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Debt and Macroeconomic Stability: Case studies

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DEBT AND MACROECONOMIC STABILITY: CASE STUDIES

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ABSTRACT/RÉSUMÉ

Debt and macroeconomic stability: Case studies

Accumulating debt raises concerns about its implications for macroeconomic stability. This paper sheds light on the implications of high indebtedness for the macroeconomic volatility by identifying the main drivers of the evolution of debt in a set of countries. The country choice was based on large deleveraging episodes of total economy debt, identified by turning point dating. The analysis shows that GDP is more volatile in the phase of deleveraging. However, countries can be distinguished into two groups. In a first set of countries (Germany, Israel, Mexico and the United States) economic activity has often rebounded during the phase of deleveraging. On the contrary, in a second group of countries, the higher volatility during the deleveraging phase has been accompanied by sluggish economic activity. Countries in this second group (for instance, Japan and Sweden) share the common characteristic that higher indebtedness was driven by a boom in asset prices. When asset prices burst, the financial sector cuts credit supply, which weighs on economic activity. The results also suggest that many episodes of debt leveraging have been naturally driven by boom in asset price used as collateral or by financial liberalisation, which have facilitated excessive borrowing.

JEL classification: E44; E65; H60; H63

Keywords: Debt management; deleveraging; case studies; cycles

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Endettement et stabilité économique : Études de cas

L'accumulation de dettes amène à se préoccuper des répercussions de ce phénomène sur la stabilité économique. Ce document met en lumière les conséquences d'un niveau élevé d'endettement du point de vue de l'instabilité macroéconomique en identifiant les principaux déterminants de l'évolution de la dette dans un certain nombre de pays. Les pays choisis ont connu de longues périodes de désendettement, identifiées par la datation du point de retournement. L'analyse montre que les PIB est plus variable au cours de la phase de désendettement. On distingue toutefois deux groupes de pays. Dans un premier groupe (Allemagne, Israël, Mexique et États-Unis), l'activité économique a souvent rebondi durant la phase de désendettement. Dans un second groupe, au contraire, la plus forte instabilité caractérisant la phase de désendettement s'est accompagnée d'une atonie de l'activité économique. Les pays du second groupe (Japon et Suède, par exemple) ont en commun le fait que leur niveau plus élevé d'endettement a été imputable à une explosion des prix des actifs. Lorsque les prix des actifs flambent, le secteur financier réduit l'offre de crédit, ce qui pèse sur l'activité économique. Les résultats semblent indiquer aussi que, dans bien des cas, les épisodes de désendettement ont fait suite naturellement à une poussée des prix des actifs utilisés comme nantissement ou à une libéralisation financière, qui a facilité un recours excessif à l'emprunt.

JEL classification: E44 ; E65 ; H60 ; H63

Mots clés : Gestion de la dette ; désendettement ; études de cas ; cycles

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The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

DEBT AND MACROECONOMIC STABILITY: CASE STUDIES

by Rossana Merola[1]

1. Introduction and main findings

Debt as a share of GDP has surged in the OECD since the mid-1990s. These developments have raised concerns about macroeconomic performance. On the one hand, accumulating debt can help smooth real activity, but on the other hand it can create vulnerabilities and affect macroeconomic performance.

The case study approach provides a useful analytical tool for assessing the interaction between debt and macroeconomic stability, by taking into account also country-specific institutional and historical factors. It is based on the investigation of a small number of countries, with a detailed examination of the national context that is difficult to control for when the analysis involves many countries.[2] In addition, case study analysis can complement quantitative analysis in case of missing data or non-homogenous definitions of data series across countries. The main findings are:

- In some countries (*e.g.* Sweden and Japan), asset price cycles have substantially interacted with debt developments in the financial sector. Debt has led to disruptive financial cycles in which credit fuelled booms have been followed by default-driven busts. In some countries (*e.g.* Mexico and Norway), developments in oil markets have also contributed to shape debt dynamics.

- Financial liberalisation can be a source of volatility if it facilitates excessive borrowing. The process can encourage banks to accept higher risks during the expansion phase. During the recession, a high proportion of bad loans can lead to a financial crisis.

- Identifying the main drivers of the evolution of debt sheds light on the implications of high indebtedness for the macroeconomic volatility. The analysis shows that GDP is more volatile in the phase of debt deleveraging. However, the effect of volatility on economic activity varies across countries. In a first set of countries (Germany, Israel, Mexico and the United States) the higher GDP volatility is accompanied by strong growth. Economic activity has often rebounded during the phase of deleveraging and GDP growth has remained high for at least two years after

1. The author is member of the Economic Department of the OECD. This paper is a revised version of a document prepared for the OECD's project on Debt and Macroeconomic Stability which was presented at a meeting held in October 2012 of Working Party No. 1 of the OECD Economic Policy Committee. The project is summarised in Sutherland *et al.* (2012) and the other background papers include Ziemann (2012) and Sutherland and Hoeller (2012). The author is indebted to the participants of the meeting as well as Jorgen Elmeskov, Peter Hoeller, Jean-Luc Schneider and Douglas Sutherland for useful comments and suggestions and to Susan Gascard for excellent editorial support.

2. For instance, Reinhart, Rogoff and Savastano (2003) invoke historical facts in explaining why many countries with moderate debt-to-income ratios face higher spreads than other countries with far higher debt ratios. They rationalised this phenomenon in terms of sovereign reputation and countries' distinct credit histories.

the peak in total debt. On the contrary, in a second set of countries, the higher volatility during the deleveraging phase has been accompanied by sluggish economic activity. Countries in this second group (Japan and Sweden) share the common characteristic that higher indebtedness was driven by a boom in asset prices. When asset prices burst, the financial sector was forced to cut back the supply of credit and economic activity slowed down.

- Most of the episodes were driven by high indebtedness in the financial sector (*i.e.* Sweden, the United States). In some cases, high debt in the financial sector was accompanied by high debt in the corporate sector (*i.e.* Finland, Japan, Spain, Poland and the Slovak Republic).

- In most cases, sustained growth and loose monetary policy – and hence high inflation – have eased the deleveraging process.

2. Economy-wide debt and its drivers

In most OECD countries, indebtedness rose before the recent crisis and often reached high levels by historical standards. Table 1 shows the evolution of the total debt-to-GDP ratio over the period 2002-09. Gross household debt relative to disposable income rose by more than 100 percentage points in the United Kingdom and the Netherlands, followed by Sweden and the United States. Non-financial corporate debt increased in the United Kingdom and Italy by 50 percentage points, and to a lesser extent in France, Sweden and the United States. Gross debt of the financial sector rose much more strongly relative to GDP than for the non-financial sectors. The debt-to-GDP ratio in the financial sector rose by around 250 percentage points in the United Kingdom and by more than 100 percentage points in France, the Netherlands and Switzerland.

There are good reasons for individuals, companies and governments to borrow. Borrowing allows individuals to smooth their consumption in the face of income fluctuations and corporations to smooth investment and production in the face of earnings fluctuations. In addition, debt can help overcome imperfections in financial market intermediation by providing liquid assets. Public debt allows governments to smooth taxes in the face of cyclical revenue changes, and increases the flexibility of the private sector in responding to variations in income and spending opportunities. Furthermore, it can help smooth consumption not only over the lifetime of individuals, but also across generations. Therefore, debt improves the efficiency of resources allocation and allows risks to be shifted to those most able to bear them.

However, the accumulation of debt involves risks and debt needs to be sustainable in the long run. Sutherland *et al.* (2012) argued that targeting a prudent debt level would provide a long-run anchor for fiscal policy. The literature, however, does not reach firm conclusions as to the desirable debt level and determining the optimal debt level empirically is thus not straightforward. But assessing debt developments allows pinpointing emerging vulnerabilities of both government and the private sector to changes in the business cycle.

High **public debt** levels can induce fiscal policy to become pro-cyclical and less effective (Égert, 2010). High current and expected future debt can lead to debt financing problems, which can push up interest rates on government bonds. For example, Haugh *et al*. (2009) found that interest rate spreads in the euro area are influenced by the level of the debt service ratio, with the effect being larger when a country has a poor record of fiscal discipline. High public debt levels may have adverse effects on growth and inflation (Reinhart and Rogoff, 2010, Caner *et al*., 2010, Kumar and Woo, 2010 and Checherita and Rother, 2010).

After the recent crisis that featured significant disruptions in financial markets, models have started to focus on financial intermediation in order to capture the interaction between the real economy and financial markets (Gertler and Kiyotaki, 2009 and Fernandez-Villáverde and Ohanian 2010). The more recent literature concluded that **banking sector** leverage and investors' sentiment have played a key role in the contraction of economic activity in the euro area during the crisis (Gerali, Neri, Sessa and Signoretti, 2010, Martin and Ventura, 2010 and Kollman, Enders and Müller, 2011). Berkman *et al.* (2009) concluded that countries with a more leveraged financial system and strong credit growth have suffered more during the crisis. The increase in leverage during the pre-crisis period can be linked to the combination of financial innovation and weak market discipline (Slovik and Cournède, 2011).

Debt developments in the **corporate sector** also affect the business cycle. Corporate finance theory links the leverage ratio with higher corporate risk and thus higher costs of external financing. Higher funding costs in turn tend to reduce investment, depresses future cash flow and output. Moreover, the financial accelerator theory (Bernanke, Gertler and Gilchrist, 1996, 1999) suggests that higher corporate leverage and debt exacerbates a slowdown in economic activity, by amplifying and propagating adverse shocks. Moreover, in the pre-crisis period, the boom in asset prices favoured accumulation of debt by providing more collateral. This factor, along with the tax bias in favour of debt and financial liberalisation encouraged firms to raise debt.

Finally, **household** borrowing has increased considerably in many countries over the past two decades (Girouard *et al*., 2006 and Warnock and Warnock, 2007). Some factors played an important role in the increase in indebtedness: *i)* low real interest rates prior to the crisis encouraged borrowing for consumption purposes; *ii)* allowing the deductibility of mortgage interest payments has created strong incentives to borrow in countries such as the Netherlands, Sweden and the United States; *iii)* rapid increases in property prices in the pre-crisis period may have generated expectations of continued future increases and hence boosted demand for credit to acquire property and obtain the associated capital gains; *iv)* the apparent reduction in macroeconomic risks during the Great Moderation period may have reduced precaution by households and banks; and *v)* financial liberalisation contributed to increase credit supply by offering more flexible loan conditions.

High household indebtedness can have large macroeconomic implications for two reasons. First, in normal times, high household indebtedness can have important consequences by increasing households' exposure to macroeconomic fluctuations. High debt levels can, for instance, increase households' vulnerability to income, interest rate and asset price shocks. This channel is particularly strong in countries where adjustable-rate mortgage contracts are common, like Sweden, but less so in countries with predominantly fixed-rate mortgages like France, Germany and the United States (Debelle, 2004). Second, in times of financial distress, over-indebtedness can exacerbate the effects of a crisis. For instance, Mian and Sufi (2010) point to a link between the deterioration of household balance sheets and the sharp decline in consumption of durable goods and residential investment, which have played a critical role in exacerbating the recent economic downturn.

High indebtedness poses several challenges for monetary policy. The first challenge concerns the associated changes in the monetary transmission mechanism. High debt reduces the creditworthiness of borrowers and leads to an increase in interest rates, even when policy rates are falling. Tighter credit conditions may reduce borrowers' access to credit and hence reduce investment and consumption. Monetary policy may thus lose traction in inducing banks to lend or firms and consumers to spend when fears of a looming fiscal crisis increase uncertainty. The second challenge concerns the interaction of monetary policy with fiscal policy and poses risks to central banks' credibility. High and rising levels of public debt might adversely affect the public's belief about central banks' ability (or willingness) to control inflation in the medium term, leading to higher inflation expectations.

3. The case studies

Case studies can shed light on these issues. This section focuses on a set of countries, which were chosen due to differences with regard to features that have accompanied the run-up in debt and then debt deleveraging. In the following cases, total debt includes public debt and private debt of households, financial and non-financial enterprises and it is defined as total liabilities, net of financial derivatives and shares and other equity. Debt is scaled by GDP in all sectors except for the household sector, where it is expressed as share of disposable income.[3]

The choice of countries was principally based on large deleveraging of total economy debt. The case studies cover Germany, Finland, Hungary, Israel, Japan, Mexico, Norway, Poland, the Slovak Republic, Sweden, Spain and the United States. The analysis is based on non-consolidated debt (Table 2).

For these countries, a peak in total debt is identified by turning point dating. To avoid identifying "false" turning points, a peak needs to be preceded by at least two years of an increase in total debt and followed by at least two years of lower total debt.[4] Then, the economic situation five years before and after the peak in total debt is analysed. Over the 10 year window, macroeconomic indicators can be observed so to provide a clear overview of the economic situation during both the build-up phase and the deleveraging phase. In particular, the analysis focuses on the volatility of GDP during deleveraging periods. For this reason, peaks in total debt occurring in recent years of the sample are not analyzed, as they would not allow a sufficiently wide window to observe the behaviour of the GDP and the other macroeconomic variables during the deleveraging phase. Sectoral debt developments (corporate, financial, government and households) are also covered. Key economic indicators[5] are selected to identify the interaction between indebtedness and other macroeconomic variables. Common aspects that have pushed debt up and forces acting during the deleveraging process are highlighted as well as the policy responses.

The identification of channels through which debt affects macroeconomic stability allows distinguishing countries into five different groups: *i)* countries, where the boom in asset prices encouraged indebtedness by improving households' and businesses' asset side and thus collateral; *ii)* countries with balance sheet vulnerabilities due to high exposure to oil price fluctuations; *iii)* countries where unwise macroeconomic policies, especially exchange rate and monetary policy, contributed to raise debt ratios; *iv)* countries where privatisation and restructuring of the banking sector improved financial intermediation and hence access to loans for corporate and households sectors; *v)* countries where high debt is not accompanied by high domestic and external imbalances.

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3. Data for debt are taken from the OECD National Accounts-Financial Accounts database, while data for GDP, household debt and household disposable income are taken from the OECD Economic Outlook annual database.

4. This approach does not allow describing the economic situation in the United States and Spain during the last decades. As shown in Table 1, since 2001 in Spain the total debt-to-GDP ratio is on an increasing path. In the United States, debt has started decreasing only in 2010, the last observation. Therefore, in both cases, it is not possible to detect a turning point, defined as a peak preceded by at least two years of an increase in total debt and followed by at least two years of lower total debt. Moreover, the lack of long time series does not allow covering episodes of deleveraging during the 1980s in Germany, Finland, Hungary, Norway, Poland and the Slovak Republic and during the 1990s in Israel and Mexico.

5. Data for net lending by sector are taken from the OECD National Accounts-Financial Accounts database; asset prices are taken from the OECD Main Economic Indicator-Financial Indicators; GDP growth, the output gap and the cyclically-adjusted government balance are taken from the EO 90 annual database; interest and unemployment rates, CPI inflation, house prices, unit labour cost, current account deficits and exchange rates are taken from the ADB annual database.

The case studies also shed light on factors that were important in reducing debt. In a mechanical sense debt-to-GDP ratios can been reduced by *i)* economic growth; *ii)* inflation; *iii)* higher savings; *iv)* default or restructuring of private and/or public debt; and *v)* a steady dose of financial repression that is accompanied by rising inflation.[6] In this work, we focus on the first two mechanisms. A decomposition of past debt developments shows the mechanical contributions of inflation and growth to the initial debt level in the three years[7] following the start of a deleveraging process (Table 3).[8]

Figure 1 reports the main distributional statistics five periods before and five periods after the peak in total debt. The statistics reported are the mean, the median and the 1st and 3rd quantiles. The mean in the total debt, as well in the financial and corporate sector, remains above the median, meaning that debt is concentrated among outliers. A general overview shows that:

- Deleveraging has mainly occurred in the corporate sector. On the contrary, the household sector has not contributed to deleveraging;
- Financial debt on average keeps rising after the peak, while government debt declines close to the peak, but then starts increasing again;
- The downward path in the net lending of the financial and corporate sector has a positive effect on the deleveraging process;
- GDP picks up after the peak in total debt, but subsequently slows down;
- During the deleveraging phase, both long and short-term interest rate fall, meaning that financial conditions improve. CPI inflation converges to 2% and competitiveness substantially improves close to the peak, but then worsens during the deleveraging phase.

3.1. Asset price boom and bust episodes

The common characteristic shared by Japan and Sweden is that high indebtedness was accompanied by a boom in asset prices. In these countries the boom in asset prices led to a large accumulation of debt in the financial sector in Sweden, and in both the financial and corporate sector in Japan.

When asset prices burst, the financial sector was burdened by a large number of non-performing loans and was forced to cut back the supply of credit as economic activity slowed. Both in Japan and Sweden, deleveraging was supported by growth that helped reduce the debt ratio.

In contrast to Sweden, in Japan monetary easing reduced the cost of rolling-over loans.

3.1.1. Japan

The start of ever-increasing government debt in Japan goes back to the collapse of the bubble economy in the early 1990s, and the following deep and prolonged economic recession. However, total

6. The standard instruments to implement financial repression are ceilings on interest rates. However, the government can also decide to maintain interest rate ceilings through central bank interest rate targets, when central bank independence is limited.

7. For Germany, Hungary, Norway and the United States, the analysis focuses on 2 year deleveraging episodes.

8. Empirical studies suggest that deleveraging is a slow process. The median duration is seven years for reducing debt-to disposable income ratios by 23 percentage points in the household sector (Igan *et al.*, 2012).

debt, mainly driven by corporate and financial sector debt, peaked earlier in 1989. The peak in corporate and financial debt was followed by a collapse in stock prices in the early 1990s. As private demand slowed sharply, fiscal stimulus packages were introduced and monetary policy was eased. As a consequence, Japan began running large, chronic budget deficits driven by increasing spending and a series of tax cuts. Four years later, the government deficit had widened further because government revenues were affected by slow growth, while spending continued to rise mainly driven by social spending. The common view is that the stagnation was mainly driven by the collapse of asset prices. In particular, the negative shocks generated by sharp declines in asset prices in the early 1990s were propagated and amplified by their interaction with the deteriorating condition of the financial system.

Despite the rapid rise in public debt, Japanese government bond yields remained steady and low, because of the large pool of domestic saving parked in Japanese financial institutions. Therefore, in the case of Japan, it was mainly domestic saving that has made debt sustainable. Moreover, during the first two years following the peak in debt, high growth rates helped in reducing the debt-to-GDP ratio. As economic activity and inflation slowed down, debt started to increase again in 1992.

3.1.2. Sweden

In Sweden, the increase in total debt prior to 2001 was mainly driven by the debt of the financial and corporate sectors. Stock prices collapsed in 2001 and remained low for three years. Output growth slowed sharply, while unemployment edged up from 2003 onwards.

Output growth re-bounded in 2003, when both monetary conditions and fiscal policies turned to be supportive of growth. Furthermore, the effective exchange rate depreciated by around 10%, underpinning export growth.

The general government budget balance swung from a surplus into deficit in 2002 and 2003 partly due to tax cuts that led to a fall in government revenues from corporate and capital gains taxes. However, the deficit was not large and also low interest rates contributed to keep government debt steady just below 60% of GDP.

In contrast to Japan, in Sweden tax cuts and easier monetary conditions were more successful in supporting growth, because they were coupled with bad loan recognition. Debt reduction was supported by growth and inflation (Table 3).

3.2 A high debt episode without imbalances

3.2.1. Germany

In Germany, indebtedness was not problematic, as it was matched with sustained growth and a current account surplus.

Total debt peaked in 2005, following an increase in financial debt. After the peak, domestic demand was strong, as it was sustained by tax reductions for both households and business. This encouraged the accumulation of debt especially in the household sector. As a consequence, from 2005 house prices increased even though the acceleration remained modest. Real GDP started to rebound in the first phase of the deleveraging process and remained strong until the 2008 financial crisis. The upswing was export driven: the euro depreciated and unit labour cost slightly fell and hence German competitiveness remained favourable. Therefore, from 2004, the current account surplus increased. Inflation remained modest, although higher oil prices from 2007 pushed CPI inflation above 2%. Despite increases in short-term interest rates by the European Central Bank monetary conditions remained accommodative and hence

favoured strong growth and low unemployment. The growth rate therefore allowed a reduction in the debt ratio by more than 43 percentage points (Table 3).

3.3. Macroeconomic policy difficulties

In Spain, the United States and Israel monetary and exchange rate policy contributed to keep debt ratios high. In Spain, in the early-1990s, higher interest rates arising from the attempts to defend the currency exacerbated the interest payment burden. On the contrary, in Israel the currency depreciation in 2008 increased the burden of the foreign currency-denominated debt.

3.3.1. Spain

In Spain, total debt peaked in 1993. It was essentially driven by indebtedness of the corporate and financial sector.

Extremely low and even negative growth rates reflected the slow expansion of exports markets and losses in competitiveness that harmed the foreign balance. During the financial turmoil in the autumn of 1992, the monetary authority attempted to defend the peseta by raising interest rates. Short-term interest rates remained above 10% until 1996.

Weakening activity had an adverse effect on the government balance, but the government succeeded in reducing the deficit from 1993 onwards. The effect of budget consolidation, depreciation and lower wage growth reduced the external deficit from 1993 onwards and underpinned economic activity. Growth swung from a negative rate to 2.4% in 1996 and 4.5% in 1998. Stronger economic activity accounted for 28 percentage points of debt reduction, while inflation contributed 44 percentage points (Table 3).

3.3.2. The United States

In early 1970s, the US economy entered a recession. In addition, the US economy had to face problems posed by the oil price shock which fuelled a sharp rise in inflation.

The increase in indebtedness was mainly concentrated in the financial sector, while debt of the household and government sector remained low during the 1970s.

Asset prices fell just after the peak in total debt, while GDP growth suffered two years later. As a consequence of the slowdown in economic activity, unemployment rose until 1975. High inflation, initially driven by the OPEC price shock, persisted until the 1980s. There was also a sharp tightening of monetary policy between 1972 and 1974. Monetary policy became loose again because there was another recession in 1974-75. Reflecting the easier monetary policy, interest rates declined sharply in 1976, but then started increasing reflecting large demand for securities by the corporate and government sectors, as well as expectations that monetary policy would have to be tightened to counteract inflationary pressures.

The easier monetary policy and hence high inflation was the main factors behind the decrease in the debt ratio, accounting for almost 40 percentage points of the debt reduction (Table 3).

3.3.3. Israel

A specific aspect of Israel is its high external debt, making the economy and the debt deleveraging process more sensitive to external shocks. The currency depreciation in 2008 increased the burden of foreign currency-denominated debt.

Debt peaked in 2005, mainly driven by rising indebtedness in the financial sector. Rapid export-led growth helped deleveraging in the first three years. Tightened credit conditions implied a substantial deleveraging process. Interest rates increased between 2005 and 2007 and this also helped to control inflationary pressures.

From 2008, stock prices fell sharply and the economic and financial crisis slowed economic activity, which hampered the deleveraging process. In 2008, the central bank favoured depreciation through foreign currency purchases, which widened the current account surplus and, combined with interest rate cuts, supporting economic activity in 2010.

A sharp reduction in the government deficit between 2004 and 2007 brought government debt down, but weaker growth and tax cuts since 2008 widened the government deficit.

3.4. Oil price fluctuations

Mexico and Norway could increase their government deficits without compromising growth due to high oil revenues. However, the strong dependence on the oil market also made these two countries more sensitive to changes in oil prices. In both countries, the accumulation of debt was modest. While in Norway deleveraging was mainly supported by high growth, Mexico depended mostly on high inflation. The more modest role played by growth during the deleveraging process can be explained by the higher dependence of the Mexican economy on US demand, which was weak.

3.4.1. Mexico

Total debt in Mexico peaked in 2002, mainly driven by increasing financial debt and a sharp slowdown in GDP growth. However, the debt-to-GDP ratio remained relatively low. The slowdown in economic activity in 2001 was mainly due to sluggish US demand, which also contributed to keep the current account in deficit. In the context of weaker economic activity, the strong peso helped to bring down inflation. Disinflation and the decline in real interest rates started in 2000 before the peak in total debt, but came to a halt in 2002, reflecting in particular a hike in administered prices (gas, electricity) and the rigidity of service prices as contractual wages adjusted only slowly. However, inflation remained quite high and hence contributed to debt reduction by 24.6 percentage points in the three years following the debt peak.

Real output growth rebounded in the course of 2003, while unemployment continued to increase. The oil price rose sharply in 1999 and 2000, and then from 2002 onwards. As a consequence, the current account deficit narrowed, reflecting not only higher oil prices but also a lower non-oil trade deficit.

Public debt was kept at a low level and started decreasing from 2002 onwards.

3.4.2. Norway

In Norway, total debt peaked in 1999, mainly driven by increasing debt in the financial and corporate sector and the collapse in stock prices and slowing real output growth. This slowdown in 1998-99 was caused by an adverse oil price shock and then exacerbated by a profit squeeze due to excessive wage rises, a tight policy stance and lower investment in the oil sector. From 2000, activity picked up, reflecting stronger world demand, an easier macroeconomic policy stance, a pick-up in exports and a renewed surge in oil prices. The current account surplus from 2000 onwards climbed above 10% of GDP, reflecting not only the steep oil price hike but also a sizeable rise in oil production. The current account swung from a deficit in 1998 to a surplus of 15% of GDP in 2000.

Stronger output growth from 2000 was accompanied by some acceleration in consumer price inflation, to close to 3% in 2000 and 2001. This rise reflected not only the steep rise in the oil price and special factors such as the energy tax increase, but also the tight product and labour market conditions. With monetary policy aiming to achieve low inflation, the underlying inflationary pressures led to a rise in the interest rate. Moreover, the Norges Bank was one of the few central banks that did not cut interest rates after 11 September 2001. Therefore, in 2001-03 economic activity was sluggish, due to the tightening monetary conditions and the deterioration of competitiveness, especially in 2003.

High inflation contributed to reducing the debt ratio by 60 percentage points.

3.5. Financial market liberalisation

Financial liberalisation can be a source of volatility if it facilitates excessive borrowing and increasing risk-taking.

In Finland, deregulation of financial markets in early 1990s intensified competition among banks and led to excessive indebtedness in the private sector. These factors led to an explosion of bank credit and large capital inflows.

The Eastern-Europe countries were characterised by a rise in borrowing in the mid-1990s, influenced by demand-side factors such as the expectation of property price increases following accession to the EU. Moreover, privatisation and restructuring coupled with a simultaneous increase in foreign investor participation, enhanced management quality and banks' efficiency. These factors improved access to loans for the corporate and household sector. As a result, borrowing grew rapidly. Nevertheless, banks were insufficiently prepared for such strong loan growth: no credit information bureaus operated, bank customers' credit histories were relatively short, and advanced credit risk assessment systems were imperfect or nonexistent. The surge in lending had an adverse macroeconomic impact. Growth in lending and the increase in internal demand fuelled inflation and aggravated the current account deficit. This threatened the macroeconomic stability of the countries. Since rapid fiscal adjustments were not implemented, the burden of stabilising the economy had to be shouldered by monetary policy by keeping the policy rate very high.

Massive foreign investment that started in the early 2000s implied a higher exposure to exchange rate movements. The big influence of non-domestic factors on the behaviour of national financial markets led to greater vulnerability of domestic asset prices to international developments, due to the high foreign investor participation in the banking sector (*e.g.* in Poland) or the high share of foreign currency-denominated debt (*e.g.* in Hungary).

3.5.1. Finland

Total debt peaked in 1994, as financial market liberalisation in early 1990s encouraged increasing indebtedness in the private sector. Deleveraging in the financial sector started the year before the peak in total debt, namely in 1993, while in the corporate sector debt kept rising and the deleveraging process started in 1995. Government debt was very low in 1990, kept rising until 1996 when the debt-to-GDP ratio reached 66%, four times the value in 1990. The increase in government debt is partly due to the considerable public support to the banking system.[9]

9. The fiscal cost of restructuring is estimated around 7.5% of GDP (Edey and Hviding, 1995). The restructuring process consisted of regrouping saving banks into a Saving Bank of Finland and three big commercial banks.

Improvements in the financial and corporate balance from 1993 onwards supported the debt deleveraging process undertaken two years later in 1995. On the contrary, the government and household balance deteriorated.

Economic activity started recovering in 1994. The output gap started narrowing, even though it remained negative until 1997. The labour market started recovering in 1995 during the deleveraging process: the unemployment rate decreased from 17.9% in 1993 – the year before the peak in total debt – to 10.2% in 1999.

The collapse of trade with the former Soviet Union enlarged the current account deficit, which soared in early 1990s. The recovery in the Finnish economy was underpinned by exports.

Financial conditions substantially improved: in the late-1980s short-term interest rates increased as consequence of excessive borrowing, then started to normalise in 1996, two years after the peak in total debt. CPI inflation was at a high level in the late 1980s-early 1990s, due to the rapid expansion of credit, and then started decreasing in 1992, before the peak in total debt. Competitiveness also improved in the same year, but then worsened in 1994.

3.5.2. Poland

In Poland, total debt peaked in 2002, when the corporate sector began to deleverage. In the financial sector debt continued to increase, though at a moderate pace.

Economic activity accelerated and asset prices rose the year after the peak in total debt. Following the rebound in the economic activity, unemployment started to fall. The boost in economic activity contributed to reducing debt by 27 percentage points (Table 3). Higher imports generated from higher income growth more than offset the increase in exports generated by the devaluation of the zloty. As the output gap became negative from 2001 onwards wage increases were moderate, contributing to keep inflation low.

3.5.3. The Slovak Republic

In the Slovak Republic, total debt peaked in 2001. The financial and corporate sectors feature higher indebtedness compared to other sectors. In particular, indebtedness in the household sector remained at a very low level. Inflation rose further in 2003 fuelled by an increase in administered prices. Output was boosted by growth enhancing structural reforms.

High growth and inflation helped deleveraging. However, deleveraging involved only the corporate sector, while in the financial sector debt continued to increase.

3.5.4 Hungary

In Hungary, total debt peaked in 2000. Indebtedness increased in the financial and corporate sector, while it remained low in international comparison, especially in the household and government sector. The combination of large current account and fiscal deficits weakened investors' confidence and led to extremely volatile stock prices. As a consequence, interest rates remained high. The government attempted to bolster government revenues though substantial asset sales.

Furthermore, strong growth and high oil prices contributed to rising inflation, which, in turn, accounted for more than 47 percentage points of debt reduction (Table 3). High growth and moderate wage increases contributed to reduce unemployment.

Figure 1. Macro developments during deleveraging

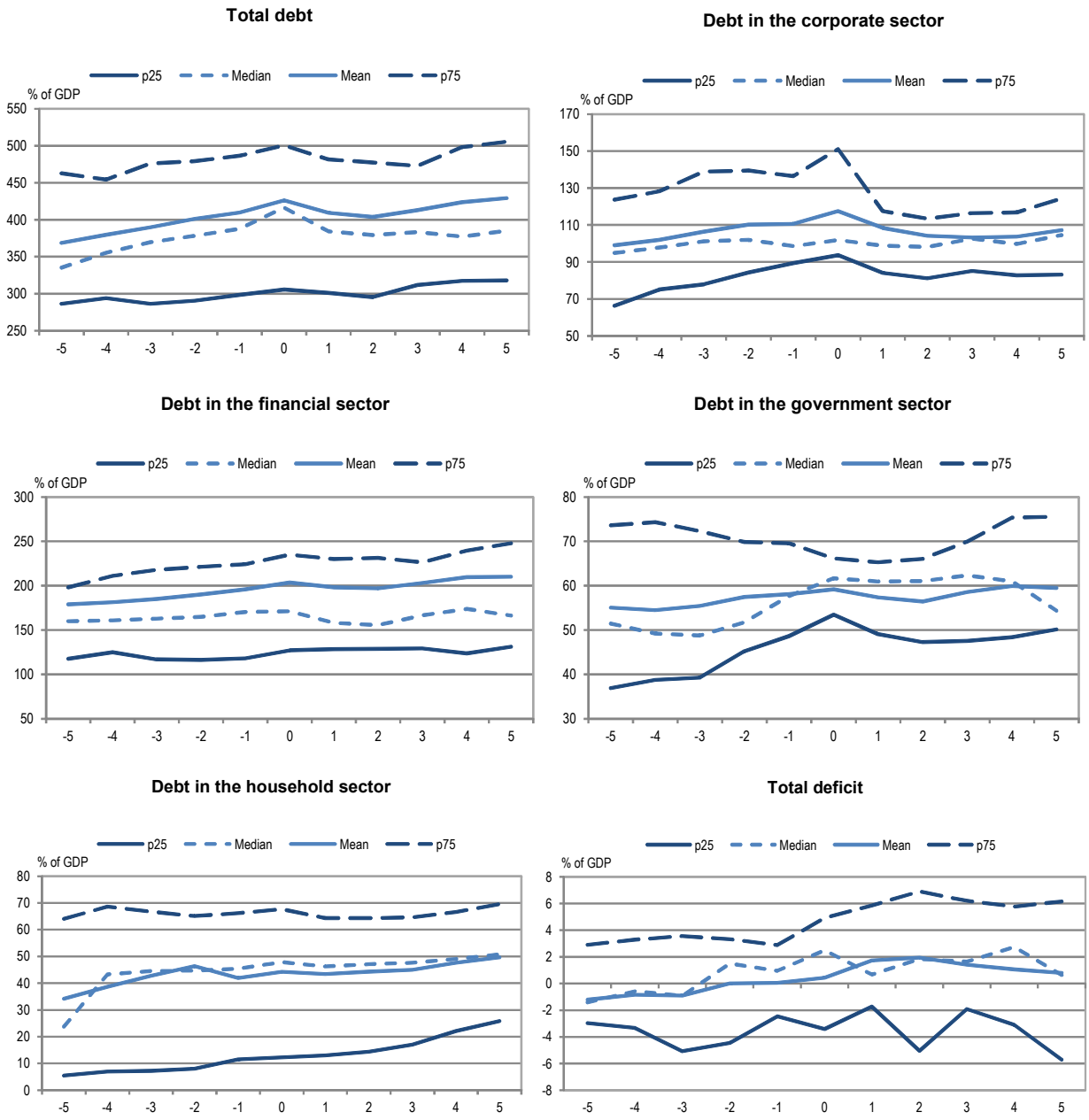
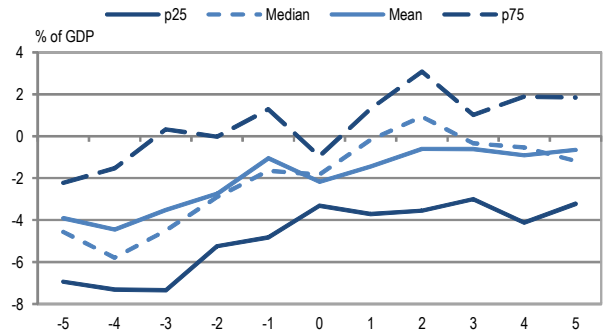
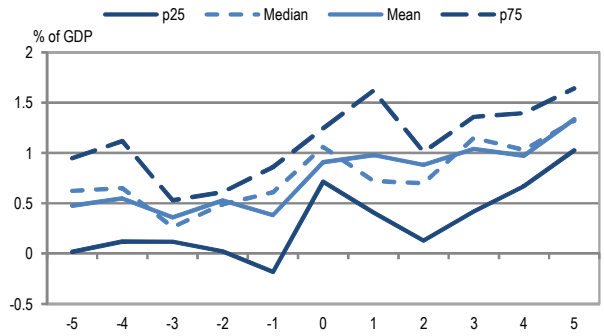


Figure 1. Macro developments during deleveraging (continued)

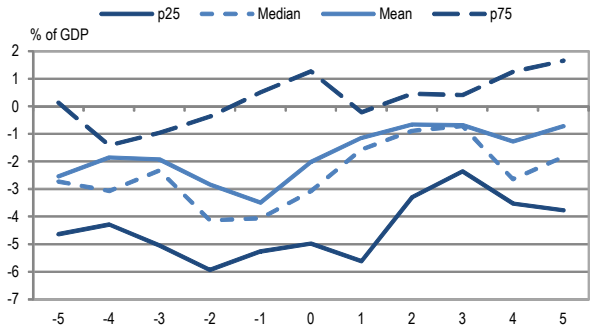
Deficit in the corporate sector



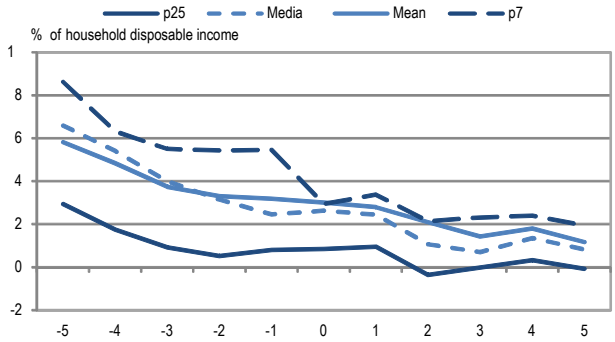
Deficit in the financial sector



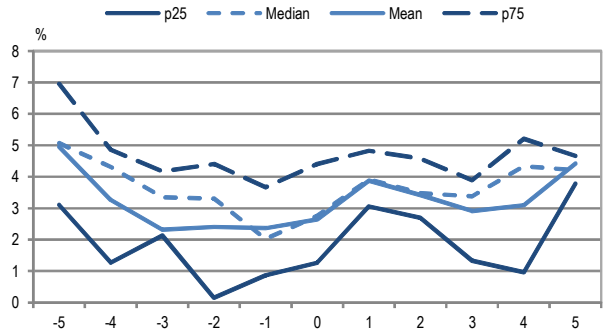
Deficit in the government sector



Deficit in the household sector



GDP growth



Output gap

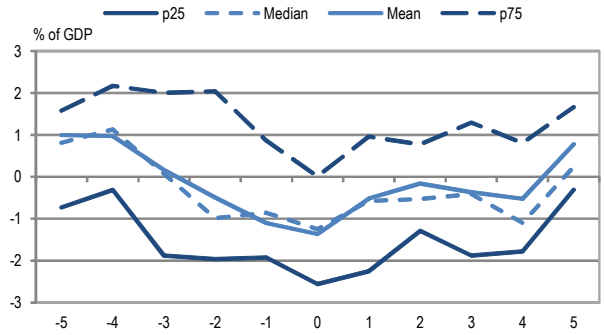
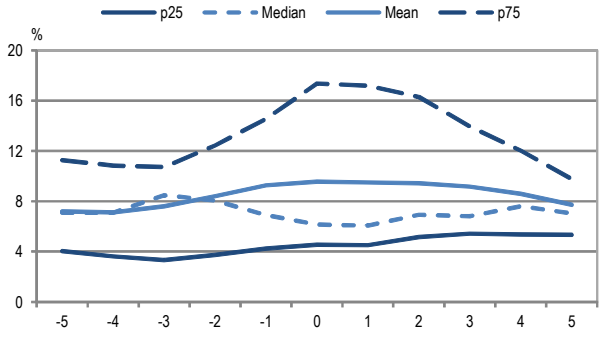
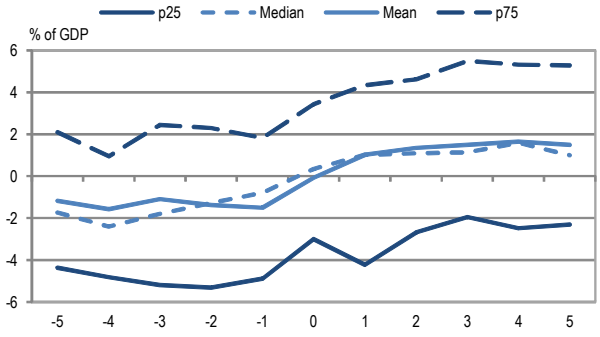


Figure 1. Macro developments during deleveraging (continued)

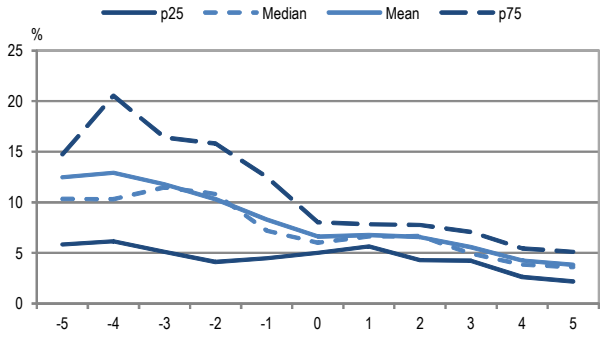
Unemployment rate



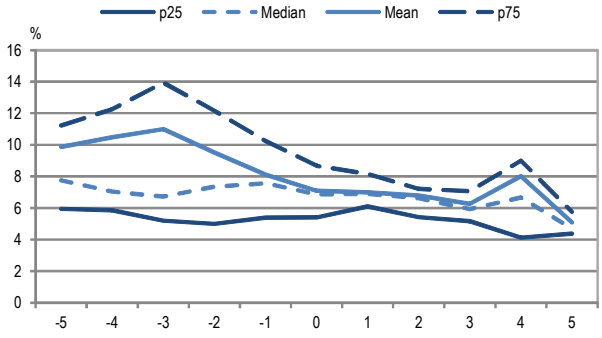
Current accounts



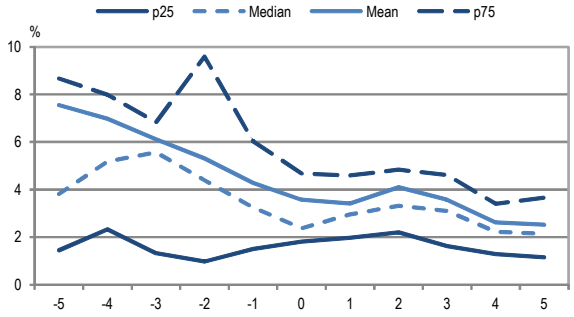
Short term interest rate



Long term interest rate



CPI inflation



Unit labour cost index

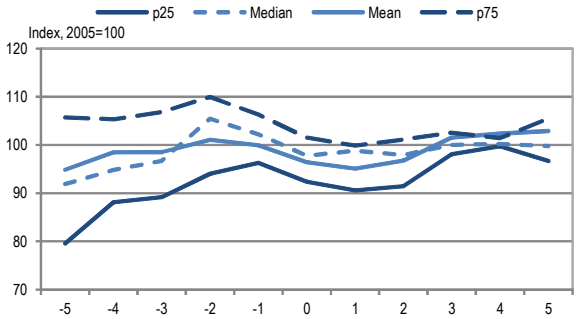


Table 1. Total debt-to-GDP ratio

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
AUS	379.13	384.49	393.81	409.44	429.50	457.46	536.64	534.90	549.65	531.95
AUT	499.73	496.47	507.29	523.86	550.47	576.57	594.47	665.87	664.04	645.00
BEL	659.31	646.99	680.13	691.78	730.33	743.77	790.38	815.13	801.28	780.31
CAN	544.92	546.99	535.93	536.55	545.50	563.20	572.99	591.36	654.32	650.38
CHE	767.85	770.56	786.73	772.48	821.00	811.43	856.92	767.94	808.20	
CHL					344.62	330.71	344.32	380.48	381.04	363.43
CZE	304.84	317.60	307.25	294.85	300.93	293.79	302.68	305.24	327.13	336.93
DEU	600.32	612.82	618.64	625.22	633.46	625.06	623.40	652.43	674.12	658.37
DNK			662.15	681.75	733.26	764.87	808.69	860.97	913.30	904.28
ESP	469.49	477.22	495.15	523.08	581.93	633.75	681.51	709.20	750.14	754.39
EST	226.40	247.84	261.61	285.44	317.81	360.06	370.99	395.91	443.11	404.02
FIN	346.22	345.39	355.74	367.23	377.92	390.19	393.30	428.78	480.47	518.46
FRA	539.54	546.55	553.53	572.72	609.62	637.85	685.69	718.93	751.08	766.17
GBR	805.88	799.47	841.03	890.99	987.84	1042.71	1080.02	1152.76	1185.32	1159.73
GRC	339.65	346.59	337.47	346.35	368.89	386.73	419.37	472.56	511.02	539.22
HUN	277.13	269.90	294.23	305.42	340.63	362.73	389.61	444.82	490.38	471.48
IRL	753.79	764.83	869.35	1002.06	1 249.07	1 361.21	1 412.40	1 793.44	1 992.48	2053.95
ISR	430.75	454.63	459.92	463.51	474.59	455.96	452.73	433.81	444.01	447.60
ITA	435.22	451.44	461.97	472.76	496.60	515.91	528.83	553.24	593.70	597.35
JPN	973.75	990.94	981.84	967.58	963.37	944.99	930.63	926.28	993.37	985.14
KOR		554.59	544.17	525.10	540.30	577.46	603.24	642.39	661.82	643.94
LUX						5 063.60	4 895.83	5 101.51	4 836.32	4 112.46
MEX	117.29	128.53	120.87	110.65	113.88	110.30	112.82	117.32	130.91	
NLD	869.66	877.56	911.75	940.44	1 005.78	1029.36	1095.54	1068.19	1135.29	1159.10
NOR	415.63	448.55	467.99	472.88	469.49	487.77	527.30	560.02	595.70	580.19
POL	223.61	238.65	224.98	215.23	225.20	240.66	250.25	276.72	286.62	301.93
PRT	588.55	589.06	607.89	604.08	627.66	651.21	686.79	735.41	799.68	846.69
SVK	321.14	315.05	313.77	317.88	321.47	297.75	298.86	294.35	316.73	318.15
SVN	257.11	271.43	277.49	281.40	313.53	321.83	362.30	377.43	428.69	419.32
SWE	578.63	558.66	552.03	545.30	588.47	603.15	621.97	684.43	725.97	680.10
USA	531.78	537.67	559.70	577.66	587.15	603.63	623.65	628.42	644.04	631.43

Source: OECD, ADB database.

Table 2. Episodes of deleveraging: Behaviour of the main macroeconomic variables

JAPAN	t-5	t-4	t-3	t-2	t-1	t=1989	t+1	t+2	t+3	t+4	t+5
NON CONSOLIDATED DEBT											
Total economy	676.03	692.15	744.37	799.04	826.05	858.51	841.81	831.73	833.83	854.86	871.88
Non financial corporate sector (% GDP)	184.31	177.49	186.37	196.84	200.62	211.35	209.85	204.51	199.53	200.29	199.64
Financial sector (% GDP)	354.82	375.01	410.06	448.17	472.56	498.59	486.06	482.02	485.11	498.48	507.30
Government (% GDP)	70.02	72.72	78.51	79.97	75.86	67.92	65.40	65.98	70.51	76.30	82.17
Household (% disposable income)	92.26	94.73	136.82	179.43	113.95	126.20	122.96	125.29	118.88	123.27	124.77
NET BORROWING/LENDING											
Total economy	2.99	3.23	3.55	3.29	2.29	1.24	0.67	1.84	2.75	2.75	2.14
Non financial corporate sector (% GDP)	-2.99	-5.24	-3.59	-4.00	-4.59	-8.87	-11.83	-10.96	-5.77	-4.12	-1.18
Financial sector (% GDP)	-0.40	-0.67	-0.84	-0.81	-0.76	-0.71	0.72	-0.42	1.36	1.73	1.32
Government (% GDP)	-2.73	-1.41	-1.41	-0.37	0.51	1.27	2.01	1.73	0.59	-2.46	-3.77
Household (% disposable income)	9.10	10.51	9.36	8.50	7.03	9.26	9.35	11.11	6.29	7.28	5.39
MAIN ECONOMIC INDICATORS											
GDP growth	4.46	6.33	2.83	4.11	7.15	5.37	5.57	3.32	0.82	0.17	0.86
Output gap	-2.04	-0.41	-1.85	-1.88	0.82	1.94	3.83	3.87	1.96	-0.03	-0.77
Short-term interest rate	6.46	6.63	5.17	4.23	4.53	5.38	7.72	7.38	4.46	2.98	2.23
Long-term interest rate	7.32	6.49	5.15	5.02	4.79	5.13	6.96	6.34	5.33	4.32	4.36
Unemployment rate	2.72	2.62	2.77	2.84	2.52	2.26	2.10	2.10	2.16	2.50	2.89
Current accounts (%GDP)	2.69	3.62	4.17	3.39	2.61	2.21	1.52	2.05	2.80	2.95	2.70
Cyclically adjusted government balance (% GDP)	-2.05	-1.15	-0.90	0.26	0.46	0.75	0.98	0.80	-0.17	-2.64	-3.64
CPI Inflation	2.29	3.19	0.13	0.05	0.71	2.25	2.82	3.26	1.73	1.26	0.70
Unit labour cost index (2005=100)	76.61	99.92	105.75	111.73	101.95	92.47	99.64	102.52	118.85	128.33	130.54
House price (growth rate)	3.33	2.53	2.33	7.02	6.13	6.89	13.17	4.30	-3.87	-4.30	-2.35
Asset price (growth rate)	26.07	22.15	32.85	47.87	8.90	20.49	-15.11	-15.52	-25.95	11.70	4.94

Table 2. Episodes of deleveraging: Behaviour of the main macroeconomic variables (continued)

SWEDEN	t-5	t-4	t-3	t-2	t-1	t=2001	t+1	t+2	t+3	t+4	t+5
NON CONSOLIDATED DEBT											
Total economy	501.01	525.19	539.62	537.32	555.83	578.63	558.66	552.03	545.30	588.47	603.15
Non financial corporate sector (% GDP)	146.93	160.37	170.12	172.46	190.09	203.64	195.66	183.09	149.17	160.57	167.46
Financial sector (% GDP)	208.72	221.23	225.99	230.90	237.58	249.42	238.28	243.00	266.26	293.31	304.96
Government (% GDP)	84.36	82.98	81.99	73.20	64.29	62.67	60.24	59.34	59.95	60.80	53.87
Household (% disposable income)	46.42	47.17	47.84	49.19	50.97	58.47	59.54	62.34	65.24	69.42	72.44
NET BORROWING/LENDING											
Total economy	3.47	4.34	4.38	3.42	4.47	4.86	5.06	6.90	6.79	7.17	7.25
Non financial corporate sector (% GDP)	3.28	3.78	2.97	2.33	1.59	-1.88	2.54	3.08	2.86	2.95	2.39
Financial sector (% GDP)	0.90	1.28	0.15	0.02	-1.72	1.83	0.98	2.95	2.30	1.44	1.64
Government (% GDP)	-3.32	-1.64	0.88	0.79	3.59	1.58	-1.48	-1.26	0.42	1.95	2.22
Household (% disposable income)	2.07	0.58	0.14	-0.07	0.48	2.68	2.45	1.61	0.71	0.39	0.42
MAIN ECONOMIC INDICATORS											
GDP growth	1.63	2.92	4.11	4.39	4.60	1.41	2.50	2.48	3.71	3.15	4.56
Output gap	-2.32	-1.80	-0.59	0.56	1.65	-0.16	-0.36	-0.27	1.18	1.83	3.61
Short-term interest rate	5.82	4.14	4.22	3.12	3.95	4.00	4.07	3.03	2.11	1.72	2.33
Long-term interest rate	8.06	6.65	5.02	4.98	5.37	5.11	5.30	4.64	4.42	3.38	3.70
Unemployment rate	11.40	11.67	9.71	8.20	6.75	5.83	5.95	6.57	7.37	7.65	7.05
Current accounts (%GDP)	3.52	4.08	3.82	4.02	3.74	3.70	3.83	6.97	6.55	6.77	8.43
Cyclically adjusted government balance (% GDP)	-1.81	-0.40	1.35	0.57	2.73	1.42	-1.52	-1.24	-0.10	1.17	0.58
CPI Inflation	0.53	0.66	-0.27	0.46	0.90	2.41	2.16	1.93	0.37	0.45	1.36
Unit labour cost index (2005=100)	116.69	110.75	107.77	105.74	104.20	95.60	98.24	104.00	104.23	100.00	99.55
House price (growth rate)	0.81	6.61	9.51	9.36	11.21	7.89	6.35	6.63	9.33	9.03	12.22
Asset price (growth rate)	22.02	45.43	15.55	16.04	48.94	-29.72	-23.11	-11.36	28.28	21.80	26.60

Table 2. Episodes of deleveraging: Behaviour of the main macroeconomic variables (continued)

GERMANY	t-5	t-4	t-3	t-2	t-1	t=2005	t+1	t+2	t+3	t+4	t+5
NON CONSOLIDATED DEBT											
Total economy *	592.58	600.32	612.82	618.64	625.22	633.46	625.06	623.40	652.43	674.12	658.37
Non financial corporate sector (% GDP)*	98.81	101.40	105.44	103.91	101.17	99.17	97.23	99.54	105.00	112.16	109.74
Financial sector (% GDP)*	358.16	365.05	371.43	375.16	382.15	391.19	389.63	394.07	415.02	419.35	398.78
Government (% GDP)*	60.85	60.10	62.50	65.89	69.31	71.87	69.82	65.56	69.75	77.41	86.84
Household (% disposable income)**	73.94	72.97	72.70	72.96	71.93	70.62	67.73	63.61	62.04	64.60	62.19
NET BORROWING/LENDING											
Total economy *	-1.44	-0.19	1.97	1.88	4.67	5.06	6.48	7.52	6.20	5.76	5.79
Non financial corporate sector (% GDP)*	-6.70	-1.71	0.27	-0.24	1.19	0.74	0.60	0.99	-0.34	1.89	1.84
Financial sector (% GDP)*	0.45	-0.03	0.80	0.45	1.16	1.14	1.62	0.70	1.04	0.67	2.20
Government (% GDP)*	1.14	-3.07	-3.84	-4.14	-3.77	-3.34	-1.65	0.23	-0.06	-3.21	-4.29
Household (% disposable income)**	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MAIN ECONOMIC INDICATORS											
GDP growth**	3.30	1.64	0.03	-0.38	0.70	0.83	3.89	3.39	0.81	-5.08	3.56
Output gap***	0.73	0.64	-0.72	-2.20	-2.51	-2.57	0.17	2.24	1.63	-4.53	-2.30
Short-term interest rate**	4.39	4.26	3.32	2.33	2.11	2.18	3.08	4.28	4.63	1.23	0.81
Long-term interest rate**	5.27	4.80	4.78	4.07	4.04	3.35	3.76	4.22	3.98	3.22	2.74
Unemployment rate**	-1.82	0.01	1.99	1.93	4.60	5.01	6.21	7.51	6.26	5.67	5.63
Current accounts (%GDP)**	-1.82	0.01	1.99	1.93	4.60	5.01	6.21	7.51	6.26	5.67	5.63
Cyclically adjusted government balance (% GDP)***	3.33	-1.16	-1.44	-0.92	-0.39	0.20	0.96	1.97	1.51	0.61	-1.32
CPI Inflation**	1.46	2.00	1.35	1.05	1.69	1.51	1.57	2.29	2.64	0.32	1.15
Unit labour cost index (2005=100)**	94.76	94.79	95.76	100.50	101.86	100.00	99.36	100.51	100.42	101.16	96.24
House price (growth rate)**	0.39	0.00	-0.67	-1.35	-1.37	-0.89	0.10	1.13	0.59	0.59	2.35
Asset price (growth rate)****	27.00	-24.53	-23.36	-22.44	23.01	15.69	24.74	24.23	-20.42	-24.77	21.04

Table 2. Episodes of deleveraging: Behaviour of the main macroeconomic variables (continued)

SPAIN	t-5	t-4	t-3	t-2	t-1	t=1993	t+1	t+2	t+3	t+4	t+5
NON CONSOLIDATED DEBT											
Total economy	340.92	351.00	353.65	361.73	362.20	399.40	387.10	388.73	398.22	404.56	417.73
Non financial corporate sector (% GDP)	90.92	94.00	96.82	100.03	95.91	96.08	92.37	89.28	89.70	94.35	100.51
Financial sector (% GDP)	166.56	168.95	166.76	169.48	170.84	193.36	186.51	186.22	187.09	187.20	189.68
Government (% GDP)	45.34	45.83	47.71	49.58	52.11	65.58	64.35	69.32	76.03	75.04	75.38
Household (% disposable income)	38.11	41.13	41.23	41.46	41.47	42.53	41.05	40.80	41.54	43.56	47.16
NET BORROWING/LENDING											
Total economy	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Non financial corporate sector (% GDP)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Financial sector (% GDP)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Government (% GDP)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Household (% disposable income)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MAIN ECONOMIC INDICATORS											
GDP growth	5.09	4.83	3.78	2.54	0.93	-1.03	2.38	2.76	2.42	3.87	4.47
Output gap	1.30	2.29	2.77	2.19	0.42	-2.55	-2.16	-1.85	-2.24	-1.40	-0.17
Short-term interest rate	11.65	15.04	15.15	13.23	13.34	11.69	8.01	9.36	7.50	5.37	4.24
Long-term interest rate	11.74	13.60	14.68	12.36	11.70	10.21	10.00	11.27	8.74	6.40	4.83
Unemployment rate	14.54	12.59	12.11	12.23	13.54	17.19	19.11	18.71	17.54	16.31	14.65
Current accounts (%GDP)	-4.81	-4.96	-6.54	-7.17	-5.57	-7.37	-6.47	-6.09	-4.40	-3.21	-2.78
Cyclically adjusted government balance (% GDP)	-1.01	-2.71	-3.46	-3.57	-3.49	-1.08	-1.24	-0.31	-0.23	-0.09	-1.18
CPI Inflation	4.84	6.79	6.72	5.93	5.92	4.57	4.72	4.67	3.56	1.97	1.83
Unit labour cost index (2005=100)	93.30	99.66	105.87	107.05	106.61	94.93	90.68	92.04	93.53	89.19	90.18
House price (growth rate)	26.57	23.54	15.54	13.91	-0.67	-0.28	1.54	3.52	2.58	4.23	4.88
Asset price (growth rate)	11.02	8.79	-12.49	0.37	-12.05	14.71	18.46	-6.18	22.07	52.73	46.69

Table 2. Episodes of deleveraging: Behaviour of the main macroeconomic variables (continued)

THE UNITED STATES	t-5	t-4	t-3	t-2	t-1	t=1972	t+1	t+2	t+3	t+4	t+5
NON CONSOLIDATED DEBT											
Total economy	295.60	294.79	291.03	296.00	302.85	309.78	309.01	303.85	323.46	322.06	324.79
Non financial corporate sector (% GDP)	62.31	63.31	65.55	67.21	68.38	70.36	74.22	71.57	86.70	84.23	84.93
Financial sector (% GDP)	130.45	131.08	128.62	132.81	137.79	143.56	142.11	140.77	142.62	142.74	143.54
Government (% GDP)	54.48	52.60	49.88	50.04	50.27	48.68	45.59	44.31	47.44	48.26	47.76
Household (% disposable income)	70.00	69.62	68.65	64.85	65.25	67.29	66.56	66.40	64.43	65.62	68.70
NET BORROWING/LENDING											
Total economy	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Non financial corporate sector (% GDP)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Financial sector (% GDP)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Government (% GDP)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Household (% disposable income)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MAIN ECONOMIC INDICATORS											
GDP growth	2.53	4.84	3.11	0.19	3.36	5.31	5.79	-0.55	-0.21	5.37	4.60
Output gap	2.05	2.92	2.32	-1.17	-1.43	0.53	2.90	-1.10	-4.28	-1.85	-0.04
Short-term interest rate	5.54	6.38	9.87	8.43	6.63	5.47	9.42	11.26	6.95	5.64	6.16
Long-term interest rate	5.07	5.65	6.67	7.35	6.16	6.21	6.84	7.56	7.99	7.61	7.42
Unemployment rate	3.84	3.55	3.51	4.98	5.95	5.60	4.88	5.62	8.47	7.69	7.04
Current accounts (%GDP)	0.31	0.07	0.04	0.22	-0.13	-0.47	0.52	0.13	1.11	0.24	-0.71
Cyclically adjusted government balance (% GDP)	-3.42	-2.39	-0.81	-1.96	-2.30	-1.41	-1.10	-1.02	-3.90	-2.56	-2.07
CPI Inflation	2.78	4.24	5.44	5.88	4.23	3.27	6.26	11.01	9.14	5.77	6.47
Unit labour cost index (2005=100)	n.a.	n.a.	n.a.	127.00	123.02	113.29	102.59	99.50	98.24	98.94	96.81
House price (growth rate)	n.a.	n.a.	n.a.	n.a.	8.07	7.18	11.86	9.13	6.48	7.35	11.69
Asset price (growth rate)	10.00	9.06	-1.27	-16.37	18.61	11.20	-4.77	-23.65	4.32	19.09	-1.42

Table 2. Episodes of deleveraging: Behaviour of the main macroeconomic variables (continued)

ISRAEL	t-5	t-4	t-3	t-2	t-1	t=2005	t+1	t+2	t+3	t+4	t+5
NON CONSOLIDATED DEBT											
Total economy	n.a.	430.75	454.63	459.92	463.51	474.59	455.96	452.73	433.81	444.01	447.60
Non financial corporate sector (% GDP)	n.a.	80.85	87.39	87.11	89.77	89.09	87.02	84.33	80.39	78.46	77.99
Financial sector (% GDP)	n.a.	207.57	215.07	218.06	219.63	230.12	227.30	227.37	213.01	221.50	228.73
Government (% GDP)	84.32	88.99	96.66	99.25	97.65	93.74	84.72	78.13	77.07	79.49	76.13
Household (% disposable income)	n.a.	45.49	50.70	47.98	49.34	53.25	51.43	53.36	53.79	54.55	54.43
NET BORROWING/LENDING											
Total economy	-1.40	-0.95	-0.91	1.11	2.35	3.74	5.86	4.01	1.64	3.26	n.a.
Non financial corporate sector (% GDP)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Financial sector (% GDP)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Government (% GDP)	-1.53	-4.08	-5.05	-5.93	-4.06	-2.44	-1.06	-0.52	-2.35	-5.31	n.a.
Household (% disposable income)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
MAIN ECONOMIC INDICATORS											
GDP growth	9.27	-0.25	-0.58	1.51	4.84	4.94	5.59	5.50	4.03	0.84	4.85
Output gap	4.18	1.05	-2.33	-3.58	-1.73	-0.43	1.13	2.70	2.72	-1.60	-0.64
Short-term interest rate	9.05	6.53	7.17	6.61	4.26	3.88	5.46	4.26	3.56	0.64	1.64
Long-term interest rate	5.48	4.83	5.35	4.75	7.56	6.36	6.31	5.55	5.92	5.06	4.68
Unemployment rate	8.76	9.29	10.27	10.68	10.33	9.04	8.37	7.29	6.14	7.56	6.63
Current accounts (%GDP)	-3.06	-1.52	-1.12	0.68	1.56	3.34	4.89	2.43	1.15	3.56	3.01
Cyclically adjusted government balance (% GDP)	-5.56	-6.87	-7.16	-6.69	-5.26	-4.69	-2.86	-2.56	-4.89	-5.83	-4.72
CPI Inflation	1.12	1.10	5.69	0.72	-0.41	1.33	2.11	0.49	4.59	3.33	2.69
Unit labour cost index (2005=100)	128.60	127.56	115.59	109.36	102.47	100.00	99.69	100.65	112.49	109.51	114.91
House price (growth rate)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Asset price (growth rate)	29.86	-18.85	-20.69	-9.77	15.07	19.05	15.70	9.77	-30.63	-28.49	6.19
Exchange rate (change)	1.50	-3.03	-11.22	4.26	1.37	-0.08	0.76	8.43	14.71	-8.75	5.17

Table 2. Episodes of deleveraging: Behaviour of the main macroeconomic variables (continued)

MEXICO	t-5	t-4	t-3	t-2	t-1	t=2002	t+1	t+2	t+3	t+4	t+5
NON CONSOLIDATED DEBT											
Total economy	143.68	133.04	124.05	113.18	117.29	128.53	120.87	110.65	113.88	110.30	112.82
Non financial corporate sector (% GDP)	29.17	17.73	14.57	12.27	10.64	12.92	11.07	9.72	9.79	9.90	10.91
Financial sector (% GDP)	77.10	76.67	74.23	67.02	72.72	77.98	71.56	64.50	66.88	64.19	65.74
Government (% GDP)	31.96	34.05	31.29	29.47	29.98	33.44	32.75	30.97	31.07	28.81	28.11
Household (% disposable income)	5.45	4.58	3.96	4.43	3.95	4.18	5.49	5.45	6.14	7.40	8.06
NET BORROWING/LENDING											
Total economy							-1.01	-0.67	-0.59	-0.49	-0.87
Non financial corporate sector (% GDP)							-4.84	-4.79	-4.91	-4.27	-4.27
Financial sector (% GDP)							-0.25	1.01	1.22	1.33	2.03
Government (% GDP)							0.07	0.53	0.38	0.23	-0.48
Household (% disposable income)							4.16	2.69	2.76	2.23	1.86
MAIN ECONOMIC INDICATORS											
GDP growth	7.24	5.01	3.56	5.98	-0.92	0.08	1.37	4.03	3.18	5.15	3.24
Output gap	-0.13	1.57	1.78	4.70	0.97	-1.49	-2.54	-0.90	-0.07	2.76	3.86
Short-term interest rate	21.26	26.18	22.38	16.15	12.24	7.44	6.51	7.10	9.33	7.30	7.35
Long-term interest rate	26.61	32.77	28.01	20.22	14.94	10.13	8.98	9.54	9.42	8.39	7.78
Unemployment rate	4.12	3.64	2.56	2.63	2.61	2.93	3.03	3.73	3.57	3.58	3.71
Current accounts (%GDP)	-1.65	-3.30	-2.47	-2.79	-2.50	-2.00	-1.02	-0.69	-0.69	-0.47	-0.90
Cyclically adjusted government balance (% GDP)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
CPI Inflation	20.63	15.93	16.59	9.49	6.37	5.03	4.55	4.69	3.99	3.63	3.97
Unit labour cost index (2005=100)	87.51	88.33	96.71	105.07	112.13	112.53	100.42	96.37	100.00	100.00	99.09
House price (growth rate)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Asset price (growth rate)	39.19	-2.91	22.33	26.98	-8.15	6.78	8.53	48.59	35.69	45.40	42.98
Oil price (change)	-7.02	-30.15	33.81	57.38	-14.44	0.67	19.32	33.07	36.27	17.07	9.47

Table 2. Episodes of deleveraging: Behaviour of the main macroeconomic variables (continued)

NORWAY	t-5	t-4	t-3	t-2	t-1	t=1999	t+1	t+2	t+3	t+4	t+5
NON CONSOLIDATED DEBT											
Total economy	n.a.	388.29	385.70	395.08	413.63	433.46	414.15	415.63	448.55	467.98	472.88
Non financial corporate sector (% GDP)	n.a.	116.09	116.26	128.96	135.35	146.68	141.09	133.02	136.74	130.57	138.82
Financial sector (% GDP)	n.a.	155.82	159.13	160.38	169.91	177.43	166.24	170.50	184.25	196.60	188.92
Government (% GDP)	34.56	37.87	33.61	29.67	28.01	29.14	32.66	31.84	39.00	48.45	50.94
Household (% disposable income)	n.a.	68.22	66.11	65.70	69.12	68.66	63.54	67.98	74.67	78.98	79.76
NET BORROWING/LENDING											
Total economy	2.87	3.46	6.79	6.12	-0.39	5.50	14.95	16.05	12.46	12.56	12.53
Non financial corporate sector (% GDP)	0.11	-0.99	0.48	-1.83	-5.54	-1.79	-0.17	3.67	0.75	1.61	-0.67
Financial sector (% GDP)	0.80	0.17	0.44	0.74	0.76	0.76	-0.32	-0.21	0.42	0.94	1.24
Government (% GDP)	0.13	3.22	6.29	7.64	3.32	5.99	15.38	13.32	9.21	7.38	11.10
Household (% disposable income)	1.60	0.69	-0.83	-0.76	0.77	0.29	-0.14	-0.91	1.89	2.58	0.83
MAIN ECONOMIC INDICATORS											
GDP growth	5.05	4.19	5.10	5.39	2.68	2.03	3.25	1.99	1.50	1.01	3.86
Output gap	-0.71	-0.28	0.73	1.99	2.14	0.97	0.90	0.18	-0.82	-2.02	-0.20
Short-term interest rate	5.85	5.48	4.89	3.73	5.79	6.54	6.75	7.23	6.91	4.10	2.01
Long-term interest rate	7.44	7.42	6.77	5.89	5.40	5.50	6.22	6.24	6.38	5.05	4.37
Unemployment rate	5.42	4.88	4.82	4.02	3.17	3.18	3.43	3.55	3.89	4.48	4.47
Current accounts (%GDP)	3.00	3.57	6.87	6.28	-0.31	5.61	15.01	16.11	12.55	12.26	12.59
Cyclically adjusted government balance (% GDP)	-5.48	-2.19	-1.93	-1.16	-2.09	-0.47	1.63	0.67	-1.75	-3.72	-1.96
CPI Inflation	1.40	2.45	1.25	2.58	2.27	2.33	3.09	3.02	1.29	2.48	0.47
Unit labour cost index (2005=100)	91.89	94.14	92.98	93.98	91.64	92.10	90.99	94.49	101.97	100.47	95.98
House price (growth rate)	13.23	7.15	9.24	11.81	11.14	11.21	15.67	7.05	4.90	1.75	10.13
Asset price (growth rate)	26.34	8.48	20.85	45.01	-7.99	-3.84	28.36	-9.33	-15.70	-4.28	53.02
Oil price (change)	-6.89	7.23	20.22	-7.02	-30.15	33.81	57.38	-14.44	0.67	19.32	33.07

Table 2. Episodes of deleveraging: Behaviour of the main macroeconomic variables (continued)

FINLAND	t-5	t-4	t-3	t-2	t-1	t=1994	t+1	t+2	t+3	t+4	t+5
NON CONSOLIDATED DEBT											
Total economy	348.08	359.93	398.52	439.61	437.23	447.60	381.27	370.18	368.40	349.95	352.62
Non financial corporate sector (% GDP)	113.38	124.15	140.82	154.86	139.64	164.19	106.02	103.75	109.70	103.71	108.62
Financial sector (% GDP)	165.29	166.04	175.35	181.00	180.23	164.70	149.97	140.55	137.41	128.21	135.33
Government (% GDP)	16.56	16.40	24.81	44.65	57.76	60.67	65.26	66.22	64.66	61.24	54.88
Household (% disposable income)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
NET BORROWING/LENDING											
Total economy	-4.88	-5.08	-5.52	-4.75	-1.43	0.95	3.93	3.73	5.05	5.10	7.06
Non financial corporate sector (% GDP)	-7.67	-9.27	-7.18	-4.63	0.59	5.31	5.12	5.23	5.05	3.52	5.62
Financial sector (% GDP)	0.16	0.81	0.34	0.02	2.39	1.53	3.31	2.41	1.37	1.40	1.03
Government (% GDP)	6.80	5.39	-0.95	-5.46	-8.23	-6.68	-6.13	-3.47	-1.37	1.59	1.66
Household (% disposable income)	-3.96	-1.87	2.47	5.54	3.99	0.89	1.66	-0.50	-0.19	-1.49	-1.42
MAIN ECONOMIC INDICATORS											
GDP growth	5.42	0.14	-6.00	-3.48	-0.81	3.65	3.96	3.57	6.21	5.03	3.91
Output gap	7.33	4.90	-2.79	-6.96	-8.39	-6.10	-4.43	-3.55	-0.76	0.46	0.52
Short-term interest rate	12.56	14.00	13.08	13.25	7.77	5.35	5.75	3.63	3.23	3.57	2.96
Long-term interest rate	12.09	13.21	11.71	11.97	8.83	9.04	8.79	7.08	5.96	4.79	4.72
Unemployment rate	4.43	4.56	8.04	13.03	17.62	17.87	16.70	15.87	12.77	11.43	10.25
Current accounts (%GDP)	-4.93	-5.02	-5.36	-4.69	-1.28	1.14	4.16	3.84	5.23	5.20	5.17
Cyclically adjusted government balance (% GDP)	3.87	2.95	0.00	-1.93	-3.63	-3.17	-3.55	-1.42	-0.83	1.46	1.37
CPI Inflation	6.59	6.15	4.31	2.92	2.19	1.09	0.79	0.63	1.19	1.40	1.16
Unit labour cost index (2005=100)	138.33	142.23	135.58	117.03	97.81	101.54	109.05	102.67	98.94	100.55	100.27
House price (growth rate)	24.56	-3.37	-11.92	-14.50	-10.12	4.03	-1.82	5.95	15.77	8.85	7.06
Asset price (growth rate)	44.37	-4.49	-5.45	3.14	11.42	5.92	-10.11	13.64	29.26	30.78	22.04

Table 2. Episodes of deleveraging: Behaviour of the main macroeconomic variables (continued)

POLAND	t-5	t-4	t-3	t-2	t-1	t=2002	t+1	t+2	t+3	t+4	t+5
NON CONSOLIDATED DEBT											
Total economy	178.49	189.80	205.55	211.49	223.61	238.65	224.98	215.23	225.20	240.66	250.25
Non financial corporate sector (% GDP)	63.93	70.01	77.86	85.99	91.05	95.22	75.45	68.20	67.12	69.86	73.70
Financial sector (% GDP)	60.58	68.05	70.49	70.31	74.00	70.32	78.29	77.73	85.78	94.59	99.63
Government (% GDP)	48.45	43.96	46.82	45.40	43.74	55.04	55.39	54.58	54.76	55.18	51.75
Household (% disposable income)	5.08	7.49	7.99	8.30	12.89	15.94	13.66	14.07	15.83	19.44	23.69
NET BORROWING/LENDING											
Total economy	-3.34	-3.81	-5.08	-5.38	-2.35	-2.15	-1.73	-5.04	-1.91	-3.09	-5.11
Non financial corporate sector (% GDP)	-5.63	-6.72	-7.84	-7.15	-3.89	-1.53	1.31	-0.10	1.01	-0.54	-4.38
Financial sector (% GDP)	1.09	1.07	0.02	0.53	0.48	0.98	0.41	0.13	0.27	-0.46	1.49
Government (% GDP)	-4.64	-4.29	-2.32	-3.03	-5.26	-4.98	-6.19	-5.40	-4.08	-3.63	-1.83
Household (% disposable income)	5.56	5.85	4.71	3.99	5.97	3.04	2.61	0.20	0.70	1.36	-0.54
MAIN ECONOMIC INDICATORS											
GDP growth	6.98	4.92	4.44	4.47	1.28	1.46	3.94	5.21	3.58	6.17	6.83
Output gap	0.89	1.21	1.90	2.37	-0.29	-2.24	-1.90	-0.79	-1.76	-0.79	0.73
Short-term interest rate	23.11	19.91	14.68	18.88	15.72	8.77	5.69	6.24	5.20	4.20	4.77
Long-term interest rate	n.a	n.a	n.a	11.79	10.68	7.36	5.78	6.90	5.22	5.23	5.48
Unemployment rate	11.25	10.57	13.98	16.09	18.24	19.93	19.64	18.97	17.75	13.84	9.60
Current accounts (%GDP)	-4.99	-4.77	-2.97	-3.80	-5.16	-4.19	-5.50	-5.08	-3.46	-3.35	-2.15
Cyclically adjusted government balance (% GDP)	-3.68	-4.03	-7.49	-6.05	-3.13	-2.81	-2.51	-5.25	-2.34	-3.75	-6.12
CPI Inflation	14.91	11.60	7.15	9.90	5.41	1.91	0.68	3.38	2.18	1.31	2.44
Unit labour cost index (2005=100)	82.59	87.95	85.37	94.04	106.20	101.51	90.21	89.42	100.00	102.23	105.67
House price (growth rate)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Asset price (growth rate)	27.80	-7.86	3.77	22.94	-24.26	0.41	18.00	41.42	22.55	46.00	36.85
Exchange rate (change)	-17.58	-6.48	-11.80	-8.81	5.99	0.36	4.95	6.97	12.49	4.18	12.55

Table 2. Episodes of deleveraging: Behaviour of the main macroeconomic variables (continued)

THE SLOVAK REPUBLIC	t-5	t-4	t-3	t-2	t-1	t=2001	t+1	t+2	t+3	t+4	t+5
NON CONSOLIDATED DEBT											
Total economy	283.39	291.24	289.76	307.12	304.73	321.14	315.05	313.77	317.88	321.47	297.75
Non financial corporate sector (% GDP)	127.13	140.72	138.15	134.32	116.49	116.92	109.65	106.83	100.03	95.73	94.54
Financial sector (% GDP)	113.17	105.99	102.19	108.50	115.50	130.71	136.48	139.71	148.63	160.51	133.89
Government (% GDP)	37.65	39.02	41.16	53.50	57.57	57.07	50.23	48.24	47.61	39.20	34.11
Household (% disposable income)	5.38	5.53	6.64	8.97	12.70	13.31	16.33	17.93	17.47	23.00	30.12
NET BORROWING/LENDING											
Total economy	-10.05	-9.57	-9.59	-4.15	-2.79	-7.18	-9.50	-6.69	-6.49	-8.95	-7.86
Non financial corporate sector (% GDP)	-8.24	-9.08	-7.85	0.62	8.01	-1.97	-2.10	-3.55	-3.00	-5.68	-3.23
Financial sector (% GDP)	-1.11	0.49	0.19	0.57	0.74	1.15	1.86	0.84	0.24	1.03	0.61
Government (% GDP)	-9.91	-6.31	-5.33	-7.42	-12.27	-6.51	-8.22	-2.78	-2.36	-2.81	-3.17
Household (% disposable income)	8.96	4.97	3.30	2.31	0.96	0.22	-0.92	-1.09	-1.61	-1.44	-1.77
MAIN ECONOMIC INDICATORS											
GDP growth	6.94	4.44	4.36	0.04	1.37	3.48	4.58	4.78	5.06	6.66	8.35
Output gap	1.42	2.13	2.73	-0.83	-3.36	-3.31	-2.93	-2.76	-2.95	-1.76	1.01
Short-term interest rate	11.97	22.38	21.13	15.69	8.58	7.77	7.77	6.18	4.68	2.93	4.32
Long-term interest rate	9.67	9.37	21.73	16.24	9.80	8.04	6.94	4.99	5.03	3.52	4.41
Unemployment rate	11.33	11.89	12.62	16.38	18.76	19.30	18.66	17.54	18.21	16.24	13.36
Current accounts (%GDP)	n.a.	-7.18	-6.40	-7.17	-10.85	-5.28	-7.09	-1.89	-1.44	-2.25	-3.44
Cyclically adjusted government balance (% GDP)	-9.26	-8.54	-8.86	-4.79	-3.45	-8.27	-7.87	-5.93	-7.82	-8.49	-7.85
CPI Inflation	5.78	6.14	6.67	10.57	12.04	7.33	3.13	8.55	7.55	2.71	4.48
Unit labour cost index (2005=100)	66.60	70.22	70.74	69.73	76.88	77.86	78.94	89.06	97.57	100.00	105.38
House price (growth rate)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Asset price (growth rate)	11.19	-6.26	-35.08	-29.78	-1.05	24.34	13.62	40.82	29.79	104.92	-7.60
Exchange rate (change)	-2.98	-8.80	-4.60	-14.69	-10.37	-4.68	7.02	23.08	13.97	3.88	4.70

Table 2. Episodes of deleveraging: Behaviour of the main macroeconomic variables (continued)

HUNGARY	t-5	t-4	t-3	t-2	t-1	t=2000	t+1	t+2	t+3	t+4	t+5
NON CONSOLIDATED DEBT											
Total economy	329.40	298.99	276.50	274.13	284.85	293.68	277.13	269.90	294.22	305.42	340.63
Non financial corporate sector (% GDP)	73.61	76.77	77.94	79.18	88.22	104.52	100.40	96.63	105.18	104.33	119.56
Financial sector (% GDP)	154.48	135.15	121.89	119.09	118.83	115.90	104.80	96.42	104.70	109.81	123.20
Government (% GDP)	91.96	79.19	70.24	68.71	70.25	64.56	61.66	62.71	64.96	68.82	71.73
Household (% disposable income)	9.35	7.89	7.46	7.15	7.80	9.22	10.98	14.45	19.83	23.01	26.52
NET BORROWING/LENDING											
Total economy	-2.85	-3.18	-3.72	-6.23	-7.90	-7.56	-5.20	-6.48	-8.28	-9.35	-7.47
Non financial corporate sector (% GDP)	-3.50	-6.34	-5.41	-7.09	-5.82	-7.36	-3.72	0.93	-1.27	-3.54	-2.00
Financial sector (% GDP)	1.92	1.26	1.77	2.70	0.01	0.58	0.49	0.53	1.15	0.67	0.46
Government (% GDP)	-8.71	-4.43	-5.58	-7.54	-5.20	-3.08	-4.10	-8.93	-7.21	-6.46	-7.92
Household (% disposable income)	7.63	6.48	5.78	5.92	3.96	2.58	2.08	1.07	-0.72	0.27	2.04
MAIN ECONOMIC INDICATORS											
GDP growth	1.49	0.16	3.13	4.07	3.20	4.23	3.71	4.51	3.85	4.80	3.96
Output gap	-0.79	-2.57	-1.98	-1.14	-1.54	-1.01	-0.80	0.28	0.97	2.61	3.74
Short-term interest rate	32.04	23.96	20.13	17.99	14.65	11.03	10.80	8.91	8.22	11.30	7.00
Long-term interest rate	n.a.	n.a.	n.a.	n.a.	n.a.	8.55	7.95	7.09	6.77	8.29	6.60
Unemployment rate	10.43	10.11	8.91	7.92	7.05	6.47	5.77	5.87	5.93	6.16	7.31
Current accounts (%GDP)	n.a.	-3.52	-5.15	-7.41	-4.80	-2.60	-3.80	-9.08	-7.69	-7.54	-9.55
Cyclically adjusted government balance (% GDP)	-3.30	-3.84	-4.32	-7.02	-7.77	-8.64	-6.05	-6.91	-7.98	-8.64	-7.45
CPI Inflation	28.31	23.47	18.31	14.15	10.00	9.80	9.12	5.27	4.66	6.74	3.56
Unit labour cost index (2005=100)	66.85	67.52	71.68	72.13	74.17	75.14	81.33	89.74	91.87	98.03	100.00
House price (growth rate)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Asset price (growth rate)	-13.60	109.39	119.22	7.99	-4.79	30.15	-21.09	12.53	8.10	39.82	61.84

Table 3. Episodes of deleveraging: The contribution of inflation and growth

Country	Episodes	Total debt reduction (percentage points)	Mechanical contribution of		Debt at the peak
			Growth	Inflation	% of GDP
DEU	2005-07	-10.06	-43.46	-11.47	633.46
ESP	1993-96	-1.17	-28.51	-44.15	399.40
FIN	1994-97	-79.20	-50.68	-23.64	447.60
HUN	2000-02	-23.78	-22.03	-47.29	293.68
ISR	2005-08	-40.78	-64.86	-16.50	474.59
JPN	1989-92	-24.67	-77.55	-51.10	858.51
MEX	2002-05	-14.64	-9.68	-24.36	128.53
NOR	1999-01	-17.83	-21.45	-60.39	433.46
POL	2002-05	-13.45	-27.07	-14.47	238.65
SVK	2001-04	-3.26	-46.67	-21.37	321.14
SWE	2001-04	-33.33	-42.57	-42.24	578.63
USA	1972-74	-5.93	-14.80	-39.89	309.78

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