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Analyzing the Present Sustainability of Turkey's Current Account Position

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Abstract

In this paper we assess the present sustainability of Turkey's current account position using the framework provided by Milesi-Ferretti and Razin (1996) based on the ability-to-pay and willingness-to-lend model. This framework allows us to assess the structural features and macroeconomic policy indicators. We extend this framework by considering global sustainability indicators as well. Using data for three periods, 1991-1993, 1998-2000 and 2004-2006 we evaluate the present sustainability in light of the prior two crises (1994, 2001). Based on our analysis of these factors in the extended framework, we conclude that Turkey's internal structure and macroeconomic conditions (such as exports and the fiscal position) have improved that are allowing Turkey to continue having large and increasing current account deficits. However, there is vulnerability from global factors namely the impending U.S. recession and a potential global slowdown. This might require some adjustments in policy to continue accumulating large deficits.

Keywords: Current account sustainability, predictors of crisis, Turkey
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1. INTRODUCTION

Although Turkey has suffered from current account deficits earlier, the last two years have seen ever increasing current account deficits. These large deficits have caused a great level of debate over whether the Turkish current account is sustainable and whether there is a possibility of another crisis in Turkey. The primary cause for concern is that the two major crises Turkey faced (1994 and 2001) were preceded by high current account deficits. The current account deficits facing Turkey are more severe than those in previous periods and are over the 5% of GDP threshold, yet Turkey is yet to experience a crisis. This is because a high current account deficit alone, does not necessarily imply an *unsustainable* external position and thus may not necessarily result in a crisis. Rather there are a whole host of factors that have an impact on a country's sustainability.

A comprehensive framework for examining current account sustainability is provided by Milesi-Ferretti and Razin (1996). This framework is based on the willingness-to-lend and ability-to-pay model and incorporates structural factors, macroeconomic policy, political conditions and market expectations that shed light on current account unsustainability. They define an unsustainable current account deficit as one that either results in a policy reversal or a crisis. By analyzing the experiences of six countries that faced large and persistent current account deficits they identify the key factors that lead to policy reversals or crises. We build on their framework by including global factors that can shed light on a country's current account sustainability. Using this extended framework we examine the factors that impact current account sustainability for the periods immediately preceding both the earlier crises. Through this discussion we evaluate Turkey's present vulnerability to a crisis. Our analysis shows that while internal fundamentals are allowing Turkey's high current account deficits to persist for longer periods, there is vulnerability in global sustainability indicators.

The paper is organized as follows: the next section provides background on crisis literature as well as discusses the Turkish current account and the crises faced in 1994 and 2001. Section 3

discusses the sustainability framework of Milesi-Ferretti and Razin (1996) and our extension of this framework. This is followed by our analysis of the indicators in this extended framework for Turkey in section 4. Section 5 summarizes and concludes.

2. BACKGROUND

Turkey suffered two major crises in 1994 and 2001.[1] High current account deficits have been associated with crises. As noted by Milesi-Ferretti and Razin (1996), conventional wisdom suggests that a current account deficit to GDP ratio of 5% or higher implies that the current account is unsustainable.[2] Figure 1 maps out Turkey's current account to GDP ratio from the first quarter of 1992 to the third quarter of 2007. Prior to both crises, Turkey's current account deficit to GDP ratio came close to and did breach the 5% sustainability threshold. In the second quarter of 1993 the current account deficit to GDP ratio was over 5% and fell to a little below 3% and again increased to 3.4% in the last quarter of 1993. The current account deficit to GDP ratio was even worse in the year prior to the 2001 crisis. In 2000, except for the third quarter, the current account deficit to GDP ratio exceeded the 5% threshold and in the second quarter was above 6%. High current account deficits therefore are a sign of vulnerability.

However, Ozatay (2001) notes that high current account deficits in Turkey were not a trend prior to the two crises, but rather a one-shot problem. Thus, the temporary nature of high current account deficits indicates that it was a cause of the earlier crises. While Turkey's current account imbalance may have been temporary earlier, that does not appear to be the case in more recent years. Turkey's current account balance has worsened considerably since 2003 as seen in figure 1. Moreover, since 2004, Turkey has continuously breached the 5% sustainability threshold with the current account deficit to GDP ratio reaching 7.90% in 2006. This suggests that Turkey's

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[1] We focus on financial and currency crises only. Thus, we do not discuss the economic crisis of 1999, when Turkey's GDP growth was -4.71%.

[2] There is disagreement with this idea in the literature. For example, in their study of 117 crashes for 105 countries, Frankel and Rose (1996) conclude that high current account deficits are not associated with crashes.

weakening current account position is reflective of a deteriorating trend rather than a temporary problem. Thus, there is some concern about Turkey's vulnerability to a crisis today.

However, even a persistently high current account deficit is not necessarily unsustainable. Milesi-Ferretti and Razin (1996) show that Australia had a high and continuous current account deficit for a long period without facing a crisis. In Turkey's case, Ogus and Sohrabji (2006, 2008) show that the trend in a deteriorating current account position in the early 2000s may not imply unsustainability due to policy changes. Using an intertemporal benchmark model and stationarity tests, they show a structural break in the deviation of actual and optimal net external liabilities since 2001. Thus, current account deficits alone do not reveal the whole story about current account sustainability. An examination of all the factors that impact the current account is necessary.

There are several factors that contribute to current account unsustainability. First-generation crisis models such as Krugman (1979) and Flood and Garber (1984) focus on weakened fiscal conditions such as high deficits, interest payments and debt. In addition, Ozatay (2001) highlights the need to also consider financing of the fiscal position. In analyzing the 1994 crisis, he highlights that it was not the weak fiscal position, but the way that deficits were financed that contributed to the crisis. This is also the case for the 2001 crisis noted in Ozatay and Sak (2002). They argue that liquidity injection from the central bank which was channeled to the government resulted in the depreciation of the lira and the crises. Now the focus is the fragile financial sector which is emphasized by third-generation models including Krugman (1999) and Aghion, Bacchetta and Banerjee (2000, 2001).

In addition to the above, there are important trade and investment factors that contribute to sustainability. Second-generation crisis models such as Obstfeld (1994) and Eichengreen, Rose and Wyplosz (1997) emphasize the contagion effect. Through trade and investment linkages, countries can face a weakening current account position which can lead to a crisis. If a country's exports decline because its trade partners are facing a crisis, then it hurts the trade balance and

thus leads to a worsened current account position. Similarly, a country could face a crisis through contagion capital outflows in neighboring countries. This is a crucial issue for a country that has large foreign portfolio investment.

Thus, to analyze whether Turkey is susceptible to a crisis we need to examine a comprehensive list of indicators which include all the factors discussed above. Milesi-Ferretti and Razin (1996) provide a sustainability framework that encompasses some of these factors and includes others that can impact a country's current account sustainability. They study the experiences of six countries based on this framework and identify the main indicators of sustainability. They conclude that among the indicators they study only high exports to GDP ratios, high interest payments and appreciated real exchange rates differentiate between crisis and non-crisis episodes and the rest do not show a consistent pattern for the episodes in the sample. They also emphasize external influences, the fragility of the financial sector and political instability as playing important roles. We build on their work in two ways. First we explicitly include global factors to the list of sustainability indicators. Also, we contribute three episodes from Turkish history to their ten episodes of the seven countries analyzed by Milesi-Ferretti and Razin (1996). Two of these are crisis episodes and the other a persistent current account deficit. The framework used by Milesi-Ferretti and Razin (1996) and our extension are discussed in the following section.

3. FRAMEWORK FOR PREDICTING CURRENT ACCOUNT SUSTAINABILITY

Milesi-Ferretti and Razin (1996) provide a framework to examine sustainability. Their framework is based on the willingness-to-lend and ability-to-pay model which includes indicators that span structural factors, macroeconomic policy, political conditions and market expectations. They study the experience of persistent current account imbalances in seven countries including Australia, Chile, Ireland, Israel, Malaysia, Mexico and South Korea. A country can have three types of persistent current account imbalances. In the first case a country can have a persistent

current account deficit for several years with no policy shift or crisis such as was the case of Australia (1981 – 1994) and Malaysia (1991 – 1994). This implies that the current account was sustainable. Unsustainability of the current account position implies that there was either a policy shift or a crisis. Thus, the second type of persistent current account deficits are those that lead to a policy reversal (such as fiscal tightening) where this policy reversal improves the current account position such as in Ireland (1987 – 1990), Israel (1985 – 1986), Malaysia (1985 – 1986) and South Korea (1978 – 1988). Finally, a country can have a persistent current account deficit that leads to a crisis where the country is unable to meet their debt obligations such as Chile (1977 – 1982) and Mexico (1977 – 1982 and 1991 – 1995). Policy shifts or crises are triggered by a shock that change investor expectations which in turn impact capital flows. These changed expectations are related to factors that impact either the ability or the willingness of the country to repay debt.

Milesi-Ferretti and Razin (1996) group the factors that impact crises according to four broad categories: structural features, macroeconomic policy stance, political factors and market expectations. Structural features include economic growth, investment, trade and financial liberalization and external liabilities. Macroeconomic policy position considers exchange rate policy and fiscal policy. Political factors emphasize as credibility and stability and market expectations include bond prices and interest rate spreads. They modify their list of predictors for practical concerns which cover structural features and macroeconomic policy indicators. As noted earlier, based on the analysis of the countries studied, Milesi-Ferretti and Razin (1996) conclude high exports to GDP ratios, high interest payments and appreciated real exchange rates differentiate between crisis and non-crisis episodes, while the rest of the factors do not show a consistent pattern for the episodes in their sample. They also emphasize the importance of external forces, the fragility of the financial sector and political instability in crises.

We follow their modified list in analyzing past crises to determine sustainability factors for Turkey's external position. We contribute three episodes from Turkish history, two of which are

crisis episodes and the other a persistent current account deficit to the ten episodes of six countries analyzed by Milesi-Ferretti and Razin (1996). Our list of structural features include *GDP growth rate*, *investment/GDP*, *net foreign direct investment inflows/GDP*, *net foreign portfolio inflows/GDP*, *exports/GDP*, *terms of trade, gross external debt/GNP*, *real interest rate, extent of short-term debt/gross external debt* and *foreign exchange(FE) reserves/gross external debt*. Macroeconomic policy indicators include the *real effective exchange rate (REER) index*, *inflation rate[3]*, *fiscal deficit/GNP* and *interest payments/GNP*. In addition, we also consider global sustainability indicators including *world growth rate*, *EU growth rate*, *world real interest rates* and *oil prices*. All these factors are discussed in detail below.

3.1 Structural features

Higher *GDP growth rate* implies that a country can sustain a higher current account deficit, both because the current account/GDP ratio is lowered as well as because it indicates that the country's ability to pay has increased. In addition, growth signals confidence to foreign investors that may increase their willingness to lend. Thus, growth should have a positive impact on a country's current account sustainability. By positively impacting growth, higher investment can also allow current account deficits to persist for longer periods. Higher *investment/GDP* ratios would thus have a positive impact on the external position of a country.

Foreign investment is also an important component of a country's current account sustainability. While higher foreign investment could have a positive impact, excessive dependence on foreign portfolio investment which tends to be short-term, increases the potential of a crisis. Thus we consider *net portfolio inflows* and *net FDI inflows* (both measured as a percentage of GDP) separately.

A higher *export/GDP* ratio improves a country's ability to repay debt. A heavy dependence on exports increases a country's vulnerability to external shocks such as a sudden decline in

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[3] Inflation rate is not explicitly an indicator in the Milesi-Ferretti and Razin (1996) framework, but we include it because it adds to the discussion of macroeconomic stability.

foreign demand due to recessions. However, a higher level of exports by improving the trade balance would improve the current account position of a country. In addition, improvement of the *terms of trade* (defined as the ratio of the price of exports to the price of imports) helps the current account deficit of a country.

A high level of *external debt*/*GNP* could imply an unsustainable external position. However, a high debt is not the only concern. It is also important to consider what allows a country to continue accumulating debt as well as the composition of the debt which affects a country's vulnerability to a crisis. Growth of external debt is impacted by foreigners' willingness to lend which in turn is based on interest rates. The higher the *real interest rate*, the greater the willingness of foreigners to continue lending. If a country relies heavily on *short term debt* (measured as a percentage of external debt), the country would be more vulnerable to a crisis. Also, a low *FE reserves/external debt* ratio can reduce a country's ability to stave off a crisis thus making it more vulnerable.

3.2 Macroeconomic policy indicators

Fiscal unsustainability can lead to current account unsustainability.[4] The framework uses three measures to examine fiscal unsustainability. Higher *fiscal deficit/GNP* and *interest payments*/*GNP* ratio indicate a poor fiscal position. Shaky fiscal fundamentals, impacts a country's ability to pay and makes foreigners unwilling to lend. Thus, a weakened fiscal position has the potential to make the current account deficit unsustainable.

To determine macroeconomic stability we also consider prices and exchange rates. High inflation rates which can be related to fiscal policy add to concerns in an economy. A country with high inflation rates is burdened by macroeconomic uncertainty and poor allocation of resources. In addition, it has an impact the value of the currency.

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[4] We acknowledge the two-way relation between fiscal and current account unsustainability discussed in the twin deficits literature. However, for our paper, we focus on the impact of the fiscal deficit on the current account deficit.

The exchange rate regime and exchange rate movements also matter for the current account position. Before the 2001 crisis, Turkey had a fixed exchange rate. A fixed regime puts a burden on foreign exchange reserves. As noted earlier, a high level of foreign exchange reserves makes a country less vulnerable to a crisis. However, if the regime is fixed then there is a need for even higher levels of reserves. We capture exchange rate movements through the *REER index*. An increase in the index implies that the currency is becoming overvalued which hurts the trade position and thus contributes to unsustainability of the current account position.

3.3 Global unsustainability indicators

As noted earlier we extend the list of sustainability indicators provided by the Milesi-Ferretti and Razin (1996) framework to include global factors that impact Turkey's current account position. One of the main global factors is growth rates in the world. In Turkey's case we include both *world growth rate* as well as *EU growth rate* as indicators of a crisis. As its largest trading partner, economic conditions in EU matter for Turkey. In addition, Turkey's potential accession to the EU would make the region even more important for Turkey in the future. A lower growth rate (world growth as well as EU growth) would have a negative impact on Turkey's external position through a decline in trade and investment opportunities. Hence, a world wide or EU recession has the potential to make Turkey's current account vulnerable to a crisis.

In addition, as shown by Frankel and Rose (1996) *world real interest rates* are an important determinant in current account sustainability. A higher world interest has the potential to draw resources away from a country, while lower returns in the world could lead to increased investment into the country. Thus, a higher world interest rate could impact both a country's ability to pay off debts as well as foreigners' willingness to lend and thus its current account sustainability.

Finally, we consider the impact of oil price shocks. Increases in o*il prices* can slow investment and production while simultaneously increasing the import bill for an oil importing

country. Thus, oil price increases hurt Turkey's ability to pay off its debts and thus negatively

impact its current account position.

We use this extended framework to analyze sustainability indicators for the 1994 and 2001

crises in Turkey to shed light on its present current account position. Our analysis is spread over

three phases, the first relates to the 1994 crisis, the second relates to the 2001 crisis and the third

is the current phase. Each phase is further broken down to capture short-term and long-term

changes. Thus, we break the first phase into three periods, the three-year average prior to the

crisis (1991 – 1993), the year immediately prior to the crisis (1993) and the crisis period (1994).

Likewise the second phase is broken up into the three-year average for 1998 – 2000, the year

2000 and the year 2001. The third phase is broken up into the three-year average of 2004 – 2006

and the year 2006 alone to make it comparable to the crisis periods. Our analysis of the extended

list of indicators is presented in the following section.

4. DATA AND RESULTS

Data for the series discussed in the section above are available from the Central Bank of

Turkey website. Since we analyze sustainability indicators for the past crises to draw conclusions

for the current situation, we use data from 1991 – 2006. We consider annual data for all series.

Data for the three phases (discussed earlier) are presented in tables II and III. Table II

focuses on Turkish sustainability indicators which are from the framework provided by Milesi-

Ferretti and Razin (1996). Table III provides information on our extension of the framework

which includes global sustainability indicators, again for the three phases discussed earlier.

4.1 Turkey's 1994 crisis

Macroeconomic policy indicators played a major role in the 1994 crisis. Similar to the

conclusion of Milesi-Ferretti and Razin (1996) for Mexico's 1982 crisis, where fiscal imbalances

played a major role, Ozatay (2001) also argues that fiscal imbalances contributed to Turkey's

1994 crisis. As can be seen in table II, the average *fiscal deficit/GNP* ratio was high at 5.43% for

1991-1993 and worse in 1993 alone at 6.70%. The same trend is observed in the *interest payments/GNP* ratio which increased from an average of 4.43% for 1991-1993 to 5.80% in 1993 alone.

Related to the poor fiscal position was the macroeconomic instability observed in both the inflation rate and exchange rates. From the table we see that the average inflation rates for 1991-1993 were very high at 67.38% and stayed high in 1993 at 66.10%. Besides providing poor signals in allocating resources, high inflation rates also impact the currency.

Milesi-Ferretti and Razin (1996) note that overvaluation of the currency played a major role in Chile and Mexico's crises (1982 for both countries). This can be observed in Turkey's case as well. As reported in table II, the average *REER index* for 1991-1993 was 115.74 and increased to 122.89 in 1993 which represents an overvaluation of the lira. Appreciation of the lira was noted by Celasun (1998) and Ozatay (2001) as a factor in the 1994 crisis.

In addition, there was one factor from the global sustainability indicators which impacted Turkey in this period. Like Milesi-Ferretti and Razin (1996) highlight the impact of a world recession in the 1982 Mexican crisis, we find that the poor growth performance in EU was a factor for Turkey in the 1994 crisis. Average *EU growth rate* was 0.43% for 1991-1993 and reduced still further in 1993 to -0.20% (from table III). Though world growth rates were steady, the slowdown in the EU region which was and continues to be a major trade and investment partner adversely impacted Turkey in this period.

While none of the structural features stand out as predictors of the crisis, financial sector problems were observed in Turkey. Milesi-Ferretti and Razin (1996) emphasizes the importance of a weak financial sector in the crises of Chile (1982) and Mexico (1982 and 1994). Similarly, Ozatay (2001) and Arican (2005) highlight the problems of Turkey's financial sector in the 1994 crisis.

4.2 Turkey's 2001 crisis

Fiscal unsustainability was once again a major macroeconomic policy indicator in the 2001 crisis. Ozatay and Sak (2002) note that similar to the 1994 crisis and the Chilean experience reported in Milesi-Ferretti and Razin (1996), a poor fiscal position was a factor in the 2001 Turkish crisis. This can be seen in the data in table II. Both interest payments/GNP and fiscal deficit/GNP were higher (and increasing) compared with the period leading to the 1994 crisis. The average *interest payments/GNP* for 1998-2000 was 13.84% and higher in 2000 at 16.27%. Similarly, fiscal deficits saw an increase with the average *fiscal deficit/GNP* ratio of 9.79% for 1998-2000 and 10.56% in 2000.

Inflation rates were also higher, although at an average of 68.14% in 1998-2000 and slightly lower at 54.92% in 2000 were not more problematic than in the 1994 crisis. The REER index also increased with an average of 126.05 for 1998-2000 and 136.53 in 2000. While this may suggest an appreciation in the real exchange rate, we believe this is more to do with the changed fundamentals that make the base year of the index (1995) less relevant for the REER index change comparisons across the period.

Of the structural features, we find that similar to Chile's crisis in 1982 as noted in Milesi-Ferretti and Razin (1996), high external debt had a major role in the 2001 Turkish crisis. Table II shows that average external debt to GNP ratio was 53.90% in 1998-2000 and higher in 2000 at 59.13% in 2000.

In addition, Turkey saw a worsening terms of trade position in this period. Milesi-Ferretti and Razin (1996) find this an important indicator in the Chilean crisis of 1982. From table II, we find that the *terms of trade* were 1.06 in 1998-2000 and lower at 1.00 in 2000. While this is indeed a worsened terms of trade position, given the very small changes, we do not feel that this is an important indicator in 2001 crisis.

Of the global sustainability indicators, world interest rates and oil prices had an impact on Turkey. High world interest rates specially in relation to domestic interest rates were a factor identified by Milesi-Ferretti and Razin (1996) for both Chile in 1982 and Mexico in 1994. From

table III we see that *world interest rates were* 5.91% in 1998-2000 and increased to 6.65% in 2000. It is important to note that the interest rate in Turkey for the same periods were 14.02% and -12.21%. The big difference between world and Turkish interest rates in 2000 was an important factor in the 2001 crisis. In 2000, Turkey's *real interest rate* was -12.21%.

As noted by Ozatay and Sak (2002) we also find high petroleum prices to be a concern in this period. From table III we see that *oil prices* were $ 18.15 for the 1998-2000 period and significantly higher for 2000 alone at $ 26.12.

Once again weakness in the financial sector identified by Milesi-Ferretti and Razin (1996) as important predictors and which was a factor in Turkey's 1994 crisis was a concern in the 2001 crisis as well. Alper (2001), Ozatay and Sak (2002) and Arican (2005) emphasize the importance of a weak financial system in the 2001 crisis. Contributing to the problems in the financial system is the timing of the capital account liberalization which can partly be attributed to outside pressures from the IMF as noted by Alper and Onis (2002) as well as internal political problems. Alper and Onis (2003) note that weakness in political structure such as lack of accountability and transparency in a financially liberalized environment leads to recurring financial crises.

4.3 Present position in Turkey

To discuss the present current account position in Turkey, we consider the trends in the broad categories of indicators identified earlier separately below.

<u>Structural features</u>

Growth during the 1990s was fairly volatile in Turkey. Figure 2, which maps out the trend for the entire sample period shows several and major dips in the growth trajectory. However, the present growth path in Turkey is healthy. From table II we see that average *growth rate* for the 2004-2006 period was high at 7.47% and slightly lower but healthy at 6.10% in 2006. The comparison of the two periods is important if one compares the growth experience of Turkey prior to the earlier crises. Turkey's growth rates were high in the year immediately preceding the earlier two crises at 8.04% and 7.36% in 1993 and 2000 respectively. However, while these

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growth rates were high and comparable to the position today, we believe that those earlier growth rates were cause for concern for Turkey at that time, which is not presently the case. Specifically, the 1993 growth rate was 61% higher than the three-period average for 1991-1993 at 4.98% while the 2000 growth rate represented a 285% jump from the three year average for 1998-2000 at 1.91%. The latter jump is that extreme because of the 1999 recession in Turkey that significantly lowered the three year average. Nevertheless, rapid increase in growth from the former period represents an overheating concern for the Turkish economy in both cases. The present situation represents a sustained high growth rate for the entire period and thus is not indicative of a structural problem in the Turkish economy.

By contributing to growth, investment (measured as a percentage of GDP) increases the potential of a country to repay debts. As can be seen from figure 3, the *investment/GDP* ratio has been steady for most of the sample period. The investment to GDP ratio was healthy prior to the earlier crises. From table II, we see that the average investment to GDP ratio for 1991-1993 was 16.75% and increased to 19.50% in 1993. The ratios for 1998-2000 and 2000 alone were likewise healthy at 18.06% and 18.51%. Turkey's current investment position is even higher than earlier periods at 20.70% for the 2004-2006 period and 19.58% for 2006 alone. Thus, investment-wise, Turkey continues to be in a stable position.

As we noted earlier, in the case of foreign investment the type of investment matters for vulnerability where direct investment suggests lesser and portfolio investment suggests higher vulnerability. Milesi-Ferretti and Razin (1996) find that both direct investment and portfolio investment flows are not major predictors of crises in their sample. We conclude the same for Turkey which shows very low inflows (as a percentage of GDP) for both types of investment. From figure 4 we see that FDI flows to GDP were low, but stable for most of the sample period. FPI flows to GDP were also low, but more volatile for the sample period. The present FDI and FPI position is healthier in Turkey. Average *net FDI inflows/GDP* for 2004-2006 was 2.62% and increasing in 2006 at 4.79% (as noted in table II). Similarly healthy results are observed in *net*

FPI inflows/GDP which are 2.74% and 1.84% respectively. The higher level of FDI inflows compared with FPI inflows in 2006 shows that Turkey is less vulnerable to international speculative activity. Both inflows are a major improvement over the entire sample period as seen in figure 4 and specifically compared with the crises periods as can be seen in table II.

Exports have been an important indicator of sustainability. Milesi-Ferretti and Razin (1996) identify low exports as a major factor in Chile and Mexico's 1982 crisis as well as Mexico's 1994 crisis. In addition, Milesi-Ferretti and Razin (1996) also discuss how Malaysia's high exports to GDP ratio of 82% in 1994 were an important factor in improving the trade and thus current account position. From figure 5 we see that Turkey's export to GDP ratio has been on a general upward trajectory since 1990. There have been slight fluctuations around the 2001 crisis, but have steadied since then and exports have continued to increase until 2006. From table II we see that the three-year average *export/GDP* ratio for 2004-2006 is 29.12% and 29.05% for 2006 in Turkey. While the numbers are not as high as Malaysia's case, they still represent a very healthy export position for Turkey.

For most of the sample period, the terms of trade has been approximately 1 as seen in figure 6. However, the terms of trade has slightly deteriorated in the current period. In 2006 the *terms of trade* were 0.97 is lower than three-year average of 1.00 for 2004-2006 and the lowest it has been for the sample period. While the terms of trade are worse in the current period, the deterioration has been fairly small and thus we do not that this factor shows Turkey's vulnerability to a crisis in the current period.

The external debt position was a major predictor of crises for the episodes studied by Milesi-Ferretti and Razin as well as in our analysis of the 2001 crisis. Figure 7 shows that in the early 1990s, Turkey's external debt position was steady but jumped up considerably in the period leading to the 2001 crisis. As noted earlier, the external debt/GNP ratio was an average of 53.90% for 1998-2000 and 59.13% for 2000 (from table II). The debt position further worsened during the crisis reaching 79.25% in 2001. Currently, the average *external debt/GNP* ratio is

50.63% 2004-2006 and 51.57% for 2006 alone as reported in table II. While these numbers are high they represent an improvement in Turkey's external debt position.

Real interest rates in Turkey have been very high in the 1990s due to increasing budget deficits. The level of debt that needed to be repaid at these high rates of interest consequently also soared. This crowded out private investment and hurt the Turkish economy. That in turn increased the risk premium on external borrowing from foreign lenders and thus put pressure on domestic public sector borrowing. High rates of interest continue to be an issue in Turkey even though political and economic risks have been reduced by reforms after the 2001 crisis. At an average of 9.33% in 2004-2006 and 7.75% in 2006 alone, real interest rates in Turkey have shown a significant decline from interest rates as high as 30% in 2001. However, the rates in the present period are still fairly high which form an impediment to investment and growth. On the other hand, these high rates, especially in relation to world interest rates, make Turkey an attractive investment opportunity for foreign investors and thus help finance the current account deficit.

Heavy dependence on short term debt makes a country more vulnerable to a crisis. Radelet and Sachs (1998) note that short-term debt has been a major factor in the case of East Asia. The amount of short-term debt as a percentage of external debt was higher in the period leading to the 1994 crisis than in the 2001 crisis, but was not a major cause for either crisis. Figure 8 shows a declining dependence on short-term debt in the present period. From table II we see that the average *short-term debt/external debt* ratio in 2004-2006 was 20.71% and 20.33% for 2006. This is lower than the ratios in the periods leading up to the two crises. Thus, Turkey is in a better short-term debt position today.

The final support for Turkey's improved external liabilities can be seen in its improved foreign reserves position. From figure 8 we see a steadily improving foreign exchange position. The *FE reserves/external debt* ratio at 28.25% for 2006 is slightly higher than the three-year average for 2004-2006 at 26.42% as can be seen in table II. From figure 8, we see that this

represents a significant improvement over the entire sample period. This improved foreign reserves position implies that Turkey is better able to withstand capital outflows.

In addition, it is also useful to consider the ratio of short-term debt to foreign exchange reserves. Radelet and Sachs (1998) argue that poor foreign exchange positions in countries in East Asia hurt the economies during the 1997 crisis. At 170%, 120% and 200%, Indonesia, Thailand and South Korea respectively all had weak foreign exchange positions in the year preceding the crisis. The ratio in Turkey prior to the first crisis was far worse at an average of 230% for 1991-1993 and close to 300% in 1993 alone. This had improved in the period preceding the second crisis, but at 106% for 1998-2000 and 113% for 2000, still indicated a problematic foreign exchange position. Currently, the ratio is below 100% with the 2004-2006 average being approximately 78% and the 2006 ratio at 72%. This means that currently Turkey would be able to repay short-term debts if there were a sudden capital outflow.

Milesi-Ferretti and Razin (1996) emphasize the importance of exports and external debt among structural features. From the above, we see that both these indicators have improved. Exports have been steadily increasing as a percentage of GDP and while debt continues to be high it has reduced considerably since the 2001 crisis period. None of the other structural features played a major role in Turkey's earlier crises. Nevertheless, it is worth noting that all the structural features discussed in the framework have improved[5] in the current period. Thus, based on structural features, we find that Turkey is in a better current account position.

Macroeconomic policy indicators

One important change in the current period is exchange rate regime in Turkey. Following the 2001 crisis, Turkey's exchange rate regime shifted from a fixed (managed float) to a floating regime. In addition, to the efficiency benefits of a currency being market determined, another major advantage for Turkey in this period compared to earlier periods is decreased burden on foreign exchange reserves. This combined with an improved foreign reserves position discussed

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[5] There is a slight worsening of the terms of trade position, but it is not a significant deterioration.

earlier, shows that Turkey is in an even better position to allay the fears of anxious investors and withstand a crisis.

Following the shift to a floating exchange rate regime, the *REER index* has increased significantly in the current period. The average REER index for the 2004-2006 period was much higher at 154.66 and even more so in 2006 at 160.53 (from table II). This increase could suggest an appreciation of the lira which presents a concern for current account sustainability. Milesi-Ferretti and Razin (1996) highlight overvaluation as a major predictor for both Chile and Mexico in the 1982 crises in the two countries. While, a higher index does imply an appreciation, it is important to note that the REER index uses 1995 as a base year and thus, the higher index implies an appreciation of the lira from 1995. With a significantly different economic structure in 2000s compared with 1995, the higher index is more likely reflecting the changed fundamentals in the Turkish economy, rather than signaling an overvalued lira. Thus, even though a higher REER index should make a country susceptible to a crisis (which as discussed by Milesi-Ferretti and Razin (1996) was a concern for Chile and Mexico), we do not see this as a vulnerability in the Turkish economy.

Fiscal unsustainability that Milesi-Ferretti and Razin (1996) highlight as a major predictor in Chile in 1982 and were also major factors in the prior two crises (as discussed earlier). The two measures of fiscal unsustainability are interest payments/GNP and fiscal deficit/GNP. From figure 9 we see that the trend in both measures deteriorated until 2001. However, we find improvements in both these measures in the present period in Turkey. *Interest payments/GNP* which were a concern prior to both crises, have been fairly healthy since 2004. The average ratio in 2004-2006 was 9.76% and lower for 2006 at 6.71% (from table II).

The other measure is the size and increase in fiscal deficits as a percentage of GNP. High fiscal deficits which are an important predictor in Chile's crisis according to Milesi-Ferretti and Razin (1996) have also been a concern for Turkey in earlier crises. From table II, the average *fiscal deficit/GNP* ratio for 2004-2006 was 3.23% and was only 0.96% for 2006. Not only are

these ratios significantly lower than previous periods but they fall within the EU Maastricht Treaty threshold requirement of less than 3%. This is thus, a period of fiscal restraint for Turkey.

Fiscal restraint has also improved the inflation position in Turkey. While Turkish inflation rates were in double and in some cases triple digits for most of the sample size, the trend has improved in the present period as can be seen in figure 10. From table II we see that average rate of inflation for 2004-2006 was 8.81% and slightly higher at 9.61% in 2006. The single-digit inflation figures show a marked improvement in macroeconomic conditions in Turkey in the present period.

Malaysia's experience between 1979-1986 with fiscal restraint discussed in Milesi-Ferretti and Razin (1996) offers a cautionary tale for Turkey. Following an increase in fiscal deficit/GDP ratio from 6.6% in 1980 to over 17% in 1982 prompted a fiscal tightening program. This reduced the fiscal deficit to GDP ratio significantly to 6% in 1984. However, due to other factors including problems in the financial sector and depreciation of the real exchange rate, Malaysia's fiscal tightening policy resulted in a sharp decline in growth. Thus, while fiscal responsibility is a valued goal, it has the potential to hurt Turkey and may require a change in policy.

However, in Malaysia's case it was a combination of several factors together with fiscal tightening that hurt economic growth. Those factors include depreciation of the exchange rate and weaknesses in financial sector. While the financial sector has been weak in Turkey for most of the sample period, Ogus and Sohrabji (2008) highlight the reforms in this sector following the 2001 crisis. Also, there is no indication of a depreciation in the lira and thus we conclude there is less of a concern of fiscal tightening leading to a decline in growth.

From the above, we thus conclude that Turkey's macroeconomic policy indicators are healthier. Not only is the fiscal position much improved, but as noted earlier, the shift in exchange rate regime has put Turkey in a better position. Thus, based on the macroeconomic policy indicators, we believe that Turkey is less vulnerable to a crisis.

<u>Global sustainability indicators</u>

Just as a global slowdown impacted Mexico in the 1982 crisis discussed in Milesi-Ferretti and Razin (1996), an EU slowdown hurt Turkey in 1994. Since then world and EU growth rates have been steady as can be seen in figure 11. World growth in the current period was healthy with average *world growth rates* of 5.20% in 2004-2006 and 5.40% in 2006 (from table III). Similarly *EU growth* was also steady with 2.57% and 3.20% for the two periods respectively. Looking forward though, the global slowdown in 2008 will definitely have an impact on Turkey as well.

The high world real interest rates (especially compared with Turkey's negative real interest rates) hurt Turkey in 2001. In fact, as can be seen from figure 12, for most of the sample period, world interest rates were high and higher than interest rates in Turkey. From tables II and III we find that this is not a concern in the 2004-2006 period. The average *world real interest rate* in that period was 3.61% compared with Turkey's average of 9.33%. That rate for the world was higher in 2006 at 5.27% and had fallen in Turkey to 7.75%. The spread between the two interest rates was lower in 2006, but Turkey's rates were still higher. Based on cuts in rates of interest in the US due to fears of a recession may imply an increase in the interest rate spread and put Turkey in a better position.

Oil prices have been on an upward trajectory as can be seen from figure 13. High oil prices had a role in the 2001 Turkish crisis. The prices are far higher today and increasing. Based on the average *oil price* at $ 35.87 for 2003-2005 from table III Turkey's import bill and thus current account deficit is increasing. This is expected to increase in the future as well. While the import bill does increase, Turkey robust growth and high exports lead us to conclude that oil price increases are not making Turkey vulnerable to a crisis.

One vulnerability in the global sustainability indicators in the 2004-2006 period is the rise in oil prices. However, that has not slowed growth. In addition, the strong export performance makes a higher import bill due to increasing oil prices a lesser concern. The bigger concern is global growth in the coming period. Both world and EU growth were healthy in the 2004-2006

period. The looming US recession and slower world growth could hurt exports from Turkey, thus making Turkey vulnerable to an unsustainable current account position. Some of that concern may be counteracted by interest rate cuts in the US which increase the spread between Turkish interest rates and world interest rates and thus help attract more investment. However, that may not be sufficient to reduce the negative impact of a global slowdown. In that case, the increasing import bill through higher oil prices that was counteracted by strong export performance could become a big problem as well.   Thus, while we can conclude that based on global sustainability indicators, Turkey's current account position was healthy for the in the 2004-2006 period, that may not hold for the coming years. The global sustainability indicators show some vulnerability in the current account position in Turkey.

Based on the above analysis of the three categories of factors that signal vulnerability in the Turkish current account position, we find that internally, Turkey is in an improved current account position. Both structural features and macroeconomic policies have improved and are allowing Turkey to sustain higher current account deficits for longer periods of time. However, even though the overall position is better, there are outside factors, namely a global slowdown that may generate some vulnerability in the external position. Given Turkey's dependence on the global economy, the impending global slowdown may cause Turkey to be unable to sustain these high current account deficits without further policy changes.

5   CONCLUSION

In this paper we analyze the present sustainability of Turkey's current account using the framework provided by Milesi-Ferretti and Razin (1996). Their modified list of sustainability predictors fit into two broad categories, structural features and macroeconomic policy indicators. We extend their framework to include a third category, global sustainability indicators. Just as they do, we analyze specific episodes to determine which factors play a role in current account unsustainability. While they analyze six countries including Australia, Chile, Ireland, Israel, Malaysia and Mexico, we focus on three episodes in Turkey only. Of the three episodes, two are

the period leading to the 1994 and 2001 crisis which comprises 1991-1993 and 1998-2000. An analysis of these two periods allows us to determine the present (2004-2006) sustainability of the Turkish current account.

Based on our analysis we conclude that Turkey's structural features and macroeconomic policy indicators have improved in the present period. Of the structural features, Milesi-Ferretti and Razin (1996) emphasize the importance of exports in predicting crises in Chile and Mexico in 1982 and Mexico again in 1994. In addition, they also highlight the role of exports in Malaysia's sustainable current account episode of 1991-1995. Turkey's current export position is healthy with an export/GDP ratio of 29.05% in 2006. This helps the trade and thus the current account in Turkey.

Another major factor is the external debt position. This has been an issue for Chile in 1982 as noted in Milesi-Ferretti and Razin (1996) and was also a major factor in the 2001 crisis in Turkey discussed earlier. While the external debt/GNP ratio is high, it is healthier in the current period compared to the period leading to and during the 2001 crisis. Related to this is the improved foreign exchange position where the short-term debt to foreign reserves ratio has become less than 100% in the present period indicating Turkey's ability to repay short-term liabilities. Therefore, overall Turkey's current account is in a better position.

None of the other structural features played a major role for the episodes analyzed by Milesi-Ferretti and Razin (1996). This is similar to our analysis of Turkey's prior crises. Nevertheless, all of those structural features discussed in the framework have improved in the current period.

All the macroeconomic policy indicators, the fiscal position and exchange rate policy and movements played a major role in earlier crises. The fiscal position in the 2004-2006 period is much improved with Turkey's fiscal deficit/GNP ratio falling to 0.96% in 2006 and interest payments/GNP at a fairly low rate of 9.61% in that same year. While tight fiscal policy may provoke fears of a slowdown in growth, Turkey's growth rate has been and continues to be healthy.

Also, the switch in exchange rate regime from fixed to floating has put Turkey in a better position. This is both due to a shift to a market price for the lira as well as the reduced burden placed on foreign reserves which is not needed to defend the lira anymore. The shift in the regime is associated with an increasing REER index. While an increasing REER index may be indicative of an appreciated lira which could hurt the current account position, we believe that this increase is based on the way the index is computed and signifies changed fundamentals rather than an overvalued lira.

Thus, our overall conclusion based on structural and macroeconomic policy indicators is that Turkey is in a stronger current account position despite its high current account deficits.

However, there is some vulnerability in the Turkish current account position. This is associated with the global sustainability indicators in our extension of the Milesi-Ferretti and Razin (1996) framework. While our analysis shows that all indicators are healthy for the 2004-2006 period, the looming US recession in 2008 and consequent global impact shows some signs of concern for Turkey. As noted earlier, Turkey's export performance has been strong for this period and is a major factor in the improved current account position. A potential global slowdown which hurts Turkey's exports could hurt that healthy position. In addition, high oil prices (seen in the 2004-2006 period) which increased the value of imports becomes a bigger concern if exports decline.

The vulnerability in the Turkish current account position is associated with outside factors beyond Turkey's control. Internally, both structural features and macroeconomic indicators have improved and are allowing Turkey to sustain higher current account deficits for longer periods of time. However, given Turkey's dependence on the global economy and the impending global slowdown, Turkey may be unable to sustain these high current account deficits without further policy changes.

Figure 1: Turkey's current account balance to GDP ratio (quarterly data from 1992:Q1 – 2007:Q3)
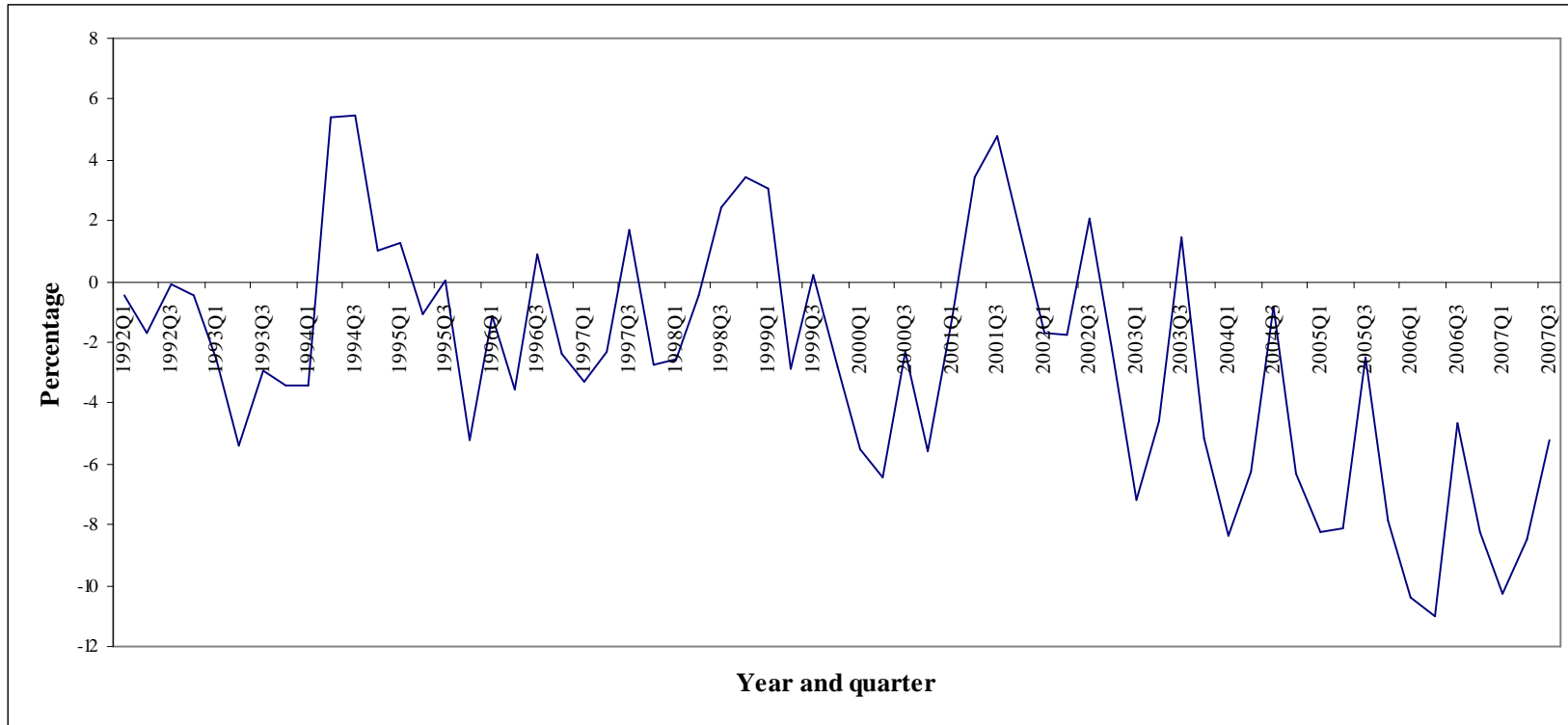
Note: The GDP series is expressed in current Turkish lira and the current account balance was in US dollars. To make the two series comparable, the current account series was converted to Turkish lira (using the indicator selling nominal exchange rate from the Central Bank of Turkey). The above series is the ratio of current account to GDP in percentage form.
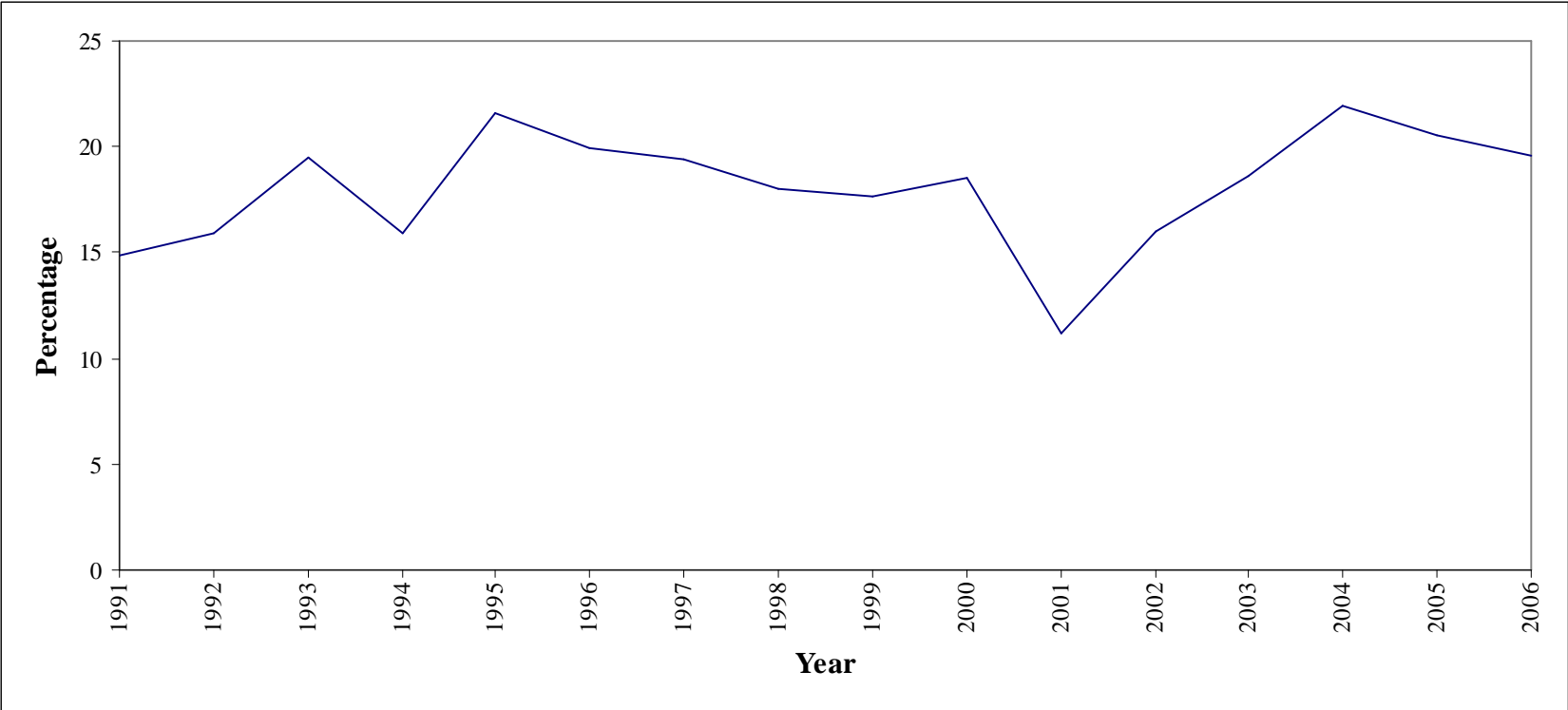
Source: Central Bank of Turkey

Figure 2: Turkey's real GDP growth rate (annual data from 1991 – 2006)
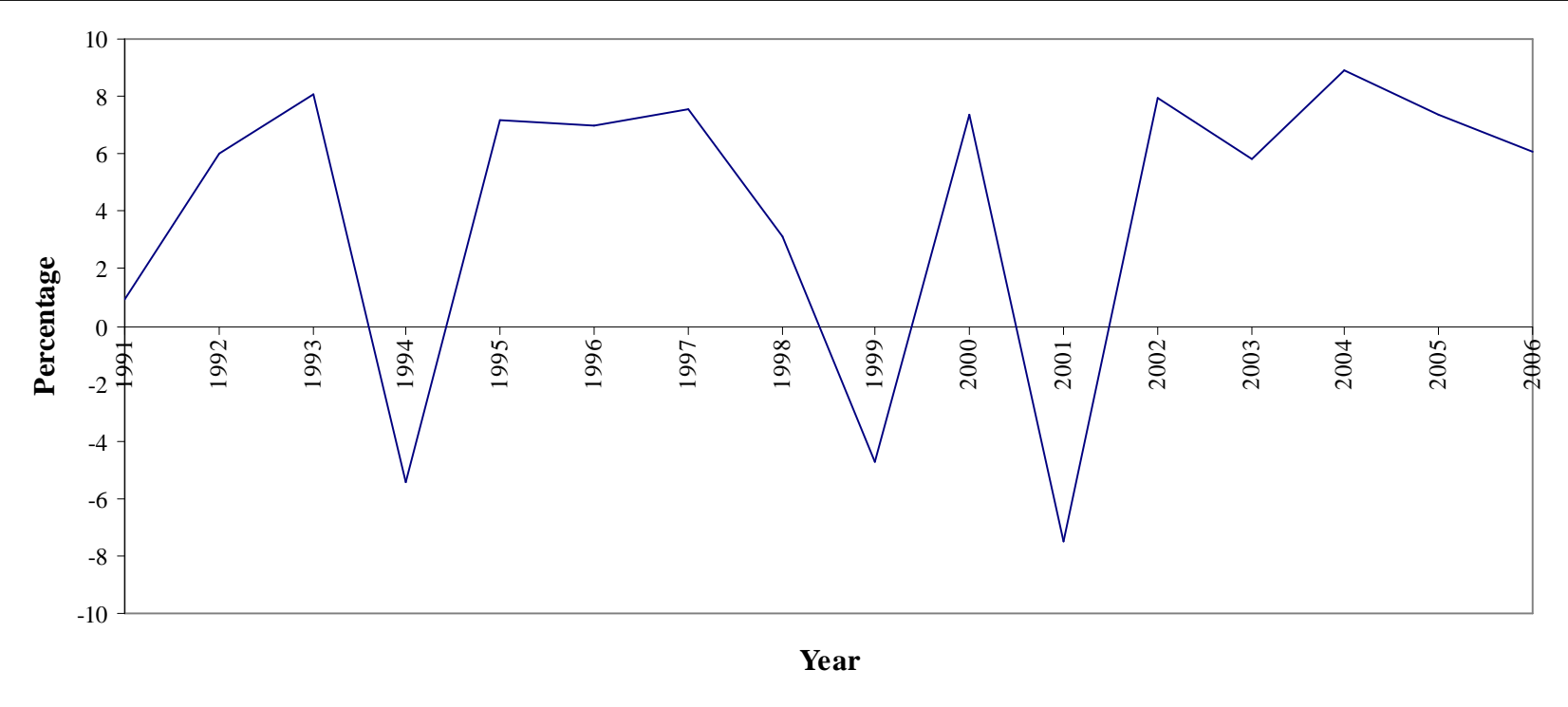
Note: The GDP series is expressed in constant Turkish lira. The above series is the real growth of GDP.

Source: Central Bank of Turkey

Figure 3: Turkey's investment to GDP ratio (annual data from 1991 – 2006)

Note: The GDP and investment series are both expressed in current Turkish lira. The above series is the ratio of investment to GDP in percentage form.
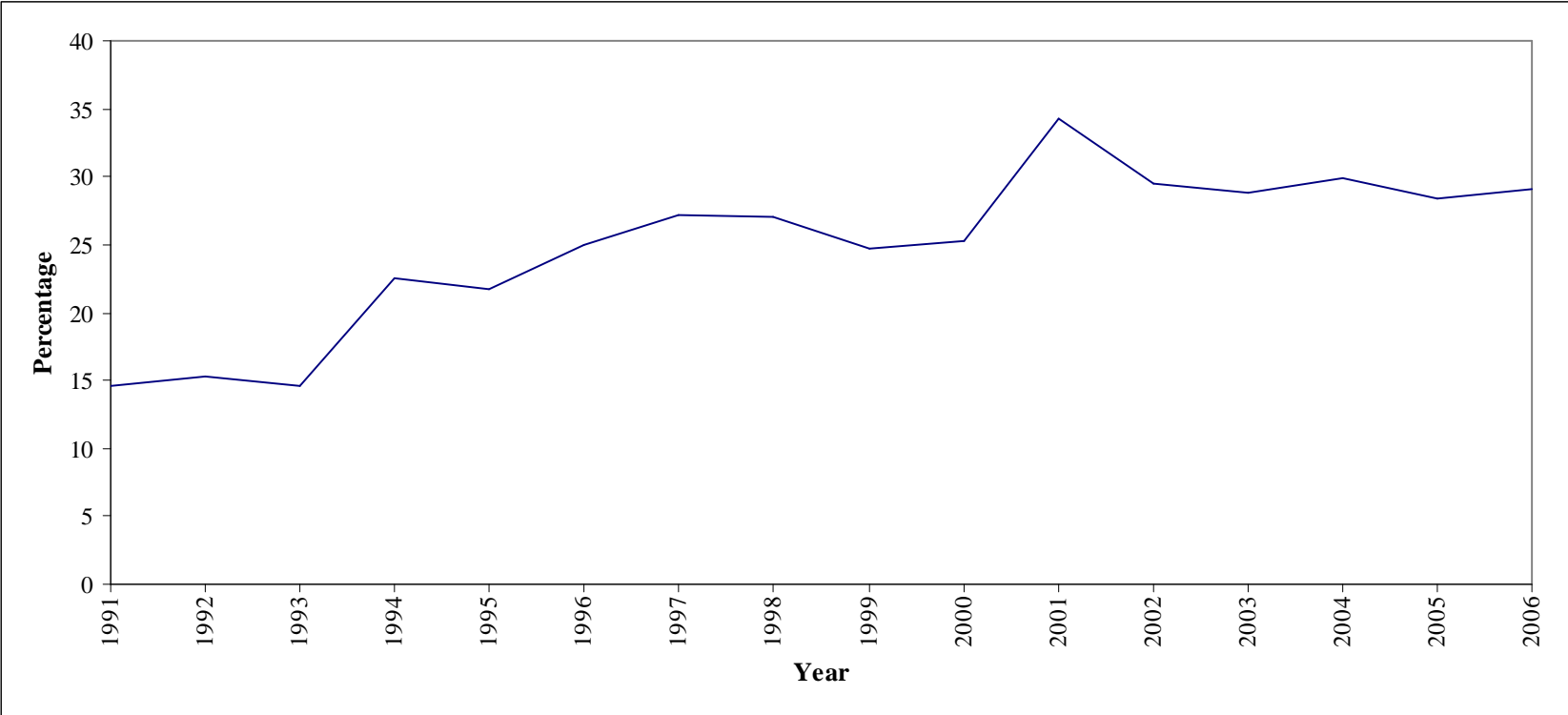
Source: Central Bank of Turkey

Figure 4: Turkey's foreign investment flows to GDP ratio (annual data from 1991 – 2006)
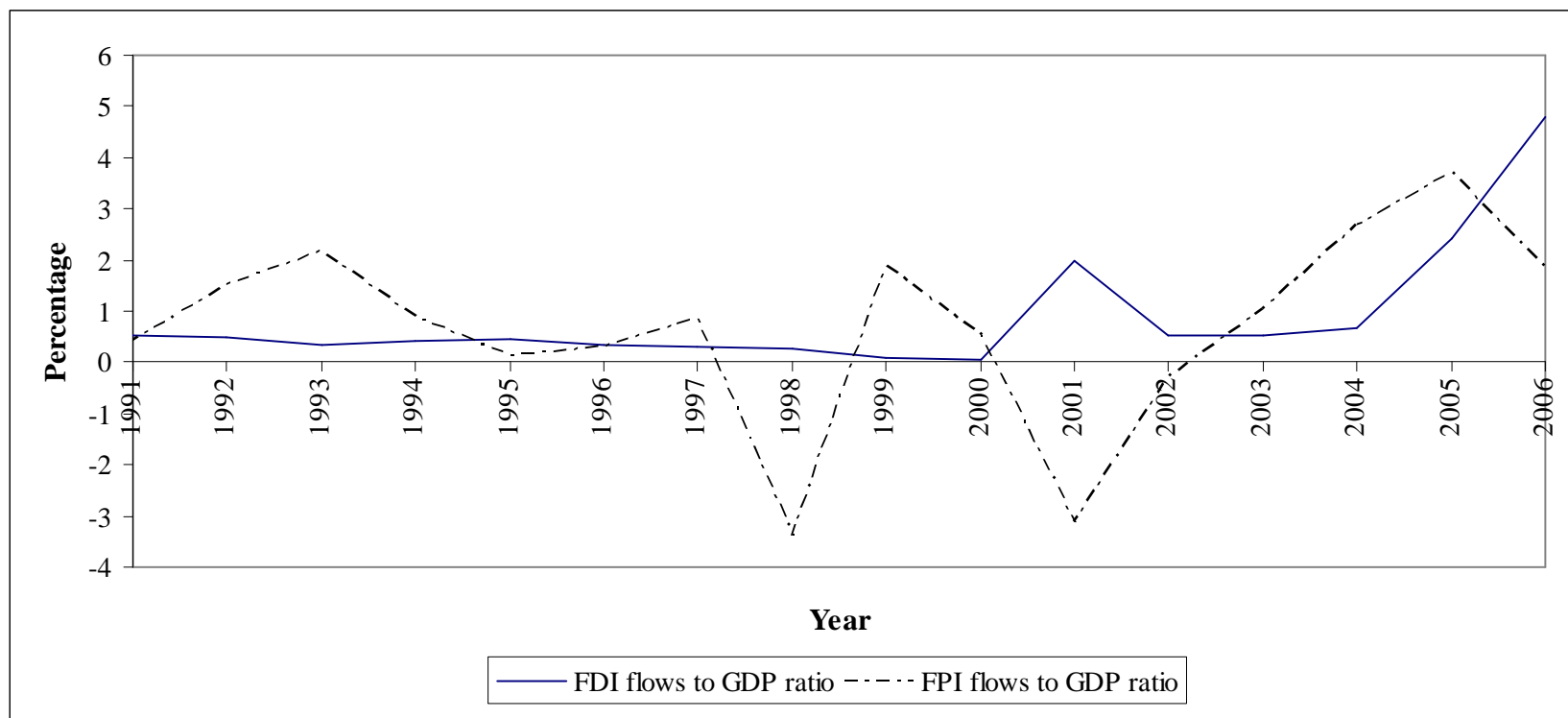
Note: The GDP series is expressed in current Turkish lira and FDI and FPI flows are expressed in US dollars. To make the series comparable, the FDI and FPI series were converted to Turkish lira (using the indicator selling nominal exchange rate). The above series are the ratios of FDI flows to GDP and FPI flows to GDP in percentage form.

Source: Central Bank of Turkey

Figure 5: Turkey's exports to GDP ratio (annual data from 1991 – 2006)

Note: The GDP series is expressed in current Turkish lira and exports are expressed in US dollars. To make the two series comparable, the export series was converted to Turkish lira (using the indicator selling nominal exchange rate). The above series is the ratio of exports to GDP in percentage form.

Source: Central Bank of Turkey

Figure 6: Turkey's terms of trade (annual data from 1991 – 2006)
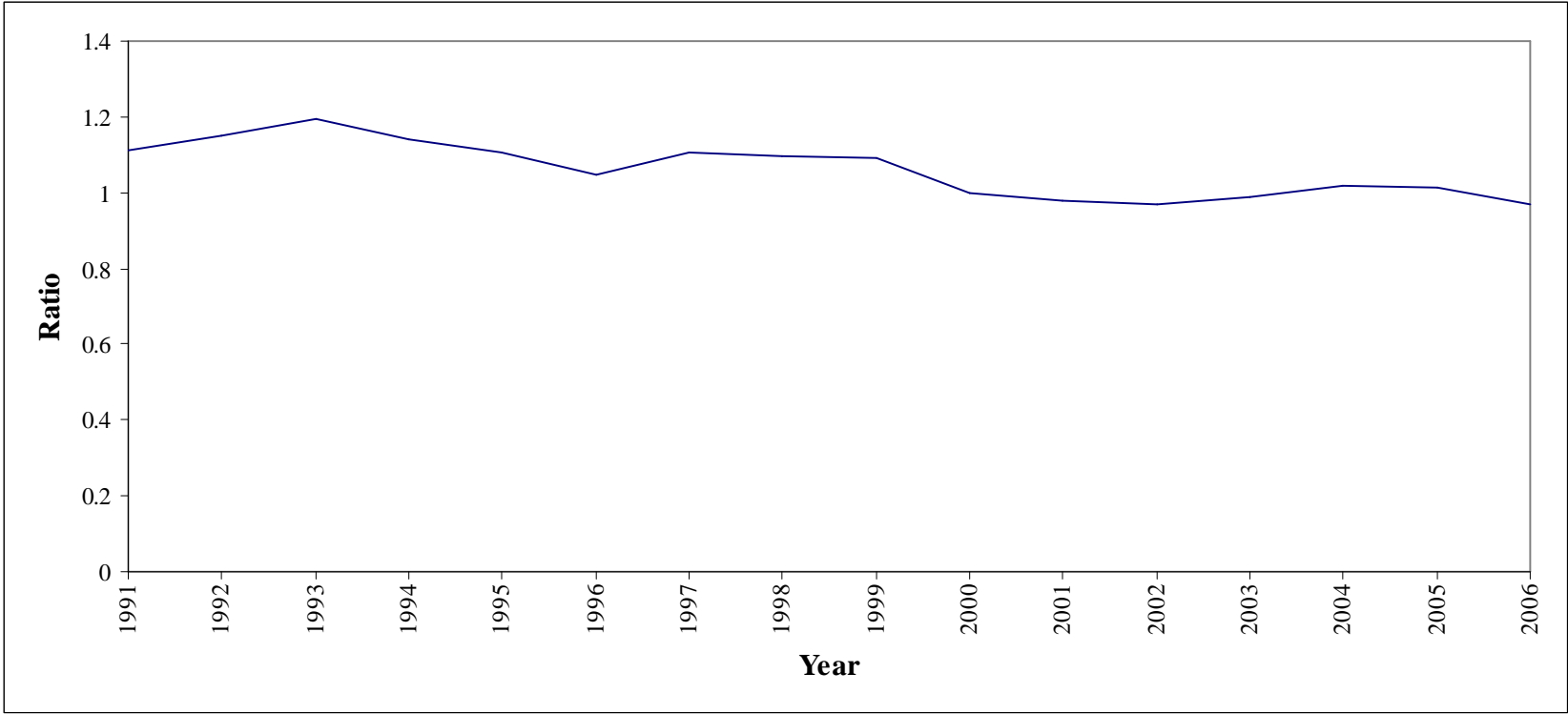
Note: Terms of trade is defined as the price index of exports to price index of imports. The base year for the two indices is 2000. The original data was quarterly data which was averaged by the authors to make it annual data comparable to other series. If the terms of trade exceeds 1 it implies a better terms of trade position.

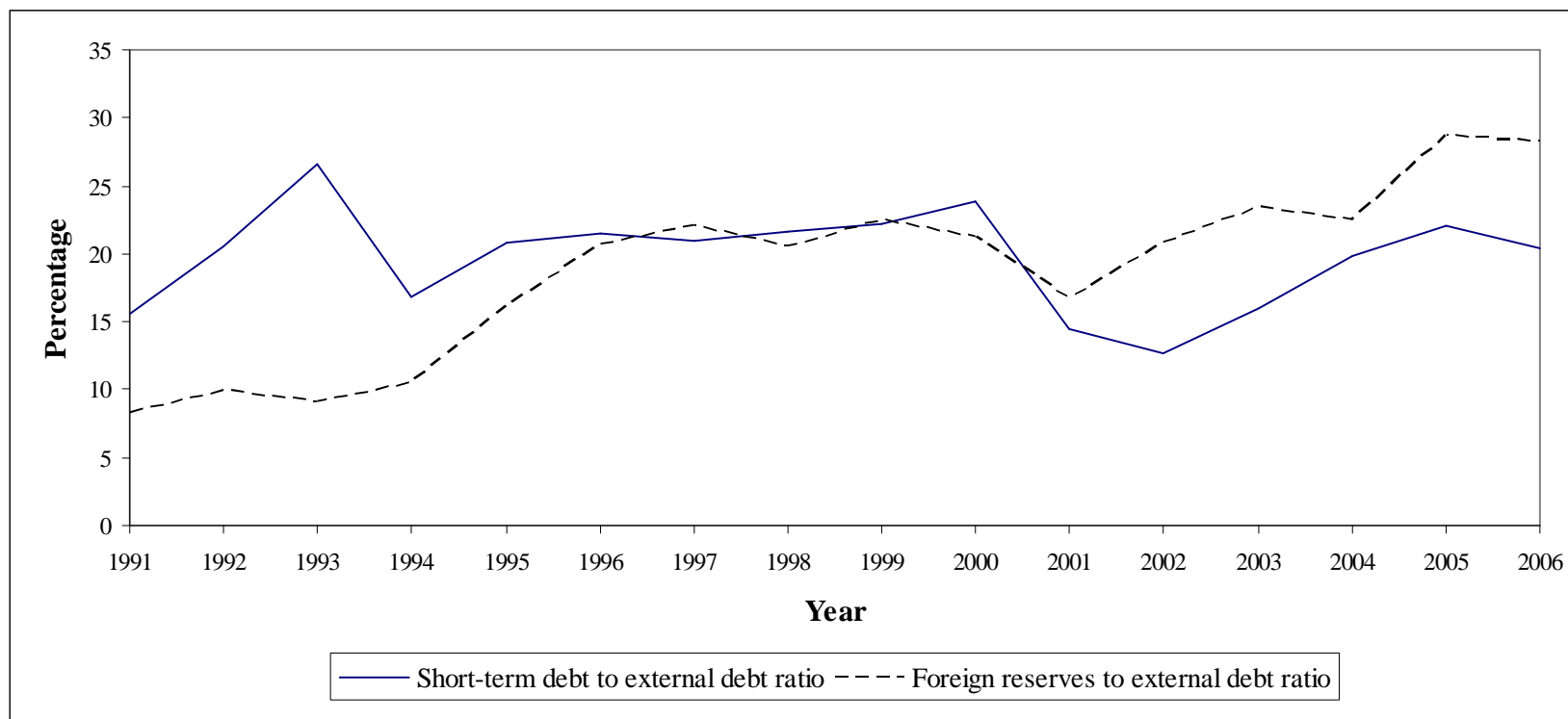*Source*: IMF, International Financial Statistics database

Figure 7: Turkey's external debt to GNP ratio (annual data from 1991 – 2006)
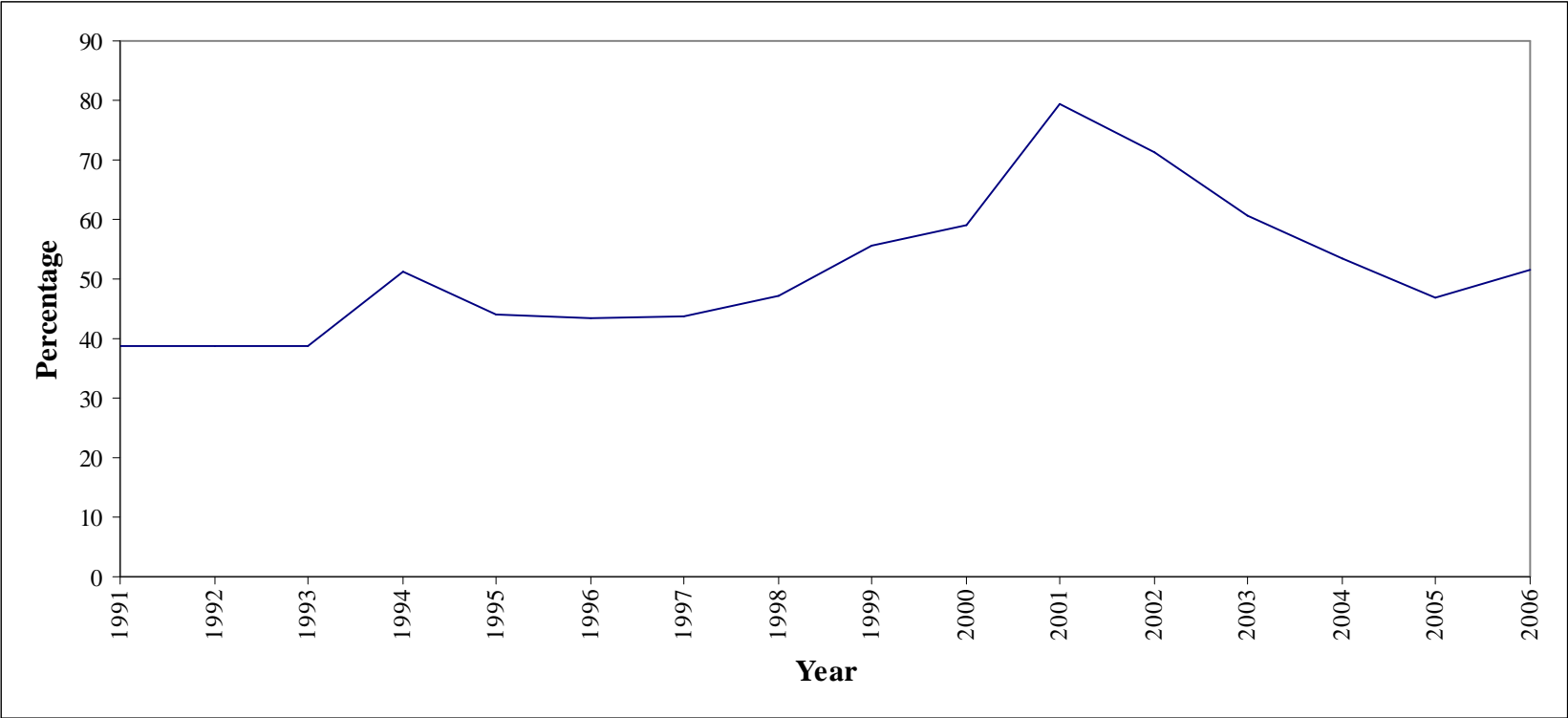
Note: External debt is expressed in US dollars and GNP is expressed in Turkish lira.   External debt data was converted into Turkish lira (using the indicator selling nominal exchange rate) to compute the external debt/GNP ratio.

Sources: External debt is available from IMF, International Financial Statistics database. GNP and selling nominal exchange rate are available from Central Bank of Turkey.

Figure 8: Turkey's short-term debt to external debt ratio and foreign reserves to external debt ratio (annual data from 1991 – 2006)

Note: External debt, short-term debt and foreign reserves data are expressed in US dollars. The above series are short-term external debt ratio and foreign reserves to external debt ratio in percentage form.

*Source*: IMF, International Financial Statistics database

Figure 9: Turkey's fiscal balance to GNP ratio and interest payments to GNP ratio (annual data from 1991 – 2006)
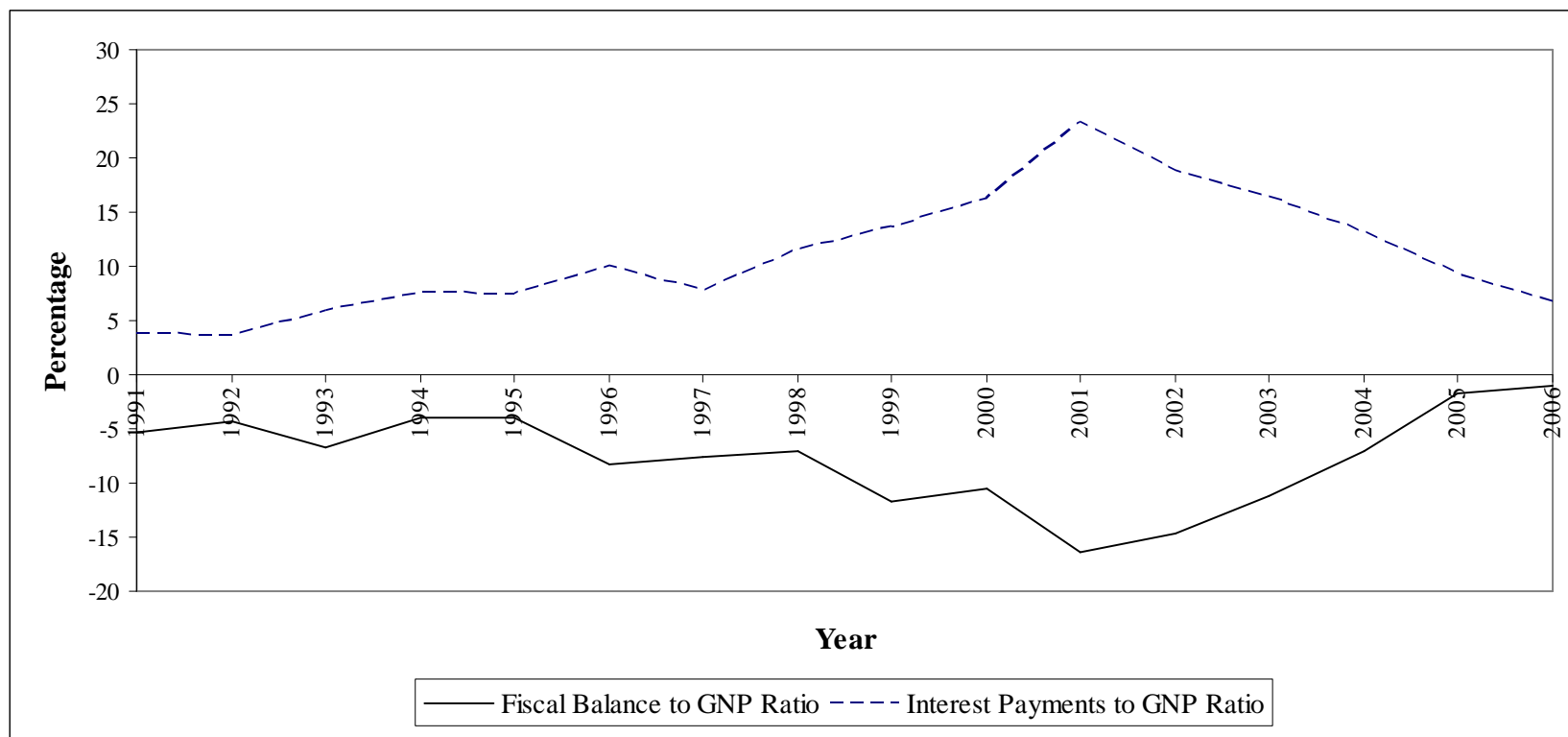
Note: All series (fiscal balances, interest payments and GNP) are expressed in Turkish lira. The above series are the ratio of fiscal balance to GNP and interest payments to GNP in percentage form.

Sources: Ratios for 1991-1993 are as reported in Alper and Onis (2003). The rest of the data is available from the Central Bank of Turkey
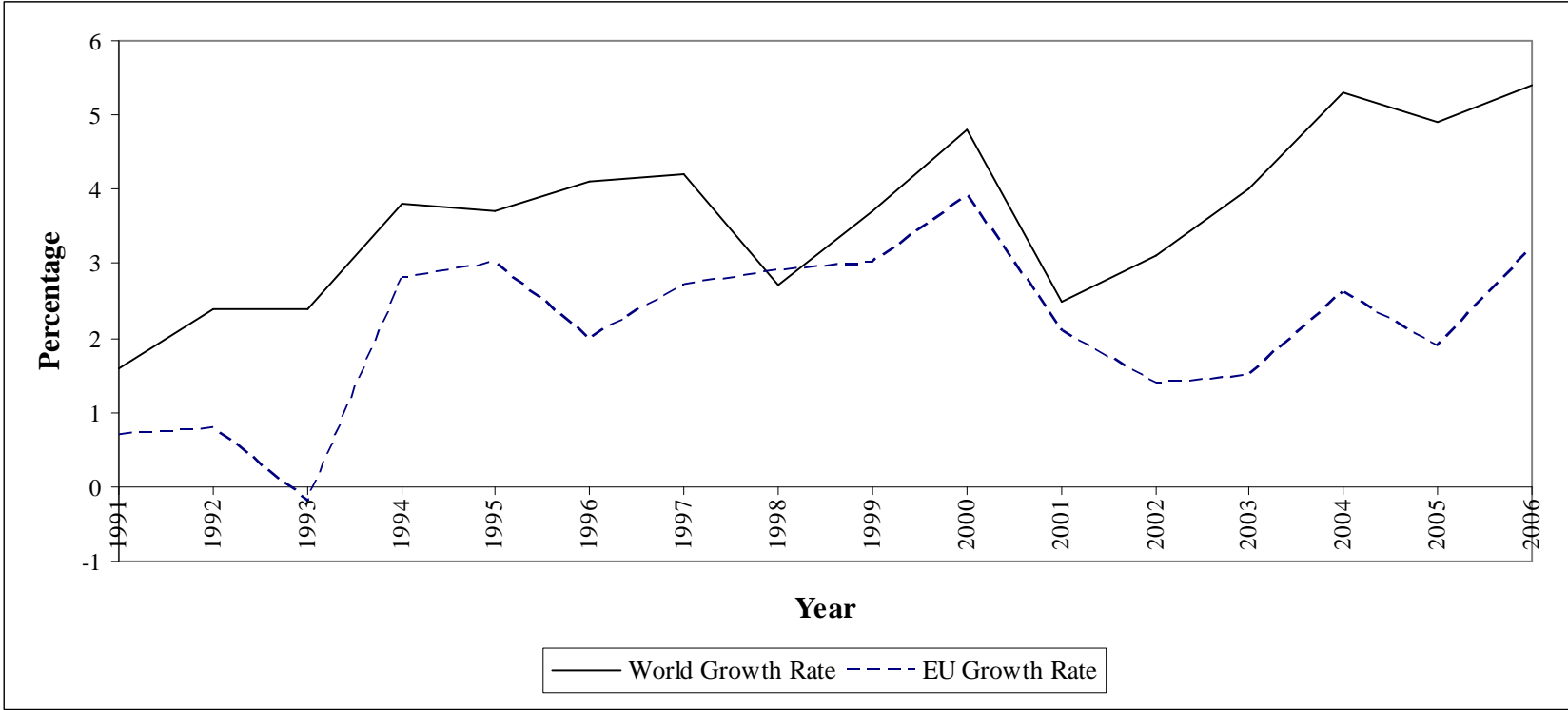
Figure 10: Turkey's inflation rate (annual data from 1991 – 2006)
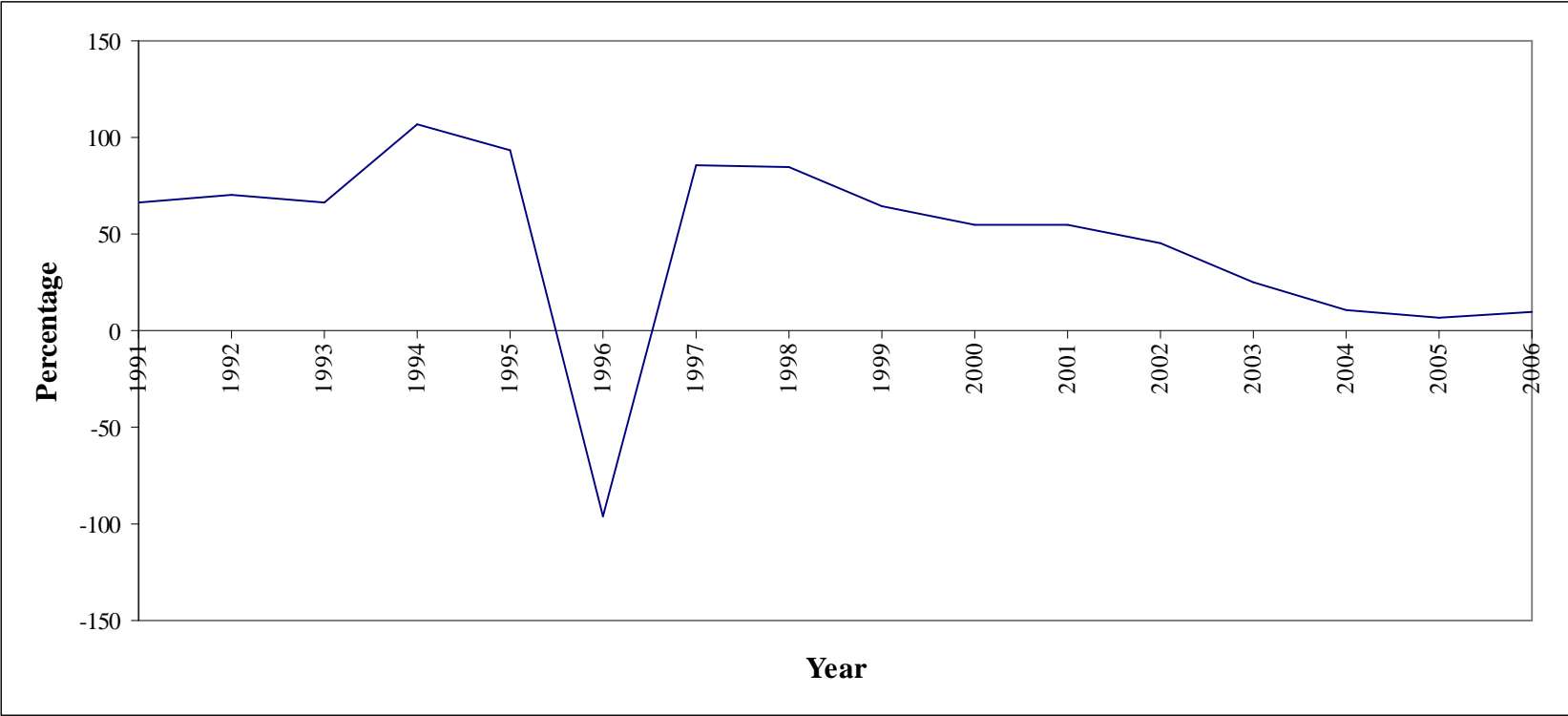
Note: Inflation rate uses the CPI index. There are different base years for the different years, so all indices are recalculated for 2003 as the base year.
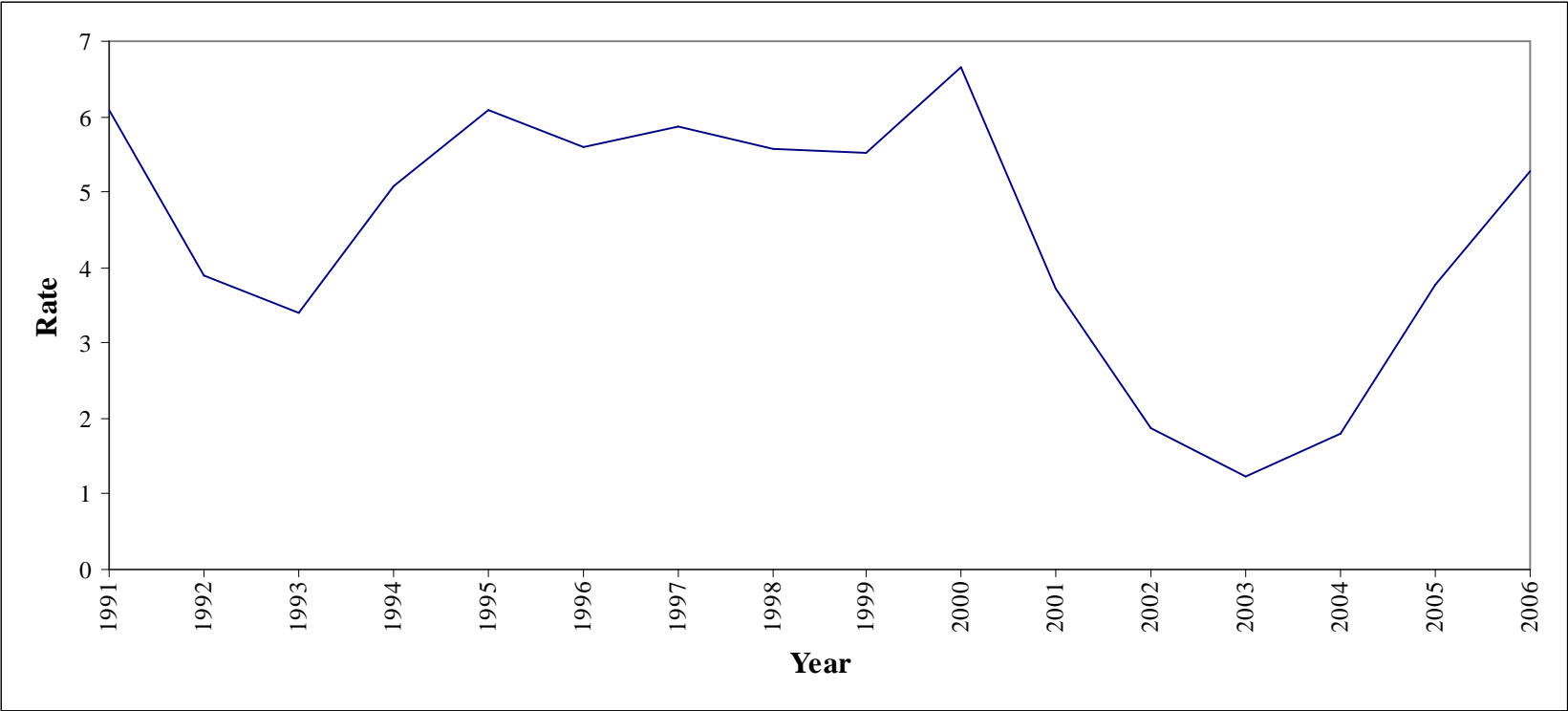
Source: Central Bank of Turkey

Figure 11: World growth rate and EU growth rate (annual data from 1991 – 2006)

Note: The series are real world growth rate of GDP and real EU growth rate of GDP .
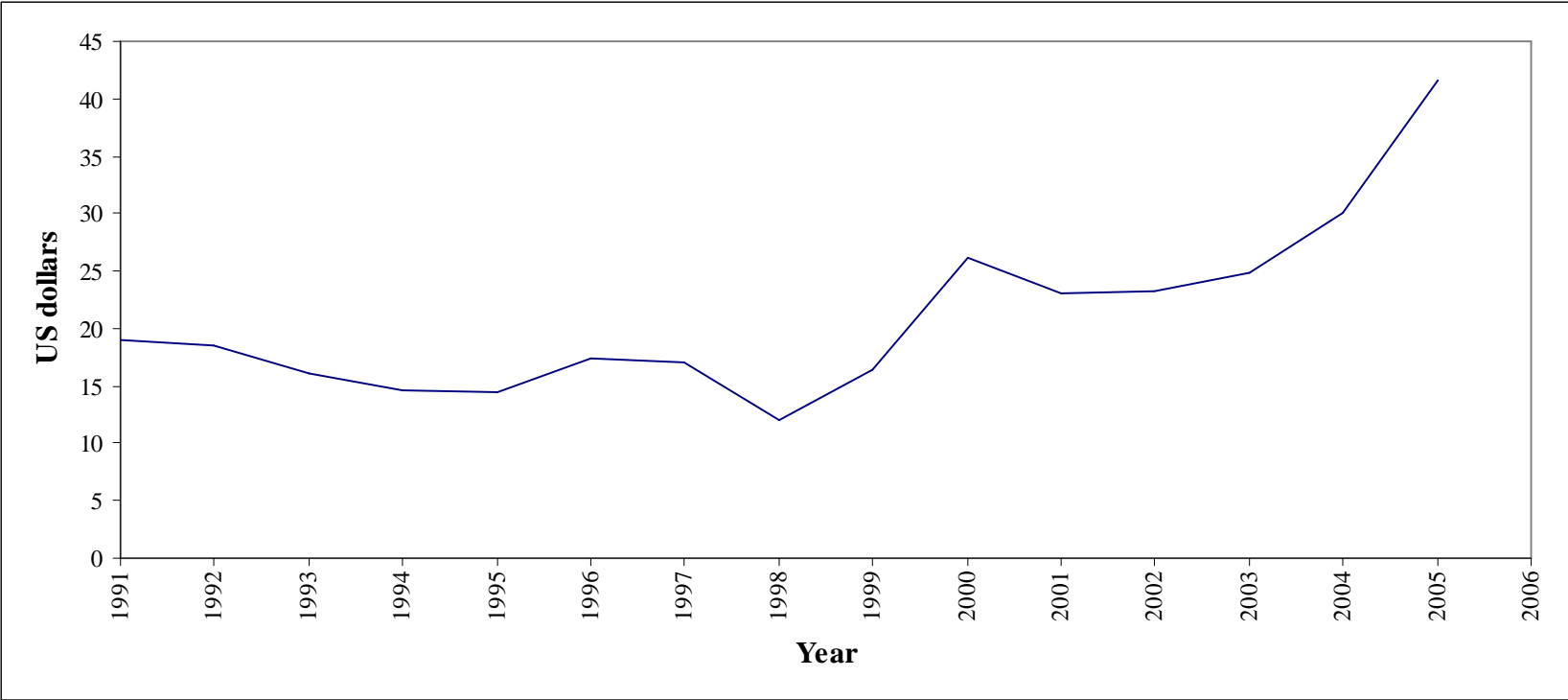
Source: World Economic Outlook

Figure 12: World interest rate (annual data from 1991 – 2006)

Note: The world interest rate series is the 6 month LIBOR on US dollars.

Source: IMF, International Financial Statistics database

Figure 13: Oil prices (annual data from 1991 – 2005)

Note: Oil prices are measured as 1990 US $ per barrel.

Source: World Economic Outlook

Table I: Turkey's current account position

	1991-1993 (average)	1993	1994	1998-2000 (average)	2000	2001	2004-2006 (average)	2006
Current account/GDP (%)	-1.35	-3.59	2.03	-1.56	-4.94	2.34	-6.49	-7.90

Note: The GDP series was expressed in current Turkish lira and the current account balance was in US dollars. To make the two series comparable, the current account series was converted to Turkish lira (using the indicator selling nominal exchange rate from the Central Bank of Turkey). The above series is the ratio of current account balance to GDP in percentage form. The negative numbers indicate a current account deficit.

Source: Central Bank of Turkey

Table II: Turkey's sustainability indicators affecting its current account position

	1991-1993 (average)	1993	1994	1998-2000 (average)	2000	2001	2004-2006 (average)	2006
Growth rate (%)	4.98	8.04	-5.46	1.91	7.36	-7.50	7.47	6.10
Investment/GDP (%)	16.75	19.50	15.95	18.06	18.51	11.17	20.70	19.58
Net FDI inflows/GDP (%)	0.45	0.35	0.43	0.14	0.06	1.97	2.62	4.79
Net portfolio inflows/GDP (%)	1.37	2.19	0.89	-0.33	0.51	-3.12	2.74	1.84
Exports/GDP (%)	14.86	14.65	22.52	25.64	25.24	34.21	29.12	29.05
Terms of trade	1.15	1.19	1.14	1.06	1.00	0.98	1.00	0.97
Real interest rate	-	-	-	14.02	-12.21	29.34	9.33	7.75
External debt/GNP (%)	38.83	38.80	51.20	53.90	59.13	79.25	50.63	51.57
Short term debt/external debt (%)	20.89	26.56	16.86	22.56	23.88	14.44	20.71	20.33
FE reserves/external debt (%)	9.05	9.03	10.41	21.37	21.18	16.63	26.42	28.25
REER index	115.74	122.89	92.50	126.05	136.53	112.50	154.66	160.53
Fiscal deficit/GNP (%)	5.43	6.70	3.88	9.79	10.56	16.45	3.23	0.96
Interest payments/GNP (%)	4.43	5.80	7.67	13.84	16.27	23.27	9.76	6.71
Inflation rate (%)	67.38	66.10	106.26	68.14	54.92	54.40	8.81	9.61

Notes:

- Terms of trade is defined as the price index of exports to price index of imports as reported in IMF, International Financial Statistics database. The base year for the two indices is 2000. The original data was quarterly data which was averaged by the authors to make it annual data comparable to other series. If the terms of trade exceeds 1 it implies a better terms of trade position.

- The real interest rate is the cost of domestic borrowing from Domestic Debt Management Reports by the Turkish Treasury (several reports from 2002-2007).
- External debt, short term debt and foreign exchange reserves data is from IMF International Financial Statistics database. All series were expressed in US dollars. External debt was converted into Turkish lira (using the indicator selling nominal exchange rate from the Central Bank of Turkey) to compute the external debt/GNP ratio.
- The REER (real effective exchange rate) index as reported by the Central Bank of Turkey uses 1995 as the base year.
- Fiscal deficit to GNP ratio and interest payments to GNP ratio for 1991 to 1993 are reported in Alper and Onis (2003). For the rest of the years, the ratios are calculated from data on fiscal deficits, interest payments and GNP from the Central Bank of Turkey.
- Inflation rate uses the CPI index. There are different base years for the different years, so all indices are recalculated for 2003 as the base year.

Source: All data unless otherwise noted are available from Central Bank of Turkey.

Table III: Global sustainability indicators affecting Turkey's current account position

	1991-1993 (average)	1993	1994	1998-2000 (average)	2000	2001	2004-2006 (average)	2006
World growth rate (%)	2.13	2.40	3.30	3.73	4.80	2.50	5.20	5.40
EU growth rate (%)	0.43	-0.20	2.80	3.27	3.90	2.10	2.57	3.20
Real world interest rate (%)	4.46	3.41	5.07	5.91	6.65	3.73	3.61	5.27
Oil prices (1990 $ per barrel)	17.80	16.03	14.55	18.15	26.12	23.10	35.87[*]	

Notes:

- The world interest rate series is the 6 month LIBOR on US dollars.
- Oil prices are measured as 1990 US $ per barrel.

Sources: All data are available from IMF International Financial Statistics database and World Economic Outlook.

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