OECD Economics Department Working Papers No. 871

The Growth Effects of Current Account Reversals: The Role of Macroeconomic Policies

Luiz de Mello,

Pier Carlo Padoan,

Linda Rousová

https://dx.doi.org/10.1787/5kgb1mftj6s3-en

OECD

Unclassified **ECO/WKP(2011)40**

Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development **30-May-2011**

English - Or. English

ECONOMICS DEPARTMENT

ECO/WKP(2011)40
Unclassified

THE GROWTH EFFECTS OF CURRENT ACCOUNT REVERSALS: THE ROLE OF MACROECONOMIC POLICIES

ECONOMICS DEPARTMENT WORKING PAPERS No. 871

By Luiz de Mello, Pier Carlo Padoan and Linda Rousová

JT03302645

English - Or. English

ABSTRACT/RÉSUMÉ

The growth effects of current account reversals: the role of macroeconomic policies

This paper assesses empirically whether or not current account reversals have permanent growth effects and the role of macroeconomic policies in this process. The methodology developed in de Mello, Padoan and Rousova (2010) to identify a chronology of current account reversals is applied to the real growth rate of GDP of more than 100 countries during the period 1971-2007. We use ordered probit models to show that current account reversals associated with improvements in external positions increase the probability of a sustained rise in the rate of growth of GDP (growth acceleration) beyond those generated by real exchange rate effects. Current account reversals associated with a deterioration of external positions make impending GDP accelerations less likely. The macroeconomic policy stance prevailing at the time of current account reversals also matters. High budget deficits thwart the positive effect of a current account improvement on the probability of a growth acceleration. By contrast, a monetary tightening in association with a current account deterioration makes an impending growth acceleration more likely. This paper improves our understanding of how macroeconomic policies help countries maximise the growth payoff of current account improvements.

JEL classification codes: C32; C35; F32; F43
Keywords: current account reversals; trend GDP growth; monetary policy; fiscal policy

****

Effet sur la croissance des inversions de balance courante : le rôle des politiques macroéconomiques

Ce document examine de manière empirique si les inversions de balance courante ont ou non des effets permanents sur la croissance et quel rôle les politiques macroéconomiques jouent dans ce processus. La méthodologie développée par de Mello, Padoan et Rousova (2010) pour déterminer une chronologie des inversions de balance courante est appliquée aux taux de croissance réelle du PIB de plus de 100 pays sur la période 1971-2007. Des modèles probit sont utilisés pour montrer que les inversions de balance courante associées à des améliorations des positions extérieures augmentent la probabilité d'une hausse soutenue du taux de croissance du PIB (accélération de la croissance). Des inversions de balance courante associées à une dégradation des positions extérieures rendent moins probable une accélération imminente du PIB. L'orientation des politiques macroéconomiques au moment des inversions est également importante. Des déficits budgétaires élevés neutralisent l'effet positif d'un redressement de la balance courante sur la probabilité d'une accélération de la croissance. A l'inverse, un durcissement monétaire associé à une dégradation de la balance courante rend plus probable une accélération imminente de la croissance. Cette étude permet de mieux comprendre comment les politiques macroéconomiques peuvent aider les pays à maximiser les gains de croissance découlant d'améliorations de la balance courante.

Codes JEL : C32 ; C35 ; F32 ; F43
Mots clés: inversions de balance courante ; croissance du PIB tendanciel ; politique monétaire ; politique budgétaire

TABLE OF CONTENTS

THE GROWTH EFFECTS OF CURRENT ACCOUNT REVERSALS: THE ROLE OF MACROECONOMIC POLICIES

Luiz de Mello, Pier Carlo Padoan and Linda Rousová[1]

1. Introduction

Most of the empirical literature on current account reversals focuses on the disruptive growth effects of sharp shifts in a country's current account balance or net foreign asset position. In emerging-market and developing economies, current account reversals hurt growth, because they are often followed by exchange-rate and banking crises. Nevertheless, such adverse growth effects tend to be short-lived to the extent that they are related to temporary deviations of GDP growth from trend with no long-lasting effect on potential supply (Hutchinson and Noy, 2002; Edwards, 2005; Eichengreen and Adalet, 2005; Assmann and Boysen-Hogrefe, 2010). A separate strand of literature nevertheless shows that many determinants of a country's external positions, such as exchange-rate movements and international trade flows, are also powerful drivers of sustained improvements in the rate of growth of GDP (Hausmann, Pritchett and Rodrik, 2005; Jones and Olken, 2008).

This paper aims to bridge a gap in the empirical literature on the growth effects of current account reversals by focusing on persistent, rather than short-lived, shifts in GDP growth and on the role of the macroeconomic policy stance prevailing at the time of reversals. We build on a previous paper (de Mello, Padoan and Rousová, 2010), where we identify a chronology of current account reversals for a large set of countries on the basis of the unit root properties of the ratio of net foreign asset positions to GDP. We use the same methodology to identify endogenous breaks in the level and/or trend of GDP growth, which we refer to as growth accelerations or decelerations. This methodology has the advantage of taking country-specific volatility into account to set the chronologies of current account reversals and breaks in GDP growth, rather than using *ad hoc* definitions based on the actual magnitude of adjustment, which overestimates the occurrence of breaks in volatile economies. We then test the hypotheses that the breaks in GDP growth are likely to be preceded by current account reversals and that the macroeconomic policies implemented in association with current account reversals affect the probability of post-reversal breaks in GDP growth. In doing so, we seek to improve our understanding of how macroeconomic policies could help countries maximise the growth payoff of current account improvements.

Our main findings, based on the estimation of ordered probit models for a large sample of mature, emerging-market and developing economies during the period 1971-2007, are as follows:

- Current account reversals increase the probability of a break in GDP growth within two years of occurrence of the reversal. In particular, an improvement in a country's external position increases the probability of a pick-up in trend GDP growth by about 4.5 percentage points and reduces the probability of a growth deceleration by 1.3 percentage points. In turn, a current account deterioration reduces the probability of an impending growth acceleration by 0.9 percentage points, while leaving the probability of a growth deceleration unchanged. These

1. Paper prepared for the Bank of Israel conference on "Lessons from the World Financial Crisis", held in Jerusalem on 31 March and 1 April 2011. We are indebted to the conference participants, and in particular Michael Leahy, for helpful comments and discussions, as well as Gabriele di Fillipo and Edouard Turkisch, and to Penny Elghadab for assistance in preparing the document, but remain solely responsible for any remaining errors or omissions. The analysis and opinions expressed in this paper are the authors' own and do not necessarily reflect those of the OECD or the Organisation's member countries.

effects are over and above those generated by the change in the relative price of tradables to nontradables (the real exchange rate), which is an important driver of growth accelerations.

- Macroeconomic policies also matter. Policy moves that have the potential for improving external positions – such as a fiscal tightening when external positions improve or a monetary tightening when external positions deteriorate – could also raise the probability of a subsequent pick-up in trend GDP growth. In particular, in association with a current account improvement, a reduction in the budget deficit that would cause the debt-to-GDP ratio to fall by 10% over a three-year period prior to a break in GDP growth raises the probability of an impending growth acceleration by 3.3 percentage points. As for monetary policy, an increase in the discount rate by 10 percentage points over a three-year period prior to a break in GDP growth that includes a negative current account reversal raises the probability of an impending growth acceleration by 0.1 percentage points.

- Breaks in GDP growth depend on other non-policy factors. These include the level and rate of change of GDP growth prior to a break, as well as regional spillover effects, measured by the number of growth accelerations (minus the number of growth decelerations) in the reference country's geographical area. The level of government indebtedness and the extent of exchange-rate depreciation (correcting for Balassa-Samuelson effects, as in Rodrik, 2008) also affect the probability of a break in trend GDP growth, although not in a robust manner across specifications.

The paper is structured as follows. Section 2 discusses the channels through which current account reversals could have a persistent effect on GDP growth. Section 3 describes the methodology for identifying current account reversals and breaks in GDP growth, and the main characteristics of both chronologies. Section 4 elaborates on our estimating strategy and reports the baseline findings. Section 5 focuses on the links between macroeconomic policies and the growth effects of reversals. Section 6 concludes.

2. How can current account reversals affect growth?

The empirical literature on current account reversals has focused on large improvements in current account positions, which tend to occur following periods of unsustainable build-up of net foreign liabilities. Such reversals tend to be disruptive, at least as far as developing and emerging-market economies are concerned, because they are often accompanied by sudden stops in capital flows and large exchange rate depreciations, which in turn trigger the occurrence of banking crises. GDP falls relative to trend or regional/world averages during or immediately after a reversal but bounces back strongly thereafter, once the drivers of unsustainable external positions, including misaligned exchange rates, have been rooted out. Estimates of the growth effects of current account reversals nevertheless vary a great deal: they are found to be negligible in Milesi-Ferretti and Razin (2000), short-lived and related to capital mobility in Edwards (2005), and short-lived and dependent on the size of pre-adjustment current account imbalances and exchange rate misalignment in Eichengreen and Adalet (2005). Assmann and Boysen-Hogrefe (2010) find that the output losses associated with reversals are on average large, although they vary considerably across countries.

Current account reversals tend to have less disruptive, while still short-lived, effects on growth in industrial countries. Freund (2005) and Freund and Warnock (2005) find that current account reversals are usually followed by a short spell of below-trend growth, with the magnitude of adjustment depending on the size of the current account imbalance. Debelle and Galati (2007) also find evidence of a slowdown in growth following adjustment, defined as a sharp reduction in the current account deficit, which tends to be accompanied by a large exchange rate depreciation. Croke *et al*. (2005) nevertheless finds little evidence of

deleterious growth effects on the basis of an event analysis of current account reversals in industrial countries.

We argue in this paper that current account reversals may have longer-lasting effects on the economy that result in structural breaks in trend GDP growth, rather than short-lived deviations of growth from trend. To our knowledge, this hypothesis has yet to be tested empirically. From a theoretical point of view, four main channels can be considered.

Expansion of the tradable sector

To the extent that productivity is higher in the tradable sector, a lasting reallocation of resources away from sectors producing non-tradable goods could cause both the current account balance to improve in a sustained manner and growth to accelerate. Such resource reallocation could be triggered, for example, by a positive shock in the terms of trade: the stronger and the more lasting the shock, the higher the potential magnitude and persistence of the improvement in external positions and in turn the stronger – and possibly the more lasting – the salutary effect of the terms-of-trade gain on GDP growth. Evidence in favour of the reallocation hypothesis is available from Hausmann, Pritchett and Rodrik (2005), who find that terms-of-trade improvements are indeed potent drivers of growth accelerations, defined as sustained rises in a country's rate of GDP growth. However, the authors also find that the effects of such shocks wane when additional explanatory variables are included in the regressions.

A lasting pro-growth reallocation of resources can also be driven by policy. This is the case of trade liberalisation, for example, whereby domestic firms may gain from specialisation, economies of scale and international knowledge spillovers, which enhance their competitiveness in foreign markets (Rivera-Batiz and Romer, 1991; Grossman and Helpman, 1991). Competition from imports also often weeds out less productive firms, which may have a beneficial impact on growth (Melitz, 2003). In addition, the literature underscores the importance of a competitive export-oriented manufacturing sector that can benefit from demand from foreign markets (Rodrik, 2006). Jones and Olken (2008) indeed find that growth take-offs, defined as appreciable improvements in GDP growth, are associated with large expansions in international trade that are more likely driven by trade liberalisation than by changes in the terms of trade.[2] Openness to trade also reduces the probability of a growth deceleration when countries reach a threshold level of income beyond which the process of catching-up slows down (Eichengreen *et al.*, 2011).

It can be argued that, if the expansion of a country's tradable sector is accompanied by gains in competitiveness, such as those arising from an undervalued exchange rate, the productivity gains from trade liberalisation can be amplified and maintained over several years, which leads to persistently higher growth (Jones and Olken, 2008; Rodrik, 2008). An undervalued exchange rate nevertheless appears to increase the probability of a growth slowdown once a country has reached a threshold income level (Eichengreen *et al.*, 2011). Moreover, the productivity gains originating in the tradable sector may spill over to the nontradable sector, notably trough the development of infrastructure, transport and communication, which may in turn facilitate production of other goods and services.

Greater availability of financing

The link between current account reversals and structural breaks in GDP growth may be related to the availability of financing. In surplus countries, the future stream of earnings arising from an increase in the stock of net foreign assets could be used to finance pro-growth activities at home, which could trigger a

2. Some of these findings have subsequently been questioned (Jong-A-Pin and de Haan, 2008; Xu, 2011). But it appears that the effect of economic reform on growth accelerations is reasonably robust to more recent data revisions and sample selection.

growth acceleration. In deficit countries, the resources used to service net external liabilities could be allocated instead to finance pro-growth activities. In both cases, an improvement in external positions would enhance trend growth.

It can also be argued that an increase in capital inflows that corresponds to a sustainable deterioration of the current account balance may yield a growth dividend to the extent that foreign savings are used to finance investment in productivity-enhancing activities in the recipient country. If, by contrast, capital inflows are channelled to lower-productivity sectors producing nontradables, rather than to the more productive tradable manufacturing sector, additional financing would not be associated with a growth acceleration and may even cause trend growth to decelerate. Recent literature indeed provides some support for the latter hypothesis that reliance on capital inflows, which would be consistent with a deterioration of external positions, may harm, rather than promote, growth in developing countries, despite an associated increase in financing (Aizenmann *et al.*, 2004; Gourinchas and Jeanne, 2007; Prasad *et al.*, 2007).

Reduction of external vulnerabilities

By making indebted countries less reliant on foreign financing, an improvement in their external positions would make them less vulnerable to sudden capital flow reversals, which are often detrimental to growth by heightening the likelihood of banking and currency crisis (Calvo, 1998 and 2000). This is particularly true for emerging-market economies, which are more vulnerable to capital flow reversals and where current account reversals are more likely to be disruptive than in mature economies.

Increase in domestic savings

The growth dividend arising from a sustained improvement in a country's external position could be related to a lasting increase in domestic saving. Different hypotheses have been put forward to explain a positive correlation between savings and growth, which is a stylised fact in the empirical growth literature, and could shed light on the channels through which current account reversals may subsequently affect trend growth. One hypothesis is related to the co-financing of investment projects by domestic and foreign investors. Aghion, Comin and Howitt (2006) argue that local banks in developing countries have a stronger incentive to monitor projects when both domestic and foreign investors co-finance investment than when financing comes entirely from foreign sources. As a result, banks select the most productivity-enhancing investment projects; in doing so, they contribute to reducing the technological gap between the recipient country and the home country of foreign investors. The authors find that domestic savings indeed correlate strongly with future FDI inflows and TFP growth in the recipient economy.

The existence of incomplete financial markets is yet another channel through which sustained current account reversals due to increased reliance on domestic savings may result in improvements in trend growth. Sandri (2010) argues that entrepreneurs facing incomplete financial markets and risky investment need not only to self-finance investment but also to accumulate precautionary assets to cover the uninsurable risk of losing invested capital. As a result, an increase in growth-enhancing investment generates a more than proportional rise in corporate savings. On the basis of calibrated simulations the author shows that this net increase in saving can sustain large and persistent improvements in external positions while delivering faster growth.

3. Identifying current account reversals and breaks in GDP growth

The methodology

In de Mello, Padoan and Rousová (2010), we applied the Lee-Strazicich (1999, 2003) unit root tests with endogenous breaks to the first differences of the ratios of net foreign asset positions to GDP of 101

countries during 1971-2007 to assess the stationarity of the time series and to identify current account reversals on the basis of the endogenous structural breaks. Allowing for at most two breaks per country and including all significant breaks, we identified a chronology of 159 reversals that are consistent with stationary external positions. Applying the same methodology to the real rate of GDP growth yields a chronology of 185 breaks for the 113 countries for which data are available at the annual frequency in the World Bank's *World Development Indicators* for 1971-2007.[3] The dates of current account reversals and breaks in GDP growth are reported in Appendix 1.

As discussed in de Mello, Padoan and Rousová (2010), the advantages of the unit-root-based methodology to identify structural breaks in both external positions and GDP growth are threefold:

- Country-specific volatility is taken into account to identify large shifts in the data, rather than imposing *ad hoc* criteria based on the actual size of adjustment, as is customary in the empirical literature on current account reversals (Milesi-Ferretti and Razin, 1998, 2000; Eichengreen and Adalet, 2005; Edwards, 2005; Freund, 2005; Freund and Warnock, 2005; Croke *et al.*, 2006; Liesenfeld *et al.*, 2007) and growth accelerations/decelerations (Ben-David and Papell, 1998; Hausmann, Pritchett and Rodrik, 2005).[4] As a result, our chronologies are not sensitive to cross-country differences in the volatility of external positions and GDP growth.[5]

- Endogenous breaks are allowed in levels and trends, rather than only in levels, as in the conventional literature. This feature of the methodology is particularly appealing when dealing with the growth effects of current account reversals, because it allows for distinguishing same- and opposite-sign breaks in levels and trends. In other words, we are interested in those episodes of growth accelerations (decelerations) characterised by combinations of breaks in levels and trends that result in higher (lower) post-reversal GDP growth.

- The presence of structural breaks is tested simultaneously with the stationarity of the relevant series. On the basis of the Lee and Strazicich test, rejection of the hypothesis of a unit root with breaks against the alternative of stationarity around breaks unambiguously implies a trend stationary process, because the methodology allows for breaks in both the null and the alternative hypotheses. This is particularly useful when identifying current account reversals, because trend stationarity is associated with the intertemporal sustainability of external positions.

3. GDP growth is found to be trend-stationary around breaks for the vast majority of countries (88%). Unlike the methodology used to identify endogenous breaks in external positions, we do not exclude countries for which the test procedure could not reject the presence of a unit root (13 countries at the 10% significance level). The Lee-Strazicich procedure identifies two (one) significant breaks in the level and/or slope of GDP growth for about 77% (10%) of countries, whereas 13% of countries do not experience a significant break.

4. Ben-David and Papell (1998) use search methods on the basis of *ad hoc* thresholds, but unlike other researchers they test for the statistical significance of the breaks. Hausmann, Pritchett and Rodrik (2005) define a growth acceleration as an increase in per capita output growth by at least 2 percentage points over at least 8 years resulting in a post-acceleration growth rate of at least 3.5%.

5. To our knowledge the only study that also defines structural breaks in current account positions on the basis of the data generating process is Bagnai and Manzocchi (1999), although they use the Zivot and Andrews (1992) test, which may suffer from spurious rejection problems. Jerzmanowski (2006) uses a Markov switching model to define different regimes of economic growth, including accelerations and decelerations, while Paap *et al.* (2005) use a clustering algorithm to classify growth experiences on the basis of the autoregressive properties of the GDP series. Jones and Olken (2008) use the Bai and Perron (2003) algorithm to locate and test for the presence of structural breaks.

The main characteristics of the chronologies

Breaks in trends and levels may have the same sign and therefore reinforce each other. This is the case, for example, of an upward shift in the level of GDP growth that is accentuated by a positive shift in trend growth. Our chronologies show that these mutually-reinforcing (same-sign) breaks in both levels and trends occur more frequently in the case of GDP growth (32% of breaks) than for current account reversals (23% of reversals) (Table 1).

Table 1. Distribution of level and trend breaks[1]

Level shifts / Trend shifts	Current account balance[2]			GDP growth			Definition
	Negative	Positive	Total	Negative	Positive	Total	
Negative	21 (-6.6)	47 (-1.9)	68 (-3.4)	29 (-2.8)	56 (-2.0)	85 (-2.3)	Current account deterioration or growth deceleration (negative break)
Positive	75 (4.4)	16 (9.8)	91 (5.4)	70 (0.9)	30 (2.0)	100 (1.2)	Current account improvement or growth acceleration (positive break)
Total	96 (1.9)	63 (1.1)	159 (1.6)	99 (-0.2)	86 (-0.6)	185 (-0.4)	

1. The numbers in parentheses are average changes in the rate of GDP growth or current account balance between pre- and post-break regimes.

2. Only reversals associated with a stationary current account balance are considered.

Source: Authors' computations based on the chronologies reported in Appendix 1.

Breaks in trends and levels may nevertheless have opposite signs and offset each other. This is the case, for example, of the V-shaped pattern highlighted in the empirical literature on current account reversals, whereby GDP falls and bounces back after the reversal. In the case of mutually-offsetting breaks, trend breaks are only partially offset by opposite-sign breaks in levels, whereas breaks in levels tend to be more than offset by opposite-sign trend breaks. More specifically, positive trend breaks are associated with an average rise in GDP growth after the break by 1.2 percentage points, whereas the post-break GDP growth rate rises, rather than falls, by 0.9 percentage points on average when a positive trend break is accompanied by a negative level break. By contrast, the post-break growth rate falls, rather than rises, by 2.0 percentage points on average when a positive level break is accompanied by a negative trend break. Therefore, our definition of GDP growth accelerations (decelerations) and current account improvements (deteriorations) is based on the sign of the trend shift rather than that of the level shift.

Current account reversals and breaks in GDP growth occur relatively often and are fairly equally distributed across regions, regardless of their income level (Table 2). This finding reflects the fact that our methodology takes into account country-specific volatility and therefore, unlike most of the literature based on *ad hoc* definitions of breaks, does not over-detect breaks in developing and emerging-market economies, which tend to be more volatile than mature economies.

Table 2. Geographical distribution of current account reversals and breaks in GDP growth

	Current account reversals				Breaks in GDP growth			
	Number of countries	Breaks per country	Deteriora-tions[2]	Improve-ments[2]	Number of countries	Breaks per country	Decelera-tions[2]	Accelera-tions[2]
Total	97	1.6	43	57	113	1.6	46	54
OECD and others[1]	23	1.8	46	54	32	1.6	40	60
Latin America (excluding Mexico)	20	1.3	42	58	24	1.5	44	56
Middle East	9	1.5	54	46	6	1.7	60	40
Asia and Pacific	9	2.0	33	67	17	1.9	47	53
Africa	36	1.7	41	59	34	1.7	50	50

1. OECD countries (as of 2009) plus Andorra, Greenland, Latvia, Liechtenstein and Malta.

2. In % of all breaks.

Source: Authors' computations based on the chronologies reported in Appendix 1.

Whereas the frequency of current account reversals is fairly balanced throughout the period covered by our chronologies, breaks in GDP growth tend to be less frequent in recent years (Figure 1, panel A). Over 25% of breaks in GDP growth took place within the first five years (1974-1978) covered in our data set, against less than 10% in the last five years (2000-2004).[6] By contrast, 13% and 20% of current account reversals occurred in the first and last five-year periods, respectively.

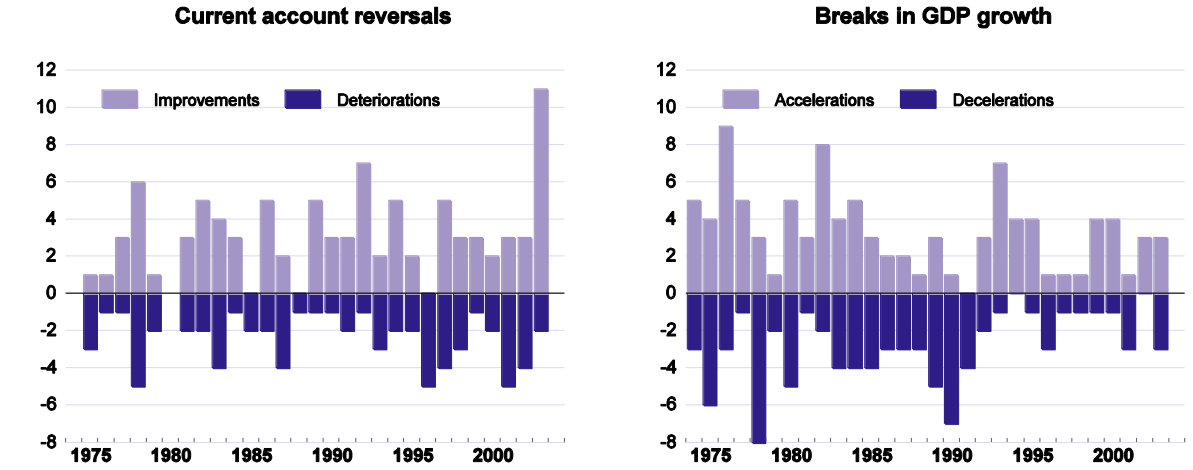
Both chronologies include slightly more improvements in external positions than deteriorations and more growth accelerations than decelerations. There is a strong (and statistically significant) positive correlation between the number of improvements and deteriorations in external positions in any given year, although this is not the case for growth accelerations and decelerations. This is consistent with the fact that an improvement in a country's external position is matched by an offsetting deterioration in other countries. But faster growth in a given country does not necessarily imply slower growth elsewhere.

The growth regimes prevailing between breaks are not always long-lived (Figure 1, panel B). For those countries where two breaks have been detected, over 30% of growth breaks occur within 5 years. When focussing on growth breaks that are sustained over more than 5 (8) years, at least one growth acceleration is experienced by nearly two-thirds (one-half) of countries. This finding is comparable to the results reported by Hausmann, Pritchett and Rodrik (2005), who detect at least one growth acceleration that is sustained over more than 8 years in 55% of the countries in their sample.

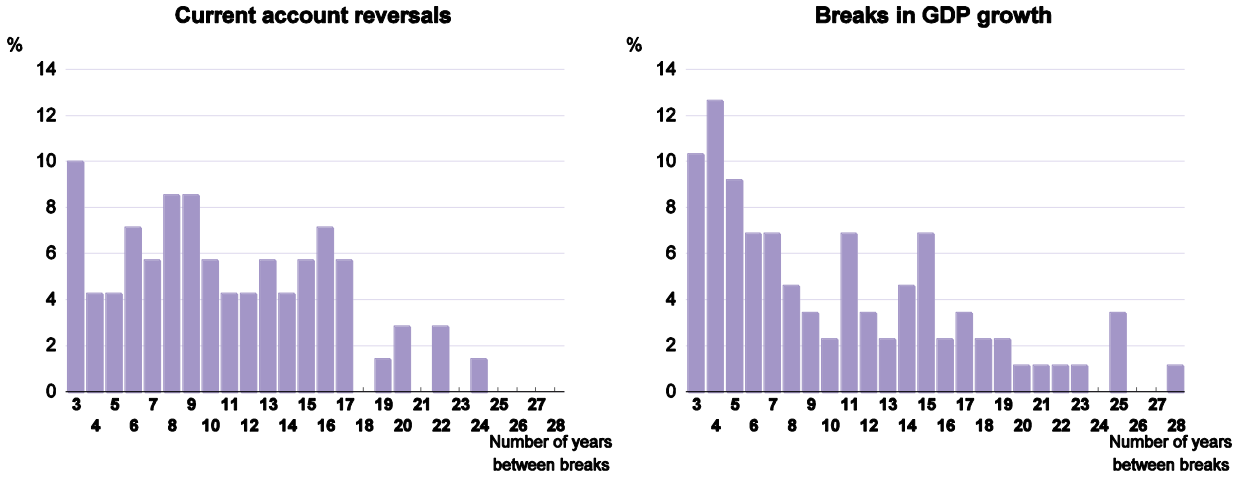
6. The first and last years when a break can be identified are 1974 and 2004, respectively, as the first and last 3 observations over the period 1971-2007 are excluded from the search process.

Figure 1. Distribution of current account reversals and breaks in GDP growth

A. Number of breaks in a given year[1]



B. Number of years between breaks, in per cent[2]



1. The number of current account improvements (deteriorations) and growth accelerations (decelerations) is shown on a positive (negative) scale. Only reversals associated with a stationary current account balance-to-GDP ratio are included.

2. The minimum number of years between breaks is set to three when applying the Lee-Strazicich unit root tests.

Source: Authors' computations based on the chronologies reported in Appendix 1.

4. Do current account reversals affect trend GDP growth?

Preliminary analysis of the chronologies of growth breaks and current account reversals suggests that they may indeed be correlated. The probability that a growth break occurs within one or two years after a current account reversal is 12.4%, which is significantly higher at classical levels of confidence than the unconditional probability of a growth break, at 5.2%.[7] Moreover, current account improvements are

7. The probability that a break in GDP growth occurs within one or two years after a current account reversal (12.4%) is calculated as the ratio of 17 breaks in GDP growth preceded by a current account reversal by one or two years to a total of 137 current account reversals identified in our chronology of current account reversals and breaks in GDP growth. The unconditional probability of a GDP break (5.2%) is calculated as the ratio of a total of 135 breaks in GDP growth identified in our merged chronology to the number of country-years in which a break could have occurred: the number of countries for which both chronologies of breaks are available (84 countries) times the number of years covered by the chronology of GDP growth breaks (31 years).

followed by growth accelerations in nearly all cases detected in our merged chronology, suggesting a positive association between both outcomes. Nevertheless, the picture is less clear for current account deteriorations and growth decelerations, as the former are followed by an equal number of growth accelerations and decelerations.[8]

The model and estimating strategy

To shed further light on the growth effects of current account reversals, we estimate several regressions to control not only for the occurrence of a reversal but also for other determinants of breaks in GDP growth. To distinguish growth accelerations and decelerations, as well as the absence of a break in GDP growth, the dependent variable is valued "-1" for a growth acceleration, "0" for the non-occurrence of a break and "1" for a growth deceleration. As the coding reflects a natural ordering of the three outcomes, we estimate an ordered probit regression with a latent variable, Y_{it}^{*}, corresponding to the occurrence of a break in GDP growth in country i at time t, as follows:

$$Y_{it}^{*} = \beta_1 NFA_{i,t-1}^{+} + \beta_2 NFA_{i,t-1}^{-} + \beta_3 C_{it} + u_{it}, \quad (1)$$

where $NFA_{i,t-1}^{+}$ and $NFA_{i,t-1}^{-}$ are dummy variables denoting respectively current account improvements and deteriorations taking place in country i at time $t-1$ or $t-2$, C_{it} is a vector of control variables, and u_{it} is an error term.

The indicators of current account reversals are lagged to deal with simultaneity: we disregard account current account reversals taking place in the same year as breaks in GDP growth and only consider those occurring one or two years before the corresponding GDP growth break.

As for the control variables, we include in the baseline regressions the level and the rate of change of GDP growth averaged over three years prior to the break in GDP growth, as well as the number of growth accelerations minus decelerations in the reference country's geographical area, proxying for regional spillover effects. We expect the pre-break level and rate of change of GDP growth to enter the regressions with negative signs, as GDP growth is mean-reverting. As countries in the same geographical area are likely to be effected by common shocks, we expect the regional spillover indicator to be positively signed.[9] In addition, we include (the log of) the level of gross government debt-to-GDP ratio averaged over three years prior to the break in GDP growth. In line with the recent literature on the effects of public debt on growth (Reinhart and Rogoff, 2010; Caner, Grennes and Koehler-Geib, 2010; Checherita and Rother, 2010; Kumar and Woo, 2010), we expect that a higher level of public debt reduces the probability of a growth acceleration. Finally, we include in the set of controls the rate of change of the real exchange rate (adjusted for Balassa-Samuelson effects) averaged over three years prior to a break in GDP growth. This adjusted real exchange rate is the measure of exchange rate undervaluation used by Rodrik (2008), who finds that a depreciated currency is growth-enhancing.[10] Data sources and the definition of the variables are reported in Appendix 3.

8. See Appendix 2 for a list of countries and typology of breaks in GDP growth preceded by current account reversals by one or two years.

9. The presence of regional spillover effects has been highlighted in the growth literature (Kose, Otrok and Whiteman, 2003).

10. We also experimented with other explanatory variables, such as indicators of political change and financial liberalisation, as well as the terms of trade, as suggested by Hausmann, Pritchett and Rodrik (2008). Except for Hausmann, Pritchett and Rodrik (2005), the empirical literature offers limited guidance on the selection of determinants of breaks in GDP growth. We therefore also turned to the growth literature and started by including the standard determinants of GDP growth, such as GDP per capita, inflation, trade openness and

Table 3. Growth accelerations and decelerations: Baseline regressions[1]

Dep. var.: Breaks in GDP growth, coded as (-1,0,1)

	Baseline	Marginal effects[2]		
		Calculated for:	Growth acceleration	Growth deceleration
Positive CA reversal	0.58***	Change from 0 to 1	4.45*	-0.87***
	(0.01)		(0.07)	(0.00)
Negative CA reversal	-0.56	Change from 0 to 1	-1.30***	3.02
	(0.12)		(0.01)	(0.33)
GDP growth (level)[3]	-0.067***	At mean	-0.28***	0.19***
	(0.00)		(0.00)	(0.00)
GDP growth (change)[3]	-0.067**	At mean	-0.27**	0.19**
	(0.03)		(0.05)	(0.04)
Regional spillovers	0.099*	At mean	0.41*	-0.28*
	(0.05)		(0.05)	(0.06)
Public debt (log of level)[3]	-0.17*	At mean	-0.68*	0.47*
	(0.07)		(0.08)	(0.09)
Undervalued (change in log) [3]	0.97	At mean	4.00	-2.74
	(0.21)		(0.21)	(0.20)
Observations	1,489		1,489	1,489

1. ***, **, * denote significance at the 1, 5, and 10% significance levels, respectively. P-values (in parentheses) are based on robust standard errors. The sample includes significant breaks in trend GDP growth, rather than breaks in both trends and levels, and excludes countries having experienced two growth breaks or current account reversals in less than 5 years. The cut-off points are not reported.

2. Refer to changes in percentage points, not in probabilities.

3. Averaged over three years prior to the reference year.

Source: Authors' estimations

The baseline results

The regression results reported in Table 3 confirm the presence of an empirical association between current account reversals and growth breaks. The baseline regression focuses on significant breaks in trend GDP growth, rather than breaks in both trends and levels, and excludes countries having experienced two growth breaks or current account reversals in less than 5 years.[11] The marginal effects associated with the baseline parameter estimates show that a current account improvement increases the probability of a growth acceleration within one or two years by about 4.5 percentage points and reduces the probability of a growth deceleration by 0.9 percentage points.[12] By contrast, a current account deterioration reduces the probability

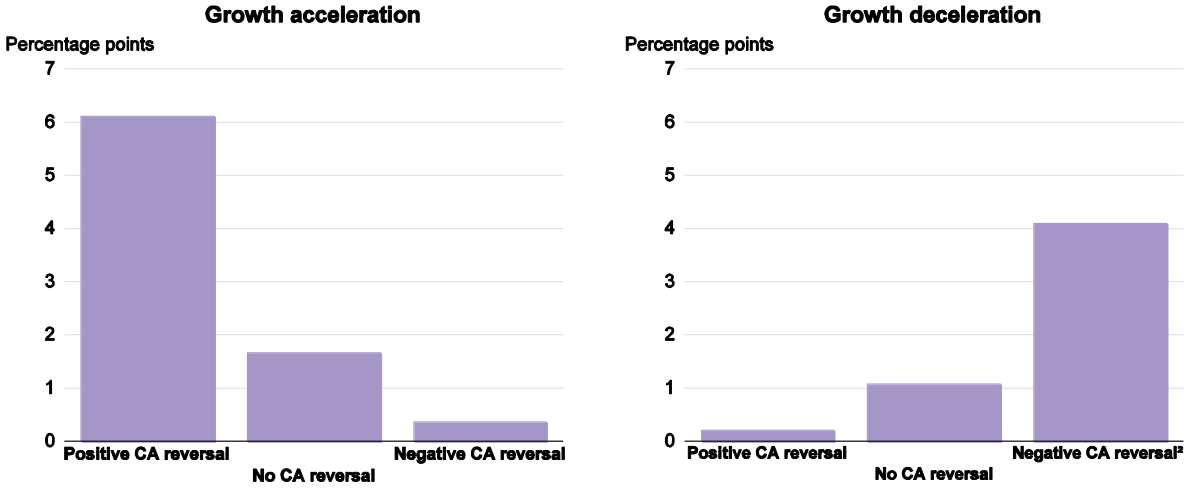
FDI and portfolio inflows, among others. All these variables were nevertheless found to be statistically insignificant in the baseline regressions and were therefore omitted.

11. This filter is customary in the literature. For example, Hausmann, Pritchett and Rodrik (2005) impose a 5-year window between episodes of growth accelerations.

12. Marginal effects in ordered probit regressions are in general different for each outcome of the dependent variable and need to be computed at particular values of the explanatory variables, due to the non-linearity of the model. We calculate the marginal effects for growth accelerations and decelerations for which the sign of the corresponding coefficient (β_1) unambiguously determines the direction of the effect (*i.e.*, for a positive β_1, a positive effect on the probability of growth accelerations and a negative effect on the

of a subsequent positive break in GDP growth by 1.3 percentage points, while having no discernible effect at classical levels of statistical significance on the probability of an impending deterioration in GDP growth. The predicted probabilities depicted in Figure 2 illustrate the relative size of the estimated marginal effects. For instance, a positive current account reversal more than triples the probability of a growth acceleration within one or two years.

Figure 2. Predicted probabilities[1]



1. Based on the baseline regression reported in Table 3 and evaluated at the means of the explanatory variables.

2. Corresponds to a non-significant marginal effect reported in Table 3.

Source: Authors' computations based on the results reported in Table 3.

The baseline results are in line with some of the channels discussed above. The growth payoff of an improvement in external positions may reflect a reallocation of resources towards the tradable sector, increased financing for growth-enhancing activities and/or an increase in domestic savings in countries with significant market failures. As for deteriorations in external positions, the associated reduction in the probability of a growth acceleration may be due to allocative distortions, whereby foreign capital inflows may finance investment in low-productivity nontradable sectors, rather than in the more productive tradable manufacturing sector. Importantly, while a deterioration of a country's external position would reduce the probability of a growth acceleration, it would not go as far as increasing the probability of a growth deceleration.

As for the other covariates, in line with our expectations, the higher the level and the rate of change of GDP growth averaged over three years prior to a growth break the lower the probability of a growth acceleration and the higher the probability of a growth deceleration. The results also confirm the presence of significant regional spillover effects: the probability of a growth acceleration in the reference country increases with the number of growth accelerations in other countries in the region, whereas a growth deceleration is more likely if other countries in the region also experience growth decelerations. High government indebtedness in the run-up to a growth break is found to reduce the probability of a growth

probability of growth decelerations). We evaluate the marginal effects for a change in the variable of interest (e.g., occurrence as opposed to non-occurrence of a current account improvement), while keeping the other explanatory variables at their sample means or in some cases at specific values (e.g., the interaction terms).

acceleration and to increase the probability of a growth deceleration. Finally, we do not find a significant growth effect for the extent to which a currency is deemed to be depreciated.

Table 4. Growth accelerations and decelerations: Robustness analysis[1]

(Dep. var.: Breaks in GDP growth)

	Sample				
	(1) No restriction on inter-break length	(2) Duration more than 5 years	(3) Duration more than 5 years	(4) Duration more than 5 years	(5) Duration more than 5 years
	Dependent variable (coded as:)				
	Breaks in trend of GDP growth (-1,0,1)	All breaks in GDP growth (-1,0,1)	Breaks in trend of GDP growth (-2,-1,0,1,2)	Breaks in trend of GDP growth (-1,0,1)	Breaks in trend of GDP growth (-1,0,1)
Positive CA reversal	0.49***	0.49***	0.55***		0.58**
	(0.00)	(0.01)	(0.00)		(0.01)
Negative CA reversal	-0.22	-0.39	-0.42		-0.56
	(0.44)	(0.16)	(0.13)		(0.14)
Positive CA reversal (1-3 lag)				0.29	
				(0.16)	
Negative CA reversal in (1-3 lag)				-0.42	
				(0.18)	
GDP growth (level)[2]	-0.067***	-0.047**	-0.051***	-0.067***	-0.067***
	(0.00)	(0.02)	(0.01)	(0.00)	(0.00)
GDP growth (change)[2]	-0.069***	-0.069**	-0.072**	-0.067**	-0.067*
	(0.00)	(0.02)	(0.01)	(0.03)	(0.05)
Regional spillovers	0.074*	0.077**	0.11**	0.095*	0.099*
	(0.07)	(0.03)	(0.02)	(0.06)	(0.06)
Public debt (log of level)[2]	-0.094	-0.099	-0.10	-0.16*	-0.17***
	(0.14)	(0.24)	(0.24)	(0.07)	(0.01)
Undervalued (change in log)[2]	0.86*	1.61**	1.49**	0.92	0.97
	(0.05)	(0.02)	(0.03)	(0.22)	(0.19)
Observations	2,198	1,459	1,459	1,459	1,459

1. ***, **, * denote significance at the 1, 5, and 10% significance levels, respectively. P-values (in parentheses) are based on robust standard errors except for model (5), where standard errors are clustered by year. The cut-off points are not reported.

2. Averaged over three years prior to the reference year.

Source: Authors' estimations.

Robustness analysis

The baseline findings are fairly robust. The results reported in Table 4 show that inclusion of countries having experienced two breaks in GDP growth or current account reversals within 5 years (model 1) does not substantially change the baseline parameter estimates, which are also robust to considering all significant breaks in levels and/or trends, rather than only trends (model 2). Moreover, robustness is maintained if the growth breaks are recoded as "-2" ("2") to identify negative (positive) shifts in both the level and the trend of GDP growth, "-1" ("1") to identify negative (positive) shifts in the trend of GDP growth that are partly offset by positive (negative) shifts in the level of GDP growth, and "0",

otherwise (model 3). However, the growth effect of current account reversals becomes insignificant, if the lag between breaks in GDP growth and current account reversals is increased to up to three years (model 4). Finally, the baseline results are robust to using standard errors clustered by year, which allows for capturing possible correlations in a given year beyond the spillover effects included in the regressions (model 5).[13]

Among the control variables, it appears that effects of public indebtedness and exchange rate depreciation are not robust across the different model specifications. In particular, unlike the baseline results reported in Table 3, government indebtedness is statistically insignificant, although it remains negatively signed, in three out of five specifications (models 1-3). In addition, the rate of exchange rate depreciation is found to be significant and positively signed in three out of five robustness checks (models 1-3).

5. The role of macroeconomic policy

Estimating strategy

Having established that current account reversals are good predictors of growth accelerations and decelerations, we move on to assess how the macroeconomic policy stance prevailing at the time of current account reversals affects the probability of a growth break within two years of occurrence of a reversal. In doing so, we shed additional light on how countries can maximise the growth payoff of a current account improvement by putting in place appropriate macroeconomic policies at the time a reversal takes place. In particular, we focus on the effects of macroeconomic actions over and above those related to the level of public indebtedness and the real exchange rate, which have been shown to affect the likelihood of structural breaks in growth in the previous specifications.

We redefine Equation (1) as follows:

$$Y_{it}^{*}(j) = \beta_1 NFA_{i,t-1}^{+} + \beta_2 NFA_{i,t-1}^{+} + \beta_3 P_{ji,t-1} + \beta_4 NFA_{i,t-1}^{+} * P_{ji,t-1} + \beta_5 NFA_{i,t-1}^{-} * P_{ji,t-1} + \beta_6 C_{it} + u_{it}, \quad (2)$$

where $P_{ji,t-1}$ denotes the average stance of policy *j* (monetary or fiscal) over a three-year period prior to a break in GDP growth, and the other variables are defined as in Equation (1).

We measure the fiscal stance as the budget deficit, defined as the first difference of the log of the gross government debt-to-GDP ratio, averaged over three years prior to a break in GDP growth. Monetary policy is proxied by the discount rate averaged over three years prior to a break in GDP growth.

Main findings

The results reported in Table 5 show that fiscal policy is by itself a poor predictor of breaks in GDP growth (model 1). Nevertheless, when associated with a current account improvement (model 2), a low budget deficit increases the positive effect of a current account improvement on the probability of a growth acceleration, while leaving the probability of a growth deceleration unchanged. In particular, given that a positive current account reversal occurs, a reduction in budget deficit that would cause the government debt-to-GDP ratio to fall by 10% over three years prior to a growth break increases the probability of an impending growth acceleration by 3.3 percentage points.

13. To allow for different types of correlations among the error terms, we experimented with using standard errors clustered by country as well as with multi-way clustering of standard errors by both country and year using the approach developed by Cameron, Gelbach and Miller (2006). The standard errors nevertheless turned out to be very similar in all cases.

Inclusion of the fiscal policy variable in the baseline regressions does not alter the statistical significance of the control variables. The probability of a break in GDP growth continues to be affected by the level and the rate of change of the GDP growth rate, the level of government indebtedness and the presence of regional effects prior to the occurrence of a growth break. The real exchange rate indicator remains statistically insignificant at classical levels. Moreover, the fiscal policy effect is robust to excluding from the regression the level of government indebtedness, which is negatively correlated with the budget balance in our sample (model 3).

Table 5. Growth accelerations and decelerations: Regressions with budget deficit[1]

Dep. var.: Breaks in GDP growth, coded as (-1,0,1)

	Baseline		Marginal effects[2]			Robustness check
	(1)	(2)	Type	Growth accelera-tions	Growth decelera-tions	(3)
Positive CA reversal	0.61***	0.73***	Change from 0 to 1	3.00***	-2.03***	0.68***
	(0.00)	(0.00)		(0.00)	(0.01)	(0.00)
Negative CA reversal	-0.58	-0.53	Change from 0 to 1	-2.16	1.47	-0.49
	(0.11)	(0.19)		(0.20)	(0.18)	(0.24)
GDP growth (level)[3]	-0.074***	-0.074***	At mean	-0.31***	0.21***	-0.065***
	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)
GDP growth (change)[3]	-0.069**	-0.070**	At mean	-0.29**	0.20**	-0.078**
	(0.02)	(0.02)		(0.04)	(0.03)	(0.01)
Regional spillovers	0.10**	0.11**	At mean	0.43**	-0.29*	0.11**
	(0.05)	(0.05)		(0.04)	(0.05)	(0.04)
Public debt (log of level)[3]	-0.18*	-0.18*	At mean	-0.75*	0.51*	
	(0.06)	(0.06)		(0.07)	(0.07)	
Undervalued (change in log)[3]	1.30	1.33	At mean	5.49	-3.73	1.09
	(0.12)	(0.11)		(0.12)	(0.11)	(0.20)
Budget deficit (level)[3]	-0.63	-0.36	No CA reversal, At mean	-1.47	1.00	-0.17
	(0.18)	(0.47)		(0.46)	(0.46)	(0.72)
Positive CA reversal* Budget deficit (level)[3]		-2.14**	Positive CA reversal, At mean[4]	-33.46*	22.90	-2.08**
		(0.02)		(0.06)	(0.15)	(0.02)
Negative CA reversal* Budget deficit (level)[3]		-1.92	Negative CA reversal, At mean[4]	-2.45	20.82	-1.97
		(0.33)		(0.33)	(0.14)	(0.35)
Observations	1,426	1,426		1,426	1,426	1,426

1. ***, **, * denote significance at the 1, 5, and 10% significance levels, respectively. P-values (in parentheses) are based on robust standard errors. The cut-off points are not reported. The sample excludes countries having experienced two breaks in GDP growth or two current account reversals less than or 5 years apart. The cut-off points are not reported.

2. Refer to changes in percentage points, not in probabilities.

3. Averaged over three years prior to the reference year.

4. Refers to the total marginal effect of the budget deficit, if a corresponding current account reversal occurs.

Source: Authors' estimations.

The estimation results reported in Table 6 show that, as in the case of fiscal policy, monetary policy is by itself a poor predictor of breaks in GDP growth (model 1). However, an increase in the discount rate

(i.e., a monetary tightening) over a period that includes a current account deterioration raises the probability of a growth acceleration within two years, while having no discernible effect on the probability of a growth deceleration (model 2). The marginal effects associated with the parameter estimates reported in the table suggest that, if the discount rate rose by 10 percentage points over three years prior to a growth break, the probability of a growth acceleration would rise by 0.1 percentage points.

Table 6. Growth accelerations and decelerations: Regressions with discount rate[1]

Dep. var.: Breaks in GDP growth, coded as (-1,0,1)

	Baseline		Marginal effects[2]			Robustness check
	(1)	(2)	Type	Growth accele-rations	Growth decele-rations	(3)
Positive CA reversal	0.43*	0.49*	Change from 0 to 1	2.03**	-1.26*	0.43*
	(0.08)	(0.05)		(0.04)	(0.09)	(0.08)
Negative CA reversal	-0.74**	-0.89***	Change from 0 to 1	-3.69**	2.30**	-0.83**
	(0.01)	(0.01)		(0.02)	(0.01)	(0.01)
GDP growth (level)[3]	-0.074***	-0.076***	At mean	-3.14***	0.20**	-0.072***
	(0.00)	(0.00)		(0.00)	(0.01)	(0.00)
GDP growth (change)[3]	-0.061	-0.062	At mean	-0.26	0.16	-0.060
	(0.11)	(0.11)		(0.13)	(0.13)	(0.11)
Regional spillovers	0.098*	0.099*	At mean	0.41*	-0.26*	0.098*
	(0.09)	(0.08)		(0.08)	(0.10)	(0.09)
Public debt (log of level) [3]	-0.24**	-0.24**	At mean	-0.99**	0.62**	-0.21**
	(0.02)	(0.02)		(0.03)	(0.03)	(0.02)
Undervalued (change in log)[3]	1.63*	1.66*	At mean	6.91*	-4.30*	
	(0.06)	(0.06)		(0.07)	(0.09)	
Discount rate[3]	0.00012	0.000070	No CA reversal, At mean[4]	0.00	0.00	-0.00015
	(0.89)	(0.94)		(0.94)	(0.94)	(0.86)
Positive CA reversal* Discount rate[3]		-0.0040	Positive CA reversal, At mean[4]	-0.04	0.04	-0.00012
		(0.74)		(0.73)	(0.73)	(0.99)
Negative CA reversal* Discount rate[3]		0.010**	Negative CA reversal, At mean[4]	0.01*	-0.11	0.0097**
		(0.04)		(0.06)	(0.23)	(0.04)
Observations	1,103	1,103		1,103	1,103	1,133

1. ***, **, * denote significance at the 1, 5, and 10% significance levels, respectively. P-values (in parentheses) are based on robust standard. The cut-off points are not reported. The sample excludes countries having experienced two breaks in GDP growth or two current account reversals less than or 5 years apart. The cut-off points are not reported.

2. Refer to changes in percentage points, not in probabilities.

3. Averaged over three years prior to the reference year.

4. Refers to the total marginal effect of the discount rate, if a corresponding current account reversal occurs.

Source: Authors' estimations.

Inclusion of the monetary policy variable in the baseline regressions does not alter the statistical significance of the control variables. The probability of a break in trend GDP growth continues to be affected by the rate of GDP growth, the level of government indebtedness and the presence of regional effects prior to the occurrence of a growth break. However, the rate of change in the GDP growth rate prior

to a growth break loses significance and the real exchange rate indicator becomes significant, a finding that is related to the sample change, rather than the inclusion of the discount rate. The effect of monetary policy is nevertheless robust to excluding the rate of real exchange rate depreciation, which is positively correlated with the discount rate (model 3).

Discussion

Our findings suggest that, if deployed appropriately, macroeconomic policy can maximise the longer-term payoff of current account reversals. In particular, a macroeconomic policy stance that has the potential for improving external positions – such as a fiscal tightening when external positions improve or a monetary tightening when external positions deteriorate – are likely to enhance the trend growth payoff of improvements in external positions.

In the case of fiscal policy, the growth dividend of a current account improvement is increased considerably if government finances are strengthened at the same time. As for monetary policy, by reducing absorption when external positions deteriorate, a monetary tightening makes a pick-up in trend growth more likely within two years of occurrence of a current account reversal. Moreover, the growth payoff of fiscal policy is stronger than that of monetary policy: the estimated marginal effect of a monetary tightening when the current account deteriorates on the probability of a break in trend growth is far weaker than that of a fiscal tightening when the current account improves. Given this stronger effect, it would be interesting to assess in greater detail the growth payoffs of different mixes of revenue and expenditure instruments used to strengthen the budget balance in association with a current account improvement. Unfortunately, data on revenue and expenditure aggregates are currently available for only a small sub-sample of countries.

The long-term growth dividend of fiscal policy may be affected by cross-border externalities. In particular, a fiscal tightening in association with a current account improvement in one country, which raises the probability of a subsequent growth acceleration in that country, may also depend on the stance of fiscal policy elsewhere. Through trade and investment linkages, fiscal policy affects activity at least in the short term not only at home but also abroad. It is nevertheless difficult to disentangle empirically the effects of fiscal action abroad on the probability of current account reversals in neighbouring countries, which is used as a measure of regional spillover effects in the regressions, and on the fiscal stance of the reference country, which affects the probability of a impending growth acceleration.

Interestingly, the results are asymmetrical for growth accelerations and decelerations. In particular, appropriate fiscal or monetary policy actions that could lift the probability of a trend growth acceleration have no discernible effect on the probability of decelerations. Another type of asymmetry in the findings is related to current account improvements an d deteriorations. In this case, fiscal policy raises the probability of a growth acceleration when it contributes to an improvement in external positions (through lower deficits) but not when it prevents external positions from deteriorating further. As for monetary policy, the estimated trend growth payoff arises when a monetary tightening contributes to preventing current account deteriorations, but not when it enhances improvements in external positions.

The findings also shed light on the role of pro-growth structural policies. Such reforms can correct the distortions that not only hold back potential growth but also prevent countries from making the most of capital inflows as a source of finance. A case in point is those pro-competition reforms in financial and product market regulations, for example, that could facilitate – and/or remove obstacle to – the allocation of capital inflows to high- rather than low-productivity activities. Policy action to this end would ensure that an accumulation of net foreign liabilities would bolster the growth dividend of increased financing. In turn, on the basis of our baseline results, policies that remove impediments to outward foreign investment, which would be consistent with an accumulation of net foreign assets, would be growth-friendly at home.

The joint effects of structural policy on long-term growth and on external positions are nevertheless difficult to disentangle and, as a result, structural policy indicators have been omitted from the set of controls. Dealing with such effects remains an important topic for future research.

6. Conclusions

This paper's main finding is that improvements in a country's external position increase the probability of a subsequent sustained pick-up in trend GDP growth. We also find that deteriorations in external positions make impending growth accelerations less likely, while leaving the probability of a growth deceleration unchanged. These results contribute to a growing empirical literature on the growth implications of current account reversals, which nevertheless tends to focus on short-run, rather than long-term, effects. Several channels through which current account improvements/deteriorations may affect trend GDP growth are discussed, including those related to the availability of financing for growth-enhancing activities and the allocation of resources among sectors with different productivities. Our empirical results are consistent with several of those explanations, but they do not necessarily point to a specific one.

Policy also matters. The growth effects of a current account reversal can be amplified by concomitant macroeconomic policy actions that strengthen external positions. This is the case, for example, of a fiscal consolidation when external positions improve and a monetary tightening when external positions deteriorate. These findings are instructive, because they shed light on how appropriate macroeconomic policies can maximise the growth payoffs of current account reversals. Our results also suggest that structural reforms that remove impediments to the allocation of capital to growth-enhancing activities would allow countries to reap the full benefits of capital inflows as a source of growth financing.

BIBLIOGRAPHY

Abbas, S.A., et al. (2010), "A Historical Public Debt Database", *IMF Working Paper*, No. 10/245, International Monetary Fund, Washington, D.C.

Aghion, Comin and Howitt (2006),"When Does Domestic Saving Matter for Economic Growth?", *NBER Working Papers*, No. 12275, National Bureau of Economic Research, Cambridge, MA.

Aizenman, J., B. Pinto and A. Radziwill (2004), "Sources for Financing Domestic Capital: Is Foreign Saving a Viable Option for Developing Countries?", *NBER Working Papers*, No. 10624, National Bureau of Economic Research, Cambridge, MA.

Assmann, C. and J. Boysen-Hogrefe (2010), "Analysis of Current Account Reversals via Regime Switching Models", *Economic Change and Restructuring*, Vol. 43, pp. 21-43.

Bai J. and P. Perron (2003), "Estimating and Testing Linear Models with Multiple Structural Changes", *Econometrica*, Vol. 66, pp. 47-78.

Bagnai, A. and S. Manzocchi (1999), "Current-Account Reversals in Developing Countries: The Role of Fundamentals", *Open Economies Review*, Vol. 10, pp. 143-63.

Ben-David, D. and D.H. Papell (1998), "Slowdowns and Meltdowns: Postwar Growth Evidence from 74 Countries", *Review of Economics and Statistics*, Vol. 80, pp. 561-71.

Calvo, A.G. (1998), "Capital Flows and Capital-Market Crises: The Simple Economics of Sudden Stops", *Journal of Applied Economics*, Vol. 1, pp. 35-54.

Calvo, A.G. (2000), "Balance-of-Payments Crises in Emerging Markets, Large Capital Inflows and Sovereign Governments", in P. Krugman (ed.), *Currency Crises*, University of Chicago Press, Chicago, IL.

Cameron, A.C., J.B. Gelbach and D.L. Miller (2006), "Robust Inference with Multi-way Clustering ", *NBER Technical Working Paper*, No. 327, National Bureau of Economic research, Cambridge, MA.

Caner, M., T. Grennes and F. Koehler-Geib (2010), "Finding the Tipping Point – When Sovereign Debt Turns Bad", *World Bank Policy Research Working Paper*, No. 5391, The World Bank, Washington, D.C.

Checherita, C. and P. Rother (2010), "The Impact of High and Growing Government Debt on Economic Growth: An Empirical Investigation for the Euro Area", *ECB Working Paper*, No. 1237, European Central Bank, Frankfurt.

Croke, H., S. Kamin and S. Leduc (2006), "An Assessment of the Disorderly Adjustment Hypothesis for Industrial Economies", *International Finance*, Vol. 9, pp. 37-61.

Debelle, G. and G. Galati (2007), "Current Account Adjustment and Capital Flows", *Review of International Economics*, Vol. 15, pp. 989–1013.

de Mello, L., P.C. Padoan and L. Rousová (2010), "Are Global Imbalances Sustainable? Shedding Further Light on the Causes of Current Account Reversals", *Economics Department Working Paper*, No. 813, OECD, Paris.

Edwards, S. (2005), "Capital Controls, Sudden Stops and Current Account Reversals", *NBER Working Paper*, No. 11170, National Bureau of Economic research, Cambridge, MA.

Eichengreen, B. and M. Adalet (2005), "Current Account Reversals: Always a Problem?", *NBER Working Paper*, No. 11634, NBER, Cambridge, MA.

Eichengreen, B., D. Park and K.Shin (2011), "When Fast Growing Economies Slow Down: Evidence and Implications for China", *NBER Working Paper*, No. 16919, NBER, Cambridge, MA.

Freund, C. (2005), "Current Account Adjustment in Industrial Countries", *Journal of International Money and Finance*, Vol. 24, pp. 1278-98.

Freund, C. and F. Warnock (2005), "Current Account Deficits in Industrial Countries: The Bigger They are, the Harder They Fall?", *NBER Working Paper*, No. 11823, National Bureau of Economic Research, Cambridge, MA.

Gourinchas, P.-O. and O. Jeanne (2007). "Capital Flows to Developing Countries: The Allocation Puzzle", *NBER Working Paper*, No. 13602, National Bureau of Economic Research, Cambridge, MA.

Grossman, G.M. and E. Helpman (1991), *Innovation and Growth in the Global Economy*, MIT Press Cambridge, MA.

Hausmann, R., L. Pritchett and D. Rodrik (2005), "Growth Accelerations", *Journal of Economic Growth*, Vol. 10, pp. 303-29.

Hutchinson, M. and I. Noy (2002), "Output Costs of Currency and Balance of Payments Crisis in Emerging Markets", *Comparative Economic Studies*, Vol. 44, pp. 27-44.

Jerzmanowski, M. (2006), "Empirics of Hills, Plateaus, Mountains and Plains: A Markov-Switching Approach to Growth", *Journal of Development Economics*, Vol. 81, pp. 357-85.

Jones, B.F. and B.A. Olken (2008), "The Anatomy of Start-Stop Growth", *Review of Economics and Statistics*, Vol. 90, pp. 582-87.

Jong-A-Pin, R. and J. de Haan (2008), "Growth Accelerations and Regime Changes: A Correction", *Economic Journal Watch*, Vol. 5, pp. 51-8.

Kose, M.A., C. Otrok and C.H. Whiteman (2003), "International Business Cycles: World, Region and Country-Specific Factors", *American Economic Review*, Vol. 93, pp. 1216-39.

Kumar, M. S. and J. Woo (2010), "Public Debt and Growth", *IMF Working Paper*, No. 10/174, International Monetary Fund, Washington, D.C.

Lane, P.R. and G.M. Milesi-Ferretti (2007), "The External Wealth of Nations Mark II: Revised and Extended Estimates of Foreign Assets and Liabilities, 1970-2004", *Journal of International Economics*, Vol. 73, pp. 223-50.

Lee, J. and M.C. Strazicich (1999), "Minimum LM Unit Root Test", *Faculty Research Paper*, No. 9932, Department of Economics, University of Central Florida, Orlando, FL.

Lee, J. and M.C. Strazicich (2003), "Minimum Lagrange Multiplier Unity Root Test with Two Structural Breaks", *Review of Economics and Statistics*, Vol. 85, pp. 1082-89.

Liesenfeld, R., G.V. Moura and J.-F. Richard (2007), "Dynamic Panel Probit Models for Current Account Reversals and their Efficient Estimation", *Economics Working Paper*, No. 2007-11, Department of Economics, Christian-Albrechts University, Kiel.

Melitz, M.J. (2003), "The Impact of Trade on Intra-industry Reallocations and Aggregate Industry Productivity", *Econometrica*, Vol. 71, pp. 1695-1725.

Milesi-Ferretti, G.M. and A. Razin (1998), "Sharp Reductions in Current Account Deficits: An Empirical Investigation", *European Economic Review*, Vol. 42, pp. 897-908.

Milesi-Ferretti, G.M. and A. Razin (2000), "Current Account Reversals and Currency Crises, Empirical Regularities", in P. Krugman (ed.), *Currency Crises*, University of Chicago Press, Chicago, IL.

Paap, R., P.H. Franses, D. van Dijk (2005), "Does Africa Grow Slower than Asia, Latin America and the Middle East? Evidence from a New Data-Based Classification Method", *Journal of Development Economics*, Vol. 77, pp. 553-70.

Prasad, E.S., R.G. Rajan and A. Subramanian (2007): "Foreign Capital and Economic Growth," *Brookings Papers on Economic Activity*, Vol. 38, pp. 153-230.

Reinhart, C. M. and K. S. Rogoff (2010), "Growth in a Time of Debt", *American Economic Review*, Vol. 100 (2), pp. 573-78.

Rivera-Batiz, L.A. and P. M. Romer (1991), "Economic Integration and Endogenous Growth", *Quarterly Journal of Economics*, Vol. 106, pp. 531-55.

Rodrik, D. (2008), "The Real Exchange Rate and Economic Growth", unpublished manuscript, John F. Kennedy School f Government, Harvard University, Cambridge, MA.

Sandri, D. (2010), "Growth and Capital Flows with Risky Entrepreneurship", *IMF Working Paper*, No. 10/37, International Monetary Fund, Washington, D.C.

Xu, G. (2011), "Growth Accelerations Revisited", *Economic Journal Watch*, Vol. 8, pp. 39-56.

Zivot, E. and D.W.K. Andrews (1992), "Further Evidence on the Great Crash, the Oil-Price Shock and the Unit Root Hypothesis", *Journal of Business and Economic Statistics*, Vol. 10, pp. 251-70.

Appendix 1. The chronologies of current account reversals and breaks in GDP growth

	Current account reversals[1]			Breaks in GDP growth[1]		
	Two breaks (level, trend)[2]		One break (level, trend)[2]	Two breaks (level, trend)[2]		One break (level, trend)[2]
Algeria	1978 (n,s)	1995 (s,s)		1974 (n,s)	1993 (n,n)	1974 (n,s)
Andorra				1974 (s,n)	1999 (s,s)	
Argentina	1998 (n,n)	2002 (s,s)	2001 (s,s)	1990 (s,n)	2000 (n,s)	
Australia	1995 (s,s)	2002 (s,n)		1984 (n,s)	1992 (s,n)	
Austria	1981 (s,n)	1987 (s,n)		1980 (s,s)	1991 (n,s)	
Bahamas, The				1978 (s,s)	1984 (s,s)	
Bahrain	1981 (s,s)	2000 (n,n)	2003 (n,n)			
Bangladesh				1976 (s,n)	1980 (s,s)	
Belgium	1979 (s,s)	1999 (s,s)		1982 (n,n)	1990 (n,s)	1983 (n,n)
Belize				1982 (s,n)	1993 (s,n)	
Benin	1989 (s,n)	2003 (s,s)		1978 (s,n)	1989 (s,n)	
Bermuda				1980 (n,n)	1988 (n,s)	1980 (s,n)
Bolivia	1987 (s,n)	1997 (s,s)		1978 (n,s)	1985 (s,s)	
Botswana				1977 (n,s)	1995 (n,s)	
Brazil	1982 (s,n)	1999 (n,s)		1983 (s,n)	1986 (n,s)	
Burkina Faso				1974 (s,s)	1994 (n,n)	
Burundi	1978 (n,s)	1994 (n,s)		1977 (s,s)	1992 (s,s)	
Cameroon	1978 (s,s)	1991 (s,s)		1986 (n,s)	1995 (n,s)	
Canada	1990 (n,s)	2001 (s,n)		1983 (s,n)	1992 (n,s)	
Central African Rep.	2000 (s,s)	2003 (n,s)		1993 (n,n)	2002 (s,s)	2001 (n,n)
Chad	1978 (s,n)	2000 (n,s)		1991 (n,s)	2003 (s,s)	
Chile	1978 (n,n)	1990 (s,n)	1999 (n,n)	1976 (n,s)	1983 (s,n)	
China				1975 (s,s)	1987 (n,s)	
Colombia				1983 (n,n)	1997 (n,n)	1997 (n,n)
Congo, Dem. Rep. of	1984 (n,n)	2000 (s,s)	1997 (s,s)	1978 (n,s)	1989 (n,s)	
Congo, Republic of	1986 (s,s)	2002 (n,s)		1977 (s,s)	1985 (s,s)	
Costa Rica	1982 (s,s)	1991 (n,s)		1979 (n,s)	1983 (n,n)	1985 (s,n)
Côte d'Ivoire	1992 (s,s)	1995 (n,s)		1978 (n,n)	1995 (n,n)	1978 (s,n)
Denmark	1983 (s,s)	1989 (s,s)		1974 (s,s)	1987 (n,s)	
Dominican Republic	1997 (n,s)	2003 (s,s)		1988 (s,s)	2000 (n,n)	1988 (s,n)
Ecuador	1977 (n,n)	1985 (n,s)	1978 (s,s)	1982 (s,s)	1999 (s,s)	
Egypt	1976 (s,s)	1993 (n,s)		1980 (s,n)	1984 (s,s)	
El Salvador	1982 (n,n)	1994 (n,s)	1994 (n,n)	1978 (s,s)	1992 (n,s)	
Equatorial Guinea	1981 (s,s)	1996 (s,s)				
Ethiopia	1989 (s,s)	1998 (n,s)				
Fiji				1975 (n,s)	1982 (s,s)	
Finland	1997 (n,s)	2000 (s,n)		1988 (s,s)	1994 (n,s)	
France	1993 (s,s)	1996 (s,s)		1984 (n,s)	1990 (n,n)	1985 (n,n)
Gabon	1978 (s,s)	1986 (s,s)		1975 (s,s)	1980 (n,s)	
Gambia, The	1981 (n,s)	1997 (n,s)		1975 (n,s)	2003 (n,s)	
Georgia				1990 (s,s)	1994 (n,s)	

Appendix 1. (continued)

	Current account reversals[1]			Breaks in GDP growth[1]		
	Two breaks (level, trend)[2]		One break (level, trend)[2]	Two breaks (level, trend)[2]		One break (level, trend)[2]
Germany	1990 (s,n)	2003 (n,s)		1979 (n,n)	1990 (n,s)	1976 (n,n)
Ghana	1997 (s,s)	2002 (s,s)		1976 (s,s)	1983 (s,n)	
Greece	1987 (s,n)	1992 (s,s)		1976 (s,s)	1980 (n,n)	1981 (n,n)
Greenland				1985 (n,s)	1993 (s,n)	
Guatemala	1977 (n,s)	1989 (n,n)	1982 (n,n)	1980 (n,s)	1987 (n,n)	1980 (s,n)
Guinea	1985 (n,s)	1999 (n,n)	2002 (n,s)			
Guinea-Bissau				1976 (s,s)	1983 (s,s)	
Guyana	1984 (n,n)	1993 (s,n)	1992 (n,s)	1983 (n,n)	1996 (s,s)	1990 (s,n)
Haiti	1983 (s,s)	1996 (s,n)				
Honduras	1995 (n,s)	2003 (n,n)	1995 (n,n)	1974 (n,s)	1978 (n,s)	
Hong Kong, China				1983 (n,s)	1997 (s,s)	
Hungary				1989 (n,s)	1992 (n,s)	
Iceland	1992 (n,s)	2002 (s,s)		1976 (s,s)	1993 (n,s)	
India				1977 (s,s)	1980 (n,s)	
Indonesia	1993 (s,n)	2001 (s,s)		1996 (s,s)	1999 (s,s)	
Iran, Islamic Republic of	1978 (s,s)	1994 (n,s)		1979 (s,s)	1984 (s,s)	
Ireland	1998 (s,s)	2001 (s,s)		1979 (n,s)	1994 (s,n)	
Israel	1985 (n,n)	1998 (s,s)	1998 (s,s)	1976 (s,s)	2001 (n,s)	
Italy	1978 (s,s)	1992 (n,s)		1975 (s,s)	1983 (n,s)	
Jamaica	1979 (n,s)	1991 (s,s)		1974 (s,s)	1993 (s,s)	
Japan	1998 (s,s)	2003 (s,s)		1986 (n,s)	1991 (n,s)	
Jordan	1990 (s,s)	1994 (n,s)				
Kenya	1989 (s,s)	1997 (s,s)		1975 (n,s)	1997 (s,s)	
Kiribati				1976 (s,s)	1980 (s,n)	
Korea, Rep.				1996 (n,s)	1999 (n,n)	
Latvia				1989 (n,s)	1993 (n,s)	
Lebanon	1984 (s,s)	1993 (n,s)				
Lesotho				1975 (s,s)	1978 (s,s)	
Liberia	1992 (s,n)	2001 (n,n)	2001 (n,n)	1994 (n,s)	1998 (n,s)	
Liechtenstein				1974 (s,s)	1978 (n,s)	
Luxembourg				1985 (s,n)	1989 (s,n)	
Madagascar	1978 (s,s)	2002 (s,s)		2000 (s,s)	2003 (n,s)	
Malawi	1980 (n,n)	2003 (s,s)	2003 (s,s)	1982 (n,s)	2000 (s,n)	
Malaysia				1985 (n,n)	1996 (n,s)	1996 (n,n)
Mali	1983 (s,n)	1991 (s,s)		1974 (s,n)	1977 (s,n)	
Malta	1979 (s,n)	2000 (n,n)	2000 (n,s)	1976 (n,s)	1987 (s,n)	
Mauritania	1983 (s,s)	2003 (s,n)		1989 (s,s)	1996 (s,s)	
Mauritius	1975 (s,n)	1987 (n,s)				
Mexico	1981 (s,n)	1989 (s,n)		1981 (s,n)	1988 (n,n)	1981 (s,n)
Morocco	1975 (n,n)	1987 (n,s)	1987 (n,s)	1976 (n,n)	1991 (s,s)	1977 (n,n)
Myanmar	1983 (s,s)	1997 (s,s)				
Nepal	1981 (n,s)	2003 (s,s)		1982 (s,s)	1985 (n,s)	
Netherlands	1992 (s,s)	2003 (n,s)		1982 (n,s)	2001 (s,n)	
New Zealand	1995 (s,s)	2001 (s,s)		1984 (s,s)	1999 (s,n)	

Appendix 1. (continued)

	Current account reversals[1]			Breaks in GDP growth[1]		
	Two breaks (level, trend)[2]		One break (level, trend)[2]	Two breaks (level, trend)[2]		One break (level, trend)[2]
Nicaragua	1994 (n,s)	1997 (n,n)	1991 (n,s)	1976 (s,s)	1981 (n,s)	
Niger	1982 (n,s)	1985 (s,n)		1974 (s,s)	1979 (n,s)	
Nigeria	1987 (s,s)	2003 (n,n)	1986 (s,s)	1984 (s,n)	2000 (s,s)	
Norway				1993 (s,n)	2003 (s,n)	
Oman				1978 (s,s)	1984 (s,s)	
Pakistan	1983 (s,s)	1998 (n,s)		1981 (n,s)	2002 (n,s)	
Panama	1978 (s,s)	1993 (n,s)		1985 (n,n)	1991 (n,n)	1990 (n,n)
Papua New Guinea				1983 (s,s)	1996 (s,s)	
Paraguay	1987 (n,n)	1995 (n,s)	1994 (s,s)	1980 (n,s)	1995 (s,s)	
Peru	1977 (n,s)	1986 (s,s)		1990 (n,n)	1997 (s,n)	1984 (n,n)
Philippines	1975 (s,s)	1986 (s,s)		1982 (s,s)	1986 (n,s)	
Portugal				1985 (n,s)	1990 (n,s)	
Qatar	1977 (s,s)	1996 (s,s)				
Rwanda	1999 (n,n)	2003 (s,s)	2003 (s,s)	1993 (s,s)	1996 (n,s)	
Samoa	1984 (s,s)	1994 (n,s)				
Saudi Arabia	1977 (s,s)	1983 (n,s)		1982 (n,n)	1992 (n,s)	1983 (n,n)
Senegal	1988 (s,s)	2003 (s,s)		1976 (s,s)	1990 (n,s)	
Seychelles				1976 (s,s)	2001 (s,s)	
Sierra Leone	1992 (s,s)	2001 (s,s)		1999 (n,s)	2003 (n,s)	
Singapore	1994 (n,s)	2001 (n,s)		1987 (n,s)	2002 (s,s)	
South Africa	1984 (n,s)	1994 (n,s)		1975 (s,n)	1984 (s,n)	
Spain	1975 (s,s)	1998 (n,n)	1997 (s,s)	1978 (n,n)	1990 (n,n)	1979 (n,n)
Sri Lanka	1978 (s,s)	1990 (s,s)		1980 (n,s)	2003 (n,s)	
St. Vincent and the Grenadines				1976 (s,s)	1990 (n,s)	
Sudan	1977 (s,s)	1995 (n,n)	1977 (s,s)	1977 (s,n)	1988 (s,s)	
Swaziland	1976 (n,s)	1984 (n,s)		1978 (n,s)	1990 (s,n)	
Sweden	1989 (s,s)	2002 (n,s)		1989 (n,s)	1995 (s,s)	
Switzerland	1982 (s,s)	1986 (s,s)		1975 (s,s)	1991 (s,s)	
Syrian Arab Republic	1983 (n,n)	1986 (n,n)	1983 (n,n)	1975 (n,s)	1990 (n,s)	
Tanzania	1974 (n,s)	1981 (n,n)	1987 (n,s)			
Thailand	1992 (s,s)	2001 (n,s)		1995 (n,s)	2000 (s,s)	
Togo	1976 (n,n)	1979 (n,s)	1979 (n,s)	1991 (n,s)	1994 (n,n)	1981 (n,n)
Trinidad and Tobago	1975 (s,n)	1982 (s,s)		1982 (s,n)	2001 (n,n)	1982 (s,s)
Tunisia	1996 (s,n)	2003 (n,s)		1977 (n,n)	1980 (n,n)	1983 (n,n)
Turkey	1977 (n,n)	1999 (n,n)	1999 (n,n)	1980 (n,n)	1998 (s,s)	1998 (s,s)
Uganda	1999 (s,s)	2003 (s,s)				
United Kingdom	1974 (n,n)	1985 (s,s)	1985 (s,s)	1987 (s,s)	1993 (n,s)	
United States	1982 (s,s)	1999 (s,s)		1981 (s,s)	1986 (n,s)	
Uruguay	1982 (n,s)	1998 (s,s)		1984 (s,n)	2001 (s,s)	
Venezuela, Rep. Bol.	1977 (n,n)	1996 (n,s)	1975 (n,s)	1982 (s,s)	2002 (s,s)	
Zambia	1983 (s,s)	1986 (s,s)		1982 (n,s)	1988 (s,n)	

1. The search process excludes the first and last 3 observations over the period 1971-2007. The optimal number of lagged first-differenced terms included in the unit root test to correct for serial correlation is selected according to the general-to-specific procedure of Lee and Strazicich (1999 and 2003) with a maximum number of lags set to 2.

2. The statistical significance/insignificance of the estimated breaks in levels and trends are denoted at the 10% level by “s” and “n”, respectively.

Source: Authors’ estimations.

Appendix 2. Current account reversals followed by breaks in GDP growth

	Date of a break		Type of a break	
	Current account	**GDP growth**	**Current account**	**GDP growth**
Brazil	1982	1983	Deterioration	Acceleration
Canada	1990	1992	Improvement	Acceleration
Gabon	1978	1980	Improvement	Acceleration
United Kingdom	1985	1987	Deterioration	Deceleration
Iran	1978	1979	Deterioration	Acceleration
Iceland	1992	1993	Improvement	Acceleration
Jamaica	1991	1993	Improvement	Acceleration
Sri Lanka	1978	1980	Deterioration	Deceleration
Madagascar	2002	2003	Improvement	Acceleration
Nepal	1981	1982	Deterioration	Acceleration
Paraguay	1994	1995	Improvement	Acceleration
Senegal	1988	1990	Deterioration	Deceleration
Singapore	2001	2002	Improvement	Acceleration
Sierra Leone	2001	2003	Deterioration	Deceleration
Swaziland	1976	1978	Deterioration	Acceleration
Uruguay	1982	1984	Improvement	Acceleration
Zambia	1986	1988	Improvement	Deceleration

Source: Authors' computations based on the chronologies reported in Appendix 1.

Appendix 3. Data sources and definitions

Variable	Description
GDP growth	Defined as $dGDP = (GDP_t - GDP_{t-1}) / GDP_{t-1} * 100$, available from the World Bank's *World Development Indicators* database.
Net foreign assets (NFA)	Defined in per cent of GDP, available from the updated and extended version of the *External Wealth of Nations Mark II* database developed by Lane and Milesi-Ferretti (2007). First-differenced data are computed as $dNFA = (NFA_t - NFA_{t-1}) / GDP_{t-1} * 100$.
Positive CA reversal (1-2 lag)	Dummy variable that takes a value of "1" if a country experienced a positive reversal in external positions (improvement) one or two years ago.
Negative CA reversal (1-2 lag)	Dummy variable that takes a value of "1" if a country experienced a negative reversal in external positions (deterioration) one or two years ago.
Positive CA reversal (1-3 lag)	Dummy variable that takes a value of "1" if a country experienced a positive reversal in external positions (improvement) one, two or three years ago.
Negative CA reversal (1-3 lag)	Dummy variable that takes a value of "1" if a country experienced a negative reversal in external positions (deterioration) one, two or three years ago.
Regional spillovers	Total number of growth accelerations minus growth decelerations in the same economic area excluding breaks in the reference country as identified by the Lee-Strazicich test reported in Appendix 1. The economic areas used are: OECD countries (as of 2009, plus Andorra, Greenland, Latvia, Liechtenstein and Malta), Latin America, Middle East, Asia and Pacific, and Africa.
Public debt	Logarithm of gross government debt-to-GDP ratio, available from Abbas et al. (2010).
Undervalued	Logarithm of the real exchange rate adjusted for the Balassa-Samuelson effect defined as the difference between the real exchange rate and the Balassa-Samuelson-adjusted rate (computed as the fitted values of a fixed time-effects regression of the real exchange rate on per capita GDP), available from Rodrik (2008).
Budget deficit	First difference of the logarithm of gross government debt-to-GDP ratio, available from Abbas *et al*. (2010).
Discount rate	Discount/bank rate (in per cent per year), available from the International Monetary Fund's International Financial Statistics database (line 60).

WORKING PAPERS

The full series of Economics Department Working Papers can be consulted at www.oecd.org/eco/workingpapers/

870. *Les politiques du logement en France*
(May 2011) Bénédicte Rolland

869. *How important is wealth for explaining household consumption over the recent crisis? An empirical study for the United States, Japan and the euro area*
(May 2011) Clovis Kerdrain

868. *Adjusting fiscal balances for asset price cycles*
(May 2011) Robert Price and Thai-Thanh Dang

867. *Improving the functioning of the housing market in the United Kingdom*
(May 2011) Christophe André

866. *An analysis of demand for foreign exchange reserves*
(May 2011) Peter Vujanovic

865. *Episodes of large capital inflows and the likelihood of banking and currency crises and sudden stops*
(May 2011) Davide Furceri, Stephanie Guichard and Elena Rusticelli

864. *The effect of episodes of large capital inflows on domestic credit*
(May 2011) Davide Furceri, Stephanie Guichard and Elena Rusticelli

863. *Medium-term determinants of international investment positions: the role of structural policies*
(May 2011) Davide Furceri, Stephanie Guichard and Elena Rusticelli

862. *French social housing in an international context*
(May 2011) Kathleen Scanlon and Christine Whitehead

861. *Making the French housing market work better*
(May 2011) by Hervé Boulhol

860. *Surveillance by international institutions: lessons from the global financial and economic crisis*
(April 2011) by Kumiharu Shigehara and Paul Atkinson

859. *France's environmental policies: internalising global and local externalities*
(April 2011) by Balázs Égert

858. *Bringing French public debt down: the options for fiscal consolidation*
(April 2011) by Balázs Égert

857. *Policy frameworks in the post-crisis environment*
(April 2011) by Nigel Pain and Oliver Röhn

856. *Global imbalances, exchange rate pegs and capital flows: a closer look*
(April 2011) by Paul van den Noord

855 *Interest rate pass-through during the global financial crisis: the case of Sweden*
(April 2011) by Niels-Jakob Harbo Hansen and Peter Welz

854 *What drives inflation in the major OECD Economies*
(April 2011) by Diego Moccero, Shingo Watanabe and Boris Cournède

853 *Mitigation potential of removing fossil fuel subsidies: A general equilibrium assessment*
(April 2011) by J.M. Burniaux and J. Chateau

852 *Enhancing labour utilisation in a socially inclusive society in Australia*
(April 2011) by Vassiliki Koutsogeorgopoulou

851 *Meeting infrastructure needs in Australia*
(March 2011) by Claude Giorno

850 *Restoring fiscal sustainability in Spain*
(March 2011) by Pierre Beynet, Andrés Fuentes, Robert Gillingham and Robert Hagemann

849. *Drivers of homeownership rates in selected OECD countries*
(March 2011) by Dan Andrews and Aida Caldera Sánchez

848. *How efficient are banks in Hungary?*
(February 2011) by Margit Molnár and Dániel Holló

847. *Strengthening the macroeconomic policy framework in South Africa*
(February 2011) by Tatiana Lysenko and Geoff Barnard

846. *To move or not to move: what drives residential mobility rates in the OECD?*
(February 2011) by Aida Caldera Sánchez and Dan Andrews

845. *Reforming the labour market in Spain*
(February 2011) by Anita Wölfl and Juan S. Mora-Sanguinetti

844. *Macroeconomic Impact of Basel III*
*(*February 2011) by Patrick Slovik and Boris Cournède

843. *The policy and institutional drivers of economic growth across OECD and non-OECD economies: new evidence from growth regressions*
by Romain Bouis, Romain Duval, and Fabrice Murtin

842. *Limiting Long-Term Unemployment and Non-Participation in Sweden*
(February 2011) by Niels-Jakob Harbo Hansen

841. *Enhancing the cost-effectiveness of climate change mitigation policies in Sweden*
(February 2011) by Stéphanie Jamet

840. *Policies towards a sustainable use of water in Spain*
(February 2011) by Andrés Fuentes

839. *Increasing public sector efficiency in Slovakia*
(January 2011) by Felix Hüfner