Stabilisation

Stabilisation

By

Peter A. Prazmowski

CAMBRIDGE SCHOLARS

PUBLISHING

Stabilisation, by Peter A. Prazmowski

This book first published 2013

Cambridge Scholars Publishing

12 Back Chapman Street, Newcastle upon Tyne, NE6 2XX, UK

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN (10): 1-4438-4821-2, ISBN (13): 978-1-4438-4821-3

To my wife, my daughters, my parents and my sister

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

PREFACE

"We pay some price when necessary to bring down inflation but that price is temporary and is not large relative to the permanent gain from reduced inflation" (Martin Feldstein)

I have been unfortunate to experience, first hand, four economic crises and more than seven stabilisation attempts in my career. These have changed my perspectives on how the economy works and the way in which institutions poorly coordinated in achieving stabilisation.

The recurring elements that accompany crises, usually labelled as the *stylized facts of stabilisation*, appear inevitable and, although we have systematically learned to deal with such devastating episodes of high inflation and exchange rate devaluation, there is still much to discern about the way markets and governments manoeuvre through crisis.

How to design and implement credible and sustainable policies to stabilize inflation and exchange rates is at the heart of the literature. The essays in this book will, hopefully, contribute to our understanding of crisis and the ability to cope with the related and recurrent stylized facts of stabilisation.

The book has a technical angle that makes it appealing to academia. However, policy makers and the private sector may also find the conclusions and recommendations in the book relevant. In particular, Chapter 7 provides a summary and perhaps a quick approach to the most important findings of my research. If, however, more detail is needed, the reader may delve into the chapter that covers the topic of interest.

In editing the book, I have kept the flavour of the essays that were part of my original PhD dissertation. In this regard, many of the chapters may seem intense and the mathematics more detailed than usual. A more subtle and perhaps less comprehensive version of the chapters could be found in professional academic journals where some of the essays are either published or in the process of being published.

The reader may find the details and depth of the essays in the book engaging. I hope that the materials contained in these chapters will stimulate future research in this interesting literature that will continue to contribute to our understanding of economics in general and the economics of stabilisation in particular.

Peter Albert Prazmowski

ACKNOWLEDGMENTS

I am grateful to Dr José R. Sánchez-Fung and Professor Subrata Ghatak for their unconditional support in the long journey of putting this volume together. I would also like to express my gratitude to the *School of Economics at Kingston University* in London and its faculty for their encouragement. In particular, I would like to thank Professor Vince Daly, Dr Willy Spanjers, and Professor Peter Scott (*University of Massachusetts at Amherst*) for comments and suggestions; also Dr Joachim Stibora for useful insights, and Dr Miguel Segoviano, a dear friend from my days at the *London School of Economics*, and who is currently at the *International Monetary Fund* (IMF), for sharing interesting insights about the IMF and its current role in the global markets that helped shape many of the ideas in this book. I am in debt with Jeanet Cabrera for her assistance in this process and to many participants at Kingston PhD conferences for providing valuable feedback. Last, but not least, I would like to thank Dr Jalal Siddiki (*Kingston University*) and Dr Jose A. León-Ledesma (*Kent University*) for their time devoted on this material, enlightening comments and suggestions.

CHAPTER ONE

INTRODUCTION

Stabilisation

Economic crises arising from exchange rate volatility and high inflation have affected countries around the world and, in particular, those with developing economies. The common response of countries suffering from volatility during times of crisis has been to design and implement stabilisation packages aimed at controlling the exchange rate, stabilising inflation, and restoring economic fundamentals.

The stabilisation attempts pursued in Latin America, Israel, Turkey, and Iceland have allowed economists to identify stylized facts for each type of stabilisation strategy (e.g. Calvo and Végh 1999). The debate over which strategy to adopt for achieving stabilisation is intense, and centres on whether *exchange-rate-based stabilisation* (ERBS) programmes are superior to other types of orthodox and heterodox programmes, especially *money-based stabilisation* (MBS).

The main difference between the programmes is in the selection of the nominal anchor. ERBS uses the exchange rate, whereas MBS uses a monetary aggregate. The choice of the nominal anchor can have diverse implications. For example, Végh (1992) finds distinctive patterns in key macroeconomic variables attributed to the choice of the stabilisation strategy. The patterns are believed to influence the success of the stabilisation attempt.

Achieving the goals of stabilisation also demands financial support from institutions like the *International Monetary Fund* (IMF). The IMF assists countries in designing and implementing stabilisation programmes, and is also known for pursuing global financial and exchange rate stability through the stabilisation of inflation in countries with balance of payments difficulties. The IMF, with its role of crisis manager and lender of last resort, has generated an extensive record of stabilisation episodes, providing information for investigating the implications of IMF-supported stabilisation programmes and their corresponding stylized facts (see, for example, Fischer 1999).

The essays in this book contribute to the literature by extending some analytical models and by empirically testing their relevance across developing countries. In doing so, Chapter 2 reviews the literature on the stylized facts of stabilisation and other important concepts such as the credibility and timing of stabilisation plans. The subsequent four chapters contain original contributions to the literature on stabilisation.

One important fact of stabilisations is the drop-recovery cycle found in output and consumption during and after stabilisation programmes are implemented. The policies pursued under different stabilisation strategies will have different effects over consumption and output that could lead to regime-specific patterns. There is a substantial research programme dealing with the issue that can be classified as either demand- or supply-side approaches (see Fischer et al 2002).

Chapter 3 focuses on consumption during stabilisation. The analysis puts forward a demand-side explanation for the boom-drop cycles observed in consumption using a variation of the *stochastic life-cycle-permanent income* (SLCPI) with rational expectations model. The analysis extends Hall's (1978) model by incorporating capital mobility and currency substitution. The approach is new to the literature dealing with inflation stabilisation, and by considering a foreign currency variable, the model is also new to the SLCPI hypothesis.

The model is tested for a group of developing countries engaging in IMF supported programmes. Across this section of countries, the results reveal the significance of currency substitution and capital mobility in the SLCPI. The model is fairly successful in replicating the actual patterns of consumption during stabilisation, providing a link between consumption cycles and the ability of economic agents to hedge against devaluation and chronic inflation by shifting between currencies.

Another important stylized fact of stabilisation is the appreciation of real exchange rates after introducing ERBS programmes. There are several explanations in the literature for this phenomenon. In general, it is believed that under ERBS, inflation is slow to decline to international levels, which under a fixed nominal exchange rate will cause an appreciation of the real exchange rate. The basis for such persistence in inflation, especially under ERBS, is understood as coming from inertial forces, aggregate demand pressures and exchange rate misalignments from equilibrium. For example, Kamin (2001) explored the contribution of these sources of inflation during ERBS programmes in Mexico, and surprisingly finds that real factors, such aggregate demand pressures, are the most significant source of real exchange rate appreciation during times of crisis.

Chapter 4 investigates the behaviour of real exchange rates and inflation during stabilisation by developing a framework for changes in stabilisation preferences and credibility. The model shows that changes in preferences and credibility can lead to Lucas (1976) structural shifts, not only in the estimated inflation equations, but also at the steady state, which could caused errors in the design and implementation of the stabilisation strategy.

The econometric exercises modelling Chile's 1978 and Mexico's 1988 and 1994 stabilisation attempts endorse the theoretical framework and generate insights on the evolution of the real exchange rate and its relationship to policy preferences and credibility. In particular, the results indicate that the degree of flexibility allowed to the nominal anchor during stabilisation will have different effects over credibility and ultimately on the success of the programmes. As in Edwards (1996), credibility appears to be the fundamental force affecting the relationship between real exchange rate appreciation, inflation inertia and aggregate demand pressures.

The timing of stabilisation plans is also important. Coordination problems between the private and public sectors often delay stabilisation programmes. The key element is measuring what is known as duration in stabilisation. The literature has relied on some threshold definitions of high and low inflation for calculating the timing between the introduction of a stabilisation programme and the definitions of high and low inflation.

Chapter 5 develops and tests a model showing how policy makers decide to engage in a stabilisation programme by evaluating the variance of inflation, providing an alternative approach for measuring duration in stabilisation. The approach also gives a rationale for using Engle's (1982) *Autoregressive Conditional Herterskedasticy* (ARCH) model for empirically evaluating chronic inflation in countries with a history of stabilisation episodes. The analysis employs the volatility underlying an inflation equation as an alternative, and arguably more rigorous, threshold definition of high and low inflation in the calculation of duration.

The hypothesis is tested for a group of developing countries engaging in several IMF supported ERBS programmes. The results from the modelling show that inflation rates are heteroscedastic and that the ARCH overshoots near or on the dates the stabilisation programmes are announced. Notably, the results show no correlation between the ARCH and failed stabilisation programmes. The analysis reveals that competing frameworks like Hamman (2001) exaggerate duration and may have over-emphasised the importance of coordination problems in the timing of stabilisation plans.

The debate over choosing a nominal anchor for stabilisation is fundamentally based on the stylized facts pertinent to each type of stabilisation strategy. There is, however, a great deal of emphasis on the degree of discipline that each anchor imposes over fiscal and monetary policies and its relationship to the final choice of the nominal anchor (see Tornell and Velasco 1998). The question still lingers: can the type of nominal anchor influence the perception of agents on the effectiveness of stabilisation efforts? This is relevant as credibility may affect inflation persistence and the success of the stabilisation programme (see Agénor and Taylor 1992).

Chapter 6 examines the credibility of stabilisation programmes relying on different types of nominal anchors. The analysis uses methods advanced in the literature for calculating an approximate measure of credibility for each of the stabilisation strategies (e.g. Edwards 1998), and applies the techniques to a cross-section of countries that have undergone ERBS and MBS programmes. Armed with a panel of 19 countries registering a total of 39 stabilisation episodes, the analysis concludes that countries experiencing higher inflation persistence prior to stabilisation are more inclined to pursuing MBS than ERBS. It also reveals that ERBS are percieved as more credible than MBS. A further important finding is that the impact of stabilisation over inertia has declined since the 1970s. Additionally, it appears that the size, region, and level of development of countries engaging in stabilisation affect the likelihood of reducing inflation inertia.

Policy Implications

There are important policy implications derived from the essays that can provide a practical application to crisis and that are also summarized in Chapter 7. In particular, Chapter 3 offers advice on the potential consequences of currency substitution and capital mobility when exchange rate expectations are volatile or when local interest rates substantially depart from international levels. It also highlights the welfare implications of credit constraints on consumers that are unable to hedge or act against exchange and interest rate movements, especially during times of crisis.

Chapter 4 concludes that changes in credibility will affect the short- and long-term structural characteristic of estimated inflation models, especially during the implementation of stabilisation programmes. The results extend the Lucas (1976) critique dealing with the effects of policy reaction on econometric modelling. The conclusions have important implications for the ability of policy makers and the IMF to forecast the

effects of their packages when volatility is high and expectations are changing. As a consequence, the performance of the programmes can change public perception, creating a structural bias that could mislead the authorities in the implementation of stabilisation plans.

Chapter 5, dealing with the timing of stabilisation, provides a simple and testable framework that will allow central banks and the IMF to monitor the volatility of the economy, advising on the correct time to engage in stabilisation policies. The monitoring process, using the techniques suggested by the model, allows identifying unexpected changes in the evolution of key indicators, helping to anticipate periods of crisis and, once a stabilisation package is in place, the timing when the economy regains stability.

Finally, Chapter 6 provides a set of benchmarks related to the size and level of development of countries engaging in stabilisation that could be used to suggest the correct type of stabilisation strategy. In particular, the panel highlights that ERBS programmes have a larger announcement effect on inflation persistence compared to other forms of stabilisation. However, this result changes among regions and over time depending, for example, on the popularity and success record of each type of anchor. These finds, and those that could be obtained from further research, should be useful to the IMF and to countries planning to engage in IMF-supported programmes.

Conclusion

One interesting characteristic of this literature is that it draws on many areas in economics. The review chapter provides a taste of the literature, and is divided according to each area of research pertinent to stabilisation. In this regard, the remaining chapters fall into one or several of these areas, and could be regarded as a collection of essays in the field of stabilisation.

In particular, Chapters 3 and 4 deal with the stylized facts of stabilisation. Chapter 5 deals with the timing of stabilisation and what the literature calls duration in stabilisation. The conclusions to be drawn from chapter 5 also spill over into other areas of research dealing with political opportunism and the political economy of reforms.

Finally, Chapters 4 and 6 also deal with the concept of credibility, which has become a central element in understanding the success and/or failure of stabilisation attempts. Hopefully, the models put forward in the book will promote future research that could help in our understanding of crisis and stabilisation.

References

Agénor, P. R., and M. K. Taylor, 1992, Testing for Credibility Effects, *IMF Staff Papers*, 39 (3), 545-571.

Calvo, G.A., and C.A. Végh, 1999, Inflation Stabilization and BOP Crises in Developing Countries, in Taylor, J.B. and M. Woodford, (eds.) *Handbook of Macroeconomics*, 1, 1531–1614.

Edwards, S., 1996, Exchange-Rate Anchors, Credibility and Inertia: A Tale of Two Crises, Chile and Mexico, *American Economic Review*, 86 (2), 176-180.

—. 1998, Two Crises: Inflationary Inertia and Credibility, *The Economic Journal*, 108, 665-80.

Engle, R. F., 1982, Autoregressive Conditional Heteroskedasticity with Estimates of the Variance of U.K. Inflation, *Econometrica*, 50, 987-1008.

Fischer, S., 1999, On the Need for an International Lender of Last Resort, *Journal of Economic Perspectives*, 13 (4), 85-104.

Fischer, S., R. Sahay, and C. A. Végh, 2002, Modern Hyper and High Inflations, *Journal of Economic Literature*, 40, 837-880.

Hall, R. E., 1978, Stochastic Implications of the Life-Cycle Permanent Income Hypothesis: Theory and Evidence, *Journal of Political Economy*, 89, 971-987.

Hamman, J. A., 2001, Exchange-Rate-Based Stabilisation: A Critical Look at the Stylized Facts, *IMF Staff Papers*, 48 (1), 111-138.

Kamin, S. B., 2001, Real Exchange Rates and Inflation in Exchange-Rate-Based Stabilizations: an Empirical Examination, *Journal of Development Economics*, 64, 237-253.

Lucas, R. E., 1976, Econometric Policy Evaluation: a Critique, *Carnegie-Rochester Conference Series on Public Policy*, 1, 19-46.

Tornell, A., and A. Velasco, 1998, Fiscal Discipline and the Choice of a Nominal Anchor in Stabilization, *Journal of International Economics*, 46, 1-30.

Végh, C. A., 1992, Stopping High Inflation: An Analytical Overview, *IMF Staff Papers*, 39, 629-95.

CHAPTER TWO

REVIEW OF STABILISATION

Introduction

This chapter surveys the literature on stabilisation. Firstly, the review explains stabilisation programmes and the role of the *International Monetary Fund* (IMF). Secondly, the chapter discusses the stylized facts of stabilisation and the research unveiling relevant empirical regularities. In particular, the review focuses on *exchange-rate-based stabilisation* (ERBS) and *money-based stabilisation* (MBS) programmes. The chapter also deals with the concept of credibility. Credibility and the techniques for empirically investigating its role are at the core of the literature and will be further addressed in other parts of the book. The final section deals with the timing of stabilisation, the duration of stabilisation plans, and the optimal timing of stabilisation programmes.

Stabilisation Programmes

Stabilisation programmes aim at containing inflation over and above other macroeconomic objectives. For that reason, the success or failure of these programmes is commonly measured by their ability to reduce inflation and to control inertia (Edwards 1992).[1] However, stabilising inflation demands controlling intermediate targets or anchors.

For example, ERBS programmes rely on the nominal exchange rate as the intermediate target, while MBS programmes rely on the money base or some narrower definition of money as the primary anchor.[2]

---

[1] Although inflation is the primary objective during stabilisation, other indicators are relevant. For example, the behaviour of real exchange rates is important, as they tend to overly appreciate during stabilisation. This appreciation causes the economy to lose trade competitiveness, inducing a significant degree of inflation persistence (Calvo and Vegh 1999).

[2] In principle, the fundamental difference between ERBS and MBS is the use of the exchange rate or the money base as an instrument for stabilising inflation. However, there is no such thing as a pure MBS programme, since most of them

Additionally, ERBS programmes may fix the nominal exchange rate or allow it to devalue under parity by pegging the exchange rate to an inflation rate target. One interesting example is the Mexican ERBS *Pacto* programme of 1988, in which a combination of stabilisation strategies was used. In particular, the *Pacto* had three phases. It started with a fixed nominal exchange rate in a first phase, and then allowed a devaluation that was set below expected inflation. Finally, an exchange rate band was set such that the exchange rate was allowed to move freely within the band.

The intermediate target or anchor defines the scope by which stabilisation programmes can be classified. In this regard, stabilisation has two broad dimensions. Firstly, it can include fiscal corrections in the form of austerity. Secondly, income policies such as wage-price controls may be implemented. These fiscal and income policies provide support to the stabilisation effort and are usually a key element in the success of stabilisation attempts.[3]

Turning to IMF programmes, they are known to be the most popular form of stabilisation, particularly in developing countries. In its article of agreements of the 1944 *Breton Woods Conference*, the IMF was created with the purpose of assisting countries facing severe macroeconomic imbalances while promoting global economic stability.[4] The programmes focus on fiscal austerity and tight monetary policy as instruments for stabilisation. In particular, exchange rate devaluation and credit restrictions are standard measures used by the IMF to control balance of payment problems that arise from sustained periods of high inflation.

The underlying justification for such policies follow from a monetarist prescription developed by Polack (1957), understanding that inflation is "always and everywhere a monetary phenomenon" (Friedman 1968). Since the monetary base is composed by reserves and domestic credit to public and private sectors, a restrain on credit will reduce money supply, thus bringing the balance of payments to equilibrium while stopping

---

rely on a wide mixture of policies on top of money aggregates. Nevertheless, MBS tend to differ from the ERBS programmes in the lack of an explicit *de facto* pegged exchange rate. Most of the MBS cases adopted a floating exchange rate regime. Even though the rest of the chapter will continue to use the term MBS, it might seem appropriate to refer them as non-ERBS.

[3] The importance of fiscal austerity becomes more relevant in situations of severe balance of payments misalignments. In particular, and under the implementation of MBS programmes, constraints on money supply, implied by the stabilisation attempt, must be accompanied by fiscal austerity.

[4] In the same conference, the *World Bank* was also created with the purpose of providing financing for long-term economic development projects.

inflation. In addition, countries impose conditionalities that describe the necessary requirements to receive financial assistance from the IMF, other collateral lending organizations such as the *International Development Bank* and *World Bank*, as well as debt rescheduling facilities with international lenders such as the *Paris Club* (Goldstein 2000).[5]

Since its inauguration, the IMF has assisted around 189 countries with programmes that vary greatly in form and substance. For example, the IMF provides short-term assistance under a *stand-by* agreement, usually repayable within five years, under programmes aimed at providing solutions to balance of payment problems. In addition, there are extended *fund facility* programmes, established in 1974, aimed at providing medium -term assistance of two to three years, with a ten-year repayment schedule to countries facing severe imbalances in production, trade and prices.

There are also *structural adjustment facility* programmes, in which resources are made available on a concessional basis, providing medium-term macroeconomic and structural support for countries facing severe balance of payment problems. Finally, the *enhanced structural adjustment facility* is aimed at strengthening structural policies with access to funds and monitoring procedures that vary substantially (see Mussa and Savastano 1999).

In addition to IMF programmes, there are also heterodox stabilisation strategies. On top of the traditional fiscal and monetary prescriptions of the IMF, heterodox programmes rely on discretionary income policies such as wage-price and exchange rate controls.[6] Examples of heterodox stabilisation include Argentina, Bolivia, Brazil and Israel during 1985 and 1986. These countries experienced high rates of inflation and opted for discretion instead of an IMF set of measures. The programmes failed utterly in Brazil and Argentina, although inflation did stabilize in Israel and Bolivia. Research has focused on identifying the role of income policies in the success of stabilisation programmes and the ability of governments to implement reforms that are not under the scope of the IMF (for a survey of the literature on stabilisation see Bruno et al 1990). If heterodox policies fail, however, experience shows that countries usually rush to the IMF as the last hope towards stabilisation.

In addition to orthodox-IMF and heterodox programmes, stabilisation can be implemented in a gradual or shock fashion. The latter type of programme, referred to as shock therapy, became very common during the reform of the transition economies of central Europe in the 1990s. One

[5] See Marchesi (2003) for an analysis of the correlation between IMF programmes and the granting of debt rescheduling facilities.

[6] IMF programmes usually adopt wage restraints instead of price controls.

widely studied case is Poland's shock therapy programme of 1990, which had the objective of liberalising the economy, causing a significant drop in real output (Lipton and Sachs 1990). Under a shock therapy programme, the implementation of income policies around the nominal anchor may be so dramatic that the economy goes into a resting mode with a severe recession. In this situation, the slow-down in economic activity helps to contain inflation. However, this severe negative welfare effect is one of the reasons why shock programmes are less popular (Agénor and Montiel 1999).

Nonetheless, some positive arguments in favour of shock programmes have been posed: firstly, shock reforms motivate the reallocation of resources, lowering adjustment costs (Mussa 1984). Secondly and due to their decisive nature, these types of programme tend to enhance credibility (Hiemenz et al 1992). Thirdly, it is more feasible to establish rapid reforms provided that design of a detailed sequence of reforms is almost impossible to implement (Funke 1993). Finally, gradual reforms may deter the efficient allocation of resources (Murphy et al 1992) and may inhibit the liberalisation of the economy (Lipton and Sachs 1990).

On the contrary, gradual programmes tend to implement a set of income policies around the nominal anchor that are subtler, and usually compensate for their adverse effects on low-income sectors by using, for example, focalized subsidy mechanisms. Many countries, such as China and Japan have experienced gradual-based transitions. Other examples include the case of Chile in 1983, with an orthodox-gradual programme, while a heterodox-gradual case is the Brazilian 1964-1967 Campos-Bulhoes programme. On the other hand, heterodox-shock programmes may include, for example, the Argentina, Bolivia, Brazil and Israel programmes during 1985 and 1986, as mentioned above.

The choice of programmes and the IMF as a lender of last resort are profoundly controversial and have raised a great deal of research on the subject (see, for example, Fischer 1999). The debate has centred on the *structuralist* view, which favours heterodox type programmes versus the *monetarists'* school, which provides the essence of IMF-orthodox-gradual recipes.

The *structuralist*, and more recently the *neo-structuralist*, argue that IMF packages impose an unnecessary burden on society, leading to losses in output, growth and employment. For example, regarding the IMF prescription for devaluating the currency, Dornbusch (1973) shows that under fixed international prices, such policies lower aggregate demand. Cooper (1971) also argues that if the initial trade deficit is very large, a

devaluation that improves the trade balance may have adverse aggregate demand effects.

Diaz-Alejandro (1963) points out that any given devaluation may cause aggregate demand to fall if a significant redistributing effect is induced. This effect increases the income of capitalists and reduces the income of workers, under the assumption that workers have a greater propensity to consume. Ahmed (1986) also shows that if the country has a substantial foreign debt and if *purchasing power parity* (PPP) does not strictly hold, devaluation will increase the debt burden and will therefore lower aggregate demand.

In addition, Krugman and Taylor (1978) show that under large trade deficits, if exports and imports react slowly to prices, a devaluation of the exchange rate will, in the short run, increase domestic spending above earnings from exports and, therefore, cause aggregate demand and non-tradable production to fall. Other authors argue that aggregate supply will fall during devaluations due to increases in import prices of raw materials, increases in wages that are linked to exchange rate expectations and increases in interest rates due to a fall in money supply associated with the devaluation of the exchange rate (Van Wijnbergen 1986).

There is also research showing a contractionary effect from credit restraints. If financial markets are underdeveloped, the banking system becomes a firm's only source of financing. A credit restraint will raise interest rates, reducing investment and aggregate output (van Wijnbergen 1983). Credit restraint may also increase the opportunity cost of capital, limiting the availability of credit, thus lowering aggregate supply (Bruno 1979).

On a global basis, Williamson (1981) has argued that if credit restrains are applied simultaneously to a group of countries in the form of stabilisation, a worldwide recession may occur, affecting the ex-post performance of the countries under the programme. Therefore, according to the *structuralists*, devaluation and credit restraints provide no immediate solution to balance of payment problems or to economic crisis.

In defence of their structural packages, the IMF argues that corrective measures are necessary to avoid a more painful medicine down the road. However, some authors have suggested that excessive conditionalities required by the IMF create concerns regarding the ability of governments to commit to the programmes (Goldstein 2000). Nonetheless, the IMF argues that their corrective measures are the best antidote to balance of payment problems (Nowzad 1981). Other empirical studies have suggested that conditionalities have negligible additional effects over economic growth, as they reflect government policies that would have been

implemented regardless of the IMF programme (Dreher 2006). The IMF has also argued that their stabilisation packages promote aggregate supply through policies orientated towards reducing price distortions and trade barriers (see, for instance, Khan and Knight 1982). Finally, the IMF understands that most of the *structuralists*' arguments are already incorporated in their stabilisation packages.

Although at the theoretical level the debate has remained unresolved, at the empirical level evidence shows strong support for IMF programmes. For example, Gylfason (1987) compares the macroeconomic performance of developing countries on IMF stabilisation packages against countries with similar balance of payments difficulties, but without formal programmes. He finds strong support for the IMF in terms of controlling inflation and improving the balance of payments without significant negative effects over output performance.[7]

Stylized Facts of Stabilisation

The stabilisations pursued in Latin America, Israel, Turkey, and Iceland attempting to alleviate chronic inflation, have allowed establishing important stylized facts. Calvo and Végh (1999) and more recently Fischer et al (2002), have established facts regarding the choice of nominal anchors. Table 2.1 presents the most relevant.

Table 2.1: Empirical regularities of stabilisation programmes

Exchange-rate-based stabilisation	Money-based stabilisation
1. Slow convergence of the inflation rate to the devaluation rate	1. Slow convergence of the inflation rate to the rate of growth of the money supply
2. Real appreciation of the domestic currency	2. Real appreciation of the domestic currency
3. Initial increase in real GDP and private consumption followed by later contraction	3. Initial contraction in economic activity

Source: Calvo and Végh (1999)

[7] One important aspect of stabilisation that has recently being explored is the credibility effect induced by IMF packages (see Bird 2002). It is believed that IMF conditionalities are more credible than discretion, thus raising the ex-post success probability of the programmes.

Facts one and two, which are common across programmes, imply that the nominal exchange rate decelerates faster than domestic prices, resulting in a real appreciation of the exchange rate. A literature has emerged trying to understand the reasons behind the real appreciation of the exchange rate, taking two broad approaches.

The first focuses on a framework that assumes that the real exchange rate starts out at a steady state level prior to stabilisation and that several aspects of the programmes cause a subsequent appreciation. The second shows that as a result of internal and external misalignments, the real exchange rate starts out away from equilibrium and converges to the steady state after stabilisation policies are implemented.

Within the former framework, however, there are two potential explanations for the observed behaviour of the real exchange rate. One understands that various aspects of stabilisation lead to higher aggregate demand, raising non-tradable prices and causing a real appreciation of the currency. Calvo and Végh (1993) argue that if stabilisation is not credible, consumers will increase spending while conditions remain stable. Uribe (1995) and Roldos (1995) view inflation as a tax that, when reduced through stabilisation, will boost investment and consumption, causing an appreciation of the real exchange rate. Rebelo and Végh (1995) highlight that fiscal reforms associated with stabilisation programmes reduce the need for distortion financing, increasing permanent income, leading to higher consumption and a lower real exchange rate. Finally, Erceg and Levin (1996) argue that the structural reforms in most stabilisation programmes increase the desired capital stock, leading to higher output and a lower real exchange rate.

Under the second set of explanations, inflation is slow to decline to international levels due to overlapping contracts, imperfect credibility, and backward-looking expectations that, under a fixed nominal exchange rate anchor, lead to an appreciation of the real exchange rate. Rodríguez (1982) uses a model of non-tradable inflation that assumes that expected inflation adjusts sluggishly to changes in actual inflation. In Dornbusch and Werner (1994), inflation depends on wage growth, which is determined by expected inflation and approximated by lagged inflation. In the last two cases, with a fixed nominal exchange rate, sticky prices cause a real appreciation of the currency. In Edwards (1996), wage growth depends on the credibility of the stabilisation programme. If the programme is not fully credible and the nominal exchange rate is anchored, non-tradable inflation resulting from wage inertia leads to a real appreciation of the currency.

The final explanation argues that domestic inflation is linked to the gap between the real exchange rate and its equilibrium or steady state level.

Due to balance-of-payments misalignments and a highly devalued nominal exchange rate prior to stabilisation, the real exchange rate may be away from its domestic market-clearing level, causing pressures on non-tradable prices. Again, under a nominal exchange rate anchor, inflation persistence will cause an appreciation of the real exchange rate until equilibrium is restored (see Kamin 2001; Gil-Diaz and Carstens 1996). Kamin (2001) finds that inflation in Mexico is mostly driven by these type of real exchange rate misalignments.[8]

According to fact three in Table 2.1, however, the most salient difference between the two types of stabilisation strategies is the real effect over economic activity and the business cycle. In particular, ERBS exhibits a consumption boom early in the programme followed by a contraction, whereas MBS exhibits an initial consumption drop followed by a recovery. The literature exploring these boom-drop-recovery cycles, known as the *recession-now-versus-recession-later* hypotheses, uses models aimed at replicating the empirical regularities in consumption following stabilisation.

There are four main explanations in the literature aimed at capturing such consumption patterns (see Fischer et al 2002). An earlier explanation, originally presented by Rodríguez (1982) following Cagan (1956), was based on backward-looking inflation expectations. Accordingly, if there are backward-looking expectations, and *uncovered interest parity* (UIP) holds such that nominal interest rates fall proportionally with the exchange rate, real interest rates will fall. As a result, consumption will increase.

These models provide a good explanation for episodes in which real interest rates fall early in the programme like the Argentine 1978 plan. However, they cannot explain programmes in which real interest rates suddenly increase due to the implementation of stabilisation policies, such as many heterodox attempts in the mid-1980s (see Calvo and Végh 1999).

Calvo and Végh (1999), and Calvo (1986) are examples of models that explain consumption boom-drop cycles using the *temporariness hypothesis*. According to their explanation, under ERBS the exchange rate is not usually a fully credible anchor implying that consumers, perceiving its temporariness, anticipate a future devaluation. Acting on this perception, agents increase consumption of tradable goods and services. However, as

[8] One merit of Kamin's approach is that it successfully combines both equilibrium and inertial theories in an *error correction model* (ECM) that allows identifying the contribution of each explanation to the real appreciation of the exchange rate. One limitation of the model, however, is its light theoretical substance in the development of the partial adjustment ECM formulation.