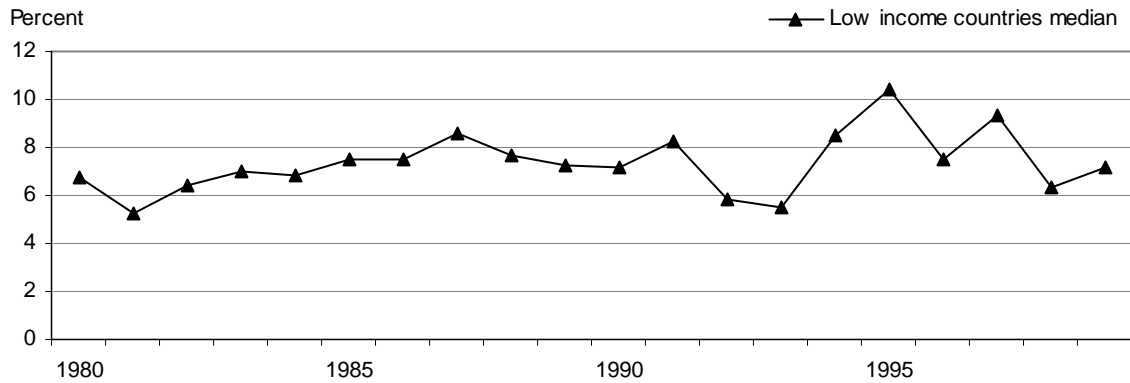
(Source: Global Development Network Growth Database, the World Bank)

Figure 9: Low income countries median FDI to GDP ratio



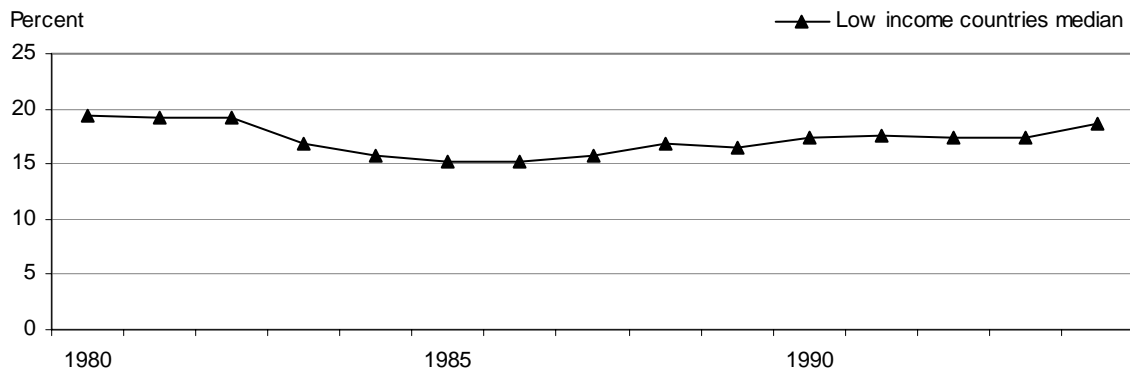
(Source: Global Development Network Growth Database, the World Bank)

Figure 10: Low income countries median gross domestic savings to GDP ratio



(Source: Global Development Network Growth Database, the World Bank)

Figure 11: Low income countries median public plus private investments to GDP ratio



(Source: Global Development Network Growth Database, the World Bank)

No single variable can be expected to explain the trends of inflation, interest rate, savings, investments or any other macro economical factor. Still it is interesting to point out some variables' relationships to the debt overhang hypothesis: During the 1980s, a 157 percent increase in median indebtedness (from 35 percent of GDP in 1980 to 90 percent in 1989) occurred simultaneously as:

- median consumer price inflation decreased slightly
- median real interest rate increased considerably

- median FDI to GDP rate was fairly constant
- median gross domestic savings to GDP rate was fairly constant
- median domestic investments to GDP rate was fairly constant

Also, the 1990s, when median external debt to GDP was more or less constant at a very high level of 89 percent (on average), were a period when:

- median consumer price inflation was unstable but trending slightly downwards
- median real interest rate was unstable but trending slightly upwards
- median FDI to GDP ratio rose by 315 percent
- median gross domestic savings to GDP rate was unstable but on average constant
- median domestic investments to GDP ratio were constant, at least during the first half of the decade (after which there is no data available)

The combination during the 1980s of 1) a massive increase in indebtedness, 2) fairly constant investments (foreign and domestic), 3) fairly constant domestic savings and 4) a slight decrease in inflation suggests that there is more to investments than debt. The same can be said about the 1990s with its combination of 1) very high and constant debt levels, 2) a major increase in FDI, 3) an on average constant gross domestic savings rate and 4) constant domestic investments.

This, quite obviously, does not prove much of anything, except perhaps that high levels of external debt must not invariably induce inflation, decrease savings or investments, neither foreign nor domestic. As a matter of fact, on an aggregated scale for low income countries, they seem not to.

4.2.2 The Econometric Design

I have above by mere visual means made connections between external debt on the one hand and the five variables plotted in figures 7 through 11 on the other. The relationships between these variables are of course too complex to be properly analyzed in median terms. Let's therefore turn to the econometric analysis of the same data. These tests will

evaluate the empirical support of the debt overhang theory by examining 1) the external debt's importance for inflation and the interest rate, and 2) the importance of debt, inflation and the interest rate for investments and savings. More formally the relationships to be econometrically tested are:

$$\pi = c + \beta_1 D_e \quad \text{(Equation 3)}$$

$$r = c + \beta_1 D_e \quad \text{(Equation 4)}$$

$$S = c + \beta_1 D_e + \beta_2 r \quad \text{(Equation 5)}$$

$$I_{private} = c + \beta_1 D_e + \beta_2 r + \beta_3 S \quad \text{(Equation 6)}$$

$$I_{public} = c + \beta_1 D_e + \beta_2 r + \beta_3 S \quad \text{(Equation 7)}$$

$$I_{foreign} = c + \beta_1 D_e \quad \text{(Equation 8)}$$

Where,

c	intercept
$\beta_?$	factor coefficient
π	inflation
D_e	external debt to GDP ratio
r	real interest rate
$I_{private}$	domestic private investments to GDP ratio
I_{public}	domestic public investments to GDP ratio
$I_{foreign}$	foreign direct investments to GDP ratio
S	gross domestic savings to GDP ratio

For complete econometric results please refer to appendix 2. Here follow the more interesting results.

4.2.3 Highlights from the Data

The debt overhang hypothesis emphasizes the damaging effect of national debt. I have focused on the most apparent channels for this effect: investments, savings, inflation and the interest rate. The data reveal that most of the linkages can not be confirmed statistically.

Inflation: External debt is statistically significant when explaining inflation, but its explanatory value is very small. *Real interest rates:* The same can be said for real interest rates: the debt variable is statistically significant, but its explanatory value is weak. *Savings:* Interestingly enough, debt is a statistically significant explanatory variable for savings rates, but real interest rates are not. The explanatory value of the debt variable is small. *Private investments:* Neither the size of the debt nor the level of the interest rate is statistically significant. The domestic savings rate, though, is statistically significant but with weak explanatory value, which supports the proposition put forward above that investment decisions are based not merely on the level of interest rates or the size of the national debt. Event though such a claim can not be extrapolated by the results in this thesis, it is very possible that structural factors like infrastructure, rule of law and other such elementary conditions are the more important ones underlying investment decisions. *Public investments:* Both debt stock and savings rate are statistically significant with a high explanatory value. The importance of the debt variable was to be expected because of the close relationship between public investment, government budget and the need to take loans. *Foreign direct investments:* The debt variable is statistically significant but has weak explanatory power.

Overall, the only factor in which debt proved to have meaningful explanatory value is public investments, due to reasons not related to the debt overhang hypothesis. In short, not any of the claims made by the DOH examined here were supported by the statistical analysis.

5 Conclusion

There is broad consensus in the development economics literature that development assistance should be given in ways where the scarce resources will do most good; where the money will be used most effectively and efficiently. When it comes to the practice of debt relief there are reasons to doubt that it really constitutes an optimal use of resources.

This study has not made any comparisons between different forms of development assistance. Instead it has focused on testing some of the arguments made, explicitly and implicitly, in the case for debt relief. No convincing evidence has been found that debt, generally speaking, is very damaging for economic growth in low income countries. It cannot be said to generally cause surges in inflation or real interest rates, impede saving or hamper private investments, neither domestic nor foreign.

On the other hand it does not seem as though debt forgiveness expenditures averts resources from foreign aid. Quite to the contrary, it appears that ODA and debt forgiveness have a positive correlation, somehow reinforcing each other.

To conclude, I believe this examination has addressed the empirical basis of one of the two central claims of the debt relief theory: the debt overhang hypothesis. The other claim, which concentrates on the net flow of resources between the developed and the developing world and on the role of service payments, has been largely ignored in this work. Further research into that area should constitute interesting reading for anyone interested in the effective use of development assistance resources.

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Appendix 1: Country Sample

Table 1: Low income countries

Country	Region	Indebtedness	HIPC status
Afghanistan	South Asia	Severely indebted	
Angola	Sub-Saharan Africa	Severely indebted	Potentially sustainable debt levels
Azerbaijan	Europe & Central Asia	Less indebted	
Bangladesh	South Asia	Less indebted	
Benin	Sub-Saharan Africa	Moderately indebted	Reached completion point
Bhutan	South Asia	Severely indebted	
Burkina Faso	Sub-Saharan Africa	Moderately indebted	Reached completion point
Burundi	Sub-Saharan Africa	Severely indebted	Reached pre-decision point
Cambodia	East Asia & Pacific	Moderately indebted	
Cameroon	Sub-Saharan Africa	Moderately indebted	Reached decision point
Central African Republic	Sub-Saharan Africa	Severely indebted	Reached pre-decision point
Chad	Sub-Saharan Africa	Severely indebted	Reached decision point
Comoros	Sub-Saharan Africa	Severely indebted	Reached pre-decision point
Congo, Dem. Rep.	Sub-Saharan Africa	Severely indebted	Reached decision point
Congo, Rep.	Sub-Saharan Africa	Severely indebted	Reached pre-decision point
Côte d'Ivoire	Sub-Saharan Africa	Severely indebted	Reached pre-decision point
Equatorial Guinea	Sub-Saharan Africa	Less indebted	
Eritrea	Sub-Saharan Africa	Moderately indebted	
Ethiopia	Sub-Saharan Africa	Severely indebted	Reached completion point
Gambia, The	Sub-Saharan Africa	Moderately indebted	Reached decision point
Georgia	Europe & Central Asia	Moderately indebted	
Ghana	Sub-Saharan Africa	Moderately indebted	Reached completion point
Guinea	Sub-Saharan Africa	Moderately indebted	Reached decision point
Guinea-Bissau	Sub-Saharan Africa	Severely indebted	Reached decision point
Haiti	Latin America & Caribbean	Less indebted	
India	South Asia	Less indebted	
Indonesia	East Asia & Pacific	Severely indebted	
Kenya	Sub-Saharan Africa	Moderately indebted	Reached potentially sustainable debt
Korea, Dem. Rep.	East Asia & Pacific	Less indebted	
Kyrgyz Republic	Europe & Central Asia	Severely indebted	
Lao PDR	East Asia & Pacific	Severely indebted	Reached pre-decision point
Lesotho	Sub-Saharan Africa	Less indebted	
Liberia	Sub-Saharan Africa	Severely indebted	Reached pre-decision point
Madagascar	Sub-Saharan Africa	Less indebted	Reached completion point
Malawi	Sub-Saharan Africa	Moderately indebted	Reached decision point
Mali	Sub-Saharan Africa	Moderately indebted	Reached completion point
Mauritania	Sub-Saharan Africa	Moderately indebted	Reached completion point
Moldova	Europe & Central Asia	Moderately indebted	
Mongolia	East Asia & Pacific	Moderately indebted	
Mozambique	Sub-Saharan Africa	Less indebted	Reached completion point

Myanmar	East Asia & Pacific	Severely indebted	Reached pre-decision point
Nepal	South Asia	Moderately indebted	
Nicaragua	Latin America & Caribbean	Severely indebted	Reached completion point
Niger	Sub-Saharan Africa	Moderately indebted	Reached completion point
Nigeria	Sub-Saharan Africa	Severely indebted	
Pakistan	South Asia	Moderately indebted	
Papua New Guinea	East Asia & Pacific	Severely indebted	
Rwanda	Sub-Saharan Africa	Severely indebted	Reached decision point
São Tomé and Príncipe	Sub-Saharan Africa	Severely indebted	Reached decision point
Senegal	Sub-Saharan Africa	Moderately indebted	Reached completion point
Sierra Leone	Sub-Saharan Africa	Severely indebted	Reached decision point
Solomon Islands	East Asia & Pacific	Less indebted	
Somalia	Sub-Saharan Africa	Severely indebted	Reached pre-decision point
Sudan	Sub-Saharan Africa	Severely indebted	Reached pre-decision point
Tajikistan	Europe & Central Asia	Severely indebted	
Tanzania	Sub-Saharan Africa	Less indebted	Reached completion point
Timor-Leste	East Asia & Pacific	Debt not classified	
Togo	Sub-Saharan Africa	Severely indebted	Reached pre-decision point
Uganda	Sub-Saharan Africa	Less indebted	Reached completion point
Uzbekistan	Europe & Central Asia	Moderately indebted	
Vietnam	East Asia & Pacific	Less indebted	Reached potentially sustainable debt
Yemen, Rep.	Middle East & North Africa	Less indebted	Reached potentially sustainable debt
Zambia	Sub-Saharan Africa	Severely indebted	Reached decision point
Zimbabwe	Sub-Saharan Africa	Moderately indebted	

(Source: The World Bank.)

Table 2: **Countries past HIPC decision point**

Country	Decision Point	Completion Point
Benin	July 2000	April 2003
Bolivia	February 2000	June 2001
Burkina Faso	July 2000	April 2002
Cameroon	October 2000	
Chad	May 2001	
Congo, D. R.	July 2003	
Ethiopia	November 2001	April 2004
Gambia, The	December 2000	
Ghana	February 2002	July 2004
Guinea	December 2000	
Guinea-Bissau	December 2000	
Guyana	November 2000	December 2003
Honduras	July 2000	
Madagascar	December 2000	October 2004
Malawi	December 2000	
Mali	September 2000	February 2003
Mauritania	February 2000	June 2002
Mozambique	April 2000	September 2001
Nicaragua	December 2000	January 2004
Niger	December 2000	April 2004
Rwanda	December 2000	
Sao Tome and Principe	December 2000	
Senegal	June 2000	April 2004
Sierra Leone	March 2002	
Tanzania	April 2000	November 2001

Uganda
Zambia

February 2000
December 2000

May 2000

(Source: The World Bank.)

Table 3: Low income countries past decision point

Benin
Burkina Faso
Cameroon
Chad
Congo, D. R.
Ethiopia
Gambia, The
Ghana

Guinea
Guinea-Bissau
Madagascar
Malawi
Mali
Mauritania
Mozambique
Nicaragua

Niger
Rwanda
Sao Tome and Principe
Senegal
Sierra Leone
Tanzania
Uganda
Zambia

(Source: The World Bank.)

Table 4: Low income countries not past decision point

Afghanistan
Angola
Azerbaijan
Bangladesh
Bhutan
Burundi
Cambodia
Central African
Republic
Comoros
Congo, Rep.

Côte d'Ivoire
Equatorial Guinea
Eritrea
Georgia
Haiti
India
Indonesia
Kenya
Korea, Dem. Rep.
Kyrgyz Republic
Lao PDR

Lesotho
Liberia
Moldova
Mongolia
Myanmar
Nepal
Nigeria
Pakistan
Papua New Guinea
Solomon Islands
Somalia

Sudan
Tajikistan
Timor-Leste
Togo
Uzbekistan
Vietnam
Yemen, Rep.
Zimbabwe

(Source: The World Bank.)

Appendix 2: Econometrics

Equation 2: Additionality

Regression results for $a = c + \beta_1 * b$

G5-countries

Dependent Variable: ?DEBTREDEXP

Method: Pooled Least Squares

Sample: 1992 2002

Included observations: 11

Number of cross-sections used: 5

Total panel (unbalanced) observations: 54

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-7597.240	4067.009	-1.868017	0.0674
?ODA	1.929320	0.532542	3.622854	0.0007
R-squared	0.201536	Mean dependent var		6095.774
Adjusted R-squared	0.186181	S.D. dependent var		12232.33
S.E. of regression	11035.02	Sum squared resid		6.33E+09
Log likelihood	-578.2804	F-statistic		13.12507
Durbin-Watson stat	0.519967	Prob(F-statistic)		0.000662

OECD countries

Dependent Variable: ?DEBTREDEXP

Method: Pooled Least Squares

Sample: 1992 2002

Included observations: 11

Number of cross-sections used: 18

Total panel (unbalanced) observations: 169

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1838.625	682.2308	-2.695018	0.0078
?ODA	1.217388	0.151765	8.021541	0.0000
R-squared	0.278135	Mean dependent var		1995.382
Adjusted R-squared	0.273812	S.D. dependent var		7426.487
S.E. of regression	6328.603	Sum squared resid		6.69E+09
F-statistic	64.34512	Durbin-Watson stat		0.530255

Prob(F-statistic) 0.000000

Equation 3: Inflation and Debt Stock

Regression results for $\pi = c + \beta_1 * ED$

Dependent Variable: ?INFLATION_CSMR
 Method: Pooled Least Squares
 Sample: 1980 1999
 Included observations: 20
 Number of cross-sections used: 50
 Total panel (unbalanced) observations: 774
 Cross sections without valid observations dropped

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-127.6742	48.77693	-2.617512	0.0090
?DEBTSTOCKGDP	2.368220	0.319126	7.420956	0.0000
R-squared	0.066585	Mean dependent var		118.6934
Adjusted R-squared	0.065376	S.D. dependent var		1028.374
S.E. of regression	994.1907	Sum squared resid		7.63E+08
F-statistic	55.07059	Durbin-Watson stat		1.731709
Prob(F-statistic)	0.000000			

Equation 4: Real Interest and Debt Stock

Regression results for $r = c + \beta_1 * ED$

Dependent Variable: ?REALINTEREST
 Method: Pooled Least Squares
 Sample: 1980 1999
 Included observations: 20
 Number of cross-sections used: 52
 Total panel (unbalanced) observations: 666
 Cross sections without valid observations dropped

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.634911	1.794867	4.810892	0.0000
?DEBTSTOCKGDP	-0.023771	0.010771	-2.206835	0.0277
R-squared	0.007281	Mean dependent var		6.025149
Adjusted R-squared	0.005786	S.D. dependent var		34.94590
S.E. of regression	34.84465	Sum squared resid		806195.5
F-statistic	4.870120	Durbin-Watson stat		1.163993
Prob(F-statistic)	0.027667			

Dependent Variable: ?REALINTEREST
 Method: Pooled Least Squares
 Sample(adjusted): 1981 1999
 Included observations: 19 after adjusting endpoints
 Number of cross-sections used: 52
 Total panel (unbalanced) observations: 637
 Cross sections without valid observations dropped

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.07067	1.854786	5.429560	0.0000
?DEBTSTOCKGDP(-1)	-0.034775	0.011066	-3.142497	0.0018
R-squared	0.015313	Mean dependent var		6.261966
Adjusted R-squared	0.013763	S.D. dependent var		35.68239
S.E. of regression	35.43600	Sum squared resid		797375.7
F-statistic	9.875289	Durbin-Watson stat		1.197053
Prob(F-statistic)	0.001753			

Equation 5: Savings and Debt Stock

Regression results for $S = c + \beta_1 * ED + \beta_2 * r$

Dependent Variable: ?SAVINGS
 Method: Pooled Least Squares
 Sample: 1980 1999
 Included observations: 20
 Number of cross-sections used: 52
 Total panel (unbalanced) observations: 638
 Cross sections without valid observations dropped

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.136490	0.866370	10.54571	0.0000
?DEBTSTOCKGDP	-0.012179	0.005144	-2.367481	0.0182
?REALINTEREST	-0.012098	0.018473	-0.654907	0.5128
R-squared	0.009153	Mean dependent var		7.738401
Adjusted R-squared	0.006032	S.D. dependent var		16.36746
S.E. of regression	16.31802	Sum squared resid		169086.3
F-statistic	2.932918	Durbin-Watson stat		0.131407
Prob(F-statistic)	0.053963			

Equation 6: Private Investments and Debt Stock

Regression results for $IPri = c + \beta_1 * ED + \beta_2 * r + \beta_3 * S$

Dependent Variable: ?PRI_INVEST
 Method: Pooled Least Squares
 Sample: 1980 1994
 Included observations: 15
 Number of cross-sections used: 39
 Total panel (unbalanced) observations: 433
 Cross sections without valid observations dropped

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.13415	0.573990	19.39782	0.0000
?DEBTSTOCKGDP	-0.000207	0.003418	-0.060551	0.9517
?REALINTEREST	-0.001417	0.027593	-0.051339	0.9591
?SAVINGS	-0.050056	0.022445	-2.230206	0.0263
R-squared	0.011522	Mean dependent var		10.75368
Adjusted R-squared	0.004610	S.D. dependent var		7.841237
S.E. of regression	7.823142	Sum squared resid		26255.47
F-statistic	1.666909	Durbin-Watson stat		0.398961
Prob(F-statistic)	0.173446			

Dependent Variable: ?PRI_INVEST
 Method: Pooled Least Squares
 Sample(adjusted): 1984 1994
 Included observations: 11 after adjusting endpoints
 Number of cross-sections used: 38
 Total panel (unbalanced) observations: 323
 Cross sections without valid observations dropped

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.13562	0.638018	17.45347	0.0000
?DEBTSTOCKGDP(-4)	7.61E-05	0.004199	0.018128	0.9855
?REALINTEREST	-0.006663	0.028254	-0.235842	0.8137
?SAVINGS	-0.073744	0.027539	-2.677792	0.0078
R-squared	0.022504	Mean dependent var		10.58854
Adjusted R-squared	0.013312	S.D. dependent var		8.046364
S.E. of regression	7.992629	Sum squared resid		20378.40
F-statistic	2.448056	Durbin-Watson stat		0.417612
Prob(F-statistic)	0.063708			

Equation 7: Public Investments and Debt Stock

Regression results for $IPub = c + \beta_1 * ED + \beta_2 * r + \beta_3 * S$

Dependent Variable: ?PUB_INVEST
 Method: Pooled Least Squares
 Sample: 1980 1994
 Included observations: 15
 Number of cross-sections used: 39
 Total panel (unbalanced) observations: 444
 Cross sections without valid observations dropped

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.400490	0.447233	21.01924	0.0000
?DEBTSTOCKGDP	0.012257	0.002707	4.528788	0.0000
?REALINTEREST	0.023768	0.021185	1.121934	0.2625
?SAVINGS	-0.164229	0.017894	-9.177777	0.0000
R-squared	0.199496	Mean dependent var		9.585500
Adjusted R-squared	0.194038	S.D. dependent var		6.966458
S.E. of regression	6.254165	Sum squared resid		17210.42
F-statistic	36.55119	Durbin-Watson stat		0.200421
Prob(F-statistic)	0.000000			

Dependent Variable: ?PUB_INVEST
 Method: Pooled Least Squares
 Sample(adjusted): 1993 1994
 Included observations: 2 after adjusting endpoints
 Number of cross-sections used: 22
 Total panel (unbalanced) observations: 42
 Cross sections without valid observations dropped

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	14.25706	2.038890	6.992557	0.0000
?DEBTSTOCKGDP(-13)	-0.019466	0.032774	-0.593937	0.5561
?REALINTEREST	-0.053496	0.109774	-0.487327	0.6288
?SAVINGS	-0.381330	0.064040	-5.954533	0.0000
R-squared	0.485500	Mean dependent var		9.752272
Adjusted R-squared	0.444882	S.D. dependent var		9.186834
S.E. of regression	6.844767	Sum squared resid		1780.332
F-statistic	11.95271	Durbin-Watson stat		0.259512
Prob(F-statistic)	0.000012			

Equation 8: Foreign Direct Investments and Debt Stock

Regression results for $FDI = c + \beta_1 * ED$

Dependent Variable: ?FDI
 Method: Pooled Least Squares
 Sample: 1980 1999
 Included observations: 20
 Number of cross-sections used: 57
 Total panel (unbalanced) observations: 837
 Cross sections without valid observations dropped

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.351148	0.349951	3.860966	0.0001
?DEBTSTOCKGDP	0.005638	0.002534	2.224518	0.0264
R-squared	0.005891	Mean dependent var		1.932248
Adjusted R-squared	0.004701	S.D. dependent var		6.752936
S.E. of regression	6.737045	Sum squared resid		37898.79
F-statistic	4.948478	Durbin-Watson stat		1.034332
Prob(F-statistic)	0.026380			

Dependent Variable: ?FDI
 Method: Pooled Least Squares
 Sample(adjusted): 1986 1999
 Included observations: 14 after adjusting endpoints
 Number of cross-sections used: 57
 Total panel (unbalanced) observations: 580
 Cross sections without valid observations dropped

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.064191	0.426635	2.494385	0.0129
?DEBTSTOCKGDP(-6)	0.011523	0.002977	3.871072	0.0001
R-squared	0.025271	Mean dependent var		2.162747
Adjusted R-squared	0.023584	S.D. dependent var		7.764127
S.E. of regression	7.672024	Sum squared resid		34021.05
F-statistic	14.98520	Durbin-Watson stat		1.107701
Prob(F-statistic)	0.000121			