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Foreword

Economic Research Forum is a private, non-profit and non-partisan research organization which was co-founded in 2004 by Koç University and TÜSİAD, the largest non-governmental organization of the Turkish private sector. Economic Research Forum aims to promote objective and independent economic analysis of major policy issues through academic and policy oriented research, analysis and discussion.

Economic Research Forum's research areas encompass a wide variety of issues concerning Turkish economy, with a special focus on the developments related with the European Union's economic integration process. The Forum attempts to anticipate emerging issues through workshops, seminars, and conferences, which aim to contribute to the public debate. A preliminary version of this working paper has been presented and discussed at an international conference, hosted by Economic Research Forum, on December 2, 2005, at Koç University.

Will History Repeat Itself?
An Assessment of Turkish Current Account Trends and Prospects

February 2006

Cevdet Akçay and Murat Üçer[1]

The current account deficit has been on the rise in recent years, and is estimated to have exceeded 6% of GNP in 2005. Turkey never saw a period with such deficits ending smoothly. Will history repeat itself? Or, how will this latest current account widening episode play out? This paper explores these questions. After a short introduction on the recent macroeconomic record, we highlight some interesting features of recent current account developments, focusing on the quality and sustainability of the current account, as well as the policy response to it. We then glance through the behavior of a number of macro indicators during Turkey's previous boom-bust episodes, as well as in relation to "convergence" economies when they began negotiations with the European Union. Finally, we identify short run determinants of the current account in a simple vector autoregression framework, and investigate the role of Balassa-Samuelson effect in explaining the real appreciation of the lira during the sample period. As regards the title's question, we include ourselves in the optimistic camp, though with a few caveats.

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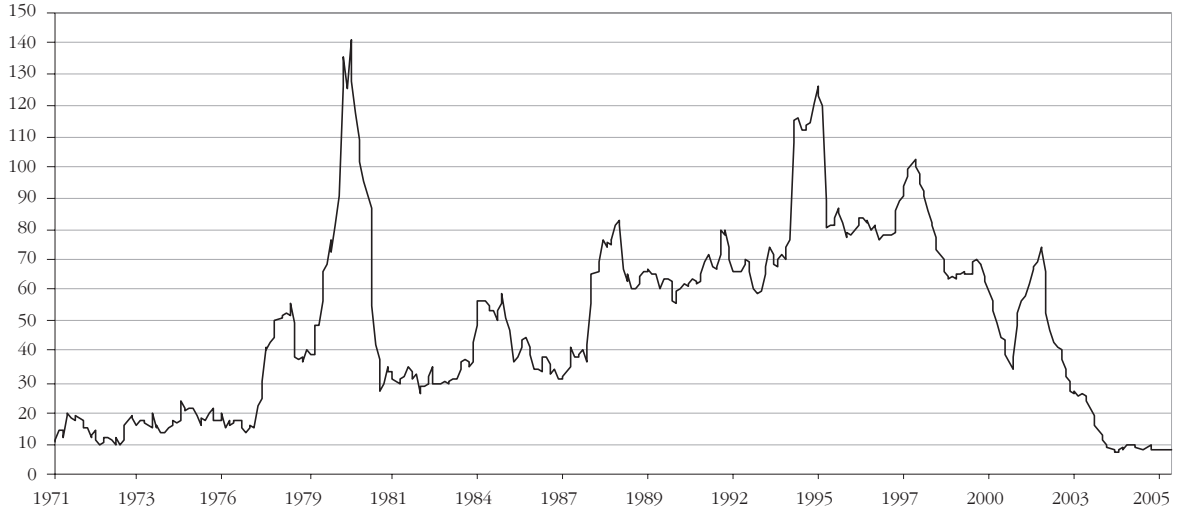
I. Background

Liquid international markets, stable politics, and several bold steps in both political and economic fronts served Turkey well in the aftermath of the 2000-01 financial crises, leading to an impressive macro economic transformation. Government's commitment to tight fiscal policy — and more recently, privatization in a context of a renewed IMF program — and impressive legislative steps toward EU membership were the key drivers of this transformation. But a very favorable global environment and the attendant recovery in capital flows to emerging markets — thanks to better fundamentals and low interest rates in mature markets – significantly contributed to this turnaround as well.[2]

Inflation declined to single digit levels (Chart 1), as growth rebounded by almost a cumulative 30%, from its 2000 peak. Both real interest rates and external debt spreads narrowed to below what seems justified by Turkey's sovereign ratings, while the lira appreciated by around 30% in real terms from its 2002 average, markedly above its pre-crisis peak (Charts 2-4).[3]

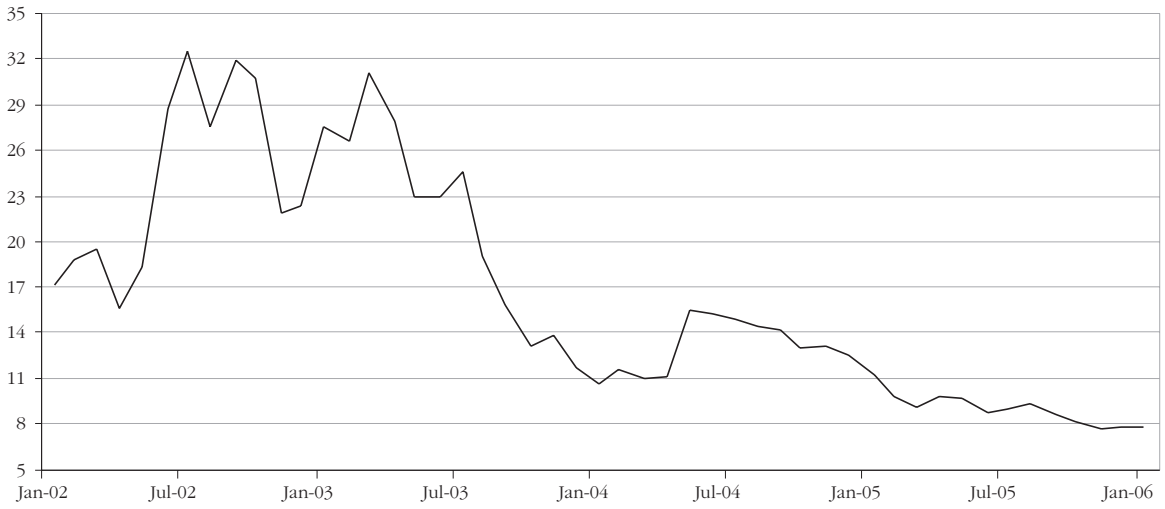
Chart 1 - Long View: Inflation
(12-month; %)



[2] A full assessment of this transformation goes beyond the scope of this paper. But government's commitment to twin EU and IMF anchors relatively early on, despite some hesitation at the beginning, appears to have played a major role, alongside a favorable international environment. After several critical legislative steps, Turkey was given the go-ahead by the EU to start the negotiations in October 2004, even though eventual membership is likely to be a protracted process and remains elusive in many regards. As for the IMF, the Fund has been involved in Turkey since before the crisis. Partly motivated by a need to restructure large repayments to the Fund, a new program has been agreed upon in April this year. On the recovery of capital flows to emerging markets, see IIF (2005).

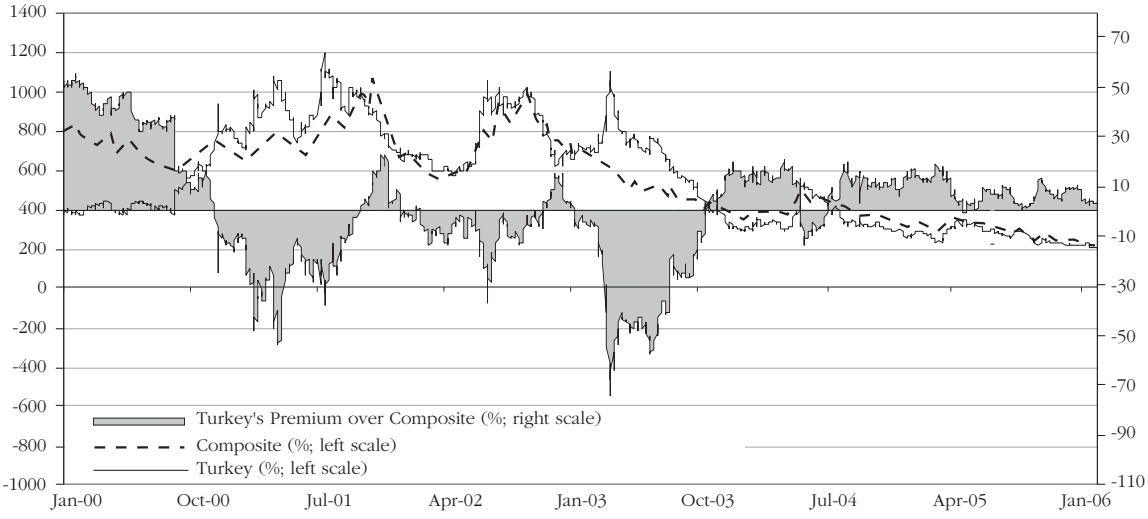
[3] As of early February, Turkey was 3 notches below "investment grade" according to all major agencies.

Chart 2 - Secondary Market Real Interest Rates (%)



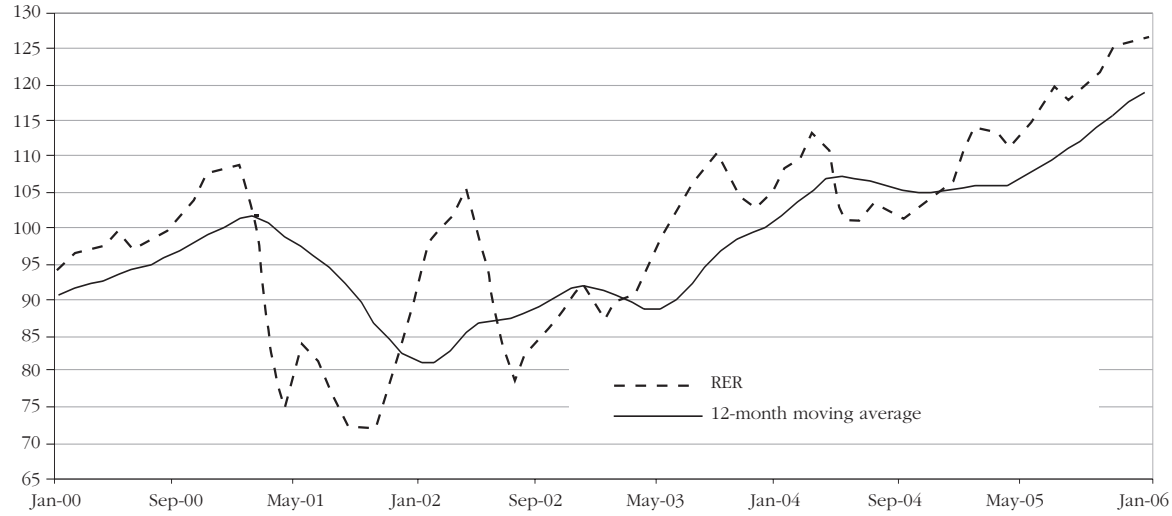
**(1 + nominal secondary market rate)/(1+12-month ahead inflationary expectation)*

Chart 3 - JPM EMBI Spread



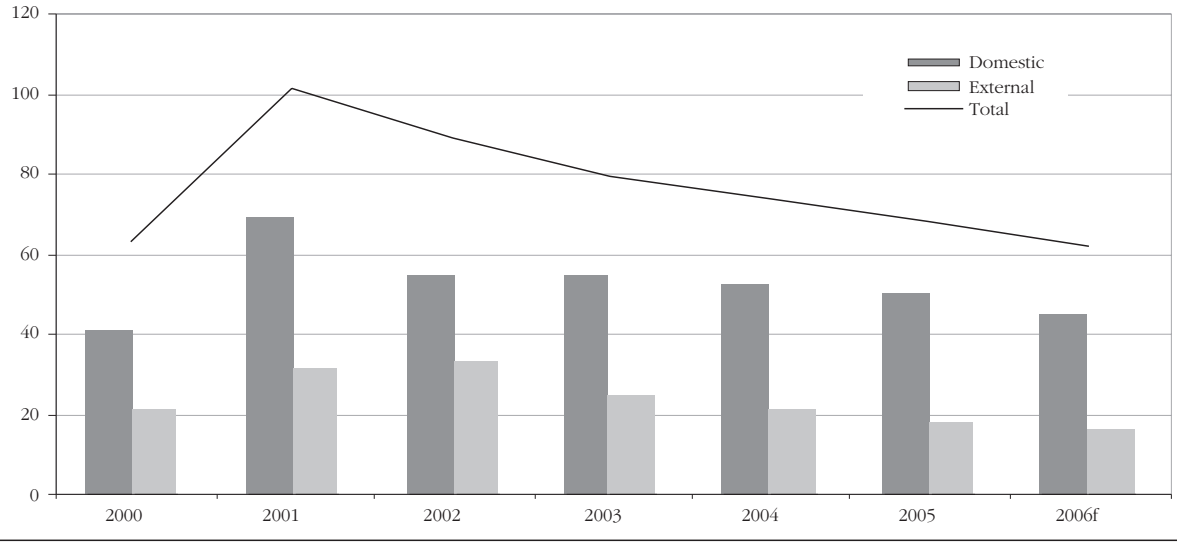
*Composite index adjusted by approximately 50 bps downward before June 13th, to account for Argentine restructuring.

Chart 4 - Real Effective Exchange Rate
(CPI-based; 2000=100)

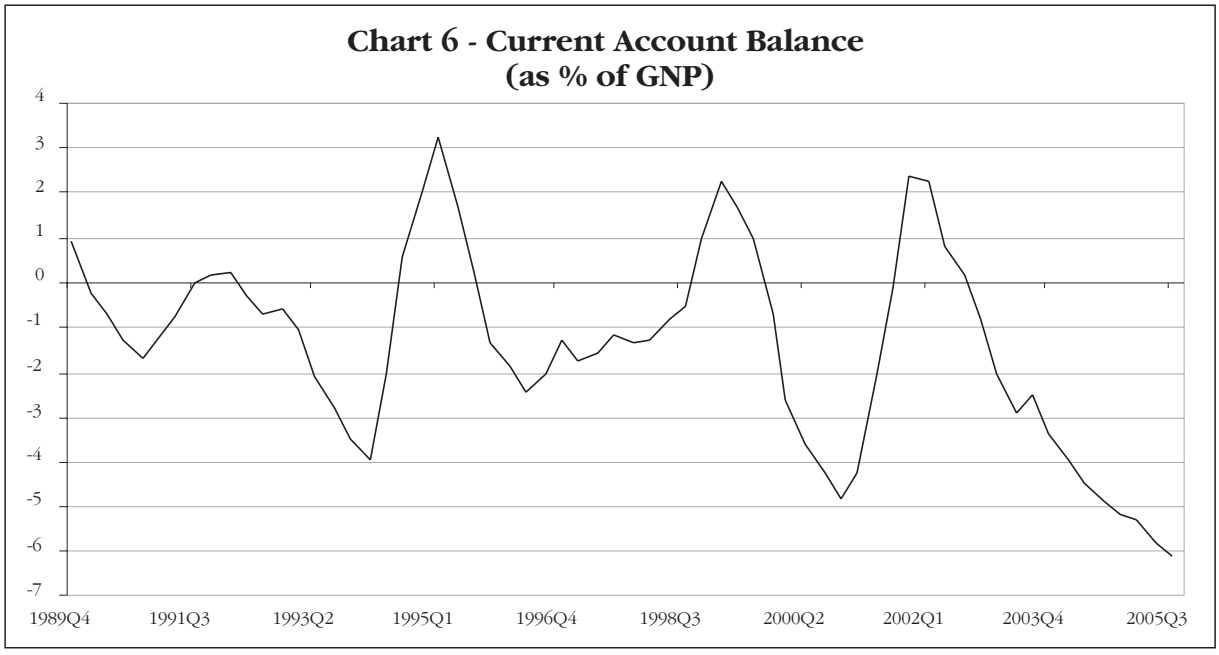


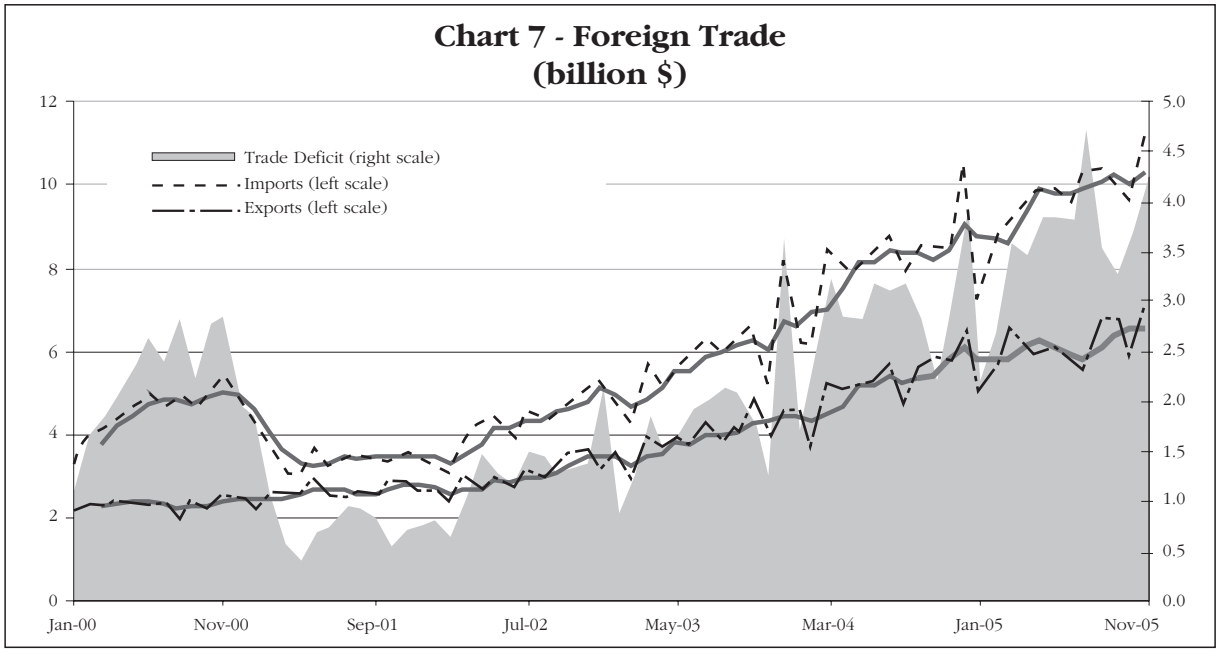
After a sharp increase in the year of the crisis, mainly reflecting lira depreciation and liabilities arising from bank restructuring, public debt declined to less than 70% of GNP by end-2005, from a peak of almost 100% at end-2001, and looks on track to dropping further to around 63%-64% by the end of next year (Chart 5). The structure of debt also improved from its post-crisis weaknesses, with maturity (of market debt) doubling to around 36 months from around 18 months during 2002-03, and the share of external and FX-linked debt in total declining to less than 40% from close to 60% at end-2001.

Chart 5 - Consolidated Budget Debt Dynamics
(as % of GNP)



One casualty of this otherwise impressive picture has been the widening in the current account deficit, which swung from a post-crisis surplus of around 2% of GNP in mid-2001, to a deficit of over 6% by mid-2005, markedly above its pre-crisis peak, and its average during the 1990s (Chart 6). The main driver of the widening in the current account deficit has been the dramatic jump in trade deficit, which widened to a $4 billion per month level, from around $2-$2.5 billion in the pre-crisis period (Chart 7).[4]



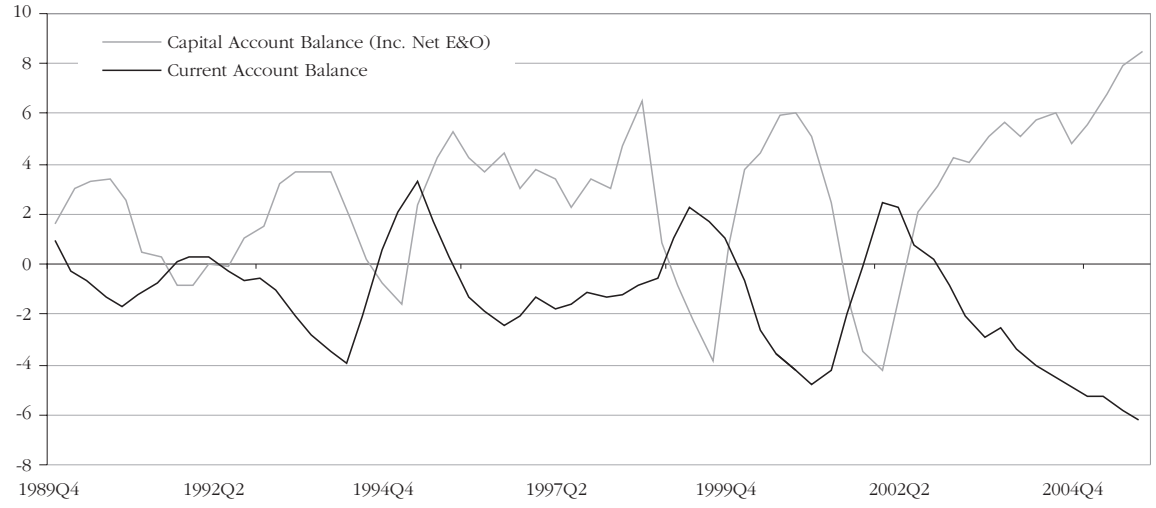


[4] Interestingly, however, export growth kept up with import growth in both volume and value terms. In the period from January 2003 through December 2005, for instance, import volumes expanded by a cumulative 92%, while exports expanded by some 98%.

On the back of this gapping trade deficit, the widening in the current account deficit continued last year, and is estimated to have exceeded 6% of GNP. Although last year's widening largely reflected the impact of higher oil prices, the deficit is unlikely to narrow too significantly this and the coming years, in the absence of a sharp reversal in oil prices. Where, then, are we heading? Or, what should one make out of this most recent wave of widening in current account deficit?

Not surprisingly, the issue has received much attention in the media and policy circles, as well as from various observers of the Turkish economy, including foreign investors. The interest in this question mainly drives from a simple fact — all such widening episodes in the past have ended, so to speak, in mayhem. Large deficits were accompanied by even larger capital inflows, which then left en masse, requiring sharp reversals in the current account along with growth collapses (Chart 8).[5] The latest such episode in 2000-01 cost Turkey almost 15 percentage points of lost output in the year of the crisis (compared to its potential), and some 25% of GNP in government debt, associated with bank bailouts. That Turkey has absolutely been no exception to this "sudden stop" and reversal pattern in emerging markets — a well-known feature of international capital markets over the past few decades — offers no consolation.

Chart 8 - Current Account Balance and Capital Flows (as % of GNP)



But much debate in the popular press notwithstanding, there have not been, to the knowledge of these authors, many attempts, other than Ersel and Togan (2005) and

[5] Turkey's capital account has been fully liberalized since the beginning of the previous decade. As a matter of fact, the next section provides empirical evidence on capital flows being the key driver of current account dynamics in the 1990s.

Babaoglu (2005), to address the issue more systematically and formally. Rather than looking at recent developments and debates, both studies focus exclusively on the sustainability of the current account. Ersel and Togan (2005) applies an econometric model built around the standard sustainability formula, while Babaoglu (2005) focuses on the intertemporal model of the current account, as Akcay and Ozler (1998) had done earlier. While this paper is more descriptive in nature than both, it covers somewhat broader territory, focuses on recent developments, and is much less alarmed in its conclusions.

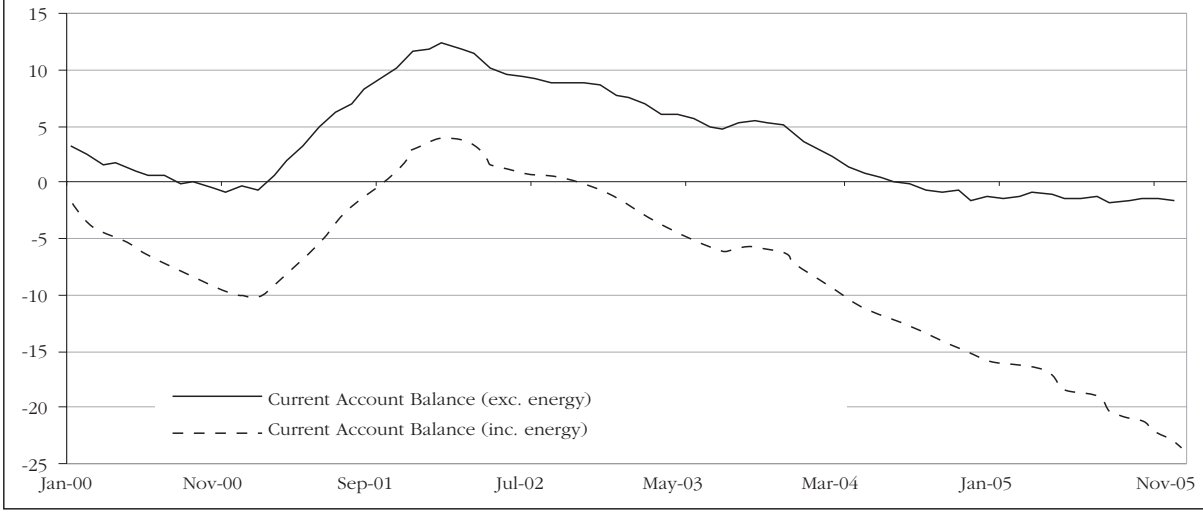
The paper is organized as follows. In Section II, we formulate a few propositions to summarize our take on recent current account, financing and external debt trends, and the international and domestic policy context within which these developments took place. The disquieting size of the deficit notwithstanding, we point out the important — and basically quite favorable — changes that the current account seems to be undergoing in recent years. In Section III, we compare the behavior of several macro indicators in the past few years, to Turkey's former reversal episodes, and surmise on the current situation from a "convergence" perspective. In Section IV, we empirically identify the drivers of the widening in the current account in a vector autoregression setting, and explore extent of the so-called "Balassa-Samuelson effect" in the latest real exchange rate appreciation episode. In Section V, we conclude.

Although the current episode shows some discomforting parallels to the former reversal episodes, Turkey appears to have come a long way in terms of macro economic stability, and the context appears to have changed quite dramatically. Specifically, the widening in the current account deficit in this cycle seems to be driven by investment (rather than consumption), external vulnerabilities, combined with shock-absorbing properties of a floating exchange rate, seem reduced, and Turkey now compares quite favorably to so-called "convergence economies" when they started negotiations in late 1990s. That said, how Turkey will handle the transition i.e., improve its external financing and rating outlook, while financing large current account deficits against the backdrop of a relatively high public debt – still heavily indexed and of relatively short-maturity – remains a challenging question. In addition, current account sustainability requires that investments are productive (making possible repayment of debt later), which, in turn, makes the question of nature of whether investment is responding to expected higher productivity, say, because of EU accession or concentrating on non-tradable sector – a very important one. Although generic, we find the usual advice of stepping up structural reforms now, especially when times are still good, particularly pertinent. All in all, though, we find ourselves in the optimistic, "soft-landing" camp, and conclude that history does not have to repeat itself.

II. Current Account Facts: What Do We Seem to Know?

As noted in the previous section, the kind of deficit we are running now is abnormal by historical standards and none of previous widening episodes ended smoothly. Moreover, as long as Turkey stays the course against the backdrop of a reasonably stable international economy, current account deficits on the order of 6% of GNP are likely to stay with us for some time to come. For instance, under a fairly plausible set of assumptions — no significant decline in oil prices (from current levels), no marked slowdown in economic growth (from 4.5%-5%), and a stable or mildly appreciating real exchange rate — the deficit, as a percent of GNP, is likely to moderate only slightly this year, if at all. The reason behind this is simple arithmetic: although modest (some $1-$2 billion, or 0.25% of GNP), Turkey's non-energy current account deficit would not reverse in such a scenario, since exports would unlikely grow any faster than non-energy imports (Chart 9). Combined with an energy bill of around $21-$22 billion, this mechanically leads to a current account deficit of around 6% of GNP, atop of a similar number last year.[6]

Chart 9 - Current Account Balance
(12-month rolling; in US$ billions)



What, then, should we make out of this new pattern? In order to answer this question, we lay out a few propositions – three of them to be precise — on the nature of the current account deficit, namely on its "quality" and sustainability, as well as the policy context within which the deficit has emerged.

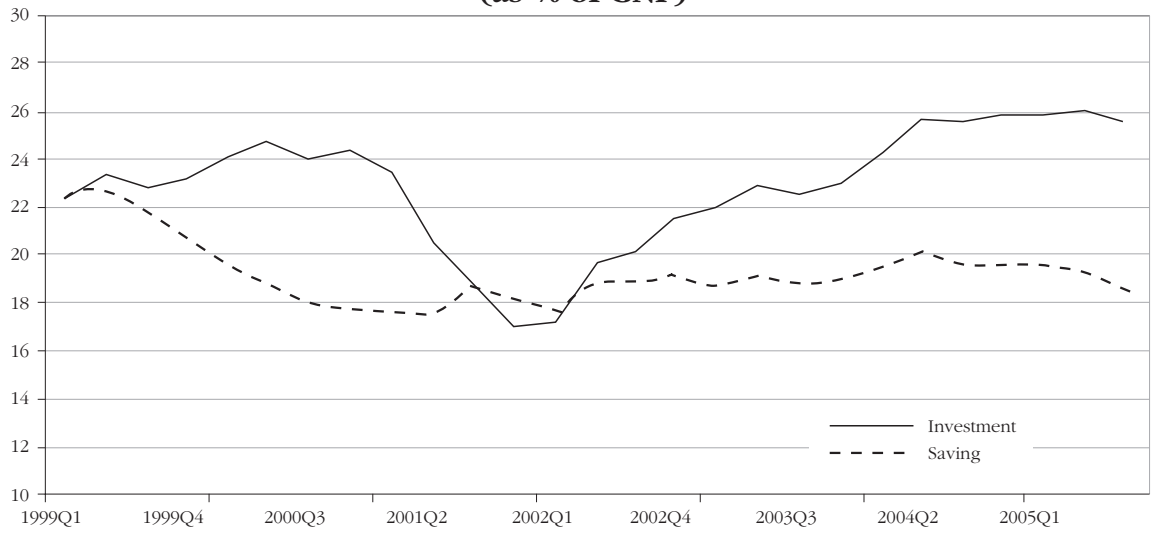
[6] It should be noted that the envisaged revisions to national income accounts – expected to be released this year -- could change these ratios, should GDP numbers be revised upward by some 20%-%30, as expected.

Proposition 1 – The "quality" of the current account deficit — the main source behind the widening and the way the deficit is financed — is reasonably encouraging.

Since current account deficit is nothing but the gap between a country's total investment and saving (or its investment/saving imbalance), the first place to look so as to gauge the *quality* of the deficit, is whether the widening is being driven by higher investment, or lower saving; and, as a corollary, whether it is driven by the private or the public sector. The logic behind this is fairly straightforward: If investment drives the current account deficit, it is considered a good thing, simply because investment today means growth tomorrow, whereas deficit driven by lower savings suggests that current account deficit is possibly a result of "excessive consumption" and hence, is arguably unsustainable. Also, that the widening is driven by the private sector bodes well for efficiency of such investment, given that private sector is likely to be better in using and allocating resources, and that fiscal deficits – which are nothing but identically equal to government's saving-investment imbalance — are bad for macroeconomic stability.

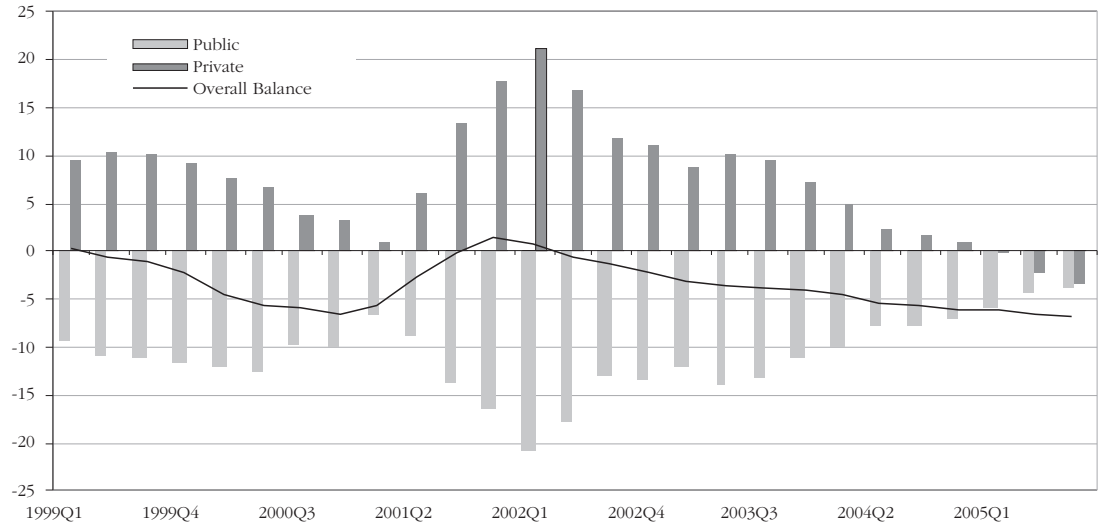
On both fronts, Turkey's recent record is quite encouraging. As shown in Chart 10, the recent widening in the current account appears to have resulted almost entirely from higher investment, rather than lower savings. In fact, although still lower than in the late 1990s, saving ratio appears to have edged up slightly in the past year or so, as investment rose from a low of 17% of GNP in the year of crisis, to 25%-26%, recently.

Chart 10 - Saving and Investment Balances (as % of GNP)



Further, the driver of the current account deficit in this cycle appears to be the private sector rather than the government (Chart 11), with the sharp improvement in government's saving-investment balance more than offset by a marked deterioration in that of the private sector. In fact, what seems to have happened in recent years is quite striking. For instance, from the middle of 2003 through the third quarter of last year, public sector's financial balance appears to have improved by some 10 percentage points of GNP, but that of the private sector deteriorated by 13.5 percentage points, resulting in a current account gap — by national income accounts definitions — of almost 7% of GNP. Another possibly good news is that this is arguably a "one-off adjustment", which might soon level off, given reasonably tight fiscal and monetary policies in the background.[7]

Chart 11 - Saving and Investment Balances: Public vs. Private (as % of GNP)



The other dimension that helps us to gauge the quality of current account deficit, is how it is financed, the simple rule of thumb being that, the more it is financed by "non-debt flows," i.e. FDI and equity flows (and to some extent, by "errors and omissions" in Turkey's circumstances), the better. Chart 12 below shows such a breakdown of the capital account in recent years. The improvement is quite striking, with the share of non-debt flows in total (including errors and omissions) rising quite significantly.[8] One could argue, however, that the share of so-called "hot money"

[7] In principle, these numbers should be adjusted for inflation to get a more accurate picture of the resource transfer between the two sectors -- in a high inflation environment, because government interest payments include a large inflation term, it exaggerates the size of the resource transfer made by the private sector, to the government -- but there is no straightforward way of doing this.

[8] Errors and omissions amounted to $5 billion in the 12-month period through November. Though it is difficult to know precisely, the usual way of interpreting it as resident reflows seems broadly appropriate.

inflows, i.e. highly return-sensitive flows that move in and out of the country quickly, rose quite rapidly in recent years. While this sure is correct, it is important to note that "reserve coverage" of these flows appears to have risen markedly as well (Chart 13).

Chart 12 - Debt vs. Non-Debt Flows
(12-month rolling; billion $)

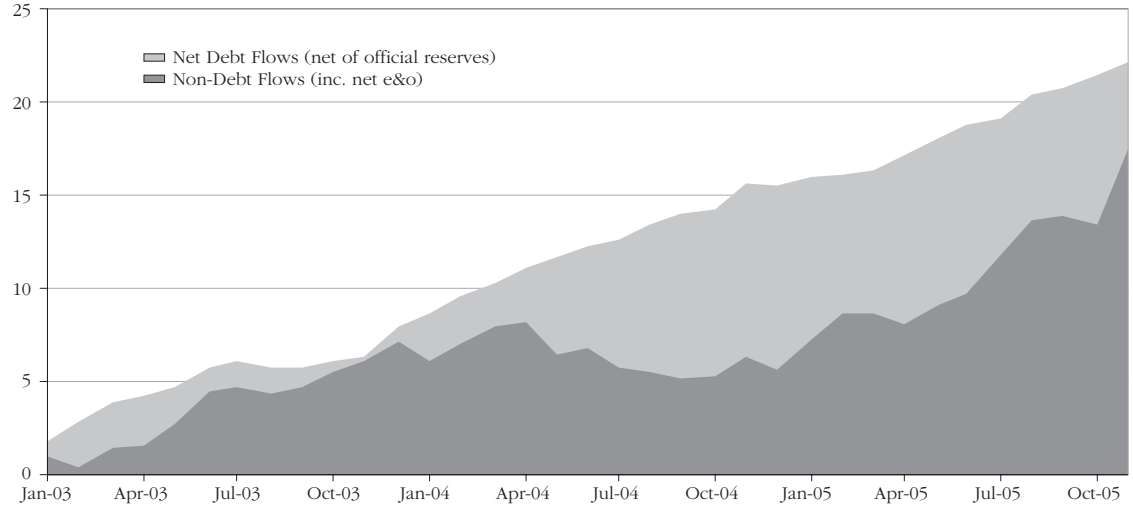
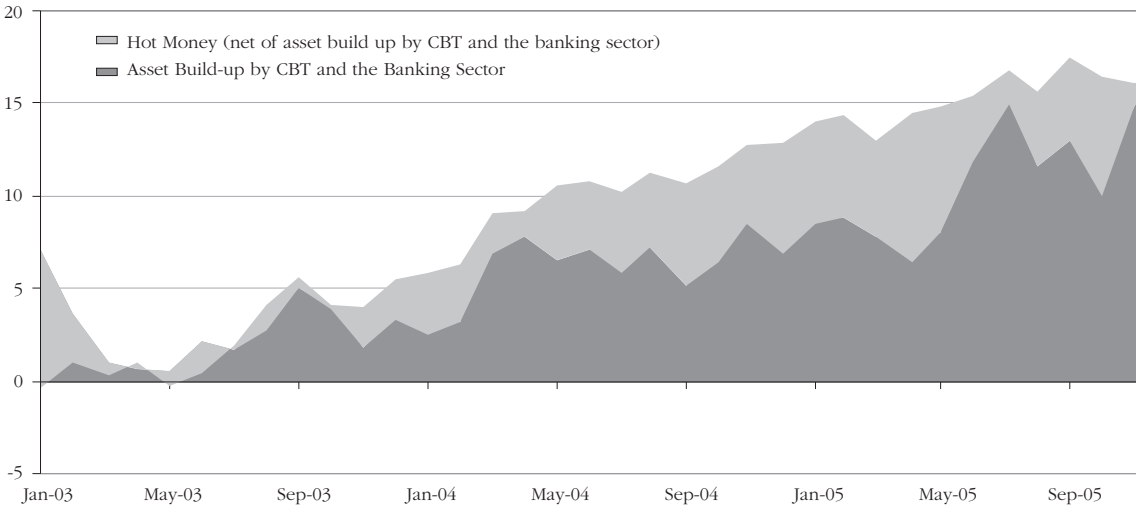
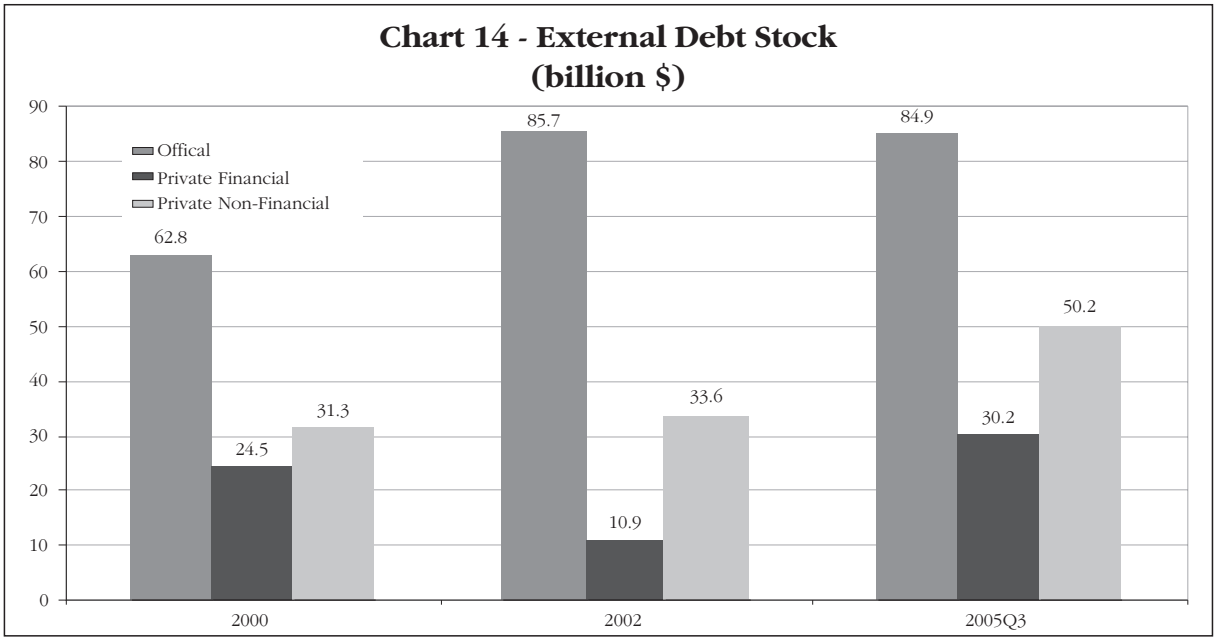


Chart 13 - Hot Money vs. Asset Build-up by the Banking Sector
(12-month rolling; billion $)



All this being said, a few caveats are in order. First, that the widening is driven by investment is not something to be fully complacent about either, at least for two reasons: first, not all investment is productive. As a matter of fact, a good chunk of investment of the past few years comprises mostly stock build-up, and building and construction investment, hence investment in non-tradable sectors. Second, the other side of this reasonably favorable picture, with government's saving/investment balance improving and most of the financing coming through private channels, means external indebtedness is being shifted onto the private sector. As regards the latter, the evolution of official data in the past few years suggests that gross external indebtedness appears to have shifted from banks in the period during and before the crisis, to government in the immediate aftermath of the crisis, and now increasingly to the corporate sector (Chart 14) – a phenomenon that needs to be monitored carefully going forward.[9]



Finally, despite an improvement in the quality of the flows, it is true that, at the end of the day, most financing still comes in debt-generating forms, and/or as short-term flows. Also, impressive privatization efforts notwithstanding, some of the big-ticket items (e.g., Erdemir, Tupras) are likely to lead to external borrowing either directly or indirectly (say, through bank syndications), and hence further increase private sector leverage.

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[9] What we need here is a measure for the "currency mismatch" of the private sector. Clearly, gross external indebtedness is very different, but provides a crude proxy nevertheless. The standard explanation for stepped-up private sector borrowing tends to be benign, which holds that majority of these loans are "round-tripped" loans (granted to local firms from the non-resident branches of local banks because of tax reasons and other restrictions); resident wealth abroad treated as loans for tax reasons; and that most borrowers, being exporters, are natural hedgers.

Proposition 2 – Until recently, external debt looked sustainable thanks to real appreciation, but now this calls for sustained increases in non-debt flows.

Turkey ran a cumulative current account deficit nearing $50 billion during the past 3 years, but, somewhat paradoxically, gross external debt to GNP ratio declined from around 78% at end-2002, to 47% by the third quarter of last year (Table 1). How did this happen? Chart 15 below, which breaks down the change in debt-to-GNP ratio into its key components – real appreciation, growth, and growth in nominal debt — offers an answer. The decline was mostly because of real appreciation, which, combined with strong growth, appears to have more than compensated for the increase in the absolute (dollar) value of debt. One could argue that official data mismeasures debt for at least 2 reasons. First, it is a gross rather than a net concept. And second, it underestimates debt because it excludes local debt instruments held by non-residents.[10] Interestingly though, net international investment position data also suggests that Turkey's net foreign liability position has been declining or stable, as a percent of GNP (see Table 1).[11]

Table 1 - External Debt Stock: 2000-2005
(billion $)

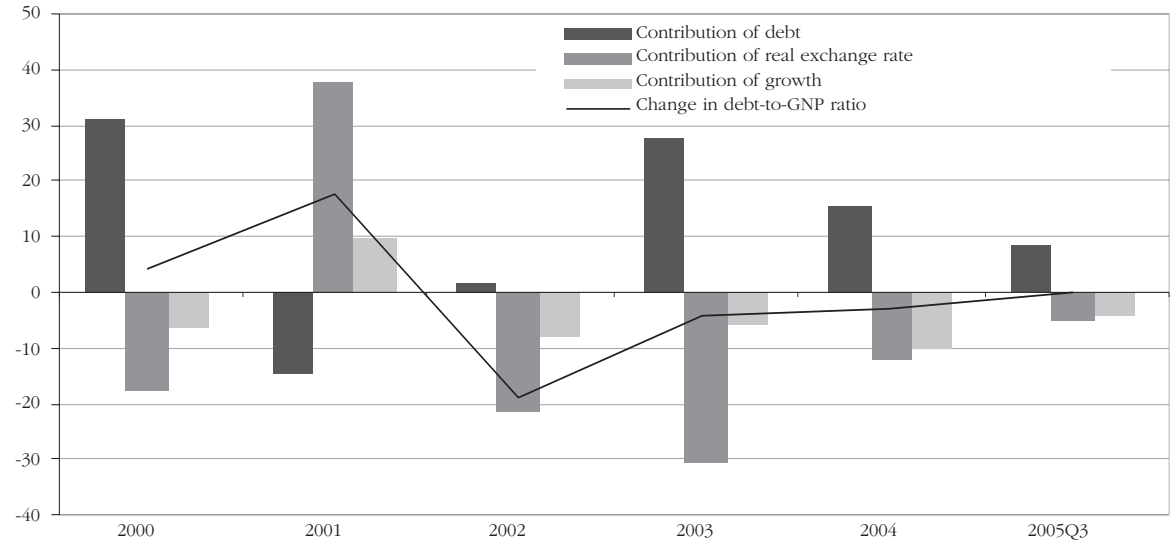
	2000	2001	2002	2003	2004	2005 Q3
Total Debt Stock	118.6	113.6	130.2	145.3	161.9	165.3
Short Term	28.3	16.4	16.4	23.0	31.8	36.9
o/w: Private	26.6	15.7	14.8	20.2	28.5	34.1
Financial	16.9	8.0	6.3	9.7	13.8	16.7
Non-Financial	9.7	7.7	8.4	10.5	14.8	17.4
Medium and Term	90.3	97.2	113.8	122.3	130.1	128.3
Public	47.7	46.2	63.7	69.6	73.8	68.7
CBT	13.4	23.6	20.3	21.5	18.1	13.4
Private	29.2	27.5	29.7	31.2	38.2	46.2
Financial	7.6	4.8	4.6	4.9	8.3	13.5
Non-Financial	21.6	22.7	25.2	26.3	29.9	32.8
Memorandum Items:						
External Debt (net) 1/	93.5	94.9	103.5	111.7	125.9	123.5
International Investment Position (net) 2/	-98.6	-84.2	-85.6	-109.2	-125.9	-136.2
As % of GNP						
External Debt	63.6	92.9	77.6	56.9	50.6	47.1
Short Term	15.2	13.4	9.8	9.0	9.9	10.5
Medium and Term	48.4	79.5	67.8	47.9	40.6	36.5
Public	33.6	57.7	51.0	36.8	29.7	24.2
Private	29.9	35.3	26.5	20.1	20.8	22.9
External Debt (net)	50.1	77.6	61.6	43.7	39.3	35.2
IIP	-52.8	-68.9	-51.0	-42.8	-39.3	-38.8

Source: Treasury; our calculations
1/ Net of CBT gross reserves.
2/ Country's net asset/liability position viz. the rest of the world. 2005Q3 is our estimate.

[10] Then again, all Eurobonds are classified as external debt in official statistics, whereas at least half is estimated to be held by resident bank and non-bank sectors.

[11] Note that NIIP is different than indebtedness as it includes all of a country's assets and liabilities including non-debt equity and portfolio flows – hence the name NIIP. Moreover, this is the most comprehensive concept in full compliance with balance of payments methodology.

Chart 15 - Sources of Change in Gross External Debt



But if this were the case mainly because of strong real appreciation in the past, what will the future bring? That is, what sort of an external debt dynamic are we faced with, if we assume that real exchange rate appreciation cannot be sustained going forward, while current account deficits continue? We can address this question by using simple current account sustainability arithmetic, a crude version of which is provided by the following formula:[12]

$$NICA + NDCF \geq (R_f - \_rer/rer - g) \times D$$

whereby NICA stands for non-interest current account balance, NDCF, non debt creating flows, both as a percent of GNP, R_f is the average interest rate on external borrowing in real terms, _rer/rer is real exchange rate appreciation, g is real growth rate, and D is the initial external (net) debt-to-GNP ratio.

Basically the formula states that, assuming the initial debt-to-GNP ratio is broadly "appropriate", external debt situation of a country is considered sustainable, as long as the sum of its non-interest current account and inflows from non-debt financing sources, both measured as a percent of GNP, is greater than or equal to initial debt stock, multiplied by a "growth factor" — the latter composed of real interest rate on external debt, less the sum of real exchange rate appreciation and real growth.

[12] As it is well-known, sustainability concept is difficult to operationalize, when defined in reference to a broader "solvency" concept. What we have in mind here as sustainability is a situation that debt-to-GNP ratio is either stable or declining. While this is only a crude application of the concept, it is nevertheless informative and commonly used in practical work. See, for instance, Caranza (2002).

If we take recent years as our guide, so as to pick some plausible values for the key parameters above, where does this formula leave us? We have done an illustrative calculation, using the 2004-05 averages for the non-interest current account and non-debt inflows. The left hand side of the above equation then amounted to minus 2% of GNP or so, comprising a 4.6% of GNP deficit in the non-interest current account, and some 2.6% of GNP in non-debt flows, which, in fact, is somewhat *lower* than the "right hand side" of the above equation, under fairly plausible assumptions for the latter.[13] This suggests that while current account deficit seems to be evolving into a more sustainable mode, non-debt flows will have to increase further to ensure external debt sustainability, in the absence of sustained real appreciation. In other words, reductions in the debt ratio that were primarily driven by real exchange rate appreciation during the early phase, will now have to change nature, with the key contribution (to debt reduction) coming from higher non-debt flows, if the deficit is sustained at these rates.

This becomes all the more important, considering that Turkey's external debt indicators are far from comfortable to begin with, while its sovereign rating, typically based on a sovereign's external financing outlook and debt ratios, is 3 notches below "investment grade" (Table 2). In a recent report, for instance, Moody's states that, while improving, Turkey's external vulnerability indicators are still very high, with, among others, the ratio of its external debt to current account receipts higher than every other Ba-rated and even higher than the B1- to C-rated median for sovereigns.[14]

Table 2 - Turkey Vulnerability Indicators (as % of GNP unless otherwise indicated)

	1999	2000	2001	2002	2003	2004	2005Q3
Current Account Balance	-0.8	-5.0	2.5	-0.9	-3.3	-5.1	-5.9
Capital Account Balance	3.1	6.6	-3.3	4.2	2.9	4.6	6.7
External Debt	55.0	59.0	78.9	71.4	61.1	53.8	47.0
as % of exports	194.7	200.4	199.5	213.9	197.7	172.4	156.5
Short Term Debt	12.5	13.9	11.3	9.0	9.7	10.7	10.5
as % of external debt	22.3	23.9	14.4	12.6	15.8	19.6	22.4
as % of CBT gross reserves	101.3	111.2	86.7	61.5	68.4	89.1	88.6
External Debt Service (as % of exports)	20.2	19.1	26.5	35.5	36.1	43.0	34.8
CBT Gross Reserves (in months of imports)	5.1	4.4	4.2	5.1	5.0	3.9	4.0
S&P Ratings	B	B+	B-	B-	B+	BB-	BB-

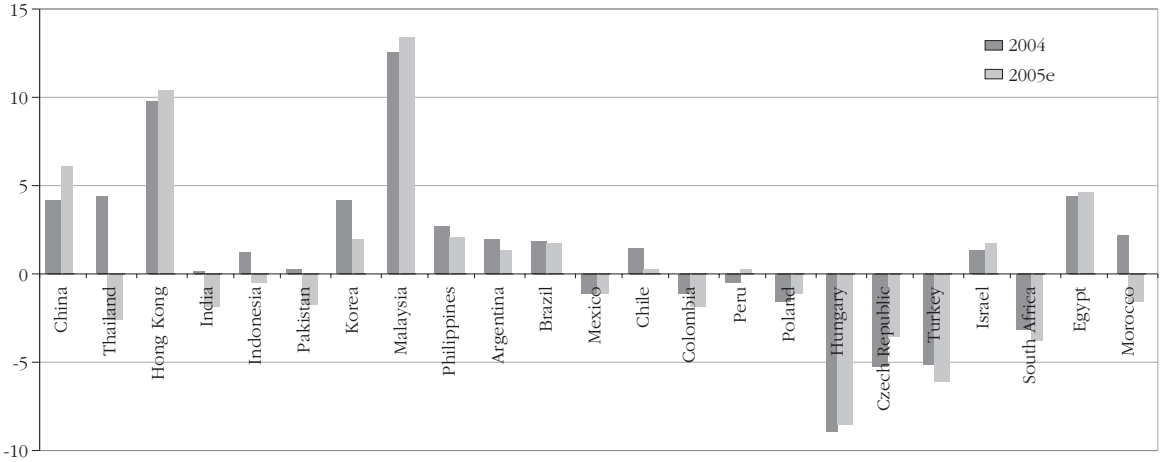
[13] We took 4% real interest rate, 5% growth rate, and modest real appreciation of around 2-3%, the latter in line with the so-called Balassa-Samuelson effect, and 35% initial external (net) debt-to-GDP ratio, which yielded minus 1.4% for the right-hand side. We discuss BS effect in the final section.

[14] See Moody's (2005). Looking ahead, another challenge will be to move over time, from what may be called "first generation" FDI flows (driven by privatizations and M&A) to "second generation" (or greenfield) flows. For an assessment of possible obstacles to "greenfield" FDI, see Dutz, et. al. (2005).

Proposition 3 – There was little that policy — notably monetary and exchange rate policy — could do differently, to avoid the widening in the current account deficit.

Has the policy response to current account widening been appropriate, or could it all be executed differently to avoid such a huge deficit? This is a hotly debated issue among various observers of the Turkish economy, who typically argue that the Central Bank should have reduced interest rates faster and/or bought up foreign exchange more aggressively.[15] In order to address the issue, one needs to start with the shift in Turkey's international environment – an issue often ignored in local debates. Emerging markets seem much more attractive today than they were in the early 1990s, thanks to a secular improvement in their fundamentals, and very liquid capital markets. In this context, Turkey is one of the few sizeable emerging markets that remains a "net capital importer," i.e. runs a current account deficit (Chart 16).[16] While this makes Turkey relatively more vulnerable to a shift in sentiment, it also makes it an attractive investment destination, increasing the amount of capital willing to park at Turkish assets, at historically low costs. In fact, capital inflows driven by benign international conditions ("push" factors) were arguably more important in driving the widening in the deficit, than Turkey's own "fundamentals," including enhanced prospects for EU accession ("pull factors").

Chart 16 - EMEs as "Capital Exporters": Selected Countries (as % of GDP)



Source: World Economic Outlook, September 2005

15 The literature on the policy response to capital inflows is huge. See Williamson (2005) for a recent take.

16 This shift in international environment with emerging markets becoming, on average, net capital exporters began with several Asian economies in the late 1990s, likely as a post-crisis response, but now became more widespread. See IMF (2004b) for an account. This is puzzling, since emerging markets should be borrowers rather than lenders, under a normal debt-cycle. See Bernanke (2005) and Rajan (2005a, 2005b), and the references cited therein, for the other leg of this anomaly, which is the emergence of the United States as the key "borrower".

What has been the policy response to the widening? Or perhaps more specifically, what was the fiscal and monetary policy-mix — that accompanied the widening — like? With the benefit of hindsight, one could sum it up as follows: Impressive fiscal tightening, in the form of high primary surpluses, paved the way for the Central Bank to sharply, but cautiously, ease monetary policy, as inflation expectations (and of course, the inflation rate itself) decelerated, and the adverse impact of "external shocks" eased (Charts 17-18).

Chart 17 - Condolidated Budget Developments
(as % of GNP)

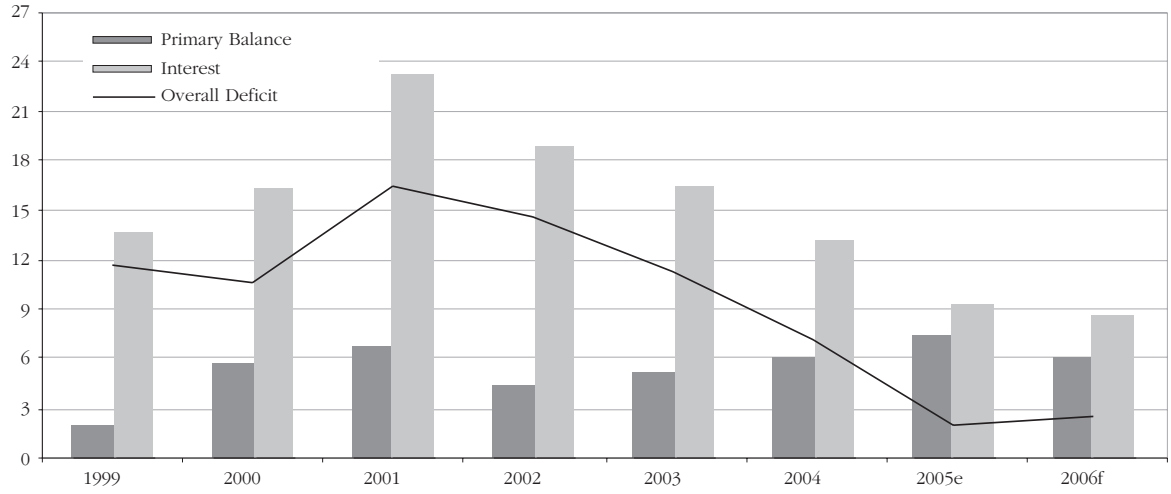
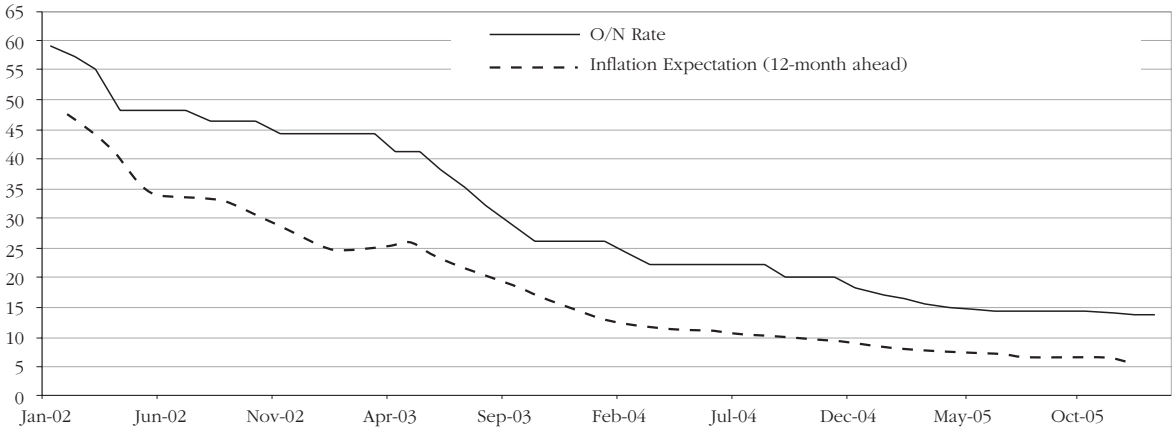


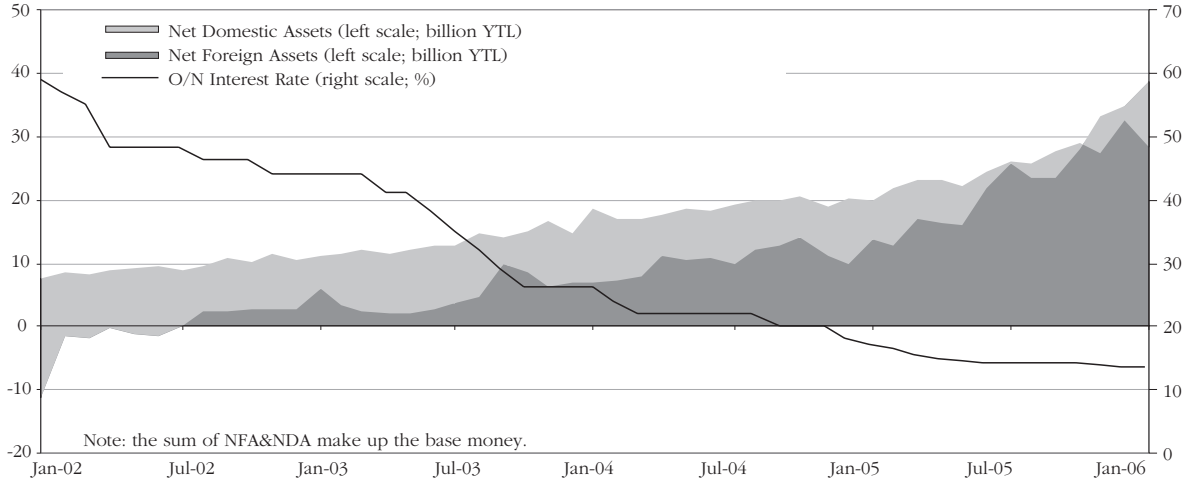
Chart 18 - CBT Policy Rate and Inflation Expectations
(end-period; %)



Meanwhile, monetary expansion driven by largely *unsterilized* F/X purchases liberally accommodated the increase in "money demand" resulting from declining inflation, as well as inflation expectations (Chart 19). Yet, the Bank had to watch over the amount of such intervention, and avoid, *ex ante*, leaving monetary expansion unchecked, lest

it could threaten the inflation target.[17] Seen as such, large — and mostly exogenously-driven — capital inflows could hardly be managed any differently. True, lira strengthened sharply during this period, posing difficulties for the tradable sector, but alternative routes, such as higher foreign exchange purchases could come with significant costs as well, either in the form of higher inflation, or hefty fiscal costs from sterilization.

Chart 19 - Base Money and O/N Interest Rate



III. A Comparative Perspective

In this section, we try to place the recent current account developments in perspective. We first look at Turkey's former current account reversal episodes and examine the behavior of a few macro indicators in the run up to these reversals. We then look at how Turkey's macroeconomic indicators *today* compare to those of a select sample of "convergence" economies *at the start of the negotiations*. We found out that, several similarities notwithstanding, the current context differs in some important ways from the former reversal episodes; and that Turkey compares favorably to convergence countries when they started negotiations, but that the latter had healthier external indicators.

a. A comparison to previous reversal episodes

How did macro indicators behave ahead of the former reversal episodes? In order to answer this question, we identified 3 reversal episodes in Turkey's recent past — those caused by the 1994 currency crisis, 1997-98 Asian contagion, and the 2001 currency crisis — and then examined the evolution of key macro indicators in the run up to these

[17] One other option would be for the central bank to build up more reserves and also sterilize more aggressively the impact on the money supply through open market operations. But technically, this would be costly for the Bank's balance sheet, because of the interest differential, and very likely "counterproductive" as well, bringing in even more inflows. See Rodrik (2006).

reversals (Table 3).[18] We traced 5 sets of variables – investment saving balances; growth and domestic demand indicators; external sector developments (imports, exports, productivity and the real exchange rate); external vulnerability indicators, and those that capture the external environment. All variables are familiar from the literature on currency and banking crises, and our exercise here is in the spirit of current account reversal studies.[19]

A number of points are worth highlighting. First, as pointed out in the previous section, latest episode is clearly driven by investment, and the private sector, in sharp contrast to all former reversal episodes, which exhibited declines in saving rates, and were associated with large fiscal imbalances. Second, demand side and growth indicators are fairly comparable to earlier reversal episodes. Credit growth is particularly striking, and much higher than any of the previous episodes.[20] Third, import growth is massive in this period, more so than the other episodes, despite a more robust export performance. Fourth, despite a much-praised productivity effect in the latest cycle, strong productivity increases appear to have been a feature of previous current account widening episodes as well. Fifth, external vulnerability indicators are somewhat better than in the previous crises, though Turkey's external debt service ratio is higher now than in the past. Finally, external environment is reasonably benign, including no indication of an adverse terms of trade shock, in contrast, for instance, to the 2000 episode.

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[18] In what follows, we focus our discussion on cumulative changes in these variables in the 2 years preceding the reversal. The table provides values for one year as well, but that is too short a period to be indicative, while three years, judging from anecdotal evidence and short lifespan of Turkey's boom-bust cycles, would appear too long. Because of one-quarter lag between the exchange rate crisis and current account reversal, in the 1994 and 2001 episodes we defined the quarter in which the reversal took place as the one with the sharp jump in the exchange rate, while for 1998, we took the quarter (1998:Q2) that the deficit itself swung from a deficit to a surplus.

[19] See, for instance, Goldstein, Kaminsky, Reinhart (2000). For the reversal literature, see Edwards (2004), and Miles-Ferretti and Razin (200). For the pattern and modalities of industrialized country reversals only, see Croke, Kamin and Leduc (2005), and Debelle, Guy and Galati (2005). Ours is just an illustrative single-country exercise, whereas these above-cited papers are panel-data studies that identify reversal episodes through a set of non-parametric techniques.

[20] That said, as a percent of GNP, credit stock seems lower than or just around the pre-crisis levels. More generally, the contraction during the 2001 crisis was more severe than the previous episodes, so growth – and hence recovery in various growth and demand indicators from a much more distressed base – was strong. It should be noted that these calculations are inevitably sensitive to the base period, and should thus be interpreted with caution.

Table 3 - Current Account Reversal Episodes: Past and Present

	Investment-Saving Balances (%) (as % of 4-quarter rolling GNP)					Growth, Private Absorption, and Credit (quarter-on-quarter; %)				Exports, Imports, RER, and Productivity (quarter-on-quarter; %)				Vulnerability Indicators			External Factors (quarter-on-quarter; %)			
	Total Investment	Total Saving	Total (S-I)	Private (S-I)	Public (S-I)	GDP Growth	Private Cons.	Private Inv.	Real Credit	Export	Import	RER	Productivity	Debt Service (as % of exports)	ST Debt * (as % of reserves)	External Debt* (as % of GNP)	Terms of Trade	ğ/$ Parity	Fed Funds	World Growth
1993-94																				
2 years*	3.85	1.10	-2.75	-1.33	-1.42	14.3	11.6	47.6	22.0	23.8	41.7	11.2	18.6	...	...	...	4.4	...	-1.5	3.6
1 year*	3.26	0.41	-2.85	-0.45	-2.40	8.4	8.4	44.1	10.1	13.2	36.6	11.0	12.9	27.2	207.3	...	2.7	...	0.0	1.1
1997-98																				
2 years	-1.67	0.11	1.78	3.87	-2.09	12.0	9.2	12.0	47.5	50.0	34.9	12.5	5.0	...	...	...	3.9	...	0.3	5.8
1 year	0.10	1.34	1.24	2.73	-1.49	3.3	-0.6	-1.7	4.0	17.4	10.4	7.4	-0.8	20.3	95.1	58.8	-2.5	...	0.0	2.7
2000-01																				
2 years	0.72	-4.84	-5.56	-2.24	-3.32	6.3	4.2	6.5	3.0	15.1	25.8	19.2	16.2	...	...	...	-13.4	-22.9	1.7	6.4
1 year	1.22	-2.90	-4.11	-5.44	1.33	8.6	5.6	16.4	15.9	13.7	19.6	14.9	7.7	35.5	101.3	71.2	-4.2	-16.6	1.1	2.3
2004-?																				
2 years	3.07	0.11	-2.96	-13.22	10.26	19.2	23.6	88.8	109.3	22.7	44.9	14.9	18.6	...	...	...	0.7	11.1	2.1	5.4
1 year	0.39	-0.88	-1.27	-4.63	3.36	4.2	4.4	15.8	31.4	4.7	9.2	8.5	3.8	36.0	80.3	50.5	-3.3	4.6	2.3	2.4
Avg (2 years)	...	...	...	...	...	8.7	8.1	16.6	10.8	22.6	28.1	7.3	14.1	...	...	...	-0.1	2.1	...	6.8
Avg (1 year)	...	...	...	...	...	4.2	4.0	8.0	5.3	10.7	13.2	3.6	6.8	...	...	...	0.0	1.1	...	3.4

* Years before the current account reversal.

b. Macroeconomic achievements from a convergence perspective

Because Turkey faces the prospect of "convergence," the experience of other convergence countries, which have joined the European Union in May 2004, makes a natural reference. Moreover, as it is well-known, these countries went through a process of significant real exchange rate appreciation and widening in the current account deficit, against which Turkey's experience can be compared, and insights gleaned.

Table 4 below compares Turkey in 2005 to a select sample of countries that when they started the negotiations in terms of a host of macro variables.[21] One can make the following observations. In terms of key macro stability indicators, namely inflation and budget, Turkey indeed compares quite favorably, or is at least at par with these countries. On the external side, current account deficits are large in these countries as well, and like Turkey, they appear to have experienced a process of significant real exchange rate appreciation.

Table 4 - EU Accession Countries: Selected Indicators

	Inflation (annual; %)		GDP Growth (%)		RER Appreciation (%)		Interest Rate (%)	
	Before	After	Before	After	Before	After	Before	After
Poland	15.1	9.5	6.8	4.4	9.0	0.7	19.4	14.7
Hungary	18.3	12.1	4.6	4.5	4.3	0.8	16.9	13.2
Czech Republic	8.5	6.4	-0.7	0.0	9.0	6.7	7.7	6.3
Slovak Republic	6.1	8.6	1.5	2.9	6.6	8.1	14.4	7.5
Romania	45.8	52.5	-1.2	3.9	-7.0	11.0	74.2	47.0
Bulgaria	2.6	10.6	2.3	4.8	5.8	6.9	3.2	3.0
Turkey	**7.4**	**...**	**5.0**	**...**	**16.6**	**...**	**16.4**	**...**

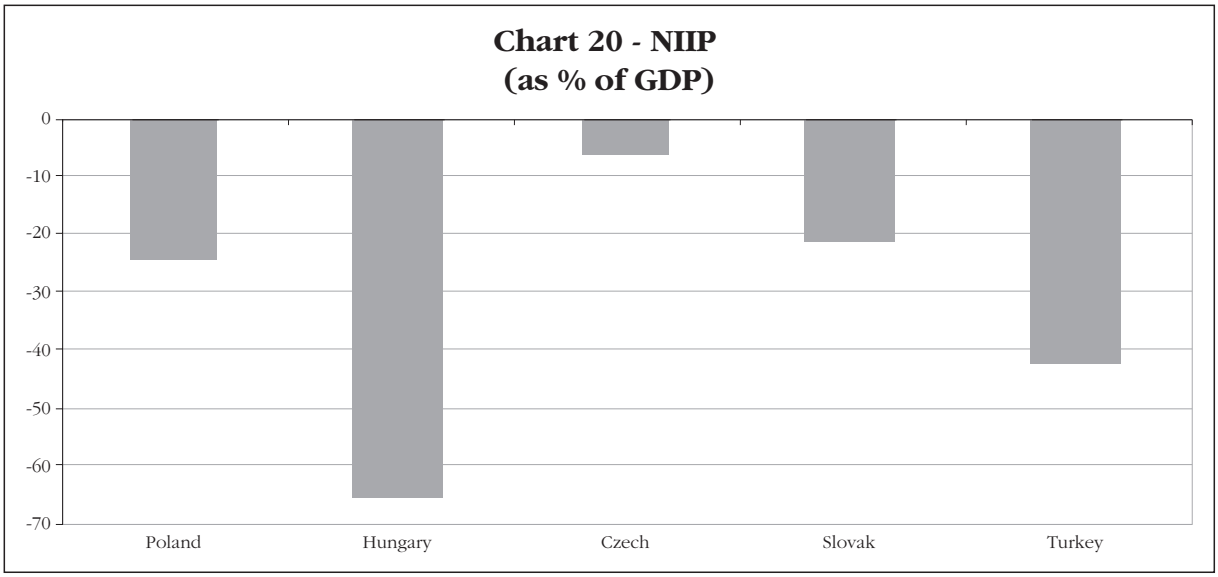
	Current Account Balance (as % of GDP)		Current Account Balance (exc. FDI; as % of GDP)		Fiscal Balance (as % of GDP)		Unemployment (%)	
	Before	After	Before	After	Before	After	Before	After
Poland	-3.7	-5.8	-0.6	-1.8	-1.6	-0.8	10.5	11.7
Hungary	-4.5	-7.5	3.6	-1.1	-4.5	-4.9	8.7	7.4
Czech Republic	-6.4	-2.3	-4.2	5.9	-0.9	-1.5	4.8	7.6
Slovak Republic	-5.7	-1.7	-2.1	3.2	-3.2	-3.1	16.2	18.9
Romania	-3.6	-4.6	-0.8	-1.8	-16.9	-34.1	11.3	10.1
Bulgaria	-5.0	-6.4	1.2	0.4	1.5	1.3	16.0	18.3
Turkey	**-6.3**	**...**	**-4.5**	**...**	**-3.0**	**...**	**9.5**	**...**

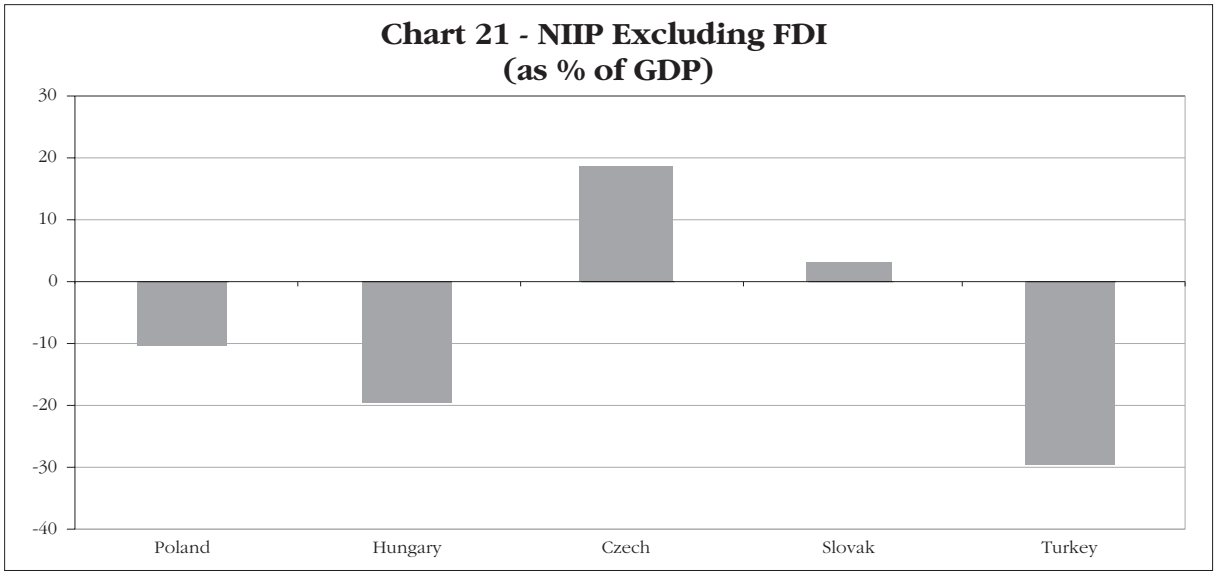
Source: IFS, Eurostat, World Development Indicators.

Note: Poland, Hungary Czech Rep. started negotiations on March 1998; Slovakia, Bulgaria, Romania in early 2000. For real exchange rate, "before" corresponds to cumulative appreciation from t through t-2; "after" correponds to cumulative appreciation from t+1 through t-1, where t is the year in which negotiations start. For all other series, "before" corresponds to t-1, "after" average of t and t+1.

[21] These are March 1998 for CEE4 other than Slovakia, and February 2000 for Slovakia, Bulgaria and Romania. All data and charts have been compiled for these years, unless otherwise indicated.

Yet, these countries, on average, had better external positions when they started the negotiations. Specifically, they did not have as large current account deficits after accounting for FDI, and they compared quite favorably to Turkey in terms of their net international investment positions, especially excluding FDI (Charts 20 and 21).

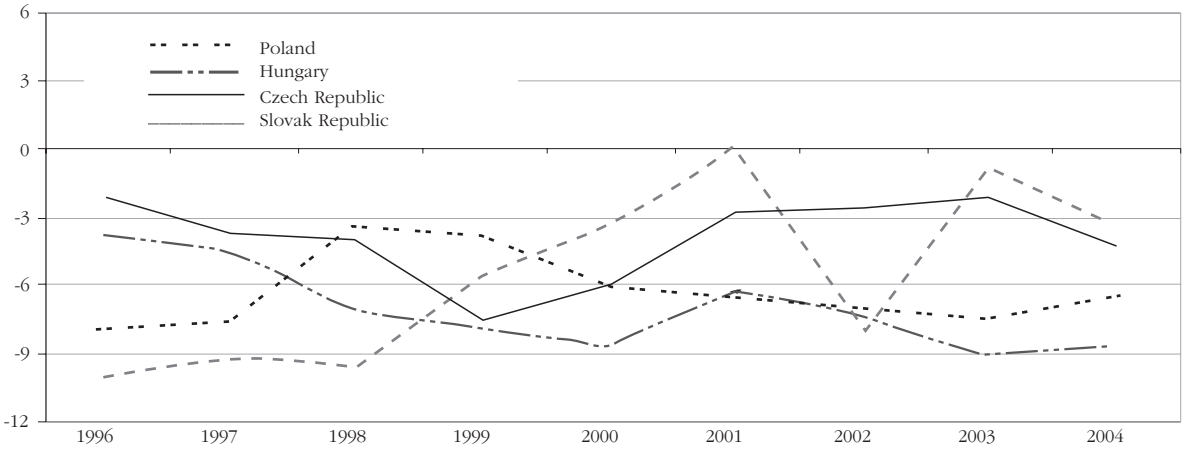




The good news is that most of these countries (except for Slovakia) did not seem to have experienced sharp reversals in their current account deficits. Rather, it appears that they have gone through — what may be called – endogenous adjustments, driven by

the business cycle, à la industrialized countries (Chart 22). For instance, Poland appears to have experienced some reduction in the deficit, but that seems to have been associated with lower growth, tighter monetary policy, and move to a more flexible exchange rate regime.[22]

Chart 22 - Current Account Balance (as % of GDP)



IV. On the Short Run Determinants of the Current Account

The aim in this section is two-fold: the validity of the Balassa-Samuelson (BS) effect is tested, and a simple vector autoregression model is run to gain insights into the short run dynamics of the current account. As it is well known, higher productivity increases in the traded goods sector following trade integration underlies the BS effect. Faster productivity growth in the traded goods sector is translated into higher wages, which, under the assumptions of full employment and perfect labor mobility across sectors, leads to higher wages in the non-traded goods sector. In the absence of a matching productivity increase in the traded goods sector, profitability concerns push up prices in the non-traded goods sector, and a higher overall consumer price index is brought about by the above mentioned supply side effects. Similarly, rising income and wealth also lead to higher prices overall, and only in the case of demand being biased towards traded goods could the supply side effect be at least partly undone. That is fairly unlikely given the stylized fact that demand is indeed usually biased toward services. Hence the supply side effect remains fully in place, indeed being further strengthened by demand side considerations.

[22] Admittedly, this is a very crude take on the experience of these countries in terms of current account reversals, which need to be followed up by country-specific, case studies in future research.

As the standard definition of the real exchange rate is the ratio of non-traded to traded goods prices, the natural extension of the above argument is bound to be real appreciation provided that the counter-party in the exchange rate definition experiences a lower increase in the productivity differential than the home country. Non-tradable goods inflation is in essence equal to traded goods inflation — common to all trading partners plus the rate of depreciation (provided that the exchange rate is not constant) — plus, a productivity differential measure, that reflects the asymmetry of the productivity gains between the home country and the trading partners.

The significance of the BS effect is in its implications regarding prolonged periods of real appreciation which are commonly observed in emerging market economies, and economies undergoing transformations. Whether such periods correspond to periods of persistent productivity differentials or alternatively to periods of real exchange rate "disequilibria" are a question of utmost importance for policy purposes. If it is the former, there is clearly no scope for counter policy measures without distorting relative prices, which are in the first place moving to their new equilibrium. The BS effect is hence intrinsically an equilibrium concept that need not, and should not, be interfered.[23]

First, we regress real exchange rate on a productivity differential variable (defined as the ratio of output per unit of labor in the traded goods sector to that in the non-traded goods sector), a capital inflow variable that by design responds to "fundamentals", and a fiscal stance variable.[24] The productivity differential variable is only a proxy as the corresponding differential for trading partners is missing, but given the surge in productivity in recent years in particular, it should not be farfetched that the inter-country differential would be mostly driven by the Turkish differential.[25] We define the capital inflow variable as capital account financing without reserve changes minus the sum of short-term loans, portfolio movements, and currency and deposit liabilities. Capital flows have been short-term arguably until very recently, and are better viewed as short-term loans rather than flows responding to fundamentals. What we have left is thus only that portion of financing that could be considered relevant for "equilibrium" real exchange rate movements, as opposed to "misalignments."[26]

---

[23] For a pedagogical overview of equilibrium real exchange rate models, and estimation techniques, see Montiel (2002).

[24] A dummy variable that accounts for the 1994 and 2001 crises was also included.

[25] The timing of the surge in productivity in the US, arguably the most significant productivity increase in recent history for the developed world, does not coincide with the Turkish productivity boom, and a measurement problem for the most recent period hardly exists. For the dot.com revolution era of the nineties, a slightly overstated differential is inevitably in place and the degree of overstatement is commensurate with the weight of those economies in Turkey's trade volume.

[26] As explained further below, a different capital inflow variable is used in the vector autoregression below, where we look at short-term current account dynamics.

A fiscal stance variable is included in order to capture the influence of budgetary developments that are considered to be of a permanent/signaling nature on the real exchange rate. Expected sign of the coefficient is ambiguous; textbook case would suggest that a fiscal correction via expenditure cuts and/or revenue increases would reduce the borrowing need, lower interest rates, and cause depreciation of the currency via the interest rate parity condition. However, in countries like Turkey where debt servicing can be very taxing and costly, fiscal correction reduces the risk premium and lowers yields, but it also increases the demand for local currency denominated assets, thus leading to appreciation of local currency. Furthermore, as fiscal theory of inflation was the most applicable of theories to the highly nominal inflation process in Turkey, the impact of fiscal adjustment on expected inflation is also operational in interest rate reductions. The ensuing lower expected inflation leads to appreciation of local currency, and thus the ambiguous link between real exchange rate and fiscal stance for the reasons cited. We chose Primary Surplus/GNP as the fiscal indicator variable as it best represents the fiscal effort that could signal a permanent change in the fiscal structure.

We use the residual of the real exchange rate equation as a variable in the second part of the empirical exercise. The intuition is fairly straight forward: as the variables we have included in the equation are those that determine the value of real exchange rate in an equilibrium sense, the residual modestly serves as a measure of misalignment in the exchange rate stemming mostly from short-term volatile capital flows. All variables used in the first section were tested for stationarity status using Philips-Perron (PP) and Kwiatkowski-Phillips-Schmidt-Shin (KPSS) unit root tests.[27] Unit root tests are known to suffer from lack of power, and KPSS is now recognized as a more powerful test than PP, which had been until recently the most widely used testing procedure along with the Augmented Dickey Fuller test. All of the series used in the reported VARs in this paper came out to be stationary according to the KPSS test with the exception of the real exchange rate. According to the PP test, capital inflows, real exchange rate, current account, and productivity ratio series all had unit roots that disappeared when seasonally differenced. GNP growth and the residual that we obtain from the real exchange rate equation to be used in the second part of the empirical section were clearly stationary according to both tests. We chose to be conservative and act on the PP results and used all variables in seasonally differenced form with the exception of GNP growth.[28]

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[27] Results for both test procedures for all relevant variables are given in Table 1 of the annex.

[28] We have the level-version as well, which relies on KPSS test results. Qualitative inferences remain intact with respect to all variables, sign and significance-wise. Note that if one adheres to the level version of the estimation, a long run implication that is extractable from the coefficients of the current and lagged productivity differential regressors. The implication relates to that portion of the real exchange rate movement that can be explained via the variation in the productivity differential variable. The sum of the coefficients for the current and the lagged differential variables is 0.82, indicating that over the long run a one percent change in the productivity differential should lead to a 0.82% change in the real exchange rate. Considering that for the whole sample period (1990Q1 through 2005Q3) the change in productivity differential is 35.9% and the change in real exchange rate is 49.1%, this implies that 60% of the change in the real exchange rate can be attributed to the change in productivity differential for the period in question. If one uses the sum of the two coefficients in the difference version, which is 0.64, the contribution is lowered to 46.8%, still not an insignificant portion of the change in the real exchange rate.

Regression output is reported in Table 2 of the annex. Both lags of the productivity differential variable have statistically significant coefficients yet with opposite signs, which beg for some explanation. The positive sign for the contemporaneous productivity differential impact is self-explanatory; very much in the spirit of the BS effect, with higher productivity differential leading to real appreciation.[29] The crisis dummy variable came out to be statistically significant as expected. "Fundamentals" led inflows as a determinant of the real exchange rate proved to be highly insignificant. That is highly understandable as such flows were virtually negligible until very recently and could not have had an impact on real exchange rate movements in either direction. Fiscal stance variable also came out to be insignificant, and had a negative sign which indeed fits the textbook case more, and that would have been challenging to explore had it come out to be statistically significant. An AR(1) component had to be used to eliminate serial autocorrelation in the error term.

As the above-mentioned contribution stands for the whole sample period, we tried to obtain insights as to how that contribution evolved over time during the sample period.[30] To serve this purpose, we re-ran the real exchange rate regression as a "moving window", with the first window covering 1Q1990 to 3Q2001 period, and the remaining four windows successively forwarded by one year. Productivity differential variable was significant in all windows and lagged productivity differential coefficient was statistically insignificant only in the first window. The coefficient for the current productivity differential variable steadily grew, suggesting that the B-S effect became more important over time. So did the sum of the current and lagged variables' coefficients as of the third window, and in a significant manner, suggesting a long-run inference of the same spirit. Inflow variable was insignificant for all windows, and fiscal stance variable was statistically significant in the last two windows, and with a negative sign, indicating that an increase in the primary surplus-GNP ratio leads to real depreciation when other relevant variables are controlled for. A plausible explanation for this could run as follows: Primary surplus increases could lead to productivity increases due to crowding-in, and the resultant real appreciation, when mostly captured by the productivity differential, could be inversely linked to the fiscal stance variable.

In the second phase of our empirical exercise, we search for the short run determinants of the current account deficit in a vector autoregression setup. We take the residual series from the regression in the first part of the empirical section as representative of a real exchange rate series that is cleared from effects of relative productivity changes and all possible equilibrium exchange rate determinants. Hence it encompasses all other drivers of the real exchange rate, which arguably cause misalignments. The real exchange rate series itself as well as the residually-defined series were used in different

[29] The negative sign for the lagged value of productivity differential could be taken as indicative of some "correcting" behavior in the real exchange rate preventing an explosive behavior.

[30] Coefficients for all variables for all windows are given in Table 3 of the annex.

VAR frameworks in order to gain an insight into the main determinants of the current account deficit in general and the role of real exchange rate changes in current account process in particular.[31]

In the VAR framework, we included capital inflows, the real exchange rate, output growth, and current account balance as endogenous variables, and primary balance as the exogenous variable. The latter sought to capture the impact of improving budget balances on variables such as inflows and local currency appreciation.[32] The results have been hardly any different in the two cases with and without the primary balance, and the fiscal variable was thus left out for parsimony concerns. What is more crucial for our purposes is the impact of real exchange rate changes on the current account deficit in the absence and in the presence of a Balassa -Samuelson effect. In theory, the BS effect should not have an impact on the current account balance as it is an equilibrium response and stems from the rise in prices of non-tradables. Hence, the VAR framework is set up in the first case with the real exchange rate variable itself, and then with the residual series replacing the actual real exchange rate series. Optimal lag-length in the VAR set up for both versions was obtained as 2, and the choice was not very difficult to make.[33] The VAR estimation results for the two cases are given in Tables 4 and 5 in the Annex.

If a productivity differential-induced real exchange rate appreciation is the key driver behind the observed appreciation of the TL, then the coefficients of the actual real exchange rate variable and the residual series in the two VAR frameworks should bear no resemblance as the latter should indeed be close to zero and/or insignificant. To the extent that a significant portion of the real exchange rate variation could be attributed to factors other than BS, coefficients should be roughly similar in the current account equations. It does not quite seem to be the case; the first lag of the real exchange rate series in the actual real exchange rate setup has a statistically significant coefficient while significance holds for the lag in the residual series version. There does seem to be some impact of real exchange rate changes on the current account, from both "fundamental" and "misalignment" components albeit with different lag structures. One should bear in mind, though, that estimated coefficient values in VAR models do not constitute the strength of these models, and should be interpreted with caution to say

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[31] On the short and long run determinants of the current account balances, see Calderon et. al. (2002) and Chinn and Prasad (2003), respectively.

[32] Different VAR frameworks involving absorbtion, the US Federal Funds Rate, and primary budget balance as an endogenous as well as exogenoeous variable with different orderings in each model were also tried, and the major conclusion regarding the determination of the current account deficit remained mostly intact. We chose to present the ,set up that serves our dual purpose best, which happens to give the best fit for the current account equation.

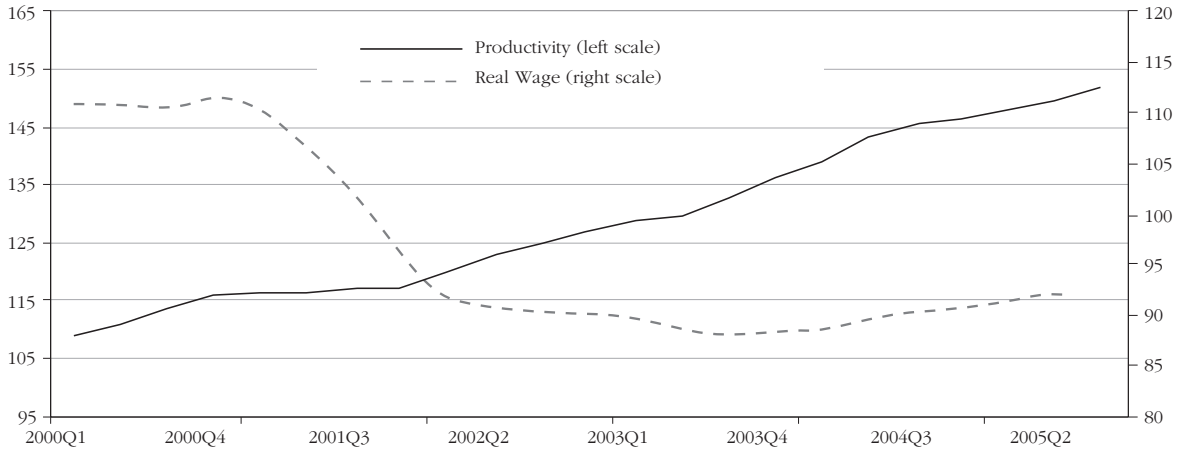
[33] Schwartz Information and Hannan-Quinn Criterion seemed fairly adamant to the choice of maximum lag length and were stuck at two lags while LR and Akaike Criteria in particular tended to go for the maximum lag. At four lags, LR criterion yielded two lags and two lags thus looked like the most robust lag choice for the version with the real exchange rate itself. Almost the same conclusions were obtained with the residual series version; a strictly resilient choice of 2 lags by Schwartz and H-Q criterion and other criteria opting for higher lags. The only difference was that 4 came out to be the choice for Akaike and LR criteria at both 4 and 5 lag selections.

the least. Better use of VAR models are made through variance decompositions and impulse responses. Both VAR decompositions (Tables 6 and 7) and impulse response functions (Tables 8 and 9) for both setups, i.e. the one with the actual real exchange rate series and the one with the residual series, are provided in the Annex.

For both set ups, variance decompositions clearly show that the current account is mostly a capital account driven phenomenon, i.e. inflows more than any other variable appears to have been the culprit behind the widening of the current account deficits in the past decade and a half. With regards to the role of real exchange rate movements in the determination of the current account deficit, residual series explain some 12.3% of the ten-step ahead forecast error variance for current account while actual real exchange rate series accounts for 25.1% of the ten-step ahead forecast error variance. For all steps ahead, residual series' contribution to the decomposition of current account forecast error variance hovers around half of the contribution made by the actual real exchange rate series. The moral of the story is that the current account to some extent is driven by the misalignment portion of the real exchange rate, but the extent of overvaluation in that sense is not obtainable from these estimations. Note however that it would have been alarming to find that the contributions of the two series to the current account forecast error variance were almost identical. That would clearly imply that to the extent that the real exchange rate has any impact on the current account balance, almost all of that stems from that portion of the change in the real exchange rate that is not linked to productivity differentials and other long-run equilibrium drivers of the real exchange rate. Such is not the case according to our findings, and more importantly, short-run dynamics seem to be driven mostly by short-term capital inflows

As for the plausibility of the BS effect in Turkey, a few precautions might be in place. A glance at productivity and real wage data suggests that an increase in real wages did not indeed accompany the productivity increase in the tradable goods sector (Chart 23). The most obvious explanation could be the unemployment rate that has remained significant for almost the whole sample period, hence annulling one of the assumptions of BS that is instrumental in bringing a relative price increases in the non-traded goods sector. Nevertheless, one can surmise on an alternative mechanism whereby capital inflows lead to asset price inflation, with the attendant wealth effect in turn resulting in significant demand side effects biased towards non-traded goods and services. Thus, in the absence of significant supply side effects, the major premise of the BS effect — the emergence of a productivity differential — as well as its most significant implication — real appreciation of local currency under the assumption of a productivity differential favoring home country – would still seem to hold in Turkey.

Chart 23 - Real Wage and Labor Productivity Indices (per hour; 1997=100)



V. Last Words

Where do all these findings leave us? Our story of the current account deficit is not necessarily alarming. For one thing, the deficit comes at a time Turkey is undergoing significant structural change. One demonstration of this is a notable improvement in the "quality" of the deficit. Specifically, the current cycle appears to be driven by strong investment rather than consumption, and the private rather than the public sector. Moreover, the quality of financing seems to be rapidly improving as well from debt to non-debt flows. Although the current episode shows some discomforting parallels to the former reversal episodes as well, Turkey appears to have come a very long way in terms of macro economic stability, something we observe quite vividly when we compare it to a select sample of "convergence economies," when they started the negotiations. Also, although it is difficult to establish a quantitative link between the two, we are now in a new, safer world of stronger banking sectors and floating exchange rates, which should make the economy much less vulnerable to adverse shocks. From this perspective, it is quite conceivable that Turkey may be able to sustain the current account deficits at these historically high levels for a while longer, and then, eventually, undergo an adjustment in the style of industrialized countries — with slower growth and some currency weakening – instead of experiencing a capital outflow-driven reversal, with currency crises and growth collapses. This conjecture is based, in part, on two assumptions, though: international environment should not deteriorate too dramatically, and Turkey's EU momentum must be maintained.

There are some issues that invite caution as well. We are only in the initial phases of a long journey to maturation. For instance, declining debt ratios and marked improvements notwithstanding, simple current account sustainability arithmetic suggests that, looking ahead, deficit is sustainable only under fairly benign assumptions.

Improved financing prospects add to the optimism, but corporate sector's currency mismatches need close monitoring. Moreover, as Section IV showed, history, with its capital flow-driven adjustments, advice caution regarding the current account prospects. The Balassa–Samuelson effect is found to have some relevance for the estimation period, but the real exchange rate does seem to entail a component that is independent of this effect, which is thus reflective of some sort of misalignment. Our findings suggest that some 40% of the variation in the real exchange rate comes from factors other than the Balassa–Samuelson effect, which in turn has an impact on the current account deficit that cannot be ignored.

ANNEX

Table 1 - Unit Root Test Results

	KPSS test 5% level asymptotic critical value Null Hyp: series is stationary	KPSS test statistic	Inference	Phillips-Perron test 5% level asymptotic critical value Null Hyp: series is non-stationary	P-P test statistics	Inference
PROD_RATIO_LN (trend + int.)	0.14600	0.10470	no unit root	-3.48160	-2.99276	unit root
CAROLL (trend + int.)	0.14600	0.09744	no unit root	-3.48276	-2.77822	unit root
RERLN_CPI (trend + int.)	0.14600	0.14879	unit root *(at 5, but not at 1%)*	-3.47937	-2.83715	unit root
INFLOWFINAL (trend + int.)	0.14600	0.06882	no unit root	-3.48276	-2.70870	unit root
GNPGRWTH (no trend)	0.46300	0.08783	no unit root	-2.90921	-3.72515	no unit root
PRIMARYBALANCE (trend + int.)	0.14600	0.05279	no unit root	-3.48276	-2.75201	unit root
D_RESID_LT (no trend)	0.46300	0.133859	no unit root	-2,913,549	-6,397,607	no unit root
INFLOWS_LT (trend + int.)	0.14600	0.07116	no unit root	-3.48276	-2.74859	unit root
INFLOWS_ST (trend + int.)	0.14600	0.08449	no unit root	-3.48276	-2.40436	unit root

Table 2 - Real Exchange Rate Regression Output

Dependent Variable: D_RERLN_CPI
Sample (adjusted): 1991Q1 2005Q3
Included observations: 59 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.0199	0.0278	0.7145	0.4781
D_PROD_RATIO_LN	1.9796	0.4224	4.6862	0.0000
D_PROD_RATIO_LN(-1)	-1.3432	0.4291	-3.1304	0.0029
DUM	-0.1265	0.0552	-2.2921	0.0260
D_PRIMARYBALANCE	-0.0160	0.0081	-1.9713	0.0540
D_INFLOWS_LT	0.0028	0.0064	0.4289	0.6697
AR(1)	0.5756	0.11994	4.79871	0.0000
R-squared	0.6608	Mean dependent var		0.0210
Adjusted R-squared	0.6216	S.D. dependent var		0.1422
S.E. of regression	0.0874	Akaike info criterion		-1.9246
Sum squared resid	0.3976	Schwarz criterion		-1.6782
Log likelihood	63.777	F-statistic		16.880
Durbin-Watson stat	1.6973	Prob(F-statistic)		0.0000
Inverted AR Roots	0.58			

Table 3 - Window Regression Results

	pr.ratio	pr.ratio(-1)	L-R impact	inflow	primbal
1Q1990-3Q2001	1.97964	-1.34317	0.63646	0.00275	-0.01602
1Q1991-3Q2002	1.98700	-1.43433	0.55267	0.00440	-0.01038
1Q1992-3Q2003	2.03996	-1.49270	0.54726	0.00302	-0.01509
1Q1993-3Q2004	2.28830	-1.54309	0.74521	0.00232	-0.01884
1Q1995-3Q2005	2.41500	-1.65188	0.76312	0.00128	-0.01869

* Reds are statistically significant.

Table 4 - Vector Autoregression Estimates (Actual Real Exchange Rate Series)

Sample (adjusted): 1991Q2 2005Q3
Included observations: 58 after adjustments
Standard errors in ( ) & t-statistics in [ ]

	D_INFLOWS_ST	D_RERLN_CPI	GNPGRWTH	D_CAROLL
D_INFLOWS_ST(-1)	0.8907	0.0150	0.0101	-0.2478
	-0.1417	-0.0053	-0.0023	-0.0425
	[6.28488]	[2.84016]	[4.50413]	[-5.83628]
D_INFLOWS_ST(-2)	-0.1744	-0.0062	-0.0067	0.1983
	-0.1649	-0.0061	-0.0026	-0.0494
	[-1.05737]	[-1.01597]	[-2.55813]	[4.01213]
D_RERLN_CPI(-1)	-1.6783	0.9251	0.0632	-3.6689
	-4.4891	-0.1672	-0.0711	-1.3452
	[-0.37387]	[5.53437]	[0.88856]	[-2.72741]
D_RERLN_CPI(-2)	-3.2267	-0.4099	-0.0828	0.4766
	-4.9439	-0.1841	-0.0783	-1.4815
	[-0.65267]	[-2.22658]	[-1.05645]	[0.32168]
GNPGRWTH(-1)	6.2578	-0.3189	0.6546	0.0301
	-10.4006	-0.3873	-0.1648	-3.1166
	[0.60168]	[-0.82340]	[3.97204]	[0.00966]
GNPGRWTH(-2)	-1.8943	0.3159	-0.0292	-0.1274
	-10.1534	-0.3781	-0.1609	-3.0425
	[-0.18657]	[0.83541]	[-0.18180]	[-0.04188]
D_CAROLL(-1)	-0.6490	0.0163	0.0078	1.0856
	-0.3621	-0.0135	-0.0057	-0.1085
	[-1.79225]	[1.20914]	[1.36565]	[10.0039]
D_CAROLL(-2)	0.8877	-0.0062	-0.0052	-0.4006
	-0.2953	-0.0110	-0.0047	-0.0885
	[3.00598]	[-0.56245]	[-1.10902]	[-4.52755]
C	0.1274	0.0122	0.0161	-0.0376
	-0.4477	-0.0167	-0.0071	-0.1342
	[0.28452]	[0.73128]	[2.27227]	[-0.28060]
R-squared	0.7959	0.6321	0.6969	0.9469
Adj. R-squared	0.7626	0.5721	0.6474	0.9382
Sum sq. resids	310.3867	0.4304	0.0779	27.8710
S.E. equation	2.5168	0.0937	0.0399	0.7542
F-statistic	23.8816	10.5248	14.0830	109.2038
Log likelihood	-130.9423	59.9036	109.4620	-61.0456
Akaike AIC	4.8256	-1.7553	-3.4642	2.4154
Schwarz SC	5.1453	-1.4356	-3.1445	2.7351
Mean dependent	0.2074	0.0202	0.0388	-0.3040
S.D. dependent	5.1650	0.1433	0.0672	3.0343
Determinant Residual Covariance		0.0000		
Log Likelihood (d.f. adjusted)		-24.4117		
Akaike Information Criteria		2.0832		
Schwarz Criteria		3.3621		

Table 5 - Vector Autoregression Estimates (Residual Real Exchange Rate Series)

Date: 02/13/06 Time: 13:50
Sample (adjusted): 1991Q3 2005Q3
Included observations: 57 after adjustments
Standard errors in ( ) & t-statistics in [ ]

	D_INFLOWS_ST	D_RESID_LT	GNPGRWTH	D_CAROLL
D_INFLOWS_ST(-1)	0.9143	0.0039	0.0110	-0.2658
	-0.1449	-0.0049	-0.0023	-0.0419
	[6.30897]	[0.79187]	[4.76491]	[-6.33753]
D_INFLOWS_ST(-2)	-0.1431	0.0072	-0.0073	0.2315
	-0.1692	-0.0057	-0.0027	-0.0490
	[-0.84550]	[1.25895]	[-2.73274]	[4.72731]
D_RESID_LT(-1)	-4.7219	0.0794	0.0555	-2.1295
	-4.4704	-0.1506	-0.0709	-1.2936
	[-1.05626]	[0.52762]	[0.78209]	[-1.64616]
D_RESID_LT(-2)	-3.9825	-0.0148	0.0773	-4.0537
	-4.4859	-0.1511	-0.0712	-1.2981
	[-0.88779]	[-0.09772]	[1.08559]	[-3.12281]
GNPGRWTH(-1)	9.3180	-0.1937	0.6960	-2.5391
	-9.1042	-0.3066	-0.1444	-2.6345
	[1.02349]	[-0.63191]	[4.81902]	[-0.96381]
GNPGRWTH(-2)	-7.6496	-0.0492	-0.1194	0.8789
	-8.4556	-0.2848	-0.1341	-2.4468
	[-0.90468]	[-0.17294]	[-0.88987]	[0.35921]
D_CAROLL(-1)	-0.4269	0.0145	0.0098	1.1627
	-0.3242	-0.0109	-0.0051	-0.0938
	[-1.31667]	[1.32713]	[1.91163]	[12.3932]
D_CAROLL(-2)	0.7937	-0.0011	-0.0066	-0.4259
	-0.2906	-0.0098	-0.0046	-0.0841
	[2.73172]	[-0.11633]	[-1.43066]	[-5.06578]
C	0.1418	0.0112	0.0179	-0.0208
	-0.4452	-0.0150	-0.0071	-0.1288
	[0.31855]	[0.74593]	[2.53668]	[-0.16121]
R-squared	0.7988	0.1311	0.6982	0.9514
Adj. R-squared	0.7653	-0.0137	0.6479	0.9433
Sum sq. resids	304.4828	0.3453	0.0766	25.4960
S.E. equation	2.5186	0.0848	0.0400	0.7288
F-statistic	23.8237	0.9056	13.8803	117.4860
Log likelihood	-128.6331	64.6517	107.5614	-57.9504
Akaike AIC	4.8292	-1.9527	-3.4583	2.3491
Schwarz SC	5.1518	-1.6301	-3.1357	2.6717
Mean dependent	0.2539	-0.0003	0.0398	-0.3081
S.D. dependent	5.1987	0.0842	0.0673	3.0611
Determinant Residual Covariance		0.0000		
Log Likelihood (d.f. adjusted)		-25.8543		
Akaike Information Criteria		2.1703		
Schwarz Criteria		3.4607		

Table 6 - Variance Decompositions (Actual Real Exchange Rate Series)

Variance Decomposition of D_INFLOWS_ST:

Period	S.E.	D_INFLOWS_ST	D_RERLN_CPI	GNPGRWTH	D_CAROLL
1	2.5168	100.0000	0.0000	0.0000	0.0000
2	3.4663	97.6763	0.1458	0.4262	1.7517
3	4.0563	97.3892	0.1190	0.7894	1.7024
4	4.2688	96.5520	0.6929	1.1904	1.5648
5	4.3590	93.1109	2.9965	1.4629	2.4297
6	4.5300	87.6029	6.8275	1.4926	4.0770
7	4.7875	83.3473	10.0631	1.3601	5.2295
8	5.0052	81.8105	11.4612	1.2458	5.4826
9	5.1074	81.8667	11.5556	1.2295	5.3482
10	5.1301	81.9028	11.4600	1.2862	5.3510

Variance Decomposition of D_RERLN_CPI:

Period	S.E.	D_INFLOWS_ST	D_RERLN_CPI	GNPGRWTH	D_CAROLL
1	0.0937	4.4385	95.5616	0.0000	0.0000
2	0.1313	18.2955	80.2492	0.6848	0.7705
3	0.1398	23.8576	74.2645	0.6696	1.2083
4	0.1423	24.9957	72.5458	0.7922	1.6663
5	0.1459	23.7709	73.0700	1.1931	1.9660
6	0.1495	23.2234	73.1905	1.4490	2.1372
7	0.1517	23.6913	72.6068	1.4913	2.2106
8	0.1527	24.3320	71.9774	1.4735	2.2171
9	0.1530	24.6210	71.6895	1.4812	2.2083
10	0.1532	24.6069	71.6566	1.5061	2.2305

Variance Decomposition of GNPGRWTH:

Period	S.E.	D_INFLOWS_ST	D_RERLN_CPI	GNPGRWTH	D_CAROLL
1	0.0399	0.6236	34.8299	64.5465	0.0000
2	0.0565	24.1949	29.2989	45.5448	0.9614
3	0.0621	30.7802	25.5477	42.7676	0.9045
4	0.0643	32.0218	24.4510	42.5698	0.9574
5	0.0657	30.7103	25.9537	42.2340	1.1020
6	0.0671	30.1720	27.4052	41.0835	1.3394
7	0.0684	31.0075	27.7596	39.6922	1.5406
8	0.0693	32.2283	27.4688	38.6901	1.6129
9	0.0697	32.9636	27.1749	38.2600	1.6014
10	0.0698	33.0729	27.1511	38.1531	1.6229

Variance Decomposition of D_CAROLL:

Period	S.E.	D_INFLOWS_ST	D_RERLN_CPI	GNPGRWTH	D_CAROLL
1	0.7542	3.8352	8.0429	0.2780	87.8439
2	1.4883	34.1001	16.6099	0.1518	49.1383
3	2.1237	45.0880	22.0886	0.1290	32.6944
4	2.4817	51.1548	23.2046	0.1451	25.4955
5	2.5806	53.6748	22.5107	0.2336	23.5810
6	2.6040	52.8860	22.5789	0.3850	24.1502
7	2.7028	51.0660	24.1750	0.4902	24.2689
8	2.8621	50.9780	25.4791	0.4864	23.0565
9	2.9876	52.3068	25.5689	0.4476	21.6767
10	3.0393	53.4625	25.1165	0.4499	20.9711

Cholesky Ordering: D_INFLOWS_ST D_RERLN_CPI GNPGRWTH D_CAROLL

Table 7 - Variance Decompositions (Residual Real Exchange Rate Series)

Variance Decomposition of D_INFLOWS_ST:

Period	S.E.	D_INFLOWS_ST	D_RESID_LT	GNPGRWTH	D_CAROLL
1	2.5186	100.0000	0.0000	0.0000	0.0000
2	3.4708	97.5548	0.4928	1.2108	0.7416
3	4.1227	96.2298	1.6323	1.5983	0.5396
4	4.3554	95.2548	2.0673	1.8264	0.8515
5	4.4362	92.3063	3.1649	1.7777	2.7511
6	4.5854	88.1148	4.6222	1.7560	5.5071
7	4.8394	85.0046	5.9639	1.8514	7.1800
8	5.0700	84.0434	6.6545	1.9340	7.3681
9	5.1860	84.2093	6.7715	1.9384	7.0808
10	5.2143	84.1794	6.7033	1.9183	7.1990

Variance Decomposition of D_RESID_LT:

Period	S.E.	D_INFLOWS_ST	D_RESID_LT	GNPGRWTH	D_CAROLL
1	0.0848	6.5839	93.4161	0.0000	0.0000
2	0.0863	7.1932	90.4772	0.9461	1.3836
3	0.0880	7.6952	88.0014	1.8516	2.4518
4	0.0896	7.5323	87.5966	2.0722	2.7990
5	0.0905	7.4218	87.6393	2.0650	2.8740
6	0.0908	7.3783	87.6873	2.0535	2.8809
7	0.0909	7.3675	87.6858	2.0634	2.8833
8	0.0909	7.3784	87.6637	2.0722	2.8858
9	0.0909	7.4064	87.6323	2.0739	2.8875
10	0.0909	7.4380	87.6012	2.0732	2.8876

Variance Decomposition of GNPGRWTH:

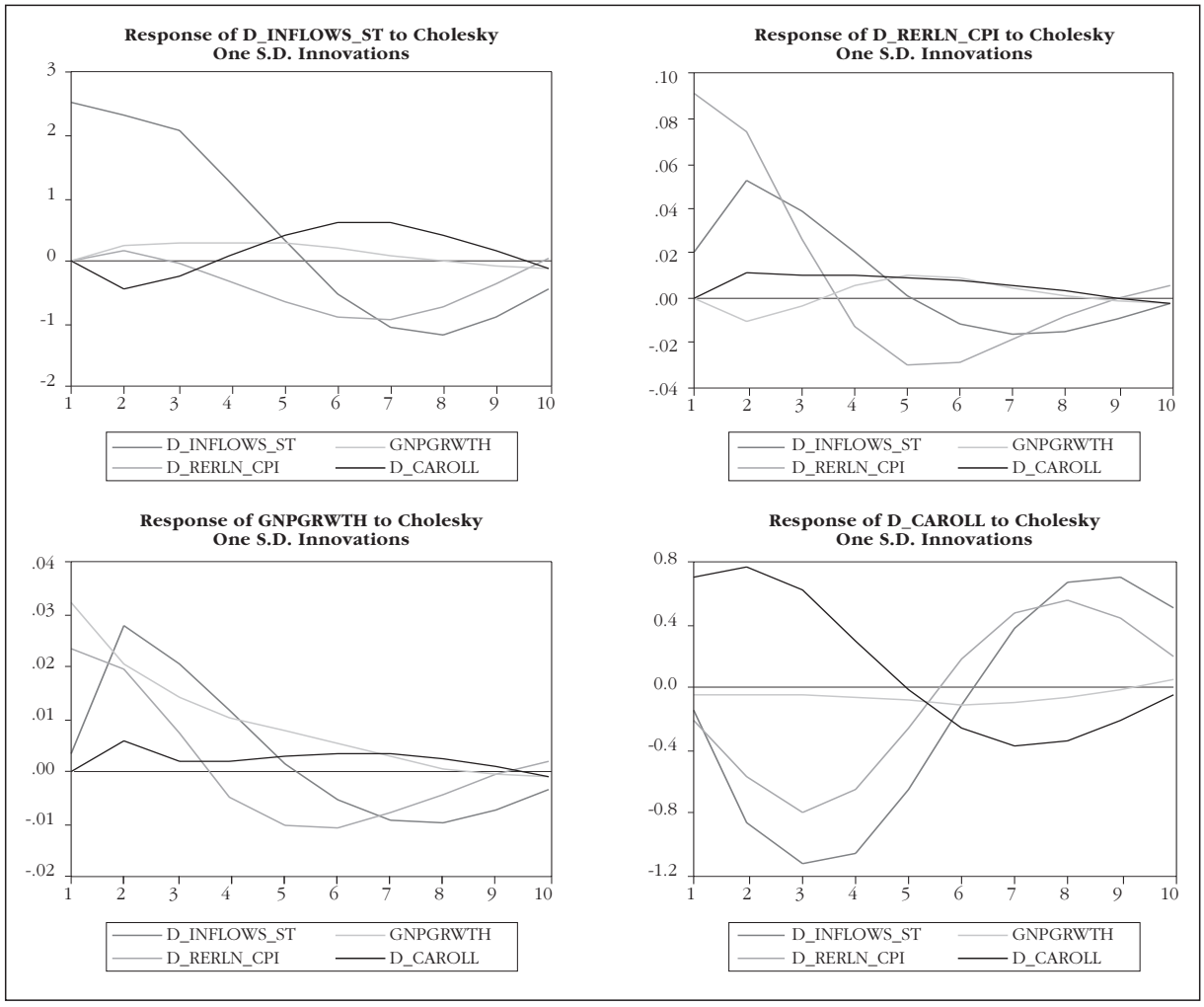
Period	S.E.	D_INFLOWS_ST	D_RESID_LT	GNPGRWTH	D_CAROLL
1	0.0400	1.7164	11.0146	87.2690	0.0000
2	0.0583	28.5049	10.3988	59.7010	1.3953
3	0.0650	34.1490	10.3837	53.6391	1.8282
4	0.0671	35.9262	9.9242	51.2315	2.9180
5	0.0678	35.3149	10.4637	50.1592	4.0623
6	0.0688	34.8146	11.4365	48.7550	4.9938
7	0.0699	35.3470	11.9965	47.2410	5.4154
8	0.0708	36.2692	12.1501	46.1388	5.4419
9	0.0711	36.8395	12.1102	45.6652	5.3852
10	0.0712	36.9042	12.0818	45.5475	5.4665

Variance Decomposition of D_CAROLL:

Period	S.E.	D_INFLOWS_ST	D_RESID_LT	GNPGRWTH	D_CAROLL
1	0.7288	6.0921	0.4087	1.2037	92.2955
2	1.4759	41.8933	3.2611	1.9116	52.9340
3	2.1418	52.7382	8.9310	2.8568	35.4740
4	2.5093	58.9249	10.5288	2.9848	27.5615
5	2.6222	61.1199	10.7231	2.8714	25.2857
6	2.6497	60.0754	10.5315	2.8649	26.5283
7	2.7425	58.1322	10.9844	3.0695	27.8140
8	2.8992	57.8316	11.7888	3.2674	27.1123
9	3.0304	58.8759	12.2505	3.3206	25.5531
10	3.0890	59.8199	12.2849	3.2848	24.6104

Cholesky Ordering: D_INFLOWS_ST D_RESID_LT GNPGRWTH D_CAROLL

Charts - Impulse Response Functions (Actual Real Exchange Rate Series)



Charts - Impulse Response Functions (Residual Real Exchange Rate Series)

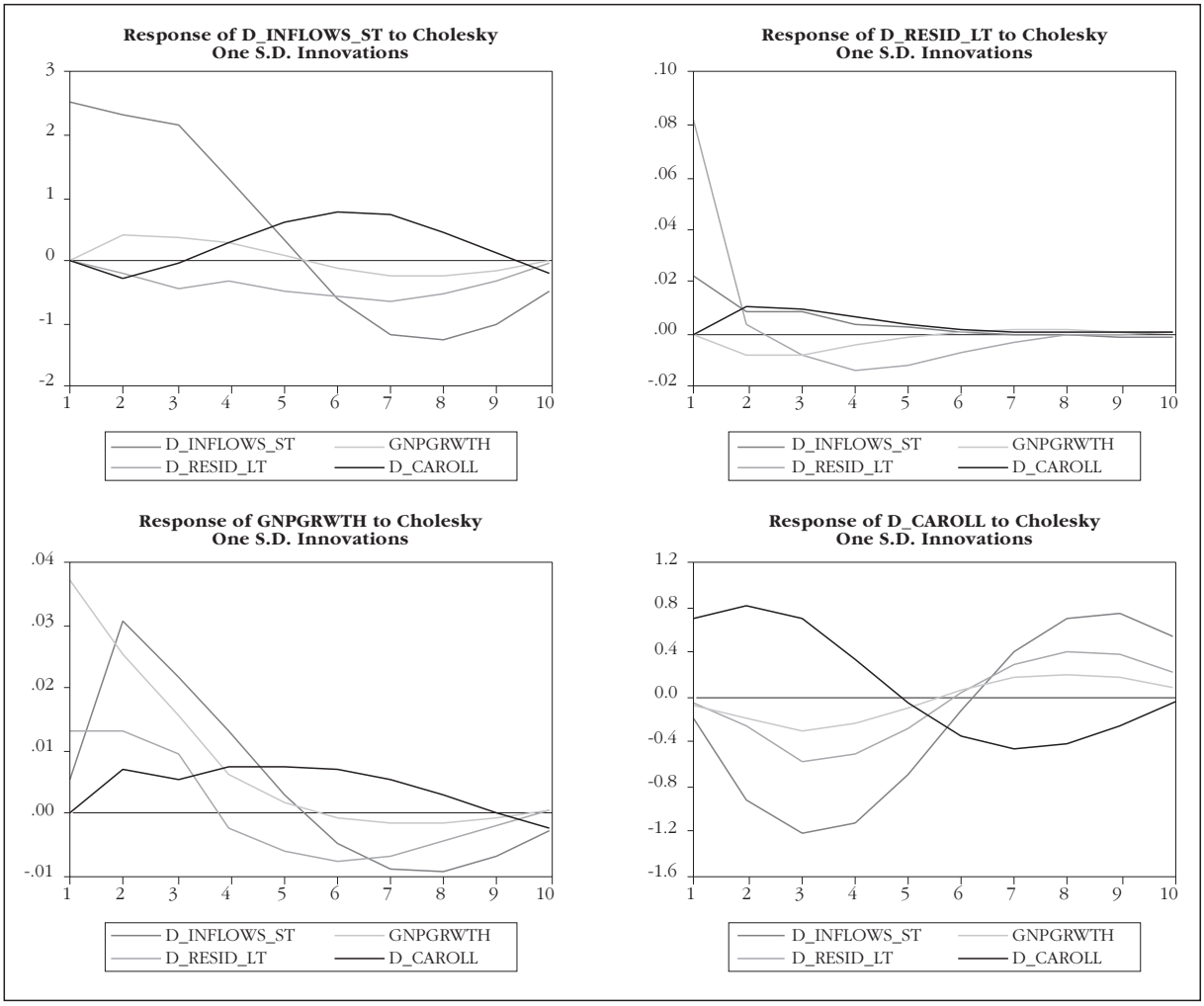


Table 8 - Variables List

RER_LN_CPI	CPI based real effective exchange rate
PROD_RATIO_LN	Ratio of productivity of tradables to non-tradables
GNPGRWTH	Year on year percentage growth of GNP
CAROLL	4-quarter rolling current account balance in $s.
INFLOWROLL_NEW	4-quarter rolling portfolio flows, short-term loans and currency and deposit liabilities
DUM	“1” for 1994:Q2 and 2001:Q2; “0” for the rest
RESID_DUM	Residuals of the regression

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