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OF FISCAL POLICY? EXPERIENCES
FROM SWEDEN**

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ABSTRACT

A Role Model for the Conduct of Fiscal Policy? Experiences from Sweden*

Sweden was hit by a severe macroeconomic crisis in the early 1990s. GDP fell for three consecutive years in 1991-1993, unemployment increased by 9 percentage points, banks had to be nationalized, and public budget deficits exceeded 10 percent of GDP. The recovery was however quick. GDP growth was around four percent in 1994-1995, and budget deficits had been eliminated by 1998. Growth remained high in the subsequent decade, and the government debt ratio was reduced by almost 50 percent of GDP.

This paper describes and analyzes the Swedish crisis and the policy measures implemented in response to the crisis. Policy measures include abandoning the fixed exchange rate, fiscal austerity, a new stricter fiscal framework, and several structural reforms in the 1990s. These policies were appropriate for handling the Swedish crisis, but the Swedish experiences have limited applicability for the current debt crisis, in particular because currency depreciation in combination with strong growth on export markets was a key ingredient in the Swedish recovery. Implementing fiscal austerity would have been more complicated absent this export-led growth. Moreover, the new fiscal framework has most likely contributed to strengthening public finances, but I demonstrate that budget surpluses and high GDP growth only explain around a third of the reduction in the public debt ratio after 1997.

JEL Classification: E02, E32, E62, E65 and G01

Keywords: banking crisis, fiscal consolidation, fiscal rules and macroeconomic crisis

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1 Introduction

The Swedish economy entered a severe macroeconomic and financial crisis in the early 1990s. In several dimensions, the build up and early phases of the Swedish crisis resemble the developments preceding the current European crisis. In 1985-1990, there was rapid credit expansion, quickly rising house prices combined with high real-estate investment, and current account deficits. Growth was high, there was little unemployment, the public debt-to-GDP ratio was low and falling, and monetary policy was constrained by a fixed exchange rate.

In 1990, it was evident that these developments were not sustainable. The fixed exchange rate in combination with high wage and price inflation had eroded competitiveness. External factors became less favorable when the United States and many European economies entered a recession, and when German monetary policy was tightened following the reunification. A Swedish tax reform in 1990-1991 further raised the effective real interest rate faced by households. The business-cycle peaked in late 1989 or early 1990. GDP then fell for three consecutive years, 1991-1993. Failing banks had to be nationalized, unemployment increased from 2 percent in 1990 to 11 percent in 1993, and government gross debt increased by more than 30 percentage points of GDP in these three years. The fixed exchange rate was abandoned in late 1992, resulting in a sharp currency depreciation.

The important policies implemented to address the immediate crisis after the currency was allowed to float consisted of a general guarantee extended to the depositors and creditors of the banks and mortgage institutions, rapid recapitalization of the banking system, relatively tight monetary policy to build credibility for a newly announced inflation target, and efforts to consolidate fiscal policy. These policies turned out successful. The banking system was basically reconstructed and recapitalized by mid 1993. GDP growth resumed quickly and was close to 4 percent already in 1994. The public budget deficit (general government net borrowing) peaked at 13 percent of GDP in 1993 but had been turned to a surplus in 1998. And inflation expectations started falling down towards the inflation target in 1995.

In addition to the policies implemented to address the immediate crisis, a series of structural reforms were implemented in the 1990s to improve the frameworks surrounding monetary and fiscal policy, improve the design of social insurance schemes, and strengthen competition on product markets. Growth remained high in the decade after Sweden had recovered from the crisis, and in particular public finances has strengthened further. For example, public debt fell by more than 50 percentage points relative to GDP from its peak in 1996 to 2011.

The ambition with this paper is to give an overview of these policies and reforms, and to analyze how they contributed to the Swedish recovery. I focus in particular on aspects of the fiscal consolidation and reforms of the fiscal framework that may be of relevance for the current European crisis.

My main message is that many economies today face substantially deeper problems than the Swedish economy did in the early 1990s. The Swedish recovery was facilitated by the large currency depreciation in combination with strong growth on export markets.

Without these developments, the general guarantee extended to banks could have become a much larger burden on public finances (as a similar guarantee did in Ireland recently). Moreover, attempts to consolidate public finances in the early 1990s were not successful in reducing the growing budget deficit. The successful and important consolidation was implemented in 1995 when growth was already high. There are clear indications that this consolidation was contractionary. But the consolidation was still politically and economically acceptable, most likely because the economy had started recovering.

During the ongoing crisis, most economies have not benefitted from substantial currency depreciation or strong external demand. Thus, while fiscal and monetary austerity was appropriate for Sweden in the 1990s, it is not clear that such policy choices would be successful today. Other factors contributing to the deeper problems in many economies today are the initial public debt levels and demographic challenges. While budget deficits were large in the early 1990s and the debt rapidly increasing, the net government debt ratio was never large. It peaked at 27 percent of GDP in 1996, while many countries today have debt ratios around 100 percent of GDP. Many Southern European countries today also face severe demographic challenges with rapidly aging populations, and in some cases also falling total populations. In combination with pension and health care systems that are not well-designed to handle the demographic change, these anticipated developments aggravate market perceptions of fiscal sustainability already today.

I also examine how the fiscal framework and growth-stimulating structural reforms contributed to the continued reduction of the Swedish debt ratio after the economy had recovered from the crisis. The analysis indicates that the direct effect from sound fiscal policy and high growth on the debt reduction has been modest. Budget surpluses account for less than a third of the 50 percentage point debt reduction in 1997-2011, and growth had almost no direct impact on debt. The limited role of budget surpluses is consistent with compliance with the surplus target in the fiscal framework, stating that the surplus should average one percent of GDP. For the 15-year period 1997-2011, budget surpluses should therefore reduce the debt ratio by approximately 15 percentage points. Growth is only helpful for reducing the debt ratio if there is an outstanding debt to grow away from. Because Swedish net public debt has been close to zero on average in this time period, the high Swedish GDP growth rate has not had a direct impact on the debt ratio. It is however possible that both the fiscal framework and high GDP growth contributed indirectly to the debt reduction. Absent a strong fiscal framework, the rapid debt reduction might have triggered more expansionary fiscal policies, and high growth may have been an important factor behind the increased asset values.

The remainder of the paper is structured as follows. Section 2 provides the background to the Swedish crisis in the early 1990s. This includes the expansion of the welfare state and active use of Keynesian fiscal policies in the 1970s, deregulation and overheating in the 1980s, and eventually the banking and currency crisis in the early 1990s. Section 3 describes and analyzes both the immediate management of the crisis and the structural reforms implemented during and after the crisis. This includes a description of immediate crisis management and a reformed fiscal framework, as well as an analysis of factors contributing to the development of public debt ratios in different countries 1997-2011. Section 4 briefly discusses the long-run fiscal sustainability problems that many countries face today, and which the Swedish economy did not face to the same extent in its crisis

two decades ago. Section 5 concludes by highlighting insights from the Swedish crisis management that are (or are not) useful for managing the ongoing crisis.

2 Background: 1970-1992

The macroeconomic development in the 1970s was disappointing in most western economies, but maybe more so in Sweden than in other comparable countries. While the unemployment rate remained low throughout the decade, Sweden stood out with unusually problematic outcomes for growth and inflation, and to some extent also public debt.¹ These outcomes coincided with, and followed, a number of economic and political reforms and developments often referred to as the formation of the Swedish model. Prominent characteristics of these developments were a rapid expansion of the welfare state, new legislation that strengthened labor unions, and an active use of Keynesian countercyclical fiscal policy.²

In the mid 1960s, government consumption and investment amounted to 24 percent of Swedish GDP, and government expenditure excluding interest payments amounted to 33 percent of GDP. These levels were just slightly higher than in other OECD countries. While the public sector expanded rapidly in many countries in the 1970s, it did so more dramatically in Sweden. Figures 1 and 2 show that government consumption and investment had increased to 34 percent of GDP in 1980, and that primary expenditure had increased to 55 percent of GDP. No other country was close to these levels.³

[Figures 1-2]

Lindbeck (1997) lists a number of possible explanations for this extremely rapid expansion of the government sector, including a constitutional reform abolishing the first chamber and shortening the election period for the remaining chamber to three years, and a budget process that allowed detailed spending decisions to be taken before funding was cleared. He argues, however, that a more plausible explanation is that politicians actually wanted to expand the welfare state rapidly and that they did not understand the costs associated with such expansion.

Sweden moreover responded rapidly to the first energy crisis in 1973 by initiating Keynesian expansionary policies. The two blocks in parliament had equal voting power after the election in 1973. The governing social democrats argued for temporarily increased transfer payments while the right-wing parties proposed temporary or permanent tax cuts. In the end, transfer payments were raised and the value added tax was reduced for parts of 1974.

¹Moreover, the low unemployment rate is somewhat misleading since an increasing fraction of the labor force was covered by labor market programs and sheltered employment from the mid 1970s.

²Lindbeck (1997) accounts for the development of the Swedish model from the mid 1960s and onwards. The description of macroeconomic policies for this time period also builds on Jonung (1997) and various issues of OECD's Economic Surveys of Sweden.

³It should be noted, however, that most transfer payments are subject to income taxation in Sweden. One may therefore argue that comparisons including transfer payments exaggerate the magnitude of the Swedish welfare state.

OECD (1974) saw few risks with these policies and argued that permanent tax cuts might also be motivated as the growth rate of public expenditure was projected to fall in the coming years and because lower taxes might help reduce wage claims.

But the combination of the underfunded expansion of the welfare state, intentional or not, and the active use of expansionary fiscal policy to stimulate the economy after OPEC I had put the economy on an untenable path. Inflation had increased to around 10 percent annually in the mid 1970s. Rapid wage increases in combination with slow productivity growth and a fixed exchange rate implied that competitiveness started falling; relative unit labor costs in the manufacturing sector increased by more than 20 percent between 1974 and 1976 (see Figure 3). To restore competitiveness, the exchange rate was devalued four times between 1976 and 1981. The central government budget also started displaying large deficits, resulting in a debt-to-GDP ratio that increased by more than 40 percentage points between 1975 and 1983. And the average annual growth rate of real GDP was 1.9 percent in Sweden relative to 3.1 on average in the OECD countries.⁴

[Figure 3]

It is noteworthy that the OECD in its country reports initially praised the expansionary Swedish fiscal policies and still in 1976 concluded that: "The Swedish experience provides an example of what can be achieved by a combination of flexible demand management and selective policies – sometimes referred to as 'fine-tuning' – during serious international recessions even in a country heavily dependent on foreign trade. While priorities, institutions and attitudes differ, it would seem that aspects of Swedish policy-making should be of interest to other countries." (OECD 1976, p. 38). A warning to the reader of this paper is therefore that what may look as an example of successful economic policy in the short run may be seen as a flagrant failure in the long run.

After winning the 1982 election, the entering social democratic government devalued the krona by an additional 16 percent. This time the intention was not to restore competitiveness, but to kick-start the economy with an export-lead stimulus.⁵ To restrain household demand and further inflationary pressure, the devaluation was combined with an increase in the value added tax and temporary price controls. But fiscal policy was also expansionary in some areas. New resources were allocated to public investment, labor market programs, and higher child benefits. The budget deficit improved somewhat but was still large (see Figure 4).

[Figure 4]

The two devaluations in 1981 and 1982 (10 and 16 percent, respectively) together with an unanticipated upswing in the world economy contributed to rapid GDP growth from

⁴Only Switzerland had a lower growth rate than Sweden in this time period. The other countries behind this weighted average are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Italy, Japan, Netherlands, Norway, New Zealand, Portugal, Spain, the United Kingdom, the United States, and West Germany.

⁵The devaluation and the plan for economic policies to accompany it was internally referred to as the Big Bang, and the plan was to devalue by 20 percent. After fierce criticism at a last-minute meeting with representatives from other Nordic countries, a slightly smaller devaluation was chosen (Feldt 1991).

1984. At the end of the decade, the public budget balance had also improved substantially. According to Feldt (1991), it was however understood at the ministry of finance that the improvement in the budget was mostly cyclical; household consumption increased faster than GDP and resulted in high revenue from consumption taxes, firm profits were unusually high and generated large tax revenue, and taxation of household income increased because the tax system was not fully indexed.⁶ In contrast to this claim, standard measures of the fiscal stance indicate that the improvement in general government net lending by 7 percent of GDP between 1985 and 1987 was mostly structural.⁷ Irrespective of which of these positions is correct, it is evident that the expansion in economic activity in the latter half of the 1980s was unsustainable and that a considerably more contractionary fiscal policy had been motivated.

The need for contractionary fiscal policy was partly motivated by a number of structural reforms. Most importantly, credit markets were deregulated in the mid 1980s, in particular in 1983-1985. The reforms included removal of caps on lending rates and lending quantities.⁸ Markets for international transactions were fully deregulated in 1989. In response to the deregulation, the Riksbank raised liquidity requirements for banks, but monetary policy was – and had to be – mostly dedicated to maintaining the fixed exchange rate.

The 1982 devaluation and the subsequent deregulation of credit and foreign-exchange markets resulted in a credit and investment boom, which was an important aspect of the subsequent crisis. House prices, housing investment, and household liabilities increased rapidly in the latter half of the 1980s. But the development for these variables in 1985-1989 looks relatively undramatic in comparison to the buildup of the recent financial crisis (see Figures 5-7). In contrast to the recent crisis, the Swedish problems were more related to the commercial real estate market. As indicated in Figure 5, the price of commercial buildings rose much more quickly than for one-family houses. Liabilities of firms, both financial and non-financial firms also increased substantially in this time period, and it was in the commercial real-estate market that the first problems erupted in 1990.

⁶Kjell-Olof Feldt was the minister for finance between 1982 and 1990.

⁷Cyclically adjusted net lending increased by 5.7 percent of GDP between 1985 and 1987 according to OECD Economic Outlook December 2011. Several empirical studies using increases in the cyclical balance as a measure of fiscal consolidations therefore classify 1986 and 1987 as years of large consolidation in Sweden. For example, OECD (2007) and Guichard et al. (2007) identify consolidations in all years 1981-1987 and list this as one of the largest consolidation episodes in OECD countries. Studies using the Blanchard (1990) approach to judge the fiscal stance based on the development of unemployment (instead of the output gap) typically end up with similar assessments of fiscal policy in the 1980s. For example, Alesina and Perotti (1995) classify 1983, 1984, and 1987 as years of very tight fiscal policy in Sweden. Ardagna (2007) classify the same years and 1986 as large fiscal consolidations.

OECD (1994) however note that a number of specific factors – basically the same as reported by Feldt – in the late 1980s and early 1990s were missed by standard indicators of the fiscal stance. Along a similar line, Bénétrix and Lane (2011) find evidence that traditional adjustments of fiscal variables miss much of the cyclicalities when credit growth is high. Sweden in the late 1980s and Ireland and Spain in the mid 2000s may be good examples of such developments. In these episodes a fiscal crisis was preceded by rapid growth in GDP, house prices and construction while public debt ratios were low and shrinking. Finally, Devries et al. (2011) classify fiscal consolidations based on explicit policy intentions. According to their action-based approach, 1984 was the only year in the 1980s with a consolidation in Sweden.

⁸See Drees and Pazarbasioglu (1995) and Englund (1999) for more detailed discussions of the deregulation, the subsequent credit expansion, and the resulting real-estate and banking crisis. Other useful references are Wohlin (1998) and Jonung et al. (2006).

[Figures 5-7]

Since monetary policy was tied up by the fixed exchange rate, a tighter fiscal policy would have been motivated to dampen the credit and investment expansion and the strong demand pressure. Feldt (1991) argues that it was also well understood in the ministry of finance that the economy was overheated. Attempts to dampen wage and price pressures with income policies had not been successful. Relative unit labor costs therefore increased quickly in the late 1980s (see Figure 3), and the economy was now close to the peak of the business cycle.⁹

The developments and policy choices in the mid and late 1980s had brought the Swedish economy onto an unsustainable economic path with a fixed exchange rate but considerably higher wage and price inflation than other countries, and in particular than in Germany which dominated the currency regime. When the government insisted on implementing further price and wage controls rather than tightening policy, Feldt resigned as minister of finance in early 1990. For outsiders, this was maybe the first clear indication of the approaching economic crisis. The price and wage controls were abandoned already in April. Instead, the value added tax was raised repeatedly during the year. In September that year Nyckeln, a finance company with exposure to the real-estate market, had a liquidity crisis and went bankrupt. This was the first of a number of finance companies going bankrupt. Following large capital outflows, the Riksbank had to raise its policy rate from 12 to 17 percent in October. The government also announced further measures to substantially reduce public expenditures, and to shift its priorities from "full employment" to fighting inflation. These measures would however soon turn out to be insufficient for preventing a further deterioration of public finances, falling GDP, rising unemployment, and eventually a currency crisis.

A number of events around 1990 contributed to the timing of the crisis. First, there was a downturn in the world economy, with the exception of Germany. For example, U.S. GDP growth fell from 3.6 percent in 1989 to 1.9 percent in 1990 and negative in 1991. This coincided with an increase in European interest rates as a result of tight monetary policy in Germany following the 1990 reunification. The German three-month interest rate increased by more than 4 percentage points from early 1989 to late 1990.

Second, the Swedish fixed-exchange rate gradually lost credibility. This was largely a consequence of the high wage and price inflation in the late 1980s and the increasing problems in the Swedish real-estate and banking sectors. Speculation against the Swedish krona intensified after a devaluation in Finland in November 1991. Third, a tax reform in 1990-1991 reduced the tax rate on capital income from 50 percent to 30 percent. This also implied a corresponding reduction in tax deductions on mortgages, which in turn implied a further increase in the effective real interest rate faced by households.

The higher international interest rates, contractionary monetary policy to defend the exchange rate, and lower tax deductions raised the effective real interest rate faced by households from minus 2 percent on average in 1988-1990 to almost 4 percent in 1991-1993.¹⁰

⁹According to Bergman (2011), the business cycle peaked in late 1989 or early 1990.

¹⁰I calculate the real interest rate as $(1 - \tau)i - \pi$ where $\tau = 50\%$ for the former time period and 30% for the latter period, i is the one-year nominal rate (treasure bills), and π is ex post CPI inflation.

Households responded to the higher interest rates by raising savings. The net saving ratio increased from 2.8 percent in the early period to 10 percent in 1991-1993. Lower household demand put further downward pressure on the economy.

Fourth, public finances rapidly deteriorated in 1991 and 1992. This was partly a result of the lower household consumption, since the value added tax was an important source of tax revenue. More importantly expenditure related to unemployment and the banking sector had started rising. The unemployment rate increased from 2.1 percent in 1990 to 6.6 percent in 1992 and added to expenditure as both replacement rates in the unemployment insurance system and ambitions for active labor market policies were high. The recession, and in particular problems on the commercial real-estate market with failing finance companies had generated substantial losses in the banking sector. In 1991, it was clear that at least two of the six major banks were in need of capital injections. The government was the major owner of one of these banks, and that bank was fully nationalized in the summer of 1992. Another bank went bankrupt and was nationalized in September 1992. In the end of that month, the center-right government (in office since 1991) issued a general guarantee to the depositors and creditors of the banks and mortgage institutions.

The culmination of the Swedish banking crisis coincided with the European currency crisis. When several other European countries devalued their currencies or abandoned the fixed exchange-rate regime in September 1992, the Swedish government and Riksbank still tried to defend the peg. The policy rate was raised to 500 percent for two days. In just a few weeks, the center-right wing government and the Social Democrats opposition party presented two fiscal consolidation packages. While the first package was a rather traditional attempt to consolidate through higher revenue and lower expenditure, the second package attempted to achieve an internal devaluation by raising the value added tax and reducing holidays and social security contributions for employers.¹¹ Although the policy rate could be reduced to just above 10 percent in October and early November, it was soon evident that the consolidation efforts had not restored market confidence. Facing new currency outflows in mid November, the fixed exchange-rate regime was abandoned.

3 Reform and recovery: 1993-2011

When abandoning the fixed exchange-rate regime, the Swedish economy faced a number of major challenges. The country had a history of repeated devaluations and failed attempts to bring price and wage inflation down to acceptable levels. There was also a history of uncontrolled increases in government expenditures and resulting budget deficits. In two decades, Sweden had moved from a top position in international GDP per capita to a position below the OECD average. There was now an ongoing banking crisis, falling GDP, large budget deficits, and rapidly increasing government debt.

It was clear that major reforms were necessary, and the collapse of the fixed-exchange rate regime indeed came to mark the turning point for the Swedish economy. A government commission, lead by professor Assar Lindbeck, was appointed in December 1992 to analyze

¹¹An increase in the retirement age from 65 to 66 years was also part of the packages, but this was never implemented.

the crisis and propose measures to solve it. The report, including 113 policy proposals, was presented already in March 1993.¹² Lindbeck et al. (1994) identified a number of fundamental problems in Swedish institutions. Most importantly, they pointed to a short election period after the constitutional reform in 1970, and a weak budget process.¹³ Many of the Lindbeck commission's proposals have now been implemented, and one may speculate that reforms in the last two decades have been more extensive than envisioned by the commission. It should be noted that there was already widespread discussion about fundamental reforms and that many of the proposals made by the commission were not new. The main contribution of the commission was rather to present a comprehensive analysis and a broad set of policy proposals at a time when there was a large consensus about the need for reforms.

The important reforms of economic institutions and policy systems decided after the crisis were:¹⁴

- **Tax reform:** As argued previously, the tax reform in 1990-1991 contributed to the timing of the crisis by raising the real interest rate net of taxes faced by households. But the reform was more comprehensive; it broadened tax bases, in particular for the value added tax, reduced top marginal tax rates on labor income from more than 70 percent to around 50 percent, and made taxation of capital income proportional at 30 percent.
- **EU membership:** The government announced its plans to apply for membership in the European Union in 1990. Although the breakdown of the Soviet Union was the important factor behind these plans, the announcement was also a reaction to the mounting economic problems, intended to boost confidence for the Swedish economy (Carlsson, 2003).¹⁵ It is also likely that the economic crisis tilted the general opinion in favor of EU membership and contributed to the affirmative outcome of the 1994 referendum. Sweden joined the union in 1995.
- **Election periods:** Parliament decided in 1994 to change the constitution and prolong the election period to four years.
- **Monetary policy:** The central bank announced an *inflation target* in January 1993, to apply from 1995 and on. The government approved of the inflation target, and the Riksbank was then in practice a relatively independent inflation-targeting central bank, albeit initially with little credibility for its target. New *legislation* in 1999 stated price stability as the central bank's main objective, and strengthened the bank's formal independence. The Riksbank's external communication has developed gradually over these years. Policy documents have been published since 1999 explaining that monetary policy is *flexible*, i.e. takes business-cycle developments into consideration, although the legislation states price stabilization as the

¹²The English translation (Lindbeck et al., 1994) was published one year later.

¹³Von Hagen (1992) found that the design of the budget process had important and systematic impact on the budget outcome in countries in the European Community. Molander (1992) showed that the Swedish budget process was weak in comparison to the European countries, ranked only better than the Italian process.

¹⁴There are a number of texts surveying and analyzing the Swedish reforms after the crisis, for example Ministry of Finance (2001), EEAG (2007), Calmfors (2012a), and EEAG (2012).

¹⁵Ingvar Carlsson was Swedish prime minister 1986-1991 and 1994-1996.

primary objective. The Riksbank now also publishes attributed minutes of the executive boards monetary-policy meetings, and a forecast of its own interest-rate path. Two external evaluations of the Riksbank's inflation targeting regime (Giavazzi and Mishkin, 2006, and Goodhart and Rochet, 2011) have mostly applauded the reforms of the monetary framework and the implementation of actual policy. But the Riksbank has also been criticized for missing the inflation target. The average inflation rate has been lower than the target and some argue that a more expansionary stance would have been motivated in particular after the financial crisis.¹⁶

- **Fiscal policy:** A *new top-down budget process* was introduced in 1996. The budget process was supported by *expenditure ceilings* set three years ahead for government nominal expenditure. A *surplus target* for general government net lending was introduced in 1997 and phased in to apply fully from 2001. A *balanced-budget requirement for local governments* was introduced in 2000. A *fiscal-policy council* was established in 2007 with the remit to monitor fiscal policy, to evaluate its fulfillment of policy objectives, and to contribute to more transparency around economic policy. The fiscal framework and the motivation behind it is discussed in more detail below.
- **Pension system:** Cross-party discussions about reforms of the pension system were initiated in 1991, an agreement reached in 1994 and decided in 1998 (Ministry of Health and Social Affairs, 2009). The reform made the system more robust to population aging, added flexibility about the pension age, and strengthened individual incentives to postpone retirement. The increased robustness was achieved by restricting pension benefits to the resources in the system, i.e. basically by changing from defined benefits to defined contributions. The system therefore implies that pensions will fall relative to incomes as the population ages.
- **Competition, deregulation and privatization:** There were a number of reforms in the early 1990s to adapt to EU regulations. For example, a stricter competition legislation was introduced in 1992. To promote supply and enhance efficiency, a number of sectors were deregulated, including telecommunications, transportation, postal services, and electricity generation.¹⁷ Several large state-owned firms have also been privatized in the last two decades. Moreover, there have been widespread initiatives to stimulate private, but publicly financed, production of welfare services such as schooling, health and elderly care, and labor market training and search programs.¹⁸

In parallel with the formulation and implementation of these reforms, policy makers still struggled with handling the ongoing banking crisis and the immediate effects of the banking and currency crises. Several measures were taken to address the banking crisis and avoid a credit crunch. As already mentioned, a general guarantee to the depositors and creditors of the banks and mortgage institutions (not covering equity) was issued in the fall of 1992. The intention with this guarantee was to raise confidence for the Swedish financial

¹⁶The critique has been particularly intense from some of the members of the bank's executive board. See for example Svensson (2012).

¹⁷The deregulation of these markets had profound effects on the Swedish economy, but according to SOU (2005:4) it is not evident that the net effect was positive in all these markets. On the negative side, markets often came to be dominated by a few producers, and prices often increased after deregulation.

¹⁸See SNS (2011) for an evaluation of these reforms.

sector, and thereby facilitate bank funding on international markets. An explicit strategy followed in managing the crisis was to be transparent and report actual and expected losses immediately rather than deferring them as long as is legally possible (Ingves and Lind, 1996). Bad loans were transferred from the two nationalized banks to separate entities ("bad banks"). The reconstructed nationalized banks were recapitalized in 1992 and 1993, and the government also had to provide equity to the bad banks. The capital injections from the government totalled around SEK 61 billion in 1992 and 1993, i.e. around four percent of annual GDP. The banking crisis was initially handled by the Ministry of Finance together with the Riksbank and the Financial Supervisory Authority, but a separate Bank Support Authority (BSA) was set up in early 1993. Of the remaining four major private banks, three applied for support from the BSA. In the end, however, these banks needed little or no direct support from the BSA. Already in mid 1993, two of those banks had managed to raise sufficient new private equity, and the banking system showed a profit in 1994 (Andersson and Viotti, 1999). In a paper published in early 1996 top officials handling the banking crisis noted that "the Swedish banking crisis is over" (Ingves and Lind, 1996). The general guarantee was removed in mid 1996.

The main problem facing monetary policy was to establish credibility for the new inflation target and more broadly for the management of monetary policy with a floating exchange rate. The nominal exchange rate had depreciated by 20 percent from mid 1992 to the end of 1993, but the impact on inflation was moderate; the inflation rate was well below 3 percent in 1994. But one-year ahead inflation expectations were still above 3 percent for most of 1994 and 1995 (see Figure 8). The spread between Swedish and German interest rates on 10 year government bonds also increased from 1.4 percentage points in early 1994 to more than 4 percentage points in the fall of that year. In an effort to show commitment to the inflation target and to bring down inflation expectations, the Riksbank only reduced the policy rate gradually after the floating of the krona, and it started raising the rate in mid 1994. There was a clear fall in inflation expectations in late 1995, allowing monetary policy to shift to a more expansionary path in early 1996. The average real interest rate, measured as the policy rate minus either actual or expected inflation, was 4.9 percent in 1993-1996, i.e. much higher than during the subsequent IT boom 1997-2000 when it was just 2.4 percent.

[Figure 8]

Efforts to consolidate public finances continued after the floating of the krona. The revenue increases in the two crisis packages presented in September 1992 mostly amounted to not continuing with plans to cut taxes. In particular, the plans to reduce the standard value added tax from 25 to 22 percent and the capital-income tax from 30 to 25 percent were abolished. Further policy decisions were taken in 1993, both expansionary to stimulate the economy (for example a temporary tax deduction for housing repair work) and contractionary to consolidate public finances (for example a reduction of the replacement rate from 90 to 80 percent and the introduction of a five day waiting period in the unemployment insurance system). According to Devries et al. (2011), the total consolidation efforts amounted to 1.8 and 0.8 percent of GDP in 1993 and 1994, respectively, and were concentrated on spending cuts (around 80%) rather than tax increases. Their calculations

however do not include the retraction of previously announced tax cuts.¹⁹

In spite of the efforts to consolidate, central government net borrowing increased from 11 percent of GDP in 1992 to 13 percent in 1993. Figure 9 shows that the deficits in these years were mostly generated by increasing expenditures. Expenditures related to unemployment and labor-market programs increased by 3.1 percent of GDP between 1990 and 1993. There were also expenditures amounting to 2.3 percent of GDP in 1993 and 1.5 percent in 1994 to restore the banking system. OECD (1994) also note that a substantial part of the rising deficit was generated by special cyclical factors not captured by standard methods for cyclical adjustment. For example, private consumption accounted for an unusually large part of output at the peak of the business cycle, but also for an unusually rapid fall during the crisis as a result of the increase in household saving. This generated a boom-bust pattern for revenue from the value-added tax and other indirect taxes, which are large sources of tax revenue. In 1994, however, the first clear indications of an improvement in public finances were seen, and already in 1998 the deficits had been eliminated and debt stabilized.

[Figure 9]

Both the statistical and action-based approaches identify the deficit reduction in 1993-1998 to be mostly a result of fiscal consolidation rather than cyclical improvements. According to OECD Economic Outlook, primary financial saving by the general government increased by 11.8 percent of GDP from 1992 to 1998. Of this, 10.7 percentage points are estimated as a structural improvement. According to the action-based approach (Devries et al., 2011), the consolidation in these six years amounted to 10.6 percent of GDP.

There are a number of interesting aspects of this episode of fiscal consolidation. First, the large and rapid consolidation went hand in hand with an economic recovery. One may therefore ask if this is an example of an episode of expansionary fiscal contraction (Giavazzi and Pagano, 1990). Second, although the deficit was eliminated, public debt (at least gross debt) was still high. In the decade after deficits had been eliminated, a second phase of consolidation resulted in a substantial fall in debt ratios. In that period, Sweden also experienced substantially higher growth than in the average OECD country (see Figure 10). Why and how did Sweden, in contrast to most other OECD countries, manage to reduce public debt in the decade preceding the recent financial crisis? And how important were the structural reforms and the improvements of the monetary and fiscal frameworks for the debt consolidation and the high growth? I will address these questions below.

[Figure 10]

¹⁹A number of recent studies, for example Mertens and Ravn (2011), find that pre-announced but not yet implemented tax changes affect the economy and that these anticipation effects are an important source of business cycle fluctuations. In principle, an investigation of the fiscal stance should therefore account not only for actual tax and spending changes, but also for policy announcements and the credibility of such announcements.

3.1 Eliminating the Deficit, 1993-1998

The efforts to consolidate public finances and restore confidence for the Swedish economy in 1990-1992 never fully addressed the fundamental problems with high price and wage inflation and a tendency for an expenditure-led expansion of the public sector. The inflation rate in 1990 and 1991 exceeded the German rate by approximately 7 percentage points (but started falling in 1992 as a consequence of the recession). The high inflation resulted in a rapid loss of competitiveness and also forced the Riksbank to tighten monetary policy to temporarily compensate for the inflation differential. The attempts to consolidate fiscal policy were modest in relation to the impact of the cyclical developments. Government expenditure relative to GDP therefore increased to unprecedented levels in the early 1990s.

The turning point came when the fixed-exchange rate regime was abandoned in November 1992. The krona rapidly depreciated by 20 percent in nominal terms. Productivity growth was also high, probably because redundant labor resources were laid off during the recession. Relative unit labor costs in the manufacturing sector fell by more than 30 percent in the year after the krona started floating, and both exports and the industry sector started growing in 1993, although total GDP was still falling. As seen in Figure 11 growth in the industry sector exceeded 15 percent in 1994 and remained at unusually high levels throughout year 2000, with a temporary dip only in 1996. There was a similar development for the export volume. Although the industry sector accounted for less than 15 percent of Swedish GDP, it contributed to more than half of the total GDP growth (at basic prices) in 1994, and a third of the growth in 1995. Figure 12 moreover shows that private consumption increased much more slowly than GDP during the initial years of the consolidation, and also through most of the subsequent years of consolidation.

[Figures 11-12]

These observations clearly indicate that the initial recovery was generated by the currency depreciation, possibly in combination with unusually high productivity growth in manufacturing, and that there is no evidence of an expansionary fiscal contraction in the sense identified by Giavazzi and Pagano (1990). The mechanism behind such expansionary contractions is that a large-scale fiscal consolidation in an economy with previously unsustainable public policies restores households' confidence for the economy and raises their perceived permanent income. The expansion is then generated by higher household consumption and investment demand.

Still, demonstrating commitment to fiscal discipline was a major concern for the government. The consolidation was intensified after the election in late 1994 when a social democratic minority government gained power. The consolidation in 1995-1997 amounted to 7 percent of GDP, and half of this was implemented in 1995 following a consolidation program with explicit medium-term targets announced in the months after the election. According to Henriksson (2007, 2012), the frontloading, with most of the consolidation implemented in 1995, was an intentional strategy chosen by the government to demonstrate commitment to the announced consolidation program. The focus was however not primarily on household confidence and potential wealth effects stimulating demand, but more in line with a second mechanism discussed by Alesina and Ardagna (1998), namely

through effects on interest rates. The government was concerned by the high interest rate differential versus Germany, but maybe even more so by the Riksbank's strict monetary stance. Henriksson (2012) argues that under asymmetric information, a government exercising more fiscal discipline than what is motivated in an economy with perfect information could induce a welcome expansion of monetary policy.

There is an ongoing debate about the timing of consolidations in Europe and the United States, and the arguments partly coincide with the reasoning of the Swedish government in the mid 1990s. Alesina and Giavazzi (2012) argue in favor of frontloading, partly based on the interest-rate mechanism. But the DeLong and Summers (2012) and DeLong (2012) point out that the ECB and the Fed cannot expand monetary policy much further, and therefore argue against frontloading. The relevance of these arguments should differ from country to country. As Corsetti (2012) writes, "governments with a full and solid credibility capital should abstain from immediate fiscal tightening, while committing to future deficit reduction". For countries without such credibility capital, such as Sweden in the mid 1990s, frontloading may be more attractive.

It should be noted, however, that the Swedish consolidation was implemented after the banking system had been recapitalized and after currency depreciation had generated high, export-led, GDP growth in 1994 and 1995. In the present European debt crisis, countries that lack this kind of credibility capital face larger problems than Sweden in 1995, because banks still need to be recapitalized, and because growth has not resumed. Austerity may still be necessary, at least absent intensified support from other countries, but should be expected to be more problematic than it was in Sweden. Figure 12 moreover demonstrates that there was a temporary pause in the Swedish recovery in 1996-1997, i.e. in the years following the most restrictive fiscal policy. GDP growth was lower than the OECD average in 1996 and 1997, and the unemployment rate increased to a peak in 1997. These observations indicate that the Swedish consolidation had standard contractionary short-run effects.

3.2 A New Fiscal Framework

The new budget process and fiscal rules were developed in parallel with the consolidation. The elimination of the budget deficit was therefore achieved with little help from the fiscal framework. The new framework may however have been more important during the second phase of the consolidation, the reduction of the public debt from 1997 and on. Before analyzing that phase, I will therefore discuss the new fiscal framework in some detail. The framework now consists of (i) a top-down budget process, (ii) three-year expenditure ceilings, (iii) a surplus target, (iv) a balanced-budget requirement for local governments, and (v) a fiscal-policy council.

The new budget process was introduced in 1996, supported by new legislation from 1997. This new process follows a top-down approach in line with what von Hagen (1992) had identified as best practise.²⁰ The first step in the process is to set a nominal ceiling for government expenditure and to allocate resources under this ceiling to 27 expenditure areas. Expenditure on detailed budget items within an expenditure area are determined

²⁰See von Hagen et al. (2001) and Ljungman (2009) for more recent discussions of budget processes.

in a second step. The centralized top-down budget process is motivated by potential failures in the political process. There is an externality resulting from public spending often being targeted at specific interest groups while tax revenue comes from broader groups. This generates a common-pool problem; interest groups argue for more spending since the funding is shared with all tax payers. A centralized budget process can prevent this common-pool problem from resulting in a deficit bias and unplanned increases in public expenditures. Since total spending is decided in a first step in the process, any proposal for additional expenditures must be met by reductions in some other spending item.

The expenditure ceilings were introduced in 1996. They cover central government nominal expenditure, including the pension system and a budget margin, but excluding interest payments, and are set three years ahead (ceilings for 1997-1999 were set in 1996). The expenditure ceilings are part of the top-down approach in the budget process and intended to further mitigate the common-pool problems discussed above. Another motivation for setting expenditure ceilings several years in advance is to generate a longer planning horizon in the political process. There is otherwise a well-known risk that politicians are mostly concerned by the election cycle and that there may also be time-inconsistency problems.²¹

The surplus target was introduced in 1997 and phased in to apply fully from 2001. According to the target, general government net lending shall average one percent over the business cycle, but it is not specified how the business cycle should be measured. The initial motivation for the target was that it should be a tool for consolidating public finances, and that the chosen level would allow for more flexibility in allowing fiscal policy to vary over the business cycle without violating the Stability and Growth Pact. But the motivation has varied over the years; the Swedish Fiscal Policy Council (2008) lists 16 different motivations that have been stated in budget documents since 1996.²²

A balanced-budget requirement for local governments was introduced in 2000. This requirement is motivated by moral-hazard problems similar to those motivating the European fiscal rules; a local government running into fiscal problems may be bailed out by the central government. Anticipations of such bail-outs would result in less market discipline through high interest rates in highly indebted governments, and could rationalize a debt and deficit bias in local governments.²³

A fiscal-policy council was established in 2007 with the remit to monitor fiscal policy, to evaluate its fulfillment of policy objectives, and to contribute to more transparency around economic policy. The council consists of a small group of independent, mostly academic, economists.²⁴ One motivation for setting up fiscal councils is that they raise the transparency surrounding fiscal policy and its fulfillment of budget rules. Such motives may be particularly important when rules are (i) self-imposed and (ii) vague.

As noted by for example Debrun (2007), budget rules are often formulated by governments

²¹Persson and Tabellini (1999) survey the literature on such (and other) failures in the political process. See Ljungman (2008) for a deeper discussion of expenditure ceilings.

²²See also Ministry of Finance (2010) for a detailed evaluation of the surplus target.

²³See Pisauro (2001) for an overview of the literature on intergovernmental relations and fiscal discipline.

²⁴Calmfors (2012b) describes the council in more detail, while Calmfors and Wren-Lewis (2011) discuss fiscal councils more generally.

and parliaments to apply on their own behavior, and there need not be any formal costs associated with violating the rules. This is indeed the case for the Swedish expenditure ceilings and surplus target. The Swedish budget legislation has recently become stricter and now states that three-year expenditure ceilings and budget targets should be formulated, it does not stipulate punishments for violations of the formulated targets. Moreover, the legislation is not part of the constitution and can therefore be withdrawn with short notice. The effective costs associated with violating the rules in the fiscal framework are instead the bad publicity such violation would generate. By generating transparency around fiscal policy, a fiscal council can contribute to raising such costs. In line with this reasoning, Posen (1995) and Debrun (2007) argue that rules can only be sustained if they reflect deeper social preferences or permanent features of the political system. This appears to have been the case in Sweden. The fiscal rules, in particular the expenditure ceilings and the surplus target, are relatively well known. The framework has broad support from the major political parties and has survived shifts in political power. The budget rules are also often mentioned in the political debate, both by sitting governments and the opposition.

Empirical research has demonstrated that the quality of the budget process and the implementation of fiscal rules and explicit numerical targets are associated with improvements in public finances.²⁵ Interesting in relation to the Swedish framework, surplus targets supported by expenditure ceilings appear to be particularly effective (OECD, 2007). As many have pointed out, the causality from the fiscal framework to budget discipline is not well-identified. It is possible that countries with a larger commitment to fiscal discipline also choose to implement stricter frameworks. It is clear that the reforms of the Swedish fiscal framework in the late 1990s were a result of the new-found determination to eliminate the deficit and reduce public debt. Still, the importance of the Swedish fiscal framework in forming the political agenda in the last decade cannot be denied. My interpretation of the development is that the formulation of the framework indeed reflected a commitment for budget discipline but that the framework has then prolonged the collective memory of the budget crisis and the importance of sustainable fiscal policies. It is also possible that the budget rules in themselves have created a preference in the political system for fulfilling these specific objectives.

Fiscal policy has mostly complied to the rules and intentions specified by the reformed fiscal framework, and the overall assessment of the framework has mostly been positive, both from domestic and foreign observers. The top-down budget process and expenditure ceilings are widely supported and most likely contributed to bringing down public expenditure relative to GDP after the uncontrolled upward trend in the 1970s and 1980s (see Figures 2 and 9). Some problems have however been noted.²⁶ For example, the government has often provided insufficient motivation for their choice of ceilings, budget margins under the ceiling has often been used for unplanned expenditure when budget outcomes were favorable, expenditures have sometimes been reported as tax expenditures, and some expenditures have been shifted inappropriately to years with a less binding ceiling. The expenditure ceilings were also criticized for being too rigid (lacking escape-clauses) during the recent financial crisis.

²⁵For some recent empirical studies and surveys, see Fabrizio and Mody (2006) and European Commission (2010).

²⁶These problems have been noted repeatedly in particular by the Swedish National Audit Office and the Swedish Fiscal Policy Council.

The surplus target is somewhat more controversial. It has a vague formulation because it applies for the average surplus "over the business cycle" and is therefore difficult to evaluate. The vague formulation is however intentional and possibly an important strength that allows for flexible fiscal actions over the business cycle. Fulfillment of a vague target such as this will by necessity be based on judgement, and should be assessed externally.

The motivation for having this target is also unclear, in particular since the initial motivation (to consolidate public finances) has been accomplished. The target is often criticized in the public debate for crowding out public investments (since the target applies to net lending rather than costs), sometimes also for resulting in unmotivated accumulation of public wealth and for transferring resources from current to future generations. Recently the government has also been criticized for saving more than what is motivated by the surplus target, and for choosing policies that minimize the risk of running temporary deficits even if the economy is hit by negative shocks.

It is generally acknowledged that some form of a balanced-budget requirement on local governments is necessary. But the Swedish restriction applies for the annual budget and does not allow for an accumulation of "rainy-day" contingency funds that are used in other countries. Although the central government transferred extra resources to local governments during the recent crisis (but not until in 2010), there is some evidence that local-government activity is mildly procyclical.²⁷ Plans exist for reforming the balanced-budget requirement so that it becomes more flexible.

The fiscal policy council is also generally considered to have strengthened the overall fiscal framework. Arguably, the council's most important contribution has been to raise transparency by stimulating and improving the discussion about fiscal policy, both in the media and in parliament. The council itself has criticized the government for providing too little resources for its work, and the IMF has repeatedly joined in this criticism.²⁸

One might guess that a fiscal council typically would assume the role of a fiscal hawk, trying to stop the government from running too expansionary fiscal policies. Interestingly, those roles have been reversed in Sweden. The fiscal council criticized the government for not stimulating the economy sufficiently in early 2009, for being too afraid to violate the expenditure ceilings in the initial phases of the financial crisis, and for aiming at higher fiscal balances than what is motivated by the surplus target. These observations demonstrate the strong political support for sound fiscal finances. Jonung (1997) has characterized the development of Swedish fiscal policy as the outcome of a learning process, where lessons from the last crisis dominate thinking about policies until there is a new crisis. The lesson from the 1990s crisis was then the importance of tight fiscal policy, which then is manifested by the new fiscal framework. A related interpretation is that the fiscal framework may have dominated the political and public discussion to the extent that it has reinforced political preferences for strong public finances.

²⁷See Assarsson (2011) and Vredin et al. (2012).

²⁸See for example IMF (2012a).

3.3 Reducing the Debt, 1997-2011

Figure 13 shows that both net and gross public debt peaked around 1996. The net debt ratio fell by almost 50 percentage points from the end of 1996 to the end of 2007, while gross debt ratios fell by almost 40 percentage points. Contrary to most other OECD countries, the Swedish debt ratios continued falling during and after the financial crisis in recent years. To understand if and how the new fiscal framework and the structural reforms have contributed to the strong public finances in Sweden, I here try to identify what factors contributed to the different development of public debt in Sweden relative to most other OECD countries.

[Figure 13]

A useful starting point for analyzing this debt reduction is the public budget constraint,

$$D_t = P_t + (1 + i_{t-1}) D_{t-1} + V_t$$

where D denotes net public debt at the end of the period, P denotes the primary deficit, i is the nominal interest rate, and V is a residual that in particular captures valuation changes on the assets and liabilities behind the net debt.²⁹

Relating variables to GDP, we get

$$d_t - d_{t-1} = -p_t + (r_t - g_t) d_{t-1} + v_t \quad (1)$$

where d and p denote the debt-to-GDP ratio and the primary surplus relative to GDP, $r_t = (1 + i_{t-1}) / (1 + \pi_t) - 1$ is the real interest rate if we let π denote the inflation rate measured by the GDP deflator, and g is the growth rate of real GDP. The factors affecting the development of the debt are thus the initial debt, the primary surplus, the levels of interest rates and growth rates, and a residual term. Table 1 and Figure 14 summarize these variables in OECD countries for 1997-2011.³⁰ Note that of the 21 countries listed, only 9 had a higher debt ratio in 2011 than in 1996. Those are Austria, France, Germany, Greece, Ireland, Japan, Portugal, the United Kingdom, and the United States. Norway displays the largest reduction in the debt ratio (or rather increase in wealth ratio). The country has reported large budget surpluses throughout the time period, mostly as a result

²⁹The residual is sometimes referred to as the *stock-flow adjustment* (SFA). Eurostat regularly monitors the SFA for European countries (see for example Eurostat 2012). Their reports are however based on the development of gross rather than net debt. The most important factor contributing to the SFA is then financial transactions, because those transactions affect the gross debt but not the primary deficit or surplus.

³⁰The data is from OECD Economic Outlook December 2011, but in Table 1 and in the baseline analysis below, I use a broader definition of net interest payments than what is standard. I calculate net interest payments as $iD = YPEPG - YPERG$ where YPEPG (YPERG) is property income paid (received) by government. The important difference between this measure and standard measures is that dividends on assets held by the government are included in the interest rate. I then calculate the primary surplus as $P = NLG + iD$ where NLG is OECD's reported government net lending. Using the more narrow standard measure of interest payments affects the allocation between the two first terms on the right-hand side in equation (2). The contribution from total real surpluses ($p - rd$) and the contributions from growth and the residual are therefore not affected by the choice of measure of interest payments.

of revenue from the oil industry. Both Finland and Sweden reduced the debt ratio by more than 50 percentage points over the time period.

[Table 1]

[Figure 14]

From (1) we have

$$d_T - d_0 = \sum_{t=1}^T (-p_t + r_t d_{t-1} - g_t d_{t-1} + v_t). \quad (2)$$

Another way to think about the contribution of different factors is as follows: Let \bar{r} and \bar{g} denote the average real interest rate and real growth rate of GDP in the sample (i.e. across countries and over time). Then calculate \hat{p}_t as the primary surplus that would stabilize the debt ratio at this average interest rate and growth rate in the absence of valuation effects. From (1) we have

$$\hat{p}_t = (\bar{r} - \bar{g}) d_{t-1}. \quad (3)$$

Subtract $\hat{p}_t - (\bar{r} - \bar{g}) d_{t-1} = 0$ for each t on the right-hand side in (2) to get

$$d_T - d_0 = \sum_{t=1}^T [-(p_t - \hat{p}_t) + (r_t - \bar{r}) d_{t-1} - (g_t - \bar{g}) d_{t-1} + v_t]. \quad (4)$$

Table 2 reports the total contribution of each of the four terms in (4) to the change in the debt ratio. The tables highlight two features of the Swedish debt reduction. First, high growth is often mentioned as an explanation for the Swedish debt reduction. It is correct that Swedish growth was clearly higher than average for this time period (see Table 1), but these tables show that the direct effect from growth to the debt ratio has been negligible. The explanation is that net debt has been close to zero on average in Sweden during this time period. Growth is only useful for reducing the debt ratio if net debt is positive, and it is an impediment to accumulation of net wealth relative to GDP. It is however possible that high growth contributed indirectly to the debt reduction by raising returns (dividends and value effects) on publicly held assets.

[Table 2]

Second, primary surpluses have contributed to the reduction in the debt ratio, but they explain only around a third of the reduction.³¹ Primary surpluses have contributed more, in an absolute sense, to debt reduction in Belgium, Canada, Denmark, and Italy even though the debt reduction was smaller in these countries. The large debt reduction in Sweden is instead mostly explained by the residual term, indicating valuation effects in the debt and asset portfolio. The residual term has also been important in Finland and

³¹Primary surpluses explain a larger fraction (32 of 52 percentage points) if we use the narrow measure of interest rates. But the contribution from total real surpluses ($p - rd$) is still only around ten percentage points of the total 52 points reduction in the ratio.

Norway, two countries where public asset holdings are large, just as Sweden. In other countries, the contribution from the residual term has been less important.³²

The financial accounts are useful for understanding the mechanisms behind the Swedish residual term. These accounts contain more detailed information about financial transactions and wealth positions for different sectors in the economy. Table 3 summarizes the wealth position for the public sector at the end of 1996 and 2011 according to the financial accounts. The public sector's debt is concentrated to the central government, while both the central government and the social security system have substantial asset holdings. The central government's asset holdings consist both of equity (mostly unquoted shares in government-owned corporations) and loans.³³ Sweden has a pay-as-you go pension system supported by buffer funds that mitigate the impact from demographic and economic fluctuations. Traditionally, these funds invested mostly in interest-bearing assets, but a reform in 2001 broadened the set of assets that they can invest in. As Table 3 shows, the social security system now has substantial holdings both of equity (mostly quoted shares) and interest-bearing assets. Local governments have small financial positions.

[Table 3]

The Swedish financial accounts confirm that valuation effects explain most of the residuals.³⁴ Figure 15 shows that changes in the government's net holdings of equity and bonds, not explained by transactions in these items, account for most of the residual. The residual stemming from equity holdings, can be attributed both to the central government and to the social security system, while the residual stemming from bond holdings can mostly be attributed to the central government. Figure 16 shows the negative of the residual stemming from equity holdings together with the development of the OMX stock-market index. The strong positive correlation between these series confirms that the residual tends to be negative (i.e. contribute to lower debt) when returns on the stock market are positive. In this sense, high growth in the Swedish economy may have contributed to debt reduction indirectly by raising the returns in the asset portfolios held by the central government and the social security system.

[Figures 15-16]

The development of the Swedish public debt was not particularly affected by the crisis in 2008-2011; the results for Sweden in Table 2 would have been similar if we had only

³²Greece is an exception with a large positive residual term.

³³Because of privatizations, the number of government-owned corporations has decreased over the time period, see e.g. Munkhammar (2007). In early 2012, there were 43 government-owned corporations, and an additional 15 corporations partly owned by the government. The market value of these corporations was assessed to SEK 580 billion (around 17 percent of GDP), including the holdings in the three listed corporations with a value of SEK 105 billion (Government Offices of Sweden, 2012). According to the financial accounts, the central government held equity worth SEK 542 billion at the end of 2011.

³⁴The exception is the residual in 2001. Most of the large residual in that year appears to be explained by a retroactive change in accounting standards (for accruals) in 2009 that has been backtracked to 2001 by Statistics Sweden. This change raised the government's financial claims on the private sector by more than 7 percent of GDP, and thereby reduced reported net government debt.

used data until 2007 rather than 2011. For several other countries the development before and after the crisis was however very different. There were large debt reductions between 1997 and 2007 also in Belgium, Canada, Denmark, Finland, Ireland, New Zealand, and Spain (more than 30 ppt reduction).³⁵ With the exception of Finland, Ireland and Spain, the debt reductions in these countries were accomplished through primary surpluses. In Ireland and Spain, high growth, low real interest rates, and residuals were also important. The low real interest rates in Ireland and Spain are explained by low nominal interest rate differentials in the EU area in 1997-2007 in combination with higher inflation in these countries.

It is also worth noting that low growth has been an obstacle to debt reduction in Italy and Japan. Both these countries had large debt ratios to potentially grow away from, but they both have had unusually low GDP growth rates.

So, how did Sweden ended up with strong public finances prior to and during the recent financial crisis? The analysis here casts some doubt on the importance of the fiscal framework and the growth-stimulating structural reforms for the reduction of the debt ratio since its peak in 1997. Sweden does not stand out with unusually large budget surpluses. Primary surpluses account for less than a third of the Swedish debt reduction, and total budget surpluses account for less than a fifth of the debt reduction. The direct impact from growth on the debt ratio was negligible in Sweden during the period. Most of the debt reduction instead appears to stem from valuation effects in the government's asset portfolio. But this analysis cannot rule out important indirect effects from the fiscal framework and high growth. Absent a strong fiscal framework, the rapid debt reduction might have triggered more expansionary fiscal policies, and high growth may have been an important factor behind the increased asset values.

4 Long-Run Sustainability

In addition to currently having low public debt and deficits, the Swedish economy appears unusually well prepared for the aging of populations. The S2-sustainability indicator reported by the European Commission indicates that current fiscal policy in Sweden is close to being long-run sustainable even when taking the aging populations into account (see Figure 17). But this position is not only a result of the debt reduction during the last 15 years. Other important factors contributing to sustainability are the pension system and the relatively mild demographic change. As already mentioned, the pension system has been reformed and now has a mechanism that automatically balances pension payments to revenue and available funds. The pension system is therefore designed as a closed self-financing system which cannot run into sustainability problems. It is however possible, and maybe likely, that the system is not politically sustainable. According to forecasts, the average pension will fall from 64 percent of an average income in 2007 to 46 percent in 2060 (European Commission 2010). This development may induce pressure for adding resources to the system. Some weakness in the system was indicated during the recent crisis, when the balancing mechanism in the pension system was modified so that the impact of falling asset values on pension payments would be less immediate.

³⁵I exclude Norway, with its extreme developments due to oil revenue, from the comparisons.

[Figure 17]

Compared to other OECD countries, the increase in the old-age dependency ratio during the coming decades will be relatively mild (see Figure 18). The pressure on public finances through pensions and costs related to health and elderly care may therefore become more problematic in other countries. Moreover, the Swedish population growth rate is expected to be high, at least in comparison with many South European countries (Figure 19). Low population growth rates will aggravate the debt problems in countries such as Portugal and Italy because it will tend to reduce GDP growth rates and therefore make it more difficult to reduce the debt-to-GDP ratios.

[Figures 18-19]

5 Insights from the Swedish Experiences

Confidence for the Swedish economy, and in particular for Swedish economic policies was restored in the mid 1990s through a series of fundamental reforms and policy choices. The reforms included tax reform, EU membership, deregulation of markets, privatization of publicly owned companies and of welfare services, stricter competition legislation, introduction of a floating exchange rate, an independent central bank with an inflation target, a new budget process, and the introduction of medium-term fiscal targets. Policy choices included a general guarantee to the banking system and nationalization and rapid recapitalization of failing banks, strict monetary policy until inflation expectations were in line with the inflation target, and a tough consolidation program for fiscal policy.

We would from a theoretical perspective expect these reforms to raise economic efficiency in the long-run. High growth in GDP and productivity from 1997 and on gives at least some support for that view. The short-run impact of the reforms and policy measures are theoretically less clear. It is also difficult to empirically disentangle separate effects from each of the reforms. A few observations can still be made. First, there is clear evidence that the currency depreciation in 1993 in combination with rapid productivity growth and a benign development on important export markets contributed importantly to the Swedish recovery. Second, although there were clear efforts to consolidate public finances from 1992 and on, the substantial consolidation was implemented in 1995-1997, i.e. after rapid growth had resumed in the Swedish economy. Third, there are strong indications that the strict monetary and fiscal policy implemented around 1995 had contractionary effects on the Swedish economy.

These observations cast doubt on the relevance of the Swedish experiences for current European crisis countries. Most of those countries have fixed exchange rates and cannot benefit from currency depreciation. Economies today also face weak demand from trading partners, and several economies have monetary policy constrained by the zero lower bound. Large fiscal consolidations are politically more difficult to implement and economically more questionable in these circumstances than in they were in Sweden in 1995.

The quick recovery of the Swedish economy would most likely not have been possible without the rapid recapitalization of the banking system.³⁶ It was an intentional policy choice to immediately report all expected losses and to recapitalize banks quickly. Still, the outcome of this strategy was probably more successful than policy makers expected at the time. It was not evident in late 1992 that the economy would recover as fast as it did. Without the quick recovery, the general guarantee extended to the banks would have become more costly, and the banking system would most likely have needed further support. Recent developments in Ireland may serve as an example. The Irish government issued a guarantee to the depositors and creditors of the major banks in September 2008, it injected capital amounting to four percent of GDP into banks in early 2009, and it established an asset management company to take care of the banks' bad assets and facilitate reconstruction of the banks.³⁷ But the Irish economy has struggled with restoring competitiveness under the fixed exchange rate and weak foreign demand. The capital initially injected into the banking system turned out to be far from sufficient. During 2009-2010 public recapitalization amounted to 30 percent of GDP, and further recapitalizations have been needed more recently (IMF 2011, 2012b). Thus, while the rapid recapitalization of the Swedish banks in 1992-1993 most likely contributed to the rapid recovery of the Swedish economy in the subsequent years, the strategy chosen could have resulted in much larger public costs if other macroeconomic developments had not been so favorable.

Another important observation is that Swedish net government debt never exceeded 30 percent of GDP. The Swedish crisis was not a debt crisis, but is better described as a currency and banking crisis in combination with a loss of confidence in economic policies and the sustainability and efficiency of the welfare state. Because debt was never high, there was no direct contribution from high growth to the reduction of the debt ratio. High export-led growth instead contributed to the recovery by mitigating the effects from contractionary monetary and fiscal policies, and by limiting bank losses.

In addition to having high public debts, many present crisis countries also anticipate a dramatic aging of their populations in the coming decades. Sweden did not face that problem in the 1990s, and does so to a lesser extent today than other economies. That Sweden has had a high fertility rate relative to many other European countries is possibly a result of family policies oriented to enhance the compatibility between labor-force participation and parenthood (Andersson, 2008). These policies include generous systems for paid parental leave and public day care.

One may argue that the Swedish reactions to the crisis in the early 1990s and the subsequent reforms were indeed a role model for the conduct of economic policies. The fiscal framework in particular stands out as providing both incentives for long-run sustainable fiscal policy and still allowing flexibility for fiscal policy to vary, mostly through automatic mechanisms, over the business cycle. Ingredients from the Swedish fiscal framework could help other countries prevent future fiscal crises. But the analysis here indicates that the direct contribution from sound public finances (in the form of budget surpluses) to the large debt reduction was limited. This observation casts some doubt on the importance of

³⁶For example, Lindbeck et al. (1994) argued that the Riksbank's high policy rate at that time was relatively unimportant in comparison to high lending rates of commercial banks.

³⁷One difference between the Swedish and Irish strategies is that Ireland was initially reluctant to fully nationalize insolvent banks.

the fiscal framework for Sweden's strong fiscal finances today. The problems now faced by several European economies are also substantially deeper than the Swedish problems in the 1990s. Export-led growth through currency depreciation and strong external demand was a key ingredient in the Swedish recovery, facilitating both bank recapitalization and fiscal consolidation. In the recent crisis, economies have either fixed exchange rates or currencies that do not depreciate much because other economies face similar problems.³⁸ It is therefore already evident that the short-run economic and political effects of fiscal consolidation will not be as benign this time as in Sweden in 1995.

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³⁸Iceland is an exception. Being a small economy with a floating exchange rate, and being hit more severely by the crisis, its recovery has been facilitated by substantial currency depreciation.

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Figures and Tables

Table 1: Summary statistics 1997-2011

Country	debt ratio		net lending	primary net lend.	growth rate	interest rates	
	d_{1996}	d_{2011}	$p - rd$	p	g	r	r^d
Australia	20.9	4.9	0.4	-0.7	3.3	3.7	0.4
Austria	40.2	45.2	-2.2	-0.2	2.1	2.7	3.1
Belgium	115.3	80.4	-1.5	2.8	1.9	2.9	2.8
Canada	70.0	33.6	-0.3	1.7	2.7	5.1	4.4
Denmark	33.3	2.4	1.0	2.0	1.3	2.4	2.5
Finland	-6.7	-60.9	2.1	0.4	2.8	2.3	2.2
France	41.9	62.7	-3.6	-1.5	1.7	1.9	2.3
Germany	32.7	51.5	-2.3	0.0	1.4	3.2	3.7
Greece	82.2	133.1	-6.9	-2.0	2.0	1.8	1.9
Ireland	42.2	65.0	-3.0	-2.1	4.3	1.8	1.8
Italy	103.9	100.2	-3.2	1.9	0.9	2.0	2.4
Japan	29.2	127.6	-6.5	-5.4	0.6	3.3	3.2
Netherlands	52.7	37.7	-1.4	-0.9	2.1	3.3	2.1
Norway	-41.0	-162.5	11.8	3.1	2.0	2.3	-0.4
New Zealand	32.4	10.8	1.0	0.8	2.6	5.3	3.4
Portugal	26.5	75.8	-4.6	-2.4	1.5	1.0	1.5
Spain	55.5	45.6	-2.4	-0.9	2.6	1.3	1.2
Sweden	26.6	-24.9	0.8	1.0	2.7	2.1	2.2
Switzerland	6.0	0.4	-0.2	-0.3	1.9	2.0	1.6
UK	27.9	61.7	-3.4	-1.6	2.2	2.2	2.6
USA	51.9	73.7	-4.0	-1.9	2.3	2.8	2.7

Note: The table shows the development of general government net debt from the end of 1996 (1998 and 1999 for Ireland and Switzerland) to the end of 2007. r is the weighted average return on assets and liabilities. r^d is the interest rate paid on liabilities.

Source: OECD Economic Outlook December 2011 and own calculations.

Table 2: Decomposition of change in debt 1997-2011

Country	change in debt $d_{2011} - d_{1996}$	Contribution to change in debt			
		primary surplus $-(p - \hat{p})$	real interest rate $(r - \bar{r}) d$	growth $-(g - \bar{g}) d$	residual ν
Australia	-16.0	10.2	-20.0	-1.7	-4.4
Austria	5.0	0.0	8.6	-0.2	-3.2
Belgium	-34.9	-49.7	3.8	1.4	9.6
Canada	-36.5	-28.3	0.8	-6.3	-2.7
Denmark	-30.9	-31.4	4.8	-0.6	-3.7
Finland	-54.2	-2.2	3.3	2.1	-57.5
France	20.9	19.3	4.3	3.1	-5.8
Germany	18.7	-3.4	12.7	4.4	5.0
Greece	50.9	23.8	-7.9	5.1	29.9
Ireland	22.7	38.4	-2.2	-4.9	-8.6
Italy	-3.7	-36.6	6.7	17.5	8.7
Japan	98.3	74.6	0.7	16.5	6.5
Netherlands	-15.0	10.8	-19.7	-1.4	-4.7
Norway	-121.4	-38.9	-15.6	-7.1	-59.8
New Zealand	-21.7	-13.8	-11.5	-2.4	6.1
Portugal	49.3	32.5	1.8	6.5	8.4
Spain	-9.9	10.5	-9.9	-5.1	-5.3
Sweden	-51.5	-15.6	5.8	-1.6	-40.1
Switzerland	-5.6	0.1	-4.2	0.0	-1.5
UK	33.8	21.4	4.6	0.5	7.3
USA	21.8	24.3	-0.4	-1.4	-0.7

Note: Decomposition as in equation (4) for 1997-2011.

Source: Own calculations based on OECD Economic Outlook December 2011.

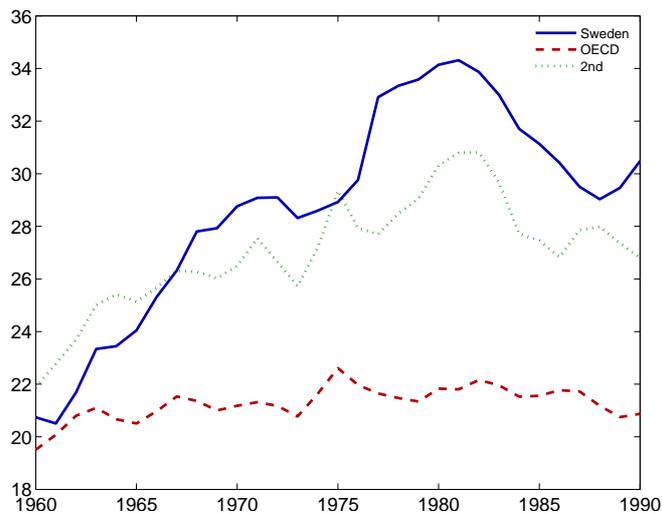
Table 3: Financial Assets and Liabilities in the Swedish Public Sector

	1996	2011
<hr/>		
General government		
<hr/>		
Net debt	26.6	-21.1
Liabilities	98.9	53.0
Assets	72.3	74.2
Central government		
<hr/>		
Net debt	61.5	4.6
Liabilities	89.3	39.6
Assets	27.8	35.1
<i>.equity</i>	<i>15.6</i>	<i>15.6</i>
<i>.bonds, loans, etc</i>	<i>9.9</i>	<i>13.4</i>
<i>.accounts receivable</i>	<i>2.3</i>	<i>6.1</i>
Local government		
<hr/>		
Net debt	0.9	-0.4
Liabilities	9.6	12.5
Assets	8.7	12.9
Social security system		
<hr/>		
Net debt	-35.8	-25.3
Liabilities	0.0	0.9
Assets	35.9	26.2
<i>.equity</i>	<i>3.8</i>	<i>13.1</i>
<i>.bonds, loans, etc</i>	<i>32.0</i>	<i>10.6</i>
<i>.mutual funds</i>	<i>0.0</i>	<i>1.8</i>

Note: Percent of GDP.

Source: Statistics Sweden (Financial Accounts).

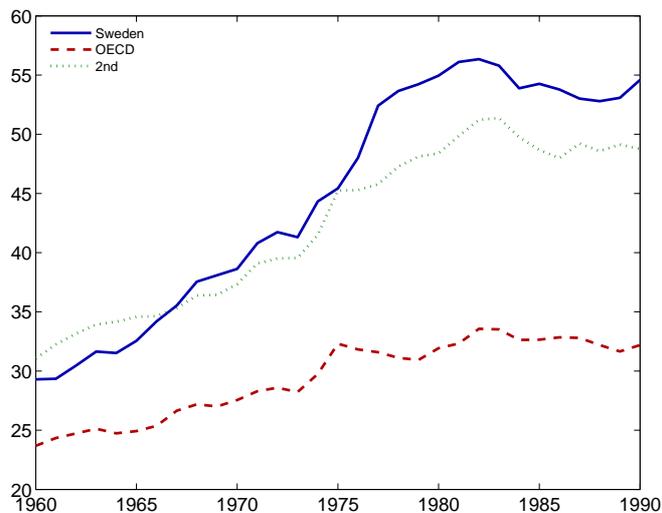
Figure 1: Government consumption and investment (% of GDP)



Note: 'OECD' refers to a weighted average of OECD countries with data available for the full time period. Those countries are Austria, West Germany, Finland, France, Japan, Norway, and the United States. '2nd' refers to the highest value in a group of 19 OECD countries (typically Denmark, France, or the Netherlands).

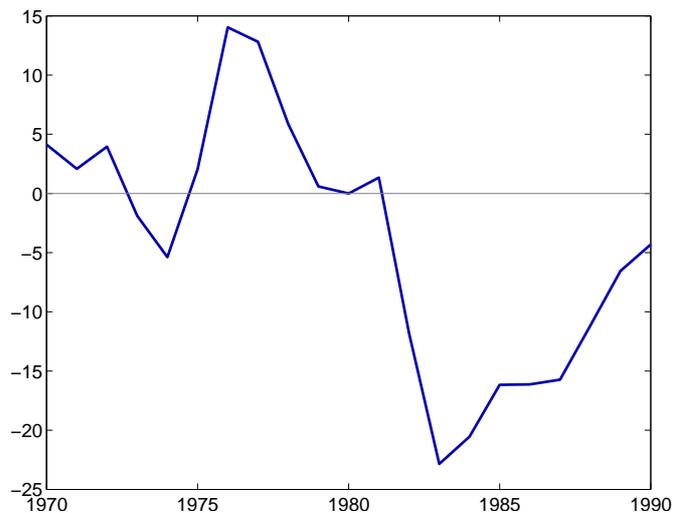
Source: OECD Economic Outlook December 2011.

Figure 2: Government primary expenditure (% of GDP)



Note: See Figure 1.

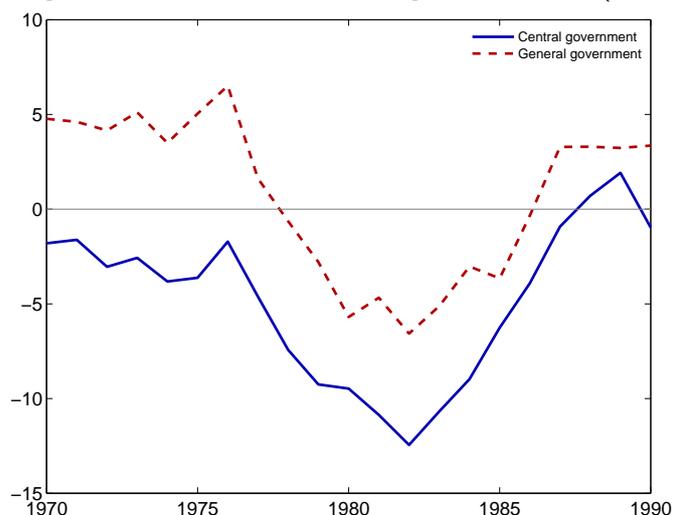
Figure 3: Relative unit labor cost



Note: Relative unit labor cost in manufacturing, percent deviation from 1980 level.

Source: OECD Economic Outlook December 2011.

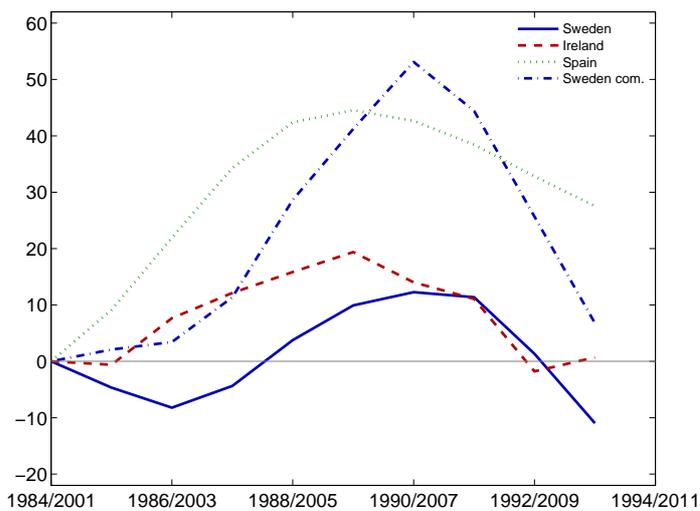
Figure 4: Government budget outcome (% of GDP)



Note: Central government budget balance and general government net lending.

Source: Swedish National Financial Management Authority and OECD Economic Outlook December 2011.

Figure 5: House prices



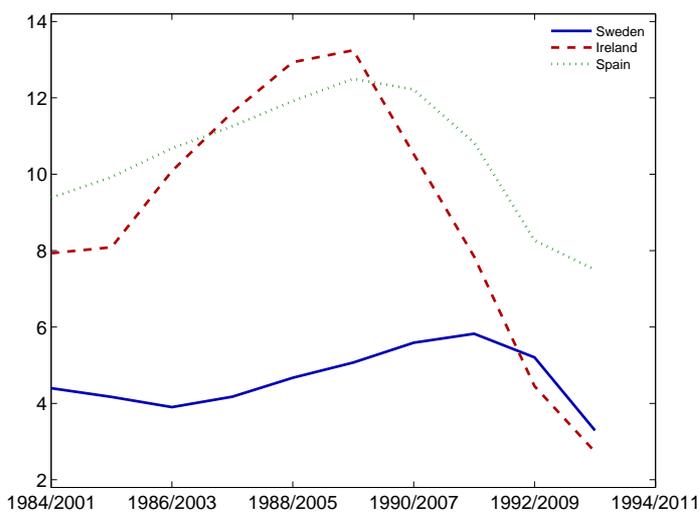
Note: House prices relative to GDP, percent deviation from initial value. Sweden 1984-1993.

Ireland and Spain: 2001-2010. $t = 0$ corresponds to 2007. 'Sweden com.'

refers to commercial and multi-dwelling buildings.

Source: Statistics Sweden, Irish Department of Environment, BIS, and OECD Economic Outlook December 2011.

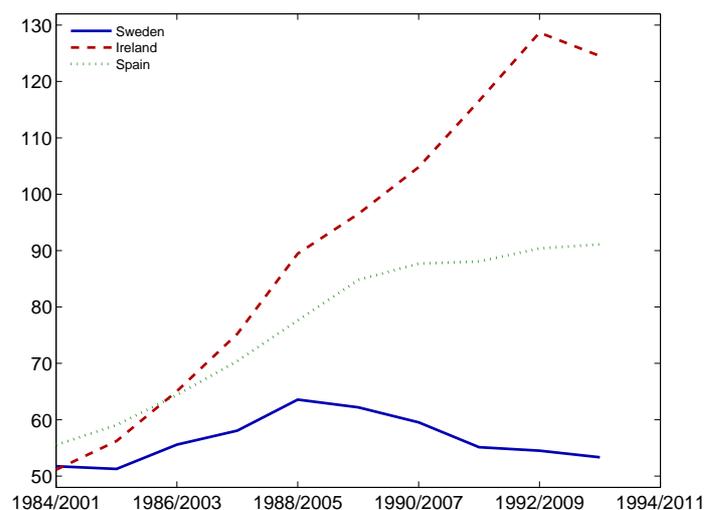
Figure 6: Housing investment (% of GDP)



Note: See Figure 5.

Source: OECD Economic Outlook December 2011.

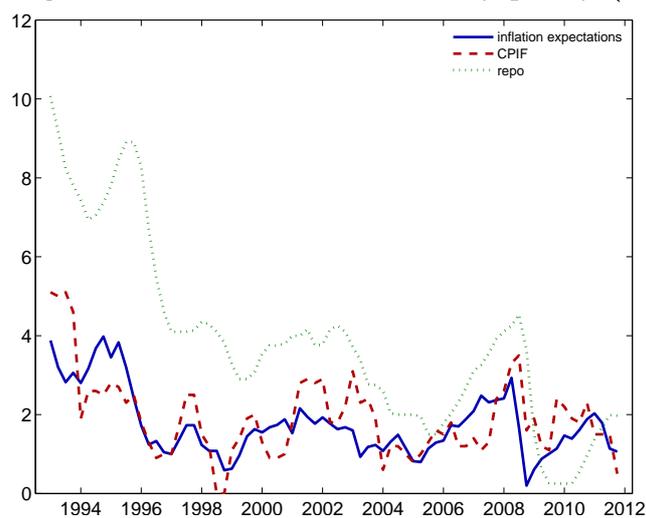
Figure 7: Household sector liabilities (% of GDP)



Note: See Figure 5.

Source: Statistics Sweden and OECD National Accounts.

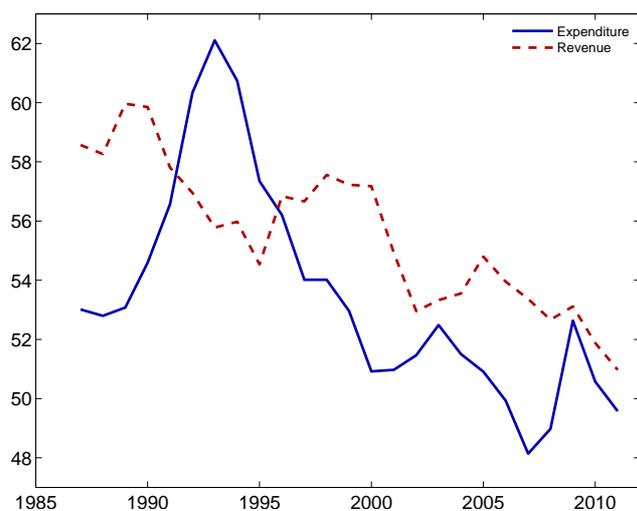
Figure 8: Inflation and monetary policy (% of GDP)



Note: 12 month ahead inflation expectations in the business sector. The Riksbank's policy rate was the marginal rate until May 1994 and the repo rate thereafter. CPIF refers to the 12-month CPI inflation rate with a fixed mortgage rate.

Source: NIER, Riksbank, and Statistics Sweden.

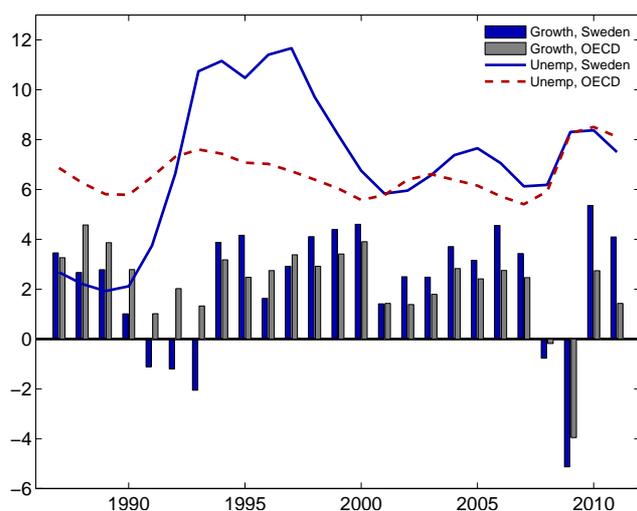
Figure 9: Government primary expenditure and revenue (% of GDP)



Note: General government primary current disbursements and receipts 1985-2011.

Source: OECD Economic Outlook December 2011.

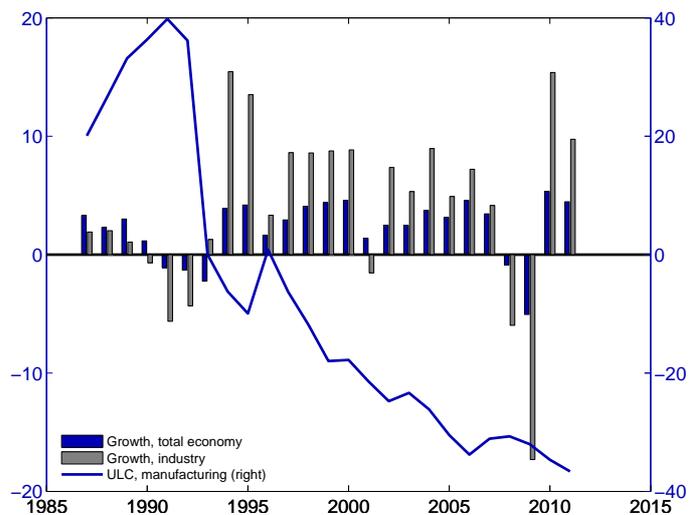
Figure 10: Growth and unemployment (percent)



Note: Growth rate of GDP in Sweden and weighted average of 19 OECD countries.

Source: OECD Economic Outlook December 2011.

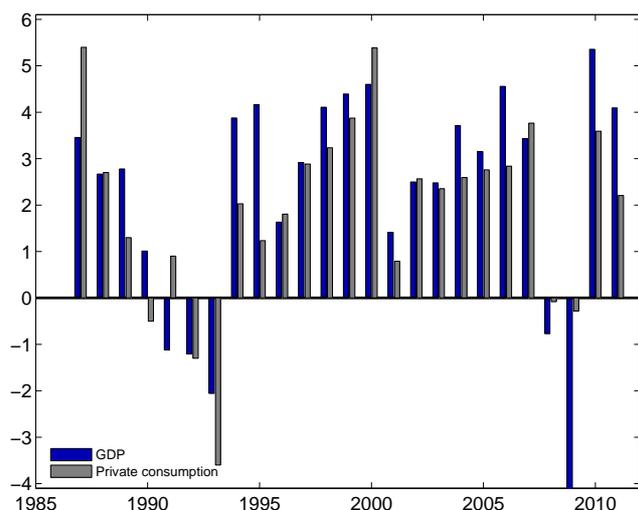
Figure 11: Growth and competitiveness (percent)



Note: Growth rate of real GDP (%), total economy and industry (left axis). Relative unit labor cost in manufacturing (% deviation from 1993 level, right axis).

Source: NIER and OECD Economic Outlook December 2011.

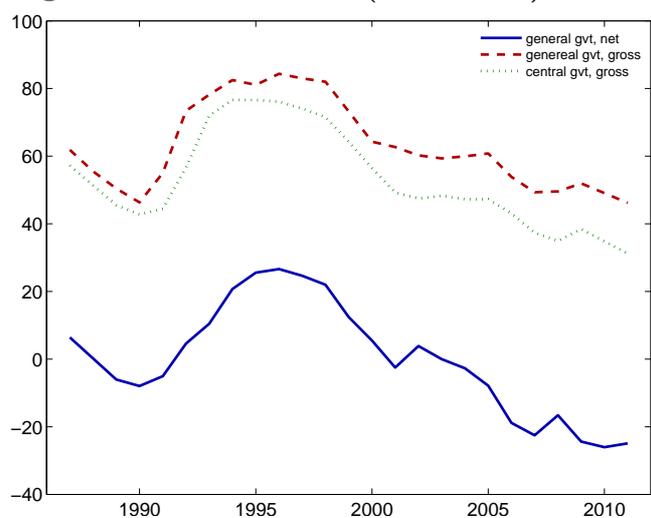
Figure 12: GDP and Consumption Growth (%)



Note: Growth rate of real GDP and private consumption.

Source: OECD Economic Outlook December 2011.

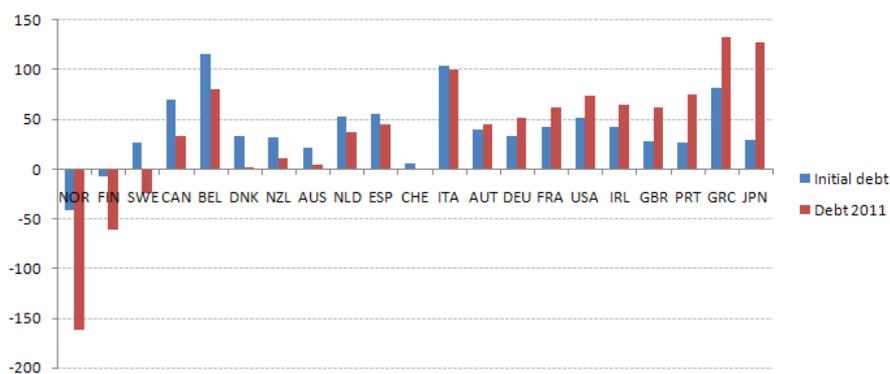
Figure 13: Public Debt (% of GDP)



Note: General and central government net and gross debt.

Source: OECD Economic Outlook December 2011 and Swedish National Financial Management Authority.

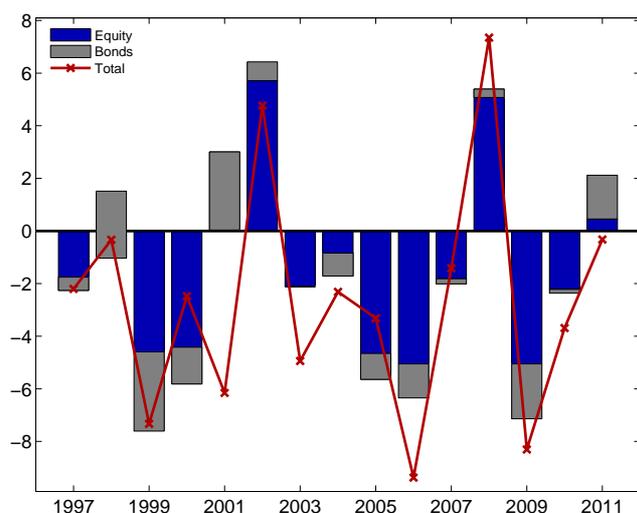
Figure 14: Development of Net Public Debt (% of GDP)



Note: General government net debt at the end of 1996 (end of 1998 for Ireland and end of 1999 for Switzerland) and end of 2011, sorted by magnitude of debt change.

Source: OECD Economic Outlook December 2011

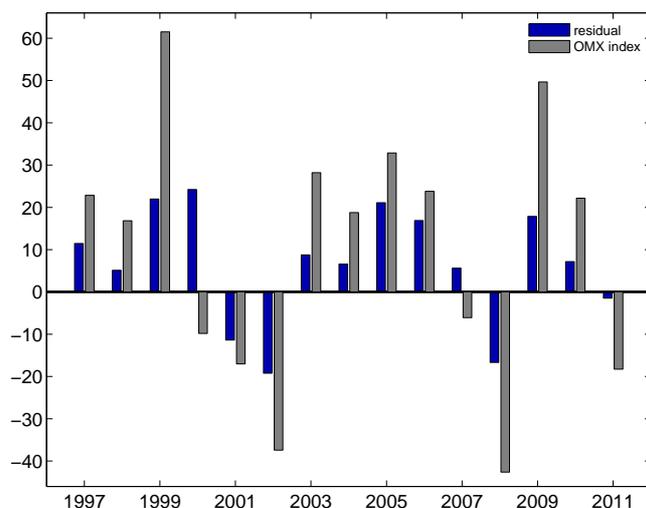
Figure 15: Contribution of residuals to changes in debt ratios



Note: The bars show residuals (percent of GDP) between stocks and flows in the general government's holdings of equity and bonds according to the financial accounts. The line shows the total residual, i.e. v calculated as in equation (4).

Source: Own calculations based on OECD Economic Outlook December 2011 and Statistics Sweden's financial accounts.

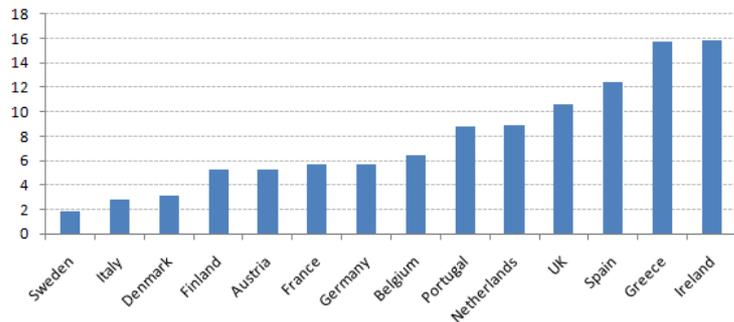
Figure 16: The residual from holdings of equity



Note: The residual is the negative of the equity residual in Figure 15, but expressed as percent of equity holdings rather than GDP. The shaded bars report the percent change in the OMX stock market index.

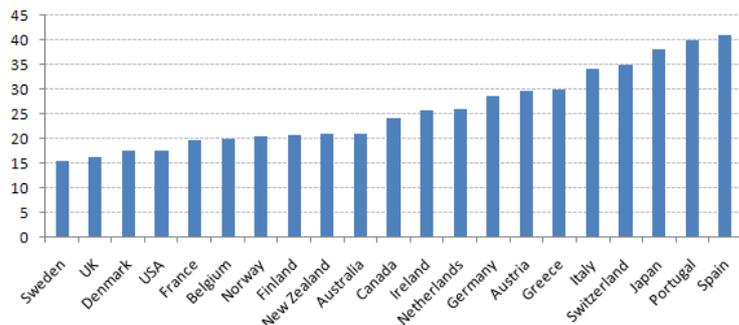
Source: OMX and own calculations based on Statistics Sweden's financial accounts.

Figure 17: The S2 indicator of sustainability of public finances



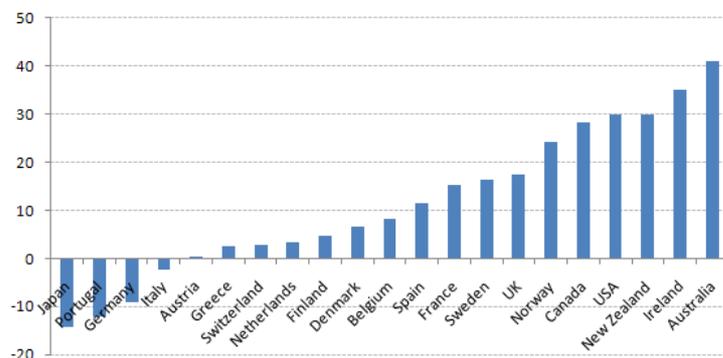
Note: The S2 indicator shows the necessary permanent increase in permanent government primary net lending to achieve long-run sustainable public finances.
Source: European Commission (2011) and EEAG (2012).

Figure 18: Increase in old-age dependency ratio 2010-2050



Note: Population aged 65 per 100 persons aged 20-64 years, increase from 2010 to 2050.
Source: United Nations Population Forecasts, medium scenario.

Figure 19: Increase in total population 2010-2050 (%)



Source: United Nations Population Forecasts, medium scenario.