

OECD DEVELOPMENT CENTRE



Working Paper No. 296

THE MACROECONOMIC EFFECTS OF LARGE EXCHANGE RATE APPRECIATIONS

by

Marcus Kappler, Helmut Reisen, Moritz Schularick and Edouard Turkish

Research area:
Perspectives on Global Development



DEVELOPMENT CENTRE WORKING PAPERS

This series of working papers is intended to disseminate the Development Centre's research findings rapidly among specialists in the field concerned. These papers are generally available in the original English or French, with a summary in the other language.

Comments on this paper would be welcome and should be sent to the OECD Development Centre, 2 rue André Pascal, 75775 PARIS CEDEX 16, France; or to dev.contact@oecd.org. Documents may be downloaded from: <http://www.oecd.org/dev/wp> or obtained via e-mail (dev.contact@oecd.org).



THE OPINIONS EXPRESSED AND ARGUMENTS EMPLOYED IN THIS DOCUMENT ARE THE SOLE RESPONSIBILITY OF THE AUTHORS AND DO NOT NECESSARILY REFLECT THOSE OF THE OECD OR OF THE GOVERNMENTS OF ITS MEMBER COUNTRIES

©OECD (2011)

Applications for permission to reproduce or translate all or part of this document should be sent to rights@oecd.org

CENTRE DE DÉVELOPPEMENT DOCUMENTS DE TRAVAIL

Cette série de documents de travail a pour but de diffuser rapidement auprès des spécialistes dans les domaines concernés les résultats des travaux de recherche du Centre de développement. Ces documents ne sont disponibles que dans leur langue originale, anglais ou français ; un résumé du document est rédigé dans l'autre langue.

Tout commentaire relatif à ce document peut être adressé au Centre de développement de l'OCDE, 2 rue André Pascal, 75775 PARIS CEDEX 16, France; ou à dev.contact@oecd.org. Les documents peuvent être téléchargés à partir de: <http://www.oecd.org/dev/wp> ou obtenus via le mél (dev.contact@oecd.org).



LES IDÉES EXPRIMÉES ET LES ARGUMENTS AVANCÉS DANS CE DOCUMENT SONT CEUX DES AUTEURS ET NE REFLÈTENT PAS NÉCESSAIREMENT CEUX DE L'OCDE OU DES GOUVERNEMENTS DE SES PAYS MEMBRES

©OCDE (2011)

Les demandes d'autorisation de reproduction ou de traduction de tout ou partie de ce document devront être envoyées à rights@oecd.org

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	4
PREFACE.....	5
RÉSUMÉ	6
ABSTRACT	6
I. INTRODUCTION	7
II. REAL EFFECTS OF LARGE EXCHANGE RATE ADJUSTMENTS	10
III. IDENTIFYING APPRECIATION EPISODES.....	13
IV. ECONOMETRIC METHODOLOGY	18
V. THE MACROECONOMIC EFFECTS OF LARGE APPRECIATIONS	20
VI. CONCLUSION	29
REFERENCES	43
OTHER TITLES IN THE SERIES/ AUTRES TITRES DANS LA SÉRIE	47

ACKNOWLEDGEMENTS

We are grateful to Menzie Chinn, Christian Daude, Luiz de Mello and Helen Qiao for helpful comments and suggestions.

PREFACE

The global imbalances that have developed in the past decade and the associated movements in capital flows pose risks for global growth. The quest for sustainable growth has raised the debate on how to rebalance the global economy. Currency appreciations in surplus countries are considered a central policy tool in reducing imbalances. However, there is no consensus regarding their effects. Some economists argue that appreciation of emerging countries' currencies (in particular the Chinese renminbi) would help in reducing imbalances, whereas others raise doubt about its effectiveness as long as underlying savings-investment imbalances are structural. A further concern is that currency appreciation lowers growth in export-oriented economies. The OECD Development Centre Working Paper No. 292 "The Renminbi and Poor-Country Growth" cautions that a rapid renminbi appreciation might not only hamper China's growth, but would also undermine global poverty reduction through growth spillover effects on developing countries.

Given the wide variety of diverging arguments, policy decisions need better empirical evidence. The present paper aims to inform the debate on global imbalances through historical evidence since the 1960s:

- by identifying 25 episodes of large, sustained currency appreciations that can be considered as exogenous events;
- by investigating the impacts of large exchange rate appreciations on current account and growth;
- by summarising the channels through these impacts occur, with a distinction between developed and developing countries; and
- by producing evidence on the associated growth effects.

The study shows that currency appreciations can help to a certain extent in reducing global imbalances, and that it can go along with a shift from a mainly export-based model of growth towards a model with internal sources of growth. The cost in terms of growth would be very limited in the case of developed countries, but somewhat larger for developing countries.

The present paper serves the policy debate on the world economy rebalancing and on defining new models of growth, especially in emerging and developing countries.

Mario Pezzini
Director
OECD Development Centre
February 2011

RÉSUMÉ

Dans ce document de travail, nous étudions les effets macroéconomiques de larges appréciations du taux de change. Dans un échantillon de 128 pays depuis 1960, nous identifions 25 épisodes de larges appréciations nominales et réelles, et nous étudions leurs effets macroéconomiques dans un modèle autorégressif en données de panel augmenté d'une variable indicatrice. Nos résultats montrent qu'une appréciation du taux de change peut avoir des effets importants sur la balance courante. En moyenne, dans les trois ans suivant l'épisode d'appréciation, la balance courante se détériore en moyenne de trois points de PIB. Cet effet se produit via par une réduction de l'épargne, sans une réduction significative de l'investissement. La croissance réelle des exportations se ralentit sensiblement, alors que les importations restent dans l'ensemble inchangées. Toutefois, les pertes en termes de production résultant des appréciations sont faibles et non statistiquement significatifs, ce qui indique un déplacement vers des sources internes de croissance. Tous ces effets apparaissent quelque peu plus prononcés dans les pays en développement.

Classification JEL: F4; F31; F32; N10; O16.

Mots clés: ajustement du compte courant; déséquilibres mondiaux; variations de taux de change.

ABSTRACT

In this paper we study the macroeconomic effects of large exchange rate appreciations. In a sample of 128 countries since 1960, we identify 25 episodes of large nominal and real appreciation shocks and study their macroeconomic effects in a dummy-augmented panel autoregressive model. Our results show that an exchange rate appreciation can have strong effects on current account balances. Within three years after the appreciation event, the current account balance on average deteriorates by three percentage points of GDP. This effect occurs through a reduction of savings without a meaningful reduction in investment. Real export growth slows down substantially, while imports remain by and large unaffected. However, the output costs of appreciation are small and not statistically significant, indicating a shift towards domestic sources of growth. All these effects appear somewhat more pronounced in developing countries.

JEL Classification: F4; F31; F32; N10; O16.

Keywords: current account adjustment; global imbalances; exchange rate changes.

I. INTRODUCTION

The aim of this paper is to provide an empirical backbone to the debate about the macroeconomic effects of large upward exchange rate adjustments of tightly managed or pegged exchange rate regimes. Using a large cross-country dataset covering almost 50 years of international economic history between 1960 and 2008, we study the empirical record of large exchange rate appreciation and revaluation shocks. Some of these episodes are regularly referred to in the debate about global rebalancing in the wake of the recent financial crisis, *e.g.* in Germany and in Japan. Our goal is to provide systematic evidence on the macroeconomic lessons that can be learned from these episodes.

Global imbalances have become a household word. In particular, the large trade imbalance between China and the United States has gained prominence in academic and political debates. Despite considerable disagreement about the causes, many economists think that the international imbalances that have developed in the past decade are problematic and should be reduced (*e.g.* Obstfeld and Rogoff 2004; Cline and Williamson 2007; Feldstein 2008). However the appropriate policy treatment remains debated.¹ One group of economists thinks that large exchange rate adjustments – basically a dollar depreciation and an appreciation of the Chinese renminbi and of other Asian currencies – will eventually play a role in rebalancing the world economy (Obstfeld and Rogoff 2005; Goldstein, 2006; Wolf 2009; Subramanian 2010; Ferguson and Schularick 2011).

Yet other scholars argue that currency adjustment is not an effective policy tool as elasticities could be relatively low and underlying savings and investment remain unaffected by exchange rate changes (Devereux and Genberg 2007; McKinnon 2007; Qiao 2007). A third group of development economists, by contrast, fears that exchange rate adjustment might be all too effective – but mainly in reducing the growth rate of the Chinese and other developing economies as China has become a locomotive for developing country growth in the 2000s (Rodrik 2008; Berg and Miao 2010; Garroway *et al.* 2010).²

1 There is also an emerging consensus that the imbalances were closely linked to the financial crisis of 2008-09 (Bini Smaghi 2008; Caballero and Krishnamurthy 2009; Blanchard and Milesi-Ferretti 2009; Obstfeld and Rogoff 2009). However, some authors maintain that the financial crisis of 2008-09 was by and large unrelated to global imbalances (*e.g.* Dooley *et al.* 2009).

2 The key argument is that revaluation might put a successful export-led growth model at risk that was centred on a competitive real exchange rate and positive externalities from investment in the tradable goods sector. For a formal model see Korinek and Servén (2010). Similar causes have been named as an explanation for the widespread phenomenon of “fear of floating” among emerging market countries (Calvo and Reinhart, 2002).

The main points of disagreement about the effects of exchange rate changes on the macroeconomy relate to two central issues. First, how effective would currency revaluation be in reducing current account surpluses in Asia and deficits in the United States? Second, is there reason to believe that appreciation would come with the negative side effect of reducing growth in developing countries? The first question relates to the role of exchange rates in international adjustment and the second to the role of real exchange valuation in the development process. While these questions open up two very different theoretical boxes, they are to some degree open to a joint empirical treatment, which is what we aim to do in this paper.

Despite the large literature dealing with exchange rates and trade elasticities, the number of studies that have specifically analysed the economic effects of appreciation episodes is relatively small.³ Goldfajn and Valdés (1999) have studied large real effective appreciation episodes from 1960 to 1994 for a broad country sample, but with a focus on the dynamics of appreciation and overvaluation. Eichengreen and Hatase (2007) have analysed the Japanese revaluation experience with an eye on the policy lessons for China today. A recent study by Eichengreen and Rose (2010) has broadened this approach and is similar to our study in its research objective, but not in the empirical approach.

Our approach is the following: in a first step, we identify large exchange rate appreciations and revaluations. Our definition of a large exchange rate event comprises a 10% (or larger) appreciation of the nominal effective exchange rate over a two-year window (or less), leading to sustained real effective appreciation. We hence limit ourselves to studying such nominal exchange rate appreciations that have led to large movements in real exchange rates. We require the appreciation to be sustained in real terms over at least five years.

From 1960, we identify 25 episodes of large nominal and real appreciations in a sample of 128 countries of developing and advanced economies. Having identified these events, we ask in a second step how these affected the current account balance and output using a dummy variable augmented autoregressive panel model following the methodology pioneered in Cerra and Saxena (2008). We also split our sample and look at differences between advanced and developing countries in response to nominal and real appreciation shocks.

We establish four central empirical regularities. First, the current account balance typically deteriorates strongly in response to appreciation and revaluation shocks. Three years after the strengthening of the exchange rate, the current account balance falls by about three percentage points of GDP as a function of decreased savings with stable investment rates. Second, the effects on output are limited. The negative effect on the level of output amounts to a modest 1% after six years. The confidence intervals are wide and the results are statistically insignificant. Third, while aggregate output is not strongly affected, export growth falls significantly after appreciation and revaluation shocks. Finally, most of these effects seem to be more pronounced in developing countries.

Difficulties in disentangling the effects of exchange rate changes from the factors that lead to the change of the exchange rate have been a typical problem for empirical analysis in this field (Engel 2009). In this paper, we deal with the exogeneity issue through detailed narrative

3 At least outside the narrower context of appreciation pressures in resource rich economies. The seminal contribution on the so-called Dutch disease is Corden and Neary (1982).

documentation of the individual appreciation episodes⁴ and explicit exogeneity tests. This allows us to differentiate between appreciation episodes that occurred for largely exogenous reasons, and those that might have been partly endogenous to economic development. We identify 14 episodes when a country's real and nominal effective exchange rate appreciated by 10% or more without discretionary adjustments of the parity by the country's government. Typically, such appreciations were the indirect consequence of the appreciation of the anchor currency of the peg against important other currencies.⁵ We use the estimated effects of these events to evaluate the robustness of estimations using a broader definition of appreciation episodes.

The structure of the paper is as follows. Section II provides a theoretical and empirical guide. In Section III, we define and describe the appreciation events we are studying. Section IV introduces our econometric methodology; Section V presents the key results and a number of robustness tests. Section VI summarises the key results of this study – strong effects on current account balances, a small and insignificant negative impact on output but pronounced effects on export growth, and somewhat stronger overall responses in developing countries – and discusses their implication for economic policy.

4 Not dissimilar to the approach taken by Romer and Romer (2010) to identify the effect of tax changes.

5 To give an example, the Malaysian ringgit was managed relative to the Singapore Dollar in the late 1970s. When the Singapore Dollar strengthened against the US dollar in the early 1980s, the Malaysian ringgit appreciated strongly on a trade weighted basis (both in nominal and real terms) for reasons that were by and large unrelated to Malaysia's economic position. We consider this an exogenous appreciation event. By contrast, when the German government decided to revalue the Deutschmark in 1970, it is likely that the decision partly reflected the strength of the German economy and the strength of the external position. We consequently treat such an event as at least partly endogenous.

II. REAL EFFECTS OF LARGE EXCHANGE RATE ADJUSTMENTS

In the debate about the real effects of large exchange rate adjustments, two different strands of international economics meet. First, the debate opens up old fault lines in international economics about the effects of exchange rate adjustments on current account balances. Some scholars are more pessimistic about elasticities, pass-through or effects on savings and investment, while others are more optimistic. Second, these long-standing disagreements are amplified by concerns coming mainly of development economics with regard to the positive growth effects of undervaluation (and the potential costs of undoing it). We shall discuss both in turn.

In its simplest form, the idea that large exchange rate movements affect trade and current account balances and could help the global rebalancing process goes back to traditional elasticity models. In this framework, changes in real exchange rates will affect the current account if the Marshall-Lerner condition is fulfilled, *i.e.* if the sum of export and import elasticities exceeds one.⁶ However, "elasticity pessimism" has a long tradition in international economics.⁷ Many empirical studies found relatively low elasticities, at least at short-time horizons (Rose and Yellen 1989; Hooper *et al.* 2000; Chinn 2004; Chinn and Lee 2009). Also the literature in the field of new open economy models has often pointed to limited short-run responsiveness of the current account to exchange rate changes (Goldberg and Knetter 1997; Devereux and Engel 2003).⁸ All in all, scepticism with regard to the role of exchange rates in generating adjustment is widespread and no consensus has been reached to date (Engel 2009).⁹ Models incorporating low elasticities, limited pass-through, and imports of intermediate goods yield only small adjustment effects (Devereux and Genberg 2007).

It does not come as a surprise that the same lack of consensus can be found in the literature debating the Chinese case. Devereux and Genberg (2007) develop a general equilibrium model to analyse the impact of an exchange rate appreciation on the current account that generates only small effects. Also Kwack *et al.* (2007), Marquez and Schindler (2007),

6 Initially, there might be a J-Curve effect due to counteracting valuation effects, but eventually the current account would deteriorate as price elasticities rise over time.

7 See the discussion in Obstfeld (2002).

8 Chinn and Wei (2008) demonstrate that flexible exchange rate regimes are no more effective in facilitating current account adjustment than fixed regimes.

9 However, some authors take the opposite position and argue that the "elasticity pessimism" might have gone too far (Obstfeld 2002). In the Asian context, models that show only small adjustment effects (at best) due to sticky prices are also at odds with the rich literature on particularly high pass-through in emerging markets leading to the "fear of floating" phenomenon (Calvo and Reinhart 2002).

Cheung *et al.* (2010), Thorbecke and Smith (2010) have studied Chinese trade elasticities. However, while this literature has generally arrived at relatively small effects from possible Renminbi revaluation, other recent contributions by Ahmed (2009) and Cline (2010) have found export price elasticities closer to unity and see greater potential for exchange rate adjustment.

As a country's current account balance equals the gap between national saving and investment, real exchange rate movements ultimately have to impact savings and investment patterns to be effective in changing the current account. Yet to what extent changes in real exchange rates affect savings and investment remains an open issue. Other factors such as income, growth expectations and demographic trends are likely to play an important role for savings and investment decisions, but exchange rates might also matter. Economic historians have often seen real exchange rate undervaluation as important factors in explaining growth performance. Eichengreen (2008) as well as Ferguson and Schularick (2011) argue that real exchange rate undervaluation has often been a cornerstone of successful catching-up, partly through the effect on corporate profitability and investment.

Levy-Yeyati and Sturzenegger (2007) argue that a more depreciated exchange rate leads to lower real wages, inducing firms to increase saving, thereby rising overall saving. Gala (2008) explores the link between depreciated exchange rate changes, depressed real wages and high corporate savings in Asian economies. Similar channels have been analysed by Montiel (2000) and Montiel and Servén (2008). Qiao (2007), by contrast, studies the effect of appreciation on investment. Her model predicts that investment will be dampened by appreciation and thereby possibly causing the current account to improve as appreciation exerts a negative wealth effect. But related empirical evidence remains relatively scarce.¹⁰ These disagreements clearly call for a targeted research strategy. If we want to understand how exchange rate changes affect investments and savings determinants, we need to study the impact of exchange rate changes not only on the current account balance, but on savings and investment separately.

The impact of exchange rate changes on economic growth is another field that has attracted considerable attention in the literature. A large empirical literature deals with the growth effects of depreciation events (Edward 1986; Hong and Tornell 2005; Gupta *et al.* 2007). Bussière *et al.* (2010) have recently provided new evidence on the output effects of currency collapses that is methodologically similar to ours. However, the role of exchange rate policy and its effects on growth has also been the subject of a more fundamental debate among development economists. At the core of the debate is the question whether the view needs modification that any departures of the real exchange rate from its equilibrium level would harm growth by distorting a key relative price in the economy.¹¹ A key implication of this traditional "misalignment view" was that undervaluation is equally harmful as overvaluation.

10 Campa and Goldberg (1995, 1999) study the linkage between exchange rate and investment in industry in the US, Canada, UK and Japan. They find that during the 1970s appreciation generated a reduction in capital goods orders, but that the opposite pattern prevailed during the 1980s. Over a sample of Italian manufacturing firms, Nucci and Pozzolo (2001) show that a depreciation of the exchange rate can have positive effects on investment through higher revenues and a negative effect through the cost channel, but the magnitude of these effects varying significantly over time.

11 For a useful survey see Eichengreen (2008).

Recent contributions argue that a depreciated real exchange rate can be economically beneficial as it promotes economic growth through technology transfers and learning-by-doing externalities (Eichengreen 2008; Aizenman and Lee 2008). The literature on export-led growth has repeatedly stressed that such ideas are influential for development strategies in large parts of Asia (Dooley *et al.* 2003). Korinek and Serven (2010) present a model in which real exchange rate valuation improves welfare via positive externalities stemming from investment in the tradables sector. Through real exchange rate undervaluation, the government effectively subsidises investment in the tradables sector. But by using the exchange rate as a tool, the government outsources the targeting of the subsidy to foreign consumers avoiding domestic rent-seeking and other political economy complications. On the empirical side, Rodrik (2008) presents panel regressions that show a correlation of growth rates in developing countries with a measure of real exchange rate undervaluation. A recent study by Berg and Miao (2010) essentially confirmed Rodrik's analysis. The authors find empirical evidence that currency overvaluations are negative for growth while undervaluations are positively correlated with growth in developing-countries. Undoing real undervaluation could then be expected to be harmful to economic growth.

Summing up, there is considerable uncertainty about the real economic effects of exchange rate changes. In the remainder of the paper, we want to subject these various positions to an empirical test: we first identify large appreciation shocks in the 1960-2008 period for a broad country sample. We will then move on to estimate the macroeconomic effects on the current account balance, saving, investment and on overall economic growth.

III. IDENTIFYING APPRECIATION EPISODES

Our sample consists of annual data for 128 advanced and developing countries for the period 1960-2008. We code an appreciation event for country (i) in year (t) when the following conditions are met. First, we define an appreciation event if the nominal effective exchange rate is revalued by at least 10% or more relative to the average level two years before. The two-year horizon allows us to capture not only one-time step revaluations, but also a number of smaller appreciation steps that happen within a short time window. We restrict our analysis to countries that operate fixed exchange rate regimes, *i.e.* pegs and managed floats, according to the Reinhart and Rogoff (2004) classification (with a few minor modifications detailed in the appendix C) as we expect appreciation episodes under floating regimes to be endogenous to economic fundamentals. We define an appreciation event when the nominal effective exchange rate appreciates by 10%, so that

$$(1) \quad \ln(NEER)_{i,t} - \ln(NEER)_{i,t-2} \geq 0.1 .$$

Second, the nominal appreciation must lead to sustained real appreciation. We therefore require that the real effective exchange rate remains stronger by 10% (or more) on average for three years relative to the beginning of the appreciation process,

$$(2) \quad \ln((REER_{i,t+1} + REER_{i,t+2} + REER_{i,t+3}) / 3) - \ln(REER)_{i,t-2} \geq 0.1 .$$

We also ensure that the appreciation was not preceded by devaluation of similar magnitude, so that

$$(3) \quad \ln(NEER)_{i,t-2} - \ln((NEER_{i,t-5} + NEER_{i,t-4} + NEER_{i,t-3}) / 3) \geq -0.1 .$$

Table 1 lists the resulting appreciation events. In total, we identify 25 large appreciation episodes. Moreover, we found this list of large appreciations to be surprisingly robust to variations in the event definition – such as expanding or shortening the time frame of the appreciation episode from two years to one or three years, relaxing or strengthening the criteria for previous devaluations.

In a next step, we collected detailed historical information on each of these appreciation events. This allowed us to classify the events into two different groups. The first group consists of appreciation events that occurred *without* an active policy decision to alter the parity on part of the authorities in the concerned country. Typically, such cases relate to the appreciation of the anchor currency in a peg against key trading partners leading to nominal and real appreciation

of a country's currency on a trade-weighted basis. In other cases, the countries actively adjusted their nominal exchange rates, so that the appreciation is potentially endogenous to economic fundamentals as discussed below. An example here would be the Bundesbank's consent to a revaluation of the Deutschmark in the late 1960s and early 1970s in response to fears about imported inflationary pressures.

Table 1. Appreciation Events

Country	Period	Δ NEER	Δ REER	Description
Australia*	1971 1973	10.20%	10.30%	After the breakdown of the Bretton Woods system, the depreciation of the US dollar led to the appreciation of the Australian dollar which was pegged to the British pound.
Sweden*	1977 1979	10.80%	11.30%	From 1977 to 1991, the Krona was pegged to a trade-weighted basket of foreign currencies. The appreciation of European currencies indirectly triggered the appreciation of the Krona on a nominal and real effective basis.
Ireland*	1978 1980	12.90%	22.00%	Ireland joined the European Exchange Rate Mechanism (ERM) in 1979. The appreciation of European currencies in the late 1970s triggered appreciation on a trade-weighted basis.
Malaysia*	1978 1980	20.30%	16.50%	From September 1976 to the end of 1984, the Malaysian National Bank stabilised the exchange rate against the Singapore dollar. The rise in the Singapore dollar triggered the appreciation of the currency.
Algeria*	1980 1982	17.20%	28.00%	The exchange rate of the Algerian dinar was pegged to a basket of currencies with a large U.S. dollar weight. Dollar strength during the early 1980s led to a strong appreciation of the dinar on a trade-weighted basis.
Singapore*	1980 1982	12.90%	12.40%	From 1973 to 1985, Singapore pegged the value of Singapore Dollar against a basket of currencies with a large US dollar weight. The trade-weighted appreciation resulted from dollar strength.
Belize*	1981 1983	13.70%	16.00%	The Belizean currency was pegged to the US dollar. The appreciation was triggered by dollar strength at the beginning of the 1980s.
Algeria*	1982 1984	16.60%	11.70%	The appreciation of the U.S. dollar during the first half of the 1980s led to a strong rise in the real value of the Algerian dinar on a trade-weighted basis relative to European trading partners.
Ivory Coast*	1983 1985	16.60%	26.40%	The currency appreciated on a trade-weighted basis as a consequence of the appreciation of the anchor currency (French Franc) against the US Dollar.
Cameroon*	1984 1986	11.80%	21.20%	The currency appreciated on a trade-weighted basis as a consequence of the appreciation of the anchor currency (French Franc) against the US Dollar.
Ivory Coast*	1985 1987	30.20%	27.00%	The currency appreciated on a trade-weighted basis as a consequence of the appreciation of the anchor currency (French Franc) against the US Dollar.

Spain*	1986	1988	10.40%	19.00%	The peseta was managed vis-à-vis to other ERM currencies whose appreciation against the dollar, triggered appreciation on a trade-weighted basis.
Singapore*	1988	1990	12.00%	17.00%	Trade-weighted appreciation as a function of strength of the main anchor currency.
Spain*	1988	1990	13.40%	11.20%	Appreciation was triggered by the appreciation of European currencies against the dollar in the late 1980s.
Germany	1968	1970	10.70%	12.90%	Under the Bretton Woods system, the rate of the DM was amended in October 1969. The DM was revalued.
Japan	1970	1972	14.40%	24.00%	The exchange rate of the yen was maintained at Yen 360 per USD from 1949 to 1971. After the United States devalued, the Yen was revalued to 308 per USD.
Switzerland	1971	1973	10.20%	20.60%	After the demise of the Bretton Woods system, the Swiss franc was revalued twice in 1971.
Switzerland	1974	1976	22.40%	13.00%	The Swiss National Bank de facto managed a sustained exchange rate appreciation against dollar and DM,
Japan	1975	1977	14.70%	20.90%	The Bank of Japan managed the appreciation of the yen against the dollar.
Romania	1980	1982	47.50%	35.40%	At the beginning of the 1980s, several step appreciations of the commercial exchange rate were taken.
Taiwan	1986	1988	13.90%	11.40%	In 1987, the exchange rate regime was changed towards a more market determined rate, leading to an appreciation on a trade-weighted basis.
Chile	1992	1994	29.80%	15.00%	The central bank revalued the “central parity” of the currency. It was also decided to widen the bands from $\pm 5\%$ to $\pm 10\%$.
Colombia	1993	1995	11.20%	30.60%	The central bank revalued the “central parity” of the currency.
Czech Republic	2001	2003	11.20%	16.40%	The appreciation was linked to the introduction of a new exchange rate regime framework (with a crawling band and Central Bank interventions).
Colombia	2004	2006	10.00%	23.00%	The central bank revalued the “central parity” of the currency.

Note: *denotes indirect appreciation events as detailed in the text. All other cases involve active parity adjustments by national authorities.

Sources: see Appendix C.

A crucial problem for students of the economic effects is that decision to adjust the parity and revalue is typically not random. The economic variables whose post-appreciation behaviour is of interest – such as the current account balance – can be expected to play an important role for the decision to change the exchange rate. Clearly, our analysis also needs to address this problem. We propose two ways to deal with the issue. First, on the basis of our detailed narrative of the appreciation events we are able to identify 14 cases of indirect appreciations, *i.e.* cases where the nominal and real appreciation were “mechanistic” consequences of the appreciation of the anchor currency. We argue that such instances of appreciation by the (typically larger) anchor currency are by and large exogenous. Put differently, the appreciation of the French franc

against the dollar in the mid-1980s was not driven by economic developments in Cameroon. But the result was an effective appreciation of the trade-weighted exchange rate of Cameroon whose macroeconomic effects we can then estimate.

Second, we run a number of statistical tests to gauge the potential endogeneity problems. In Table 2 we show the results of panel logit regressions relating the probability of appreciation episodes to lagged growth and current accounts. We run separate analysis both for the small sample of indirect appreciation episodes (where no active policy decision was taken) and the large sample of all appreciations, including active revaluations. We test whether strong growth or high current account surpluses increase the probability of an appreciation event in a significant way. We also interact the two using rolling 3-year moving averages that exclude the initial year when appreciation started. While there are reasons to believe that active policy steps to revalue the currency become more likely with good economic fundamentals, it is equally conceivable that countries with good fundamentals resist exchange rate adjustment for many years and that countries with bad fundamentals can also be affected by exogenous appreciation shocks linked to movements in their anchor currency.

The results presented in Table 2 gives us an idea about the potential endogeneity problems of the two samples. For our small sample of indirect appreciations there is no evidence that appreciation is linked to economic fundamentals in the preceding years. All individual lags are insignificant. Looking at them jointly, we cannot reject hypothesis that all lags are equal to zero. We obtain similar results for the current account. In regression (3) we interact growth and current account balance, but we fail to find evidence for significant effects. Also for the large sample (which includes episodes with active policy adjustments), the lags remain individually and jointly insignificant, but the coefficient estimates increase somewhat. We interpret this as an indication that caution is needed in the causal interpretation of our results, in particular in the case of the larger sample. But all in all we come away confident that the exogeneity assumptions behind our analysis hold up relatively well. In any case, we cannot reject the hypothesis that appreciation and revaluation events are unrelated to previous trends in growth and external balances in both the restricted and the larger sample.

Table 2. Exogeneity tests

Panel-Logit	(1)	(2)	(3)	(4)	(5)	(6)
Regression Sample	small	small	small	large	large	large
<i>Dependent variable: revaluation event (0/1)</i>						
Real growth						
L.dy	0.948 (7.197)			1.787 (5.094)		
L2.dy	6.385 (8.108)			5.932 (4.501)		
L3.dy	5.993 (7.303)			2.795 (4.33)		
3-year mov. av.			1.275 (3.491)			3.011 (2.461)
Current account/GDP						
L.cagdp		0.0401 (0.073)			-0.0106 (0.051)	
L2.cagdp		0.0298 (0.095)			0.0527 (0.057)	
L3.cagdp		-0.0255 (0.076)			-0.000791 (0.037)	
3-year mov.av.			-0.0105 (0.0182)			-0.00925 (0.0144)
Growth*Current account/GDP						
3-year mov.av.			0.0834 (0.279)			0.183 (0.197)
Constant	1.266* (0.725)	1.433* (0.767)	-3.303*** (0.383)	0.620 (0.657)	0.497 (0.745)	-2.830*** (0.214)
Test for all lags =0 ,x2						
p-value	2.028	1.189		4.966	2.217	
Sum of lag	0.567	0.756		0.174	0.529	
Se	13.33	0.0444		10.51	0.0413	
	10.04	0.0533		5.409	0.0316	
Time-effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5 392	3 450	3 628	5 392	3 450	3 628
Number of countries	127	128	123	127	128	123

Note: Standard errors in parentheses: *denotes significance at 90% level; **at 95% level; ***at 99% level.

IV. ECONOMETRIC METHODOLOGY

In the following, we estimate the macroeconomic impact of appreciation episodes. We broadly follow the methodology introduced by Cerra and Saxena (2008) and extended by Bussière *et al.* (2010) in their study of the macroeconomic effects of devaluations.¹² Revisiting the literature on the contractionary effects of devaluations is beyond of the scope of this paper.¹³ Yet we think that of the channels and methods pioneered in this literature can be studied symmetrically in the appreciation case. Bussière *et al.* (2010) use both static and dynamic panel analysis. In the static model, growth is regressed on a number of variables in a first attempt to determine the average behaviour of output following a currency crash. The dynamic model builds on univariate autoregressive fixed-effects estimation. From this one can derive impulse-responses that display an estimate of the total effect of a currency change over time. The dummy augmented panel autoregressive model we use takes the following form,

$$(4) \quad x_{it} = \alpha_i + \lambda_t + \sum_{j=1}^p \beta_j x_{it-j} + \sum_{s=0}^q \delta_s E_{it-s} + \varepsilon_{it} .$$

The dependent variable $x_{i,t}$ is the macroeconomic variable of interest. Period and time effects capture cross-sectional and time-specific heterogeneity in the evolution of $x_{i,t}$. They are given by α_i and λ_t , respectively. Inertia, i.e. serial correlation, is modelled through the inclusion of lagged variables of $x_{i,t}$. Large appreciation events enter the equation through current and lagged values of the dummy variable E_{it} . Finally, ε_{it} denotes unsystematic error in the evolution of the left hand side variable. The model is estimated for each of the variables of interest by OLS. White standard errors that are robust to observation specific heteroskedasticity in the disturbances are used for inference. The lag length of the endogenous variable and the dummy variable is set to four for all model specifications. First, a common lag length facilitates comparison of impulse response functions across different estimation setups by assuring that lagged influences from the endogenous variables and the event dummies are captured equally across models. Second, four lags of both the endogenous variable and the event dummy turned out to be sufficient for capturing the relevant dynamics. Shorter lag lengths typically did not capture all relevant dynamics.

12 More generally, there is a large literature on the contractionary effects of devaluation, mostly in a developing-country context, which we will not recall here (see for instance Krugman and Taylor (1978), Shi (2006), etc.). Some of the channels emphasised in that specific literature (beyond those discussed below for elasticity's and real balance effects) have been symmetrically used in this paper for the analysis of appreciations.

13 Important references are Krugman and Taylor (1978) as well as Shi (2006).

For robustness purposes, we work with the two different appreciation event definitions that we discussed above. Our small sample consists of 14 instances of large appreciations that occurred without active policy changes on the part of the country. In our large sample, we additionally include a roughly equal number of large appreciations that reflect active policy decision by the countries' authorities. Our strategy therefore builds on two pillars. First, we took great care to study the history of each individual appreciation episode. In our sample of indirect appreciation events we included only appreciation shocks that were linked to changes in the value of the anchor currency and appeared exogenous to economic trends in the country that operated the peg. Second, our statistical tests above returned no major hints of serious violations of the exogeneity assumption also for the larger sample, although careful interpretation of the results is needed.

However, in light of the importance of the question, we need to be aware of the potential biases introduced to our analysis, which will help to guide the interpretation. A simultaneity bias could arise when the contemporaneous exchange rate event E_{it} is determined simultaneously along with the left hand side variable x_{it} . For instance, if revaluation becomes more likely with strong growth or with an increasing current account surplus, then E_{it} and the error term of equation (5) are correlated and OLS-based estimates of δ_0 will be biased. The size and direction of the bias generally depend on the covariance between x_{it} and the error term that governs the law of motion of E_{it} . At least for the direction of the bias we can give an intuition for the potential effect.

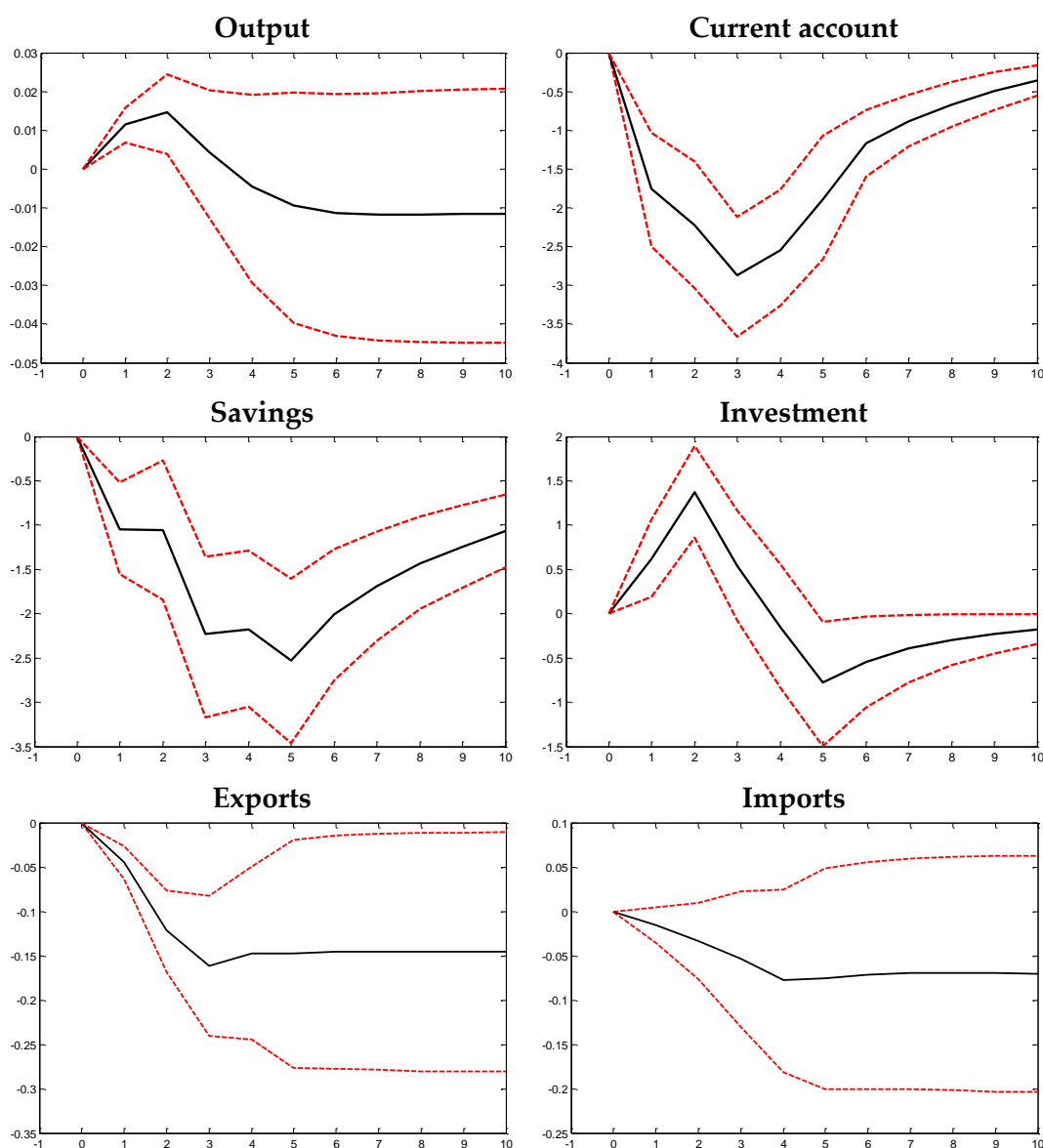
Consider the finding that a strong and sustained exchange rate appreciation deteriorates the current account (detailed results are presented below). By assuming that the exchange rate event is exogenous, we attribute the adjustment of the current account to the impact of the event. However, if the occurrence of a period of currency appreciation is a result, rather than a cause, of the deteriorating current account, then the impact of the exchange rate event would be due only to the lagged effects of E_{it} in equation (5). In this case, the estimated downward adjustments of the current account as shown in the figures below may be too strong. Yet from an economic point of view, it seems rather unlikely that appreciation is a function of a *deteriorating* current account. If anything, the opposite would be expected.

We present our estimation results as responses of the current account and output growth to contemporaneous and lagged impulses from of the appreciation event. As discussed above, we also model the effect on aggregate saving and investment separately. These impulse responses are shown with 68% confidence intervals based on stochastic simulations of the estimated coefficient uncertainty. For the purpose of simplicity, in the figures below we present the mean response together with bands that show the mean response \pm one standard deviation. We will refer to responses as significant in statistical terms if the 68% confidence intervals do not encompass the zero line. Our main conclusions do not change if we use 90% confidence intervals. Impulse response functions using 90% intervals are reported in the Appendix A. The data in Appendix B also show the individual panel regression results underlying the impulse responses. In the following discussion of the results, we focus on the effect of the appreciation shock on the post-event trend of the macroeconomic variables under study, but also refer to the resulting level effects for clarification.

V. THE MACROECONOMIC EFFECTS OF LARGE APPRECIATIONS

We start with the large sample of appreciation events, which we corroborate later with the smaller set of indirect appreciation shocks. Figure 1 shows the impulse response functions for all 25 appreciation events that we identified across all countries. A number of interesting insights emerge from the estimated impulse responses.

Figure 1. Impulse responses: all countries, all events



First, the immediate output responses seem *positive*, *i.e.* output growth accelerates, but they turn negative after about three years. After six years, the reduction in output growth accumulates to an output loss of about 1% in levels. However, wide confidence intervals imply that these losses are insignificant in statistical terms. In light of the time span and possible margins of error, these results provide only weak support for the idea that large appreciation shocks lead to pronounced output losses. By contrast, the impact of appreciation events on the current account is much stronger. The current account balance deteriorates persistently after an appreciation event. The biggest effect materialises after three years when the current account balance (as ratio of GDP) is almost three percentage points lower than before.

Does the deterioration of the current account balance reflect a fall in savings or an increase in investment? The impulse response of the current account is a reflection of the savings and investment responses which are shown in the lower part of Figure 1. The estimation yields an interesting picture. The sharp decline in the current account balance after appreciation is a function of falling saving and increasing investment (at least in the first years after the appreciation impulse). It is clear from the data that the impulse response of savings dies out only slowly. Even after ten years aggregate saving remains significantly below its pre-appreciation level. Investment first jumps after appreciation, but turns negative after three years, thus compensating part of the longer-term savings effect on the current account. From an econometric perspective, it is worth to mention that the estimated responses of the current account, saving and investment are considerably more precise than the estimated responses for output. They are also statistically significant as the error bands are narrow and do not breach the zero line.

The reaction of (real) exports and imports diverges strongly post-appreciation. As can be seen from the lowest panel in Figure 1, imports are by and large unaffected by appreciation, but export growth falls sharply in the first three years. The losses accumulate to about 15% (relative to trend) in the first three years, but stabilise afterwards. Correct interpretation of these level effects is crucial. They do not imply an outright decline in the level of real exports, but a significant reduction relative to the pre-event trend which results in a roughly 15% lower level after three years. Yet the strong slowdown in export growth does not leave a strong imprint on overall output. Domestic demand becomes the beacon of growth.

To summarise Figure 1, the results provide evidence of a negative and significant impact of appreciation events on the current account. This effect is due to the negative reaction of domestic savings. Looking at this through the lenses of foreign trade transactions, it becomes clear that export growth decelerates sharply while imports remain by and large unaffected. However, these dynamics leave a lesser imprint on overall output. The mean output response is negative for horizons above three years but insignificant from a statistical point of view. Proponents of appreciation as a remedy for global imbalances will take these results as supportive for their position. Large appreciation shocks do not meaningfully reduce domestic investment or affect economic growth but help rebalance the economy. Domestic absorption rises as a result of lower savings. Whether the decline in savings reflects mainly a decline in corporate or household savings, will be an interesting topic for further research.

In Figure 2, we show the estimated impulse responses from our small sample of indirect appreciations, *i.e.* nominal and real effective appreciations that resulted from an appreciation of the anchor currency in the peg. Reassuringly, the results are very similar so that our key finding

seem robust to endogeneity concerns. Appreciation shocks lead to a visible deterioration of the current balance, driven by a strong effect on savings. Export growth decelerates sharply while imports perform relatively better. With regard to output, the estimated effects are similar to those reported above for the broader sample of appreciation events. The mean response of output shows a cumulative loss of about 2%. While this effect seems permanent, it appears relatively small and statistically not different from zero.

Figure 2. Impulse responses: all countries, indirect events only

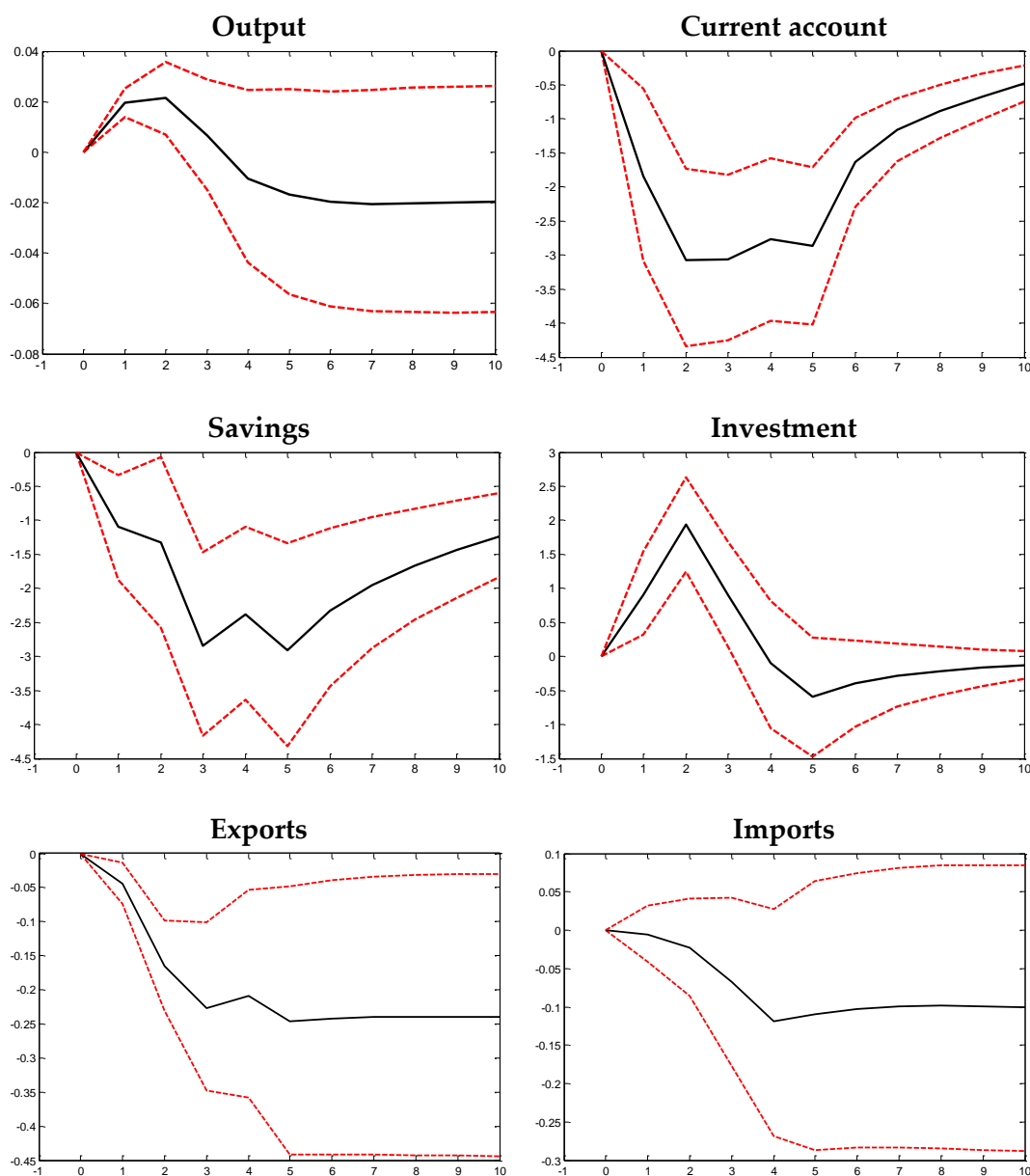


Table 3 summarises the key results of our analysis showing the estimated mean level effects in the first five years after appreciation and revaluation shocks for all countries. Output levels are initially rising, but after five years the cumulated effect is marginally negative (output

levels are less than 1% lower relative to trend). However, the current account deteriorates meaningfully (by about 2-3 pp. relative to GDP), and export losses accumulate to close to 15% over 5 years. Investment is only marginally affected, while savings fall by about 2.5 pp relative to GDP. If we restrict our analysis to the smaller sample of indirect appreciation shocks, the results are very similar, albeit the current account deterioration and the slowdown in export growth appear somewhat more pronounced.

Table 3. Mean level effects after appreciation (all countries)

Years after appreciation	1	2	3	4	5
<i>Large sample</i>					
Output	0.011**	0.014	0.004	-0.005	-0.009
Current account/GDP	-1.721**	-2.284***	-2.929***	-2.548***	-1.876**
Investment/GDP	0.618	1.373**	0.584	-0.175	-0.792
Savings/GDP	-1.050*	-1.058	-2.222**	-2.159**	-2.512**
Real exports	-0.044***	-0.122***	-0.160**	-0.145	-0.145
Real imports	-0.016	-0.033	-0.053	-0.078	-0.077
<i>Small sample</i>					
Output	0.019***	0.022	0.007	-0.009	-0.015
Current account/GDP	-1.849	-2.947**	-3.102**	-2.771**	-2.787**
Investment/GDP	0.923	1.948***	0.91	-0.041	-0.577
Savings/GDP	-1.101	-1.307	-2.832**	-2.358*	-2.912*
Real exports	-0.041	-0.162**	-0.224*	-0.204	-0.242
Real imports	-0.005	-0.023	-0.068	-0.119	-0.110

Notes: Cumulative log-level change for output, exports and imports. Percentage point change over GDP for current account, investment and savings. *denotes significance at 90% level; **at 95% level; ***at 99% level.

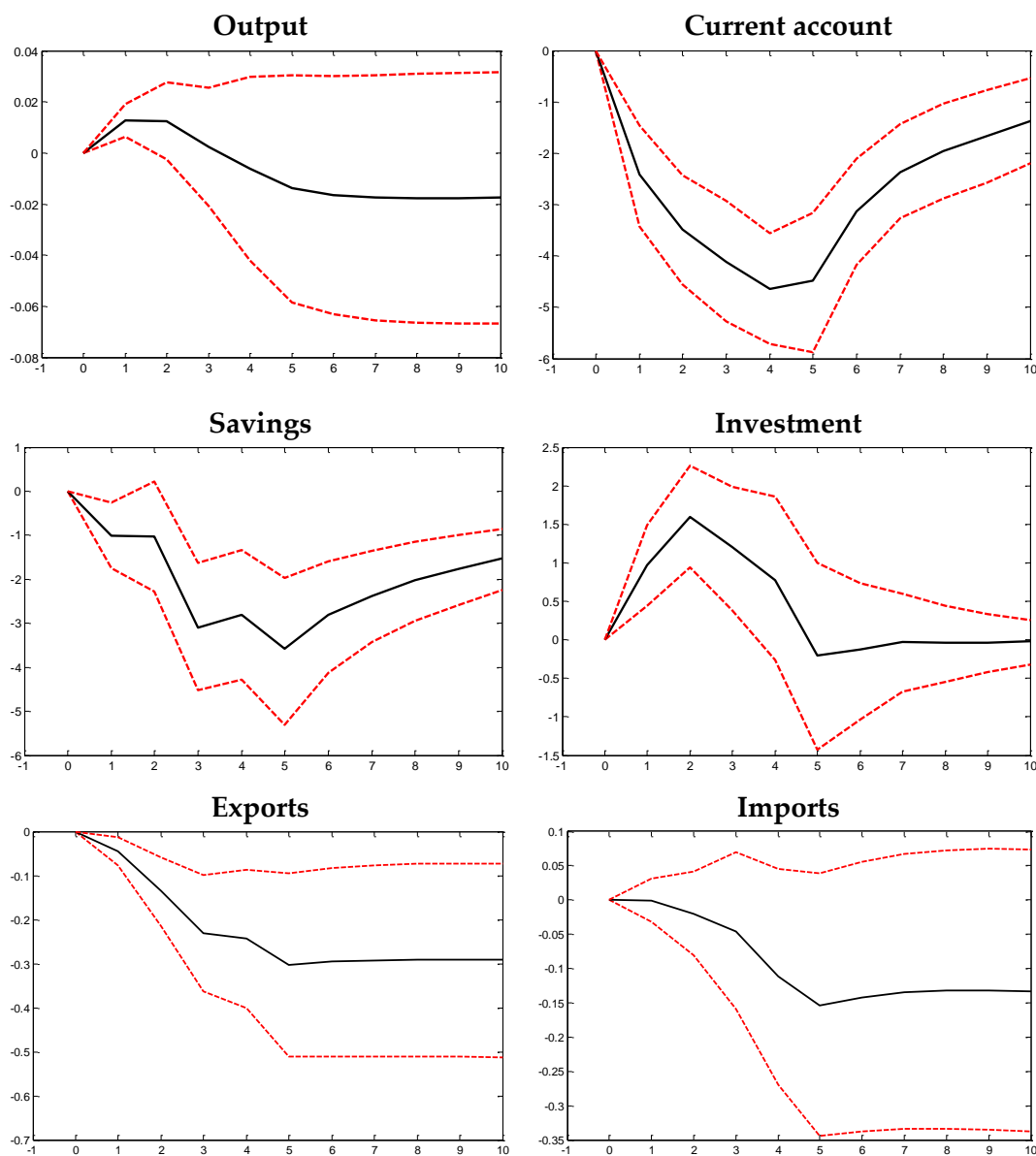
Effects in developing and advanced economies

In the next step of our empirical analysis, we split our sample in an attempt to potentially uncover different dynamics for developing and developed countries.¹⁴ As discussed above, a growing literature argues that the real exchange rate plays a central role for the economic development of poor countries, *e.g.* through positive externalities from exports of manufactured goods. This sets developing countries apart from advanced economies and calls for a disaggregated analysis. As above, we start with the broad event definition, but corroborate our results with the purely indirect appreciation episodes. For developing countries (Figure 3), the estimated event responses of the key variables are qualitatively the same as for the entire sample: strong and significant current account responses and an indeterminate impact on economic growth. What differs somewhat is the size of the effects. Current account deterioration and the decrease in the saving rate are greater than 4 pp. at peak, hence much more pronounced and also more persistent. Export losses are almost twice as large in levels while the import response is large but with wide confidence intervals. We also find evidence that output losses are somewhat

14 We classify all those countries as developing that had a PPP adjusted income of less than one third of the US level in the year 1980.

higher. They amount to about 2% over ten years, but remain statistically insignificant. Our estimations also show a more volatile path of the investment rate than in the full country sample.

Figure 3. Impulse response: developing countries, all events



For advanced economies (Figure 4), output effects of appreciation shocks are also not significantly different from zero and the current account response is considerably milder owing to a more short-lived impact on export growth. Large exchange rate appreciations have only short (if any) effects on the external balance. Our estimations show a significant response only at the three-year horizon. We find an interesting difference here as the savings decline is actually more abrupt than in the developing country sub-sample. But it goes hand in hand with a decline in investment so that the overall savings-investment balance is not strongly affected. However, a

smaller number of observations in the advanced country sample lowers the precision of the estimated coefficients and renders most impulse response functions insignificant.

All in all, we think that the evidence we find is sufficiently strong to justify the idea that the macroeconomic effects of appreciation shocks differ between developed and developing countries. The differential effects appear particularly pronounced with regard to the external balance that deteriorates more persistently in developing countries. Export growth takes a stronger hit in developing countries, but is counterbalanced by stronger domestic growth. Also the growth response is different. While not statistically significant, the point estimates suggest a stronger impact of appreciation on economic growth in developing countries. The growth path of a typical advanced country is hardly affected by appreciation. In developing countries, appreciation episodes lead to output losses more often.

Figure 4. Impulse responses: advanced countries, all events

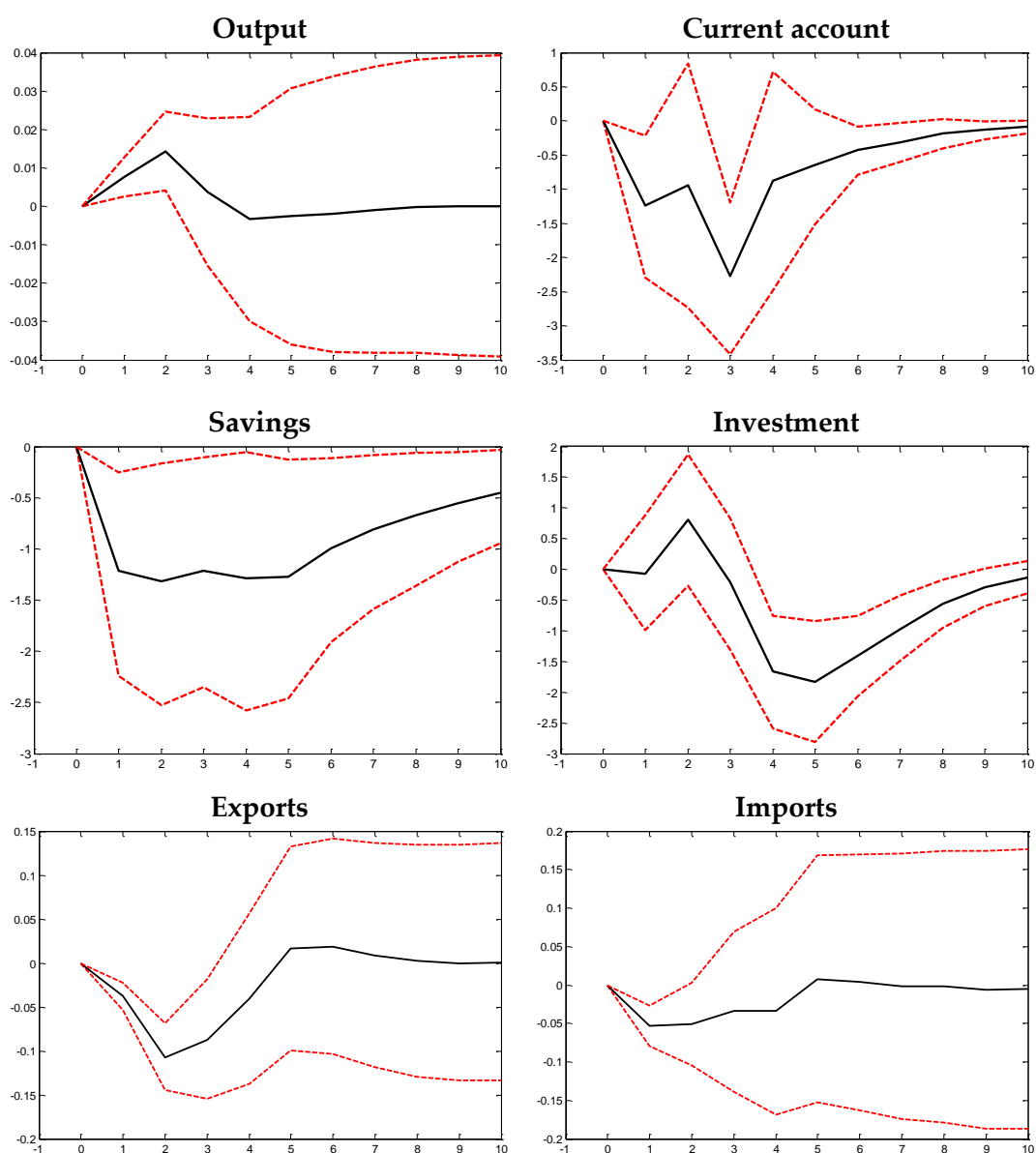


Table 4 summarises our empirical findings with regard to different event responses in developing and advanced economies. Across the variables studied here, the macroeconomic effects of appreciation and revaluation shocks appear stronger in less developed countries. The current account correction is more pronounced as is the decline in savings which is about twice as strong as in advanced economies. The behaviour of export and import growth also differs between both groups, with developing countries' exports exhibiting a much stronger sensitivity to exchange rate appreciation. However, according to our estimates here the investment dynamic remains by and large unaffected and the output effects in developing countries remain small and statistically insignificant. Overall, the previous conclusion that the economic effects of appreciation shocks are somewhat stronger in developing countries is clearly confirmed.

Table 4. Mean level effects in developing and advanced economies

Years after appreciation	1	2	3	4	5
<i>Advanced economies</i>					
Output	0.007	0.014	0.003	-0.004	-0.003
Current account/GDP	-1.165	-0.939	-2.309*	-0.827	-0.595
Investment/GDP	-0.094	0.787	-0.258	-1.712*	-1.886**
Savings/GDP	-1.171	-1.255	-1.176	-1.228	-1.246
Real exports	-0.038***	-0.108***	-0.088	-0.042	0.016
Real imports	-0.052**	-0.049	-0.031	-0.031	0.009
<i>Developing economies</i>					
Output	0.013*	0.012	0.002	-0.006	-0.014
Current account/GDP	-2.402**	-3.398***	-4.045***	-4.56***	-4.422***
Investment/GDP	0.965*	1.603**	1.272	0.769	-0.205
Savings/GDP	-0.999	-1.138	-3.161**	-2.893*	-3.668**
Real exports	-0.049	-0.137*	-0.231*	-0.247	-0.306
Real imports	-0.001	-0.020	-0.047	-0.113	-0.153

Notes: Cumulative log-level change for output, exports and imports. Percentage point change over GDP for current account, investment and savings. *denotes significance at 90% level; **at 95% level; ***at 99% level.

In a final step, we will again test the robustness of these results to a change in the event definition. By limiting our analysis to events that did not involve discretionary action by the authorities, we aim to get an idea about potential biases introduced by endogeneity of the appreciation event. In brief, this robustness check does not lead to materially different conclusions. In Figures 5 and 6, we maintain the split of the sample between developing and developed countries, but study the responses of growth and external balances using the more parsimonious indirect event definition. The external adjustment in response to large exchange rate appreciations appears again stronger in developing countries where savings fall but investment remains by and large unaffected. In advanced countries, the fall in savings is not only less pronounced, it is also compensated by a parallel fall in investment which leaves the external balance unaffected. As noted above, a similar difference between developing and advanced countries can also be seen in the graph showing the output response. The confidence bands remain wide so that these results have to be taken with caution, but our estimates point to limited output losses in developing countries while appreciation has virtually no impact on

growth in advanced economies. All in all, these results confirm our previous findings with regard to the macroeconomic effects of large appreciation shocks.

Figure 5. Impulse responses: developing countries, indirect events only

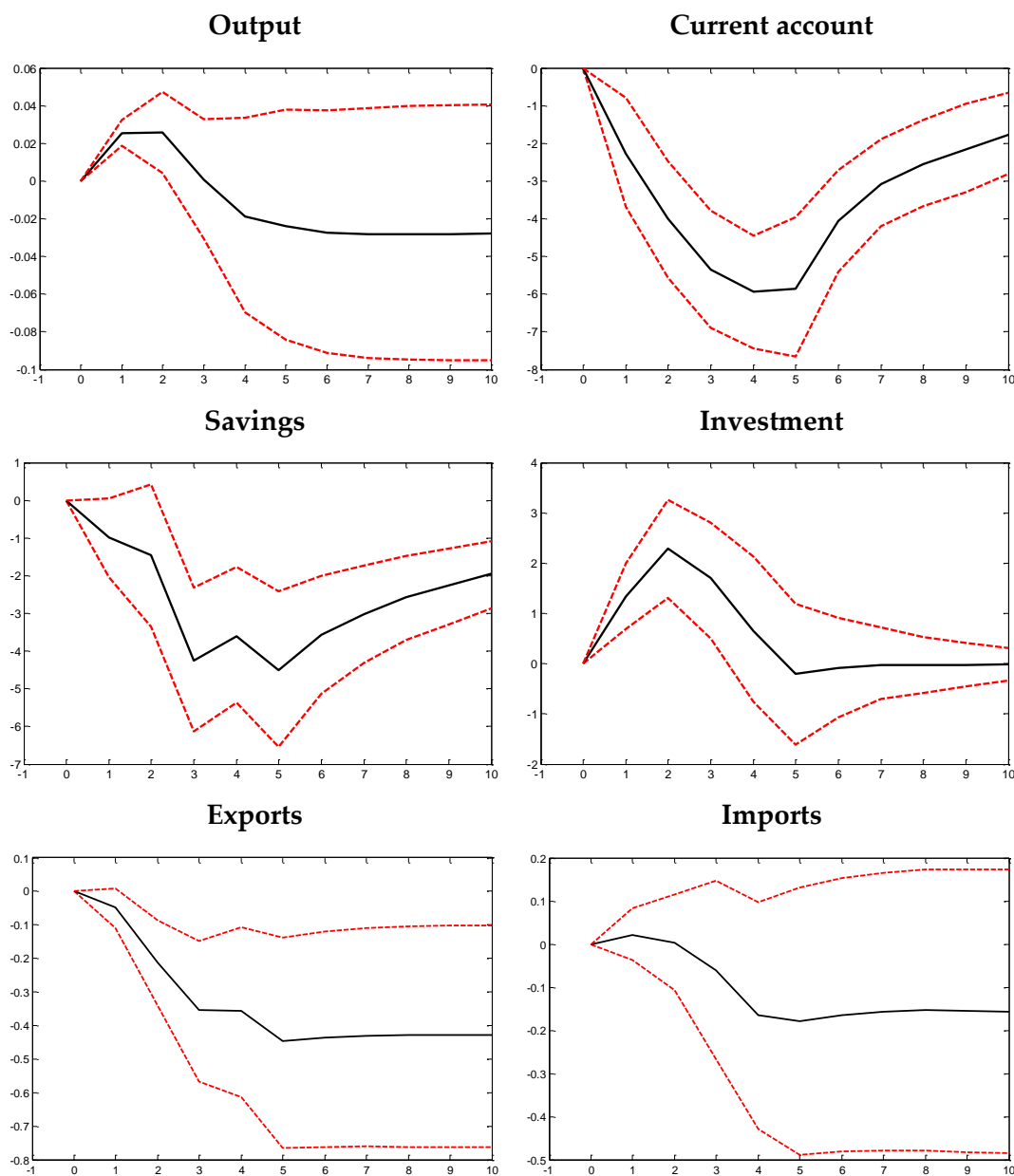
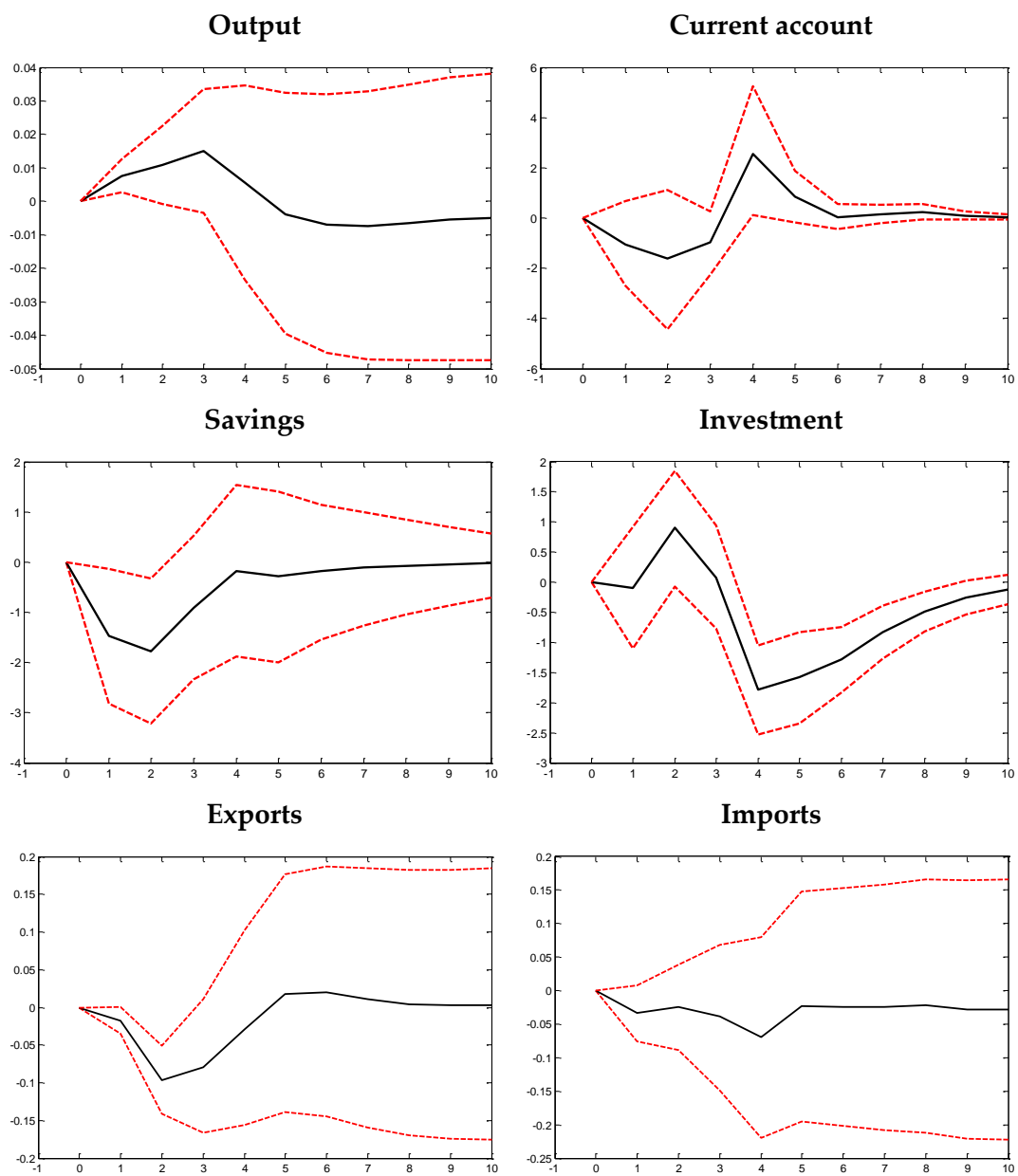


Figure 6. Impulse responses: advanced countries, indirect events only



VI. CONCLUSION

The macroeconomic effects of exchange rate changes are likely to remain a contentious issue in international economics. While the debate about global rebalancing has gained traction after the financial crisis of 2008-09, the wisdom of using exchange rates as an adjustment tool remains debated. This partly reflects long-standing disagreement in the profession about the determinants of current account balances. Until recently, scepticism with regard to the effects of (even large) exchange rate adjustment on global current account balances has been widespread. Other recent contributions by Ahmed (2009), and Cline (2010), however, have struck a little more optimistic tune towards the effects of exchange rate changes.

In this paper, we have studied the empirical record of almost 50 years of international economic history. Using data for 128 countries between 1960 and 2008, we have found 25 episodes of large sustained exchange rate revaluations, which we define as both nominal and real effective exchange rate appreciations of 10% (and more) within a two year window (or less). Studying the institutional context of each individual episode in detail, we identified 14 cases of appreciation shocks that occurred not as a result of discretionary policy action, but were passively linked to the appreciation of the anchor currency in the context of an exchange rate peg. We argue that these cases represent instances of exogenous appreciation shocks that we can use to estimate the macroeconomic impact of large appreciations and assess the robustness of estimates based on a wider definition of appreciation and revaluation events. Using a dummy-augmented autoregressive panel model we could indeed show that such large appreciations episodes have strong macroeconomic effects. Most importantly, we established four key stylised facts that can prove useful in the ongoing debate about the role of exchange rate adjustment for global rebalancing.

First, the current account balance typically falls strongly in response to large exchange rate revaluations. Three years after the revaluation, the current account balance deteriorates by about 3 pp. relative to GDP. This is due to a reduction in aggregate savings without a concomitant fall in investment. The effect on the current account balance is statistically significant and robust to variation in the country sample and the definition of appreciation events.

Second, the effects on output seem limited. Our point estimates suggest a negative effect of output growth, albeit of relatively small magnitude: on average, the aggregate level effect on output amounts to about 1% after six years. The confidence intervals are also considerably wider than for the current account. The output effects are statistically not significant.

Third, while aggregate output is not strongly affected, export growth falls significantly after appreciation shocks. Import growth remains by and large unchanged resulting in the

observed deterioration in external balances. As aggregate economic growth is much less affected, our results point to a positive domestic demand response following appreciation episodes.

Fourth, these effects seem to be more pronounced in developing countries. The sensitivity of the current account balance to revaluation shocks is higher. The effect reaches almost 4 percentage points of GDP after three years and is statistically significant. But also the potentially negative effects on output are larger. Our point estimates indicate a loss in output of 2% over ten years. But confidence intervals remain wide, so that these results miss statistically significant levels. Why these effects are stronger in developing countries will be an important question that we aim to address in future research.

In sum, the historical record of large exchange rate revaluations that we have studied in this paper lends some support to the idea that large exchange rate appreciations and revaluations have an impact on the current account as they lead to marked changes of savings and investment within countries. Appreciation shocks impact external balances, but this effect potentially comes at the cost of a reduction of dynamism in exports. While the domestic economy seems to pick up some of the external slack, leaving overall growth relatively unaffected, the prospect of sharp decelerations in export growth will remain a concern for policy-makers and bears watching especially in the context of developing countries.

APPENDIX A.

Impulse Responses with 90% Confidence Intervals

Figure A1. Impulse responses: all countries, all events

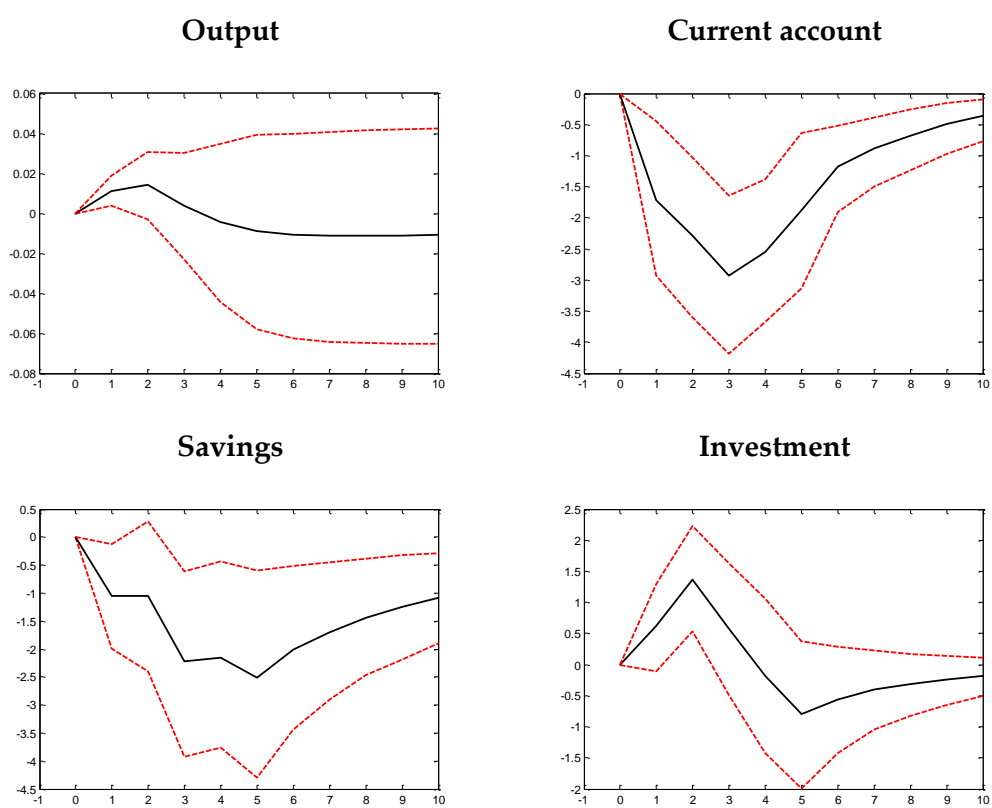


Figure A2. Impulse responses: all countries, indirect events only

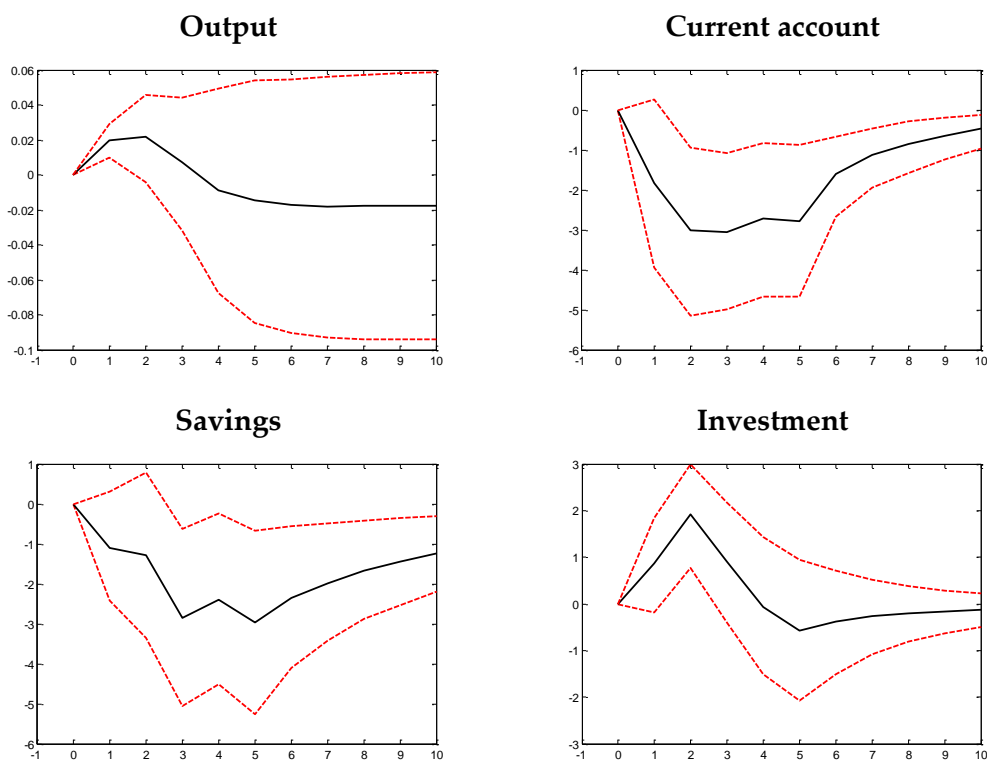


Figure A3. Impulse responses: developing countries, all events

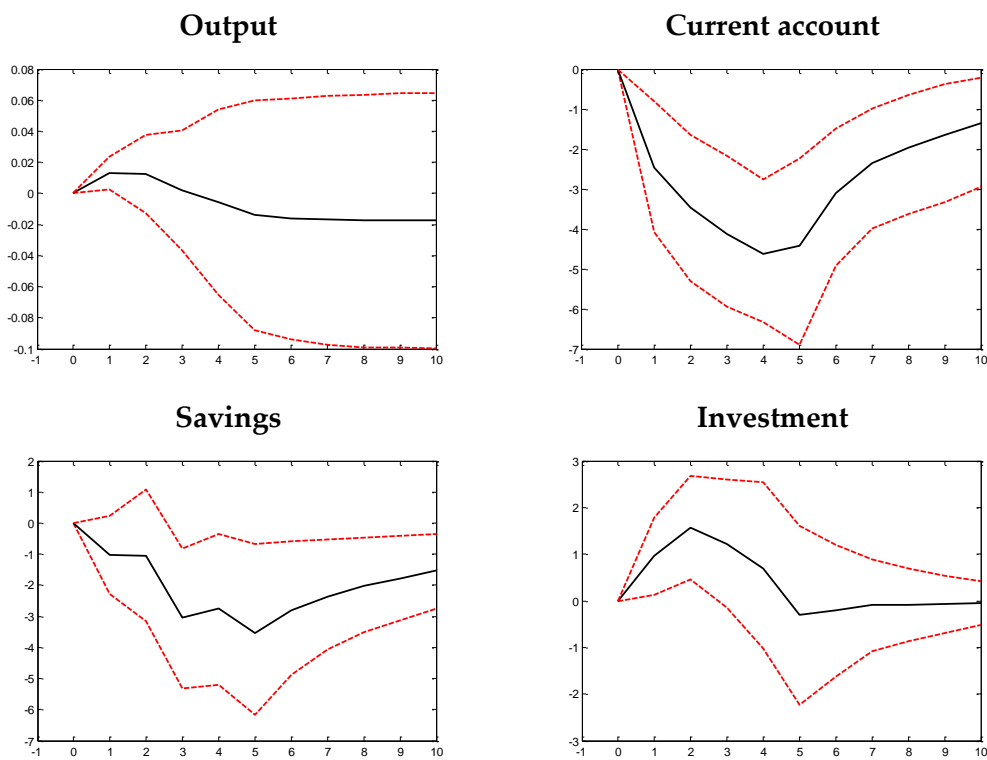


Figure A4. Impulse responses: advanced countries, all events

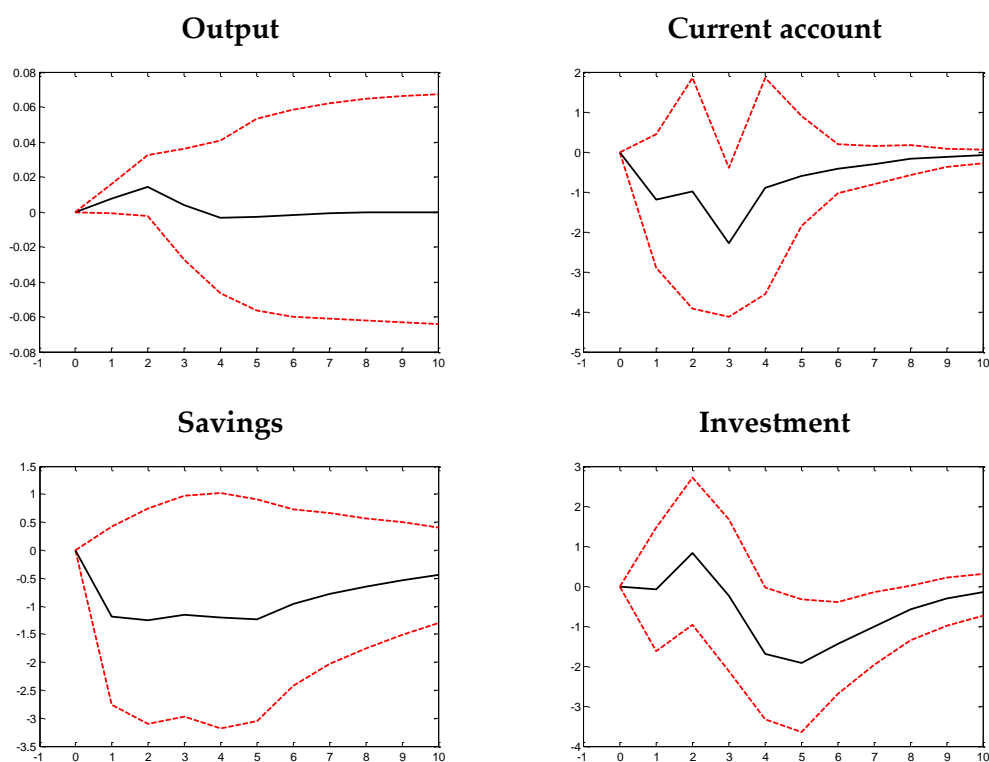


Figure A5. Impulse responses: developing countries, indirect events only

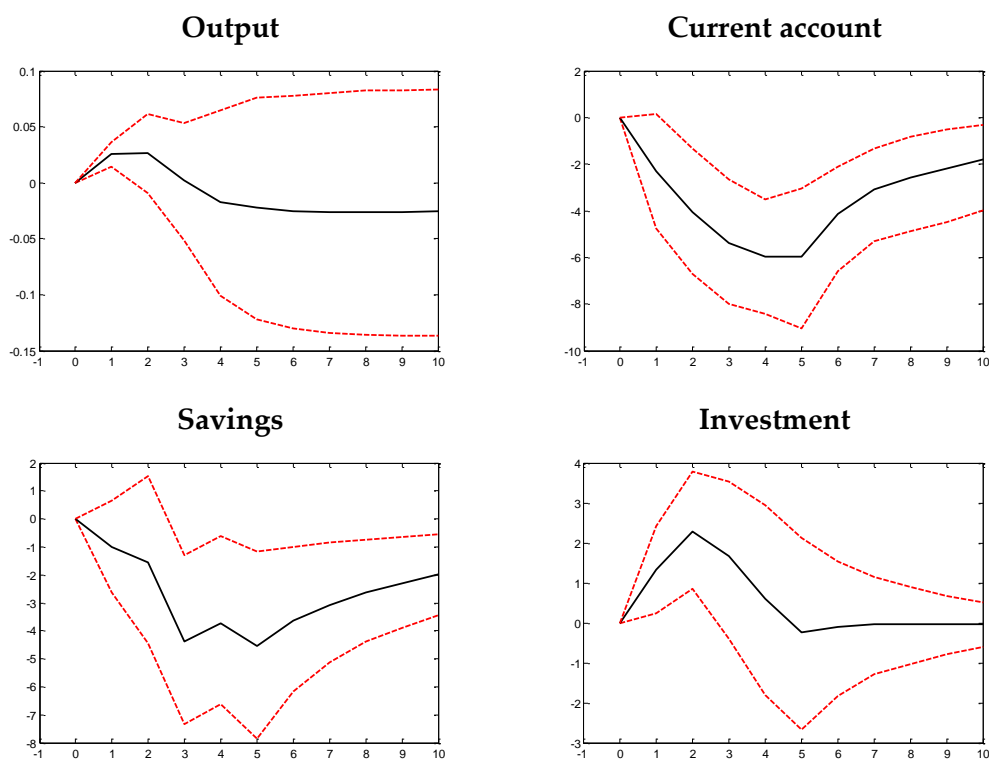
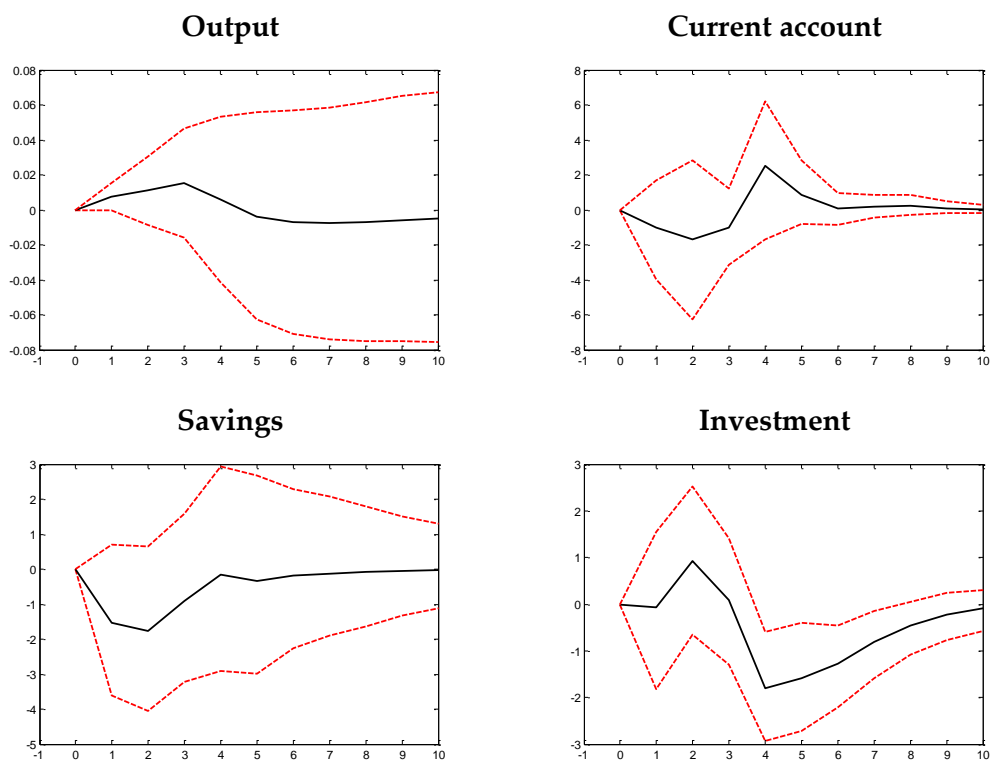


Figure A6. Impulse responses: advanced countries, indirect events only



APPENDIX B.

Regression Results

Table B1. All countries, all events

CAGDP	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.018	0.245	-4.163	0.00
CAGDP(-1)	0.396	0.152	2.609	0.01
CAGDP(-2)	0.037	0.072	0.512	0.61
CAGDP(-3)	0.077	0.047	1.634	0.10
CAGDP(-4)	0.048	0.039	1.223	0.22
REVAL	-1.740	0.755	-2.305	0.02
REVAL (-1)	-1.567	0.778	-2.015	0.04
REVAL (-2)	-1.945	0.760	-2.558	0.01
REVAL (-3)	-1.202	0.696	-1.728	0.08
REVAL (-4)	-0.546	0.683	-0.800	0.42
DY	Coefficient	Std. Error	t-Statistic	Prob.
C	0.013	0.001	11.973	0.00
DY(-1)	0.204	0.042	4.871	0.00
DY(-2)	0.062	0.022	2.856	0.00
DY(-3)	0.030	0.024	1.247	0.21
DY(-4)	-0.049	0.023	-2.131	0.03
REVAL	0.011	0.004	2.614	0.01
REVAL (-1)	0.001	0.005	0.092	0.93
REVAL (-2)	-0.012	0.006	-1.983	0.05
REVAL (-3)	-0.007	0.008	-0.931	0.35
REVAL (-4)	-0.002	0.005	-0.332	0.74
INVGDP	Coefficient	Std. Error	t-Statistic	Prob.
C	5.719	0.548	10.428	0.00
INVGDP(-1)	0.734	0.052	14.020	0.00
INVGDP(-2)	-0.022	0.065	-0.340	0.73
INVGDP(-3)	0.029	0.062	0.473	0.64
INVGDP(-4)	0.003	0.034	0.075	0.94
REVAL	0.629	0.438	1.436	0.15
REVAL(-1)	0.922	0.374	2.463	0.01
REVAL(-2)	-0.435	0.549	-0.794	0.43
REVAL(-3)	-0.569	0.578	-0.986	0.32
REVAL(-4)	-0.704	0.525	-1.342	0.18
SAVGDP	Coefficient	Std. Error	t-Statistic	Prob.
C	3.255	0.575	5.660	0.00
SAVGDP(-1)	0.737	0.067	11.002	0.00
SAVGDP(-2)	0.043	0.056	0.770	0.44
SAVGDP(-3)	0.017	0.052	0.327	0.74
SAVGDP(-4)	0.029	0.036	0.807	0.42
REVAL	-1.043	0.543	-1.919	0.06
REVAL (-1)	-0.277	0.672	-0.413	0.68
REVAL (-2)	-1.404	0.674	-2.083	0.04
REVAL (-3)	-0.451	0.600	-0.751	0.45
REVAL (-4)	-0.791	0.615	-1.286	0.20

Table B2. All countries, indirect events only

CAGDP	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.034	0.246	-4.195	0.00
CAGDP(-1)	0.397	0.152	2.610	0.01
CAGDP(-2)	0.037	0.072	0.511	0.61
CAGDP(-3)	0.077	0.047	1.633	0.10
CAGDP(-4)	0.048	0.039	1.216	0.22
REVAL1	-1.802	1.288	-1.399	0.16
REVAL1(-1)	-2.266	1.215	-1.865	0.06
REVAL1 (-2)	-1.806	1.194	-1.513	0.13
REVAL1 (-3)	-1.291	1.024	-1.261	0.21
REVAL1 (-4)	-1.281	0.988	-1.297	0.19
<u>EQ_DY</u>	<i>Dep. Var:</i>	DY		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.013	0.001	11.974	0.00
DY(-1)	0.204	0.042	4.869	0.00
DY(-2)	0.062	0.022	2.862	0.00
DY(-3)	0.030	0.024	1.249	0.21
DY(-4)	-0.049	0.023	-2.134	0.03
REVAL1	0.020	0.006	3.499	0.00
REVAL1 (-1)	-0.002	0.009	-0.201	0.84
REVAL1 (-2)	-0.016	0.007	-2.270	0.02
REVAL1 (-3)	-0.014	0.012	-1.161	0.25
REVAL1 (-4)	-0.001	0.006	-0.174	0.86
<u>EQ_INVGDP</u>	<i>Dep. Var:</i>	INVGDP		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.717	0.548	10.432	0.00
INVGDP(-1)	0.734	0.052	14.019	0.00
INVGDP(-2)	-0.022	0.065	-0.338	0.74
INVGDP(-3)	0.029	0.062	0.473	0.64
INVGDP(-4)	0.002	0.034	0.070	0.94
REVAL1	0.896	0.596	1.504	0.13
REVAL1 (-1)	1.277	0.478	2.674	0.01
REVAL1 (-2)	-0.503	0.705	-0.713	0.48
REVAL1 (-3)	-0.742	0.820	-0.904	0.37
REVAL1 (-4)	-0.571	0.617	-0.926	0.35
<u>EQ_SAVGDP</u>	<i>Dep. Var:</i>	SAVGDP		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.252	0.575	5.656	0.00
SAVGDP(-1)	0.737	0.067	11.006	0.00
SAVGDP(-2)	0.043	0.056	0.769	0.44
SAVGDP(-3)	0.017	0.052	0.328	0.74
SAVGDP(-4)	0.029	0.036	0.801	0.42
REVAL1	-1.075	0.816	-1.316	0.19
REVAL1 (-1)	-0.484	1.035	-0.468	0.64
REVAL1 (-2)	-1.807	1.005	-1.798	0.07
REVAL1 (-3)	-0.224	0.884	-0.254	0.80
REVAL1 (-4)	-1.018	0.859	-1.185	0.24

Table B3. Developing countries, all events

CAGDP	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.983	0.319	-3.079	0.00
CAGDP(-1)	0.634	0.060	10.555	0.00
CAGDP(-2)	-0.041	0.059	-0.687	0.49
CAGDP(-3)	0.063	0.054	1.166	0.24
CAGDP(-4)	0.060	0.054	1.108	0.27
REVAL	-2.426	1.002	-2.420	0.02
REVAL(-1)	-1.907	0.800	-2.385	0.02
REVAL(-2)	-2.000	0.913	-2.191	0.03
REVAL(-3)	-1.998	0.724	-2.760	0.01
REVAL(-4)	-1.305	1.104	-1.182	0.24
<u>EQ DY</u>	<i>Dep. Var:</i>	DY		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.013	0.001	10.269	0.00
DY(-1)	0.173	0.044	3.959	0.00
DY(-2)	0.080	0.022	3.672	0.00
DY(-3)	0.045	0.026	1.754	0.08
DY(-4)	-0.047	0.025	-1.835	0.07
REVAL	0.013	0.006	2.021	0.04
REVAL(-1)	-0.003	0.009	-0.307	0.76
REVAL(-2)	-0.011	0.008	-1.471	0.14
REVAL(-3)	-0.007	0.012	-0.597	0.55
REVAL(-4)	-0.005	0.008	-0.600	0.55
<u>EQ INVGDP</u>	<i>Dep. Var:</i>	INVGDP		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.635	0.499	11.289	0.00
INVGDP(-1)	0.753	0.061	12.356	0.00
INVGDP(-2)	-0.082	0.078	-1.053	0.29
INVGDP(-3)	0.081	0.071	1.136	0.26
INVGDP(-4)	-0.009	0.037	-0.252	0.80
REVAL	0.969	0.517	1.875	0.06
REVAL(-1)	0.859	0.523	1.642	0.10
REVAL(-2)	0.117	0.705	0.167	0.87
REVAL(-3)	-0.137	0.898	-0.153	0.88
REVAL(-4)	-0.830	0.857	-0.968	0.33
<u>EQ SAVGDP</u>	<i>Dep. Var:</i>	SAVGDP		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.765	0.565	4.891	0.00
SAVGDP(-1)	0.742	0.070	10.647	0.00
SAVGDP(-2)	0.039	0.064	0.614	0.54
SAVGDP(-3)	0.012	0.061	0.193	0.85
SAVGDP(-4)	0.038	0.043	0.896	0.37
REVAL	-0.996	0.753	-1.321	0.19
REVAL(-1)	-0.322	1.116	-0.289	0.77
REVAL(-2)	-2.294	1.022	-2.245	0.02
REVAL(-3)	-0.486	0.983	-0.495	0.62
REVAL(-4)	-1.325	1.046	-1.266	0.21

Table B4. Advanced countries, all events

CAGDP	Coefficient	Std. Error	t-Statistic	Prob.
C	0.378	0.315	1.201	0.23
CAGDP(-1)	0.247	0.127	1.942	0.05
CAGDP(-2)	0.027	0.068	0.402	0.69
CAGDP(-3)	0.074	0.054	1.364	0.17
CAGDP(-4)	0.051	0.051	1.007	0.31
REVAL	-1.200	1.010	-1.189	0.23
REVAL(-1)	-0.691	1.731	-0.399	0.69
REVAL(-2)	-2.041	1.044	-1.955	0.05
REVAL(-3)	-0.186	1.524	-0.122	0.90
REVAL(-4)	-0.224	0.802	-0.280	0.78
<u>EQ DY</u>	<i>Dep. Var:</i>	DY		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.016	0.002	6.825	0.00
DY(-1)	0.339	0.099	3.441	0.00
DY(-2)	-0.046	0.070	-0.660	0.51
DY(-3)	-0.040	0.066	-0.605	0.55
DY(-4)	-0.064	0.053	-1.201	0.23
REVAL	0.007	0.005	1.385	0.17
REVAL(-1)	0.004	0.005	0.842	0.40
REVAL(-2)	-0.013	0.008	-1.499	0.13
REVAL(-3)	-0.003	0.007	-0.460	0.65
REVAL(-4)	0.003	0.006	0.527	0.60
<u>EQ INVGDP</u>	<i>Dep. Var:</i>	INVGDP		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.717	2.278	3.826	0.00
INVGDP(-1)	0.640	0.108	5.934	0.00
INVGDP(-2)	0.132	0.093	1.423	0.15
INVGDP(-3)	-0.116	0.087	-1.332	0.18
INVGDP(-4)	-0.026	0.076	-0.348	0.73
REVAL	-0.111	0.934	-0.119	0.91
REVAL(-1)	0.845	0.787	1.075	0.28
REVAL(-2)	-0.755	0.761	-0.992	0.32
REVAL(-3)	-1.636	0.643	-2.542	0.01
REVAL(-4)	-0.672	0.749	-0.897	0.37
<u>EQ SAVGDP</u>	<i>Dep. Var:</i>	SAVGDP		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.080	1.797	2.826	0.00
SAVGDP(-1)	0.712	0.184	3.871	0.00
SAVGDP(-2)	0.065	0.120	0.544	0.59
SAVGDP(-3)	0.032	0.088	0.367	0.71
SAVGDP(-4)	-0.010	0.061	-0.160	0.87
REVAL	-1.159	0.952	-1.218	0.22
REVAL(-1)	-0.476	0.904	-0.526	0.60
REVAL(-2)	-0.216	0.771	-0.280	0.78
REVAL(-3)	-0.323	0.696	-0.464	0.64
REVAL(-4)	-0.285	0.747	-0.382	0.70

Table B5. Developing countries, indirect events only

CAGDP	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.998	0.319	-3.126	0.00
CAGDP(-1)	0.634	0.060	10.555	0.00
CAGDP(-2)	-0.041	0.059	-0.693	0.49
CAGDP(-3)	0.064	0.054	1.170	0.24
CAGDP(-4)	0.059	0.054	1.094	0.27
REVAL1	-2.314	1.525	-1.518	0.13
REVAL1(-1)	-2.538	1.193	-2.129	0.03
REVAL1(-2)	-2.900	1.368	-2.119	0.03
REVAL1(-3)	-2.558	1.014	-2.523	0.01
REVAL1(-4)	-1.973	1.556	-1.268	0.21
<u>EQ DY</u>	<i>Dep. Var:</i>	DY		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.013	0.001	10.258	0.00
DY(-1)	0.173	0.044	3.957	0.00
DY(-2)	0.080	0.022	3.683	0.00
DY(-3)	0.046	0.026	1.757	0.08
DY(-4)	-0.047	0.025	-1.844	0.07
REVAL1	0.026	0.007	3.674	0.00
REVAL1(-1)	-0.004	0.014	-0.247	0.81
REVAL1(-2)	-0.027	0.010	-2.683	0.01
REVAL1(-3)	-0.016	0.019	-0.852	0.39
REVAL1(-4)	0.002	0.009	0.186	0.85
<u>EQ INVGDP</u>	<i>Dep. Var:</i>	INVGDP		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.637	0.499	11.292	0.00
INVGDP(-1)	0.753	0.061	12.355	0.00
INVGDP(-2)	-0.082	0.078	-1.050	0.29
INVGDP(-3)	0.081	0.071	1.136	0.26
INVGDP(-4)	-0.010	0.037	-0.262	0.79
REVAL1	1.338	0.671	1.993	0.05
REVAL1(-1)	1.284	0.715	1.796	0.07
REVAL1(-2)	0.021	1.040	0.021	0.98
REVAL1(-3)	-0.538	1.287	-0.418	0.68
REVAL1(-4)	-0.705	1.005	-0.702	0.48
<u>EQ SAVGDP</u>	<i>Dep. Var:</i>	SAVGDP		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.762	0.565	4.891	0.00
SAVGDP(-1)	0.742	0.070	10.647	0.00
SAVGDP(-2)	0.039	0.064	0.613	0.54
SAVGDP(-3)	0.012	0.061	0.195	0.85
SAVGDP(-4)	0.038	0.043	0.898	0.37
REVAL1	-0.975	1.040	-0.938	0.35
REVAL1(-1)	-0.750	1.595	-0.470	0.64
REVAL1(-2)	-3.174	1.372	-2.313	0.02
REVAL1(-3)	-0.419	1.313	-0.319	0.75
REVAL1(-4)	-1.622	1.259	-1.289	0.20

Table B6. Advanced countries, indirect events only

CAGDP	Coefficient	Std. Error	t-Statistic	Prob.
C	0.332	0.315	1.055	0.29
CAGDP(-1)	0.247	0.127	1.941	0.05
CAGDP(-2)	0.028	0.068	0.409	0.68
CAGDP(-3)	0.075	0.055	1.362	0.17
CAGDP(-4)	0.051	0.051	1.009	0.31
REVAL1	-1.092	1.681	-0.650	0.52
REVAL1(-1)	-1.470	2.703	-0.544	0.59
REVAL1(-2)	-0.569	1.190	-0.479	0.63
REVAL1(-3)	2.833	2.359	1.201	0.23
REVAL1(-4)	0.423	0.673	0.628	0.53
<u>EQ DY</u>	<i>Dep. Var:</i>	DY		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.016	0.002	6.866	0.00
DY(-1)	0.339	0.098	3.445	0.00
DY(-2)	-0.047	0.070	-0.670	0.50
DY(-3)	-0.039	0.066	-0.586	0.56
DY(-4)	-0.065	0.053	-1.211	0.23
REVAL1	0.008	0.005	1.618	0.11
REVAL1(-1)	0.001	0.007	0.104	0.92
REVAL1(-2)	0.003	0.007	0.477	0.63
REVAL1(-3)	-0.011	0.010	-1.051	0.29
REVAL1(-4)	-0.006	0.006	-0.909	0.36
<u>EQ INVGDP</u>	<i>Dep. Var:</i>	INVGDP		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.687	2.279	3.813	0.00
INVGDP(-1)	0.640	0.108	5.939	0.00
INVGDP(-2)	0.132	0.093	1.418	0.16
INVGDP(-3)	-0.116	0.087	-1.326	0.18
INVGDP(-4)	-0.026	0.076	-0.347	0.73
REVAL1	-0.067	1.039	-0.064	0.95
REVAL1(-1)	0.986	0.702	1.405	0.16
REVAL1(-2)	-0.506	0.618	-0.818	0.41
REVAL1(-3)	-1.970	0.460	-4.285	0.00
REVAL1(-4)	-0.358	0.572	-0.626	0.53
<u>EQ SAVGDP</u>	<i>Dep. Var:</i>	SAVGDP		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.056	1.797	2.814	0.00
SAVGDP(-1)	0.712	0.184	3.870	0.00
SAVGDP(-2)	0.066	0.120	0.546	0.59
SAVGDP(-3)	0.033	0.088	0.370	0.71
SAVGDP(-4)	-0.010	0.061	-0.165	0.87
REVAL1	-1.513	1.314	-1.151	0.25
REVAL1(-1)	-0.736	1.112	-0.661	0.51
REVAL1(-2)	0.430	1.123	0.383	0.70
REVAL1(-3)	0.571	1.016	0.562	0.57
REVAL1(-4)	-0.163	0.988	-0.165	0.87

APPENDIX C. Data Sources

1. Real GDP per capita in constant prices

Angus Maddison, *The World Economy: Historical Statistics*, OECD, Paris 2003. The data can be found online at <http://www.ggdc.net/maddison/>

2. Current account balance (% of GDP)

Data are from the World Bank, World Development Indicators 2006, Washington DC. Taiwanese data were obtained from the *Key Indicators of Developing Asian and Pacific Countries*, published by the Asian Development Bank.

3. Gross national savings (% of GDP)

Calculated as current price gross national savings as a proportion of current price GDP. Data are from International Monetary Fund (2009), World Economic Outlook Database, Washington DC. For Taiwan, see above

4. Investment (% of GDP)

Calculated as current price investment as a proportion of current price GDP. Data are from the International Monetary Fund, World Economic Outlook Database (2009), Washington DC. Data are based on individual countries' national accounts statistics. For Taiwan, see above

5. Nominal Effective Exchange Rate (NEER)

Data are from the International Monetary Fund, International Financial Statistics (2009), Washington DC. We also used Bank for International Settlements estimates to extend the sample from 1963, when data are available.

6. Real Effective Exchange Rate (REER)

Real effective exchange rates are based on relative consumer prices. Data are from the International Monetary Fund, International Financial Statistics (2009), Washington DC. We also used Bank for International Settlements estimates to extend the sample from 1963, when data are available.

7. Exchange rate regime

We used the Reinhart-Rogoff (RR) classification of exchange rate regimes, updated by Ilzetzki, Reinhart and Rogoff (2008). We used the fine RR classification, ranging de facto exchange rate

regimes from 1 to 15. For an index from 1 to 8, we classified the exchange rate regime as pegged, and from 9 to 15, we classified it as floating. For each case, we then described in greater details the appreciations, to identify episodes corresponding to our definition. We also included a small number of episodes in the broad sample when countries' managed their exchange rates tightly in a narrow band corresponding to classification 9-11 on the RR scale.

The classification codes are the following:

- 1 No separate legal tender
- 2 Pre announced peg or currency board arrangement
- 3 Pre announced horizontal band that is narrower than or equal to +/-2%
- 4 De facto peg
- 5 Pre announced crawling peg
- 6 Pre announced crawling band that is narrower than or equal to +/-2%
- 7 De facto crawling peg
- 8 De facto crawling band that is narrower than or equal to +/-2%
- 9 Pre announced crawling band that is wider than or equal to +/-2%
- 10 De facto crawling band that is narrower than or equal to +/-5%
- 11 Moving band that is narrower than or equal to +/-2%
- 12 Managed floating
- 13 Freely floating
- 14 Freely falling
- 15 Dual market in which parallel market data is missing.

Source: Ilzetzi, Ethan O., Reinhart, Carmen, and Kenneth S. Rogoff (2008) "Exchange Rate Arrangements Entering the 21st Century: Which Anchor Will Hold?" available at: <http://terpconnect.umd.edu/~creinhar/Papers.html>

8. Real exports and imports

Data are from the World Bank, World Development Indicators 2006, Washington DC. Taiwanese data were obtained from the *Key Indicators of Developing Asian and Pacific Countries*, published by the Asian Development Bank.

REFERENCES

- AIZENMAN, J. and J. LEE (2008), "The Real Exchange Rate, Mercantilism and the Learning by Doing Externality", *NBER Working Papers* 13853, National Bureau of Economic Research, Inc., Cambridge, MA.
- AHMED, S. (2009), "Are Chinese Exports Sensitive to Changes in the Exchange Rate?", *International Finance Discussion Paper* No. 987 (December).
- BERG, A. and Y. MIAO (2010), "The Real Exchange Rate and Growth Revisited: The Washington Consensus Strikes Back?", *IMF Working Paper* WP/10/58, International Monetary Fund, Washington DC, March.
- BINI SMAGHI, L. (2008), "The financial crisis and global imbalances – two sides of the same coin", Speech by Mr Lorenzo Bini Smaghi, Member of the Executive Board of the European Central Bank, at the Asia Europe Economic Forum conference "The Global Financial Crisis: Policy choices in Asia and Europe", Beijing, 9 December 2008.
- BLANCHARD, O. and G.M. MILESI-FERRETTI (2009), "Global Imbalances: In Midstream?", IMF Staff Position Note, December 22, SPN/09/29, International Monetary Fund, Washington DC.
- BUSSIÈRE, M., S. C. SAXENA and C. TOVAR (2010), "Chronicle of currency collapses: re-examining the effects on output", BIS Working Papers 314, Bank for International Settlements.
- CABALLERO, R. J. and A. KRISHNAMURTHY (2009), "Global Imbalances and Financial Fragility", *American Economic Review*, American Economic Association, vol. 99(2), pages 584-88.
- CALVO, G. A., and C. M. REINHART (2002), "Fear of Floating", *Quarterly Journal of Economics*, 117, 2002, pp. 379-408.
- CAMPA, J. M. and L. S. GOLDBERG (1995), "Investment in manufacturing, exchange rates and external exposure", *Journal of International Economics*, Elsevier, vol. 38(3-4), pages 297-320.
- CAMPA, J. M. and L. S. GOLDBERG (1999), "Investment, Pass-Through, and Exchange Rates: A Cross-Country Comparison", *International Economic Review*, Department of Economics, University of Pennsylvania and Osaka University Institute of Social and Economic Research Association, vol. 40(2), pages 287-314. Available at: <http://www.nber.org/papers/w5139.pdf>
- CERRA, V. and S. C. SAXENA (2008), "Growth Dynamics: The Myth of Economic Recovery", *American Economic Review*, American Economic Association, vol. 98(1), pages 439-57.
- CHEUNG Y.W., M. D. CHINN and E. FUJII (2010), "China's Current and Account and Exchange Rate", in *China's Growing Role in World Trade*, co-edited by Robert Feenstra and Shang-Jin Wei, pages 231-271, National Bureau of Economic Research, Inc.
- CHINN, M. D. (2004), "Incomes, Exchange Rates and the U.S. Trade Deficit, Once Again", *International Finance* 7 (3): 451-69.
- CHINN, M. D. and J. LEE (2009), "Three Current Account Balances: A 'Semi-Structuralist' Interpretation", *Japan and the World Economy* 21 (2):202-12.

- CHINN, M. D. and S. J. WEI (2008), "A faith-based Initiative: Does a Flexible Exchange Rate Regime Really Facilitate Current Account Adjustment?", *NBER Working Paper* 14420, National Bureau of Economic Research, Inc., Cambridge, MA.
- CLINE, W. R. (2010), "Renminbi Undervaluation, China's Surplus, and the US Trade Deficit", *Policy Brief* 10-20, Peterson Institute, Washington DC.
- CLINE, W. R. and J. WILLIAMSON (2007), "Estimates of the Equilibrium Exchange Rate of the Renminbi: Is There a Consensus and, If Not, Why Not?", Paper presented at the Conference on China's Exchange Rate Policy (October 12, 2007), Peterson Institute, Washington DC.
- CORDEN, W. M. and J. P. NEARY (1982), "Booming Sector and De-industrialisation in a Small Open Economy", *The Economic Journal*, Vol. 92: 825-848.
- DEVEREUX, M. B., and C. ENGEL (2003), "Monetary Policy in the Open Economy Revisited: Price Setting and Exchange-Rate Flexibility", *Review of Economic Studies* 70 (4): 765-83.
- DEVEREUX, M. B., and H. GENBERG (2007), "Currency Appreciation and Current Account Adjustment", *Journal of International Money and Finance* 26 (4): 570-86.
- DOOLEY, M. P., D. FOLKERTS-LANDAU and P. GARBER (2003), "An Essay on the Revived Bretton-Woods System", *NBER Working Paper* No. 9971, September. , National Bureau of Economic Research, Inc., Cambridge, MA.
- DOOLEY, M. P., D. FOLKERTS-LANDAU and P. GARBER (2009), "Bretton Woods II Still Defines The International Monetary System", *Pacific Economic Review*, Blackwell Publishing, vol. 14(3), pages 297-311, 08.
- EDWARD, S. (1986), "Are Devaluations Contractionary?", *The Review of Economics and Statistics*, MIT Press, vol. 68(3), pages 501-08.
- EICHENGREEN, B. (2008), "The Real Exchange Rate and Economic Growth", *Commission on Growth and Development Working Paper* No.4.
- EICHENGREEN, B. and M. HATASE (2007), "Can a Rapidly-Growing Export-Oriented Economy Smoothly Exit a Peg? Lessons for China from Japan's High Growth Era", *Explorations in Economic History* 44 (3), pp. 501-521.
- EICHENGREEN, B. and A.K. ROSE (2010), "How will the new exchange rate regime affect the Chinese economy", *VoxEu.org*, June 21.
- ENGEL, C. (2009), "Exchange rate policies", *Staff Papers*, *Federal Reserve Bank of Dallas*, issue Nov. Published as: "Exchange rate policies", *BIS Papers* chapters, in: Bank for International Settlements (ed.), *The international financial crisis and policy challenges in Asia and the Pacific*, volume 52, pages 229-250 Bank for International Settlements.
- FELDSTEIN, M. (2008), "Resolving the Global Imbalances: The Dollar and the US Savings Rate", *Journal of Economic Perspectives*, 22/3, 113-125.
- FERGUSON, N. and M. SCHULARICK (2011), "The End of Chimerica", *International Finance*, Vol. 14(1).
- GALA, P. (2008), "Real Exchange Rate Levels and Economic Development", *Cambridge Journal of Economics*, 2008 32(2): 273-288.
- GARROWAY, C., B. HACIBEDEL, H. REISEN and E. TURKISCH (2010), "The Renminbi and Poor Country Growth", *OECD Development Centre Working Paper*, No.292, forthcoming, *The World Economy* 2011.
- GOLDBERG, P. K. and M. M. KNETTER (1997), "Goods Prices and Exchange Rates: What Have We Learned?", *Journal of Economic Literature*, American Economic Association, vol. 35(3), pages 1243-1272.
- GOLDFAJN, I. and R. VALDÉS (1999), "The Aftermath of Appreciations", *Quarterly Journal of Economics*.

- GOLDSTEIN, M. (2006), "Renminbi Controversies", *Cato Journal*, Vol. 26, No.2, 251-265.
- GUPTA, P., D. MISHRA and R. SAHAY (2007), "Behavior of output during currency crises", *Journal of International Economics*, Vol. 72, pp. 428-450.
- HONG, K. and A. TORNELL (2005), "Recovery from a currency crisis: some stylized facts", *Journal of Development Economics*, Vol. 76, pp. 71-96.
- HOOPER, P., K. JOHNSON, and J. MARQUEZ (2000), "Trade Elasticities for G-7 Countries", *Princeton Studies in International Economics*, no. 87 (Princeton, N.J.: International Economics Section, Department of Economics, Princeton University, August).
- KORINEK, A. and L. SERVEN (2010), "Undervaluation through foreign reserve accumulation: static losses, dynamic gains", Policy Research Working Paper Series 5250, The World Bank.
- KRUGMAN, P. R. and L. TAYLOR (1978), "Contractionary effects of devaluation", *Journal of International Economics*, Elsevier, vol. 8(3), pages 445-456.
- KWACK, S. Y., C. Y. AHN, Y. S. LEE and D. Y. YANG (2007), "Consistent Estimates of World Trade Elasticities and an Application to the Effects of Chinese Yuan (RMB) Appreciation", *Journal of Asian Economics* 18: 314-330.
- LEVY-YEYATI, E. and F. STURZENEGGER (2007), "Fear of Appreciation", *World Bank Policy Research Working Paper* 4387, The World Bank.
- MARQUEZ, J. and J. W. SCHINDLER (2007), "Exchange-Rate Effects on China's Trade", *Review of International Economics* 15(5), 837-853.
- MCKINNON, R. (2007), "Why China Should Keep Its Exchange Rate Pegged to the Dollar: A Historical Perspective from Japan", *International Finance*, Finance, 10(1), 43-70.
- MONTIEL, P. J. (2000), "What Drives Consumption Booms?", *The World Bank Economic Review*, Vol. 14, No. 3: 457-80.
- MONTIEL, P. J. and L. SERVÉN (2009), "Real Exchange Rates, Saving, and Growth: Is There a Link?", *Commission on growth and development*, Working Paper No.46.
- NUCCI, F. and A. F. POZZOLO (2001), "Investment and the Exchange Rate: an Analysis with Firm-Level Panel Data", *European Economic Review*, Volume 45, 259-283.
- OBSTFELD, M. (2002), "Exchange Rates and Adjustment: Perspectives from the New Open- Economy Macroeconomics", *Monetary and Economic Studies*, Institute for Monetary and Economic Studies, Bank of Japan, vol. 20(S1), pages 23-46.
- OBSTFELD, M. and K. S. ROGOFF (2004), "The Unsustainable US Current Account Position Revisited", *NBER Working Paper* 10869, November, National Bureau of Economic Research, Inc., Cambridge, MA.
- OBSTFELD, M. and K. S. ROGOFF (2005), "Global Current Account Imbalances and Exchange Rate Adjustments", *Brookings Papers on Economic Activity* 1, pp. 67-146.
- OBSTFELD, M. and K. S. ROGOFF (2009), "Global Imbalances and the Financial Crisis: Products of Common Causes", CEPR Discussion Papers 7606, C.E.P.R. Discussion Papers.
- QIAO, H. H. (2007), "Exchange Rates and Trade Balances Under the Dollar Standard", *Journal of Policy Modeling*, 29, pp. 765-82.
- REINHART, C. and K. S. ROGOFF (2004), "The Modern History of Exchange Rate Arrangements: A Reinterpretation", *Quarterly Journal of Economics*, 119(1):1-48.
- RODRIK, D. (2008), "The Real Exchange Rate and Economic Growth", John F. Kennedy School of Government Working Paper, October, Harvard University, Cambridge, MA.

- ROMER, D. and C. D. ROMER (2010), "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks", *American Economic Review*, June.
- ROSE, A. K. and J. YELLEN (1989), "Is There a J-curve?", *Journal of Monetary Economics* 24 (1): 53–68.
- SHI, J. (2006), "Are Currency Appreciations Contractionary in China?", *NBER Working Papers* 12551, National Bureau of Economic Research, Inc., Cambridge, MA.
- SUBRAMANIAN, A. (2010), "New PPP-Based Estimates of Renminbi Undervaluation and Policy Implications", Peterson Institute for International Economics, Policy Brief, PB10-08.
- THORBECKE, W. and G. SMITH (2010), "How Would an Appreciation of the Renminbi and Other East Asian Currencies Affect China's Exports?", *Review of International Economics*, Blackwell Publishing, vol. 18(1), pages 95-108, 02.
- WOLF, M. (2009), *Fixing Global Finance*, New Haven, Yale University Press.

OTHER TITLES IN THE SERIES/ AUTRES TITRES DANS LA SÉRIE

The former series known as “Technical Papers” and “Webdocs” merged in November 2003 into “Development Centre Working Papers”. In the new series, former Webdocs 1-17 follow former Technical Papers 1-212 as Working Papers 213-229.

All these documents may be downloaded from:

<http://www.oecd.org/dev/wp> or obtained via e-mail (dev.contact@oecd.org).

Working Paper No.1, *Macroeconomic Adjustment and Income Distribution: A Macro-Micro Simulation Model*, by François Bourguignon, William H. Branson and Jaime de Melo, March 1989.

Working Paper No. 2, *International Interactions in Food and Agricultural Policies: The Effect of Alternative Policies*, by Joachim Zietz and Alberto Valdés, April, 1989.

Working Paper No. 3, *The Impact of Budget Retrenchment on Income Distribution in Indonesia: A Social Accounting Matrix Application*, by Steven Keuning and Erik Thorbecke, June 1989.

Working Paper No. 3a, *Statistical Annex: The Impact of Budget Retrenchment*, June 1989.

Document de travail No. 4, *Le Rééquilibrage entre le secteur public et le secteur privé : le cas du Mexique*, par C.-A. Michalet, juin 1989.

Working Paper No. 5, *Rebalancing the Public and Private Sectors: The Case of Malaysia*, by R. Leeds, July 1989.

Working Paper No. 6, *Efficiency, Welfare Effects and Political Feasibility of Alternative Antipoverty and Adjustment Programs*, by Alain de Janvry and Elisabeth Sadoulet, December 1989.

Document de travail No. 7, *Ajustement et distribution des revenus : application d'un modèle macro-micro au Maroc*, par Christian Morrisson, avec la collaboration de Sylvie Lambert et Akiko Suwa, décembre 1989.

Working Paper No. 8, *Emerging Maize Biotechnologies and their Potential Impact*, by W. Burt Sundquist, December 1989.

Document de travail No. 9, *Analyse des variables socio-culturelles et de l'ajustement en Côte d'Ivoire*, par W. Weekes-Vagliani, janvier 1990.

Working Paper No. 10, *A Financial CompuTable General Equilibrium Model for the Analysis of Ecuador's Stabilization Programs*, by André Fargeix and Elisabeth Sadoulet, February 1990.

Working Paper No. 11, *Macroeconomic Aspects, Foreign Flows and Domestic Savings Performance in Developing Countries: A "State of The Art" Report*, by Anand Chandavarkar, February 1990.

Working Paper No. 12, *Tax Revenue Implications of the Real Exchange Rate: Econometric Evidence from Korea and Mexico*, by Virginia Fierro and Helmut Reisen, February 1990.

Working Paper No. 13, *Agricultural Growth and Economic Development: The Case of Pakistan*, by Naved Hamid and Wouter Tims, April 1990.

Working Paper No. 14, *Rebalancing the Public and Private Sectors in Developing Countries: The Case of Ghana*, by H. Akuoko-Frimpong, June 1990.

Working Paper No. 15, *Agriculture and the Economic Cycle: An Economic and Econometric Analysis with Special Reference to Brazil*, by Florence Contré and Ian Goldin, June 1990.

Working Paper No. 16, *Comparative Advantage: Theory and Application to Developing Country Agriculture*, by Ian Goldin, June 1990.

Working Paper No. 17, *Biotechnology and Developing Country Agriculture: Maize in Brazil*, by Bernardo Sorj and John Wilkinson, June 1990.

Working Paper No. 18, *Economic Policies and Sectoral Growth: Argentina 1913-1984*, by Yair Mundlak, Domingo Cavallo, Roberto Domenech, June 1990.

Working Paper No. 19, *Biotechnology and Developing Country Agriculture: Maize In Mexico*, by Jaime A. Matus Gardea, Arturo Puente Gonzalez and Cristina Lopez Peralta, June 1990.

Working Paper No. 20, *Biotechnology and Developing Country Agriculture: Maize in Thailand*, by Suthad Setboonsarng, July 1990.

- Working Paper No. 21, *International Comparisons of Efficiency in Agricultural Production*, by Guillermo Flichmann, July 1990.
- Working Paper No. 22, *Unemployment in Developing Countries: New Light on an Old Problem*, by David Turnham and Denizhan Eröcal, July 1990.
- Working Paper No. 23, *Optimal Currency Composition of Foreign Debt: the Case of Five Developing Countries*, by Pier Giorgio Gawronski, August 1990.
- Working Paper No. 24, *From Globalization to Regionalization: the Mexican Case*, by Wilson Peres Núñez, August 1990.
- Working Paper No. 25, *Electronics and Development in Venezuela: A User-Oriented Strategy and its Policy Implications*, by Carlota Perez, October 1990.
- Working Paper No. 26, *The Legal Protection of Software: Implications for Latecomer Strategies in Newly Industrialising Economies (NIEs) and Middle-Income Economies (MIEs)*, by Carlos Maria Correa, October 1990.
- Working Paper No. 27, *Specialization, Technical Change and Competitiveness in the Brazilian Electronics Industry*, by Claudio R. Frischtak, October 1990.
- Working Paper No. 28, *Internationalization Strategies of Japanese Electronics Companies: Implications for Asian Newly Industrializing Economies (NIEs)*, by Bundo Yamada, October 1990.
- Working Paper No. 29, *The Status and an Evaluation of the Electronics Industry in Taiwan*, by Gee San, October 1990.
- Working Paper No. 30, *The Indian Electronics Industry: Current Status, Perspectives and Policy Options*, by Ghayur Alam, October 1990.
- Working Paper No. 31, *Comparative Advantage in Agriculture in Ghana*, by James Pickett and E. Shaeeldin, October 1990.
- Working Paper No. 32, *Debt Overhang, Liquidity Constraints and Adjustment Incentives*, by Bert Hofman and Helmut Reisen, October 1990.
- Working Paper No. 34, *Biotechnology and Developing Country Agriculture: Maize in Indonesia*, by Hidjat Nataatmadja *et al.*, January 1991.
- Working Paper No. 35, *Changing Comparative Advantage in Thai Agriculture*, by Ammar Siamwalla, Suthad Setboonsarmg and Prasong Werakarnjanapongs, March 1991.
- Working Paper No. 36, *Capital Flows and the External Financing of Turkey's Imports*, by Ziya Önis and Süleyman Özmucur, July 1991.
- Working Paper No. 37, *The External Financing of Indonesia's Imports*, by Glenn P. Jenkins and Henry B.F. Lim, July 1991.
- Working Paper No. 38, *Long-term Capital Reflow under Macroeconomic Stabilization in Latin America*, by Beatriz Armendariz de Aghion, July 1991.
- Working Paper No. 39, *Buybacks of LDC Debt and the Scope for Forgiveness*, by Beatriz Armendariz de Aghion, July 1991.
- Working Paper No. 40, *Measuring and Modelling Non-Tariff Distortions with Special Reference to Trade in Agricultural Commodities*, by Peter J. Lloyd, July 1991.
- Working Paper No. 41, *The Changing Nature of IMF Conditionality*, by Jacques J. Polak, August 1991.
- Working Paper No. 42, *Time-Varying Estimates on the Openness of the Capital Account in Korea and Taiwan*, by Helmut Reisen and Hélène Yèches, August 1991.
- Working Paper No. 43, *Toward a Concept of Development Agreements*, by F. Gerard Adams, August 1991.
- Document de travail No. 44, *Le Partage du fardeau entre les créanciers de pays débiteurs défaillants*, par Jean-Claude Berthélemy et Ann Vourc'h, septembre 1991.
- Working Paper No. 45, *The External Financing of Thailand's Imports*, by Supote Chunanunthathum, October 1991.
- Working Paper No. 46, *The External Financing of Brazilian Imports*, by Enrico Colombatto, with Elisa Luciano, Luca Gargiulo, Pietro Garibaldi and Giuseppe Russo, October 1991.
- Working Paper No. 47, *Scenarios for the World Trading System and their Implications for Developing Countries*, by Robert Z. Lawrence, November 1991.
- Working Paper No. 48, *Trade Policies in a Global Context: Technical Specifications of the Rural/Urban-North/South (RUNS) Applied General Equilibrium Model*, by Jean-Marc Burniaux and Dominique van der Mensbrugghe, November 1991.
- Working Paper No. 49, *Macro-Micro Linkages: Structural Adjustment and Fertilizer Policy in Sub-Saharan Africa*, by Jean-Marc Fontaine with the collaboration of Alice Sindzingre, December 1991.
- Working Paper No. 50, *Aggregation by Industry in General Equilibrium Models with International Trade*, by Peter J. Lloyd, December 1991.
- Working Paper No. 51, *Policy and Entrepreneurial Responses to the Montreal Protocol: Some Evidence from the Dynamic Asian Economies*, by David C. O'Connor, December 1991.
- Working Paper No. 52, *On the Pricing of LDC Debt: an Analysis Based on Historical Evidence from Latin America*, by Beatriz Armendariz de Aghion, February 1992.
- Working Paper No. 53, *Economic Regionalisation and Intra-Industry Trade: Pacific-Asian Perspectives*, by Kiichiro Fukasaku, February 1992.
- Working Paper No. 54, *Debt Conversions in Yugoslavia*, by Mojmir Mrak, February 1992.
- Working Paper No. 55, *Evaluation of Nigeria's Debt-Relief Experience (1985-1990)*, by N.E. Ogbe, March 1992.
- Document de travail No. 56, *L'Expérience de l'allègement de la dette du Mali*, par Jean-Claude Berthélemy, février 1992.
- Working Paper No. 57, *Conflict or Indifference: US Multinationals in a World of Regional Trading Blocs*, by Louis T. Wells, Jr., March 1992.
- Working Paper No. 58, *Japan's Rapidly Emerging Strategy Toward Asia*, by Edward J. Lincoln, April 1992.
- Working Paper No. 59, *The Political Economy of Stabilization Programmes in Developing Countries*, by Bruno S. Frey and Reiner Eichenberger, April 1992.

- Working Paper No. 60, *Some Implications of Europe 1992 for Developing Countries*, by Sheila Page, April 1992.
- Working Paper No. 61, *Taiwanese Corporations in Globalisation and Regionalisation*, by Gee San, April 1992.
- Working Paper No. 62, *Lessons from the Family Planning Experience for Community-Based Environmental Education*, by Winifred Weekes-Vagliani, April 1992.
- Working Paper No. 63, *Mexican Agriculture in the Free Trade Agreement: Transition Problems in Economic Reform*, by Santiago Levy and Sweder van Wijnbergen, May 1992.
- Working Paper No. 64, *Offensive and Defensive Responses by European Multinationals to a World of Trade Blocs*, by John M. Stopford, May 1992.
- Working Paper No. 65, *Economic Integration in the Pacific Region*, by Richard Drobnick, May 1992.
- Working Paper No. 66, *Latin America in a Changing Global Environment*, by Winston Fritsch, May 1992.
- Working Paper No. 67, *An Assessment of the Brady Plan Agreements*, by Jean-Claude Berthélemy and Robert Lensink, May 1992.
- Working Paper No. 68, *The Impact of Economic Reform on the Performance of the Seed Sector in Eastern and Southern Africa*, by Elizabeth Cromwell, June 1992.
- Working Paper No. 69, *Impact of Structural Adjustment and Adoption of Technology on Competitiveness of Major Cocoa Producing Countries*, by Emily M. Bloomfield and R. Antony Lass, June 1992.
- Working Paper No. 70, *Structural Adjustment and Moroccan Agriculture: an Assessment of the Reforms in the Sugar and Cereal Sectors*, by Jonathan Kydd and Sophie Thoyer, June 1992.
- Document de travail No. 71, *L'Allègement de la dette au Club de Paris : les évolutions récentes en perspective*, par Ann Vourc'h, juin 1992.
- Working Paper No. 72, *Biotechnology and the Changing Public/Private Sector Balance: Developments in Rice and Cocoa*, by Carliene Brenner, July 1992.
- Working Paper No. 73, *Namibian Agriculture: Policies and Prospects*, by Walter Elkan, Peter Amutenya, Jochbeth Andima, Robin Sherbourne and Eline van der Linden, July 1992.
- Working Paper No. 74, *Agriculture and the Policy Environment: Zambia and Zimbabwe*, by Doris J. Jansen and Andrew Rukovo, July 1992.
- Working Paper No. 75, *Agricultural Productivity and Economic Policies: Concepts and Measurements*, by Yair Mundlak, August 1992.
- Working Paper No. 76, *Structural Adjustment and the Institutional Dimensions of Agricultural Research and Development in Brazil: Soybeans, Wheat and Sugar Cane*, by John Wilkinson and Bernardo Sorj, August 1992.
- Working Paper No. 77, *The Impact of Laws and Regulations on Micro and Small Enterprises in Niger and Swaziland*, by Isabelle Joumard, Carl Liedholm and Donald Mead, September 1992.
- Working Paper No. 78, *Co-Financing Transactions between Multilateral Institutions and International Banks*, by Michel Bouchet and Amit Ghose, October 1992.
- Document de travail No. 79, *Allègement de la dette et croissance : le cas mexicain*, par Jean-Claude Berthélemy et Ann Vourc'h, octobre 1992.
- Document de travail No. 80, *Le Secteur informel en Tunisie : cadre réglementaire et pratique courante*, par Abderrahman Ben Zakour et Farouk Kria, novembre 1992.
- Working Paper No. 81, *Small-Scale Industries and Institutional Framework in Thailand*, by Naruemol Bunjongjit and Xavier Oudin, November 1992.
- Working Paper No. 81a, *Statistical Annex: Small-Scale Industries and Institutional Framework in Thailand*, by Naruemol Bunjongjit and Xavier Oudin, November 1992.
- Document de travail No. 82, *L'Expérience de l'allègement de la dette du Niger*, par Ann Vourc'h et Maina Boukar Moussa, novembre 1992.
- Working Paper No. 83, *Stabilization and Structural Adjustment in Indonesia: an Intertemporal General Equilibrium Analysis*, by David Roland-Holst, November 1992.
- Working Paper No. 84, *Striving for International Competitiveness: Lessons from Electronics for Developing Countries*, by Jan Maarten de Vet, March 1993.
- Document de travail No. 85, *Micro-entreprises et cadre institutionnel en Algérie*, par Hocine Benissad, mars 1993.
- Working Paper No. 86, *Informal Sector and Regulations in Ecuador and Jamaica*, by Emilio Klein and Victor E. Tokman, August 1993.
- Working Paper No. 87, *Alternative Explanations of the Trade-Output Correlation in the East Asian Economies*, by Colin I. Bradford Jr. and Naomi Chakwin, August 1993.
- Document de travail No. 88, *La Faisabilité politique de l'ajustement dans les pays africains*, par Christian Morrisson, Jean-Dominique Lafay et Sébastien Dessus, novembre 1993.
- Working Paper No. 89, *China as a Leading Pacific Economy*, by Kiichiro Fukasaku and Mingyuan Wu, November 1993.
- Working Paper No. 90, *A Detailed Input-Output Table for Morocco, 1990*, by Maurizio Bussolo and David Roland-Holst, November 1993.
- Working Paper No. 91, *International Trade and the Transfer of Environmental Costs and Benefits*, by Hiro Lee and David Roland-Holst, December 1993.
- Working Paper No. 92, *Economic Instruments in Environmental Policy: Lessons from the OECD Experience and their Relevance to Developing Economies*, by Jean-Philippe Barde, January 1994.
- Working Paper No. 93, *What Can Developing Countries Learn from OECD Labour Market Programmes and Policies?*, by Åsa Sohlman with David Turnham, January 1994.

- Working Paper No. 94, *Trade Liberalization and Employment Linkages in the Pacific Basin*, by Hiro Lee and David Roland-Holst, February 1994.
- Working Paper No. 95, *Participatory Development and Gender: Articulating Concepts and Cases*, by Winifred Weekes-Vagliani, February 1994.
- Document de travail No. 96, *Promouvoir la maîtrise locale et régionale du développement : une démarche participative à Madagascar*, par Philippe de Rham et Bernard Lecomte, juin 1994.
- Working Paper No. 97, *The OECD Green Model: an Updated Overview*, by Hiro Lee, Joaquim Oliveira-Martins and Dominique van der Mensbrugghe, August 1994.
- Working Paper No. 98, *Pension Funds, Capital Controls and Macroeconomic Stability*, by Helmut Reisen and John Williamson, August 1994.
- Working Paper No. 99, *Trade and Pollution Linkages: Piecemeal Reform and Optimal Intervention*, by John Beghin, David Roland-Holst and Dominique van der Mensbrugghe, October 1994.
- Working Paper No. 100, *International Initiatives in Biotechnology for Developing Country Agriculture: Promises and Problems*, by Carliene Brenner and John Komen, October 1994.
- Working Paper No. 101, *Input-based Pollution Estimates for Environmental Assessment in Developing Countries*, by Sébastien Dessus, David Roland-Holst and Dominique van der Mensbrugghe, October 1994.
- Working Paper No. 102, *Transitional Problems from Reform to Growth: Safety Nets and Financial Efficiency in the Adjusting Egyptian Economy*, by Mahmoud Abdel-Fadil, December 1994.
- Working Paper No. 103, *Biotechnology and Sustainable Agriculture: Lessons from India*, by Ghayur Alam, December 1994.
- Working Paper No. 104, *Crop Biotechnology and Sustainability: a Case Study of Colombia*, by Luis R. Sanint, January 1995.
- Working Paper No. 105, *Biotechnology and Sustainable Agriculture: the Case of Mexico*, by José Luis Solleiro Rebolledo, January 1995.
- Working Paper No. 106, *Empirical Specifications for a General Equilibrium Analysis of Labour Market Policies and Adjustments*, by Andréa Maechler and David Roland-Holst, May 1995.
- Document de travail No. 107, *Les Migrants, partenaires de la coopération internationale : le cas des Maliens de France*, par Christophe Daum, juillet 1995.
- Document de travail No. 108, *Ouverture et croissance industrielle en Chine : étude empirique sur un échantillon de villes*, par Sylvie Démurger, septembre 1995.
- Working Paper No. 109, *Biotechnology and Sustainable Crop Production in Zimbabwe*, by John J. Woodend, December 1995.
- Document de travail No. 110, *Politiques de l'environnement et libéralisation des échanges au Costa Rica : une vue d'ensemble*, par Sébastien Dessus et Maurizio Bussolo, février 1996.
- Working Paper No. 111, *Grow Now/Clean Later, or the Pursuit of Sustainable Development?*, by David O'Connor, March 1996.
- Working Paper No. 112, *Economic Transition and Trade-Policy Reform: Lessons from China*, by Kiichiro Fukasaku and Henri-Bernard Solignac Lecomte, July 1996.
- Working Paper No. 113, *Chinese Outward Investment in Hong Kong: Trends, Prospects and Policy Implications*, by Yun-Wing Sung, July 1996.
- Working Paper No. 114, *Vertical Intra-industry Trade between China and OECD Countries*, by Lisbeth Hellvin, July 1996.
- Document de travail No. 115, *Le Rôle du capital public dans la croissance des pays en développement au cours des années 80*, par Sébastien Dessus et Rémy Herrera, juillet 1996.
- Working Paper No. 116, *General Equilibrium Modelling of Trade and the Environment*, by John Beghin, Sébastien Dessus, David Roland-Holst and Dominique van der Mensbrugghe, September 1996.
- Working Paper No. 117, *Labour Market Aspects of State Enterprise Reform in Viet Nam*, by David O'Connor, September 1996.
- Document de travail No. 118, *Croissance et compétitivité de l'industrie manufacturière au Sénégal*, par Thierry Latreille et Aristomène Varoudakis, octobre 1996.
- Working Paper No. 119, *Evidence on Trade and Wages in the Developing World*, by Donald J. Robbins, December 1996.
- Working Paper No. 120, *Liberalising Foreign Investments by Pension Funds: Positive and Normative Aspects*, by Helmut Reisen, January 1997.
- Document de travail No. 121, *Capital Humain, ouverture extérieure et croissance : estimation sur données de panel d'un modèle à coefficients variables*, par Jean-Claude Berthélemy, Sébastien Dessus et Aristomène Varoudakis, janvier 1997.
- Working Paper No. 122, *Corruption: The Issues*, by Andrew W. Goudie and David Stasavage, January 1997.
- Working Paper No. 123, *Outflows of Capital from China*, by David Wall, March 1997.
- Working Paper No. 124, *Emerging Market Risk and Sovereign Credit Ratings*, by Guillermo Larraín, Helmut Reisen and Julia von Maltzan, April 1997.
- Working Paper No. 125, *Urban Credit Co-operatives in China*, by Eric Girardin and Xie Ping, August 1997.
- Working Paper No. 126, *Fiscal Alternatives of Moving from Unfunded to Funded Pensions*, by Robert Holzmann, August 1997.
- Working Paper No. 127, *Trade Strategies for the Southern Mediterranean*, by Peter A. Petri, December 1997.
- Working Paper No. 128, *The Case of Missing Foreign Investment in the Southern Mediterranean*, by Peter A. Petri, December 1997.
- Working Paper No. 129, *Economic Reform in Egypt in a Changing Global Economy*, by Joseph Licari, December 1997.

- Working Paper No. 130, *Do Funded Pensions Contribute to Higher Aggregate Savings? A Cross-Country Analysis*, by Jeanine Bailliu and Helmut Reisen, December 1997.
- Working Paper No. 131, *Long-run Growth Trends and Convergence Across Indian States*, by Rayaprolu Nagaraj, Aristomène Varoudakis and Marie-Ange Véganzonès, January 1998.
- Working Paper No. 132, *Sustainable and Excessive Current Account Deficits*, by Helmut Reisen, February 1998.
- Working Paper No. 133, *Intellectual Property Rights and Technology Transfer in Developing Country Agriculture: Rhetoric and Reality*, by Carliene Brenner, March 1998.
- Working Paper No. 134, *Exchange-rate Management and Manufactured Exports in Sub-Saharan Africa*, by Khalid Sekkat and Aristomène Varoudakis, March 1998.
- Working Paper No. 135, *Trade Integration with Europe, Export Diversification and Economic Growth in Egypt*, by Sébastien Dessus and Akiko Suwa-Eisenmann, June 1998.
- Working Paper No. 136, *Domestic Causes of Currency Crises: Policy Lessons for Crisis Avoidance*, by Helmut Reisen, June 1998.
- Working Paper No. 137, *A Simulation Model of Global Pension Investment*, by Landis MacKellar and Helmut Reisen, August 1998.
- Working Paper No. 138, *Determinants of Customs Fraud and Corruption: Evidence from Two African Countries*, by David Stasavage and Cécile Daubrée, August 1998.
- Working Paper No. 139, *State Infrastructure and Productive Performance in Indian Manufacturing*, by Arup Mitra, Aristomène Varoudakis and Marie-Ange Véganzonès, August 1998.
- Working Paper No. 140, *Rural Industrial Development in Viet Nam and China: A Study in Contrasts*, by David O'Connor, September 1998.
- Working Paper No. 141, *Labour Market Aspects of State Enterprise Reform in China*, by Fan Gang, Maria Rosa Lunati and David O'Connor, October 1998.
- Working Paper No. 142, *Fighting Extreme Poverty in Brazil: The Influence of Citizens' Action on Government Policies*, by Fernanda Lopes de Carvalho, November 1998.
- Working Paper No. 143, *How Bad Governance Impedes Poverty Alleviation in Bangladesh*, by Rehman Sobhan, November 1998.
- Document de travail No. 144, *La libéralisation de l'agriculture tunisienne et l'Union européenne: une vue prospective*, par Mohamed Abdelbasset Chemingui et Sébastien Dessus, février 1999.
- Working Paper No. 145, *Economic Policy Reform and Growth Prospects in Emerging African Economies*, by Patrick Guillaumont, Sylviane Guillaumont Jeanneney and Aristomène Varoudakis, March 1999.
- Working Paper No. 146, *Structural Policies for International Competitiveness in Manufacturing: The Case of Cameroon*, by Ludvig Söderling, March 1999.
- Working Paper No. 147, *China's Unfinished Open-Economy Reforms: Liberalisation of Services*, by Kiichiro Fukasaku, Yu Ma and Qiumei Yang, April 1999.
- Working Paper No. 148, *Boom and Bust and Sovereign Ratings*, by Helmut Reisen and Julia von Maltzan, June 1999.
- Working Paper No. 149, *Economic Opening and the Demand for Skills in Developing Countries: A Review of Theory and Evidence*, by David O'Connor and Maria Rosa Lunati, June 1999.
- Working Paper No. 150, *The Role of Capital Accumulation, Adjustment and Structural Change for Economic Take-off: Empirical Evidence from African Growth Episodes*, by Jean-Claude Berthélemy and Ludvig Söderling, July 1999.
- Working Paper No. 151, *Gender, Human Capital and Growth: Evidence from Six Latin American Countries*, by Donald J. Robbins, September 1999.
- Working Paper No. 152, *The Politics and Economics of Transition to an Open Market Economy in Viet Nam*, by James Riedel and William S. Turley, September 1999.
- Working Paper No. 153, *The Economics and Politics of Transition to an Open Market Economy: China*, by Wing Thye Woo, October 1999.
- Working Paper No. 154, *Infrastructure Development and Regulatory Reform in Sub-Saharan Africa: The Case of Air Transport*, by Andrea E. Goldstein, October 1999.
- Working Paper No. 155, *The Economics and Politics of Transition to an Open Market Economy: India*, by Ashok V. Desai, October 1999.
- Working Paper No. 156, *Climate Policy Without Tears: CGE-Based Ancillary Benefits Estimates for Chile*, by Sébastien Dessus and David O'Connor, November 1999.
- Document de travail No. 157, *Dépenses d'éducation, qualité de l'éducation et pauvreté : l'exemple de cinq pays d'Afrique francophone*, par Katharina Michaelowa, avril 2000.
- Document de travail No. 158, *Une estimation de la pauvreté en Afrique subsaharienne d'après les données anthropométriques*, par Christian Morrisson, Hélène Guilmeau et Charles Linskens, mai 2000.
- Working Paper No. 159, *Converging European Transitions*, by Jorge Braga de Macedo, July 2000.
- Working Paper No. 160, *Capital Flows and Growth in Developing Countries: Recent Empirical Evidence*, by Marcelo Soto, July 2000.
- Working Paper No. 161, *Global Capital Flows and the Environment in the 21st Century*, by David O'Connor, July 2000.
- Working Paper No. 162, *Financial Crises and International Architecture: A "Eurocentric" Perspective*, by Jorge Braga de Macedo, August 2000.
- Document de travail No. 163, *Résoudre le problème de la dette : de l'initiative PPTE à Cologne*, par Anne Joseph, août 2000.
- Working Paper No. 164, *E-Commerce for Development: Prospects and Policy Issues*, by Andrea Goldstein and David O'Connor, September 2000.

- Working Paper No. 165, *Negative Alchemy? Corruption and Composition of Capital Flows*, by Shang-Jin Wei, October 2000.
- Working Paper No. 166, *The HIPC Initiative: True and False Promises*, by Daniel Cohen, October 2000.
- Document de travail No. 167, *Les facteurs explicatifs de la malnutrition en Afrique subsaharienne*, par Christian Morrisson et Charles Linskens, octobre 2000.
- Working Paper No. 168, *Human Capital and Growth: A Synthesis Report*, by Christopher A. Pissarides, November 2000.
- Working Paper No. 169, *Obstacles to Expanding Intra-African Trade*, by Roberto Longo and Khalid Sekkat, March 2001.
- Working Paper No. 170, *Regional Integration In West Africa*, by Ernest Aryeetey, March 2001.
- Working Paper No. 171, *Regional Integration Experience in the Eastern African Region*, by Andrea Goldstein and Njuguna S. Ndung'u, March 2001.
- Working Paper No. 172, *Integration and Co-operation in Southern Africa*, by Carolyn Jenkins, March 2001.
- Working Paper No. 173, *FDI in Sub-Saharan Africa*, by Ludger Odenthal, March 2001.
- Document de travail No. 174, *La réforme des télécommunications en Afrique subsaharienne*, par Patrick Plane, mars 2001.
- Working Paper No. 175, *Fighting Corruption in Customs Administration: What Can We Learn from Recent Experiences?*, by Irène Hors; April 2001.
- Working Paper No. 176, *Globalisation and Transformation: Illusions and Reality*, by Grzegorz W. Kolodko, May 2001.
- Working Paper No. 177, *External Solvency, Dollarisation and Investment Grade: Towards a Virtuous Circle?*, by Martin Grandes, June 2001.
- Document de travail No. 178, *Congo 1965-1999: Les espoirs déçus du « Brésil africain »*, par Joseph Maton avec Henri-Bernard Solignac Lecomte, septembre 2001.
- Working Paper No. 179, *Growth and Human Capital: Good Data, Good Results*, by Daniel Cohen and Marcelo Soto, September 2001.
- Working Paper No. 180, *Corporate Governance and National Development*, by Charles P. Oman, October 2001.
- Working Paper No. 181, *How Globalisation Improves Governance*, by Federico Bonaglia, Jorge Braga de Macedo and Maurizio Bussolo, November 2001.
- Working Paper No. 182, *Clearing the Air in India: The Economics of Climate Policy with Ancillary Benefits*, by Maurizio Bussolo and David O'Connor, November 2001.
- Working Paper No. 183, *Globalisation, Poverty and Inequality in sub-Saharan Africa: A Political Economy Appraisal*, by Yvonne M. Tsikata, December 2001.
- Working Paper No. 184, *Distribution and Growth in Latin America in an Era of Structural Reform: The Impact of Globalisation*, by Samuel A. Morley, December 2001.
- Working Paper No. 185, *Globalisation, Liberalisation, Poverty and Income Inequality in Southeast Asia*, by K.S. Jomo, December 2001.
- Working Paper No. 186, *Globalisation, Growth and Income Inequality: The African Experience*, by Steve Kayizzi-Mugerwa, December 2001.
- Working Paper No. 187, *The Social Impact of Globalisation in Southeast Asia*, by Mari Pangestu, December 2001.
- Working Paper No. 188, *Where Does Inequality Come From? Ideas and Implications for Latin America*, by James A. Robinson, December 2001.
- Working Paper No. 189, *Policies and Institutions for E-Commerce Readiness: What Can Developing Countries Learn from OECD Experience?*, by Paulo Bastos Tigre and David O'Connor, April 2002.
- Document de travail No. 190, *La réforme du secteur financier en Afrique*, par Anne Joseph, juillet 2002.
- Working Paper No. 191, *Virtuous Circles? Human Capital Formation, Economic Development and the Multinational Enterprise*, by Ethan B. Kapstein, August 2002.
- Working Paper No. 192, *Skill Upgrading in Developing Countries: Has Inward Foreign Direct Investment Played a Role?*, by Matthew J. Slaughter, August 2002.
- Working Paper No. 193, *Government Policies for Inward Foreign Direct Investment in Developing Countries: Implications for Human Capital Formation and Income Inequality*, by Dirk Willem te Velde, August 2002.
- Working Paper No. 194, *Foreign Direct Investment and Intellectual Capital Formation in Southeast Asia*, by Bryan K. Ritchie, August 2002.
- Working Paper No. 195, *FDI and Human Capital: A Research Agenda*, by Magnus Blomström and Ari Kokko, August 2002.
- Working Paper No. 196, *Knowledge Diffusion from Multinational Enterprises: The Role of Domestic and Foreign Knowledge-Enhancing Activities*, by Yasuyuki Todo and Koji Miyamoto, August 2002.
- Working Paper No. 197, *Why Are Some Countries So Poor? Another Look at the Evidence and a Message of Hope*, by Daniel Cohen and Marcelo Soto, October 2002.
- Working Paper No. 198, *Choice of an Exchange-Rate Arrangement, Institutional Setting and Inflation: Empirical Evidence from Latin America*, by Andreas Freytag, October 2002.
- Working Paper No. 199, *Will Basel II Affect International Capital Flows to Emerging Markets?*, by Beatrice Weder and Michael Wedow, October 2002.
- Working Paper No. 200, *Convergence and Divergence of Sovereign Bond Spreads: Lessons from Latin America*, by Martin Grandes, October 2002.
- Working Paper No. 201, *Prospects for Emerging-Market Flows amid Investor Concerns about Corporate Governance*, by Helmut Reisen, November 2002.
- Working Paper No. 202, *Rediscovering Education in Growth Regressions*, by Marcelo Soto, November 2002.

- Working Paper No. 203, *Incentive Bidding for Mobile Investment: Economic Consequences and Potential Responses*, by Andrew Charlton, January 2003.
- Working Paper No. 204, *Health Insurance for the Poor? Determinants of participation Community-Based Health Insurance Schemes in Rural Senegal*, by Johannes Jütting, January 2003.
- Working Paper No. 205, *China's Software Industry and its Implications for India*, by Ted Tschang, February 2003.
- Working Paper No. 206, *Agricultural and Human Health Impacts of Climate Policy in China: A General Equilibrium Analysis with Special Reference to Guangdong*, by David O'Connor, Fan Zhai, Kristin Aunan, Terje Berntsen and Haakon Vennemo, March 2003.
- Working Paper No. 207, *India's Information Technology Sector: What Contribution to Broader Economic Development?*, by Nirvikar Singh, March 2003.
- Working Paper No. 208, *Public Procurement: Lessons from Kenya, Tanzania and Uganda*, by Walter Odhiambo and Paul Kamau, March 2003.
- Working Paper No. 209, *Export Diversification in Low-Income Countries: An International Challenge after Doha*, by Federico Bonaglia and Kiichiro Fukasaku, June 2003.
- Working Paper No. 210, *Institutions and Development: A Critical Review*, by Johannes Jütting, July 2003.
- Working Paper No. 211, *Human Capital Formation and Foreign Direct Investment in Developing Countries*, by Koji Miyamoto, July 2003.
- Working Paper No. 212, *Central Asia since 1991: The Experience of the New Independent States*, by Richard Pomfret, July 2003.
- Working Paper No. 213, *A Multi-Region Social Accounting Matrix (1995) and Regional Environmental General Equilibrium Model for India (REGEMI)*, by Maurizio Bussolo, Mohamed Chemingui and David O'Connor, November 2003.
- Working Paper No. 214, *Ratings Since the Asian Crisis*, by Helmut Reisen, November 2003.
- Working Paper No. 215, *Development Redux: Reflections for a New Paradigm*, by Jorge Braga de Macedo, November 2003.
- Working Paper No. 216, *The Political Economy of Regulatory Reform: Telecoms in the Southern Mediterranean*, by Andrea Goldstein, November 2003.
- Working Paper No. 217, *The Impact of Education on Fertility and Child Mortality: Do Fathers Really Matter Less than Mothers?*, by Lucia Breierova and Esther Duflo, November 2003.
- Working Paper No. 218, *Float in Order to Fix? Lessons from Emerging Markets for EU Accession Countries*, by Jorge Braga de Macedo and Helmut Reisen, November 2003.
- Working Paper No. 219, *Globalisation in Developing Countries: The Role of Transaction Costs in Explaining Economic Performance in India*, by Maurizio Bussolo and John Whalley, November 2003.
- Working Paper No. 220, *Poverty Reduction Strategies in a Budget-Constrained Economy: The Case of Ghana*, by Maurizio Bussolo and Jeffery I. Round, November 2003.
- Working Paper No. 221, *Public-Private Partnerships in Development: Three Applications in Timor Leste*, by José Braz, November 2003.
- Working Paper No. 222, *Public Opinion Research, Global Education and Development Co-operation Reform: In Search of a Virtuous Circle*, by Ida Mc Donnell, Henri-Bernard Solignac Lecomte and Liam Wegimont, November 2003.
- Working Paper No. 223, *Building Capacity to Trade: What Are the Priorities?*, by Henry-Bernard Solignac Lecomte, November 2003.
- Working Paper No. 224, *Of Flying Geeks and O-Rings: Locating Software and IT Services in India's Economic Development*, by David O'Connor, November 2003.
- Document de travail No. 225, *Cap Vert: Gouvernance et Développement*, par Jaime Lourenço and Colm Foy, novembre 2003.
- Working Paper No. 226, *Globalisation and Poverty Changes in Colombia*, by Maurizio Bussolo and Jann Lay, November 2003.
- Working Paper No. 227, *The Composite Indicator of Economic Activity in Mozambique (ICAE): Filling in the Knowledge Gaps to Enhance Public-Private Partnership (PPP)*, by Roberto J. Tibana, November 2003.
- Working Paper No. 228, *Economic-Reconstruction in Post-Conflict Transitions: Lessons for the Democratic Republic of Congo (DRC)*, by Graciana del Castillo, November 2003.
- Working Paper No. 229, *Providing Low-Cost Information Technology Access to Rural Communities In Developing Countries: What Works? What Pays?* by Georg Caspary and David O'Connor, November 2003.
- Working Paper No. 230, *The Currency Premium and Local-Currency Denominated Debt Costs in South Africa*, by Martin Grandes, Marcel Peter and Nicolas Pinaud, December 2003.
- Working Paper No. 231, *Macroeconomic Convergence in Southern Africa: The Rand Zone Experience*, by Martin Grandes, December 2003.
- Working Paper No. 232, *Financing Global and Regional Public Goods through ODA: Analysis and Evidence from the OECD Creditor Reporting System*, by Helmut Reisen, Marcelo Soto and Thomas Weithöner, January 2004.
- Working Paper No. 233, *Land, Violent Conflict and Development*, by Nicolas Pons-Vignon and Henri-Bernard Solignac Lecomte, February 2004.
- Working Paper No. 234, *The Impact of Social Institutions on the Economic Role of Women in Developing Countries*, by Christian Morrisson and Johannes Jütting, May 2004.
- Document de travail No. 235, *La condition des femmes en Inde, Kenya, Soudan et Tunisie*, par Christian Morrisson, août 2004.
- Working Paper No. 236, *Decentralisation and Poverty in Developing Countries: Exploring the Impact*, by Johannes Jütting, Céline Kauffmann, Ida Mc Donnell, Holger Osterrieder, Nicolas Pinaud and Lucia Wegner, August 2004.
- Working Paper No. 237, *Natural Disasters and Adaptive Capacity*, by Jeff Dayton-Johnson, August 2004.

- Working Paper No. 238, *Public Opinion Polling and the Millennium Development Goals*, by Jude Fransman, Alphonse L. MacDonnald, Ida Mc Donnell and Nicolas Pons-Vignon, October 2004.
- Working Paper No. 239, *Overcoming Barriers to Competitiveness*, by Orsetta Causa and Daniel Cohen, December 2004.
- Working Paper No. 240, *Extending Insurance? Funeral Associations in Ethiopia and Tanzania*, by Stefan Dercon, Tessa Bold, Joachim De Weerd and Alula Pankhurst, December 2004.
- Working Paper No. 241, *Macroeconomic Policies: New Issues of Interdependence*, by Helmut Reisen, Martin Grandes and Nicolas Pinaud, January 2005.
- Working Paper No. 242, *Institutional Change and its Impact on the Poor and Excluded: The Indian Decentralisation Experience*, by D. Narayana, January 2005.
- Working Paper No. 243, *Impact of Changes in Social Institutions on Income Inequality in China*, by Hiroko Uchimura, May 2005.
- Working Paper No. 244, *Priorities in Global Assistance for Health, AIDS and Population (HAP)*, by Landis MacKellar, June 2005.
- Working Paper No. 245, *Trade and Structural Adjustment Policies in Selected Developing Countries*, by Jens Andersson, Federico Bonaglia, Kiichiro Fukasaku and Caroline Lesser, July 2005.
- Working Paper No. 246, *Economic Growth and Poverty Reduction: Measurement and Policy Issues*, by Stephan Klasen, (September 2005).
- Working Paper No. 247, *Measuring Gender (In)Equality: Introducing the Gender, Institutions and Development Data Base (GID)*, by Johannes P. Jütting, Christian Morrisson, Jeff Dayton-Johnson and Denis Drechsler (March 2006).
- Working Paper No. 248, *Institutional Bottlenecks for Agricultural Development: A Stock-Taking Exercise Based on Evidence from Sub-Saharan Africa* by Juan R. de Laiglesia, March 2006.
- Working Paper No. 249, *Migration Policy and its Interactions with Aid, Trade and Foreign Direct Investment Policies: A Background Paper*, by Theodora Xenogiani, June 2006.
- Working Paper No. 250, *Effects of Migration on Sending Countries: What Do We Know?* by Louka T. Katseli, Robert E.B. Lucas and Theodora Xenogiani, June 2006.
- Document de travail No. 251, *L'aide au développement et les autres flux nord-sud : complémentarité ou substitution ?*, par Denis Cogneau et Sylvie Lambert, juin 2006.
- Working Paper No. 252, *Angel or Devil? China's Trade Impact on Latin American Emerging Markets*, by Jorge Blázquez-Lidoy, Javier Rodríguez and Javier Santiso, June 2006.
- Working Paper No. 253, *Policy Coherence for Development: A Background Paper on Foreign Direct Investment*, by Thierry Mayer, July 2006.
- Working Paper No. 254, *The Coherence of Trade Flows and Trade Policies with Aid and Investment Flows*, by Akiko Suwa-Eisenmann and Thierry Verdier, August 2006.
- Document de travail No. 255, *Structures familiales, transferts et épargne : examen*, par Christian Morrisson, août 2006.
- Working Paper No. 256, *Ulysses, the Sirens and the Art of Navigation: Political and Technical Rationality in Latin America*, by Javier Santiso and Laurence Whitehead, September 2006.
- Working Paper No. 257, *Developing Country Multinationals: South-South Investment Comes of Age*, by Dilek Aykut and Andrea Goldstein, November 2006.
- Working Paper No. 258, *The Usual Suspects: A Primer on Investment Banks' Recommendations and Emerging Markets*, by Sebastián Nieto-Parra and Javier Santiso, January 2007.
- Working Paper No. 259, *Banking on Democracy: The Political Economy of International Private Bank Lending in Emerging Markets*, by Javier Rodríguez and Javier Santiso, March 2007.
- Working Paper No. 260, *New Strategies for Emerging Domestic Sovereign Bond Markets*, by Hans Blommestein and Javier Santiso, April 2007.
- Working Paper No. 261, *Privatisation in the MEDA region. Where do we stand?*, by Céline Kauffmann and Lucia Wegner, July 2007.
- Working Paper No. 262, *Strengthening Productive Capacities in Emerging Economies through Internationalisation: Evidence from the Appliance Industry*, by Federico Bonaglia and Andrea Goldstein, July 2007.
- Working Paper No. 263, *Banking on Development: Private Banks and Aid Donors in Developing Countries*, by Javier Rodríguez and Javier Santiso, November 2007.
- Working Paper No. 264, *Fiscal Decentralisation, Chinese Style: Good for Health Outcomes?*, by Hiroko Uchimura and Johannes Jütting, November 2007.
- Working Paper No. 265, *Private Sector Participation and Regulatory Reform in Water supply: the Southern Mediterranean Experience*, by Edouard Pérard, January 2008.
- Working Paper No. 266, *Informal Employment Re-loaded*, by Johannes Jütting, Jante Parlevliet and Theodora Xenogiani, January 2008.
- Working Paper No. 267, *Household Structures and Savings: Evidence from Household Surveys*, by Juan R. de Laiglesia and Christian Morrisson, January 2008.
- Working Paper No. 268, *Prudent versus Imprudent Lending to Africa: From Debt Relief to Emerging Lenders*, by Helmut Reisen and Sokhna Ndoye, February 2008.
- Working Paper No. 269, *Lending to the Poorest Countries: A New Counter-Cyclical Debt Instrument*, by Daniel Cohen, Hélène Djoufelkit-Cottenet, Pierre Jacquet and Cécile Valadier, April 2008.
- Working Paper No.270, *The Macro Management of Commodity Booms: Africa and Latin America's Response to Asian Demand*, by Rolando Avendaño, Helmut Reisen and Javier Santiso, August 2008.

- Working Paper No. 271, *Report on Informal Employment in Romania*, by Jante Parlevliet and Theodora Xenogiani, July 2008.
- Working Paper No. 272, *Wall Street and Elections in Latin American Emerging Democracies*, by Sebastián Nieto-Parra and Javier Santiso, October 2008.
- Working Paper No. 273, *Aid Volatility and Macro Risks in LICs*, by Eduardo Borensztein, Julia Cage, Daniel Cohen and Cécile Valadier, November 2008.
- Working Paper No. 274, *Who Saw Sovereign Debt Crises Coming?*, by Sebastián Nieto-Parra, November 2008.
- Working Paper No. 275, *Development Aid and Portfolio Funds: Trends, Volatility and Fragmentation*, by Emmanuel Frot and Javier Santiso, December 2008.
- Working Paper No. 276, *Extracting the Maximum from EITI*, by Dilan Ölcer, February 2009.
- Working Paper No. 277, *Taking Stock of the Credit Crunch: Implications for Development Finance and Global Governance*, by Andrew Mold, Sebastian Paulo and Annalisa Prizzon, March 2009.
- Working Paper No. 278, *Are All Migrants Really Worse Off in Urban Labour Markets? New Empirical Evidence from China*, by Jason Gagnon, Theodora Xenogiani and Chunbing Xing, June 2009.
- Working Paper No. 279, *Herding in Aid Allocation*, by Emmanuel Frot and Javier Santiso, June 2009.
- Working Paper No. 280, *Coherence of Development Policies: Ecuador's Economic Ties with Spain and their Development Impact*, by Iliana Olivie, July 2009.
- Working Paper No. 281, *Revisiting Political Budget Cycles in Latin America*, by Sebastián Nieto-Parra and Javier Santiso, August 2009.
- Working Paper No. 282, *Are Workers' Remittances Relevant for Credit Rating Agencies?*, by Rolando Avendaño, Norbert Gaillard and Sebastián Nieto-Parra, October 2009.
- Working Paper No. 283, *Are SWF Investments Politically Biased? A Comparison with Mutual Funds*, by Rolando Avendaño and Javier Santiso, December 2009.
- Working Paper No. 284, *Crushed Aid: Fragmentation in Sectoral Aid*, by Emmanuel Frot and Javier Santiso, January 2010.
- Working Paper No. 285, *The Emerging Middle Class in Developing Countries*, by Homi Kharas, January 2010.
- Working Paper No. 286, *Does Trade Stimulate Innovation? Evidence from Firm-Product Data*, by Ana Margarida Fernandes and Caroline Paunov, January 2010.
- Working Paper No. 287, *Why Do So Many Women End Up in Bad Jobs? A Cross-Country Assessment*, by Johannes Jütting, Angela Luci and Christian Morrisson, January 2010.
- Working Paper No. 288, *Innovation, Productivity and Economic Development in Latin America and the Caribbean*, by Christian Daude, February 2010.
- Working Paper No. 289, *South America for the Chinese? A Trade-Based Analysis*, by Eliana Cardoso and Márcio Holland, April 2010.
- Working Paper No. 290, *On the Role of Productivity and Factor Accumulation in Economic Development in Latin America and the Caribbean*, by Christian Daude and Eduardo Fernández-Arias, April 2010.
- Working Paper No. 291, *Fiscal Policy in Latin America: Countercyclical and Sustainable at Last?*, by Christian Daude, Ángel Melguizo and Alejandro Neut, July 2010.
- Working Paper No. 292, *The Renminbi and Poor-Country Growth*, by Christopher Garroway, Burcu Hacibedel, Helmut Reisen and Edouard Turkisch, September 2010.
- Working Paper No. 293, *Rethinking the (European) foundations of Sub-Saharan african regional economic integration*, by Peter Draper, September 2010.
- Working Paper No. 294, *Taxation and more representation? On fiscal policy, social mobility and democracy in Latin America.*, by Christian Daude and Ángel Melguizo, September 2010.
- Working Paper No. 295, *The Economy of the Possible: Pensions and Informality in Latin America*, by Rita da Costa, Juan Ramón de Laiglesia, Emmanuelle Martínez and Ángel Melguizo, January 2011.