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The U.S. current account deficit: Gradual correction or abrupt adjustment?

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Abstract

In this paper I use a large multi-country data set to analyze the determinants of abrupt and large "current account reversals." FS

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1. Introduction

In 1991, and after 8 years of running a deficit, the U.S. posted a current account surplus of 0.7% of GDP. That was the last time the current account balance was positive. Since then the U.S. external imbalance has grown steadily. In 2005 the deficit was 6.4% of GDP, and it is expected to grow even further during 2006. A number of analysts have become increasingly alarmed by these very large external imbalances. Some authors have argued that by relying on foreign central banks' purchases of government securities, the U.S. has become vulnerable to changes in expectations and economic sentiments (Feldstein, 2006). A number of analysts have argued that at over 6% of GDP the U.S. current account deficit is clearly unsustainable, and that in the next few years it will have to be cut, approximately, in half.[1] Of course, from a global perspective, a reduction in the U.S. deficit implies a decline in the rest of the world's collective current account surpluses.

That is, adjustment is required both in deficit and surplus nations. According to the International Monetary Fund's *World Economic Outlook* (2005), the "issue is not whether, but how they will adjust (p. 67)."

A key question is what will be the effect of a major reduction in the U.S. external deficit on economic activity. More specifically, the question is whether there will be an orderly adjustment process, with no significant impact on growth and employment, or, whether adjustment will create havoc and large dislocations. The answer to this question depends on how rapid adjustment takes place. If adjustment is gradual and distributed through a number of years, neither GDP growth nor employment are likely to be affected in a significant way. If, on the other hand, adjustment is sudden and abrupt, the U.S. and the world economies are likely to suffer. Recently, *The Financial Times* described the likely consequences of an abrupt U.S. external adjustment as follows[2]:

> "If willing lenders to the US were to dry up [suddenly], the consequences would be painful: a plunge in the dollar, a spike in interest rates, higher import prices."

Recent evidence presented in Calvo, Izquierdo, and Mejia (2004), Edwards (2004, 2005a, 2005b) and Frankel and Cavallo (2004) suggests that countries that have experienced *sudden* declines in capital inflows and/or *abrupt* current account reversals have suffered significant reduction in the rate of economic growth. According to Edwards (2005b), industrial countries that experienced current account reversals that exceeded 4% of GDP in 1 year, suffered a short-term decline in GDP per capita growth in the order of 2.9%–3.9%, relative to trend.

In this paper I use a large multi-country data set to analyze the determinants of abrupt and large current account reversals. More specifically, I use a panel random-effect probit model to estimate which macroeconomic variables affect the probability that a country experiences an abrupt current account reversal. This analysis is important for assessing the likelihood that the U.S. will be subject to a sudden, large and disruptive current account correction sometime in the next few years.

It is important to stress at the outset that the results reported in this paper should be interpreted with care. This is for two reasons: first, the U.S. plays a unique and central role in the international financial system. Second, in modern times a very large country such as the U.S. has never run persistent and very large current account deficits (Edwards, 2005b). That is, there are no historical precedents for the current large global imbalances.

The rest of the paper is organized as follows: in Section 2 I discuss the U.S. current account deficit from a historical perspective. I analyze trends and other countries' experiences. I look at both the financing of the deficit and at the evolution of the U.S. net international investment position (NIIP). In Section 3 I provide a summary of the international evidence on large and significant current account reversals. Section 4 contains new econometric results on the probability of countries experiencing abrupt and large current account reversals. In this Section I discuss how the probability of the U.S. experiencing a reversal has evolved during the last few years. Finally Section 5 contains the conclusions.

2. The U.S. current account imbalance in international perspective

In this paper, Section 1 provide some background information on the evolution of the U.S. current account during the last three decades. In Fig. 1 I present quarterly data for the U.S. current

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[2] "Economists expect to escape a disorderly correction," *Financial Times*, January 25, 2006, p. 3.
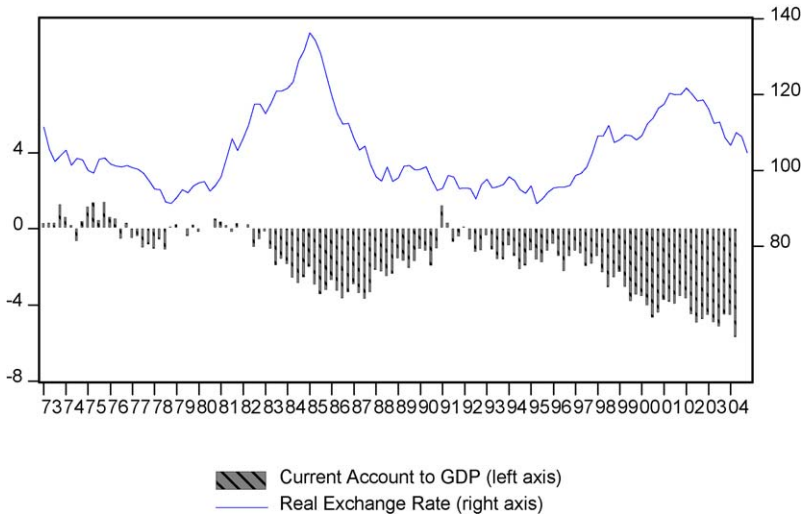
Fig. 1. Current account balance and real exchange rate.

account balance as percentage of GDP, for the period 1973–2004.[3] I also include data on the evolution of the Federal Reserve's trade-weighted index of the U.S. dollar real exchange rate (an increase in the RER index represents a real exchange rate appreciation).[4] This figure shows that deficits have become increasingly large since 1992. Fig. 1 also shows that during the period under consideration the RER index experienced significant gyrations. Finally, Fig. 1 shows a pattern of negative correlation between the trade-weighted real value of the dollar and the current account balance.

In Table 1 I present data on the current account as a percentage of GDP, and its financing for the period 1990–2004. As may be seen, during the last few years the nature of external financing has changed significantly. Since 2002 net foreign direct investment (FDI) flows have been negative; this contrasts with the 1997–2001 period when FDI flows contributed in an important way to deficit financing. Also, after 4 years on net positive equity flows (1998–2002), these became negative in 2003–2004. As the figures in Table 1 show, during 2003 and 2004 the U.S. current account deficit was fully financed through net fixed income flows, and in particular through official foreign purchases of government securities.[5]

In Fig. 2 I present the evolution of the U.S. net international investment position (NIIP) as percentage of GDP. As may be seen, this has become increasingly negative: in 2004 U.S. net international liabilities reached 29% of GDP. An important feature of the NIIP is that gross U.S. international assets and gross U.S. international liabilities are held in different currencies. While more than 70% of gross foreign assets held by U.S. nationals are denominated in foreign currency, approximately 95% of gross U.S. liabilities in hands of foreigners are denominated in U.S. dollars. This means that *net* liabilities as a percentage of GDP are subject to "valuation effects" stemming from changes in the value of the dollar. Dollar depreciation reduces the value of net liabilities; a

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[3] Parts of this section draw on Edwards (2005a).

[4] This is the Federal Reserve RER index.

[5] See, for example, Martin Wolf's October 1, 2003 article in the Financial Times, "Funding America's recovery is a very dangerous game," (p. 15).

Table 1
U.S. net financial flows: 1990–2004 ($ billion)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Reserves (net)	31.8	23.2	44.4	70.4	44.9	100.1	133.4	18.0	−26.7	52.3	42.5	23.1	110.3	250.1	358.1
Foreign private purchases of U.S. treasuries	−2.5	18.8	37.1	24.4	34.3	91.5	147.0	130.4	28.6	−44.5	−70.0	−14.4	100.4	113.4	108.1
Currency	18.8	15.4	13.4	18.9	23.4	12.3	17.4	24.8	16.6	22.4	5.3	23.8	21.5	16.6	14.8
Securities (net)	−27.2	−10.5	−19.1	−66.2	−6.2	−45.1	−46.0	44.6	32.1	182.6	338.0	309.2	301.4	178.6	323.2
Debt securities	–	–	–	–	–	–	13.0	84.2	145.5	104.2	267.7	300.3	269.8	241.8	360.1
Equity securities	–	–	–	–	–	–	−36.8	24.7	−30.3	84.5	93.0	12.6	37.5	−63.2	−36.8
FDI (net)	11.3	−14.7	−28.4	−32.6	−34.0	−41.0	−5.4	0.8	36.4	64.5	162.1	24.7	−62.4	−133.9	−133.0
Claims reported by non-banks (net)	17.3	8.0	13.2	11.3	−35.0	14.4	−32.6	−5.2	−15.1	−21.5	31.9	57.6	32.6	55.1	−41.5
Claims reported by banks (net)	8.6	3.4	37.4	55.7	100.1	−44.9	−75.1	7.9	4.2	−22.0	−31.7	−7.5	66.1	65.2	−15.6
Net financing	58.0	43.5	97.9	81.8	127.4	87.3	138.7	221.3	76.2	233.8	478.0	416.6	569.9	542.7	614.0
Current account deficit	79.0	−3.7	48.0	82.0	118.0	109.5	120.2	136.0	209.6	296.8	413.4	385.7	473.9	530.7	665.9

Source: BEA, U.S. International Transactions and International Investment Position.
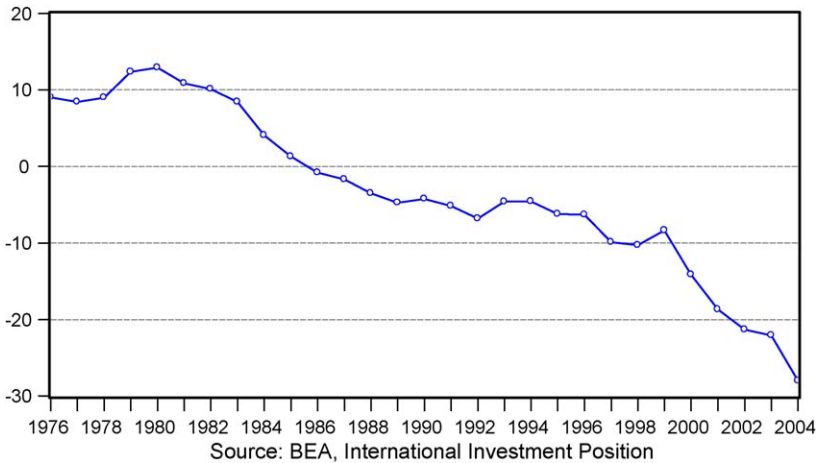
Fig. 2. U.S. net international investment position, 1976–2004.

dollar appreciation, on the other hand, increases the dollar value of U.S. net liabilities. Because of this valuation effect, the deterioration of the U.S. NIIP during 2002–2004 was significantly smaller than the accumulated current account deficit during those 2 years. An important policy question refers to the "reasonable" long-run equilibrium value of the ratio of U.S. net international liabilities to GDP; the higher this ratio, the higher will be the "sustainable" current account deficit. According to some authors, the current ratio of almost 30% of GDP is excessive, while others believe that a NIIP to GDP ratio of up to 50% would be reasonable.[6]

From an accounting point of view, the current account is the difference between savings and investment. A number of authors have argued that a worsening of a current account balance that stems from an increase in investment is very different from one that results from a decline in national savings. Some have gone as far as arguing that very large deficits in the current account "don't matter," as long as they are the result of higher (private sector) investment (Corden, 1994). The recent deterioration of the U.S. current account has largely been the result of a decline in national savings, and in particular of public and household savings. A simple implication of this trend – and one that is emphasized by most authors – is that an improvement in the U.S. current account situation will not only imply a RER adjustment; it will also require an increase in the national savings ratio, and in particular in household savings. Symmetrically, a correction of current global imbalances will also require a decline in Europe's and Japan's savings rates and/or an increase in their investment rates.[7]

In Table 2 I present data on the distribution of current account deficits in the world economy, as well as in six groups of nations – Industrial, Latin America, Asia, Middle East, Africa and Eastern Europe – for the period 1970–2001. As may be seen, at almost 6% of GDP the U.S. deficit is *very large* from a historical and comparative perspective. It is in the top decile of deficits distribution for all industrial countries in the first 30 years of floating exchange rates.

Since 1970 the U.S. has been the only *large* industrial country that has run current account deficits in excess of 5%. This reflects the unique position that the U.S. has in the international

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[6] See Obstfeld and Rogoff (2004), Edwards (2005a), and Mussa (2004).

[7] That is, the global "savings glut" identified by Bernanke (2005) would have to be reversed. See Greenspan's Speech to the International Monetary Conference in Beijing, June 6, 2005.

Table 2
Distribution of current account deficits by region: 1970–2001

Region	Mean	Median	1st Perc.	1st Quartile	3rd Quartile	9th Perc.
Industrialized countries	0.6	0.7	−3.8	−1.6	3.0	4.8
Latin America and Caribbean	5.4	4.1	−2.5	1.1	8.0	16.9
Asia	3.0	2.7	−7.1	−0.6	6.3	11.3
Africa	6.3	5.3	−3.4	1.2	9.9	16.9
Middle East	0.0	1.4	−18.8	−5.0	6.4	13.6
Eastern Europe	3.9	3.0	−2.4	0.3	6.1	10.7

Source: Author's elaboration based on World Development Indicators. A negative number indicates a current account surplus.

Table 3
Net sock of liabilities: U.S and other industrial countries: selected years (percent of GDP)

Country	1980	1985	1990	1995	2000	2003
Australia	–	–	47.4	55.1	65.2	59.1
Canada	34.7	36.3	38.0	42.4	30.6	20.6
Denmark	–	–	–	26.5	21.5	13.0
Finland	14.6	19.0	29.2	42.3	58.2	35.9
Iceland	–	–	48.2	49.8	55.5	66.0
New Zealand	–	–	88.7	76.6	120.8	131.0
Sweden	–	20.9	26.6	41.9	36.7	26.5
United States	−12.9	−1.3	4.2	6.2	14.1	22.1

Source: Bureau of Economic Analysis and Lane and Milesi-Ferretti (2001).

financial system, where its assets have been in high demand, allowing it to run high and persistent deficits. On the other hand, this fact also suggests that the U.S. is moving into uncharted waters. As Obstfeld and Rogoff (2004, 2005), among others, have pointed out, if the deficit continues at its current level, in 25 years the U.S. net international liabilities will surpass the levels observed by any country in modern times.

During the last 30 years only small industrial countries have had current account deficits in excess of 5% of GDP: Australia, Austria, Denmark, Finland, Greece, Iceland, Ireland, Malta, New Zealand, Norway and Portugal. What is even more striking is that very few countries – either industrial or emerging – have had *persistently high* current account deficits for more than 5 years (Edwards, 2005b).

In Table 3 I present data on net international liabilities as a percentage of GDP for a group of advanced countries that have historically had a large negative NIIP position.[8] The picture that emerges from this table is quite different than what one finds when analyzing current account deficits across countries. Indeed, a number of advanced nations have had – and continue to have – a significantly *larger* net international liabilities position than the U.S. This suggests that, at least in principle, the U.S. NIIP could continue to deteriorate for some time into the future. However, even if this does happen, at some point this process would have to end, and the U.S. net international liabilities position as percentage of GDP would have to stabilize. It

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[8] For the U.S. the data are from the Bureau of Economic Analysis. For the other countries the data are, until 1997, from the Lane and Milesi-Ferretti (2001) data set. I have updated them using current account balance data. Notice that the updated figures should be interpreted with a grain of salt, as I have not corrected them for valuation effects.

makes a big difference, however, at what level U.S. net international liabilities do stabilize. For example, if in the steady state foreigners are willing to hold the equivalent of 35% of U.S. GDP in the form of net U.S. assets, the U.S. could sustain a current account deficit of (only) 2.1% of GDP.[9] If, on the other hand, foreigners' net demand for U.S. assets grows to 60% of GDP – which, as shown in Table 3, is approximately the level of (net) foreign holdings of Australian assets – the U.S. sustainable current account deficit would be 3.6% of GDP. Moreover, if foreigners' are willing to hold (net) U.S. assets for the equivalent of 100% of GDP – a figure that Mussa (2004) considers implausible – the sustainable U.S. current account deficit can be as high as 6% of GDP – approximately its current level. Since there are no historical precedents for a large advanced nation running persistently large deficits, it is extremely difficult to have a clear idea on what will be the actual evolution of foreigners' demand for U.S. assets.

It is worth noting that an analysis for a longer period of time confirms the view that the recent magnitude of the current account deficit has no historical precedent in the U.S. According to Backus and Lambert (2005) the U.S. ran a current account deficit of 5% of GDP in 1815, and a somewhat smaller but persistent deficit during the 1830s and 1870s. Greenspan (2004, p. 6) has pointed out that the large deficits during the 19th century were financed with capital flows related to "specific major development projects (such as railroads)."

3. Current account reversals in the world economy: empirical evidence

A number of authors have concluded that the U.S. current account deficit is unsustainable in the long-run. Even under an optimistic scenario, where foreigners' demand for U.S. securities doubles from its current level, there would have to be a significant decline in the deficit. For example, if the (negative) NIIP were to go from its current level of 30% of GDP to 60% of GDP, the sustainable current account deficit would be 3.6%. This is almost three percentage points below its current level. In reality, however, the adjustment is likely to be even larger. The reason for this is that in order for the NIIP to go from −30% to −60% of GDP in a reasonable period of time, the current account deficit needs to overshoot its steady state level by a significant margin (Edwards, 2005a). A key question is what will be the nature of this adjustment process? In particular, will the adjustment be abrupt, and thus costly, or will it be gradual? In this Section I summarize the international experience with abrupt and large current account reversals in the period 1970–2001. Although the U.S. case is unique – both because of the size of its economy and because the dollar is the main vehicle currency in the world –, an analysis of the international experience will provide some light on the likely nature of its adjustment.

In a recent study, Frankel and Cavallo (2004) concluded that sudden stops of capital inflows (a phenomenon closely related to reversals) have resulted in growth slowdown. Croke, Kamin, and Leduc (2005), on the other hand, argue that there is no evidence suggesting that reversals have historically been associated with a decline in the rate of growth.[10] Their definition of "reversal," however, is of a rather small turnaround in the current account balance. In a series of papers (Edwards, 2002, 2004, 2005a), I have analyzed the impact of current account reversals on economic performance. I have found that countries that experience *large and abrupt* reversals have experienced drastic reductions in investment and in GDP growth. I also found that if the current

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[9] This calculation assumes a 6% rate of growth of nominal GDP going forward.
[10] See also Milesi-Ferretti and Razin (2000) and Edwards (2002).

Table 4
Incidence of current account reversals: 1970–2001 (percentages)

Region	Type of reversal	
	Reversal (4%)	Reversal (2%)
Industrial countries	1.3	3.3
Latin American and Caribbean	5.5	9.4
Asia	8.2	10.7
Africa	8.8	11.9
Middle East	10.4	14.9
Eastern Europe	5.9	7.3
Total	6.5	9.4
Pearson		
Uncorrected χ^2 (5)	33.8	33.7
Design-based $F(5, 12500)$	6.8	6.7
P-value	0.00	0.00

Source: Author's elaboration based on World Development Indicators.

account adjustment is orderly and gradual, it does not disrupt economic activity in a significant way.

3.1. The incidence of reversals: international evidence

In this study I define a "current account reversal" (CAR) episode as a reduction in the current account deficit of at least 4% of GDP in a 1 year period, that accumulates to a reduction of at least 5% of GDP over 3 years. In Table 4 I present data on the incidence of current account reversals for six groups of countries. As may be seen, for the overall sample the incidence of reversals is 6.5%. The incidence of reversals among the industrial countries is much smaller however, at 1.3%. The advanced countries that have experienced current account reversals during the period under study are: Greece (1986), Italy (1975), Malta (1997), New Zealand (1975), Norway (1978, 1989), and Portugal (1982, 1983, 1985).[11] With the exception of Italy, all of these countries are quite small; this underlies the point that there are no historical precedents of large countries, such as the U.S., undergoing profound current account adjustments. An alternative way of dividing the sample – and one that is particularly relevant for the discussion of possible lessons for the U.S. – is by country size. I define "large countries" as those having a GDP in the top 25% of the distribution in 1995 (according to this criterion there are 44 "large" countries in the sample); the incidence of abrupt current account reversals among "large" countries is 3.9% for 1971–2001.

3.2. The U.S. current account "Reversal" of 1987–1991

Between 1987 and 1991 the U.S. current account deficit experienced a significant current account correction. In the third quarter of 1987 the deficit stood at 3.7%, a figure that was then considered to be exceptionally high. During the next 3 years the deficit declined gradually, and in the fourth quarter of 1990 it was 1% of GDP. During the next two quarters, and as a result of foreign countries' contributions to the financing of the Gulf War, the current account briefly

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[11] See Edwards (2005b) for alternative definitions of reversals.

posted a surplus of 0.8% of GDP. The 1987–1991 adjustment process was accompanied by a major depreciation of the U.S. dollar. The dollar began to loose value in the second quarter of 1985, almost 2 years before the current account deficit began its turnaround.[12] In the period immediately preceding the adjustment process (1985–1987) the U.S. dollar depreciated significantly in real terms; this weakening of the U.S. dollar continued, although at a slower pace during 1987–1991. Between the second quarter of 1985 and the second quarter of 1991 the dollar lost 30% of its value in real trade-weighted terms. Although this episode does not qualify as a "reversal," in the sense defined in this paper, it is the closest to a major current account adjustment that the U.S. has experienced in modern times.

During the early part of this episode there was no decline in GDP, nor was there an increase in unemployment. However, during the latter part of the adjustment – starting in the second quarter of 1990 – there was a decline in GDP and a marked increase in unemployment. Indeed, GDP stayed below its stochastic trend well into 1993; unemployment was above its own trend until early 1994. According to the National Bureau of Economic Research in August of 1990 the U.S. entered into a recession that lasted until March of 1991.[13]

The Federal Funds interest rate increased significantly during the first part of this adjustment episode. In October 1986 the Federal Funds rate was 5.85%; by March 1989 it had increased by 400 basis points, to 9.85%. In June 1989 the Fed cut rates by 25 basis points, and began a period of interest rate reduction. By the end of the adjustment, in June 1991, the Federal Funds rate stood at 5.9%. The yield on the 10-year Treasury Note increased significantly in the months preceding the actual current account adjustment. The 10 year Note yield went from 7.1% in January 1987, to 9.4% in September of that year—an increase of 230 basis points. From that time and until March 1989, the yield on the 10-year Note moved between 9% and 9.4%. Starting in April 1989, long term interest rates began to fall, reaching 8% in April 1991. In June 1993, 2 years after the current account adjustment had ended, the long tem interest rate was 6%. Also, the yield curve became inverted in January 1989, and stayed inverted until January 1990.

The 1987–1991 current account adjustment in the U.S. was significant, but gradual. And although the episode does not qualify as a "current account reversal," as defined in this paper, it does provide some useful information. This adjustment was not characterized by a traumatic collapse in output. However, the 1987–1991 adjustment episode in the U.S. was characterized by: (a) a steep depreciation of the U.S. dollar. (b) An increase in inflation. (c) Higher interest rates; the Fed Funds rate increased through the first half of the adjustment, while the 10 years rate increased in the months prior to the beginning of the actual adjustment. (d) A decline in GDP below trend towards the latter part of the adjustment. In fact, the U.S. entered into a recession while the adjustment was taking place. (e) An increase in the rate of unemployment above trend, during the final quarters of the adjustment.

4. Abrupt current account reversals: empirical determinants

In order to understand further the forces behind abrupt external adjustments, I estimated a number of equations on the probability of "large countries" experiencing a major current account

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[12] This two-year lag coincides with the conventional wisdom of the time it takes a dollar depreciation to affect the current account.

[13] I am not necessarily implying causality in this description of the data.

reversal. The empirical model is a variance component probit, and is given by Eqs. (1) and (2):

$$\rho_{tj} = \begin{cases} 1, & \text{if } \rho_{tj}^* > 0 \\ 0, & \text{otherwise} \end{cases} \tag{1}$$

$$\rho_{tj}^* = \alpha\omega_{tj} + \varepsilon_{tj} \tag{2}$$

Variable ρ_{tj} is a dummy variable that takes a value of one if country j in period t experienced a current account reversal (as defined above), and zero if the country did not experience a reversal. According to Eq. (2), whether the country experiences a current account reversal is assumed to be the result of an unobserved latent variable ρ_{tj}^*. ρ_{tj}^*, in turn, is assumed to depend linearly on vector ω_{tj}. The error term ε_{tj} is given by given by a variance component model: $\varepsilon_{tj} = v_j + \mu_{tj}$. v_j is iid with zero mean and variance σ_v^2; μ_{tj} is normally distributed with zero mean and variance $\sigma_\mu^2 = 1$. The data set used covers 44 countries, for the 1970–2001 period; not every country has data for every year, however. See Edwards (2005b) for exact data definition and data sources.

In determining the specification of this probit model I followed the literature on external crises, and I included the following covariates[14]: (a) the ratio of the current account deficit to GDP, lagged one period. (b) The lagged ratio of the country's fiscal deficit relative to GDP. (c) An index that measures the relative occurrence of sudden stops in the country's region (excluding the country itself). This variable captures the effect of "regional contagion," and I expect its coefficient to be positive. (d) Change in the logarithm of the terms of trade (defined as the ratio of export prices to import prices), with a 1 year lag. (f) The country's initial GDP per capita (in logs). This measures the degree of development of the country in question. If more advanced countries are less likely to experience a reversal, its coefficient would be negative. (e) The 1-year lagged rate of growth of domestic credit. This is a measure of the monetary policy stance. (g) A dummy variable that takes the value of one if that particular country had a flexible exchange rate regime, and zero otherwise.

4.1. Basic results

In Table 5 I present the results obtained from the estimation of this variance-component probit model for a sample of large countries. As before, I have defined a country as being "large" if in the year 1995 its GDP was in the top 25% of the global GDP distribution. As may be seen in columns (5.1) and (5.2), the coefficients of both the current account deficit and the fiscal deficit are significantly positive, indicating that an increase in these imbalances increases the probability of the country in question experiencing an abrupt current account reversal. All the other regressors in columns (5.1) and (5.2) are significantly estimated, and have the expected signs. The results indicate that there is a regional "contagion" effect, and that a deterioration in the terms of trade increases the probability of a reversal. These results also indicate that countries with a higher (log of) GDP per capita have a lower probability of a reversal.

In columns (5.1) and (5.2) the fiscal and current account deficits variables were introduced separately in the estimation. In column (5.3) I present estimates when *both* variables are included in the same probit equation. As may be seen, in this case the coefficient of the (lagged) current account deficit continues to be positive and significant. However, the coefficient of the fiscal deficit ceases to be statistically significant. This result is rather intuitive: higher fiscal imbalances that are *not* associated with a deterioration of the external accounts, do not affect in a significant way

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[14] See, for example, Frankel and Rose (1996), Milesi-Ferretti and Razin (2000) and Edwards (2002).

Table 5
Current account reversals: random effects probit model—unbalanced panel large countries

Variable	(5.1)	(5.2)	(5.3)	(5.4)	(5.5)
Current-account deficit to GDP	0.165 (7.51)[*]	–	0.174 (7.20)[*]	0.165 (6.43)[*]	0.153 (5.59)[*]
Fiscal deficit to GDP	–	0.035 (2.07)[**]	−0.003 (0.21)	−0.002 (0.10)	0.009 (0.54)
Sudden stops in region	2.335 (3.15)[*]	2.731 (3.84)[*]	2.094 (2.73)[*]	2.327 (2.70)[*]	2.261 (2.50)[**]
Changes in terms of trade	−0.013 (2.30)[**]	−0.019 (3.50)[*]	−0.013 (2.33)[**]	−0.013 (2.08)[**]	−0.014 (1.92)[***]
Domestic credit growth	–	–	–	–	0.0001 (1.36)
Flexible exchange rate	–	–	–	−0.379(2.00)[*]	−0.298 (1.62)[***]
GDP per capita	−0.127 (2.18)[**]	−0.180 (2.71)[*]	−0.140 (2.36)[**]	−0.104 (1.69)[***]	−0.127 (1.71)[***]
Observations	881	822	822	694	608
Countries	42	36	40	40	36

Absolute values of z-statistics are reported in parentheses; explanatory variables are one-period lagged variable; country-specific dummies are included, but not reported.

[*] Significant at 1%.

[**] Significant at 5%.

[***] Significant at 10%.

Table 6
Current account reversals: marginal effects and predicted probability[a,b] (computed from the estimates in column (5.3))

Variable	(6.1)	(6.2)	(6.3)	(6.4)
Current-Account deficit to GDP	0.011 (5.70)[*]	0.042 (4.53)[*]	0.007 (2.69)[*]	0.040 (3.75)[*]
Fiscal deficit to GDP	−0.000 (0.21)	−0.001 (0.21)	−0.000 (0.20)	−0.001 (0.21)
Sudden stops in region	0.128 (2.43)[**]	0.509 (2.75)[*]	0.090 (2.09)[**]	0.435 (2.92)[*]
Changes in terms of trade	−0.001 (2.20)[**]	−0.003 (2.38)[**]	−0.001 (2.01)[**]	−0.003 (1.87)[***]
GDP per capita	−0.009 (2.40)[**]	−0.034 (2.44)[**]	−0.006 (2.95)[*]	−0.033 (2.81)[*]
Predicted Probability	0.026	0.160	0.017	0.149

[a] For details on the computations in each column, see the text.
[b] Absolute values of z-statistics are reported in parentheses. For (6.1) sample means are 1.567 for current account deficit to GDP, 4.074 for fiscal deficit to GDP, 0.092 for sudden stops in region, 5.459 for changes in terms of trade, and 9.744 for log of GDP per capita.
[*] Significant at 1%.
[**] Significant at 5%.
[***] Significant at 10%.

the probability of an abrupt current account reversal.[15] Finally, the results in columns (5.4) and (5.5) suggest that countries with flexible exchange rates have been less likely to experience an abrupt current account reversal, and that a more expansive monetary policy has had a positive – although statistically marginal – effect on the probability of a sudden current account reversal. All the estimated models presented in Table 5 performed quite well; the pseudo-R^2 ranged between 0.41 and 0.29.

4.2. Marginal effects of current account deficits on the probability of reversals

An important question in U.S. policy debates is whether the higher current account deficits experienced during the last few years have resulted in a higher likelihood of the country facing an abrupt adjustment sometime in the future. This issue can be investigated by computing the marginal effect (and standard error) of the current account deficit on the probability of an abrupt reversal. For a probit model these marginal effects are estimated as the derivatives of the cumulative normal distribution with respect to the corresponding regressor. These derivatives are then evaluated for given values of the independent variables. An important property of probit models is that marginal effects are highly nonlinear and are conditional on the values of *all* covariates. If the value of any of the independent variables changes, the marginal effect of any of them on the probability of the outcome variable will also change.

In Table 6 I present a series of *marginal effects* using the coefficient estimates from column (5.3) in Table 5; the z-statistics of these marginal effects are in parenthesis. The last row in this table corresponds to the predicted probability of occurrence of an abrupt reversal. This predicted probability is computed for the same values of the independent variables that were used to compute the marginal effects reported in that particular column.

The marginal effects in column (6.1) have been evaluated at the sample means of the independent variables (See the footnote in Table 6 for the means values.) As may be seen, a marginal increase in the current account deficit raises the probability of a reversal in 1.1 percentage points.

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[15] The significant positive coefficient of the fiscal deficit in column (5.2) is picking up the effect of the omitted current account variable.

The last row shows that, when evaluated at the sample means, the predicted probability of a reversal is a relatively low 2.6%. Column (6.2) presents the marginal effects assuming that the initial current account deficit is 7% of GDP – a figure close to the estimated U.S. deficit for 2006 – and that all other regressors remain at the sample means values. As may be seen, the marginal effect of the current account deficit increases to 4.2%. Moreover, as the last row in Table 6 shows, as a result of the much higher current account deficit (7% as opposed to 1.6%), the predicted probability of a current account reversal has increased to 16%.

The next two columns in Table 6 are an attempt to analyze the case of the U.S. in greater detail. Column (6.3) presents the marginal effects and predicted probability evaluated for the values of the independent variables corresponding to the U.S. in 1999. The corresponding values for these variables are: current account deficit = 2.5; fiscal deficit = −0.62; "contagion" ratio = 0.048; change in the terms of trade = 10.1; log of initial GDP per capita = 9.744. What is particularly interesting about these 1999 values is that at that time the U.S. current account deficit was 2.5%, close to what many analysts consider a sustainable level. Also, in 1999 the U.S. was running a small fiscal surplus.

As may be seen from column (6.3), when the 1999 U.S. values are used, the marginal effect of the current account deficit is less than 1% (0.0075). Moreover, as the last row in the table shows, in 1999 the predicted probability of a current account reversal in the U.S. was a very low 1.7%. At that time, the predicted probability of the U.S. facing an abrupt and large change in its current account balance was negligible. The last column in Table 6 – column (6.4) – evaluates the marginal effects and predicted probably using values for the independent variables that reflect the U.S. situation in mid 2006. In computing the marginal effects reported in column (6.4) I use the following values: current account deficit = 7.0; fiscal deficit = 3.0; "contagion" ratio = 0.048; change in the terms of trade = −12; log of initial per capita GDP = 9.744.[16]

Two interesting results emerge from the computation reported in column (6.4): first, the marginal effect of the current account deficit on the probability of an abrupt reversal has increased significantly, relative to the estimates using the 1999 U.S. values (see column (6.3)). Indeed, this marginal effect is now 0.04; in column (6.3) it was only 0.0075. This suggests that further increases in the U.S. external imbalance will increase significantly the likelihood of an abrupt reversal. Second, the last column in Table 6 indicates that the predicted probability of a current account reversal has increased substantially in 2006 relative to 1999. In column (6.3) in 1999 the predicted probability of the U.S. experiencing a reversal was a mere 1.7%; by 2006 this predicted probability had jumped to 14.9%. Although in absolute terms this is still a rather small number, its rate of increase has been quite remarkable.

5. Concluding remarks

Never in the history of modern economics has a large industrial country run persistent current account deficits of the magnitude posted by the U.S. since 2000. Most analysts have argued that the U.S. cannot continue to run these large deficits for much longer.[17] At some point the deficit will have to decline to a more sustainable level. An important question is whether there will be an orderly adjustment process, with no significant impact on growth and employment, or whether the adjustment will be sudden and abrupt, creating havoc and large dislocations.

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[16] The deterioration in the terms of trade is the result of the hike in the price of oil in 2005. I also assume that the "contagion" ratio stays at the same level as in 1999.

[17] For an alternative view see Caballero, Farhi, and Gourinchas (2006).

In order to have an idea of the possible nature of this adjustment process, in this paper I have analyzed the international evidence on abrupt and significant current account reversals. The results from the estimation of a number of variance-component probit equations indicate that the probability of experiencing a major current account reversal is positively affected by larger current account deficits, a deterioration in terms of trade, and expansive monetary policies. On the other hand, this probability has been lower for more advanced countries and for countries with flexible exchange rates. Overall, these results indicate that some of the recent developments in the U.S. economy have increased the probability of the country experiencing a current account reversal. An analysis of the marginal effects of current account deficits and of the predicted probability of reversal indicates that both have increased significantly for the U.S. since 1999. Using values of the key variables, I estimated that the predicted probability of a current account reversal in the U.S. has increased from 1.7% in 1999, to 14.9% in 2006. Although the absolute value of this probability continues to be on the low side, its rate of increase has been significant and fast.

It is important to point out once again, that the U.S. case is unique, and the results reported in this paper should be interpreted carefully. This is for several reasons. First, and as pointed out above, there are no historical precedents of a very large industrial country running persistent and very large deficits. This means that there have been no "historical experiments" that guide us in the analysis, or in the estimation. Second, the U.S. plays a fundamental role as the center of the international financial system. This means that the global demand for U.S. issued securities is high, and may continue to expand. What we do not know is for how long the expansion in the demand for U.S. debt will continue to grow. And third, the U.S. deficit is enormous in absolute terms – in 2005 it exceeded USD 800 billion – and is being financed by a very large percentage of world savings.

Acknowledgements

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