

## Savings, Investment, and Economic Reforms in Developing Countries

## **EFI Mission**

EFI, the Economic Research Institute at the Stockholm School of Economics, is a scientific institution which works independently of economic, political, and sectional interests.

EFI conducts theoretical and empirical research in management and economic sciences, including selected related disciplines. EFI also encourages and assists in the publication and distribution of its research findings, and is involved in the PhD program at the Stockholm School of Economics.

EFI selects its projects based on the need for theoretical or practical development of a research domain, on methodological interests, and on the generality of a problem.

### **Research Centres**

A	Management and Organisation Theory
B	Accounting and Managerial Finance
C	Managerial Economics
CEE	Centre for Ethics and Economics
CFR	Centre for Risk Research
CHE	Centre for Health Economics
D	Marketing, Distribution, and Industry Dynamics
ES	Economic Statistics
F	Public Management
FDR	The Foundation for Distribution Research
FI	Finance
I	Information Management
IEG	International Economics and Geography
P	Economic Psychology
PMO	Man and Organisation
PSC	Policy Science
RV	Law
S	Economics
T	Industrial Production

### **Directors**

Prof. Sven-Erik Sjöstrand
Prof. Lars Östman
Prof. Peter Jennergren
Adjunct Prof. Hans de Geer
Prof. Lennart Sjöberg
Prof. Bengt Jönsson
Prof. Lars-Gunnar Mattsson
Prof. Anders Westlund
Prof. Nils Brunsson
Acting Prof. Richard Wahlund
Prof. Clas Bergström
Prof. Mats Lundahl
Prof. Lennart Sjöberg
Prof. Bengt Stymne
Adjunct Prof. Brita Schwarz
Prof. Bertil Wiman
Prof. Lars Bergman
Prof. Christer Karlsson

Chairperson: Prof. Sven-Erik Sjöstrand

Director: Ekon Lic. Rune Castenäs

---

EFI, Box 6501, S-113 83 Stockholm, Sweden • Internet: [www.hhs.se/efi/](http://www.hhs.se/efi/)  
Telephone: +46(0)8-736 90 00 • Fax: +46(0)8-31 62 70 • E-mail [efi@hhs.se](mailto:efi@hhs.se)

# SAVINGS, INVESTMENT, AND ECONOMIC REFORMS IN DEVELOPING COUNTRIES

Sara Johansson



STOCKHOLM SCHOOL OF ECONOMICS  
EFI, THE ECONOMIC RESEARCH INSTITUTE



A Dissertation for the  
Doctor's Degree in Philosophy (Economics)  
Stockholm School of Economics

© The author  
ISBN 91-7258-470-X

Distributed by  
EFI, Stockholm School of Economics  
Box 6501, S-113 83 Stockholm  
Sweden  
Stockholm 1998

## **Preface.**

“Spend all of Christmas writing your preface, Sara”, my supervisor said in his most supervising tone. “It is really the most important chapter of the whole thesis, you see, it is your opportunity to kick people a little, in between the lines.”

“Well, you’re not very sharp, are you?” I answered in my perhaps not most respectful tone. “You’ll be first in line, I mean, who is a Ph.D. student to kick if not her supervisor?”

This little December dialogue provides an apt illustration of Magnus Blomström’s main characteristics as a supervisor. He has a very practical mind. He has a wealth of experience of academic work. He has a high forbearance with impertinence. He tolerates disobedience (this preface is written in March).

Magnus has been my main supervisor throughout the writing of this thesis, but I have worked with, and relied on, a team made up of him and Ari Kokko. The two have proved very complementary, not only to each other but also to me. They have been patient when I have been restless, they have been impatient when I have been idle, they have seen the broad picture when I have been caught in details, and they have spotted inconsistencies when I have been in an improvising mood. Their knowledge of, and interest in, policy oriented research has been particularly encouraging throughout my thesis work. Finally, the sense of humour and frankness the three of us share have made our discussions open and in-between-the-lines-kicking quite unnecessary.

The beginning is the hardest part (after the first paper, one can safely claim to be close to finishing). Chapter two of this thesis springs from my internship at the International Monetary Fund. I would like to thank especially John Hicklin, Hamid

Faruquee and Christian Thimann, for providing me with an idea and many comments and suggestions for the paper on Indonesia.

At the SSE, Anders Vredin and Torbjörn Becker both spent time, energy and probably several ball-point pens on helping me improve the theory and econometrics of the same paper. Their efforts were well appreciated.

Tove Strauss and I have worked closely while putting together the database and the framework used in the fourth chapter. We have spent a great amount of time together trying to figure out how to best manipulate investment, Microsoft Excel, the World Bank and our supervisors, and I think our teamwork has proved successful in at least three cases out of four.

At the Department of International Economics, Mats Lundahl developed my interest in development economics, Per Ronnås gave me ample encouragement and opportunity for fieldwork, and Örjan Sjöberg gave me his very best literature references and e-mail jokes. Finally, Mario Zejan's tranquil and patient Argentinean argumentation has proved vital in soothing my violent Swedish temper in times of frustration.

My most, perhaps only, academic characteristic is that I am hopelessly unorganised. Luckily, there are understanding people who with a patient smile have helped me with that complicated administrative side of things. Carin Blomkvist, Pirjo Furtenbach, Kerstin Niklasson and Lilian Öberg have been there for printing, sending, re-sending, faxing, re-faxing, booking, finding, getting, and for answering stupid questions. Without their help, the tricky task of finishing off a thesis while moving abroad would never have been accomplished. I am also deeply indebted to Azad for his constant efforts to help smooth the hard practical edges of my student life.

Although it is supposedly nicer to give than to get, it was with great pleasure that I

spent the money from the Fulbright Commission, the Marcus Wallenberg Foundation and the Helge Ax:son Johnsson Foundation during my very enriching year at Harvard University. Once back from the US, I was also very happy and at ease with receiving money from the Swedish International Development Authority for my thesis work.

The Ph.D. student HQ at Saltmätargatan, with a few spies over in the main building, has fostered a very special brother-sisterhood. Comrades: You know that without You, I would have been bored and desperate on a permanent rather than occasional basis. While I am grateful to all of You for friendship and help, one Comrade deserves special thanks for her patient although apparently hopeless efforts to interpret my Friday Beer messages to the Statistics Department.

Johanna, Lina and Åsa have been immensely tolerant with their lamenting Ph.D. student friend. With time they also knew better than to ask when she would be done.

Then there are all the faithful e-mail friends across the world. I will not name them, as the mere length of the list will give rise to unwanted questions as to how I have spent my time at work. Suffice it to say that they made it worthwhile going to the office on Sunday mornings, too.

I owe my parents everything for their endless love, patience, help, and confidence in me. I can never repay them. I also want to thank my sister Karin for what I modestly believe to be among the best prose and poetry ever exchanged in cyberspace.

The remaining errors and inconsistencies of the last years are probably all mine.

Paris, March 1998.

Sara Johansson





## **Contents.**

### *pg. 1*    **Chapter 1.**

#### **Introduction and summary of the thesis.**

References

### *pg. 19*    **Chapter 2.**

#### **Life cycles, oil cycles, or financial reforms: private savings in Indonesia.**

1. Introduction.
2. Life cycle savings and dependency ratios.
  - 2.1. A life cycle model.
  - 2.2. Extensions.
3. Empirical analysis.
  - 3.1. Method.
  - 3.2. The data.
  - 3.3. Long run savings.
  - 3.4. Savings fluctuations.
4. Conclusion.

References

Table 1. Growth and savings.

Table 2. Estimations of long run savings equation.

Table 3. Estimations of short run savings equation

Appendix one. Sources of data.

Table A1. Correlation matrix.

Appendix two/Table A2. Indonesian private savings 1970-1994.

### *Pg. 56*    **Chapter 3.**

#### **Incredibly helpful? Foreign aid and stabilisation reforms in sub-Saharan Africa.**

1. Introduction.
2. A framework for aid and stabilisation reforms.
  - 2.1. What initiates reform.
  - 2.2. Aid and stabilisation: friends or foes?
  - 2.3. Summary.
3. Stabilisation and aid in sub-Saharan Africa.
  - 3.1. Setting the stage: the origin of the crisis.
  - 3.2. Empirical implications.
  - 3.3. Aid volumes and stabilisation.

- 3.4. Non-aid factors.
- 3.5. Policy overshooting and shadow programs.
- 3.6. Aid history: the timing and sequencing of aid flows.
- 4. Conclusions.

#### References

- Table 1. Aid and stabilisation.
- Table 2. Selected indicators of reform.
- Figure 1. Aid flows and reform programs, 1975-1994.
- Appendix one. Stabilisation chronicles.

### *Pg. 98* **Chapter 4.**

#### **Foreign direct investment and structural adjustment lending.**

- 1. Introduction.
- 2. Reforms, credibility, and foreign direct investment.
  - 2.1. The impact of structural adjustment on foreign direct investment.
  - 2.2. Investment theory and structural reforms.
  - 2.3. Reform design and credibility.
- 3. FDI and structural reforms - an empirical investigation.
  - 3.1. The ALCID data.
  - 3.2. Conventional determinants of FDI.
  - 3.3. Reform intensity and reform design.
  - 3.4. FDI after reforms.
  - 3.5. Averages.
  - 3.6. Estimations.
- 4. Conclusions.

#### References

- Table 1. Conventional determinants of FDI. Dependent variable is FDI/GNP (%).
- Table 2. Average FDI response. Percentage changes.
- Table 3. Average FDI response, no. of obs. per category.
- Table 4. Average long run FDI response, no. obs. per category.
- Table 5. Averages, magnitude/outcome variables.
- Table 6. Averages, design variables.
- Table 7. Reform determinants. Dependent variable is long run changes in FDI inflows.
- Appendix 1. Loans/observations included in the regressions.
- Table A1. Levels. (49 countries, 147/294 observations).
- Table A2. Changes. (33 countries, 99 obs.).
- Table A3. Changes, OED variable included. (30 countries, 76 obs.).
- Appendix 2. Correlation matrices.

## **Chapter 1.**

### **Introduction and summary of the thesis.**

#### **1. Background.**

This thesis consists of three essays within the field of macroeconomics and development. As the reader will discover, the three main chapters are self-contained entities and can be read independently of one another. The purpose of this first chapter is to provide an overview of the issues covered and the results obtained. The essay in chapter two is a case study of the development of private savings in Indonesia from the 1970s up until the beginning of the 1990s. Chapter three provides an analysis of the role of aid in the stabilisation reform process in eight African countries. The fourth and final chapter of the thesis looks at the link between structural adjustment reforms and foreign direct investment in a large sample of developing countries.

The background to this special brew is a longstanding interest in development economics, and in issues regarding credible policy making, economic transition, and the role of international organisations. Practical work with development assistance effectiveness has also spurred my concerns for the role of outsiders in supporting or deferring reform. The topics may seem disparate; yet, the three studies share some fundamental characteristics. First, they are concerned with developing countries exclusively, although many of the questions raised regarding both savings and investment remain of great importance also to industrialised countries. Second, they address important contemporary issues in macroeconomics and policymaking. Third, they all

have an inherently empirical approach. The third and fourth chapters also share a common focus on economic reforms and credible policymaking.

The three studies in this thesis also share another and more unfortunate characteristic. The quality of macroeconomic data is a cause of concern already in industrialised countries; in developing countries, the task of collecting, processing and publishing reliable and consistent macroeconomic data is all the more daunting. Here, the difficulties are even more pronounced since the majority of countries studied have been subject to considerable turbulence during the time period under study. While every effort has been made to ensure accuracy and consistency in the data, comparisons across time and countries must be interpreted with caution.

Caveat in place, an overview of the three subsequent chapters follows below.

## **2. Private savings in Indonesia.**

Understanding private savings behaviour remains fundamental to economic policymakers as well as researchers, whether empirical or theoretical. Savings provide investment capital, and so identifying the factors that spur or hamper capital accumulation is a means of understanding how to promote self sustainable economic growth in poorer countries.

The East and Southeast Asian region has for long served as the prime example of a virtuous circle of high savings and growth, and has been contrasted to the substantially lower levels of private savings in stagnant economies in sub-Saharan Africa. Of course, the financial turmoil which took its beginning in 1997 and which severely affected several of the Asian growth miracles, shows the importance of not only accumulating capital but putting it to productive use to sustain economic stability and growth. Nevertheless, the

domestic savings rates of this region have remained higher than in most of the developing world.

There are three main reasons why Indonesian private savings deserve our special attention among the Southeast Asian countries. First, within the region, the development of private savings in Indonesia is a case apart. Compared to Malaysia, Singapore and Thailand, Indonesia had low private savings rates by the beginning of the 1970s. By the 1990s, however, private savings as share of private disposable income had more or less converged to the levels of the other Southeast Asian countries.

The second reason is that the steady growth in private savings rates has taken place in a period of important structural changes, all of which are plausible candidates for influencing savings rates. In the last three decades, Indonesia has graduated from the group of very poor countries to a lower middle income country. The population age pyramid has become less broad based as the share of children relative to working adults has fallen. An oil exporting country, Indonesia has been subject to considerable swings in international commodity prices, affecting both public and private wealth. Finally, Indonesia began some financial reforms in 1983.

Third, however, is the observation that Indonesia has remained a highly indebted country despite this remarkable catch-up. With the long-standing dependence on foreign savings to meet investment needs, stimulating private savings remains a policy objective of very high priority. It is therefore important to understand what the decisive factors are behind the Indonesian savings performance, as to identify if and how to stimulate savings in the private sector.

The present study aspires to have the following value-added to the existing

literature. First, an in-depth one-country study makes it possible to consolidate recent data available from national sources in a consistent framework. Second, previous studies of Indonesia have not provided a testable framework with explicit predictions regarding the role of nativity or public savings in determining private savings rates.

The life cycle overlapping generations models (see e.g. Higgins and Williamson, 1996) serve as the benchmark for the analysis of Indonesian savings. The backbone of this class of models is that savings depend on intergenerational heterogeneity in one way or the other. Generally speaking, working people are savers and children and retired people are dissavers – total private savings is simply the sum of the savings of the savers less the dissavings of the dissavers. The more savers there are relative to children and old people, the higher will savings be. Equally, the higher the income of the savers (relative to the previous and now dissaving generation) the higher will aggregate savings be. The life cycle hypothesis has been supported by several cross country studies, in that income growth as well as demographic variables reflecting the population age distribution are correlated with private savings (e.g. Edwards, 1995, Higgins and Williamson, 1996, Lahiri, 1989, Rossi, 1989, and Modigliano, 1970).

Another important issue is the influence of public savings on private savings. In the case of complete Ricardian Equivalence, any effort at reducing budget deficits would immediately be counteracted by a complete reduction in the private sector, leaving aggregate savings unchanged (see e.g. Becker, 1995). Empirical studies of developing countries suggest, however, that while there is a tendency for government savings to crowd out private savings, the offset is less than one for one, typically around one half to two thirds (Edwards, 1995, Masson *et al.* 1995, Corsetti *et al.* 1992).

By construction, the simpler life cycle perspective disregards the effects of

expectations and temporary changes in economic conditions. Following the permanent income hypothesis, savings should indeed be more sensitive to income increases that are perceived as temporary than to those which are perceived as permanent. This argument has been extended to the impact of terms of trade fluctuations on national savings (see e.g. Razin and Svensson, 1983, and Persson and Svensson, 1985), on the assumption that terms of trade have a strong impact on real income and wealth and thereby have implication for savings. Increases in terms of trade (wealth) which are perceived as temporary should therefore be saved to a greater extent than those that are perceived to be temporary should. The link between transitory terms of trade shocks and changes in private savings rates have been established by Fry (1986) and Ostry and Reinhart (1992) among others, suggesting that savings are indeed procyclical in this respect.

In view of the wealth of studies on private savings, it is quite surprising to find that there are very few studies on the Indonesian case, in spite of the unusual growth in Indonesian savings rates. A study by Lahiri (1989) finds that income growth is linked to Indonesian private savings while demographics are not; the study by Faruquee and Husain (1995) comes to the opposite conclusion.<sup>1</sup> Erquiaga (1987) finds real deposit rates to be the only significant determinant of private savings.<sup>2</sup>

The life cycle model used in the present study predicts that income growth and dependency rates (the ratios of dissavers to savers) as well as public savings, here equivalent to taxation, should have an impact on private savings. Growth, by increasing savers' disposable income, has a positive impact, taxation, by reducing the same, has a

---

<sup>1</sup> Note, however, their discussion centres on the role of retired vs. working age people, and leaves out the role of reduction in nativity.

<sup>2</sup> Note that the period under study is not identical for the three studies.

negative impact. A fall in dependency rates, i.e. a fall in the ratio of dissavers to savers, will increase savings. The model does not capture any effects from terms of trade or financial liberalisation.

An error correction specification is used to test the validity of the theoretical framework on Indonesian private savings. The error correction and cointegration approach has the advantage that it can reconcile theoretical insights about the longrun behaviour with a relatively flexible treatment of short run dynamics. Moreover, error correction methods can deal with nonstationary data, and the apparent trend in private savings in Indonesia must somehow be acknowledged in the choice of methods.

The predictions from the model do well in estimations of the long run savings behaviour. The results suggest that the demographic transition in the population has boosted private savings rates by lowering the number of dissavers relative to the number of savers in the economy. Public savings are found to reduce private savings, but the crowding out effect is far from complete, one implication being that sound public finances should indeed increase aggregate savings. Terms of trade fluctuations have a considerable impact, but on the short run dynamics of savings only, giving credit to the argument that savings rates indeed are procyclical in this respect.

### **3. Economic reforms in developing countries.**

The third and fourth chapters share an explicit focus on an area which – unfortunately – does not seem to go out of fashion, whether in the current debate or in academic research: that of economic reforms, their effects, and whether, when, where and how to implement them to promote economic stability and sustainable growth. "Economic policy reforms" and "structural adjustment programs" have become next to



analogous terms in the economic literature. Here, "structural adjustment" and "stabilisation reforms" refers more specifically to the market oriented economic reforms that in the last decade and a half have been called for in debtor developing countries, and where international organisations such as the IMF and the World Bank have played a leading role. The debt crisis, which developed in Latin America in the beginning of the 1980s, called for far-reaching economic reforms in several countries, giving structural adjustment its first dash of fame. However, the pressure for policy reform has arisen also in many Asian and African developing economies, and in the former communist countries in Eastern Europe. And if there is an optimum reform design, there is as yet no consensus of what it looks like, as is evident in the current heated debate on the best cure for the crises ridden Asian countries.

Many of the reforming countries share a similar background story. Prior to the call for reforms, ambitious economic and political agendas had strained public finances to the limit, hence the need to resort to external sources of lending to finance the ensuing fiscal gap. Successively, the economies became more vulnerable. Exogenous shocks, such as sharp deteriorations in terms of trade and the collapse of the previous international lending boom, would therefore precipitate serious macroeconomic imbalances, manifested in uncontrollable inflation and flight from the currencies.

In the beginning of the 1980s, many of the developing countries found themselves in a deadlock, unable to pay back their foreign debts and unable to retrieve new sources for financing. The intensity of the crisis in combination with pressure from foreign official and private lenders required a reassessment of economic policy. As a result, many countries embarked on reform programs. The objective was to reduce budget deficits and tighten monetary policy, to liberalise the economies, and to generally become more

market oriented.

However, the responses to the economic crisis as well as the experiences from structural adjustment programs have been very different in different countries. Whereas some countries managed to reform their respective economic systems, others are still struggling with problems of stabilisation and structural reform. Further, there are several instances where reform has been undertaken, but the economy has fallen short of recovering. The differences in response and result from economic reforms are the overall theme of the two subsequent chapters.

Economic reform programs are never a guaranteed success, neither on a sector level – trade financial sector, privatisation – nor when the overall effect is considered. Indeed, the respective results are likely to be at least partly endogenously determined. In the attempts to reduce the role of the state and improve resource allocation, reform programs have assigned a new and much expanded role for the private sector, whether domestic or foreign, as a driving economic force. Since reform programs rely on a sufficiently enthusiastic response from the non-government sector, it is a key issue whether and how the design of economic reform programs will influence the behaviour of the private agents (see Calvo, 1989, Rodrik, 1989, 1991, Van Wijnbergen, 1985, 1992 among others). Following this, questions of "optimal" content, structure and sequencing of the reform process have given rise to a substantial debate in the economic literature. How and what influences the success of reforms? And what particular reform designs are likely to be perceived as most credible and sustainable to decision makers outside the government sector, given the prevailing multitude of political as well as financial constraints? These questions provide the background for the two essays on economic reforms.

#### **4. Aid and stabilisation reforms.**

What is the role of foreign aid in encouraging or deterring stabilisation reforms in developing countries? While there is almost an identity between some inflow of aid money and attempts at policy reforms, the disparate results in terms of reform success is evidence enough that aid may not always be as effective as intended in this respect.

Aid donors have broadly two reasons for coupling large aid disbursements to policy reform in recipient countries. The first is that stabilisation reforms are costly from a political point of view, and inherently unpopular reforms will be very difficult to implement and are likely to fail altogether. Arguably, development assistance can be used to mitigate the social costs imposed by cuts in government expenditure, and by increasing foreign exchange reserves, can also be used to enhance the credibility of e.g. a currency reform. Moreover, aid can and has been used as an incentive to encourage and signal support for economic reforms (see e.g. Sachs, 1995). In all of these cases, aid increases the probability that reforms will be successfully maintained, and will therefore have a positive impact on the credibility of the stabilisation process.

However, there are also arguments suggesting that aid can have a negative role in the stabilisation process. While aid mitigates reform costs, it simultaneously reduces the costs of living with instabilities. By providing alternative means of financing budget deficits, aid can induce governments to postpone reforms that otherwise would have been unavoidable.

In fact, there are several very different experiences from aid and stabilisation reforms. This study looks at the stabilisation process in eight sub-Saharan countries during the 1980s. The countries studied have in common that they have been large

recipients of aid during the attempts at stabilisation. However, their respective experiences from stabilisation reforms are highly varied, ranging from relatively rapid stabilisation in Ghana to decades of accelerating macroeconomic instability in Zaire. The analysis in this paper hinges on the argument that aid can indeed both enhance and reduce the (perceived) probability that reforms will be successfully undertaken and maintained. Which effect dominates will not unconditionally be related to the amount of aid as such, but will depend on whether and how reforms are undertaken.

The relationship between aid and stabilisation relate to two strands of the economic literature: the macroeconomic effects of aid, and the political economy of reform. Unlike much of the aid effects and effectiveness literature, the present study does not set out to establish a positive or negative causal link from aid to stabilisation.<sup>3</sup> Unlike more general studies of the political economy of reform, this study concentrates on large aid recipients, on the somewhat tautological argument that aid has a particular and therefore more visible role in these countries.

Macro studies of aid effectiveness tend to be relatively large-scale cross-country econometric studies à la Boone (1994a, 1994b) or Burnside and Dollar (1996); studies of the political economy of reform tend to be based on one-country case studies. This essay falls somewhere in between. By leaving the one-country level, it aspires at some degree of generality. The case study method permits a qualitative type of analysis which cross-country regressions cannot easily accommodate.

The literature on the political economy of reform gives some guidance as to what factors trigger and support reform in developing countries (Haggard and Webb, 1993,

---

<sup>3</sup> See e.g. White (1992) for an overview of the empirical literature and its methodological pitfalls.

Nelson, 1984, Rodrik, 1991). The success of stabilisation reforms is likely to be influenced by several factors: a deep economic crisis that gives the political leeway to undertake reforms in the first place, a favourable turn in the international business cycle which backs up reforms once they have been implemented, and a change of government which increases the credibility of reform commitments, among others. The role of aid is ambiguous, however. Aid can be counterproductive because aid recipients as well as donors face credibility problems. Recipients may temporarily mimic reform commitment only to secure aid inflows. Donors may be prepared to renegotiate and renew an aid contract after policy slippage, thereby devaluing the impact of policy conditionality on reforms. Stabilisation will not be achieved unless reform commitment is credible, and only credible conditionality serves its purpose.

However, for the eight countries under study, there does not appear to be any systematic relationship between stabilisation and the depth of the crisis or international terms of trade. This study indicates that the real impact of policy conditionality – its credibility – depends largely on the nature of the relationship between donors and recipients.

An overall conclusion from this study is that aid flows are "sticky" downwards. This stickiness separates regimes with a history of large aid inflows from others. The conditional stabilisation aid of the 1980s should by definition be policy sensitive, relative to unconditional aid. However, among traditionally aid dependent countries, conditionality has been less efficient, as previous aid flows have defined a floor for aid levels, irrespective of policy performance. In countries where aid contracts for various reasons repeatedly have been renegotiated, aid conditionality seems to have lost its function.

Moreover, stabilisation has followed on far-reaching shadow programs, and aid inflows have followed rather than preceded successful programs, that is, supporting manifested reform commitment rather than announced intentions.

The overall conclusion is that for reform commitment to be credible, not only from recipient governments' side but also from the donors' side, aid must be policy sensitive.

## **5. Structural adjustment and foreign direct investment.**

The issues of policy credibility and reform failure rest on the underlying assumption that unless the private sector trusts the reforms, they will simply not succeed. It is logical to ask, then, whether credible reforms will indeed lead to the desired increase in private investment. Here, foreign direct investment (FDI) may have a particular role to play. In the last decade, foreign direct investment flows to developing countries have increased dramatically - but far from uniformly (see e.g. UNCTAD, 1995). While MNEs have increased their presence in most reforming countries, the differences are very large, and some countries actually received less FDI after reforms were launched. If and how are these investment flows related to the design and implementation of economic reforms? This is the topic of the final chapter of the thesis.

As developing countries have improved their economic environment, the motive for FDI has arguably shifted from accessing protected markets, to profiting from beneficial production conditions for exports. At the same time, however, there are studies which maintain that economic reforms increase uncertainty, that uncertainty is intrinsically harmful for investment, and that investment levels therefore are likely to respond very slowly to reforms (e.g. Serven and Solimano, 1992a, 1992b, 1993).

In line with the literature on the political economy of reform, we should expect the

investment response to depend on whether the design and implementation of reforms makes it likely that they will be successfully sustained. The argument should have a bearing on all private investment, although the reaction function of both domestic firms and multinational enterprises may be somewhat different. On the one hand, FDI may be a substitute for exports in the face of trade obstacles. Such tariff jumping investment is not likely to increase after trade liberalisation. On the other hand, compared to the majority of domestic investors in developing countries, MNEs have a menu of investment opportunities/countries to choose from. Their investment decisions may therefore be an important signal of that the reform package in question is a credible one and that the economic environment is indeed favourable to private sector activities.

The present study uses a database on World Bank structural adjustment lending to test some features of the relationship between FDI and economic reforms. Surprisingly little attention has been given to the FDI response after policy reforms (exceptions being e.g. Blomström and Lipsey, 1993, Globerman *et al.*, 1996, and UNCTAD, 1995) and virtually no studies link the MNE's investment decisions to specific features of the reform process. The purpose of this study is to put forward some systematic evidence on the FDI response as well as the precise links to reforms. The questions addressed are, first, whether FDI reacts differently after structural adjustment reforms have been launched, and second, whether the characteristics of reform programs can explain the new FDI pattern. However, since reforms have been launched at different times in different countries, it is insufficient to look only at period averages, comparing e.g. the 1980s with the 1990s. The database used here permits us to nail down the specific year for the beginning of structural adjustment lending for each country.

To answer the first question, we estimate the relationship between FDI inflows (in

levels) and a set of conventional determinants of FDI, such as growth, market size, wealth and exports, both before and after reforms, and test whether there is a significant difference between them. The results show a very clear change in the relationship between FDI and its conventional determinants. The emphasis among determinants changes, from income level before reforms, to market size, exports and growth after reforms. It seems plausible that MNEs have become more sensitive to host countries' economic environment after reforms.

However, the study also shows that variations in FDI response are large. On the argument that the variations in FDI might be related to reform characteristics, some aspects of reform design and implementation are tested in order to provide an answer to the second question raised above. The reform dimensions we look at are design, in terms of *scope*, how many different reform categories have been addressed in the adjustment program, and *speed*, how quickly reforms should be implemented. We measure performance by *magnitude*, indicating how far-reaching reforms have been in reality, and by an assessment variable derived from the World Bank's own evaluations. Following Rodrik (1991), we expect magnitude - far reaching reforms, that is - to have a positive influence on FDI, while there are arguments both in favour and against large scope and speed.

However, the estimations show a surprisingly weak relationship between reform magnitude and FDI. The one significant variable is related to the financial sector, since countries which have increased real interest rates are also, on average, large recipients of FDI. A possible interpretation is that attempts to address distortions in the financial sector is an important signal of reform commitment. Moreover, financial reforms tend to arrive at a later stage in the sequencing of reforms. The significance of financial reforms



can also be an indication of the long-term nature of economic reforms. This time aspect is further born out in the importance of preceding macroeconomic loans. It appears vital to start off on a broader base, addressing the overall macroeconomic framework. Neither speed nor scope has any influence on FDI.

Some of these results differ from those for overall private investment. Private investors react on reforms of large magnitude and wide scope. This seems to suggest that domestic investors prefer to verify that reforms are well in place before they believe it (magnitude) while foreign investors react on attractive design and implementation. Whether these differences are a result from different incentives, different information sets, or both, is difficult to tell. It is possible that the often oligipolistic nature of the sectors where MNEs operate gives an additional incentive to swift action. An area for future research along these thoughts could be a comparison of the behaviour of foreign companies who have been operating in the reforming country/countries before reforms with that of new comers. Whereas new entrants are compelled to act with limited information at hand, it is conceivable that incumbent MNEs behave more like local firms – domestic investors can to a greater extent afford to wait and see.

## **6. Counsel to the reader.**

Enjoy.

## References:

- Becker, T. (1995), "Government Debt and Private Consumption: Theory and Evidence." *Stockholm School of Economics Working Papers in Economics and Finance*; No. 71, October 1995.
- Blomström, M. and R. Lipsey (1993), "Foreign Firms and Structural Adjustment in Latin America: Lessons from the Debt Crisis", in Hansson, G. (ed), *Trade, growth and development: The role of politics and institutions: Proceedings of the 12th Arne Ryde Symposium, 13-14 June 1991, in honour of Bo Södersten*. London and New York: Routledge, 1993.
- Boone, P. (1994a), "The Impact of Foreign Aid on Savings and Growth.", London School of Economics, mimeo.
- (1994b), "Politics and The Effectiveness of Foreign Aid.", London School of Economics, mimeo.
- Burnside, C., and D. Dollar (1996), "Aid, Policies and Growth", World Bank, Macroeconomics and Growth Division, mimeo.
- Calvo, G. (1989), "Incredible Reforms", in G. Calvo *et al.*(eds), *Debt, Stabilization and Development*, London: Blackwell.
- Corsetti, G., K. Schmidt-Hebbel, and S. Webb (1992), "Household Saving in Developing Countries: First Cross-Country Evidence.", *World Bank Economic Review*, Vol 6.
- Edwards, S. (1995), "Why Are Saving Rates So Different Across Countries?: An International Comparative Analysis." *NBER Working Papers*; No. 5097, NBER, Cambridge, Mass.
- Erquiaga, Ph. (1987), "Improving Domestic Resource Mobilization Through Financial Development: Indonesia." *Economic Staff Papers* No. 40, Asian Development Bank, Manila.
- Faruquee, H., and A. Husain (1995), "Saving Trends in Southeast Asia: A Cross Country Analysis." *IMF Working Papers* No. 39, International Monetary Fund, Washington DC.

- Fry, M. (1986) "Terms of Trade Dynamics in Asia: An Analysis of National Saving and Domestic Investment Responses to Terms of Trade Changes in 14 Asian LDCs." *Journal of International Money and Finance*, Vol. 5.
- Globerman, S., A. Kokko, M. Revelius, and M. Sami (1996), "MNE Responses to Economic Liberalization in a Developing Country: Evidence from India." *Journal of Economic Development*; vol 21.
- Haggard, S. and S. Webb (1993), "What Do We Know About the Political Economy of Economic Policy Reform?", *The World Bank Research Observer*, 8(2).
- Higgins, M., and J. Williamson (1996), "Asian Demography and Foreign Capital Dependence." *NBER Working Papers*; No. 5560, NBER, Cambridge, Mass.
- Lahiri, A. (1989), "Dynamics of Asian Savings: The Role of Growth and Age Structure." *IMF Staff Papers*, Vol. 36.
- Masson, P., T. Barnyomi, and H. Samieie (1995), "International Evidence on the Determinants of Private Saving." *IMF Working Papers*; No. 51, Washington DC., International Monetary Fund.
- Modigliani, F. (1970), "The Life Cycle Hypothesis of Saving and Intercountry Differences in Saving Ratio." In *Induction, Growth and Trade: Essays in Honour of Sir Roy Harrod*, ed. W. A. Eltis *et al.* Clarendon Press, Oxford.
- Nelson, J. (1984), "The Political Economy of Stabilization: Commitment, Capacity, and Public Response", *World Development*, Vol 12, No. 10.
- Ostry, J., and C. Reinhart (1992), "Private Saving and Terms of Trade Shocks: Evidence from Developing Countries." *IMF Staff papers*, Vol. 39.
- Persson, T., and L. Svensson (1985), "Current Account Dynamics and the Terms of Trade: Harberger-Laursen-Metzler two generations later." *Journal of Political Economy*, Vol. 93.
- Razin, A., and L. Svensson (1983), "The Terms of Trade and the Current Account: The Harberger-Laursen-Metzler effect." *Journal of Political Economy*, Vol. 91.
- Rodrik, D. (1989), "Promises, Promises: Credible Policy Reform via Signalling", *The Economic Journal*; Vol. 99, September 1989.

- (1991), "Policy Uncertainty and Private Investment in Developing Countries", *Journal of Development Economics*; Vol. 36, No. 2, October 1991.
- Rossi, N. (1989), "Dependency Rates and Private Savings Behaviour in Developing Countries." *IMF Staff Papers*, Vol. 36.
- Sachs, J. (1995), "Why Russia Has Failed to Stabilize", *Stockholm Institute of East European Studies Working Papers*; No. 103.
- Serven, L and A. Solimano (1992a), "Private Investment and Macroeconomic Adjustment: A Survey", *World Bank Research Observer*; Vol 7, No. 1, January 1992.
- Serven, L and A. Solimano (1992b), "Economic Adjustment and Private Investment", *Finance and Development*; Vol. 29, No. 3, September 1992.
- Serven, L and A. Solimano (1993), "Debt Crisis, Adjustment Policies and Capital Formation in Developing Countries: Where Do We Stand?" *World Development*; Vol. 21, No. 1, January 1993.
- UNCTAD (1995), *World investment report, 1995: Transnational corporations and competitiveness*, Geneva: United Nations Conference on Trade and Development, Division on Transnational Corporations and Investment.
- Van Wijnbergen, S. (1985), "Trade reform, Aggregate Investment and Capital Flight." *Economics Letters*, Vol. 19.
- Van Wijnbergen, S. (1992), "Intertemporal Speculation, Shortages and the Political Economy of Price reform", *Economic Journal*, Vol. 102, No. 415, November 1992.
- White, H. (1992), "The Macroeconomic Impact of Development Aid: A Critical Survey.", *Journal of Development Studies*, Vol. 28, No. 2.

## Chapter 2.

### Life cycles, oil cycles, or financial reforms? Private savings rates in Indonesia. \*

Sara Johansson\*\*

**Abstract:** What goes steady with private savings? This paper investigates reasons for the sustained growth in private savings in Indonesia between 1970 and 1994, in a period characterised by economic growth, demographic changes, terms of trade movements, and some financial reforms. The main finding is that predictions from a simple life cycle model do well in as much as the growth in private savings rates is associated with a fall in the dependency ratio. This suggests that a reduction in the number of children relative to working age population has alleviated household budget constraints, thereby boosting savings rates.

---

\* I am grateful for many valuable suggestions and comments from Torbjörn Becker, Magnus Blomström, Tove Strauss, Ann-Charlotte Eliasson, Hamid Faruquee, John Hicklin, Lazaros Molho, Jonathan Ostry, Anne-Marie Paulsson, Assaf Razin, Anoup Singh, Anna Sjögren, Christian Thimann, and Anders Vredin, and two anonymous referees. All remaining errors and inconsistencies are mine.

\*\* Department of Economics, Stockholm School of Economics, P.O. Box 6501, S-113 83 Stockholm, Sweden.

## **1. Introduction.**

What drives capital accumulation is a core issue in economic theory as well as in empirical research. This paper looks at the sustained growth in private savings rates in Indonesia in the last twenty-five years. Whereas Indonesian private savings rates in the beginning of the 1970s were considerably lower than in other Southeast Asian countries, they have steadily increased and converged, and had in fact more than doubled by the beginning of the 1990s. The present study seeks to find what might explain this transition.

The mobilisation of private savings warrants special attention in the Indonesian case. Despite several years of sustained high growth rates, Indonesia is still a highly indebted country. With the long-standing dependence on foreign savings for investments, stimulating private savings rates remains a policy objective of the highest priority. It is important to understand the mechanisms behind the Indonesian savings performance, and to identify possible measures to maintain and encourage capital accumulation in the private sector.

Within Southeast Asia, the development of private savings in Indonesia is a case apart. First, after a period of political turmoil and economic disrupt in the 1960s, Indonesia entered the 1970s with per capita income levels among the lowest in the world. In little more than a decade, however, Indonesia moved into the group of lower middle-income countries. This change was, if not entirely due to, so at least associated with the improvement in terms of trade. A petroleum economy, Indonesia experienced rapid increases in foreign exchange and government revenue. The initially low income levels were accompanied by low rates of private savings, relative to other Southeast

Asian countries. However, in the last twenty-five years, private savings have steadily increased, with more than a doubling of net private savings as share of private disposable income between the early 1970s and the early 1990s. By the mid 1990s, Indonesian private savings rates reached levels comparable to those of other Southeast Asian countries. Whereas Indonesian per capita income growth performance is not conspicuous by (the admittedly high) Southeast Asian standards, the growth of Indonesian private savings rates clearly is (see table 1).

**< Table 1 about here >**

Moreover, the steady growth in private savings rates has taken place in a period marked by important structural changes, all of which may be expected to have strong implications for savings rates. First, Indonesia has undergone a transition from a very poor to a middle income country. Simultaneously, the age distribution of the population has successively become less tilted towards children, which has helped alleviating households' budget constraints. Also, the 1970s and 1980s have been characterised by considerable swings in international commodity prices, affecting both public and private wealth. Finally, financial reforms began in 1983, with the liberalisation of interest rates and abolishment of credit ceilings.<sup>1</sup>

How might these events influence savings behaviour? The existing empirical literature on the determinants of private savings is vast and quite inconclusive, but the following important findings provide some guidance. In support of life cycle models, several cross country studies indicate, first, a high correlation between income growth and private savings rates, and second, that demographic variables, reflecting the age

---

<sup>1</sup> For an overview of the earlier part of the Indonesian financial reforms, see e.g. Erquiaga (1987).

structure of the population, influence savings rates by influencing the number of savers relative to dissavers (e.g. Edwards, 1995, Higgins and Williamson, 1996, Lahiri, 1989, Rossi, 1989, and Modigliani, 1970). Third, there is a link between transitory terms of trade shocks and changes in private savings rates, suggesting that savings are procyclical in this respect (Fry, 1986, Ostry and Reinhart, 1992). Fourth, government savings tend to crowd out private savings, but the offset is less than one for one, i.e., there is no complete Ricardian Equivalence (Edwards, 1995, Masson *et al.*, 1995, Corsetti *et al.*, 1992). However, the net effect of real interest rates and the degree of financial development remains uncertain (Corsetti *et al.*, 1992, Ostry and Reinhart, 1992). These financial variables' ambiguous influence on savings is consistent with theoretical predictions.

As for Indonesian private savings, previous studies are scarce, despite the rather remarkable development, and the conclusions incoherent. In a study of Asian private savings rates, Lahiri (1989) finds that income growth explains Indonesian private savings, whereas transformations in the population age structure have no lasting effects. This result contrasts the study of the ASEAN countries by Faruquee and Husain (1995), where changes in the population have a strong and positive impact, whereas income growth rates do not.<sup>2</sup> Higgins and Williamson (1996) find evidence in support of the demographic effects on total domestic savings in virtually all Asian countries. In an evaluation of Indonesian financial development, Erquiaga (1987) finds no evidence of any influence from either income level or growth on domestic savings. In contrast, the

---

<sup>2</sup> The discrepancies may partly stem from the use of different sample periods - the former study included the highly unstable years between 1960-1970 - and from a different empirical specification. Also, Lahiri did find a short run impact of changes in dependency rates. However, this differenced variable is flawed by construction. See appendix one.



increase in real deposit rates are shown to have a positive impact.<sup>3</sup>

Against this rather patchy background, the present study seeks to explore how and why Indonesian private savings rates have increased in the last twenty-five years. While drawing on conventional methods in empirical and theoretical approach, this paper aspires to highlight some particular features of the development of private savings. An in-depth one country study makes it possible to consolidate the most recent data available from national sources in a consistent framework, in cases where more general sources of data typically used in cross-country studies usually are characterised by rough estimates at best or missing observations at worst. In view of the remarkable increase in the Indonesian savings rates, the limited and inconclusive explanations offered so far are insufficient. While the influence of demographics on Indonesian savings has been acknowledged in the cross country study by Faruquee and Husain (1995), their study does not take into account any underlying mechanism, such as the role of reduced nativity, and also ignores the influence of fiscal policy on long run savings behaviour. The simple model used to illustrate the mechanisms behind long run savings in this paper generates quite explicit predictions regarding the parameters of the model. The influence of both nativity and public savings has been possible to test against the data.

A case study of this nature has disadvantages as well as advantages. In this case, what is gained in focus is lost regarding generality on the one hand and robustness of the results on the other. In particular, the short times series put boundaries to the econometric analysis and the power of the results.

The paper is organised as follows. The second section outlines a simple neo-

---

<sup>3</sup> Unfortunately, Erquiaga's study is limited to the years between 1971-1983, while financial reforms were undertaken from 1983 onwards.

classical model to account for the long run development of aggregate savings rates, with an emphasis on the influence of demographic factors and economic growth on savings rates. Extensions and amendments to the basic framework are discussed. The third section is devoted to empirical analysis, using cointegration techniques to test the theoretical framework presented. The main finding is that the long run increase in private savings rates is associated with the fall in the dependency ratio, which in turn is a result of the reduction in the number of dependent children. Per capita income growth, however, has no separate influence on private savings, while government savings affect private savings negatively. Neither changes in income growth rates nor demographic changes influence the short run dynamics of savings. In support of the Harberger-Metzler-Laursen effect, however, fluctuations in terms of trade do. The fourth section concludes.

## **2. Life cycle savings and dependency ratios.**

This section consolidates some theoretical findings relevant for the study of savings over the long run. The benchmark is a simple neo-classical overlapping generations model.<sup>4</sup> A main idea of the life cycle perspective used is that working people are savers and children and retired people are dissavers. While people are working, they use their income to provide for their own consumption as well as their children's, and are saving to provide for their retirement period. Some possible extensions and amendments to the model, with particular relevance to underdeveloped economies, are also briefly discussed below.

---

<sup>4</sup> The model draws on life cycle models in general and Higgins and Williamsson (1996) in particular. See their paper for a full-fledged model of dependency rates and life cycle savings in open and closed economies.

### 2.1. A life cycle model.

The set-up is as follows. At time  $t$ , the size of a generation of working-age is  $N_t$ , and population growth is given by  $n_t$ . The economy is closed, and for simplicity, there is no uncertainty. Each individual is supported by her parents during her childhood, works in order to support herself and her children in the second period of her life, and is then retired in the third and last period of her life. Accordingly, the economy's labor force consists of the second period generation, and there is no other third period source of income than the returns to savings. Three generations are concurrently alive in the economy, so aggregate savings will be equal to the total savings of the working generation less the total dissavings of the old generation. At each point in time, we have that

$$S_t = s_t N_t - s_{t-1} N_{t-1} \quad (2.1)$$

$S_t$  are aggregate savings in the economy,  $s_t$  is the level of per capita savings of the working generation, and  $s_{t-1}$  is the equivalent of the old generation. From (2.1), it is clear that unless there is intergenerational heterogeneity, in terms of relative size or individual savings, aggregate savings will be zero.

Individual savings are easily derived from the intertemporal budget constraint:

$$s_t = \frac{c_{2t+1}}{1 + r_{t+1}} = w_t (1 - \tau_t) - c_{1t} - (1 + n_t) c_{0t} \quad (2.2)$$

where  $c_{1t}$  and  $c_{2t+1}$  are the individual's own consumption in period  $t$  and  $t+1$

respectively, and  $c_{0t}$  is the children's consumption in period  $t$ ,  $w_t$  is (labor) income in period  $t$ ,  $\tau_t$  is the (labor income) tax rate in period  $t$ , and  $r_{t+1}$  is the net return on income saved from period  $t$  to period  $t+1$ .

Two generations depend on the working generation for their consumption: the children, who are supported by their parents, and the old and retired, who buy consumption goods with their savings. We can define the young dependency ratio at time  $t$  as

$$\frac{N_{t+1}}{N_t} = 1 + n_t \quad (2.3)$$

and the old dependency ratio as

$$\frac{N_{t-1}}{N_t} = \frac{1}{1 + n_{t-1}} \quad (2.4)$$

The total dependency ratio is simply the sum of the two.

An individual of working age at time  $t$  will choose savings levels so as to maximize her life time utility, which depends positively on her own consumption as well as on the consumption of her children while they are still too young to earn their own living. Consider the most elementary set-up, with an intertemporally separable life time utility and logarithmic instantaneous utility functions. The production side is characterized by Cobb-Douglas technology and perfect competition, and labor supply is inelastic. On these assumptions, we arrive at the following expression for the aggregate

private savings rate, measured as total private savings as share of total private disposable income in the economy:

$$SR_t = \frac{S_t}{Y_t - T_t} = \frac{\beta(1-\tau_t)}{\frac{1}{1-\alpha} - \tau_t} \left\{ \frac{1}{1 + \beta + \gamma(1 + n_t)} - \frac{\left( \frac{1}{1 + n_{t-1}} \right) \left( \frac{y_{t-1}}{y_t} \right) \left( \frac{1 - \tau_{t-1}}{1 - \tau_t} \right)}{1 + \beta + \gamma(1 + n_{t-1})} \right\} \quad (2.5)$$

$Y_t$  is aggregate output, and  $y_t$  is per worker output at time  $t$ .  $T_t$  is the total amount of taxes levied in the economy, and will also be equal to government savings at time  $t$ , given that there is no government spending. The constants refer to the output elasticity of capital ( $\alpha$ ) and to the individual's relative preferences for future consumption ( $\beta$ ) and children's utility, i.e. degree of altruism ( $\gamma$ ).<sup>5</sup>

With different generations, the OLG set-up introduces the possibility for heterogeneity among individuals of different age. As is evident from equation (2.5), any variation between the generations in terms of nativity, income level, or taxation, will make aggregate savings non-zero. In particular, the expression above has the following implications for the aggregate savings rate in this economy. First, per worker income growth between generations will unambiguously have a positive effect. Second, changes in the demographic structure will change the savings rate. Since the latter is decreasing in  $n_t$  and increasing in  $n_{t-1}$ , it is decreasing in both the old and young dependency ratio. The intuition is the following. Population growth implies a larger number of children relative to workers, which strains the budgets of the working generation and lowers

---

<sup>5</sup> Note that with logarithmic utility functions, the income and substitution effects from the interest rate on savings cancel out.

savings. However, as these children enter the labor force, they are a positive factor to the aggregate savings rate - they reduce the old dependency ratio. Unless population growth remains high or increases, the young dependency ratio will also fall. The lower the dependency ratios, the higher the number of savers relative to the number of dissavers in the economy. Similarly, an increase in per worker income from one period to the next implies that the working-cum-saving generation is wealthier than the preceding one. Even if the saving and the dissaving individuals have the same saving propensities (given by identical altruism, impatience and nativity), the new generation will be saving out of a higher income than the dissaving one, which renders aggregate savings positive. Finally, if the tax rate changes over time, such that the working generation has a different tax rate from the old generation, the aggregate savings rate will be affected. An increase in the current tax rate, will, other things equal, lower savings.

Equation (2.5) shows that an increase in the growth rate will have a positive effect on savings, but that the change will be less than one for one. Equally, the first derivatives of the young and old dependency ratios are both unambiguously negative with an absolute value of less than one. But whereas government savings,  $T_t$ , increase one for one with an increase in the tax rate, the reduction in aggregate savings can be shown to be smaller than the improvement in government finances. There is no full Ricardian Equivalence in this OLG economy, since an increase/decrease in the government savings rate is not fully offset by a decrease/increase in the private savings rate. Whereas government savings are affected by the current tax rate only, the savings rate depends on both current and previous generations' tax rates (i.e. disposable income).<sup>6</sup>

---

<sup>6</sup> The calculations are available from the author.

The model brings out the importance of demographics, and therefore serves as an illustration of the effects of a demographic transition. Whereas the life cycle framework is relevant for developed and underdeveloped countries alike, there are reasons to believe that the two dependency ratios will be of different importance along an economy's development path. Here, focus should be on the young dependency ratio. An economy in a development stage characterized by high fertility rates and falling infant mortality is burdened by a high share of young children, which will lower the average household's ability to save out of current income. A population structure tilted towards the very young will therefore tend to depress domestic savings, until the economy enters the next stage of the demographic transition and population growth falls.

## *2.2. Extensions.*

The above set-up is simple and discernible but restrictive. In particular, the analysis of saving behavior in poorer countries may require several amendments to the original neoclassical model. For example, underdeveloped factor and/or output markets, undiversified production structure and low income levels, may complicate the savings decision. Institutional features, e.g. design of social security systems, taxation schemes, insurance and financial market development, will differ along an economy's development path, which in turn will be reflected in savings decisions. Some implications are outlined below.<sup>7</sup>

In the absence of bequest motives or similar transfers between generations for altruistic - or other - reasons, the aggregate of savings over the life cycle will be zero.

---

<sup>7</sup> For comprehensive surveys and discussions of savings and developing countries, see Deaton (1989, 1992), and Gersovitz (1988).

For each individual, and equivalently each generation, what is saved early in life is consumed later on. However, neglecting intergenerational income and consumption links may be particularly erroneous in economies where households typically are large and encompass several generations. The assumption of strong bequest motives, or, equivalently, infinite horizons, will in its own constitute a strong motive for saving.<sup>8</sup> Similarly, the working generation may provide for their retired parents. Altruistic children of working age might then support the consumption of the old generation, and save less for their own retirement, envisaging that they in turn will be taken care of by their children. In the latter case, population growth may in fact be endogenous to the saving decision. That is, children are an asset in the households' savings portfolio, and the cost of children's consumption will, from their parents' perspective, pay off in the form of a secured old age.<sup>9</sup>

The three-period model is aimed at illustrating "low frequency" income smoothing, and second-period income equals total and permanent income. Income growth is intergenerational, never intragenerational. Hence, the model falls short of accounting for different effects of temporary or short-run changes in economic conditions, relative to permanent changes. Nevertheless, income fluctuations may be substantial in economies with an undiversified production structure, if they are dependent on a few export products which are subject to sharp swings in international prices. Following the permanent income hypothesis, savings should indeed be more sensitive to income increases which are perceived as temporary than those which are permanent. Equally, an anticipated increase in future income, implying an increase in life-time

---

<sup>8</sup> It is straightforward to show that with parents who remain entirely altruistic throughout life, the OLG model collapses into a model of an infinitely lived representative agent.

<sup>9</sup> See e.g. Hammer (1986) and Horn (1994), on endogenous population growth and savings.



income, should lower current savings. This argument has been extended to the impact of terms of trade fluctuations on national savings (see e.g. Razin and Svensson, 1983, and Persson and Svensson, 1985), the assumption being that terms of trade have a strong impact on real income and wealth and thereby have implications for savings (the Harberger-Laursen-Metzler effect). If favourable levels of terms of trade are perceived as temporary, the additional income will be saved to a higher extent than if they are perceived to reflect a permanent improvement. Accordingly, we should expect fluctuations in terms of trade to have a stronger impact on savings, than the long run level of terms of trade.

The disincentive effect from anticipated future income growth raises questions regarding the effects of financial liberalization and financial deepening (see e.g. Ogaki, Ostry and Reinhart, 1996). A liquidity constrained individual envisaging future income growth would find it optimal to borrow against that future income. However, imperfections in the capital market, which bar the access to borrowing instruments, may prevent her from doing so. Necessary investments will then have to be financed by own savings, which raises the need for individual thrift. If credit markets are characterized by rationing and interest rate ceilings, it may be impossible or indeed suboptimal for the individual to save in the manner the life cycle hypothesis predicts. Hence, a large number of financial saving instruments and better access to financial markets might raise savings. However, if consumers earlier have had limited access to credit, and financial reforms and financial deepening also open up for borrowing, the effect may be the reverse. Individuals who expect higher income in the future may wish to borrow against that future income, and financial development and reform render this deal possible by alleviating liquidity constraints. In addition, the effect on savings from real interest rates

increases following from interest rate liberalization is ambiguous, since the income and substitution effects from an increase in the returns to savings work in opposite directions.

The standard model describes a perfectly certain world, while in reality the degree of uncertainty and risk attitudes will matter for savings behavior. How important the effects from uncertainty are will partly depend on the availability of insurance. At low income levels, uncertainty may in fact pose a particularly serious threat to consumption levels. If risk aversion is higher the lower the consumption level, the savings decision will be linked to per capita income levels (and not only to growth). In countries where the primary sector is dominant, the fact that agricultural income depends on an intrinsically unpredictable element - climate - will make risk attitudes at low income levels particularly significant in saving behavior. Increased risk regarding future income, that is higher variance, may therefore give rise to precautionary savings (see Deaton, 1992). The relation to income levels is not necessarily linear. At low income levels, mere subsistence requirements may lead to high consumption rates and hence very low savings. Although some trade-off between consumption in the present and the future would be desirable, for precautionary reasons or for intertemporal consumption smoothing, it may be physically impossible to sacrifice present needs. Hence, we might expect a change in savings propensities and elasticities as an economy rises above the absolute poverty line.<sup>10</sup>

### **3. Empirical Analysis.**

This section draws on the above theoretical framework to test hypotheses of

---

<sup>10</sup> For example, in a recent cross country study, Ogaki, Ostry, and Reinhart (1996) find that the interest rate sensitivity of saving rises with income.

what determines the development of aggregate savings rates. A brief discussion of the methodology and the data is followed by an account of the estimations.

### 3.1. Method.

The empirical analysis is based on cointegration and error correction models.<sup>11</sup> The intuition behind this specification is that although many variables exhibit stochastic trends, we may expect some of them to drift together in a stationary relationship. Empirical analysis will in such cases require a methodology which can both separate and relate transitory influences and long run determinants, that is, the short and the long run. In general, economic theory is perceived to best capture long run relationships, since it relies on equilibrium analysis, an assumption which may not hold in the short run. On the other hand, models which can explain the temporary disequilibrium and adjustment processes connected with short run dynamics, are cumbersome to specify empirically. The error correction approach is a popular compromise, most likely since it can reconcile theoretical insights about the long run behavior with a relatively flexible treatment of the short run dynamics.

Moreover, standard OLS estimation yields parameter estimates and standard errors valid for conventional hypothesis testing on the assumption that the variables have stationary means and variances. Whereas differencing the variables will resolve these difficulties, such a model may be mis specified, since it disregards any information and influence of a long run relationship on the short run dynamics. In view of the upward trend in Indonesian savings rates, the issue of stationarity is important and must somehow be acknowledged in the choice of methods.

---

<sup>11</sup> For an overview of the cointegration methodology, see e.g. Cuthbertson *et. al.* 1992.

However, the availability of data is limited, reflected in a low number of observations. The small sample size hampers the validity of the cointegration and error correction models and the various tests applied, and must be kept in mind when interpreting the results.<sup>12</sup>

The analysis proceeds in two steps.<sup>13</sup> First, to find an estimate of the long run relationship, savings rates in levels are regressed on potential explanatory variables, also in levels. The following equation is estimated:

$$SR_t - \beta' X_t = u_t \quad (3.1)$$

where  $SR_t$  is the private savings rate at time  $t$ ,  $X_t$  is a vector of variables expected to be linked to savings rates in the long run,  $\beta$  is a parameter vector, and  $u_t$  is an error term, reflecting the influence of transitory noise on the equilibrium savings rate. The stability of the long run relationship is tested on the estimated error term. If  $\hat{u}_t$  is stationary over the sample period, this suggest a long run stable, or equilibrium, cointegrating relationship between  $X_t$  and  $SR_t$ . With nonstationary variables, the estimated  $\beta$  and the respective standard errors should be corrected before the usual tests

---

<sup>12</sup> With such a short time series, it is questionable whether the estimated relationship really can be considered an equilibrium relationship.

<sup>13</sup> The more complete (and correct) Engle-Granger method to test for cointegration includes unit root tests for order of integration of all variables in equation (3.1). DF tests for unit roots were undertaken for all variables. Private savings rates, broad money, terms of trade, real interest rates, and government savings, were all found to be first order integrated, whereas per capita income growth was stationary in levels. The unit root tests also indicated that broad money as share of PDI as well as terms of trade are non-stationary series. In the case of the dependency ratio, the tests indicate a unit root in favor of a trend stationary alternative in levels. Again, in view of the limited number of observations, the unit root methodology is problematic. However, the second step of the E-G procedure consists of running standard OLS regressions, albeit with procedures for hypothesis testing which account for nonstationary series. This paper starts from there.

of significance are undertaken.

Equation (2.5) provided candidates for explaining the long run growth of savings: income growth, dependency ratios, and government savings. Based on the discussion in section two, terms of trade and variables related to financial development are also initially included in  $\mathbf{X}_t$ . Given the importance of oil in the Indonesian economy, and the large scale financial reforms undertaken, these two potential sources of variation must be controlled for.<sup>14</sup>

The information provided in the estimations of the long run relationship permit us to reconcile the short run dynamics of savings with the long run behavior. The error correction equation relies on (3.1), and can in a general form be described as:

$$\Delta SR_t = \alpha(SR_{t-1} - \hat{\beta}' \mathbf{X}_{t-1}) + \gamma' \mathbf{V}_t + v_t \quad (3.2)$$

where  $\Delta$  indicates first differences. The bracketed term is the lagged estimated “equilibrium” error term, i.e.  $\hat{u}_{t-1}$ , from the long run equilibrium equation, and  $\mathbf{V}_t$  a vector of (stationary) variables which may affect the movements of savings rates in the short run, including first differences of some of the variables in  $\mathbf{X}_t$ . Since all variables in (3.2) including  $\hat{u}$  are stationary by construction or otherwise, standard OLS regressions and inference methods can be used. While focusing on the short run, the above set-up draws on the long run relationship. In any one period, savings may deviate from the long run equilibrium relationship due to some transitory influences: which ones, and how, can be understood from estimations of equation 3.2. The “mistake”, represented by a positive

---

<sup>14</sup> Note that for the cointegrating equation to be balanced and yield a stationary error term, all variables must be integrated of the same order.

(negative)  $u_t$ , should be corrected in the subsequent period by a reduction (increase) in the dependent variable, relative to the previous period, so as to revert to the original stable relationship. The estimations below consider the influence on savings dynamics of the error correction mechanism, and, drawing on section two, of changes in growth, dependency rates, government savings, terms of trade, and financial deepening.

### 3.2. *The data.*<sup>15</sup>

Constructing an accurate time series for Indonesian private savings entails several difficulties. First, figures for private savings are derived as a residual from other macroeconomic aggregates via the national income identities. Hence, there can be a multitude of measurement errors from each aggregate included in the calculation. Second, there are alternative methods for deriving private savings from aggregate macro data, which yield identical series in theory but rarely so in practice. Here, private savings are calculated from private disposable income and private consumption rather than via the current account and investment (see table in appendix 2).<sup>16</sup>

Further, none of the national accounts based definitions of private savings account for the difference between private corporate savings and household savings. This might present a distortion in the empirical testing of saving behaviour based exclusively on hypotheses of household incentives. Whether or not it does, depends on how household members perceive retained corporate earnings. If the household members consider corporate income and saving part of household disposable income, the private sector is indeed equal to the household sector, since the latter are the owners of private firms. The

---

<sup>15</sup> A description of the sources of data as well as a correlation matrix is provided in appendix one.

<sup>16</sup> Since depreciation is deducted, the focus is on net savings rates rather than gross savings rates. For analytical purposes, however, the difference should not be very important.

aggregate figure for private savings is then appropriate. However, if household members do not "see through the corporate veil" in the above sense, or if market imperfections prevent them from incorporating firm profits into private disposable income, hypothesis testing of household behaviour on an aggregate including corporate profits may be misleading.

Two features regarding the Indonesian private savings rates are particularly important. First, they display an impressive upward trend. Second, there is one year, 1982, in which the private savings rate actually turns negative. An examination of the figures indicates that the low level of savings in 1982 was due to a rise in direct taxation, which was not compensated for by a comparable rise in national income, or a fall in private consumption levels.<sup>17</sup> Overall, however, private savings have increased rapidly, with more than a doubling of net private savings as share of private disposable income from the beginning of the 1970s to the beginning of the 1990s.

The dependency ratio, i.e. the percentage of children and old people relative to people of working age, is used to capture the demographic development.<sup>18</sup> This definition refers to total potential labour force rather than active labour force. Individuals are defined as children when below the age of 15, and of working age when between and including the ages of 15 and 64.<sup>19</sup> As a time series, this variable is impaired by the fact

---

<sup>17</sup> The fall in savings rates is noticeable irrespective of the method to derive private savings, and irrespective of whether current or constant data are used.

<sup>18</sup> Other studies, such as Faruquee and Husain (1995) and Lahiri (1989) use working age population as share of total population as their demographic variable. However, both studies focus on the relatively size of the old and working generation, and ignore the negative effects from nativity. The demographic variable used here is directly derived from the theoretical framework, so that the estimated parameter value can be compared to the magnitude predicted by the model.

<sup>19</sup> This is the conventional definition of working age in the empirical literature. We should note, however, that this definition implies among other things that the age of entry into the labor market is assumed to be constant.

that there are no annual data on the age composition of the population, and the series obtained is by construction smooth. However, it is unreasonable to expect the underlying unobservable data series to display markedly different dynamics. In other words, it is improbable that the demographic variable should fluctuate violently in the short run.

The long run development of the dependency ratio is evidence of large demographic shifts: the last twenty-five years have seen a considerable drop in this ratio. Importantly, this development is mainly due to a fall in the young dependency ratio - the number of children relative to working people has been substantially reduced. Whereas the old dependency ratio hardly has changed over the period, its order of magnitude is insignificant relative to that of the young dependency ratio and it has little influence on the development of the total dependency ratio.

Real growth rates of per capita private disposable income, are not remarkable compared to other Southeast Asian countries (c.f. table 1), but are quite impressive in relation to developing countries in general. However, and significantly, there is no clear upward trend in growth rates, indicating no obvious covariation with savings rates.

Government savings are represented by the current fiscal balance of the Indonesian central government as share of private disposable income.<sup>20</sup> The long-term movements in international terms of trade are primarily reflecting the oil price cycle over this period.

Financial deepening is represented by the development of broad money relative to private disposable income (M2). This variable provides an estimate of the increase in financial instruments in the economy.<sup>21</sup> Unsurprisingly, the financial reforms undertaken

---

<sup>20</sup> The current fiscal balance is positive throughout the period.

<sup>21</sup> As a regressor, however, broad money may introduce problems of simultaneity. Quasi money is composed of savings deposits, time deposits and foreign currency deposits, and is as such in itself a measure of formal savings. This raises questions of whether regressing savings on the financial deepening variable can produce unbiased coefficient estimates.



in 1983-1984 have had a positive effect on the financial instruments available in the formal sector. Real interest rates, finally, were lower, and often negative, in the first part of the period under study, which can be explained by a combination of interest rate ceilings in the pre-reform era, and high inflation rates. After 1983, interest rates were liberalised, which resulted in a jump to substantially higher levels.

### *3.3. Long run savings.*

In estimating (3.1), the regressions first included all variables, i.e. growth and dependency ratios, and government savings, as derived from the model in section two, as well as terms of trade, financial deepening and interest rates. In addition, a dummy variable for 1982 was included. As previously discussed, savings rates were negative in this year, and the outlier may exert considerable influence on the regression results, without correctly reflecting the long run behaviour of the system. Insignificant control variables were then sequentially eliminated.<sup>22</sup>

The results from the final estimations are reported in table 2. Column I and II include a dummy variable for 1982, in column II and IV, income growth has been excluded.

How well does the data support the savings model previously presented? A first and overall comment is that the different regressions yield similar results: the signs and magnitudes of the estimated parameters are not very different across the columns. Second, augmented Dickey-Fuller (ADF) tests on the respective estimated error terms

---

<sup>22</sup> Since the error distribution is non standard, the usual t-tests are formally invalid. For a check of how important this effect was in the estimations, the standard errors and parameter values of the regressions in columns I and II were corrected using the three step method suggested by Engle and Yoo (see Harris, 1995). This correction procedure did not significantly change the size of the parameter values (reduction in the case of DEPEND, increase in the case of GOVSAV) or their significance level. The coefficients and the conventional significance levels used above should provide reasonable indications.

also indicate that the equations yield stationary error terms for all the regressions. The null-hypothesis of a unit root is rejected at the one- percent level in all four cases, suggesting that there is a cointegrating relationship between savings, dependency rates, and government savings.

**< Table 2 about here >**

A striking result is the indication that the demographic structure of the Indonesian population has indeed influenced savings. All four regressions imply that a fall in the dependency ratio is associated with an increase in private savings rates. As predicted by the model, the magnitude of the parameter is smaller than one in absolute value. Including the 1982 dummy in the regressions increases the goodness of fit, but although the individual parameter values are reduced, the figures remain high.<sup>23</sup> Real per capita income growth, however, does not appear to have any strong impact on savings rates. Whether the growth variable is included in the regression (columns I and III) or excluded (columns II and IV) does not change the impact of the dependency ratio, nor of any other variables, and does not increase the explanatory power of the model as a whole. When growth is included, its coefficient value is in fact negative, which is not the expected sign.

The insignificance of the growth variable is not particularly surprising, considering the data representing it. Although Indonesia has experienced rapid economic development, there has been no clear upward trend in growth rates, and we should not

---

<sup>23</sup> For a check of robustness, the equation in column I was augmented by a dummy variable for 1981. The only noticeable difference regarding both significance levels and coefficients was a slight reduction in the parameter value for GOVSAV.

expect a stationary variable to be capable of explaining a nonstationary variable.<sup>24</sup>

Out of the additional information variables, government savings turned out to be the most interesting. Again, the four regressions reflect similar results. The parameter values are negative and ranging between one half and two thirds, suggesting some but not complete Ricardian Equivalence in the Indonesian economy. Again, this is consistent with the predictions of the model. An increase in government savings appears to crowd out private savings, but the offset is less than one for one. Indeed, the parameter estimate is very similar to previous empirical studies. The level of terms of trade, however, has an impact if and only if the 1982 dummy is included in the regression. Although its influence is positive, it is minor.

Broad money and interest rates, both of which we expect to capture some of the development of the financial markets and the impact of financial reforms, turned out insignificant in the regressions and were therefore not included in the reported regressions. This may be evidence of no influence, or alternatively, that financial reforms alleviate both savings and borrowing constraints, with an ambiguous impact on savings, and equally that the income and substitution effects of interest rates are counteractive forces.<sup>25</sup>

### *3.4. Savings fluctuations.*

Turning to the question of what might explain deviations from the long run equilibrium, the findings from the long run estimations are incorporated. The results from

---

<sup>24</sup> For a check, the original growth series was replaced by a filtered series (three year moving average). However, thus eliminating the transitory noise produced no qualitatively different results. Equally, using current instead of real growth rates changes nothing.

<sup>25</sup> However, the money variable is very highly correlated with the demographic variable in the sample (see appendix one.). If the demographic variable is excluded from the regressions, financial deepening has a significant, positive and strong impact on the savings rate.

estimating (3.2) are reported in table 3. These residuals stem from the regression reported in column II in table 2, hence income growth was not included in the first step regression.

**< Table 3 about here >**

Originally, first differences of income growth, dependency ratios, government savings, terms of trade, and interest rates, were included in the regressions, and then eliminated if conventional t-tests proved them insignificant. The variables that dropped out immediately were (changes in) dependency ratios, real income growth, and real interest rates. Changes in government savings are negatively signed, as expected, and the coefficient is actually higher than the estimated long run coefficients. However, the estimated coefficient is different from zero at a ten- percent level of significance only.

Whereas the impact of terms of trade on savings levels over the long run was unimportant, changes in terms of trade do have a stronger impact on changes in private savings. In this case, the parameter value is not only of considerably higher magnitude than in the case of long run determinants but also significant at the five- percent level. This gives credit to the proposition that people will save a higher portion of transitory terms of trade gains than out of a permanently favourable level of terms of trade.

The theoretical section of this paper focused on the long run development. This is reflected in the estimations of the short run, in that changes in the demographic variable were insignificant. Given that the original variable is very smooth and consists of several interpolations, this is hardly surprising and in fact reassuring: the "changes" in the variable are mostly constructed and do not reflect the underlying data. Moreover, as previously argued, there is little reason to think that the demographic variable in reality

should vary greatly in the short run, and hence, it should not be able to explain short run fluctuations. Fluctuations in income growth, further, are also completely insignificant in the regressions. This result is perhaps more surprising.

Finally, the lagged error term from the long run relationship carries a negative sign, as we expect it to. Any deviation from the long run stable relationship is partly reversed in the subsequent period, with the speed of adjustment given by the estimated coefficient, here close to one half. However, the coefficient is not significant even at the ten- percent level, and the interpretation of the results is therefore subject to considerable uncertainty.<sup>26</sup>

#### **4. Conclusion.**

This study is motivated by the observation that Indonesian private savings have undergone a remarkable development in the last twenty-five years, with an increase in the ratio of private savings to private disposable income which is unparalleled even among other high saving Southeast Asian countries. Nevertheless, the Indonesian economy remains dependent on foreign savings. It is therefore vital to establish what the mechanisms behind the savings expansion have been, and how they might be maintained and further encouraged.

The study suggests that a relationship between savings and demographic changes explain the rapid transition from a low saving to a high saving nation. Predictions from a simple life cycle model do well; the rise in private savings rates is linked to declining

---

<sup>2626</sup> The error correction coefficient is highly sensitive to the presence or absence of dummy variables for in the first step of the estimations (eq. 3.1.). When no dummy is included, the coefficient is significant and close to minus one. When dummies for both 1981 and 1982 are included, the coefficient is also significant and exceeding minus one. This underlines the fragility of the results.

dependency ratios in Indonesia, mainly due to a considerable reduction in the number of children relative to working age people. The estimations thus suggest that the demographic transition in the population has boosted private savings rates by lowering the number of dissavers relative to the number of savers in the economy. There is, however, no support for the contention that high per capita income growth rates have driven savings rates. This is not surprising. Although Indonesian growth rates have been high, they have been relatively stationary during the period, and can hardly account for the steady increase in savings. Further, terms of trade fluctuations have a considerable impact, but on the short run dynamics of savings only, giving credit to the argument that savings rates indeed are procyclical.

The most obvious policy implication from the above conclusions is that sound public finances will have a positive effect on Indonesian capital accumulation. Government savings reduce private savings, but the offset is far from complete. A solid fiscal position should therefore remain a primary target for policy makers wishing to achieve an overall high savings rate in the economy.

Given the limited availability of data, the results presented in this paper are by force tentative, but do indicate that the effects from the demographic transition on the Indonesian economy are substantial. The causality direction, however, may not be entirely clear. Here, population changes have been taken to be exogenous from both the empirical and the theoretical viewpoint, and the estimations dismiss any influence of either income growth or financial development on birth rates. With endogenous population growth, however, it may be the case that economic development in a wide sense, encompassing typical features like higher income levels and financial deepening, promotes transformations in the means of savings. People change from saving in the form of children, to saving in the form of financial assets. In this sense, the demographic

transition is reflecting a portfolio shift, where the asset forms, as opposed to the size of the savings portfolio itself, change. It would be interesting to look further at whether and how an asset shift results as an indirect consequence of both high growth rates and improvements in financial intermediation. If such feedback mechanisms indeed exist, there are reasons to believe that e.g. a reformed, expanding and continually improved financial system will have an important role in the future development of savings.

## References:

- Central Bureau for Statistics (various issues 1969-1988) *BPS Indikator Ekonom.* Djakarta.
- Central Bureau for Statistics (various issues 1969-1995) *National Income of Indonesia.* Djakarta.
- Corsetti, G., K. Schmidt-Hebbel, and S. Webb (1992), "Household Saving in Developing Countries: First Cross-Country Evidence.", *World Bank Economic Review*, Vol. 6, No. 3, 529-47.
- Cuthbertson, K., S. Hall, and M. Taylor (1992) *Applied Econometric Techniques.* University of Michigan Press, Ann Arbor.
- Deaton, A. (1992) *Understanding Consumption.* Clarendon Press, Oxford.
- Deaton, A. (1989) "Saving in Developing Countries: Theory and Review." *Discussion Papers No. 144*, Research Program in Development Studies, Princeton University.
- Edwards, S. (1995), "Why Are Saving Rates So Different Across Countries?: An International Comparative Analysis." *NBER Working Paper* No. 5097, NBER, Cambridge, Mass.
- Erquiaga, Ph. (1987), "Improving Domestic Resource Mobilization Through Financial Development: Indonesia." *Economic Staff Papers* No. 40, Asian Development Bank, Manila.
- Faruquee, H., and A. Husain (1995), "Saving Trends in Southeast Asia: A Cross Country Analysis." *IMF Working Papers* No. 39, International Monetary Fund, Washington DC.
- Fry, M. (1986) "Terms of Trade Dynamics in Asia: An Analysis of National Saving and Domestic Investment Responses to Terms of Trade Changes in 14 Asian LDCs." *Journal of International Money and Finance*, No. 5.
- Gersovitz, M. (1988), "Saving and Development.", in *Handbook of Development Economics*, ed. H. Chenery and T.N. Srinivasan. Elsevier Science Publishers B.V., Amsterdam.



- Hammer, J. (1986), "Population Growth and Savings in LDCs: A Survey Article." *World Development*, Vol. 14, No. 5.
- Harris, R. (1995) *Using Cointegration Analysis in Econometric Modelling*. Prentice Hall, London.
- Higgins, M., and J. Williamson (1996), "Asian Demography and Foreign Capital Dependence." *NBER Working Papers* No. 5560, NBER, Cambridge, Mass.
- Horn, M. (1994), "Endogenous Population in a Land Constrained Economy - Introduction and Summary." *EFI Working Papers* No. 26, EFI, Stockholm School of Economics, Stockholm.
- Indonesian Planning and Development Board (1994) *Human Resources Profile of Indonesia*. Djakarta.
- International Monetary Fund (1995), "Indonesia: Recent Economic Development 1995." Washington DC.
- International Monetary Fund (1995) *World Economic Outlook Database*. Washington DC.
- Lahiri, A. (1989), "Dynamics of Asian Savings: The Role of Growth and Age Structure." *IMF Staff Papers*, Vol. 36.
- Masson, P., T. Bamyomi, and H. Samieie (1995), "International Evidence on the Determinants of Private Saving." *IMF Working Papers*; No. 51, International Monetary Fund, Washington DC.
- Modigliani, F. (1970), "The Life Cycle Hypothesis of Saving and Intercountry Differences in Saving Ratio." In *Induction, Growth and Trade: Essays in Honour of Sir Roy Harrod*, ed. W. A. Eltis *et al.* Clarendon Press, Oxford.
- Ogaki, M., J. Ostry and C. Reinhart (1996), "Private Savings in Low-and Middle Income Countries: An International Comparison." *IMF Staff Papers*, Vol. 43, No. 1.
- Ostry, J., and C. Reinhart (1992), "Private Saving and Terms of Trade Shocks: Evidence from Developing Countries." *IMF Staff papers*, Vol 39, No. 3.
- Persson, T., and L.E.O. Svensson (1985), "Current Account Dynamics and the Terms of Trade: Harberger-Laursen-Metzler two generations later." *Journal of Political Economy*, Vol 93.

- Demographic Institute of University of Indonesia (1994) *Projections of the Indonesian Population and Labour Force*. Djakarta.
- Razin, A., and L.E.O. Svensson (1983), "The Terms of Trade and the Current Account: The Harberger-Laursen-Metzler effect." *Journal of Political Economy*, Vol 91.
- Rossi, N. (1989), "Dependency Rates and Private Savings Behaviour in Developing Countries." *IMF Staff Papers*, Vol. 36.

**Table 1. Growth and savings. Period averages.**

	1970-74	1975-79	1980-84	1985-89	1990-92
Real per capita private disposable income growth (in percent)					
Indonesia	2.8	2.1	3.1	1.9	2.0
Malaysia	4.1	3.7	3.8	3.0	4.8
Singapore	6.1	6.3	6.5	4.8	4.6
Thailand	2.0	1.8	0.6	3.1	3.1
Gross private savings (in percent of private disposable income)					
Indonesia	13.3	18.1	23.3	27.9	30.8
Malaysia	28.5	33.4	33.2	37.5	33.4
Singapore	21.8	28.7	40.3	39.8	43.4
Thailand	23.4	24.4	26.1	31.3	33.8

**Source:** Faruquee and Husain, 1995.

**Table 2. Estimations of long run savings equation.**

SAMPLE	SAVINGS RATES			
	1971-1994	1970-1994	1971-1994	1970-1994
VARIABLES <sup>a</sup>	I	II	III	IV
CONSTANT	74.20*** (11.06)	79.72*** (10.12)	90.61*** 10.22	89.72** (8.62)
DEPEND	-0.70*** (0.11)	-0.68*** (0.10)	-0.85*** (0.11)	-0.86*** (0.10)
GROWTH	-0.19 (0.24)	---	-0.13 (0.32)	---
GOVSAV	-0.59** (0.22)	-0.51*** (0.21)	-0.65** (0.26)	-0.53** (0.24)
DUM82	-13.15*** (3.11)	-13.14*** (3.15)	---	---
TOT	0.05* (0.03)	0.06* (0.03)	---	---
ADJR <sup>2</sup>	0.87	0.87	0.78	0.77
D-W	2.11	1.93	1.80	1.67
ADF-TEST <sup>b</sup>	-5.28*** (k=0)	-4.94*** (k=0)	-4.29*** (k=1)	-4.18*** (k=1)

**Notes:**

a. DEPEND = old and young population (below 15 and above 64) in percentage of working age population (15-64), GROWTH = growth in real per capita disposable income, GOVSAV = government current savings as percentage share of private disposable income, TOT = terms of trade, DUM82 = dummy for 1982.

The standard errors are given in the parenthesis under the parameter estimate.

--- not included in the reported regression.

\*\*\* significant on 1 percent level, \*\* significant on 5 percent level, \* significant on 10 percent level.

b. The stationarity tests of the error terms consisted of performing an augmented Dickey-Fuller test (ADF). k denotes number of lags in the auxiliary ADF regression, chosen to minimize the AIC criterion. The significance tests are based on MacKinnon's critical values for rejecting the null hypothesis of a unit root against a stationary alternative. Note that the ADF test is a low powered test, and so prone to indicate unit roots although the series is stationary.

**Table 3. Estimations of short run savings equation.**

SAMPLE	$\Delta$ SAVINGS RATES <sup>a</sup>	
	1971-1994	1971-1994
VARIABLES		
CONSTANT	0.67 (1.07)	0.59 0.96
ERRORLAG <sup>b</sup>	-0.44 (0.52)	-0.52 0.38
$\Delta$ SAVINGSLAG <sup>c</sup>	-0.07 (0.25)	---
$\Delta$ GOVSAV	-1.08* (0.62)	-1.07* (0.59)
$\Delta$ TOT	0.23** (0.10)	0.23** (0.10)
ADJ R <sup>2</sup>	0.13	0.17
LM[ $\chi(1)$ ] <sup>d</sup>	0.16	0.24

**Notes:**

a.  $\Delta$  denotes first differences of the variable.

b.  $ERRORLAG = \Delta SAVINGSRATES - (70.7 - 0.68DEPEND_{t-1} - 0.51GOVSAV_{t-1} - 0.06TOT_{t-1})$

c.  $\Delta SAVINGLAG = SAVINGSRATES_{t-1} - SAVINGSRATES_{t-2}$ . The number of lags were chosen so as to minimize the AIC criterion.

d. The Lagrange Multiplier test is used to check the presence of serial correlation in the error correction specification. The test statistics do not indicate that the residuals should be serially correlated. Unfortunately, the small sample size again poses problems, since the test statistics is chi-squared only asymptotically.

The standard errors are given in the parenthesis under the parameter estimate.

--- not included in the reported regression.

\*\*\* significant on 1 percent level, \*\* significant on 5 percent level, \* significant on 10 percent level.

## **Appendix one. Sources of data.**

The source of the data used in the exercise are primarily Indonesian national statistics. The Indonesian national accounts have been subject to some revision in the last year, and this paper includes the latest figures published by July 1995.

Figures for gross national income, depreciation, net indirect taxes, and export and import prices, are taken from various issues of the National Income of Indonesia, published by the Central Bureau for Statistics (BPS). In the Indonesian national accounts, depreciation is calculated as a constant per centage of GDP.

Figures for government fiscal balances and tax revenues have been taken from Recent Economic Development 1995, published by the IMF, for 1989-1994, and BPS Indikator Ekonomi for 1969-1988. All government figures have been converted from fiscal year (beginning in April) to calendar years (beginning in January). Since data on consolidated public saving are not available, the figures exclude savings at lower levels of government as well as public enterprises' profits or losses

The source for the demographic data are the population censuses as reported in The Human Resources Profile of Indonesia, published by the Indonesian Planning and Development Board (1994), as well as the Projections of Indonesian Population and Labor Force, from the Demographic Institute of University of Indonesia (1994). The observations are stem from population censuses, intercensal population surveys, and population projections. Preceding and intermediary years must therefore be estimated by extra- and interpolation.

Figures for money and quasi money have been taken from the World Economic Outlook database.

Real interest rates have been calculated as nominal interest rates ( the annual rate on 6 month time deposits ) divided by inflation. The data for nominal interest rates come from IMF International Financial Statistics for the years 1970 to 1984, and Indonesian

Financial Statistics, published by Bank Indonesia, for 1985 onwards. 6 month deposit rates are the interest rates reported in the IFS, hence this measure has been used throughout in order to get a consistent series. Figures before 1984 are based on state banks' interest rates only, for lack of other data. From 1984 onwards, nominal interest rates have been calculated as an average of different bank categories' interest rates, weighted by their relative share of total deposits. Inflation, used to calculate real interest rates, was approximated by changes in the consumption deflator. The deflators have been retrieved from the national accounts in current and constant prices. A comparison of the GDP, GNP, consumption deflator and the CPI indicated that the differences between the deflators is relatively small, and that the choice of deflator has little impact on the real value of any series.

**<Table A1 about here>**

**Table A1. Correlation Matrix.**

VARIABLE	SAVINGS	DEPEND	YOUNGDEP	OLDDEP	GROWTH	GOVSAV	TOT	M2	INTEREST
SAVINGS	1.00	-0.84	-0.85	0.48	0.35	-0.14	0.56	0.84	0.47
DEPEND	-0.84	1.00	0.99	-0.48	-0.45	-0.14	-0.69	-0.95	-0.41
YOUNGDEP	-0.85	0.99	1.00	-0.57	-0.44	-0.15	-0.70	-0.96	-0.40
OLDEP	0.48	-0.48	-0.57	1.00	0.16	0.22	0.56	0.52	0.17
GROWTH	0.35	-0.45	-0.44	0.16	1.00	0.04	0.22	0.43	0.40
GOVSAV	-0.14	-0.14	-0.15	0.22	0.04	1.00	0.44	0.03	-0.33
TOT	0.56	-0.69	-0.70	0.56	0.22	0.44	1.00	0.49	0.24
M2	0.84	-0.95	-0.96	0.52	0.43	0.03	0.49	1.00	0.41
INTEREST	0.47	-0.41	-0.40	0.17	0.40	-0.33	0.24	0.41	1.00

**Note:**

a. SAVINGS = private savings rate as percentage of private disposable income, DEPEND = old and young population (below 15 and above 64) as percentage of working age population (15-64), YOUNGDEP = young population (below 15) as percentage of working age population , OLDDEP = old population (above 64) as percentage of working age population, GROWTH = growth in real per capita disposable income, GOVSAV = government current savings as percentage of private disposable income, TOT = terms of trade, M2=broad money as percentage of private disposable income, INTEREST= real interest rates on six month deposits.



**Appendix two. Table A2. Indonesian private savings 1970-1994. At current market prices (billion rupiahs).**

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
National income	2883.0	3249.0	3868.0	5740.7	9057.9	10746.6	13337.7	16250.9	18658.5	27146.8	38838.3	46838.1	51666.5
Direct taxes <sup>a</sup>	110.7	137.3	262.7	454.3	1047.8	1454.0	1917.2	2395.1	2875.1	4596.1	7455.1	9632.8	10032.5
Private disposable income	2772.3	3111.7	3605.3	5286.4	8010.1	9292.6	11420.5	13855.8	15783.4	22550.7	31383.2	37205.3	41634.0
private consumption	2692.0	2973.0	3314.0	4790.7	7258.6	8744.5	10463.8	12458.4	14408.8	19513.7	27502.9	35560.0	41670.3
private savings	80.3	138.7	291.3	495.7	751.5	548.1	956.7	1397.4	1374.6	3037.0	3880.3	1645.3	-36.3
private savings as share of private disposable income	2.9	4.5	8.1	9.4	9.4	5.9	8.4	10.1	8.7	13.5	12.4	4.4	-0.1

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
National income	65513.5	78484.7	84609.6	86827.3	105424.3	119045	138301.6	177287.3	211408.5	237721.5	279563.4	319636.1
Direct taxes <sup>a</sup>	11190.5	12427	13395	10005.3	11938.5	14825.5	16857.3	23291	25440	27631.5	29072.3	36077.8
Private disposable income	54323	66057.7	71214.6	76822	93485.8	104219.5	121444.3	153996.3	185968.5	210090	250491.1	283558.3
private consumption	44739.3	54066.5	57201.4	63355.3	71988.9	81045.3	88752.3	124184.2	145540.4	157909.7	183530.5	213256.1
private savings	9583.7	11991.2	14013.2	13466.7	21496.9	23174.2	32692	29812.1	40428.1	52180.3	66960.6	70302.2
private savings as share of private disposable income	17.6	18.2	19.7	17.5	23.0	22.2	26.9	19.4	21.7	24.8	26.7	24.8

**Note:**

a. Converted from fiscal to calendar year.

**Source:** *National Income of Indonesia*, various issues; *BPS Indikator Ekonomi*, various issues; IMF "Recent Economic Development 1995".

## **Chapter 3.**

### **Incredibly helpful? Foreign aid and stabilisation reforms in sub-Saharan Africa.\***

**Sara Johansson\*\***

**Abstract:** What is the role of foreign aid in macroeconomic stabilisation? This study addresses the ambiguous impact of aid on stabilisation reforms in the Gambia, Ghana, Guinea-Bissau, Kenya, Tanzania, Uganda, Zaire and Zambia. These countries have all received significant amounts of aid in connection with stabilisation attempts, but differ in their respective achievements. One important reason for the discrepancies appears to be that reform commitment as well as aid conditionality is more credible in some circumstances than others. A review of factors with potential influence on reforms suggests that stabilisation aid has been less effective in countries with a history of high levels of aid, and that stabilisation has followed on comprehensive reform programs which have not been undermined by preceding failed reform attempts.

---

\* This paper has benefited from comments by Magnus Blomström, Ari Kokko, and participants in the SSE International Economics Workshop. I thank Alberto Alesina for comments on an early draft. The remaining errors and inconsistencies are my responsibility. Financial support from the Swedish International Development Authority is gratefully acknowledged.

\*\* Department of Economics, Stockholm School of Economics, P.O. Box 6501, S-113 83 Stockholm, Sweden.

## 1. Introduction.

In the last two decades, many developing countries have suffered from severe macroeconomic turbulence. The economic collapses were brought about by policy-induced distortions, adverse terms of trade, and the reduced international capital mobility and higher interest rates that followed in the wake of the international recession in the beginning of the 1980s. A situation with rampant inflation and growing current account deficits is unsustainable in the long run. Stabilisation efforts, however, often introduce high adjustment and restructuring costs. Sharp cuts in government expenditures, large devaluations, and price liberalisations, may harm specific groups or the population at large, and entail political costs for the government undertaking them. Unpopular reforms will be difficult to implement and sustain. In view of these obstacles, the implementation of stabilisation policies in developing countries has called for support in the form of development assistance.

However, the experiences from aid and stabilisation reforms are puzzling. Why do we observe sustained, even increased aid dependence, successive failed stabilisation attempts and persistent instability in some countries, like Zambia, whereas others, for example the Gambia, have managed to stabilise successfully with high aid inflows? In fact, the unclear impact of aid on stabilisation is one example of a more general aid effectiveness puzzle. One explanation for the blurred picture could be that aid has virtually no impact on stabilisation reforms. Other factors, such as the intensity of the crisis, or the historical context, explain the final outcome. Yet, it seems unreasonable to disregard the role of aid, at least where aid inflows account for a substantial part of the

economy.<sup>1</sup> An alternative interpretation is that aid has conflicting roles in the stabilisation process. The present study proceeds along this line.

The focus of this paper is the relationship between development assistance and the implementation and results of stabilisation reforms.<sup>2</sup> In the literature on macroeconomic stabilisation, a central theme is that to achieve stabilisation, the reform process as such must be credible. In other words, it must be plausible that reforms can and will be successfully maintained in the long run.<sup>3</sup> The analysis provided below builds on the argument that aid can both enhance and reduce the (perceived) probability that reforms will be successfully undertaken and maintained. Which effect dominates will depend on how and when stabilisation reforms are supported by aid, and will not unconditionally be related to the amount of aid as such. The study addresses stabilisation reforms and aid by analysing the reform process in eight sub-Saharan countries, namely the Gambia, Ghana, Guinea-Bissau, Kenya, Tanzania, Uganda, Zaire and Zambia. These countries share a common feature in that they have been significant aid recipients in the 1980s, measured either by the amount of aid relative to GNP or in absolute numbers. However, their respective experiences from stabilisation reforms are highly varied, ranging from relatively rapid stabilisation in Ghana to decades of accelerating macroeconomic instability in Zaire. In what follows, it is argued that these discrepancies reflect

---

<sup>1</sup> In a recent cross-country study of aid impact, aid is generally found to be negatively correlated with savings, but these results do not apply to countries with high aid to GNP ratios, suggesting a different pattern for these countries. (Boone, 1994a)

<sup>2</sup> In what follows, foreign aid, development assistance, and concessional flows are used interchangeably.

<sup>3</sup> An overview of stabilisation reforms in economic theory and the relevance for some country experiences is provided in Solimano (1990). On the importance of credible reforms, see e.g. Calvo (1989), Rodrik (1989), Dornbusch (1987), and Sargent (1982).

counteractive roles of foreign aid.

A comparative study of aid and stabilisation should relate to and complement two strands of the literature: the political economy of reform, and aid effectiveness. On the macroeconomic side, there is a considerable literature on the relationship between aid and investment, savings and growth.<sup>4</sup> However, this study does not attempt to assess the overall impact of aid in terms of a negative or positive correlation – the country cases already suggest that that particular question is irrelevant or at least insufficient – but to highlight under what circumstances aid can support stabilisation reforms. Unlike more general studies of the political economy of reform, however, this study concentrates on large aid recipients, on the argument that the role of aid should be more transparent there.

Concentrating on stabilisation aid rather than aid in general has some advantages.<sup>5</sup> First, stabilisation aid is a comparatively transparent case for evaluation. Relative to more general development policies and goals, the time span of the reform measures is short, ex ante conditionality usually high, and the short-term goal relatively tangible. Second, stabilisation reforms are typically associated with very distinct policy changes whose success hinge on their respective credibility. Stabilisation reforms provide an important test case for the role of aid and aid conditionality in promoting or hampering incentives and policy credibility. The conclusions should have a bearing also on other forms of aid.

The paper is organised as follows. The second section provides an overview of

---

<sup>4</sup> See e.g. White (1992) for a critical discussion of the empirical literature. Studies of aid effectiveness tend to fall into either of two categories: large econometric cross-country studies along the lines of Boone (1994a, 1994b) and Burnside and Dollar (1996), or compilations of case studies, e.g. Mosley *et. al.* (1991), Nelson (1990), Schadler (1995) and World Bank (1994).

<sup>5</sup> Of course, stabilisation reforms and structural adjustment reforms are often intimately related and difficult to separate.

some theoretical findings relevant to this study. These insights provide the general structure for the discussion of the country cases that follows in the third section. The fourth section concludes.

## **2. A framework for aid and stabilisation reforms.**

What spurs economic reforms? An ample and expanding literature addresses the question, although the bulk of the empirical work is of relatively recent date.<sup>6</sup> While the primary concern here is aid effectiveness, we also need to control for alternative reform triggers. Haggard and Webb (1993) argue that among the main economic factors influencing reforms are the intensity of the crisis, the collective memory, and external influences, including aid.<sup>7</sup> These points are developed in turn below. After a brief overview of potentially important non-aid factors in the policy process, the discussion concentrates on the roles of aid and conditionality.

### *2.1. What initiates reform?*

First, the intensity of the economic crisis has been pointed out as a possible reform trigger. The argument is best summarised as a simple cost-benefit analysis: only when the costs from living with macroeconomic instability exceed those of undertaking reform will a government find the political leeway to act. However, the argument is fully pervasive only in a short-term perspective. If costly reforms are undertaken only to remedy even more costly instabilities, it is not obvious that the reforms will be maintained in the long

---

<sup>6</sup> See e.g. Campbell and Loxley (1989), Edwards (1993), Haggard and Webb (1993) and Nelson (1990).

<sup>7</sup> Their study provides a comprehensive survey of the political economy of reform in developing countries, and brings together theory and evidence on political and institutional factors as well as economic conditions.

run, once the worst crisis is overcome. Moreover, reforms may be less likely to succeed under very adverse circumstances, when policy challenges are even greater.

Second, the reputation of the policy-makers matters. Proclaiming or even implementing reforms is not equivalent to sustaining them. Hence, a government announcing a reform plan may lack long term credibility. In the case of a new regime, the public may be uncertain about its true objectives or preferences. Distrust in reform policies arises even more easily when a government has to fight the legacy of its previously revealed preferences, in cases where policies pursued in the past are markedly different from the announced reform policies. (Which usually is the case or else reforms would have been unnecessary in the first place.) A government that repeatedly has failed to accomplish announced reform efforts is likely to face similar credibility problems.

Reforms with low credibility are vulnerable for several reasons. The long run success of reforms usually hinges on domestic and international confidence, in the economy as such, in domestic firms, in the domestic currency, etc. For example, if investors do not trust that the reform policy will remain in place, the investment response will be weak, resulting in poor economic performance in spite of reforms, which in turn raises pressures for reform reversal.<sup>8</sup> Further, if there is a possibility that the reforms will not be maintained, there will be incentives for any opposing group to make efforts to push the reform packages over the edge.

Third, external factors may affect the reform process. The international business cycle will influence the domestic economy. For example, improvements in terms of trade will ease the pressure on the economy that can facilitate the reform process. However, if

---

<sup>8</sup> See e.g. Servén and Solimano (1992) or Rodrik (1991) on the relationship between macroeconomic reforms, uncertainty, and private investment.

the crisis argument above holds, an exogenous positive shock to the economy may also have an ambiguous effect on the incentives to maintain reforms. Finally, and central to this study, there are pressure, advice and demonstration effects via aid financing and the associated policy dialogues. The next section considers how and why aid has an impact.

## *2.2. Aid and stabilisation: friends or foes?*

There are several ways in which aid can influence the reform process. Advocates of aid to stabilisation reforms point to the importance of a buffer in times of policy changes.<sup>9</sup> Aid can partly replace those distortionary means of financing budget deficits that tend to induce instabilities in the first place. In the absence of domestic resources, the availability of foreign exchange to defend a realignment of the exchange rate is vital for the credibility of the new parity. Similarly, aid can be used to pay off foreign debt when a persistent balance of payments' crisis and a debt overhang inhibit the government's ability to act.<sup>10</sup> Further, stabilisation reforms typically entail measures to reduce public spending. Such reforms may impose high costs on some groups, whether as higher taxes, foregone transfers, or a rent reduction. The political feasibility of reform can therefore hinge upon whether a government is able to compensate the losers to some extent. Here, foreign aid can help a resource-constrained government to ease the transition. All of the above should render the reforms more credible.

Moreover and importantly, aid can be used as an incentive or reward to support what are held to be necessary reforms. Conditional aid has been an integral part of the

---

<sup>9</sup> See for example Sachs (1995) on the Russian reforms.

<sup>10</sup> Debt overhang refers to the idea that investment incentives are constrained by high levels of foreign indebtedness. See Sachs (1989).



adjustment programs undertaken in developing countries in the 1980s and 1990s. Aid commitments have been made contingent on agreements on reforms, and aid flows as well as policies have resulted from discussions on reform strategies between donors and recipient governments. Hence, aid conditionality has had an explicit role in shaping the reform process.

The role of aid is nevertheless ambiguous. A common critique of development assistance is that aid transfers induce a perpetual cycle of stagnation and aid dependence, since they inherently encourage consumption rather than investments necessary for growth, and since poor performance motivates aid.<sup>11</sup> Linking this to stabilisation, it is clear that while aid can reduce the costs associated with stabilisation reforms, it can likewise reduce the costs of continuing without reform. Although aid is granted to partly replace distortionary means of financing budget deficits, it may also alleviate the pressure to undertake necessary but politically costly reforms.<sup>12</sup> Conditionality can guarantee compliance only if aid disbursements are granted after reforms that cannot be reversed.

Since there are rational arguments both against and in favour of aid, the core issue is when it will assume what role. However, although the macroeconomic impact of aid and the political economy of reform are thoroughly researched areas, the link between aid, credibility and stabilisation reforms has received less attention in formal modelling. The discussion below merges some hypothesis that come out of the existing literature,

---

<sup>11</sup> The works by Giffin (1970) and Karlström (1996) are along these lines. See Svensson (1996) for a theoretical formalisation and some empirical evidence on strategic aid dependence.

<sup>12</sup> This disincentive effect arises also from other financial flows which relieve balance of payments pressures on a temporary basis. Examples are the commodity booms and the commercial lending booms which took place in the 1970s, both of which affected the fiscal discipline in these countries. Applied to terms of trade shocks but with a bearing on aid, it has also been argued that in countries with strong and conflicting interest groups with influence over the budget, any gains from a positive shock to the current account will be appropriated (Tornell and Lane, 1994).

regarding the optimal timing of aid, the role of policy conditionality, and the role of bargaining in an aid contract.

The timing of aid is a controversial issue. Should donors help increase reform credibility by giving aid early in the reform process, or should aid donors avoid squandering resources and wait until the recipient has shown the willingness to undertake and maintain reforms? In other words, should aid packages be front-loaded or end loaded to enforce conditionality?<sup>13</sup> The only model – to our knowledge – that explicitly considers the relationship between the timing of foreign aid and stabilisation is the ‘war of attrition’ model by Casella and Eichengreen (1994). The authors introduce foreign aid into the model of stabilisation delays in Alesina and Drazen (1991), and so rely on the assumption that stabilisation is delayed because different socio-economic groups cannot agree on reform design. Their model allows for aid resources to potentially both enhance reforms and postpone them, and their conclusion is that aid commitments as well as disbursements should be made early for aid to be reform inducing rather than reform deferring.<sup>14</sup> Unfortunately, the Casella-Eichengreen model fails to address uncertainty about government conduct as well as the impact of policy conditionality. The timing of reform is a function of aid commitments, whereas if conditionality is incorporated, the timing of aid commitments and disbursements is presumably a function of (promises of) reform. Conditionality may therefore reverse the aid-reform causality, and conditionality will certainly introduce a third party into the reform bargaining process: the donor

---

<sup>13</sup> See for example Collier (1995) for a discussion.

<sup>14</sup> The result holds irrespective of the size of the aid transfer. There is a second-order effect, however: the larger the transfer, the more important to get the timing right, since the size of the transfer will enforce the positive/negative effect.

community.<sup>15</sup>

However, policy conditionality will not necessarily increase the long-term success of reforms. Following the intuition in Rodrik (1989), there is a potentially adverse impact of aid conditionality on reforms. Along the lines of Calvo (1986), Rodrik argues that the success of most reforms ultimately hinges on whether people believe that the government is willing to maintain the policy changes in the long run.<sup>16</sup> Without credibility, the public will expect a policy reversal in the future, act accordingly, and reforms will fail.

In the Rodrik model, attaching strict conditionality to aid will indeed favour the implementation, but not the success, of reforms. A time inconsistency problem arises. If aid disbursements are made conditional upon reforms, a regime can be tempted to temporarily pretend to be committed to reform in order to secure aid inflows, and then reverse reforms *ex post*. Foreign aid will provide all types of government with an incentive to launch a shadow program, that is a reform package that mimics a typical donor supported reform program. Aid will have an adverse impact on credibility, since there will be a temptation for reform averse regimes to appropriate resources by abiding in the short run only.<sup>17</sup>

In order to make reform commitment credible, a truly reform minded government will have to carry out reforms so far-reaching that a reform averse regime would find them too costly despite the aid incentive. By this form of 'policy-overshooting', the

---

<sup>15</sup> In addition, very specific policy conditionality will reduce uncertainty about the losers from the adjustment package, which should favour stabilisation in the Casella-Eichengreen model.

<sup>16</sup> The model centres on a trade reform which, if lacking credibility, results in suboptimal levels of investment. The argument and implications extend to all types of reversible reforms.

<sup>17</sup> Of course, the argument hinges on the assumption that reforms are reversible to a certain extent.

government can signal its level of commitment (its 'type').<sup>18</sup> From this perspective, conditionality is of no help, in fact, the link between aid and reform via conditionality is what distorts information, and reduces credibility.

Rodrik develops his argument above in a two period model. In traditionally aid-dependent countries, however, relations with the donor community are often built on a long-term basis, and characterised by a principal-agent relationship with repeated bargaining and renegotiation. For the Rodrik model to extend to the more realistic repeated games' set-up, there must be an implicit assumption that not only recipients but also donors face a time inconsistency problem. A reform averse regime contemplating to deviate from an aid contract would have to weigh the benefits of doing so against the likelihood that an otherwise guaranteed flow of foreign aid will be cut off in the future as a punishment. These probabilities are likely to depend on what incentives the donor has to cut off aid relative to agree to another round of discussions. The donors' policy sensitivity, meaning the donor's propensity to punish policy deviation by lower aid flows and reward policy compliance by continued/increased aid flows, will be something the recipient learns in the case of repeated slippage.

Policy insensitivity arises since donors as well as recipients have incentives to amend the aid contract after failed stabilisation reforms. In other words, aid contracts are not renegotiation-proof. In a conventional bargaining situation, the respective objective functions of the lender and the borrower are transparent. The borrower wishes to attract maximum financing in exchange for a minimum of conditions, the lender wishes to

---

<sup>18</sup> 'Overshooting' is here used to mean a reform which is more far-reaching than had been necessary in the case of full credibility.

achieve maximum policy reform in exchange for a minimum of financing.<sup>19</sup> In an aid contract, however, the donor's objectives are not as clear-cut. As opposed to commercial loans, aid is granted for a variety of reasons, be they strategic-political, altruistic or financial. An altruistic donor faces a well-known dilemma. It is *ex ante* optimal to construct an aid contract which rewards 'good' policies which result in 'good' outcomes, that is stabilisation. *Ex post*, however, a poverty averse donor will find it difficult to abandon the recipient and the aid relationship after a failed stabilisation attempt, when a large part of the population will typically be suffering even more than before.<sup>20</sup> Aid may also traditionally have been granted purely as a welfare transfer which remains justified as long as there remains an income gap between donor and recipient, and hence is unrelated to economic policy.

A less generous interpretation of the donor time inconsistency problem stems from the long-term nature of the aid-donor relationship. A prematurely ended aid contract may result in a loss of political prestige, especially in cases where development co-operation dates back several years. In addition, in these cases, the aid 'machinery', consisting of several agencies and ongoing development projects, is not likely to be easily dismantled as a punishment for failing efforts. Further, it is often the case that a donor country or agency often has a variety of claims on, or investments in, the recipient country. Suspending all aid and forcing the recipient to default reduces the probability of repayment of both concessional and non-concessional loans in the future.<sup>21</sup> Finally, and

---

<sup>19</sup> This is the intuition in the repeated conditionality game in Mosley (1987).

<sup>20</sup> For a game theoretic formalisation of how altruism may lead to non-credible aid policy, see e.g. Svensson (1996).

<sup>21</sup> In a comprehensive cross-country study by Burnside and Dollar (1996), estimations of an aid allocation equation indicate that aid (bilateral in particular) is granted for strategic interests rather than as a reward for 'good' policies. Based on a counterfactual, the authors also conclude that a stronger link

not least important, donors may face a credibility problem *vis à vis* countries where they in the past have endorsed what has turned out to be "wrong" policies. All of the above is likely to introduce some inertia in donors' policy sensitivity, and in the recipient country's estimation of that policy sensitivity.

### 2.3. *Summary.*

The above discussion provides a general framework for the influence of foreign aid on the credibility of the stabilisation process. It can be summarised as follows:

- i The success of stabilisation reforms will be influenced by several factors, including aid. Other candidates in the literature are the intensity of the economic crisis, government reputation, and external economic influences, e.g. via international business cycles.
- ii The purpose of foreign aid is to lower the costs of undertaking and sustaining stabilisation reforms, but aid can also lower the costs of living with the instabilities. Aid has a potential for both increasing and decreasing the credibility of the reform process.
- iii Due to time inconsistency problems, policy conditionality will not necessarily guarantee that reforms are sustained.
- iv To enhance credibility, governments may signal their reform commitment by policy overshooting, that is by undertaking policy reforms that are more far-reaching than would have been necessary in the case of full reform credibility.
- v When the donor is known to be motivated by purely altruistic reasons, the bargaining power of recipients may perversely increase with bad performance.

---

between aid policies and recipient economic policies would improve the impact of aid.

vi The conditionality-credibility problem arises when donors have strong incentives not to cut off aid disbursements. If the recipient can anticipate the scope for renegotiation, the effective level of policy conditionality differs from the formal level. The nature and history of the aid relationship will be important in forming such expectations on the effects of policy slippage on donor financing.

### 3. Stabilisation and aid in sub-Saharan Africa.

This section starts off with some concepts and definitions. The relationship between aid flows and the stabilisation reform process in eight sub-Saharan countries is then discussed on the basis of the analytical framework presented above. The Gambia, Ghana, Guinea-Bissau, Kenya, Tanzania, Uganda, Zaire and Zambia, have been chosen for this study according to the following criteria. First, they have all been significant aid recipients in the last two decades, whether measured in absolute numbers or as a share of GNP.<sup>22</sup> Second, they have all experienced periods of severe economic instability with subsequent attempts at stabilisation. Third, stabilisation reforms have been associated with large inflows of aid. Finally, and motivating this study, they nevertheless differ significantly regarding the results from the stabilisation programs. The analysis is based on both quantitative macroeconomic data and qualitative information about the reform programs and the stabilisation process.<sup>23</sup> Appendix 1 contains a brief chronological

---

<sup>22</sup> Indeed, sub-Saharan Africa has been increasingly marginalised relative to the rest of the world economy in most respects - trade, investment, output - but for its share of development assistance. See Collier (1995).

<sup>23</sup> The most important sources for the political economy of reform and reform agendas in the eight countries have been: For the Gambia, Jabara (1994), Radelet (1992); for Ghana, Alderman (1994), Callaghy (1990), Toye (1991); for Tanzania, Adams *et al.* (1994), Doriye *et al.* (1994), Doriye (1992), Sarris and Van den Brink (1994); for Uganda, Loxley (1989), Sharer *et al.*; for Guinea-Bissau, Zejan and Kokko (1994); for Kenya, Mosley (1991), World Bank (1994); for Zaire, wa Bilenga (1994), Callaghy (1986), Körner (1991), for Zambia, Callaghy (1990), White and Edstrand (1994).

overview of the reform process in each country.

Before we continue, a caveat is in place. Clearly, the results from the analysis undertaken here would have been stronger and more credible were they based on a larger sample of countries. There are certainly more countries that could qualify as both aid dependent and stabilisation reformers; the sample used here is group of the extreme (and perhaps most interesting) cases. A larger sample would have permitted a more rigorous statistical analysis. The somewhat unorthodox approach used here reflects a trade-off in trying to incorporate and use as much information as possible without losing sight of the individual cases.

Table 1 provides a classification of the countries with respect to the results from stabilisation reforms, along with two indicators of the importance of aid in each country. Aid figures relate to a "benchmark" year, chosen to be the year in which the first major stabilisation reform program was initiated. Aid volumes are given both as shares of GNP (average of ten years: five years before the benchmark year, the benchmark year, and four years after) and as total inflows in USD accumulated over the same period. Here and in what follows, 'successful' stabilisation refers to cases where stabilisation reforms were undertaken and maintained, where inflation was reduced and/or balance of payments situations improved, and where no further serious instabilities occurred. 'Failed' stabilisations, in contrast, are cases where such macroeconomic stability was never achieved, or where stabilisation was at best a temporary phenomenon. Following this definition, Ghana, the Gambia, Tanzania and Uganda provide examples of relatively successful and lasting stabilisation reforms, whereas Guinea-Bissau, Kenya, Zaire and Zambia are examples of unsuccessful stabilisation reforms. This categorisation is not absolute, but subject to changes depending on the time span covered by the analysis.



Hence, both the Gambian and the Tanzanian stabilisation were delayed, in the sense that the instabilities lasted for some time before action was taken. Conversely, the Kenyan economy did see some improvements in the early 1980s, but the stabilisation trend was later reversed.

< Table 1 about here >

Aid is here defined as the sum of official grants, disbursements of concessional lending, and use of IMF credit, where technical assistance grants are excluded<sup>24</sup>, and where concessional lending refers to all loans which contain a grant element exceeding 25 percent of face value. While there are several alternative measures of aid, gross aid inflows best reflect the mechanisms of interest here, that is, the role of aid as a signalling and supporting device. This definition implies, first, that the burden of old concessional debt obligations is disregarded, since it is the new resources provided by donors in response to policy changes which constitutes the signal of willingness to support. Moreover, the leverage effect of concessional loans is incorporated, since total loan values are included and not only the grant elements.<sup>25</sup> IMF support is also incorporated – although not conventionally labelled “concessional”, IMF support arrives in a state of crisis when most “normal” and non-aid sources have been cut off, implying that the *de facto* alternative cost of borrowing is prohibitively high, which in turn implies that the grant element is very high. It also carries with it considerable policy conditionality. For

---

<sup>24</sup> Following the convention in macrostudies of aid.

<sup>25</sup> An alternative formula for measuring aid inflows is to calculate the grant element from all lending flows and add these to the grants (which are simply loans with a hundred per cent grant equivalent), instead of the total value of the loan disbursements. See e.g. Burnside and Dollar (1996). However, this method hinges on a correct appreciation of the alternative cost of borrowing, which is problematic for countries which are barred from commercial lending.

simplicity, the above definition is limited to official development assistance.<sup>26</sup>

Both aid inflows in absolute numbers (USD) and aid inflows as shares of GNP are signals of the importance of aid. A comparison of aid-to-GNP ratios indicates the relative significance and impact of aid in the recipients' economies.<sup>27</sup> A comparison of the absolute levels of aid inflows, on the other hand, points to the donor community's willingness to allocate funds to one country as opposed to the other. Why these measures are complementary is evident from Table 1. Kenya and Zaire are smaller aid recipients in terms of aid relative to their respective economies, but have managed to attract quite considerable amounts of aid relative to other countries.

### *3.1. Setting the stage: the origin of the crises.*

Although the countries differ in many respects, there is a very similar historical account of how the economic difficulties occurred. The general picture is one of a combination of home-made policy failures and bad luck, or what economists call negative exogenous shocks. The long-term effects of economic mismanagement, the medium term effects of deteriorating export prices and the short-term effects of droughts and wars precipitated the crisis. After a more or less drastic political systemic change, such as independence from colonial rulers, a new generation of governments embarked on

---

<sup>26</sup> The chosen method leaves us with the somewhat arbitrary 25 percent border for distinguishing between concessional and non-concessional loans, and, moreover, two countries which receive disbursements of equal size but with different degrees of concessionality will appear to receive the same amount of aid. In the countries under study, however, such border line cases do not appear to be a severe problem. Being low income countries and large aid recipients, all countries, with the possible exception of Kenya, received a high share of their aid in the form of pure grants between 1975 and 1990. Moreover, they are in the region of very high concessionality lending, evidenced in average grant elements of new commitments well above 25 percent, and in most cases considerably higher than fifty percent. Grants and gross concessional lending should therefore provide a fairly accurate measure for a comparative exercise.

<sup>27</sup> Aid as a share of GNP or GDP is also a commonly used dependent variable in cross-country studies of aid effectiveness, see Boone (1994), Burnside and Dollar (1996), or White (1992).

ambitious programs, with the agenda set to promote economic independence and improve social standards. In order to achieve these goals, they relied on policies largely characterised by planning mechanisms, with heavily regulated prices, subsidies and expansion of the public sector. The countries generally remained dependent on a few export commodities for their foreign exchange earnings, which in turn was a crucial source of income for the government, either through direct ownership of the production facilities or via taxation. Despite relatively favourable terms of trade for commodities such as coffee (Uganda, Kenya, Tanzania), cocoa (Ghana), copper (Zaire, Zambia), and groundnuts (the Gambia, Guinea-Bissau) for a sustained period of time, the increases in public expenditures that followed on heavy investment programs and subsidies were in general incompatible with public revenue; hence the need to resort to external sources to finance the fiscal gap. The required foreign capital was made readily available not least from the international banking system's need to recycle petro-dollars. Successively, the economies became more vulnerable, with unsustainable public sector deficits and debt burdens. Shocks to the economic system, mainly in the form of deteriorations in terms of trade, would therefore precipitate serious imbalances in public finances. Falls in export prices and the oil shocks of 1974 and 1979 combined to an adverse development of terms of trade. In addition, some countries, notably Ghana, the Gambia, and Tanzania, were hit by severe droughts, and Tanzania and Uganda went to war. The mix of policy induced distortions, an unfavourable international economic environment, and various shocks, induced the collapse of the economic systems, manifested in high inflation and flight from the domestic currencies. Several countries found themselves with severe foreign exchange shortages, unable to meet their debt obligations or to alleviate acute commodity shortages. Virtually all non-concessional lending was cut off, partly as a

consequence of mounting debt arrears, partly as a consequence of ‘lessons learned’ from the Latin-American debt crisis.

In this brief overview of the background stores, hence, it is hard to find any obvious discrepancies that could explain the differences in the stabilisation process. Instead, we draw on the theoretical framework presented earlier to find a systematic pattern.

### *3.2. Empirical implications.*

The summary in section 2.3 translates into some hypotheses that can be tested against the facts:

- i Since aid can both increase and decrease the credibility of reforms, we should not necessarily expect a systematic pattern between high aid levels and successful/unsuccessful stabilisation.
- ii However, differences in performance among large aid recipients may not necessarily reflect different influences from aid, as they may instead be due to important non aid factors through the following channels:
  - The more intense the crisis, the higher the incentive for the government to undertake and maintain large-scale reform.
  - Adverse exogenous shocks lead to higher incentives for the government to undertake large-scale reform. However, positive shocks may also help a reform once it is underway.
  - The longer a government has resisted reform, the less credible will its change in economic policy be and consequently the smaller its chances of success.
- iii Far-reaching reforms originating from the government are more credible and

therefore more successful than others. Reform design as a signalling device should be particularly important in countries that receive large amounts of aid and policy conditionality.

- iv While there are strong reasons to believe that the timing and not only the volume of aid disbursements matters for the incentive structure, it remains to be investigated in what way:
- It has been argued that early aid disbursements will facilitate and help the implementation of reforms.
  - But there are also reasons to believe that a history of high aid inflows results in a lower policy sensitivity of aid.

The remainder of this paper is an attempt to test these hypotheses against the available information. Table 2 summarises the indicators chosen to operationalise the first set of arguments above. The successful countries are grouped to the left in the table, the group of unsuccessful countries is to the right.

**<Table 2 about here>**

As in table 1, all figures relate to a "benchmark" year, chosen to be the year in which the first major stabilisation reform program was initiated.<sup>28</sup> Table 2 replicates the aid figures from table 1 with aid volumes given as percentage shares of GNP and as total inflows in USD. The extent of the crisis – the trough factor argument – is illustrated by

---

<sup>28</sup> The before/after approach is readily applied to the successful cases – there is a specific stabilisation point in time to which the various factors can be related. For the unsuccessful cases, however, the comparisons are not so easily made. By definition, these countries had prolonged periods of instabilities and/or cycles of reform attempts and failures, and the benchmark year is more difficult to define.

inflation levels and the current account balance in the benchmark year, and in the three year period average prior to and including the benchmark year. External shocks are measured by annual changes in terms of trade in the benchmark year, in the three-year average prior to and including the benchmark year, and in the three-year average following the benchmark year. Government legacy is indicated by the nature of change, that is how the government/regime in question came to power, and by persistence, how long the government had been in power before the first major stabilisation program was undertaken.

### *3.3. Aid volumes and stabilisation.*

When comparing the two groups, the numbers indicate no apparent correlation between the period aggregates of aid flows on the one hand and the results from stabilisation reforms on the other. Measured in percentages of GNP, the annual average aid flows into Ghana, Kenya and Zaire are comparable, and the Gambia, Guinea-Bissau and Zambia would be defined as extremely aid dependent countries. Measured in total inflows, the pattern is different. Guinea-Bissau and the Gambia have aid profiles in similar ranges, but, mainly due to the use of IMF credit, the largest sums of external assistance have been directed to Kenya, Zaire and Zambia, the unsuccessful cases. Nevertheless, also Ghana, Tanzania and Uganda have received considerable sums.<sup>29</sup>

From a general comparison of period averages of aid it is not really possible to detect a pattern in favour or against aid. Certainly, unsuccessful stabilisers have received surprisingly large amounts of aid – which also is a reflection of the fact that these

---

<sup>29</sup> When IMF credit is not included, Uganda and Zambia are in similar ranges of aid dependency (share of GNP) and Kenya, Zaire, Zambia and Ghana are in similar ranges for total inflows.

countries have signed several agreements with the donor community, failed to stabilise, and signed new agreements. But in terms of aid/GNP, measuring aid dependency or aid inflows' importance in the domestic economy, there is no obvious link simply in terms of a positive or a negative correlation.

### *3.4. Non-aid factors.*

#### *Intensity of the crisis – the trough factor.*

The notion that the more severe the crisis, the less politically costly is the hardship from imposing stabilisation policy, is next on the list. When looking at inflation figures in table 2, there seems at first to be some support for the argument, as the rapid stabilisers, Ghana and Uganda, take the lead in terms of high inflation, especially in the case of Uganda. The high three-year average also suggests that the high inflation was not a one-year event but had persisted for some time. However, the trough factor needs some qualification before it can be considered decisive in the stabilisation process.

First, we note that although Ghana and Uganda have had the highest inflation levels, and raise the group average of the successful stabilisers high above the other group, Guinea-Bissau and Zaire also experienced high levels of inflation. High inflation was indeed one of the reasons of the introduction of stabilisation programs in these two countries as well. However, while a severe crisis – if proxied by a high inflation rate – appears to have facilitated (or impelled) the introduction of a program, it does not seem to have guaranteed that reforms are sustained. Indeed, by the end of the 1990's both Zambian and Zairian inflation levels were in the hundreds (after several stabilisation attempts, hence), and yet the deteriorating macroeconomic trends were not broken.

We should also note that the pattern is the reverse for current account deficits –

the unsuccessful group has a higher average. One reason for this may of course be that although the indicators are linked, the pains from inflation are more directly felt by the public, and therefore have more far-reaching political implications.

As the relative conformity of the background stories already suggested, then, the trough factor approach cannot fully explain the differences between these countries. At the end of the 1980s, everything in Uganda indicated extreme macroeconomic turbulence and crisis, but so did everything in Zambia and Zaire. Clearly, Ghana in 1983 was a country on the verge of an economic and social collapse. However, by the late 1980s, Zaire had not stabilised despite a disintegrating economy.<sup>30</sup> In these cases, the notion that the worse the crisis, the higher the political support for reforms – with its somewhat odd policy implication to defer crisis until it is necessary to use the emergency breaks – does not hold for a comparison across countries. But nor is the converse true, that a severe crisis impairs all reform attempts.

*Exogenous shocks - the luck factor.<sup>31</sup>*

Linked to the domestic crisis argument is that of exogenous shocks – that the crisis is worsened by sharp deteriorations in terms of trade, while the economic recovery in some countries is helped by favourable terms of trade once the reform process is underway. Deterioration in terms of trade has been held to be one of the precipitating factors for the macroeconomic instabilities; an improvement in terms of trade could

---

<sup>30</sup> Callaghy writes on Ghana that ‘the trough was deep, nasty, prolonged, and physically and psychologically devastating.’ (Callaghy, 1990, p 274). In former Zaire, the disintegration of the economy was evidenced in that an estimated 80 percent of production is taking place in the informal sector (*The Economist*, December 1994).

<sup>31</sup> Of course, neither terms of trade (which depend on the economic structure) nor government turnover (which depend on economic success or failure) are really exogenous to aid and policy reform.



arguably reduce the macroeconomic instabilities even where reform programs were not particularly credible in themselves. However, there is little to suggest that luck in the form of international terms of trade has constituted a decisive difference between the groups. As table 2 shows, falls in terms of trade just before stabilisation may indeed have spurred reform attempts by worsening the crisis among the successful stabilisers, especially the Gambia and Uganda. But terms of trade shocks are only a potential cause of instabilities, not necessarily a symptom of severe crisis. Inflation and current account deficits are likely to be more direct indicators for the extent of political costs of a crisis. More importantly, as for supporting the reform process underway, there is no clear-cut evidence. Terms of trade did improve for Ghana and Uganda after the reform program, but only for the first year. If anything, the countries that did not stabilise were comparatively more lucky after launching their respective programs.

#### *Government legacy.*

Government reputation and the government's credibility as a policy reformer, is here measured by persistence and by how marked a political change it brought about when coming to power.<sup>32</sup> Here there does seem to be a link to stabilisation. Three of the unsuccessful reformers - Kenya, Zambia, and Zaire - had no government change before or during the reform process. Likewise, the delayed stabilisers - the Gambia, Tanzania - had no major regime change.<sup>33</sup> The successful reformers, Ghana and Uganda, had - violent - government turnovers after and spurred by the beginning of the serious crisis.

---

<sup>32</sup> Here we are not really taking into account changes of posts within governments and among civil servants, though such changes may have substantial influence on the policy agenda.

<sup>33</sup> In Tanzania, however, Mwinyi succeeded Nyere in 1985. Although this changed the pace of the reform, Nyere allegedly kept a great deal of control (see Adams *et al.*, 1994).

Without deeper insight into the specific processes and political structure of each country, it is perhaps difficult to draw too hefty conclusions from these results. Yet, the evidence does suggest that in the unsuccessful cases, incumbent governments that had implemented inadequate policies in the past, faced a tough challenge in trying to convince themselves as well as their constituents that they were now completely committed to unravelling prior policy commitments. The many (donor supported) reform attempts indicate that they were better at convincing outsiders than insiders. As for the successful cases, there may have been great uncertainty regarding the nature and policy direction of the new regimes (which is what Rodrik suggests as a reason for policy uncertainty). However, a government without a record of failures can at least be given the benefit of doubt.<sup>34</sup>

In terms of non-aid factors, we conclude that there is no strong support for the trough factor or the luck factor approach. However, there is some tentative evidence that government legacy has played a role, suggesting that new governments have not had to defend a policy U-turn. Next, we turn to the factors on our checklist that are more directly related to the aid- and reformprocess.

### *3.5. Policy overshooting and shadow programs.*

As pointed out, the presence of aid conditionality and policy dialogues prompts several questions: from where do reform programs originate, who orchestrates the design and what is the fundamental reason they are implemented by the recipient governments? Recalling Rodrik's hypothesis that far-reaching reforms originating from

---

<sup>34</sup> However, *ex ante* differences in political inclinations among the regimes is not a decisive factor. The Ghanaian regime, for example, embarked on a populist, radical program in 1982, which failed and had to be aborted (Alderman, 1994).

the government are more credible and therefore more successful than others, there is, again, some systematic evidence at hand.

*Stabilisation has followed after a recipient regime has taken the initiative to a comprehensive shadow reform program, where that program was the first genuine reform attempt.* Successful shadow programs have been far-reaching and included elements that are potentially quite costly in political terms. The true originator and designer of reform programs is difficult to identify objectively, and will, of course, largely depend on institutional capacities. However, the successful stabilisation programs appear to illustrate the 'policy overshooting' case relatively well: the 1983 Economic Recovery Program in Ghana, the 1985 Economic Recovery Program in the Gambia, the 1986 Economic Recovery Program in Tanzania, and the 1988/89 Economic Policy Program in Uganda. While seeking technical help from the multilateral donors, the Ghanaian government prompted the reform program, and the set-up was clearly constructed so as to attract maximum external support. The ERP contained far-reaching and politically costly measures, including an initial devaluation exceeding 300 percent, cuts in civil service wages and cuts in agricultural subsidies. The Gambian ERP was initiated by the Ministry of Finance, and contained bold policy prescriptions such as a 20 percent reduction in the public sector work force, liberalisation of the foreign exchange market and free floating of the currency. There were consultations with the multilateral donors during the design of the program, but aid did not come forth until the program was in place. The Tanzanian ERP, under the new Mwinyi government, seemed designed to break the stalemate with the multilateral institutions, as it contained the typical IMF prescriptions: large devaluations, openly licensed foreign exchange, sharp increase in interest rates, and explicit fiscal and monetary targets.

Neither in the case of Guinea-Bissau, nor in the case of Kenya, were proper shadow programs put together. The reform programs were from the beginning supported by World Bank and/or IMF lending. In the case of Kenya, a World Bank sector program was simply converted into a structural adjustment loan. But how do the successful cases contrast to the two shadow programs put together by the Zairian and Zambian governments in 1982, and 1985 respectively? The latter programs were both set up to demonstrate the good faith of the governments and the willingness to undertake reforms. Both programs were influenced by the multilateral donor community, and their undertaking was a precondition for a donor-supported program. Both were, as envisaged, turned into formal agreements after their implementation. The Zairian program focused on cuts in public expenditures; the Zambian was probably farther reaching, with elimination of subsidies and a liberalisation of the foreign exchange system on the agenda.

For these two countries, the most prominent difference in comparison with the successful reformers lies in the historical context of the timing of the shadow programs. Several years had passed between the beginning of the crisis and the time of the design and implementation of their shadow programs. Meanwhile, Zambia and Zaire had signed several agreements with the multilaterals, in a cycle of broken agreements, new negotiations, new agreements, new slippage, and so forth. The legacy of the past seemed to erode genuine confidence in the reforms, and consequently rendered them much more vulnerable to internal opposition. When formalised into official agreements with the multilaterals, the credibility of the reform programs was already weakened. The regimes had proved that they were capable of promises without delivery. The donors, on the other hand, had proved that they were open for renegotiation also after slippage. Their

enforcement of conditionality lacked credibility.

### *3.6. Aid history: the timing and sequencing of aid flows.*

The actual sequencing of aid flows to the unstable countries has differed substantially, despite the fact that all have received generous financing throughout. However, aid flows relate to the timing of reforms and stabilisation in a consistent manner. Figure 4 relates the annual inflows of aid, with indications of when reform programs were undertaken, and when stabilisation was achieved. The figures give a clarifying account of the following conclusions:

**< Figure 1 about here >**

*In countries with a history of high aid inflows prior to the macroeconomic crisis, stabilisation has been delayed, or has never been achieved.* The tardy stabilisers, Tanzania and the Gambia, were (and are) traditionally aid dependent countries, with aid to GNP ratios in the range of 10-15 per cent at the end of the 1970s. In Guinea-Bissau, the corresponding figure was as high as 40 per cent. Whereas the aid to GNP ratios of Kenya, Zaire and Zambia were comparatively modest, averaging below five percent, this mainly reflects the relative size of their economies. Each of these countries received 100-200 million USD in aid annually, and, by the end of 1980, both Kenya and Zaire had received a cumulative total of well over one thousand million USD. Such large and stable inflows over a long time period must be evidence of aid reliance, if not aid dependence, and imply permanent and stable contacts with the donor community as well as established channels for external resources. Furthermore, in the case of the Gambia, Tanzania, Kenya, Zaire, and Zambia, these high aid flows had accrued to the same regime that in the 1980s faced crisis and pressures for economic reform. In Ghana,

Uganda, and in Guinea-Bissau, the situation was different at the outset. Military take-overs had dramatically changed the regimes, and automatically also the recipient representatives. For Ghana and Uganda, these violent shifts in the political sphere appear to have erased the collective memory, also in cases where aid flows previously had been high, and provided a new basis such that the aid and policy discussions started from scratch.

The Gambia and Tanzania did not undertake large economic reforms until aid flows had fallen for some time, relative to previous high levels. Although highly dependent on aid inflows for their imports, the regimes seem to have stayed confident that new financing would be forthcoming, even in the event of postponed reforms. The policy change did not come until, first, the macroeconomic situation had deteriorated to a point where even high aid inflows did not suffice to balance the accounts, and second, the donor position was manifested in actual reductions of aid disbursements. In particular, the withholding of bilateral donor support appears in both cases to have changed the expectations and redefined the bargaining position of each side.

Where the unsuccessful cases are concerned, it is of course impossible to relate the timing of aid flows to any stabilisation period (since by definition, no such event occurred). But whatever the time frame, Guinea-Bissau, Kenya, Zaire and Zambia received significant amounts of aid prior to and during the period of substantial macroeconomic crisis and reform attempts. Similarly, the new government of Guinea-Bissau was met with continued high aid inflows in 1980. Zambia provides the one notable dip in aid flows during the stabilisation period (1982-1983), reflecting primarily donors' reaction to slippage from an IMF arrangement. In the Zambian as well as the other cases, however, it is remarkable that whatever the 'punishment' or 'demonstration'

level of aid the donors applied in response to non-compliance by these countries, the resulting level of aid flows was still higher than before any major stabilisation attempts were made or abandoned.

*Aid may support the consolidation of reforms, but does not automatically induce reform efforts.* All major shadow reform programs undertaken in these countries have been followed by large inflows of aid, for successful and unsuccessful cases alike. However, in the Ghanaian and Ugandan cases, the real surge did not occur until after stabilisation had been achieved, that is, not immediately following the announcement of a program, but upon its implementation and continuation. Tanzania and the Gambia, being more established aid recipients, received generous financing immediately upon the announcement of a considerable reform package.

Summarising, the evidence suggests that aid flows are ‘sticky’ downwards. This ‘stickiness’ originates from the long-term nature of aid relationships. Previous aid flows appear to define a floor for further bargaining, which undermines the credibility of the donor strategy, or, put differently, reduces the actual level of conditionality. From the donor side, it appears to be more difficult to change the content and format of a relationship that has been maintained for long, than to impose strict and credible conditionality in a new aid contract.

The transformation in the purpose of aid is a critical point here. From the 1980s onwards, more and more aid was supposed to change into a policy-related mechanism. With large variance in performance and effort among countries and across time, we should expect higher variance in aid flows in times of aid with policy related conditionality. Against the background of high aid flows, along with established aid relationships, however, it has taken time, effort and very co-ordinated and marked

signals from the donor community to establish credible conditionality.

#### **4. Summary and conclusions.**

Foreign aid plays an ambiguous role in the stabilisation process in developing countries. Ample access to external resources ought to facilitate stabilisation, given the economic and political costs associated with such reforms. However, aid resources can also alleviate the pressures for undertaking policy reform. This study looks at the links between aid and reforms, as they appear in the story of macroeconomic stabilisation in eight sub-Saharan countries. These countries share a common feature in that they have been significant aid recipients in the 1980s, but differ in that their experiences from stabilisation reforms are highly varied. What has been the impact of foreign aid?

Indeed, several factors have been proposed in the debate as important for the introduction and success of stabilisation reforms: a deep economic crisis that gives the political leeway to undertake reforms in the first place, a favourable turn in the international business cycle which backs up reforms once they have been implemented, and a change of government which increases the credibility of reform commitments, among others. However, for the eight countries under study, there does not appear to be any systematic relationship between stabilisation and the depth of the crisis or international terms of trade. While this study disregards some potentially influential factors, including country- specific institutional capacity and the nature of domestic interest groups, there is nevertheless an interesting story to be found in the interaction between aid money, policy conditionality, and government reform commitment.

The theoretical literature drawn on here suggests that aid and aid conditionality can be counterproductive because aid recipients as well as donors face credibility problems.



Recipients may temporarily mimic reform commitment only to secure aid inflows. Donors may be prepared to renegotiate and renew an aid contract after policy slippage, thereby devaluing the impact of policy conditionality on reforms. Stabilisation will not be achieved unless reform commitment is credible, and only credible conditionality serves its purpose. Applying this perspective, this study indicates that the real impact of policy conditionality – its credibility – depends largely on the nature of the relationship between donors and recipients. Development assistance has a long history with motives traditionally unrelated to policy reform. Although the purpose and forms of aid may have varied over time, it seems that some governments have been reassured that foreign aid would be forthcoming, irrespective of how economic policy was conducted. In the present sample of countries, the aid and policy history appear to have influenced the final outcome jointly.

An overall conclusion from this study is that aid flows are sticky downwards. This stickiness separates regimes with a history of large aid inflows from others. The conditional stabilisation aid of the 1980s should by definition be policy sensitive, relative to unconditional aid. However, carrot-and-stick policies have been difficult to implement in countries that have been large aid recipients, such as Zambia or Tanzania. There, aid has traditionally been treated as permanent income transfer and not as a policy related variable. Where donors have been present for a long time, previous aid flows have defined a floor for further bargaining. In countries where aid contracts for various reasons repeatedly have been renegotiated, aid conditionality seems to have lost its function. Only when donors exercised a credible threat by actually lowering aid levels, did policy change occur.

Moreover, the study suggests that stabilisation has followed on far-reaching

shadow programs, but only where such programs had not been preceded by several failed reform programs. The 'first-time' shadow programs in the present sample imposed bold measures, and demonstrated the commitment of the government, despite the political costs entailed. Unsuccessful programs, on the other hand, were generally designed or bargained down to fulfil some minimum requirements of donor conditionality, or were introduced once previous half hearted reform attempts had failed. In such cases, it has been harder to interpret the programs as signals of commitment. Moreover, it should be emphasised that aid inflows have followed rather than preceded successful programs, that is, supporting manifested reform commitment rather than announced intentions.

What policy lessons can be drawn from this? Most of all, it seems that if aid is to be used as a policy related variable, then it must also be policy sensitive. In a setting with great uncertainty regarding the regime's commitment as well as donor policies, rapid and unambiguous signalling of reform commitment is important both for governments undertaking reforms in developing countries and for donors with a view to influencing the policy framework. A history of bad policy and high aid inflows will lower the credibility of reform attempts, which means that the signals will need to be stronger in these cases.

This paper does not seek to ride on the prevailing 'aid fatigue'. There are sound economic reasons for giving aid to stabilisation. However, ill-applied aid is clearly counterproductive and can contribute to economic decline. Stabilisation attempts succeed once donors as well as recipients have made their respective commitments to reform credible to each other and the economic environment. The recipient does so by undertaking and sustaining large-scale reforms, the donor, by refusing the role of a permanent lender of last resort.

## References:

- Adams, C., A. Bigsten, P. Collier, E. Julin, and S. O'Connell (1994), *Evaluation of Swedish Development Cooperation with Tanzania*, Ds 1994:113, Stockholm: Secretariat for Analysis of Swedish Development Assistance.
- Alderman, H. (1994), "Ghana: Adjustment's Star Pupil?" in D. Sahn (ed), *Adjusting to policy failure in African Economies*, New York: Cornell University Press
- Alesina, A., and A. Drazen (1991), "Why Are Stabilizations Delayed?", *American Economic Review*, December 1991.
- Boone, P. (1994a), "The Impact of Foreign Aid on Savings and Growth.", London School of Economics, mimeo.
- (1994b), "Politics and The Effectiveness of Foreign Aid.", London School of Economics, mimeo.
- Burnside, C., and D. Dollar (1996), "Aid, Policies and Growth", World Bank, Macroeconomics and Growth Division, mimeo.
- Callaghy, T. (1986), "The Political Economy of African Debt: The Case of Zaire", in J. Ravenhill (ed), *Africa in Economic Crisis*, New York: Columbia University Press.
- (1990), "Lost Between the State and the Market: The Politics of Economic Adjustment in Ghana, Zambia, and Nigeria.", in J. Nelson (ed), *Economic Crisis and Policy Choice. The Politics of Adjustment in the Third World*, Princeton: Princeton University Press.
- Calvo, G. (1989), "Incredible Reforms", in G. Calvo *et al.* (eds), *Debt, Stabilization and Development*, London: Blackwell.
- Campbell, B., and J. Loxley, eds. (1989), *Structural Adjustment in Africa*, London: MacMillan.
- Casella, A., and B. Eichengreen, (1994), "Can Foreign Aid Accelerate Stabilization?", *NBER Working Papers*, No. 4694, Cambridge, Mass.: National Bureau of Economic Research.
- Collier, P. (1995), "The Marginalization of Africa", *International Labour Review*, Vol.

- Doriye, J. (1992), "Cross-conditionality and Obligatory Adjustment in the 1980's: The Case of Tanzania", in S. Griffith-Jones *et al.* (eds), *Cross-conditionality, Banking Regulation and Third World Debt*, Hampshire: Macmillan.
- , H. White and M. Wuytz (1994), "Imports, Investment and Aid in Tanzania", in White, (ed.), *The Macroeconomics of Aid: Case studies of four countries*, Ds 1994:115, Stockholm: Ministry for Foreign Affairs.
- Dornbusch, R (1987), "Lessons from the German Inflation Experiences of the 1920s", in R. Dornbusch *et al.* (eds), *Macroeconomics and Finance: Essays in Honor of Franco Modigliani*. Cambridge, Mass: MIT Press.
- Edwards, S. (1993), "The Political Economy of Inflation and Stabilization in Developing Countries", *NBER Working Papers*, No. 4319, Cambridge, Mass.: National Bureau of Economic Research.
- Giffin, K. (1970), "Foreign Capital, Domestic Savings, and Economic Development", *Bulletin of the Oxford University Institute of Economics and Statistics*, vol. 32, No. 2.
- Haggard, S. and S. Webb (1993), "What Do We Know About the Political Economy of Economic Policy Reform?", *The World Bank Research Observer*, Vol. 8, No. 2.
- Jabara, C. (1994), "The Gambia", in D. Sahn (ed), *Adjusting to policy failure in African Economies*, New York: Cornell University Press.
- Karlström, B. (1996), *Det omöjliga biståndet*, Stockholm: SNS förlag.
- Körner, P. (1991), "Indebtedness and Kleptocracy", in E. Altvater *et al.* (eds), *The Poverty of Nations. A Guide to the Debt Crisis - from Argentina to Zaire*, London: Zed Books Ltds.
- Loxley, J. (1989), "Reconstruction in Uganda", in Campbell, B., and J.Loxley (eds), *Structural Adjustment in Africa*, London: MacMillan.
- Mosley, P. (1987), "Conditionality as a Bargaining Process: Structural Adjustment Lending 1980-1986", *Princeton Essays in International Finance*, No. 168,

Princeton: Princeton University Press.

- (1991), “Kenya”, in P. Mosley, *et al.* (eds), *Aid and Power. The World Bank and Policy-based Lending*, vol II, London:Routledge.
- (1991), *et al.* (eds), *Aid and Power. The World Bank and Policy-based Lending*, vol II, London:Routledge.
- (1990), “Conclusions”, in J. Nelson, (ed), *Economic Crisis and Policy Choice. The Politics of Adjustment in the Third World*. Princeton: Princeton University Press.
- Radelet, S. (1992), “Reform without Revolt: the Political Economy of Economic Reform in the Gambia”, *World Development*, Vol. 92, No. 20.
- Rodrik, D. (1989), “Promises, Promises: Credible Policy Reform via Signalling”, *The Economic Journal*, No. 99, September 1989.
- (1991), “Policy Uncertainty and Private Investment in Developing Countries”, *Journal of Development Economics*; Vol. 36, No. 2, October 1991.
- Sachs, J. (1989), ed., *Developing Country Debt and the World Economy*, Chicago: University of Chicago Press.
- (1995), “Why Russia Has Failed to Stabilize”, *Stockholm Institute of East European Studies Working Papers*; No. 103.
- Sarris, A., and R. Van den Brink (1994), “From Forced Modernization to Perestroika: Crisis and Adjustment in Tanzania.” in D. Sahn (ed), *Adjusting to policy failure in African Economies*, New York: Cornell University Press
- Sargent, T. (1982), “The Ends of Four Big Inflations”, in R: Hall (ed) *Inflation: Causes and Effects*, Chicago: University of Chicago Press
- Schadler, S., ed., (1995), *IMF Conditionality: Experience Under Stand-By and Extended Arrangements. Part II: Background Papers*, IMF occasional paper 129, Washington DC: IMF.
- Serven, L. and A. Solimano (1992), “Private Investment and Macroeconomic Adjustment: A Survey”, *The World Bank Research Observer*, Vol 7, No. 1.

- Sharer, R., H. De Zoysa, and C. McDonald (1995), *Uganda: Adjustment with Growth 1987-94*, IMF occasional paper 121, Washington DC: IMF.
- Solimano, A. (1990), "Inflation and the Costs of Stabilization", *The World Bank Research Observer*, Vol. 5, No. 2.
- Svensson, J. (1996), "When Is Foreign Aid Policy Credible? Aid Dependence and Conditionality.", Institute for International Economic Studies, Stockholm University, mimeo.
- The Economist*, "Zaire: the State that isn't", December 1994, 333(7894).
- Tornell, A., and P. Lane (1994), "Are Windfalls a Curse?", *NBER Working Papers*, No. 4694, Cambridge, Mass.: National Bureau of Economic Research.
- Toye, J. (1991), "Ghana", in P. Mosley, J. Harrigan, and J. Toye (eds), *Aid and Power. The World Bank and Policy-based Lending*, vol II, London:Routledge.
- wa Bilenga, T. (1994), "Zaire", in D.Sahn (ed), *Adjusting to policy failure in African Economies*, New York: Cornell University Press.
- White, H. (1992), "The Macroeconomic Impact of Development Aid: A Critical Survey.", *Journal of Development Studies*, Vol. 28, No. 2.
- and T. Edstrand (1994), "The Macroeconomic Impact of Aid in Zambia", *Sasda/Sau Working Papers*, No. 19, Stockholm: Secretariat for analysis of Swedish Development Assistance.
- World Bank (1994), *Adjustment in Africa: Lessons From Country Case Studies*, World Bank Regional and Sectoral Studies, Washington DC: The World Bank.
- , *World Debt Tables*, various issues.
- , *World Development Indicators 1997*.
- Zejan, M, and A. Kokko, "The Macroeconomic Effects of Aid in Guinea-Bissau", in White (ed.), *The Macroeconomics of Aid: Case Studies of four countries*, Ds 1994:115, Stockholm: Ministry for Foreign Affairs.

**Table 1. Aid and stabilisation.**

	Total aid, USD millions ten year <sup>1</sup>	Aid/GNP, percentages ten year averages <sup>2</sup>	Stabilisation year	First major stabilisation program
<b>Successful Stabilisation</b>			<b>After</b>	
The Gambia	764.2	37.5	1986	1985
Ghana	5602.4	12.1	1983	1983
Tanzania	7588.2	19.9	1986	1986
Uganda	6539.9	17.4	1988/89	1987/88
<b>Group Average</b>		21.7		
<b>Group Total</b>	20494.8			
<b>Failed Reforms</b>				
Guinea-Bissau	779.9	43.3	-	1986
Kenya	3935.5	7.3	-	1979
Zaire	8425.8	9.3	-	1983
Zambia	10563.0	42.3	-	1985
<b>Group average</b>		25.5		
<b>Group total</b>	23704.2			
<b>ALL COUNTRIES</b>	44199.0	23.6	--	

Source: for aid figures, *World Debt Tables*.

1. Total of ten years: the year in which the first major stabilisation reform program was initiated, five years before, and four years after.

2. Average of ten years, defined as above.

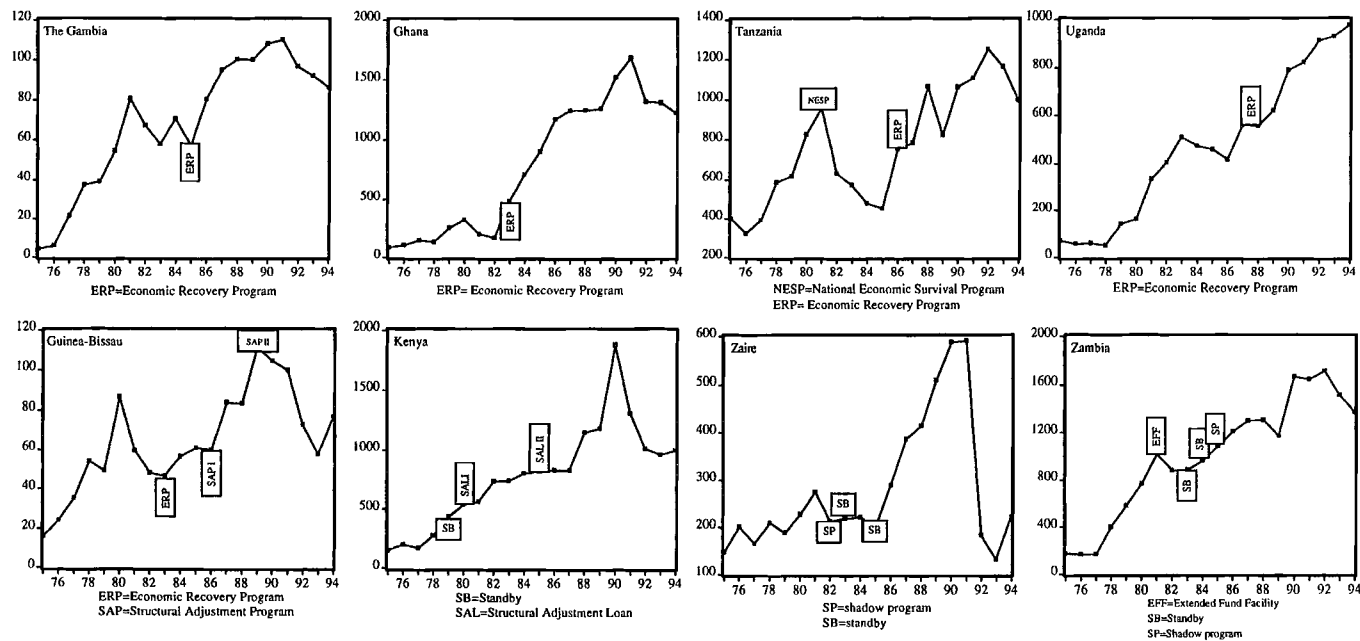
**Table 2. Selected indicators of reform.**

	Successful stabilisation				Group average	Unsuccessful stabilisation				Group average
	The Gambia	Ghana	Tanzania	Uganda		Guinea- Bissau	Kenya	Zaire	Zambia	
AID volumes										
- Aid/GNP	37.5	12.1	19.9	17.4	21.7	43.3	7.3	9.5	42.3	23.6
- Aid, total inflows	764.3	5602.4	7588.2	6539.9	20494.8	779.9	3935.5	8425.8	10563.0	23704.2
Intensity of crisis										
- Inflation in benchmark year	18.3	122.7	30	196.2	91.8	93.8	7.9	76.6	37.2	53.9
3 year av. before	17.1	87.1	32.0	185.5	80.4	66.3	13.2	49.6	25.6	38.7
- Current account in bm year	3.3	-4.2	-4.6	-4.5	-2.5	-48.0	-7.9	-3.2	-17.5	-17.1
3 year av. before	-2.7	-5.6	-5.8	-2.3	-4.1	-47.8	-6.5	-3.8	-10.3	-19.2
External shocks										
- Terms of trade in bm year	-12.0	0.9	11.4	-41.1	-10.2	9.9	-5.1	6.1	0.3	2.8
3 year av. before	8.7	-13.2	3.4	-9.7	-2.7	10.2	2.2	-2.5	0.5	2.6
3 year av. after	-8.9	0.9	-8.5	-11.8	-7.1	1.1	-1.0	-2.7	11.7	2.3
Government legacy										
- Nature of change	No change	Revolution	Change of pres.	Revolution		Revolution	No change	No change	No change	
- Persistence	No change	3 years	1 year	2 years		3 years	No change	No change	No change	
Policy overshooting										
- shadow program	1985 ERP	1983 ERP	1986 ERP	1988 EPP		No	No	(1982)	1985	



**Figure 1. Aid inflows and reform programs, 1975-1994. In current USD mill.**

Source: For aid figures, World Debt Tables. For reform programs, see footnote 24.



## Appendix one. Stabilisation chronicles.

The Gambia	Ghana	Tanzania	Uganda
<p>Independence 1965.</p> <p>President Jawara, People's Progressive Party.</p> <p>1980: Severe economic crisis due to droughts and oil price increase. Alleviated by aid boom.</p> <p>1984-85: New crisis. International reserves down, debt service arrears, exports remaining low. No new lending from the multilaterals, due to payment arrears.</p> <p>Bilateral donors withholding aid. Cross-conditionality: demanding reform/agreement with the IMF.</p> <p>1985: ministry of Finance initiated Economic Recovery Program (shadow program). Consultations with the multilaterals, but no additional financing.</p> <p>Content of ERP: liberalisation of foreign exchange, 20% reduction in public sector work force, increase in agricultural producer prices.</p> <p>End 1986: Stabilisation. New aid boom.</p>	<p>Independence 1962.</p> <p>1979: Revolution led by Jerry Rawlings. National Liberation Council.</p> <p>Economic crisis mounting.</p> <p>1982: Rawlings in control over the government.</p> <p>Discussions with IMF.</p> <p>1983: Droughts, return of 1 mill Ghanaians expelled from Nigeria. Economic collapse.</p> <p>ERP initiated by the government.. Supported by IMF and, to a lesser extent, the World Bank.</p> <p>Content of ERP: devaluation, successive devaluations, foreign exchange auctions, increase in cocoa prices, price liberalisation's, cuts in no. of civil servants, cuts in state subsidies.</p> <p>1983/84: Stabilisation.</p> <p>Bilateral donors remained reluctant to provide financing.</p>	<p>Independence 1962.</p> <p>President Nyere, Unity Party Tanu.</p> <p>1978-1980: War with Uganda.</p> <p>1979: Approaching the IMF and bilateral donors for assistance. Negotiations deserted since disagreement on policy conditions.</p> <p>1981: Launching of own alternative reform program: National Economic Survival Program. Failed.</p> <p>1982-83: Structural Adjustment Plan. (own) Aim to cut expenditures, undertake small devaluations. Anticipations of aid support from bilateral donors, which did not come forth. Program failed.</p> <p>1984: Some IMF measures incorporated in the budget. Shadow program with devaluation, removal of subsidies, user fees, some price liberalisation.</p> <p>1985: Mwinyi president. Change of pace of reform.</p> <p>1986: Economic Recovery Program. Supported by the IMF, IDA, bilateral donors.</p> <p>Content of ERP: devaluation, open licensing of foreign exchange, removal of price controls, increases in official export prices, fixed fiscal and monetary targets.</p> <p>Stabilisation.</p>	<p>Independence 1962.</p> <p>1978-1980: War with Tanzania.</p> <p>1981-1984: IMF standby agreements.</p> <p>Early 1986: Revolution led by Museveni, National Resistant Movement.</p> <p>Early 1987: Discussion with the IMF on policy package.</p> <p>1987/88: Economic recovery Program.</p> <p>Content of ERP: 77% devaluation, successive devaluations, increase in coffee producer prices. Some slippages.</p> <p>1988/89: strong corrective actions to counteract slippages. Further devaluations, adherence to fiscal and monetary targets.</p>

Guinea-Bissau	Kenya	Zaire	Zambia
<p>Independence 1974.</p> <p>1980: Military coup. Viera new president..</p> <p>1983: Economic Recovery Program. IMF supported.</p> <p>Content of the ERP: 50% devaluation, increases in producer prices and consumer prices, fiscal and monetary reforms.</p> <p>1985: Strict economic policies relaxed. Fiscal indiscipline with ensuing inflation.</p> <p>1986: Structural adjustment program with the World Bank and the IMF.</p> <p>Content of SAP: 69 % devaluation, removal of export and import quotas, price liberalisations, fiscal and monetary targets.</p> <p>Ambiguous results: successful deregulation, but fiscal indiscipline.</p> <p>1989: Launching second phase of SAP (WB supported): Delayed disbursements due to slippages.</p>	<p>Independence 1963.</p> <p>1979: severe economic crisis. Sharp fall in coffee prices.</p> <p>Standby agreement with the IMF. Contacted the World Bank::</p> <p>1980: Sector based aid contract converted into structural adjustment loan (SAL I). Very mild conditionality. IMF standby.</p> <p>Content: trade liberalisation, fiscal targets, credit ceilings, maize marketing decontrol. High slippage.</p> <p>1982: Crisis worsened. New discussions with the IMF and World Bank. Sal II: higher conditionality. But trade liberalisation partly reversed, no agricultural decontrol.</p> <p>1983, 1984: IMF standby agreements. Devaluation, fiscal adjustment, adhered to.</p> <p>1984: The World Bank cancels SAL III..</p> <p>1986: World Bank Agricultural Credit. Substantial slippage.</p>	<p>Independence 1960. President Mobuto.</p> <p>1973-74: Economic instabilities precipitated by fall in copper prices.</p> <p>Cut off from commercial lending. Discussions with the IMF.</p> <p>1975-1981: several agreements with the IMF.</p> <p>1982: Acute crisis. Government announces reform (shadow) program.</p> <p>Program content:: tightening monetary and fiscal policy, devaluation, reform and liberalisation of trade and exchange rate, price liberalisation's. Some improvements, but still reliant on external financing.</p> <p>1985: New agreement with the IMF.</p> <p>1986: Mounting internal opposition. Slowdown of reforms. Increase in public sector salaries.</p> <p>1987: Collapse of IMF agreement.</p>	<p>Independence 1964. United National Independence Party, President Kaunda.</p> <p>1973-74: Economic instabilities due to fall in copper prices.</p> <p>1980: Zambia reached the upper limit for unconditional drawings from the IMF. Policy discussions followed.</p> <p>1981: Extended Fund Facility agreement signed with the IMF.</p> <p>1982: EFF broke down due to policy slippage.</p> <p>1983: New IMF agreement.</p> <p>1984: Broke down.</p> <p>1985: Comprehensive shadow program put together under the influence of WB and the IMF. Prompted by cross conditionality by donors.</p> <p>Program content:: liberalisation of interest rates, foreign exchange auction. Elimination of maize subsidies.</p> <p>1986: Turned into formal agreement with multilaterals.</p> <p>1987: Program breaks down. Reforms reversed.</p> <p>1991: Arrears cleared with the World Bank; Zambia eligible for support.</p>

## **Chapter 4.**

### **Foreign Direct Investment and Structural Adjustment Lending.\***

**Sara Johansson\*\***

**Abstract:** The recent surge in FDI flows to developing countries has been attributed to liberalisation efforts. Using data on World Bank structural adjustment lending for a sample of developing countries, this study looks at the impact of the design and outcome of structural adjustment programs on multinational firms' investments. An important finding is that there are considerable changes before and after reforms regarding the characteristics which attract FDI, with an increased importance of the economic environment of host countries. While we find no convincing relationship between the results of reforms and an increase in FDI inflows, there is evidence that countries that undertook consecutive reform programs experienced higher growth in FDI.

---

\* This paper has benefited from comments by Magnus Blomström, Ari Kokko, Tove Strauss and Jakob Svensson. I am grateful to Gunnar Fors for introducing me to the ALCID database. The Swedish International Development Authority provided financial support.

\*\* Department of Economics, Stockholm School of Economics, P.O. Box 6501, S-113 83 Stockholm, Sweden.

## **1. Introduction.**

In the last decade, foreign direct investment (FDI) flows to developing countries have increased dramatically – by 1995, the volume of foreign direct investment inflows amounted to over 300 billion USD, representing a five fold increase compared to the yearly average between 1983-1987.<sup>1</sup> Although the bulk of FDI volumes is directed to large economies like China and Mexico, countries like Mozambique and Ghana are evidence that also the smaller less developed countries can attract important inflows relative to the size of their economy.

The surge in FDI flows is generally attributed to economic liberalisation. Since the beginning of the 1980s, many of the developing countries have attempted to restructure their economies towards market oriented systems. The precipitating factors have almost everywhere been the same: an acute need to address serious macroeconomic instability and unsustainable current account deficits, a collapse of the international private lending boom and increasing policy conditionality from both multilateral and bilateral official lenders. In response, these governments have embarked on programs of policy reform, a majority of which have been coupled to World Bank and IMF financing. As developing countries have reformed their economic policies, the motive for FDI has arguably shifted from accessing protected markets, to profiting from more beneficial export opportunities.<sup>2</sup>

Reform programs aim to foster economic recovery and/or take-off by creating an environment conducive to economic stability and growth. Success, however, is far from

---

<sup>1</sup> UNCTAD (1995).

<sup>2</sup> See e.g. IFC (1997) and UNCTAD (1995).

guaranteed at the outset. The process of economic reform is both time-consuming and difficult. In the long run, the prospects for economic development depend not only on the reforms as such, but on a sufficiently assertive positive reaction from the private sector. In times of great uncertainty, however, investors may prefer to wait and see how the situation evolves before acting – thereby rendering reforms more vulnerable.

In fact, while the observed FDI growth is assumed to stem from successful economic reforms, the possibility of *negative* links between economic reforms, policy credibility, and investment has also attracted interest.<sup>3</sup> The papers by Serven and Solimano (1992a, 1992b, 1993a, 1993b) in particular have been concerned with the so-called investment pause. Their studies are prompted by the observation that structural adjustment programs sometimes have been followed by a fall in investment levels, which in turn is followed by inertia for one or two years- the investment pause - and then, possibly revival. This very undesirable investment slump is explained mainly on the argument that economic reforms increase uncertainty, and that uncertainty is intrinsically harmful to investment.

The literature on the investment pause is related to the literature on the political economy of reform. Several models explicitly link reform design, credibility, private investment, and the success or failure of reforms.<sup>4</sup> In general, these models take their starting point in the assertion that reforms that are not fully credible may be inefficient and cause highly undesirable effects.<sup>5</sup> The implication is that the success or failure of a

---

<sup>3</sup> See Bleaney (1996), Bleaney and Fielding (1995), Rodrik, (1989), Serven and Solimano (1992a, 1992b, 1993a), and Solimano (1992) among others.

<sup>4</sup> E.g. Calvo (1988, 1989), Rodrik (1989), Rodrik (1991), Van Wijnbergen (1985), Van Wijnbergen (1992).

<sup>5</sup> Examples are consumption booms parallel to investment slumps, falling investment in the export sector in response to trade liberalisation and capital outflows in response to capital account

reform or a reform package (e.g. in terms of inciting higher levels of private investment) depends on its characteristics. Most of the models are inspired by case studies, and the theoretical findings are rarely tested on a larger scale, impeded by the practical difficulties in quantifying concepts such as "policy uncertainty" and "reform credibility".<sup>6</sup>

This study addresses the issue of the private sector response from the perspective of the investment decisions of multinational enterprises (MNEs). The broad purpose is to analyse whether and how the implementation of structural adjustment programs has attracted FDI to developing countries. In particular, we examine how various characteristics related to the design and outcome of structural adjustment programs can explain FDI flows. The structure and content of the database we use has the advantage that it permits us to relate our data on FDI response to specific reform years for a large number of countries.

Although the empirical literature on the private investment pause is relatively abundant, the relationship between the structural adjustment process and FDI flows to developing countries has received relatively little attention.<sup>7</sup> Surprisingly so, because it is an important and interesting issue from several perspectives. Although FDI is part of total private investment, it deserves separate attention. First, an increase in FDI flows in response to structural adjustment may have different effects than an increase in domestic investment. Although the core of total investment is likely to come from domestic investors, MNEs can play a catalytic role in encouraging both restructuring and growth

---

liberalisation.

<sup>6</sup> E.g. Mosley *et al.* (1991) examine World Bank structural adjustment lending, policy conditionality and compliance. They find several cases of both policy slippage and unsuccessful reforms.

<sup>7</sup> Among the exceptions are Blomström and Lipsey (1993), comparing the reorientation capacity of MNEs to that of domestic firms after the debt crisis; Globerman *et al.* (1996), looking at Swedish firms' investment decisions in response to the Indian structural reforms; and UNCTAD (1995).

in private investment in developing countries. In relation to policy changes, MNEs can increase productive efficiency by engaging in the production and marketing of exports and competitive import substitutes, and transferring technology to local firms. MNEs can also provide much needed resources in the form of desirable human and physical capital, technology, world market access etc. to facilitate and speed up the restructuring process.<sup>8</sup> It is also conceivable that multinationals react differently to reforms than domestic firms do. The reason is that multinationals are likely to be better equipped than domestic firms are when it comes to adjusting production rapidly to a changing environment<sup>9</sup>. Finally, multinationals are likely to have more investment alternatives available than domestic firms in developing countries, whose alternatives often are limited to the domestic economy. MNEs may have more or less inside information about government ability than domestic investors have, but their ability to compare countries and choose the more favourable economic environment should be higher. Their investment decisions may therefore indicate whether the reform package is credible to actors outside the government.

This paper sets out to empirically test some features of the relationship between FDI and economic reforms. The remainder of the paper is organised as follows. The second section discusses the link between reforms, credibility, and foreign direct

---

<sup>8</sup> For a discussion of how multinationals can assist in restructuring, see UNCTAD (1995), chapter 5. See also the recent study of the effects of FDI on developing countries by Borensztein *et al.* (1994), where FDI is shown to in fact have a larger pay-off to growth than domestic investment. The survey by de Mello (1997) shows that the extent and form of benefits from FDI on host countries will depend on what type of linkages, if any, that are established between the multinational firm and the host economy. A survey by Blomström and Kokko (1998) indicates that the positive spill over effects from multinational firms will increase with local capability and level of competition in the host country.

<sup>9</sup> Blomström and Lipsey (1993) examine the export performance of US multinationals' affiliates in heavily indebted Latin American countries in the adjustment period after the debt crisis. Their finding is that multinational firms were decidedly more flexible than local firms in shifting the orientation from domestic sales to exports.



investment more explicitly, and identifies some reform characteristics. The third section takes these implications to the data. Drawing on a unique database on structural adjustment lending from the World Bank, some hypotheses are tested on a large sample of developing countries. The fourth section summarises the findings.

## **2. Reforms, credibility, and foreign direct investment.**

### *2.1. The impact of structural adjustment on foreign direct investment.*

The link between structural reforms and FDI can be considered from several perspectives. There are arguments why foreign direct investment should respond directly and favourably to economic reforms. Typical market oriented reform components, e.g. trade reforms and financial reforms, as well as privatisation and a reduction of state dominance, are meant to encourage private investment. However, some caution is warranted when it comes to predicting the impact of reforms on aggregate FDI inflows. Where direct investment has been geared towards the domestic market and a substitute for exports in the face of trade barriers, it has been a direct consequence of protectionist regimes. Such "tariff jumping investment" may not necessarily rise when import substituting policies are abandoned in the host country, unless there are enough incentives (and capacity) to adjust production to the new rules of the game. Moreover, if investment levels fall in connection with structural adjustment, the observed negative correlation between structural adjustment and FDI may be spurious. Arguably, the same factors that bring about structural adjustment – e.g. adverse shocks to terms of trade or international interest rates – can also have directly adverse effects on FDI. Finally, there is the broader view that FDI levels do depend on the reform process, but that the

investment response is influenced by how the reform process is set up and what it achieves.

This study proceeds along the lines of the last approach. The analysis follows the existing literature on private investment and structural adjustment, with a focus on reform design, reform performance, uncertainty and investment response.

## *2.2. Investment theory and structural reforms.*

The main insight from the literature on irreversible investment hinges on the obvious, namely that expectations about future conditions influence investment decisions.<sup>10</sup> As a consequence, the level of uncertainty prevailing in the economy will in itself be an important determinant for investment. With entry and exit costs, the decision to invest cannot easily be reversed if the economic situation deteriorates. The decision *not* to invest, however, can be reversed: under most circumstances, it is not a once-and-for-all decision, but merely one to postpone the investment decision. Hence, in times of great uncertainty investors will be inclined to defer investment.<sup>11</sup>

Structural adjustment is mostly initiated by large macroeconomic instabilities that directly cause great uncertainty. However, although intended as a remedy, structural adjustment is a time consuming process, and its success far from guaranteed at the outset. Thus, at the initial stages of implementation, structural reforms are not likely to reduce uncertainty, but may well produce the opposite effect.

There are at least three important reasons for increased uncertainty during reforms.

---

<sup>10</sup> See Dixit and Pindyck (1994). A survey is provided in Serven and Solimano (1992a).

<sup>11</sup> The asymmetry of investment decisions is born out in Bernanke's "bad news principle": in his model, investment decisions are affected by the possibility of bad news, whereas the possibility of good news does not matter at all (Bernanke, 1983).

First, people may be uncertain of whether the policy package itself is suitable to deal with the economic crisis. To be credible, a policy set must be compatible, i.e. such that the different policy reforms included in the package are perceived to be consistent and work in the same direction.<sup>12</sup> Second, people can distrust the continuity of reforms. A government can be tempted to temporarily undertake policy changes in order to obtain foreign aid, and then, once these benefits have been reaped, reverse the reforms.<sup>13</sup> Third, the profitability of any investment project is generally positively related to other investors' investments, which introduces co-ordination problems. If the individual firm is uncertain about the investment response from others, it may not pay to invest, irrespective of the incentive structure.<sup>14</sup>

### *2.3. Reform design and credibility.*

After almost two decades of structural adjustment, there is a considerable literature on optimal reform design, originating from both policy makers and economic theorists.<sup>15</sup> Disparate experiences, both from adjusting debtor nations in Latin America, and from the relatively recent transition process of the former communist countries in Eastern Europe, has attracted ample research interest. However, although there is a relatively widespread consensus on some points, such as the complementarity between structural reforms and stabilisation efforts, several issues are still disputed.

---

<sup>12</sup> The terminology draws on Collier (1993). The idea of an incompatible policy set is e.g. represented in the argument that trade liberalisation has adverse effects on the current account and therefore works against stabilisation reforms.

<sup>13</sup> The case of reversible trade reforms, credibility and foreign aid is illustrated in Rodrik (1989).

<sup>14</sup> See e.g. Cooper and John (1988) on investment and co-ordination failures.

<sup>15</sup> For a comprehensive overview of the theory and empirical evidence on policy issues relating to the pace, credibility, and sequencing of reforms, see the recent survey by Battacharya (1997).

In order to assess aspects of reform design, we have identified four major dimensions of reform: scope, magnitude, speed, and sequencing. The *scope* of reform measures how many different reform categories have been addressed in the adjustment program. The reforms endorsed by the multilateral lenders have typically encompassed major macroeconomic as well as sectoral issues, including the areas of trade policy, debt management, financial sector, government revenue and expenditure control, public investment programs, and management of public enterprises.<sup>16</sup> A program with a wide scope, hence, would include reform efforts in all or most of these areas. The *magnitude* of the reform program indicates how far-reaching the reforms have been, e.g. in raising real interest rates or lowering inflation. The *speed* of a reform program refers to how quickly the reforms are to be implemented. *Sequencing*, finally is the timing and order of the reforms i.e. when the particular reform components have been introduced and in what particular order.<sup>17</sup> In view of these dimensions, it is clear that structural reforms packages can differ considerably from one another.

A focal point in the design-for-credibility debate, and one where substantial disagreement has arisen, is that of the optimal speed and scope of reform. Advocates of so called "shock therapy" conclude that reforms are to be undertaken as soon as possible, in order to remedy the imbalances in the economy.<sup>18</sup> The so called "Big Bang" reform programs which originate in "shock therapy" design have high credibility under

---

<sup>16</sup> The latest version of the World Bank's *Operational Manual* defines a structural adjustment loan as one intended "to support specific policy changes and institutional reforms to (a) achieve efficient use of resources, (b) meet balance-of-payments needs for quick disbursement, (c) contribute to growth and a sustainable balance of payments position in the long run, and (d) mitigate social costs." World Bank (1997).

<sup>17</sup> Whether sequencing is an issue or not will depend on the speed of the reforms.

<sup>18</sup> Including Åslund *et al.* (1996).

the assumptions that different reforms complement one another, that rapidity incurs less adjustment costs, and that swift implementation does not give potential reform adversaries any time to build up resistance.<sup>19</sup> The arguments can be and are applied to complete reform efforts (suggesting that reforms within different areas should be launched more or less simultaneously) as well as to the level of individual reforms (suggesting that e.g. price liberalisations should not be implemented step-wise). Hence, sequencing is not really an issue for "Big Bangers". Gradualist arguments, in contrast, are mostly backed by feasibility constraints.<sup>20</sup> The economic argument is that large-scale reforms may be too resource demanding or incompatible if undertaken simultaneously. With respect to politics, gradualists argue that sequenced reforms incur less drastic shocks to the public. Gradual reforms are therefore expected to be politically feasible, and hence sustainable and credibility enhancing.<sup>21</sup>

To illustrate some of the aspects of uncertainty, reform design, and investment irreversibility, we use a simplified version of the model developed in Rodrik (1991).<sup>22</sup>

Consider an economy where reforms have been implemented in order to remove

---

<sup>19</sup> See Borensztein and Ostry (1994) on industrial restructuring. Van Wijnbergen (1992) endogenises the probability of reform collapse. His model of price decontrols illustrates the case where gradualism leads to a weak response from domestic producers, which, in turn, results in the failure of reforms.

<sup>20</sup> Including Aghion and Blanchard (1994), Coricelli and Miles-Firetti (1993), Drazen and Masson (1994), Roland (1993), and Wyplosz (1993). Dewatripoint and Roland (1995) argue that gradualism may generate a higher investment response because of a lower option value of waiting than in the case of large-scale reforms. The main idea in Drazen and Masson (1994) is that if a regime is forced to instantly use all its political capital in implementing far reaching reforms, its capacity to resist pressures for reform reversal in the following periods is reduced.

<sup>21</sup> It is important to note that the two approaches generally depart only in the prescription for how the transition process should be undertaken. Both envisage a totally reformed sector or economy in the end, but differ in the recommendations on whether to get there successively or with a jump.

<sup>22</sup> Similar models are van Wijnbergen (1985), Rodrik (1989), and Fernandez and Rodrik (1991).

policy-induced distortions to the marginal return to investment ( $r$ ).<sup>23</sup> The distorting taxes have been reduced from  $t_0$  to  $t < t_0$ . Investors assign a probability  $P$  in each period to the event that reforms will be reversed and  $t_0$  reinstated. If there are reasons to suspect that the government is not capable or willing to maintain the reforms,  $P$  is greater than zero, i.e. reforms are not fully credible. We assume that there are some costs associated with disinvestment, so that once investments have been made, capital cannot be moved abroad without a cost of  $\theta$  per unit of capital. For simplicity, we assume that  $t_0$  is large enough to induce investors to leave the economy if reforms are reversed. This requires that

$$\frac{r^*}{\beta} - \theta > \frac{r - t_0}{\beta} \quad (1)$$

where  $r^*$  is the return to foreign assets, and  $\beta$  is the investor's discount rate.

$V_0$  represents the maximised value of having capital abroad whereas  $V_1$  is the value of having capital in the domestic economy when the reforms are in place. We have that

$$V_0 = \frac{r^*}{\beta} \quad (2)$$

and

$$V_1 = \frac{(r - t) - P(V_1 - (V_0 - \theta))}{\beta} \quad (3)$$

As seen in equation 3, the value of having capital in the reformed economy is reduced by the risk of a capital loss occurring from a policy reversal. Investment in the domestic economy takes place if and only if  $V_1$  is greater than  $V_0$ . Solving for  $V_1$  in (3)

---

<sup>23</sup> Here, the model is applied to a general reform package that has the purpose to reverse capital flight. However, as Rodrik points out, it can also be applied to a sector reform, where the purpose is induce capital to move into the liberalised sector.

and using (2) we get a condition for  $t$ , the tax when reforms are in place.

$$t \leq (r - r^*) - P\theta \quad (4)$$

To induce investments, hence, the magnitude of the reform – here given by the level of  $t$  – may have to be quite substantial. First,  $t$  must be low enough to make the domestic return to capital higher than that of foreign assets ( $r - r^*$ ). Second, the reform must also compensate for the possibility of policy reversal, and the extra costs associated with that event. Note that  $t$  can even be required to be negative – an investment subsidy – if the probability of reversal and/or exit costs are large. Hence, this model predicts that policy makers must ensure that the magnitude of reforms be large enough to compensate for the uncertainty about their future conduct.

Although some of the uncertainty associated with policy reform may be unavoidable, some information on policy sustainability may be drawn from how the reforms are designed and carried out. For the purpose of this study, the most interesting issue is really how and what influences  $P$ , the investors' appreciation of the probability of reform reversal.<sup>24</sup> There is no reason to believe that uncertainty is constant. In particular, policy makers' intentions and abilities will be reflected before reforms, in their design, and during and after reforms, in their final outcome.

Credibility and uncertainty, are – by definition – vague concepts. Yet, it should be possible to address some of these aspects empirically. The following questions seem appropriate as a starting point: First, do some types of reforms, or some combination of reforms, have a greater influence on FDI than others do? Second, should reforms be implemented in a particular manner in order to encourage FDI? Third, what kind of

---

<sup>24</sup> A fuller model could endogenize that probability (e.g. by making it depend on the magnitude of  $t$ .)

signals are important to MNEs investment decisions - bottom line reform achievements, in terms of e.g. de facto changes in real exchange rates and real interest rates, or the initial set-up of the reform? Finally, from an overall perspective, the answer to these questions will also shed some light on a fundamental question, namely: do reforms matter at all for the location decisions of multinational firms?

### **3. FDI and structural reforms - an empirical investigation.**

#### *3.1. The ALCID data.*

Broadly defined, the purpose of this section is to investigate whether and how FDI has reacted to the structural adjustment process which has taken place in less developed countries. At an operational level, this all-inclusive definition has been reduced to the following: What happens to inward direct investment after a country receives a structural adjustment loan with a particular policy design? Is the response from multinational enterprises related to the initial design of the reforms and to their implementation and results, and in that case how?

While the ideal study would take into account any significant policy reform announced and implemented by developing country governments, we limit ourselves to World Bank structural adjustment loans, for which there is specific and consistent information for a relatively large sample of countries. The delimitation is less serious than it first seems, since most large-scale economic reforms in developing countries have been supported by World Bank structural adjustment facilities. The data for World Bank lending has been compiled from the Adjustment Lending Conditionality and



Implementation Database (ALCID) of the World Bank.<sup>25</sup> For each loan granted between 1980 and 1992, ALCID contains information on loan characteristics such as loan amount and number of tranches. ALCID also defines six possible policy categories, macro/fiscal, trade, financial, public enterprises, public institutions, and sectoral policy reforms. There is also information on the number of conditions attached to each policy category in the loan. Each observation in the empirical tests is associated with one structural adjustment loan. Consequently, several observations can be related to one country (Bangladesh, for example, received seven structural adjustment loans between 1980 and 1992).<sup>26</sup>

The information in ALCID permits us to look into the relationship between FDI and structural adjustment in a consistent manner. Thus, as opposed to defining "before reform" as pre mid 1980s for all countries, as is often done, we are able to relate each reform to a more reasonable and country specific starting point in time.

### *3.2. Conventional determinants of FDI.*

The list of factors that potentially could influence the decision by MNEs to invest in developing countries is extensive. Nevertheless, several earlier studies indicate some empirical regularities.<sup>27</sup> FDI inflows have traditionally been directed to developing countries that are large, rich relative to other developing countries, fast growing, and open.<sup>28</sup> However, with the possible exception of openness, none of these variables are

---

<sup>25</sup> Note that World Bank structural adjustment lending has almost always been undertaken together with IMF supported reform programs. However, for IMF loans, there is no consistent database like the ALCID available.

<sup>26</sup> We look only at loans classified as structural adjustment loans or sectoral adjustment loans.

<sup>27</sup> See e.g. Caves (1996).

<sup>28</sup> The list is far from exhaustive. We are excluding a number of other variables, including relative cost advantages, measures of human capital, and importantly, rules and regulations relating to FDI

directly related to economic reforms (although, of course, the long run effect on growth is hoped to be positive, and exports are expected to increase). Moreover, the importance of some variables, such as market size and per capita GNP, may vary depending on the policy environment. For instance, large markets are likely to attract "tariff jumping" investment and not only export oriented ditto.<sup>29</sup> The relationship between the conventional determinants and FDI is likely to depend on the policy setting, and it may therefore change during the process of economic reform.

To see how far a traditional FDI estimation can take us, we begin by testing the influence of this group of FDI determinants on FDI inflows as share of GNP for a sample of countries where we can identify before reform levels and after reform levels of foreign investment.<sup>30</sup> Before reform levels are the average levels of FDI/GNP five years before and including the year in which a structural adjustment loan was given.<sup>31</sup> After reform levels are the averages four to six years after reforms. In view of the rather long run nature of economic restructuring, the response should be measured over the long run to reflect the impact of reforms.<sup>32</sup> With this set-up, each structural adjustment loan (SAL) is connected to one observation in each sample. A list of the countries included in the

---

investment.

<sup>29</sup> Large markets offer advantages also to export oriented firms, in the form of larger markets for labour, material, and services inputs.

<sup>30</sup> By concentrating on inflows only, we ignore the reaction of domestic multinationals where they exist. Given that foreign direct investment for obvious reasons tends to originate in industrial countries, the limitation is not particularly serious. Of course, adverse conditions in the home country may lead some larger companies to relocate their production abroad. However, increasing outward FDI may more reflect economic development and rising domestic labour costs (as in e.g. the case of Korea) than an improper policy framework. The effects of economic reforms on a variable representing *net* FDI is therefore difficult to analyse.

<sup>31</sup> For all estimations, we use averages in order to eliminate transitory noise.

<sup>32</sup> In a recent paper by Atkeson and Kehoe (1997), it is suggested that it takes more than five years after the implementation of structural reforms for output and productivity growth to take off.

regression is provided in appendix 1, table A1.

We measure the size of the market by (log of) real GDP, average wealth by (log of) real per capita GNP, and economic growth by annual growth in real per capita GNP.<sup>33</sup> Real exports as share of GNP are included to capture the potential for export oriented FDI. (For correlation matrices, see appendix 2.) We should note, however, that both growth and exports impose a simultaneity problem to the estimations— a positive correlation between FDI and growth may as well show that FDI increases growth as that growth attracts FDI, and similarly for exports.

Moreover, it would have been useful to include a control group of non-reformers in the regression to control for non-reform related trends and changes in FDI behaviour. Given the World Bank's outreach, however, there remain in fact very few non-loan countries to be used for such a comparison.<sup>34</sup> To address the problem, an "FDI trend" variable has instead been included in the regressions, approximated by the sum of FDI inflows in 148 developing countries (changed into an index), and with before and after levels calculated as for the other variables.<sup>35</sup>

Table 1 shows the results from the regressions.

**<Table 1 about here>**

In the first regression (column I), all observations, both before and after reform,

---

<sup>33</sup> Apart from the reform data in ALCID, data are from the *World Debt Tables*, the *World Development Indicators*, and the *Global Development Finance* databases of the World Bank and *International Financial Statistics* of the IMF.

<sup>34</sup> There are 101 countries in our ALCID database.

<sup>35</sup> Note, however, that while the FDI data used for the dependent variable has been scrutinised country by country, it has not been possible to check the consistency and accuracy of each observation for the trend variable. The two series are thus not fully consistent.

have been included, while column II and III each include before reform levels and after reform levels respectively. FDI appears to behave differently with respect to the traditional variables after reform compared to before reform. In the total sample, exports have a significant positive influence, whereas neither market size, wealth or investment levels do. When only before reform observations are included in the estimation, exports are much less significant, and wealth is in fact the only other significant determinant of FDI. After reform, however, wealth becomes insignificant (and negative), while market size gains in importance, and exports, again, have a strong significant influence. A Chow test undertaken to formally examine whether the coefficients are different in the two subsamples, supports the impression to the eye. The null hypothesis of no difference in the estimated equations is rejected by far.<sup>36 37</sup>

In their very reduced form, the above regressions are incomplete; in fact, this is what the above differences suggest. To capture general FDI attractiveness as well as persistence in investment decisions, we include a proxy for the FDI stock (albeit a very crude one). The regression reported in column IV includes the average level of FDI before reforms as an independent variable (i.e. the dependent variable in the before reform regression) The coefficient is positive and highly significant. Countries with a relatively high level of FDI as share of GNP appear to have some features that attract

---

<sup>36</sup> The F-value is 2.62, the likelihood ratio 15.93, indicating that the hypothesis of no difference can be rejected at the one percent level of significance.

<sup>37</sup> The fact that several observations can belong to one single country (e.g. Ghana, Turkey) may of course be an issue, as any country specific variable not taken into account might have a relative large impact on the results. The regressions in table 1 were therefore re-run twice with only one observation per country, the first and last loan year respectively (49 observations). In general, the results were less significant. However, for both the first-loan and the end loan samples, per capita GNP was positive and significant around the ten percent level (8 and 12 percent resp.) before reforms, whereas after reforms, exports were positive and significant and per capita GNP became negative (and insignificant). The overall conclusions seem therefore to hold.

FDI, which are not covered by the conventional determinants. When the stock variable is included, growth and market size also become more significant.<sup>38</sup>

The figures in table 1 are consistent with the proposition that FDI inflows have changed in character after reforms. Firms wishing to enter protected markets with relatively high purchasing power would not care as much about host country exports as firms wishing to make use of favourable production location for exports. Similarly, host country purchasing power is of less importance for export oriented MNEs.<sup>39</sup>

It would be wrong to assume that only unreformed economies receive local market oriented FDI. The fact that market size is important after reforms but not before can suggest that MNEs have been attracted to economies which are not necessarily richer but where the economic policy environment indicates a growth potential and is conducive to production.

It is tempting to draw the conclusion that reforms account for the differences in the FDI determinants function. However, two questions must be addressed before any more definite conclusions can be drawn. First, how much can be accounted for by the specific reforms undertaken by the developing countries relative to a general increase in the mobility of FDI, driven by other factors (e.g. home market limits, new technological advances etc.)? Although all years between 1980 and 1990 are represented in the sample, there are more observations from the end of the 1980s.<sup>40</sup> The implications are that any

---

<sup>38</sup> The regressions were also run with investment levels (excluding FDI) replacing growth. Then, per capita GNP levels were never significant after reforms, and exports were not significant before reforms.

<sup>39</sup> Unless wealth is a proxy for important determinants for FDI which are missing here, such as the quality of infrastructure provision, and the level of education of local labour.

<sup>40</sup> This is a combined result from increased activity by the World Bank and limited data availability for early years.

global change in FDI flows in the early 1990s – for reasons perhaps unrelated to host country reform – might be reflected in changes in the determinants of FDI. However, although the trend variable is significant in all regressions, when it is excluded, there are no qualitative changes in the results regarding magnitudes or significance levels.

Secondly, and linked to the discussion in section two, not all reforms are successful. Unless structural adjustment loans have a positive effect on FDI irrespective of when, where and how the associated reforms are undertaken, and irrespective of whether they have any tangible results, there is a case for examining whether differences in the design and implementation of reforms give rise to different FDI patterns. In what follows, we examine reform characteristics and FDI growth.

### *3.3. Reform intensity and reform design.*

Relying on the ALCID structure, the response of FDI and the structural adjustment process have been defined as follows.

The response of foreign direct investment is the growth rate of FDI after structural adjustment, over the short and long run. The levels of FDI inflows after the initiation of an adjustment loan are compared to levels prior to the loan. The pre reform benchmark levels are the average of FDI inflows in the five years before and including the year when a structural adjustment loan was initiated. The long run response, *FDI*, is defined as the growth (in percentages) from the benchmark level to the average level of FDI inflows four to six years following the year the loan was given. The short run response, *FDIS*, is similarly defined, but with the average of the three years immediately after reforms. Since we rely on long run levels for most of the empirics, we are limited to loans extended

between 1980 and 1990.<sup>41</sup>

Turning to the explanatory variables, we postulate the following function:

$$FDI\ RESPONSE=f(FDI\ determinants, design, performance, assistance) \quad (5)$$

The above function draws on the estimations in section 3.2 as well as on the discussion in section 2.3. The structural adjustment process will be reflected both in the design of reforms (speed, scope, and other design variables) and in the performance (magnitude, evaluation).<sup>42</sup> Finally, we also want to control for the amount of external assistance that accompanied each loan.

To capture reform design, we have tried to incorporate important aspects of the initial set-up of structural adjustment loans, using the information provided in ALCID.

The intended speed of reform, set out in the loan conditions, is approximated by *SPEED*. This variable reflects the percentage of the total number of loan conditions attached to the first half of the loan tranches. A figure exceeding 50, hence, implies relatively front loaded policy conditionality, with heavier emphasis on actions to be taken early in the reform.<sup>43</sup>

*SCOPE* measures the policy scope of a loan, and indicates the number of policy

---

<sup>41</sup> An overall problem with evaluating loan by loan individually, whether over the long or short run, is that it requires some method which acknowledges that each loan may be given in the context of other loans. It is reasonable to expect the policy content of other loans, whether preceding or succeeding the one evaluated, to have effects on the FDI response. The alternative – to consider each country as one observation – is nevertheless too aggregate.

<sup>42</sup> Although it would be interesting to look at the sequencing aspect, there is not enough data to construct a variable incorporating different orders of reforms.

<sup>43</sup> A drawback of this definition is that it hinges on the number of conditions. It is possible that countries which, by the World Bank, are perceived to have low institutional capabilities, get more conditions attached to their loans at the earlier stages. If this is the case, the variable reflects also capability to undertake reform. Presumably, this would have a negative effect on FDI.

categories in which there were any conditions (ranging from 1 to 6).

We also want to capture the idea that an individual loan may be of different significance if undertaken in the context of broader reform packages than if undertaken in isolation. *ERLAG* indicates whether the loan in question was preceded by a relatively broad economic rehabilitation loan, by giving the number of such loans in the five year period preceding the loan. As such, it also provides a crude measure of sequencing aspects, the importance of starting off the process in a particular manner. The *ERLAG* variable can also distinguish observations/countries that make reforms on a larger scale, from observations of countries that undertake e.g. only one reform in the agricultural sector.

One obvious question is whether some reforms are more prone to encourage direct investment than others are. Each loan has been characterised by a series of variables that have been created to indicate the relative importance attached to each of the policy categories in ALCID: Macro/fiscal (*MACRO*), trade (*TRADE*), financial (*FIN*), public enterprises (*PUBENT*), and public institutions (*PUBIN*).<sup>44</sup> Relative importance is proxied by the percentage share of total number of conditions allocated to each policy category, so that the category with the most conditions is considered the most important.

It is assumed that reforms, if credibly imposed and sustained, encourage FDI. There is *a priori* no reason to believe that the announcement of a particular type of reform should depress investment levels significantly. Public enterprise reform is perhaps the area we expect to exert the greatest *direct* influence on FDI since it may include large-scale privatisations.<sup>45</sup> Indirectly, however, all types of reforms could make up

---

<sup>44</sup> Sector loans excluded.

<sup>45</sup> Indirectly, privatisation also reduces the sphere of influence of the state in the economy, as



potentially important indicators of regime commitment and ability.

The second set of potential explanatory variables in the structural adjustment context includes the variables related to results from reforms. These measure performance, that is, how well governments managed to change some key macroeconomic indicators during the reforms.<sup>46</sup> Although e.g. domestic real interest rates in reality may have little direct importance for FDI, a significant improvement in these indicators can be thought of as a signal of reform commitment, capacity, and reduced uncertainty in both policy and macroeconomic environment. The indicators used to measure *magnitude* emanate from the policy reforms endorsed by the World Bank and the IMF. The so called Washington Consensus<sup>47</sup>, hence, calls for improvements in the current account balance before official transfers as share of GDP (*CAB*), inflation as changes (*INF*) and levels (*INFL*), real interest rates in changes (*RI*) and levels (*RIL*), and in the real exchange rate (*RER*).<sup>48</sup> All variables are defined in a similar manner to FDI response, that is, as growth over time in the long run, with the exception of *INFL* and *RIL*, which are the long run levels (average four to six years after reforms).<sup>49</sup>

Reform programs are expected to address imbalances in the current account, to raise real interest rates and lower inflation, and to depreciate (here: increase) the real

---

private firms are dealing with other private firms as suppliers and clients instead of parastatals.

<sup>46</sup> To fit the empirics to the model presented in section two and test effort indicators, it would have been valuable to have access to variables which are more directly under the control of governments – e.g. tariff rates. Such instruments have an additional advantage in that they are less subject to problems of simultaneity and reverse causality than the indicators we use.

<sup>47</sup> The expression is due to Williamson (1994).

<sup>48</sup> An important performance indicator is government savings. However, due to data limitations, this variable is left aside. It reduces the available sample by one half.

<sup>49</sup> The data used has been collected from the following sources: *World Debt Tables*, *Global Development Finance* and *World Development Indicators* from the World Bank, and the *International Financial Statistics Database* from the IMF.

exchange rate. To the extent that a successful program signals a favourable investment climate, hence, *CAB*, *RI*, and *RER* should have positive signs, whereas *INF* and *INFL* should be negatively correlated with the FDI response. The expected sign of *RIL* is ambiguous.<sup>50</sup>

We also tentatively look at a performance variable drawing on assessments made by the Operations Evaluations Department at the World Bank. The *OED* variable reflects the Bank's assessment of whether the reforms prescribed by the individual loans were unsatisfactorily or satisfactorily implemented. We have constructed a dummy variable, which takes the value 100 for satisfactory reform compliance, and zero otherwise.<sup>51</sup> Unfortunately, including the *OED* variable reduces the sample size by a quarter.<sup>52</sup>

Finally, another important aspect of reform is the level of external support that accompanied and followed on each loan. *FOR* is the sum of IMF support and ODA as share of GDP, and is represented as the average of yearly inflows during the six years after reforms. The influence of this variable is uncertain, as is evident in the abundant literature on aid and structural adjustment. There are arguments why external support is not only beneficial but also necessary to support economic reforms and that aid therefore is credibility enhancing.<sup>53</sup> But it has also been suggested that abundant external support may soften budget constraints and destroy the incentives to undertake reforms, thereby

---

<sup>50</sup> Real interest rates levels have been shown to have a negative impact on private investment (see e.g.) However, there is no reason to believe that multinational enterprises should depend on the availability of cheap capital for investment in the host countries. In contrast, a sound financial system with interest rates that accurately reflect the cost of capital may act as a signal of stability and maturity.

<sup>51</sup> The use of 100 instead of 1 is merely to get somewhat compatible figures with other variables which are measured in percentages.

<sup>52</sup> The *OED* variable has been constructed from Branson and Jayarajah (1995) and Branson, Jayarajah, and Sen (1996).

<sup>53</sup> See e.g. Sachs (1995) on the Russian case.

undermining their credibility in the first place.<sup>54</sup>

Before the potential relationships suggested above are put to the test, however, an overview of the FDI response is provided below.

### *3.4. FDI after reforms.*

Although the structural adjustment process introduces some turbulence to an economy, and although neither the implementation, completion nor success of reforms is guaranteed, the overall picture of the reaction of multinationals is by and large quite positive. Table 2 and 3 summarise the available data, where the definitions are as above.

#### **<Tables 2 and 3 about here>**

What has happened to FDI after structural adjustment loans have been extended? A first and important observation is that in general, foreign direct investment appears to have increased. The averages and median values are positive and surprisingly high for both the short run and the long run values (table 2), and more than 75 percent of the structural adjustment loans were followed by increases in the long run (table 3).<sup>55</sup> Out of the sample of 142 loans for which there is long run data, two thirds are followed by a sustained improvement, that is, a positive change in FDI for both the short run and the long run. Only 9 loans, less than ten percent, were followed by a temporary boost. In addition, the average as well as the median of the long run sample are considerably higher, twice the value in fact, than that of the short run sample. On average, hence,

---

<sup>54</sup> See e.g. Svensson (1996).

<sup>55</sup> Note, however, that the large value of the changes in FDI are not necessarily evidence of massive inflows, but can also merely indicate very low pre reform investment levels. Unfortunately, this characteristic is not mitigated if the variable is in the form of FDI as share of GNP rather than absolute inflows.

structural adjustment loans are followed by a positive trend in FDI

Further, based on this type of averages, there is little evidence of any investment pause in FDI, if we interpret this as a deterioration followed by an improvement (short investment pause) or investment levels which fall and never recover (long investment pause). Only 18 loans display negative values in the short run and positive values in the long run, and no more than 23 loans are followed by a sustained deterioration in FDI, accounting together for less than 30 percent. Any "J-curve effect", which would illustrate a hesitant investment behaviour such as the one described in the literature on the private investment pause, hence, cannot readily be found in the data for FDI.

However, while the overall picture is positive, the variations are large. Table 4 shows the number of observations that fall into each size category. 32 loans are followed by a negative response, while as many as 75 loans were followed by a more than twofold increase in FDI flows, compared to the benchmark. How we might explain such differences, is the subject of the next section. In a first step, we compare averages in reform variables between successful (positive FDI response) and unsuccessful loans. We then go on to estimate the FDI response.

**<Table 4 about here>**

### *3.5. Averages.*

The sample has been divided into three groups: loans which were followed by a deterioration in FDI flows, loans which were followed by a modest increase (less than a doubling), and loans which were followed by a more than twofold increase in FDI. The averages for the various explanatory variables are reported in tables 5 and 6. Lack of

data for the magnitude variables reduces the sample to 99 observations (see appendix 1, table A2).

The most interesting differences are the possible discrepancies between the worst and best group. Student t-tests indicate whether the averages of these two groups differ significantly from one another.

As can be seen in table 5, the tests undertaken give surprisingly little evidence of differences between the groups as regards the magnitude variables. The one variable with statistically significant difference is inflation changes, where the worst group has increased inflation on average, whereas the other groups have reduced inflation. We should also note the somewhat perverse pattern for current account balances, where the worst FDI group has improved their current account balance significantly more than the best group.

As for previous macroeconomic stabilisation attempts, measured by *ERLAG*, the best group has more such loans.<sup>56</sup> Similarly, the *SPEED* variable is significantly higher in the best group compared to the others, a positive relationship, hence, with front loaded conditionality. Of the individual reforms, only financial reforms are close to being significantly different among the groups, with the best performers having a higher share of such conditions.

For some variables, notably *INF*, *INFL*, *RER*, *ERLAG*, *MACRO*, *TRADE*, *PUBENT*, a comparison between the three groups suggests that the relationships may not be linear – the values do not increase/decrease systematically from the worst to the middle to the best group. This should be kept in mind when interpreting the results from

---

<sup>56</sup> It should be noted that the average is less than one for all groups.

OLS.

**< Tables 5 and 6 about here>**

### *3.6. Estimations.*

Below, we estimate the determinants for the growth in FDI inflows after reforms, over the long run. We postulate a linear relationship, and use ordinary least squares in the estimations. All regressions include, first, conventional determinants of FDI at the long run level, based on the findings in section 3.2. Real GDP, exports and growth are included as levels. The trend variable is here included as long run changes, as we want to relate changes in our sample relative to changes in the general trend. Magnitude variables and reform design variables are also included, and F-tests are carried out to determine whether they should remain in the regression. As the correlation matrix in appendix 2 indicates (table A3), there appear to be few worrisome correlations between the explanatory variables, with the exception of real interest rates and inflation.

The regressions, excluding redundant variables (as determined by F-tests), are reported in table 7.

**< Table 7 about here>**

Column II include the *OED* variable (which reduces the sample, hence the regressions are run both with and without this variable). Among the conventional determinants, exports and growth behave as expected when included. The relationship with the dependent variable is strong and positive, and the magnitude of the estimated coefficients similar for the two samples. Reforms in countries which grow fast, and which are relatively favorable for exports, have also fostered FDI growth. The average

level of FDI as a share of GNP five years before reform is strongly significant, as in the level regressions. The sign, by contrast, is negative. The positive impact on levels suggests that there is some persistence in the adaptation of FDI inflows: countries that have been attractive to MNEs before reforms remain so. The negative relationship with FDI *growth*, however, implies that countries with a small stock of FDI have been the main beneficiaries of new FDI inflows after reforms. Again, this is consistent with a change in FDI determinants. Of course, this is not to say that reforms in high stock countries have been ineffective. It is possible that FDI there has changed in character, from tariff jumping to making use of the host countries' comparative advantages, but that the level has remained the same. Market size (real GDP), is insignificant throughout, and does in fact remain so even if both growth and exports are excluded from the regression. Likewise, foreign assistance is never significant, perhaps an indication of the ambiguous effects from aid on reform incentives and success.

As for the magnitude variables, indicating how much and how far the economy has adjusted after reforms, there is only one variable which is of any interest. Changes in real interest rates have a positive and significant influence, irrespective of whether inflation or real interest rates levels are included in the estimations.<sup>57</sup> This seems to suggest that countries that have managed to address distortions in the financial sector (directly via nominal interest rates and indirectly via inflation) have also enjoyed FDI growth. However, *RI* is only significant on the ten percent level and does not survive the F-test when OED is included.

It is quite surprising to find that no other magnitude variables are significant. A reduction in inflation levels, which seemed to be linked to FDI growth when comparing

---

<sup>57</sup> As expected, however, the significance level of *RIL* increases if *RI* is excluded.

averages, does not come out.<sup>58</sup> The current account behaviour in averages, likewise, is not replicated, and changes in real exchange rates do not have any robust impact on FDI growth in this sample. With the possible exception of real interest rates, hence, MNEs do not appear to have used reform performance to identify a suitable investment climate.

Turning to reform type variables, the one variable that is significant throughout is the one indicating the relative importance of reforms of public institutions. Some caution is needed since the variable is quite sensitive to outliers. Nevertheless, it does give some support to the argument that efforts to improve the enabling environment provide an important incentive to investors. We should note that whilst *de facto* changes in the financial sector, measured by *RI*, were important, the corresponding design variable, *FIN*, was never significant in the regressions. Public enterprise reform was significant only in the smaller sample, probably because the variable is sensitive to outliers. Although the positive impact of this design variable is intuitively appealing, the results are too fragile to allow for any wider interpretation.

There is very strong support for the influence of previous broad stabilisation loans, as *ERLAG* is positive and significant in all regressions. This appears to be evidence that reforms are not independent, and that the sequencing matters. Of course, the significance of *ERLAG* can also be evidence of the long-term nature of reforms – effects of previous reforms spill over into the FDI response. There seems to be a beneficial effect from previous loans and/or from a large loan package in general. The more substantial reformers – which have also enjoyed continued confidence in the form of new loans from

---

<sup>58</sup> To check for nonlinearities, first, the square of inflation levels was included, and second, a dummy for all inflation levels above forty percent (a threshold level for high inflation advocated by Bruno and Easterly, 1996). Neither increased the significance levels.



the external financiers – have been more successful.<sup>59 60</sup>

To our surprise, we find that the scope variable, measuring the breadth of the program, has a relatively negative impact on FDI growth, at least in the large sample. An all-encompassing reform addressing a wide range of sectors and issues, hence, is not necessarily beneficial in this setting. One explanation could be that the scope of reforms is systematically related to the degree of distortions and market imperfections. If so, countries scoring high values for *SCOPE* are considered as more risky than others, at least during the period we have examined.

The inclusion of *OED* does not have any major implications for the other variables. The coefficient is positive, but significant only on the 11 percent level.<sup>61</sup> It is only with some uncertainty that we can argue that reforms that have been rated as well implemented by the lender (the World Bank) are also reforms that yield a positive response from foreign investors.

The variable measuring the speed of reform was never significant in the regressions, leaving us without conclusions regarding this design aspect. The differences in averages between the successful group and the unsuccessful group are not substantiated. Whether this is because speed is unimportant, or because the variable used

---

<sup>59</sup> In order to investigate the importance of large versus small loan packages, we also constructed two variables, which for each observation related the number of loans in the previous and following five-year period respectively. The subsequent-loans variable was insignificant throughout. When the previous-loan variable was included, it was positive and significant, and the significance level of ERLAG disappeared. No other results changed. Arguably, this is evidence that ERLAG picks up also some of the "comprehensive multi-loan package" effect and not only that of macroeconomic reforms.

<sup>60</sup> Of course, one could also imagine that a sequence of loans is evidence of consecutive failures. There is, however, no support for this in the data.

<sup>61</sup> If the trend variable is excluded, the coefficient is significant on the 8 percent level.

here is a poor proxy of the underlying variable, is of course difficult to tell.<sup>62</sup>

The trend variable, finally, is positive and significant throughout. Excluding it does not materially change any other results.

#### **4. Conclusions.**

This paper has been concerned with the relationship between FDI flows and economic policy reforms in developing countries. The recent surge in FDI flows to the developing world has been attributed to liberalisation and restructuring efforts in these countries, on the argument that the removal of policy induced distortions has provided MNEs with new investment opportunities and by improving the environment for the private sector. However, little effort has so far been made to put forward more systematic evidence either on the reform response of FDI as such, or on the precise links to reforms. Following the literature on the political economy of reform, this paper argues that reform programs can differ both in design and degree of success, and that if market economic reforms are important, then these differences should somehow be reflected in the response of FDI. Drawing on data for World Bank structural adjustment lending, we examine, first, whether FDI behaves differently after structural adjustment reforms have been launched, and second, whether various characteristics related to reform programs can explain the new FDI pattern.

This study suggests that there are indeed considerable robust changes in the relationship between FDI and a set of conventional determinants, before and after

---

<sup>62</sup> We constructed an alternative speed variable, consisting of a principal component created from the short-term response of the magnitude variables (real interest rates, inflation, current account, and real exchange rates). A considerable change in these variables in the first three years could indicate a "speedy" reform, although as opposed to the original speed variable, it measures de facto speed rather than intended or designed speed. However, these attempts did not improve any significance levels.

reforms. The change in emphasis among the determinants, from host country income level, to host country export orientation, market size and growth, indicates a change in the characteristics that attract FDI. After reforms, MNEs are likely to react more on new incentives for export orientation. The local market is nevertheless likely to remain important (which the increased importance of market size after reforms suggests). Reforms, however, can improve the possibilities for successful exploitation of the host country's comparative advantages as well as the MNEs' intrinsic assets. More generally, the estimations suggest a different pattern after reforms, where MNEs have become more sensitive to the host countries' economic environment.

The proposition that FDI inflows have increased after reforms is in general consistent with our findings. Most reforms in our sample are followed by improvements in FDI. The case of MNEs, hence, gives little support for the existence of an investment pause (as has been suggested for private investment). The variations are large, however, and in some cases, reforms are in fact followed by a decline in FDI. Clearly, signing up for a structural adjustment loan is not enough reassurance to attract FDI. On the argument that the variations in FDI response may be related to reform characteristics, we go on to test some aspects of reform design and implementation. We refer to these dimensions as design (including scope and speed) and performance (including magnitude and evaluation). Following Rodrik (1991), we expect magnitude – far-reaching reforms, that is – to have a positive influence on FDI, while there are arguments both in favour and against large scope and fast speed. First, we test differences between three groups of reforms, those which were followed by a reduction in FDI, those which were followed by a modest increase, and those which were followed by a large increase in FDI flows. Then, a linear relationship between FDI and reform variables is tested in least squares

regression.

From the empirical tests we conclude that there is a surprisingly weak relationship between reform magnitude, or reform outcome, and FDI response. The one significant variable is related to the financial sector that in some way or other appears to be of great importance for the location choices of foreign investors. Increases in real interest rates (in the regressions) single out large recipients of FDI. While multinationals' dependence on local markets for capital supply is likely to be limited, attempts to address distortions in the financial sector can nevertheless be an important signal for reform commitment. In addition, countries, which are undertaking financial reforms, are likely to be among the mature reformers, who have put the more immediate rehabilitation concerns behind them. In this respect, the significance of financial reforms can also be an indication of the long-term nature of economic reforms.

This time aspect of economic structural change is also born out in the importance of preceding macroeconomic rehabilitation loans. Although our method does not allow for any deeper analysis of the optimal sequencing of reforms, it appears to be vital to start off on a broader base. This result can also imply that the countries which undertook comprehensive reform programs — signing two or more loans with the World Bank — were most convincing in their reform commitment. There is also some evidence of a positive impact from efforts to improve the general enabling environment in the form of reforms of public institutions. However, a broad scope of reforms has a negative effect. Speed, as measured in this study, does not seem to matter for the FDI response.

There are some, although not particularly strong, evidence that reforms which are considered as well undertaken in the World Bank's own evaluations yield a positive FDI response. If the reform is implemented as intended, and the conditionalities attached to

the loans are more or less fulfilled, foreign investors appear to perceive the economy as a favourable one.

Some of these results are similar to findings regarding private domestic investment; others are in stark contrast (c.f. Strauss, 1998). Host country investors, as well as foreign investors, have generally responded favourable to reforms, although some reforms have been followed by investment slumps. Differences occur, however, when reform characteristics are investigated, in that private investors appear react on reforms of a large magnitude (in particular devaluations and a reduction of inflation levels) and scope. These differences may reflect both different investment incentives and different information sets. One possible conclusion is that while domestic investors prefer to see action before they believe it (magnitude of reforms), foreign investors are quicker to react to attractive design and implementation. Whether these differences indicate that MNEs have better information and capacity to take advantage of rapidly changing circumstances, or that MNEs have less information about regime capacity and therefore go by the World Bank book, can not be answered here. One possibility is that the relative impatience manifested by MNEs compared to domestic investors is a characteristic of the often oligopolistic nature of many of the global markets where MNEs operate. When brand names and trademarks are important, it is vital to be first for strategic reasons, to establish a reputation and to block the subsequent entry of competitors. Logically, such market conditions should make MNEs more prone to act swiftly than smaller domestic investors. It would be interesting to carry this study further in a comparison of the reaction functions of incumbent MNEs and new entrants after the implementation of economic reforms.

It has not been possible to include all important reform aspects in this analysis

(regulations for FDI, for example, are unfortunately left aside). On the basis of the information available, however, we must acknowledge that there remains a great deal of uncertainty about the way in which reforms influence the investment decisions of multinational firms. This paper provides new contributions not least in that it quantifies what are held to be important aspects of reform design and implementation. However, in order to provide useful policy predictions, more work is needed on nailing down the specific policy mechanisms by which developing countries have attracted the interest of multinational firms. The results of such research would also have an important bearing on the more general question of reform credibility.

## References:

- Aghion, P. and O. Blanchard (1993), "On the Speed of Transition in Central Europe", *European Bank for Reconstruction and Development Working Paper*; No. 6, July 1993.
- Atkeson, A. & P. Kehoe (1997), "Industry Revolution and Transition: A Neoclassical Benchmark.", *National Bureau of Economic Research Working Paper*; No. 6005, April 1997.
- Bernanke, B. (1983), "Irreversibility, Uncertainty, and Cyclical Investment", *Quarterly Journal of Economics*; Vol. 98, No. 1, February 1983.
- Bhattacharya, B. (1997), "Pace, Sequencing and Credibility of Structural Reforms", *World Development*; Vol 25, No. 7.
- Bleaney, M. (1996), "Macroeconomic Stability, Investment and Growth in Developing Countries", *Journal of Development Economics*; Vol. 48, No. 2, March 1996.
- Bleaney, M. and D. Fielding (1995), "Investment, Trade Liberalization and Structural Adjustment", *Journal of Development Studies*, Vol 32, no. 2, December 1995.
- Blomström, M. and R. Lipsey (1993), "Foreign Firms and Structural Adjustment in Latin America: Lessons from the Debt Crisis", in Hansson, G. (ed), *Trade, growth and development: The role of politics and institutions: Proceedings of the 12th Arne Ryde Symposium, 13-14 June 1991, in honour of Bo Sodersten*. London and New York: Routledge, 1993.
- Blomström, M. and A. Kokko (1998), Multinational Corporations and Spillovers, *Journal of Economic Surveys*; Vol. 12, No. 2.
- Borensztein, E., J. de Gregorio and J.w. Lee (1994), "How Does Foreign Direct Investment Affect Economic Growth?", *National Bureau of Economic Research Working Paper*, No. 5057, March 1995.

- and J.D. Ostry, "Economic Reform and Structural Adjustment in East European Industry.", *International Monetary Fund Working Paper*; WP/94/80, June 1994.
- Branson, W. and C. Jayarajah (1995), *Structural and Sectoral Adjustment: World Bank Experience, 1980-92.*, Washington D.C.: World Bank.
- Bruno, M. and W. Easterly (1996), "Inflation and Growth: In Search of a Stable Relationship", *Federal Reserve Bank of St. Louis Review*; Vol. 78, No. 3, May-June 1996.
- , C. Jayarajah, and B. Sen (1996), *Social Dimensions of Adjustment: World Bank Experience 1980-93.*, Washington D.C.: World Bank.
- Calvo, G. (1988), "Costly Trade Liberalizations: Durable Goods and Capital Mobility", *International Monetary Fund Staff Papers*; Vol. 35, No. 3, September 1988.
- (1989), "Incredible Reforms", in G. Calvo *et al.* (eds), *Debt, stabilization and development: Essays in memory of Carlos Diaz-Alejandro*. Oxford and Cambridge, Mass.: Blackwell.
- Caves, R. (1996), *Multinational enterprise and economic analysis*, Second edition. Cambridge; New York and Melbourne: Cambridge University Press, 1996.
- Collier, P. (1993), "Higgledy-Piggledy Liberalisation", *World Economy*; Vol. 16, No. 4, July 1993.
- Cooper, R. and A. John (1988), "Coordinating Coordination Failures in Keynesian Models", *Quarterly Journal of Economics*; Vol. 103, No. 3, August 1988.
- Coricelli, F., and G. M. Milesi-Firetti (1993), "On the Credibility of 'Big Bang' Programs.", *European Economic Review*; Vol. 37, No. 2-3, April 1993.
- de Mello, L. (1997), "Foreign Direct Investment in Developing Countries: A Selective Survey.", *Journal of Development Studies*; Vol 34, No. 1, October 1997.
- Dewatripoint, M., and G. Roland (1995), "The Design of Reform Packages under Uncertainty", *American Economic Review*; Vol. 85, No. 5, December 1995.
- Dixit, A., and R. Pindyck (1994), *Investment Under Uncertainty*. Princeton: Princeton University Press, 1994.



- Drazen, A., and P. Masson (1994), "Credibility of Policies versus Credibility of Policymakers", *Quarterly Journal of Economics*; Vol. 109, No. 3, August 1994.
- Fernandez, R. and D. Rodrik (1991), "Resistance to Reform: Status Quo Bias in the Presence of Individual-Specific Uncertainty", *American Economic Review*; Vol. 81, No. 5, December 1991.
- Globerman, S., A. Kokko, M. Revelius, and M. Sami (1996), "MNE Responses to Economic Liberalization in a Developing Country: Evidence from India." *Journal of Economic Development*, vol 21.
- International Finance Corporation, (1997), "Foreign Direct Investment: Lessons of Experience". Washington D.C: The International Finance Corporation.
- Michapoulos, C. (1987), "World Bank Lending for Structural Adjustment", *Finance and Development*, June 1987.
- Mosley, P., J. Harrigan, and J. Toye (eds), *Aid and Power. The World Bank and Policy-based Lending*, vol II, London:Routledge.
- Pindyck, R., and A. Solimano (1993), "Economic Instability and Aggregate Investment", in O. Blanchard and S. Fischer, eds.: *NBER macroeconomics annual 1993*; Cambridge and London: MIT Press, 1993.
- Rodrik, D. (1989) "Promises, Promises: Credible Policy Reform via Signalling", *The Economic Journal*; No. 99, September 1989.
- (1991), "Policy Uncertainty and Private Investment in Developing Countries", *Journal of Development Economics*; Vol. 36, No. 2, October 1991.
- Roland G. (1993), "The Political Economy of Restructuring and Privatization in Eastern Europe", *European Economic Review*; Vol. 37, No. (2-3, April 1993.
- Sachs, J. (1995), "Why Russia Has Failed to Stabilize", *Stockholm Institute of East European Studies Working Paper*, No. 103.
- Serven, L and A. Solimano (1992a), "Private Investment and Macroeconomic Adjustment: A Survey", *World Bank Research Observer*; Vol 7, No. 1, January 1992.

- Serven, L and A. Solimano (1992b), "Economic Adjustment and Private Investment", *Finance and Development*; Vol. 29, No. 3, September 1992.
- Serven, L and A. Solimano (1993a), "Debt Crisis, Adjustment Policies and Capital Formation in Developing Countries: Where Do We Stand?" *World Development*; Vol. 21, No. 1, January 1993.
- Serven, L and A. Solimano, eds. (1993b), *Striving for growth after adjustment: The role of capital formation.*, Washington, D.C.: World Bank, 1993.
- Solimano, A. (1992) "Understanding the Investment Cycle in Adjustment programs. Evidence from Reforming Economies", *World Bank Policy Research Working Papers*, No. 912.
- Strauss, T. (1998), "Structural Reforms, Uncertainty, and Private Investment", mimeo, Department of Economics, Stockholm School of Economics.
- Svensson, J. (1996), "When Is Foreign Aid Policy Credible? Aid Dependence and Conditionality.", mimeo, Institute for International Economic Studies, Stockholm University.
- UNCTAD (1995), *World investment report, 1995: Transnational corporations and competitiveness*, Geneva: United Nations Conference on Trade and Development, Division on Transnational Corporations and Investment.
- Van Wijnbergen, S. (1985), "Trade reform, Aggregate Investment and Capital Flight." *Economics Letters*, Vol. 19.
- Van Wijnbergen, S. (1992), "Intertemporal Speculation, Shortages and the Political Economy of Price reform", *Economic Journal*, Vol. 102, No. 415, November 1992.
- Williamson, J. (1994), "In Search of a Manual for Technopols", in J. Williamson, ed., *The political economy of policy reform*. Washington, D.C.: Institute for International Economics, 1994. .
- Wyplosz, C. (1993), "After the Honeymoon: On the Economics and the Politics of Economic Transformation", *European Economic Review*; Vol. 37, No. 2-3, April 1993.

World Bank (1997), *The World Bank's Operational Manual*,

<http://www.worldbank.org/html/opr/opmanual/ops/100tx.html>

Åslund, A., P. Boone, and S. Johnson (1996), "How to Stabilize: Lessons from Post-communist Countries", *Brookings Papers on Economic Activity*; 1996.

**Table 1. Conventional determinants of FDI. Dependent variable is FDI/GNP (%).<sup>1</sup>**

	I		II		III		IV	
	Total sample		Before reform <sup>2</sup>		After reform <sup>3</sup>		After reform	
Variable	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.
<i>Real GDP</i>	0.08	1.57	0.01	0.29	<b>0.16</b>	<b>1.83*</b>	<b>0.15</b>	<b>2.08**</b>
<i>Per cap GNP</i>	0.05	0.49	<b>0.14</b>	<b>1.77*</b>	-0.12	-0.64	-0.22	-1.30
<i>Growth</i>	0.02	1.13	-0.02	-0.82	0.05	1.43	<b>0.07</b>	<b>1.98**</b>
<i>Exports</i>	<b>0.03</b>	<b>3.56***</b>	<b>0.01</b>	<b>1.92*</b>	<b>0.04</b>	<b>3.24***</b>	<b>0.03</b>	<b>3.18***</b>
<i>FDI stock</i>	--	--	--	--	--	--	<b>0.61</b>	<b>2.88***</b>
<i>Trend</i>	<b>0.00</b>	<b>5.07***</b>	<b>0.00</b>	<b>2.11**</b>	<b>0.00</b>	<b>3.87***</b>	<b>0.00</b>	<b>3.40***</b>
<i>Constant</i>	<b>-2.50</b>	<b>-3.01***</b>	<b>-1.72</b>	<b>-2.03**</b>	<b>-3.89</b>	<b>-2.73***</b>	<b>-3.17</b>	<b>-2.32***</b>
<i>Adj. R-sq</i>	0.26		0.12		0.27		0.37	
<i>.No obs</i>	294		147		147		147	

**Notes:**

1. White Heteroskedasticity-consistent standard errors & covariance.

Significance levels: \* ten percent, \*\* five percent, \*\*\* one percent.

2. Dependent variable is average of FDI inflows as share of GNP (%), five years before reform.

3. Dependent variable is average of FDI inflows as share of GNP (%), four to six years after reform.

**Table 2. Average FDI response. Percentage changes.**

Direct investment <sup>1</sup> response	<i>FDIS</i>	<i>FDI</i>
	(average year 1-3)	(average year 4-6)
Mean	134.8	367.5
Median	69.9	220.8
No. of obs. <sup>2</sup>	142	
No. of countries	47	

**Notes:**

1. Where three years of data were not available, year 1-2 and 4-5 have been used.

2. The sample is the same as for table 1, excluding four obvious outliers:

Bangladesh 1984, Mali 1988, Senegal 1986, Sierra Leone 1984, Zimbabwe 1983.

**Table 3. Average FDI response, no. of obs per category.**

Direct investment <sup>1</sup> response		<i>FDI</i>		No. of obs.
		Increase	Decrease	
<i>FDIS</i>	Increase	92	9	101
	Decrease	18	23	41
No. of obs.		110	32	142

Notes: See table 2.

**Table 4. Average long run FDI response, no. obs per category.**

Direct investment <sup>1</sup> response	No. of obs.
<i>FDI</i> <0	32
0< <i>FDI</i> <200	35
200< <i>FDI</i>	75

Notes: See table 2.

**Table 5. Averages, magnitude/outcome variables.<sup>1</sup>**

Variable	Change in FDI				Probability
	All obs	Reduction	Modest increase	Large increase	T-test worst-best
<i>FDI</i>	382.4	-83.0	112.4	679.7	<b>0.00</b>
<i>RI</i>	95.4	127.2	111.0	76.5	0.71
<i>RIL</i>	4.8	17.8	2.9	0.8	0.17
<i>INF</i>	9.2	91.9	-29.1	-3.7	<b>0.04</b>
<i>INFL</i>	24.2	25.8	20.6	25.3	0.95
<i>CAB</i>	-21.5	40.9	-5.3	-52.1	<b>0.02</b>
<i>RER</i>	29.1	38.5	50.9	15.5	0.45
<b>No. obs.</b>	99	20	25	54	

**Note:**

1. Controlled for outliers in FDI.

**Table 6. Averages, design variables.<sup>1</sup>**

Variable	Change in FDI				Probability
	All obs	Reduction	Modest increase	Large increase	T-test worst-best
<i>FDI</i>	367.5	-70.1	117.6	678.2	<b>0.00</b>
<i>SCOPE</i>	4.44	4.69	4.61	4.26	0.14
<i>SPEED</i>	43.9%	39.0%	40.2%	47.8%	<b>0.03</b>
<i>ERLAG</i>	0.60	0.47	0.33	0.78	<b>0.05</b>
<i>MACRO</i>	21.4%	23.1%	25.7%	18.5%	0.14
<i>FIN</i>	14.3%	10.7%	11.7%	17.1%	0.11
<i>TRADE</i>	20.0%	21.4%	23.0%	18.0%	0.47
<i>PUBENT</i>	11.0%	12.7%	10.1%	10.8%	0.62
<i>PUBINT</i>	6.5%	6.0%	6.3%	6.9%	0.60
<b>No obs.</b>	142	32	36	75	

**Note:**

1. Controlled for outliers in FDI.

**Table 7. Reform determinants. Dependent variable is long run changes in FDI inflows.**

Variable	I		II	
	Coeff.	t-Stat.	Coeff.	t-Stat.
<i>FDI-stock</i>	-246.82	-3.60***	-259.50	-3.30***
<i>RGDP</i>	-5.40	-0.16	14.62	0.34
<i>GROWTH</i>	31.01	2.62*	27.84	2.27**
<i>EXP</i>	10.17	2.24**	13.31	2.57***
<i>RI</i>	0.27	2.00*	0.27	1.39
<i>SCOPE</i>	-78.34	-1.80*	-70.19	-1.57
<i>ERLAG</i>	169.51	2.90***	128.22	2.32**
<i>PUBINT</i>	10.00	2.44**	9.48	2.32**
<i>PUBENT</i>	--	--	7.23	2.05**
<i>TREND</i>	1.55	3.20***	1.13	2.39**
<i>OED</i>	--	--	2.28	1.63
C	143.24	0.17	-579.39	-0.66
Adj. Rsq	0.33		0.36	
No.obs	99		76	

## Appendix 1. Loans/observations included in the regressions.

**Table A1. Levels. (49 countries, 147/294 observations)**

---

ARGENTINA: 1986, 1987, 1988, 1989
BANGLADESH: 1982, 1984, 1986, 1987, 1989, 1990
BENIN: 1989
BOLIVIA: 1980, 1986, 1987, 1988
BRAZIL: 1984, 1986
BURUNDI: 1986, 1988, 1989
CAR: 1987, 1988
CHILE: 1986, 1987, 1988
COLOMBIA: 1985, 1986, 1988
COSTA RICA: 1983, 1985, 1989
COTE D IVOIRE: 1982, 1984, 1986, 1990
ECUADOR: 1986, 1988
GABON: 1988
THE GAMBIA: 1987, 1989
GHANA: 1983, 1984, 1985, 1986, 1987, 1988, 1989
GUINEA: 1988
GUINEA-BISSAU: 1985, 1987, 1989
GUYANA: 1981
HONDURAS: 1989
INDONESIA: 1987, 1988, 1989
JAMAICA: 1981, 1982, 1983, 1985, 1987
KENYA: 1980, 1983, 1986, 1988, 1989
KOREA: 1982, 1984, 1985
MADAGASCAR: 1985, 1986, 1987, 1988
MALAWI: 1981, 1983, 1984, 1986, 1988
MALI: 1988, 1989
MAURITANIA: 1986, 1987
MAURITIUS: 1981, 1984, 1987
MEXICO: 1983, 1987, 1988, 1989, 1990
MOROCCO: 1984, 1985, 1986, 1987, 1988, 1989
MOZAMBIQUE: 1988, 1989
NEPAL: 1987, 1989
NIGER: 1986, 1987
NIGERIA: 1984, 1987, 1989
PAKISTAN: 1981, 1982, 1985, 1986, 1989
PAPUA NEW GUINEA: 1990
PHILIPPINES: 1981, 1983, 1985, 1987, 1988, 1989
SENEGAL: 1986, 1987
SIERRA LEONE: 1984
SRI LANKA: 1990
THAILAND: 1982, 1983
TOGO: 1983, 1985
TRINIDAD & TOBAGO: 1990
TUNISIA: 1987, 1988, 1989
TURKEY: 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988
URUGUAY: 1985, 1987, 1989
VENEZUELA: 1989, 1990
ZAMBIA: 1984, 1985, 1986
ZIMBABWE: 1983

---



**Table A2. Changes. (33 countries, 99 obs)**

---

ARGENTINA:1987, 1988, 1989  
BOLIVIA:1986, 1987, 1988  
BRAZIL:1984, 1986  
CAR:1987, 1988  
CHILE:1986, 1987, 1988  
COLOMBIA:1985, 1986, 1988  
COSTA RICA:1983, 1985, 1989  
COTE D IVOIRE:1982, 1986  
ECUADOR:1986, 1988  
GABON:1988  
THE GAMBIA: 1987, 1989  
GHANA:1983; 1984, 1985, 1986, 1987, 1988, 1989  
GUYANA:1981  
HONDURAS:1989  
INDONESIA:1987  
JAMAICA: 1981, 1982, 1983, 1985, 1987  
KENYA: 1980, 1983, 1986, 1988, 1989  
MALAWI: 1983, 1984, 1986, 1988  
MAURITIUS: 1981, 1984, 1987  
MEXICO:1983, 1987, 1988, 1989, 1990  
MOROCCO:1984, 1985, 1986, 1987  
NEPAL:1987, 1989  
NIGER:1986, 1987  
NIGERIA:1984, 1987, 1989  
PAKISTAN:1981, 1982, 1985, 1986  
PHILIPPINES:1981, 1983, 1985, 1987, 1988, 1989  
SENEGAL:1987  
THAILAND:1982, 1983  
TOGO:1985  
TUNISIA:1987, 1988, 1989  
TURKEY:1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988.  
URUGUAY:1985, 1987.  
ZAMBIA:1984, 1985

---

**Table A3. Changes, OED variable included. (30 countries, 76 obs).**

BRAZIL:1984, 1986  
CAR:1987, 1988  
CHILE:1986, 1987, 1988  
COLOMBIA:1985, 1986  
COSTA RICA:1983  
COTE D IVOIRE:1982, 1986  
ECUADOR:1986, 1988  
GABON:1988  
THE GAMBIA: 1987  
GHANA:1983; 1984, 1985, 1986, 1987, 1989  
GUYANA:1981  
HONDURAS:1989  
INDONESIA:1987  
JAMAICA: 1981, 1982, 1983, 1985, 1987  
KENYA: 1980, 1983, 1986, 1988, 1989  
MALAWI: 1983, 1984, 1986, 1988  
MAURITIUS: 1981, 1984, 1987  
MEXICO:1983, 1987, 1988, 1989  
MOROCCO: 1985, 1986, 1987  
NEPAL:1987  
NIGER:1986, 1987  
NIGERIA:1984  
PAKISTAN:1981, 1982, 1985, 1986  
PHILIPPINES:1981, 1983, 1985, 1987  
SENEGAL:1987  
THAILAND:1982, 1983  
TOGO:1985  
TUNISIA:1987, 1988  
TURKEY:1980, 1981, 1982, 1983, 1984, 1985  
URUGUAY:1985  
ZAMBIA:1984, 1985

---

## Appendix 2. Correlation matrices.

### A. Level regressions (table 1).

**Table A4 . Total sample (294 obs)**

	<i>FDI</i>	<i>Real GDP</i>	<i>Per cap GNP</i>	<i>Growth</i>	<i>Investment</i>	<i>Exports</i>
<i>FDI</i>	1.00	0.06	0.20	0.10	0.07	<b>0.35</b>
<i>Real GDP</i>		1.00	<b>0.57</b>	<b>0.30</b>	0.04	<b>-0.32</b>
<i>Per cap GNP</i>			1.00	0.16	0.12	0.22
<i>Growth</i>				1.00	<b>0.34</b>	-0.06
<i>Investment</i>					1.00	0.24
<i>Exports</i>						1.00

**Table A5 . Before reform (147 obs)**

	<i>FDI</i>	<i>Real GDP</i>	<i>Per cap GNP</i>	<i>Growth</i>	<i>Investment</i>	<i>Exports</i>
<i>FDI</i>	1.00	0.03	0.23	-0.09	0.19	0.24
<i>Real GDP</i>		1.00	<b>0.55</b>	0.24	0.00	<b>-0.39</b>
<i>Per cap GNP</i>			1.00	-0.04	0.15	0.15
<i>Growth</i>				1.00	0.29	-0.25
<i>Investment</i>					1.00	<b>0.30</b>
<i>Exports</i>						1.00

**Table A6 . After reform. (147 obs)**

	<i>FDI</i>	<i>Real GDP</i>	<i>Per cap GNP</i>	<i>Growth</i>	<i>Investment</i>	<i>Exports</i>	<i>FDI stock</i>
<i>FDI</i>	1.00	0.06	0.20	0.13	0.02	<b>0.38</b>	<b>0.44</b>
<i>Real GDP</i>		1.00	<b>0.59</b>	<b>0.33</b>	0.07	-0.28	0.03
<i>Per cap GNP</i>			1.00	<b>0.31</b>	0.09	0.28	0.22
<i>Growth</i>				1.00	<b>0.38</b>	0.04	-0.11
<i>Investment</i>					1.00	0.21	0.03
<i>Exports</i>						1.00	0.24
<i>FDI stock</i>							1.00

**Table A7. Correlation matrix, changes, variables in table 7.<sup>1</sup>**

	<i>FDI</i>	<i>FDIB</i>	<i>INV</i>	<i>GROWTH</i>	<i>EXP</i>	<i>FOR</i>	<i>RI</i>	<i>RIL</i>	<i>RILSQ</i>	<i>INF</i>	<i>INFL</i>	<i>INFLSQ</i>	<i>CAB</i>	<i>RER</i>	<i>SCOPE</i>	<i>PACE</i>	<i>ERLAG</i>	<i>MACRO</i>	<i>FIN</i>	<i>TRADE</i>	<i>PUBEN</i>	<i>PUBIN</i>
<i>FDI</i>	1.00	-0.31	-0.06	0.23	0.19	0.14	0.06	-0.09	-0.09	-0.06	0.06	0.04	-0.02	-0.03	-0.05	0.11	<b>0.32</b>	-0.07	0.18	-0.20	0.10	0.20
<i>FDIB</i>		1.00	0.14	-0.14	0.06	<b>-0.31</b>	0.08	0.11	0.07	0.08	-0.06	-0.05	-0.19	-0.19	-0.04	-0.13	<b>-0.33</b>	0.12	0.00	0.14	-0.01	-0.11
<i>INV</i>			1.00	0.25	<b>0.45</b>	-0.23	-0.17	0.08	0.06	0.00	-0.17	-0.23	0.04	-0.19	0.10	-0.19	0.02	0.07	0.00	0.14	-0.16	-0.07
<i>GROWTH</i>				1.00	-0.02	-0.28	0.00	-0.19	-0.20	-0.09	0.12	0.06	0.18	0.10	-0.10	0.07	0.07	0.00	0.11	0.16	-0.14	-0.16
<i>EXP</i>					1.00	0.29	<b>-0.37</b>	-0.17	-0.15	0.07	-0.14	-0.10	0.04	-0.06	0.22	-0.11	-0.02	0.10	-0.12	0.03	0.02	0.09
<i>FOR</i>						1.00	-0.27	-0.22	-0.17	0.16	-0.12	-0.04	0.02	0.11	0.23	0.07	0.08	0.16	-0.10	-0.22	0.12	0.08
<i>RI</i>							1.00	<b>0.54</b>	<b>0.41</b>	<b>-0.32</b>	<b>-0.31</b>	-0.29	0.03	-0.09	-0.14	0.03	-0.11	-0.10	0.10	-0.05	0.12	-0.01
<i>RIL</i>								1.00	<b>0.92</b>	-0.22	-0.25	-0.28	0.08	-0.21	0.03	0.00	-0.12	-0.06	0.08	0.02	-0.03	-0.01
<i>RILSQ</i>									1.00	0.00	0.00	-0.02	0.08	-0.15	0.04	0.05	-0.11	-0.05	0.04	0.03	-0.04	-0.03
<i>INF</i>										1.00	<b>0.49</b>	<b>0.49</b>	0.13	0.03	0.06	0.25	0.00	-0.09	0.01	-0.01	-0.07	-0.02
<i>INFL</i>											1.00	<b>0.94</b>	0.11	0.06	-0.14	0.13	0.15	-0.18	0.17	0.09	-0.12	-0.17
<i>INFLSQ</i>												1.00	0.09	-0.03	-0.14	0.13	0.07	-0.18	0.13	0.06	-0.09	-0.15
<i>CAB</i>													1.00	0.15	0.01	-0.08	0.05	0.02	-0.02	0.11	-0.19	0.05
<i>RER</i>														1.00	-0.01	-0.20	0.03	0.06	-0.14	0.00	-0.14	0.04
<i>SCOPE</i>															1.00	-0.01	0.14	<b>0.35</b>	-0.15	-0.16	0.04	<b>0.32</b>
<i>SPEED</i>																1.00	0.01	-0.10	0.16	-0.13	0.27	0.03
<i>ERLAG</i>																	1.00	-0.04	0.13	-0.25	0.07	0.02
<i>MACRO</i>																		1.00	-0.11	-0.10	-0.10	-0.02
<i>FIN</i>																			1.00	-0.27	-0.22	-0.16
<i>TRADE</i>																				1.00	<b>-0.30</b>	-0.17
<i>PUBEN</i>																					1.00	0.04
<i>PUBIN</i>																						1.00

**Note:**

1. *FDI*=foreign direct investment *FDIB*= FDI stock, *INV*= gross domestic investent excluding FDI, *GROWTH*= per capita GNP growth, *EXP*= real exports, *FOR*= foreign assistance, *RI*, *RIL*= real interest rates (changes, levels, squared levels), *INF*, *INFL*, *INFLSQ*= inflation (changes, levels, squared levels), *CAB*= current account balance, *RER*= Real exchange rates, *MACRO*= macro and stabilisation, *FIN*= financial sector, *TRADE*= trade sector, *PUBEN*= public enterprise reform, *PUBIN*= public institutions reform.



*Reports since 1994*

**Published in the language indicated by the title**

*1994*

- Andersson, H., Ett industriföretags omvandling. En studie av Hägglunds förändringsprocess 1922-81 med bas i företagets produkter, relationer och resurser.
- Andersson, H., En produkthistoria (separat publicerad bilaga till ovanstående)
- Cowan, R., Hultén, S., Escaping Lock-in: The Case of the Electric Vehicle. Research Report.
- Dahlfors, G., Jansson, P., Essays in Financial Guarantees and Risky Debt.
- Företag och marknader i förändring - dynamik i nätverk, red. Mattsson, L-G., Hultén, S.  
EFI-Nerenius & Santérus Förlag.
- Helgesson, C-F., Coordination and Change in Telecommunications. Research Report.
- Lundström, T., Wijkström, F., The Swedish Nonprofit Sector. Research Report.
- Nessén, M., Essays on Exchange Rates and International Finance.
- Niemeyer, J., Essays on Market Micro-structure -Empirical Evidence from Some Nordic Exchanges.
- Nilsson, K., Rapportering i svenska storföretag 1993. Delrapport 1. Faktiska tider och påverkande faktorer för månatlig resultatrapportering. Research Report.
- Nilsson, K., Rapportering i svenska storföretag 1993. Delrapport 2. Rapporteringstider för kvartals/tertiärsrapporter. Research Report.
- Nordenlöw, L., Entreprenörskap i industriella nätverk. Research Report.
- Norén, N-E., Om flexibilitetspåverkande beslut. Research Report.
- Normark, P., Medlemsägda företag. Organisering av strategiska förändringar.
- Nyman, K., Studier av inkomstfördelningar med hjälp av mikrosimuleringsmodeller. Research Report.
- Thodenius, B., Användningen av ledningsinformationssystem i Sverige: Lägesbild 1993. Research Report.
- Sjöholm, G., Redovisningsmått vid bolagisering. Utformning och effekter.
- Wijkström, F., Det organiserade ideella arbetet i Sverige. Research Report.
- Wirsäll, N-E., Holmlöv, PG., Den nyckfulle Svensson. Reflektioner efter ett seminarium om strategier för handeln. Fonden för Handels- och Distributionsforskning, EFI.

*1995*

- Becker, T., Essays on Stochastic Fiscal Policy, Public Debt and Private Consumption.
- Blomberg, J., Ordning och kaos i projektsamarbete - en socialfenomenologisk upplösning av en organisationsteoretisk paradox.
- Brodin, B., Lundkvist, L., Sjöstrand, S-E., Östman, L., Styrelsearbete i koncerner
- Brännström, T., Bias Approximation and Reduction in Vector Autoregressive Models. Research Report.
- Ekonomisk politik i omvandling. red. Jonung, L.
- Gunnarsson, J., Wahlund, R., Hushållens finansiella strategier. En explorativ studie.  
Fonden för Handels- och Distributionsforskning, EFI.
- Höök, P., Chefsutveckling ur könsperspektiv - Mentorskap och nätverk på Vattenfall - Research Report.
- Levin, J., Olsson, P., Looking Beyond the Horizon and Other Issues in Company Valuation. Research Report.
- Mägi, A., Customer Satisfaction in a Store Performance Framework. Research Report.
- Persson, P-G., Modeling the Impact of Sales Promotion on Store Profits.
- Román, L., Institutions in Transition. A Study of Vietnamese Banking.
- Sandberg, J., Statistisk metod - dess vetenskapliga hemvist, grundläggande principer och möjligheter inom samhällsvetenskapen. Research Report.
- Sandberg, J., How Do We Justify Knowledge Produced by Interpretative Approaches? Research Report.
- Schuster, W., Redovisning av konvertibla skuldebrev och konvertibla vinstandelsbevis - klassificering och värdering.
- Söderberg, K., Farmartjänsten -Ny Kooperation inom lantbruket. Research Report.
- Söderqvist, T., Benefit Estimation in the Case of Nonmarket Goods. Four Essays on Reductions of Health Risks Due to Residential Radon Radiation.
- Thorén, B., Användning av information vid ekonomisk styrning - månadsrapporter och andra informationskällor.

- Advancing your Business. People and Information Systems in Concert.  
red. Lundeberg, M., Sundgren, B.
- Att föra verksamheten framåt. Människor och informationssystem i samverkan. red. Lundeberg, M., Sundgren, B.  
EFI/Studentlitteratur
- Andersson, P., Concurrence, Transition and Evolution - Perspectives of Industrial Marketing Change Processes.
- Andersson, P., The Emergence and Change of Pharmacia Biotech 1959-1995. The Power of the Slow Flow and the Drama of Great Events.
- Asplund, M., Essays in Industrial Economics.
- Delmar, F., Entrepreneurial Behavior & Business Performance.
- Edlund, L., The Marriage Market: How Do You Compare?
- Gunnarsson, J., Three Studies of Financial Behavior. Research Report.
- Hedborg, A., Studies of Framing, Judgment and Choice.
- Holgersson, C., Höök, P., Ledarutveckling för kvinnor - Uppföljning av en satsning på Volvo - Research Report.
- Holmberg, C., Stores and Consumers - Two Perspectives on Food Purchasing.
- Håkansson, P., Wahlund, R., Varumärken. Från teori till praktik. Fonden för Handels- och  
Distributionsforskning, Ekonomiska Forskningsinstitutet, EFI.
- Karlsson, A., The Family Business as an Heirloom. Research Report.
- Linghag, S., Man är handelsstudent. Research Report.
- Molin, J., Essays on Corporate Finance and Governance.
- Mägi, A., The French Food Retailing Industry - A Descriptive Study. The Foundation for Distribution Research.
- Mölleryd, B., Så byggdes en världsindustri - Entreprenörskapets betydelse för svensk mobiltelefoni. Research  
Report.
- Nielsen, S., Omkostningskalkulation för avancerade produktionsomgivelser - en sammenligning af stokastiske og  
deterministiske omkostningskalkulationsmodeller.
- Normark, P., Danielsson, L., Larsson, A., Lundblad, P., Kooperativa nyckeltal. Research Report.
- Sandin, R., Heterogeneity in Oligopoly: Theories and Tests.
- Sandén-Håkansson, U., Från kampanjmål till mediemix - en studie av samarbete mellan annonsörer,  
reklambyråer och mediebyråer. Research Report.
- Stein, J., Söderlund, M., Framgång i arbetet, strategier för att utföra arbetsuppgifterna, arbetsuppgifternas  
karaktär och utbildningskvalitet. En empirisk studie av civilekonomer. Research Report.
- Strömberg, P., Thornburn, K., An Empirical Investigation of Swedish Corporations in Liquidation Bankruptcy.  
Research Report.
- Söderlund, M., Och ge oss den nöjda kunden. En studie av kundtillfredsställelse och dess orsaker och effekter.  
Research Report.
- Thodenius, B., Användningen av ledningsinformationssystem i Sverige: Lägesbild 1995. Research Report.
- Ulfsdotter, U., Internationalisering för expansion eller hemmamarknadsförsvar? De nordiska marknaderna för  
fruktyoghurt 1982-1994.
- Westelius, A., A Study of Patterns of Communication in Management Accounting and Control Projects.
- Wijkström, F., Den svenska ideella sektorn och pengarna. Research Report.
- Örtendahl, M., Health and Time - A Problem of Discounting.

- Alexius, A., Essays on Exchange Rates, Prices and Interest Rates.
- Andersson, B., Essays on the Swedish Electricity Market.
- Berggren, N., Essays in Constitutional Economics.
- Ericsson, J., Credit Risk in Corporate Securities and Derivatives. Valuation and Optimal Capital Structure  
Choice.
- Changli He, Statistical Properties of Garch Processes.
- Charpentier, C., Budgeteringens roller, aktörer och effekter. En studie av budgetprocesserna i en offentlig  
organisation.
- De Geer, H., Silfverberg, G., Citizens' Trust and Authorities' Choices, A Report from The Fourth International  
Conference on Ethics in the Public Service, Stockholm June 15-18, 1994.
- Friberg, R., Prices, Profits and Exchange Rates.
- Från optionsprissättning till konkurslagstiftning. red. Bergström, C., Björk, T.
- Hagerud, G.E., A New Non-Linear GARCH Model.
- Haksar, A., Environmental Effects of Economywide Policies: Case Studies of Costa Rica and Sri Lanka.
- Holmgren, M., Datorbaserat kontrollrum inom processindustrin; erfarenheter i ett tidsperspektiv.
- Jennergren, P., Tutorial on the McKinsey Model for Valuation of Companies.
- Lagerlöf, J., Essays on Political Economy, Information, and Welfare.
- Lange, F., Wahlund, R., Planerade och oplanerade köp - Konsumenternas planering och köp av dagligvaror.
- Löthgren, M., Essays on Efficiency and Productivity; Contributions on Bootstrap, DEA and Stochastic Frontier  
Models.

Nilsson, H.E., Using Conceptual Data Modelling in Management Accounting: A Case Study.  
 Sjöberg, L., Ramsberg, J., En analys av en samhällsekonomisk bedömning av ändrade säkerhetsföreskrifter rörande heta arbeten.  
 Säfvenblad, P., Price Formation in Multi-Asset Securities Markets.  
 Sällström, S., On the Dynamics of Price Quality.  
 Södergren, B., På väg mot en horisontell organisation? Erfarenheter från näringslivet av decentralisering och därefter.  
 Tambour, M., Essays on Performance Measurement in Health Care.  
 Thorén, B., Berg-Surwee, U., Områdesarbete i Östra Hökarängen - ett försök att studera effekter av decentralisering.  
 Zhang Gang., Chinese Rural Enterprises Between Plan and Market.  
 Åhlström, P., Sequences in the Process of Adopting Lean Production.  
 Åkesson, G., Företagsledning i strategiskt vakuum. Om aktörer och förändrings-processer.  
 Åsbrink, S., Nonlinearities and Regime Shifts in Financial Time Series.

1998

Segendorff, B., Essays on Bargaining and Delegation.  
 Zethraeus, N., Essays on Economic Evaluation in Health Care - Evaluation of Hormone Replacement Therapy and Uncertainty in Economic Evaluations.