The Swedish fiscal framework – the most successful one in the EU? The first twenty years and beyond.

Fredrik N G Andersson

Department of Economics, Lund University

Lars Jonung

Department of Economics and Knut Wicksell Centre for Financial Studies, Lund University

Prepared for the *European Fiscal Board* conference on 28 February 2019 in Brussels.

April 2019

Abstract: This paper discusses the history and future of the Swedish fiscal framework. First, we claim that the fiscal framework has contributed to a sharp decline in the debt-to-GDP ratio, from one of the highest to one of the lowest in the European Union. Next, we focus on the future. Despite its success, we argue that the framework is unsustainable. Running large surpluses over the long run is not a steady-state solution. We recommend two changes to the framework. First, that the public pension system is excluded, and second that the Swedish fiscal authorities shift attention from maintaining a budget surplus of 1/3 percent of GDP over the business cycle to sustaining a stable debt-to-GDP ratio of 25 percent of GDP +/- 5 percentage points. A debt anchor at this level will provide sufficient insurance in case of a future major economic crisis judging from recent cross-country evidence. In addition, a debt anchor around 25 percent of GDP would contribute to political stability in time of crises. In a world, where populism and austerity fatigue are rampant, we stress the importance of a fiscal framework allowing successful consumption and tax smoothing in case of major negative shocks to the fiscal space. We conclude with a set of recommendations for the fiscal governance of the EU.

***Key words*:** Fiscal policy; fiscal framework; fiscal policy council; financial crisis; debt crisis; consumption smoothing; Sweden; EU.

***JEL code**:* E61; E62; E63; G02; H12; H30; N14; O52.

Authors' e-mail addresses: fredrik_n_g.andersson@nek.lu.se; Lars.Jonung@nek.lu.se

1. Introduction[1]

Sweden adopted a new fiscal framework in the late 1990s following a sharp increase in government debt in the early 1990s. Since the introduction of this framework, the public debt-to-GDP ratio has fallen from 73 percent in 1995 to 41 percent in 2017. As demonstrated by Figure 1, which plots the Maastricht debt for Sweden, the euro area, France and Germany, Swedish debt has gone from being one of the highest in Europe to one of the lowest. In the euro area, the debt ratio has increased to 87 percent, in France to almost 100 percent, in Germany the debt ratio is 64 percent, almost the same level as in 1995.

[FIGURE 1]

In fact, the Swedish framework has been so successful that its long-run sustainability can be put in question. We will argue that the debt ratio may become *too low* towards the end of the 2020s. For this reason, we recommend adjusting the fiscal framework to make it sustainable for the long run. Specifically, we propose that the government shifts attention from reducing the debt ratio through a surplus target to maintaining a stable debt-to-GDP ratio, in the process abandoning the surplus target.

The report consists of four parts. First, we give a brief account of the development of public debt in Sweden from 1750 to 2017. We show that Sweden has a long history of low and sustainable debt until the break-up of the Bretton Woods system in the early 1970s. From then on, fiscal policy turned unsustainable during periods of economic crises. The experience of this very recent period is the key factor that led to the creation of the current fiscal framework.

In the second part, we describe how the fiscal framework has evolved over time. Presently it consists for four components: i) an expenditure ceiling set in advance to keep expenditures under control, ii) a surplus target to ensure that the budget, including those of the local authorities, is balanced over the business cycle and debt is reduced, iii) a fiscal policy council to monitor and ensure that the government follows the fiscal rules, and iv) a debt anchor to

[1] We have benefitted from constructive comments from Michael Bergman, Niklas Frank, Thomas Hagberg, Jens Henriksson, Göran Hjelm, Jan in't Veld, Thomas G. Pettersson, Werner Röger, Joakim Sonnegård and discussants at the workshop organized by the European Fiscal Board where a first draft of this paper was presented.

ensure that the debt level does not grow too rapidly during major recessions when the framework allows the government to borrow.

We also discuss why the framework has been so successful. In our view, there are four main reasons. First, because leading politicians have had personal memory from the 1990s when public finances rapidly deteriorated, and from the subsequent period when fiscal discipline was restored through unpopular austerity measures. Second, the framework has evolved over time. This flexibility has ensured that public support for the framework has remained high. Third, financial markets have responded positively to the reduction in debt by reducing long-term government borrowing costs through lower interest rates. As interest rates fell, politicians were rewarded for fiscal discipline. The Swedish central bank did not bail out the government in the 1990s when debt was high and rising. Instead, interest rates were allowed to rise sharply. Fourth, the framework was designed domestically as an outcome of an internal political process, thus giving rise to public support behind the framework. It was not forced upon Sweden by outside forces. All major political parties concluded that sustainable public finances were essential for the well-being of the Swedish economy.

In the third part of the report, we discuss potential reforms of the fiscal framework. We argue that the pension system should be excluded from the framework, as it is a fully self-funded and self-regulated system. We also argue that that the surplus target is becoming obsolete once the debt ratio has fallen into a "safe" range, precluding further decline. The debt ratio is already low and reducing it much further should not be a policy goal per se as would be the case if the surplus target was maintained. Instead, greater emphasis should be given to the debt anchor, i.e. to debt stabilization. Once the debt ratio becomes low, maintaining a low ratio over time should be the primary goal of fiscal policy – and thus of the fiscal framework. Here we argue that the present debt anchor of 35 percent is set too high. It should be lowered to ensure that Sweden can meet a major economic crisis in the future without running into fiscal difficulties. Major crises are costly fiscally. The government has an important role in supporting households by smoothing their consumption during times of high unemployment and declining incomes. In short, we propose an insurance approach in the design of the fiscal framework when we settle for our specific target for the debt-to-GDP ratio.

Having a low national debt *before* the crisis is pre-requisite for a successful active fiscal policy response during the crisis. Entering the crisis with a low public debt is also important to foster political stability. A low debt level before the crisis reduces the likelihood that the government has to implement major austerity measures during or immediately after the crisis with potentially devastating economic and political effects. As households are severely stressed financially by any deep crisis, adding additional burdens through cuts in public spending is likely to reduce trust in the political system and to increase support for populist movements.

To estimate the proper fiscal space, we adopt a two-stage approach. First, we show that a public debt ratio exceeding 70 to 75 percent of GDP in Sweden is associated with rapidly increasing borrowing costs. Based on estimates of the fiscal costs of recent major international (financial) crises, we find that the average fiscal cost of a major crisis is between 30 and 40 percent of GDP. Consequently, we conclude that the debt ratio should be no higher than 20 to 30 percent *before* the next crisis. Presently, the debt anchor is set to 35 percent +/- 5 percentage points. We recommend that it should be reduced to 25 percent +/- 5 percentage points. Ideally, the debt ratio should be at the lower end of the allowed corridor during booms to allow debt to rise during recessions, allowing for the workings of the automatic stabilizers and limited discretionary expansionary fiscal measures.

Our proposed reforms of the fiscal framework have two major advantages. First, it gives the government fiscal flexibility. In normal times, debt is allowed to vary by 10 percentage points, in a major crisis by more. Second, it is easy to monitor. The Fiscal Policy Council can in a very straightforward way evaluate the sustainability of the public finances without being directly involved in the policy process. The present surplus target is defined as a surplus over the business cycle, which is a theoretical concept more difficult to measure and monitor.

In the final section, we discuss the relevance of the Swedish experience for the fiscal governance of the EU. We are well aware that prevailing Swedish views on debt and fiscal prudence are different from those of many EU member states. Still, this should not prevent us from considering how other countries may draw lessons from the Swedish fiscal record.

2. Swedish public debt from 1750 to 2017

Swedish fiscal history shares many similarities with that of other European countries.[2] Before the industrialization process, and before the creation of the modern welfare state, the public debt level was relatively low and stable. It increased during wartime and decreased during peacetime. Economic conditions had in general no effect on public debt. The Swedish debt-to-GDP ratio 1750-2017 is displayed in Figure 2. The solid black line represents central government debt (*Riksgäldsskulden*) and the dotted black line shows the Maastricht debt. Data on the Maastricht debt is only available from 1980 and onwards. Most of the time, the two debt ratios are similar, except for the latter part of the 2010s when local governments rapidly increased their debt while the central government continued to reduce its debt ratio.

[FIGURE 2]

In pre-industrial times, the Swedish government maintained a debt of roughly 10 percent of GDP from 1750 until the war against Russia in 1788-90 when the debt level increased to 30 percent of GDP. The debt ratio was then reduced to almost zero in the 1820s, a level that was maintained until the start of industrialization and public investments in railroads in the 1850s. During a 25-year period, the debt level increased to 20 percent of a GDP when the government invested heavily in infrastructure. For roughly a century, from the 1880s until 1970, the debt ratio fluctuated between 15 and 25 percent of GDP except during the Second World War when it reached 50 percent. The war effect was brief, the debt ratio was back to 20 percent already by 1950.

The fact that debt never exceeded 50 percent of GDP from 1750 to 1970 is partly explained by the long period of peace enjoyed by Sweden. The last war Sweden fought was in 1814 against Norway. Sweden stayed out of active combat during both the First and the Second World War. Although both world wars contributed to an increase in government borrowing, the rise was limited. During the First World War, high inflation was key to hold down the debt-to- GDP level. Nominal debt increased by 155 percent between 1913 and 1918, but high inflation (47 percent in 1918) kept the increase in relation to GDP to almost zero.

The fiscal history after 1970 is a more volatile one following the demise of the Bretton Woods system and the fiscal discipline inferred by the implicit gold standard. From a low of 12.5

[2] See Eichengreen et al (2019) on the cross-country history of debt accumulation in a secular perspective.

percent debt in 1970, it reached 62 percent in 1985 before briefly falling back to 40 percent by 1990, at the peak of the financial boom that followed the financial de-regulation that started in 1985. The ensuing financial crisis increased debt to 74 percent of GDP by 1995 (Figure 2). Three important factors contributed to the increase in debt: declining growth rates following the first oil price shock (OPEC I), the acceptance of a Keynesian view of the role of fiscal policy to ensure full employment, and expanding international financial markets.[3]

As in Western Europe, real GDP growth rates were high in Sweden following the Second World War, peaking in the mid-1960s and then declining thereafter although they were still relatively high (Andersson, 2017). With OPEC I, the post-World War II growth phase clearly ended. Swedish stabilization policy was strongly influenced by the Keynesian views dominating policy debate at the time (Jonung, 1999). Thus, the belief in the powers of discretionary fiscal policy in stabilizing the economy through economic fine-tuning was widespread among academics and politicians. The response to the decline in growth due to OPEC I was initially an expansionary fiscal program to prop up domestic demand and employment, which continued through OPEC II in 1979 and into the early 1980s. Consequently, government debt rose rapidly.

The acceptance of the Keynesian view was part of the expansion of the welfare state in Sweden in the post-World War II period. Public expenditures increased not just for health, education and infrastructure but also for social spending and transfers. More and more of the life-cycle consumption smoothing of households over the life cycle was performed by the Swedish state through a generous welfare state funded through high taxation. As wages stagnated and unemployment rose after OPEC I and OPEC II, government expenses increased to counter the decline in income. A reduction in the financial responsibilities of the state was deemed politically impossible.

Financial repression during the Bretton Woods period, including extensive controls on cross-border capital flows, restricted access to credit to largely domestic savings within Sweden. Being less developed, international capital markets did not serve as a source of finance in the 1950s and 1960s. During the 1970s, following the first oil price shock (OPEC I), international

[3] See Persson (1996) for the development of Swedish debt from the 1970s to the first part of the 1990s.

capital markets began to expand, partially due to the recycling of the rapidly growing revenues of the oil-exporting countries.

Because of the negative chocks to the Swedish economy of OPEC I and OPEC II, large budget deficits emerged. The Swedish government chose to finance these deficits without draining the domestic credit market of funds by borrowing internationally. In 1974, 0.1 percent of the national debt consisted of external borrowing. By 1983, the share had increased to about 21 percent (Riksbank, 1984). The adoption of the Keynesian approach to stabilization policy-making, demands through a large welfare state coupled with a reduction in economic growth, and a new source of funding outside Sweden clearly made its mark on public finances and public debt.[4]

A minor consolidation of the public finances took place in the mid-1980s. However, most of the decline in the debt ratio occurred due to an economic boom fueled by cheap credit following the deregulation of the financial markets in November 1985. The resulting boom, which turned into a large financial crisis in the early1990s, partly masked the weak underlying standing of the public finances.[5] While public debt fell to 40 percent in 1990, it rapidly shot up to 74 percent in 1995 in the wake of the financial crisis.

When the Swedish economy started to recover after the financial crisis of 1991-93, rapid fiscal consolidation took place between 1994 and 1999 when the budget was balanced. Government debt continued to fall quickly until the international financial crisis of 2008-09. The debt increased briefly during the crisis before it began to fall again. Central government debt fell, while the local governments benefitted from low interest rates that followed the crisis to fund investments. By 2017, the central government debt (*Riksgäldsskulden*) was 29 percent of GDP compared to 74 percent in 1995 and 33 percent in 2008. The Maastricht debt was 41 percent compared to 74 percent in 1995 and 38 percent in 2008.

The fiscal consolidation in the late 1990s was part of a major overhaul of economic policy-making in Sweden. The framework for monetary and fiscal policy-making was changed in a

[4] See Jonung (1999) on the shifting stabilization policy models used by Swedish governments 1970-99.

[5] See the analysis of boom-bust induced cycles in public finance in Sweden in chapter 6 in Jonung et al (2009).

most fundamental way. The fixed exchange rate of the krona was abolished during the financial crisis in November 1992 and replaced by a flexible exchange rate. Inflation targeting was adopted in early 1993 with a numerical target set at 2 per cent consumer price inflation to be valid from 1995. The Riksbank was made independent in 1999. The role of fiscal policy in stabilizing the economy was reduced to that of the workings of automatic stabilizers while the main responsibility for macroeconomic fine-tuning was given to the Riksbank. Several domestic markets were liberalized and tax rates reduced, especially on capital. Combined with a depreciation of the exchange rate of around 25 percent in 1992, when the Riksbank abandoned the fixed exchange rate, growth picked up, which contributed positively to the fiscal consolidation. The reduction in domestic demand due to the fiscal consolidation was more than fully compensated by higher external demand for Swedish exports through the depreciation of the Swedish krona. The fiscal consolidation was also successful partly because it coincided with a break with the perceived failed policies of the past.[6] The fiscal policy framework that set clear rules for sustainable finances was one of several components of the package of new economic policies and new institutional set-ups for policy-making. Since the new consensus on economic policy, so far few have argued for a return to the past.

3. The evolution of the Swedish fiscal framework

The Swedish fiscal framework has evolved over time starting in the mid-1990s, with the most recent adjustments agreed to by the political parties in 2016. Although the framework has changed over time, the goals have remained the same: to keep public spending under control, and to ensure that the national debt ratio declines over time. Following the reforms in 2016, which came into effect in 2019, the fiscal framework consists of four major components: i) an expenditure ceiling, ii) a surplus target, iii) a fiscal policy council, and iv) a debt anchor. The surplus target is set at 1/3 percent of GDP over the business cycle for the general government (central and local government, and the public pension system). The debt anchor, the latest addition to the framework emerging from the 2016 reform, is set at 35 percent of GDP +/- 5 percentage points.

3.1 The evolving framework

[6] Andersson (2016) shows that major economic crises in general cause a change in policy across developed countries.

When the budget deficit in the early 1990s reached as high as 15 percent of GDP in 1993, the unsustainability of the public finances was apparent. Because public finances had been on an unsustainable track for almost 20 years, a review of the budget process was initiated.[7] A report from the Ministry of Finance in 1992 was a first step, inspired by a study by Jürgen von Hagen (1992), arguing that the power of the executive was weak compared to that of the legislature in the Swedish system. The Riksdag (parliament) could easily add on expenditures beyond what was requested by the government. A string of more or less weak minority governments and a short three-year election period gave strong incentives for rising government spending without any restraining control on overall spending.[8]

To maintain control over government expenditures, the budget process was reorganized as a top-down procedure. First, the Riksdag votes on the overall spending volume for 27 expenditure areas before spending within each area is allocated. Spending beyond the amount allocated to each spending area is not possible. The Riksdag can no longer add on expenditures once the spending levels are decided upon as it did in the past.

Second, to control the spending level for the medium term, the Riksdag votes on expenditure ceilings for total government spending less interest payments on government debt. These ceilings are set three years in advance. The Riksdag can change these ceilings. However, it has refrained from doing so with the exception for "technical adjustments", or for the election of a new government with a new economic agenda. Thus, a new government is not bound by the expenditure ceilings set by the previous government.

The expenditure ceiling has two main purposes. First, it forces the government and the Riksdag to prioritize among expenditures. An increase in one spending area is weighted against a reduction in another area. Second, it prevents the temptation to add permanent expenditures to the budget due to a temporary increase in revenues during e.g. an economic boom. The reformed budget process and the expenditure ceilings tightened the government's grip on spending. The expenditure ceiling has turned into a key policy instrument for the Ministry of Finance to control the spending of other departments.

---

[7] The rise of the Swedish fiscal framework is described in detail in Calmfors (2013) and Jonung (2015, 2018).

[8] An extension of the terms of office from three to four years was introduced in 1994 as a response to the financial crisis of the early 1990s.

The next step in the creation of the fiscal framework was the introduction of a *surplus target* announced in 1997 that gradually came into effect until 2001. The target was set at 2 percent of GDP over the business cycle and covered general government balance, i.e. central government, local government and the pension system. Part of the savings in the pensions system was later defined as private savings rather than government savings. The surplus target was reduced from 2 to 1 percent in 2007 as a technical adjustment with no overall impact on government policy.

The surplus target was introduced to reduce the government debt ratio, and in this way to prepare the public finances for the strain of an older population. In 2016, the surplus target was reduced to 1/3 of a percent of GDP over the business cycle. The main reason for this step was that the debt ratio had fallen to a relatively low level and that the Swedish population was growing older.

A *balanced budget requirement for local governments* was enacted in 2000 to prevent local governments from undermining fiscal sustainability. Local governments are required to balance their budgets every year. They can borrow to invest as long as their yearly revenues are sufficient to cover their running expenditures and the cost of servicing and repaying their loans.

An important part of the fiscal framework was put in place in 2007 by the establishment of a *Fiscal Policy Council* to monitor the government's adherence to the rules of the fiscal framework. The council was the brain-child of Anders Borg, the Minister of Finance at that time in a center-right government. It was initially met with political resistance from the opposition parties on the left. However, by now both sides of the political spectrum have come to accept the council.[9]

The Swedish council is an agency under the Ministry of Finance. Its budget is proposed by the Government and decided by parliament as a separate line in the annual national budget. The mandate of the Fiscal Policy Council is set out in a remit framed by the Government. The present one from 2011 with minor modifications from the beginning of 2017 is short, about one page long, stating that the main task of the Council is *to review and evaluate the extent to which*

[9] See Jonung (2018) on the establishment of the fiscal policy council in 2007. Wyplosz (2002) contributed early to the arguments for a fiscal council in Sweden.

the fiscal and economic policy objectives proposed by the Government and decided by the Riksdag are being achieved, and thus to contribute to more transparency and clarity about the aims and effectiveness of economic policy.

The main tool of the Council for communicating its views and analysis is the annual report published in the spring. Soon after its publication, the annual report is presented at an open hearing before the Committee on Finance of the *Riksdag* (*finansutskottet*) where the Minister of Finance takes part as well. The report is then taken into consideration in the Committee's evaluation of the economic policies of the government. The government responds in the Budget Bill to the report of the Council, usually in September the same year.

Although the Council has no formal powers, it is a force to reckon with in public debate and policy-making. Sweden has a long history of open debate on economic issues and the economics profession has a relatively strong standing in public opinion. Critique from the Council has an impact on public opinion and thus it indirectly affects the government.

The fourth and latest building stone of the fiscal framework is the *debt anchor* introduced in the 2016 review. Coming into effect in 2019, the debt anchor stipulates that the Maastricht debt should be 35 percent of GDP +/- 5 percentage points. A debt anchor is unnecessary given the surplus target as debt would fall as long as the government runs a surplus. However, the surplus target is set as an average over the business cycle. In addition, there is no memory in the target in the sense that the government does not have to compensate in the future for failure to meet the target in the past. It does not have to run larger surpluses in the future just because the surpluses were too small in the past. A severe recession can thus cause government debt to increase. Consequently, a government that fails to adhere to the surplus target can drive debt higher. In contrast, the debt anchor ensures that debt is kept low.

The fiscal framework contains clear rules for the level of expenditures, the budget balance, government debt and supervision. However, the framework is also flexible. A new government can change the expenditure ceilings. The government can ignore both the surplus target and the debt anchor given that the Riksdag is willing to adopt the government's economic policy agenda. To further strengthen the framework, the revised budget law following the 2016 review stipulates that the government is forced to explain in public if its policies are in conflict with the surplus target and/or the debt anchor, and to present a plan for how the public finances are to be brought back in line with the rules of the framework. As long as public support for the fiscal framework remains high, these provisions are likely to induce governments to stick to the rules.

3.2. Lessons from the fiscal framework

No fiscal framework is perfect or "optimal" in its execution, not every budget since the late 1990s has been as fiscally responsible as it could have been. However, Swedish public finances have been on a sustainable path for a long time. The budget has on average been balanced with a small surplus since 2001 of 0.5 percent of GDP. No budget deficit has been higher than 1.6 percent of GDP in this period. As a result, the debt ratio has fallen. Central government debt is presently the lowest since 1978.

On the negative side, we note a growing volume of local government debt. As the borrowing costs have approached zero, local government debt has increased.[10] Higher interest rate costs may put the sustainability of local finances into question. Nevertheless, the framework has successfully reduced the Swedish debt ratio to one of the lowest in Europe. Politicians have followed the rules for more than 20 years and the present framework was agreed to by seven out of the eight political parties represented in the parliament. The exception was the Sweden Democrats, who objected to changing the rules and wished to maintain the old rules.

Why has the framework been such a success? There are several possible explanations, mutually enforcing each other. First, the framework has emerged through a domestic process. It was not imposed by demands or requirements from external authorities. Most likely, reforms created by internal forces are more successful compared to reforms imposed from external sources. They face less political resistance, they are credible, and they suit the country's circumstances better.[11] Politicians stick to the rules because they have designed the rules.

Second, the severity of the financial crisis in the early 1990s and the policy measures needed to stabilize the fiscal outlook have remained fresh in the memory of the public and of politicians

[10] The average interest rate in 2017 was 0.57 percent (*Kommuninvest*, 2017).

[11] Manasse and Katsikas (2018) argue that domestically driven reforms in Southern Europe were more successful compared to externally imposed reforms. Andersson (2016) reaches a similar conclusion. Domestic reforms are more long lasting compared to reforms imposed by external organizations.

in power. Few wish to revert to the fiscal deficits of the past. As the memory of the crisis of the 1990s fades, public support for the fiscal framework may also diminish. So far, leading members of the present government as well as of past governments have personal memories from the fiscal woes either during the crisis (1991-94) or during the fiscal consolidation period (1995-99). Table 1 shows the career position during the crisis and the consolidation period for all prime ministers and ministers of finance that have served since 2000 (i.e. after the adoption of the fiscal framework). In all governments, the prime minister, the minister of finance, or both, have private experience from the crisis and the consolidation process. Some were in government at the time as leading ministers, other served as members of parliament and some worked for the prime ministers serving at the time.

The government's reluctance to spend in time of low economic activity was criticized by the Fiscal Policy Council in 2009, 2010 and 2012. The Council advised the government to spend and borrow *more* than it did, thus proposing a more expansionary fiscal policy than the actual policy adopted by the government. In fact, the Minister of Finance criticized the Council for being too expansionary, warning that it might jeopardize fiscal sustainability in the long run.[12]

[TABLE 1]

Third, the framework has so far proven flexible in the sense that there has been a broad consensus across the political spectrum concerning alterations of the rules. As the economic circumstances change, so has the fiscal framework. The surplus target has been modified and a debt anchor was introduced in 2016. A fiscal policy council to evaluate the government was established in 2007. The flexibility of the framework is likely an important reason behind its durability.

Fourth, the strong reputation of the Fiscal Policy Council forces the government in power to stick to the rules or risk public criticism from one of its own agencies. Media and the opposition parties can refer to the Council in its critique of the government, which enhances the credibility of the Council. In addition, the Fiscal Policy Council has enhanced the public's awareness of the framework, and the budget rules of the framework represent a starting point for public debate on fiscal issues. Few parties dare to promise unfunded expenditure increases or tax cuts

[12] It is tempting to suggest that Swedish governments have suffered from a surplus bias, not a deficit bias, a concept frequently adopted to explain fiscal profligacy.

due to the critique they may encounter in a political environment, which puts a premium on fiscal prudence.

Fifth, politicians were rewarded by the financial markets for fiscal responsibility in the sense that long term borrowing costs declined as the debt ratio was reduced. In 1995, Swedish 10-year bond yield was 3.5 percentage points higher the German yield despite similar rates of inflation. In 2007, the year before the international financial crisis, Swedish bond yields were 0.1 percentage points lower than German yields. This reduction in borrowing costs became a major incentive to continue to lower the debt ratio as it increased the fiscal space allowing either increased spending or reduced taxation. The Swedish central bank did not act to influence long term bond rates when the public debt levels were high. Instead, bond yields became an important economic indicator of the state of the public finances, and politicians responded to these signals

To sum up, so far the fiscal framework has performed well during its first twenty years. It has been a source of fiscal prudence. It has received a solid support from the political parties and from the public. Let us now turn to the future of the fiscal framework.

4. The future of the Swedish fiscal framework

The success of the fiscal framework raises the question: why change it? Part of the success of the framework has been its adaptability. Future reforms of the framework are likely needed for it to continue to support sustainable public finances and to enjoy broad political support. In fact, the 2016 revised fiscal framework included an automatic review to take place every eight years (every second parliament). The next review is thus due in 2025/26.

We propose two main changes to the framework. First, the public pension system should be removed from the calculation of the surplus target. The public pension system is designed as a self-regulating system that automatically adjusts its spending to its revenues. As a separate entity, it should not be included in the calculations of the fiscal space. The pension system is expected to produce a surplus by the late 2020s. Including it implies that the government can increase its deficit on current spending against the wealth accumulated in the pension system. Such a situation should be avoided. Pension funds should be used for outlays on future pensions as they are intended for. They should thus not be included in the overall budget calculations.

According to present estimates, the Maastricht debt is expected to fall from 41 percent in 2017 to 30 percent already by 2022 according to a forecast by the Swedish National Financial Management Authority (2018). Removing the pension system would reduce the debt-ratio even further, perhaps completely eradicating central government debt by the late 2020s. This would be a step too far. Eliminating public debt should not be a public policy goal.

We acknowledge that having the opportunity of abolishing government debt completely is *per se* an envious option. However, there are several reasons to maintain a public debt. Sustaining large and consistent budget surpluses risks ignoring vital public investments. High taxation in relation to spending would drain resources from the private sector. Intergenerational considerations imply that future generations should pay for public investments made by present generations. Government bonds are in demand as a "safe" asset for financial markets to price risk and to assess risk levels in their portfolios. Completely eliminating government bonds would make it more difficult for private sector investors to price and handle risk. Eradicating all government bonds removes the infrastructure necessary for issuing debt and servicing debt in case of a nation-wide emergency. Consequently, there are several social welfare benefits of having a public debt relative to have no debt at all.

Initially, the purpose of the surplus target was to reduce a debt ratio deemed too high. Once the debt ratio is moving into lower levels, the surplus target becomes superfluous. Rather than aiming to achieve a fixed surplus over the business cycle, the government should focus on stabilizing the debt ratio at a suitable and prudent long-run level. In other words, the role of the debt anchor should be strengthened. Thus, the question we must address is: which is the proper size of a debt anchor for a country like Sweden?

4.1 Identifying a proper debt anchor for Sweden

The Swedish fiscal consolidation processes during the 1990s and recent events in Southern Europe and on Ireland illustrate the importance for society at large of having adequate fiscal space *before* any major crisis for an expansionary fiscal response, in this way escaping unpopular measures with severe economic and political consequences during and immediately after the crisis. Having sufficient space facilitates a successful fiscal response to crises. Most likely the size of the fiscal multipliers is larger when government debt is lower and trust in the government's ability to sustain the debt is high. Government actions to limit the real economic effects of the crisis thus becomes more effective and the output cost of the crisis is reduced.[13]

In short, we adopt an insurance approach: in case of a major crisis, the fiscal authorities should have sufficient fiscal space, serving as a fiscal buffer, to meet the crisis at a low cost to society. We use a broad concept of "cost" here – including loss in output and employment as well as the political costs of crises.

Having ample fiscal space implies that the political effects of drastic and large austerity measures can be minimized. This is important in any country, not least in a country like Sweden with a relatively large welfare state and public sector.[14] Swedish households rely on the government for a large share of their consumption smoothing over the life-cycle and during unexpected spells of income losses (e.g. due to unemployment). Cutting back on public spending clearly hurts households financially. Households will struggle to compensate for the loss of public spending in the short to medium run. They will cut private consumption, thus making the downturn deeper during a recession or deep crisis.[15] This was the case during the financial crisis in the early 1990s when Sweden entered a debt deflation process.[16]

Sharp austerity measures are likely to have substantial political consequences as well. As Swedish voters expect the government to fulfil its welfare promises, a disappointing economic performance will fuel populism and make it more difficult to form responsible governments. Typically, erosion of trust in government, in elected politicians and the democratic process takes place during major economic crises.[17] Trust in the Riksdag and the government fell from a net of +40 in the late 1980s before the fiscal consolidation on a scale from plus 100 to -100,

[13] See for example Jordà et al (2016) and Romer and Romer (2019) for the international evidence. Romer and Romer (2019, p. 12) note a "tremendous variation in the severity and persistence of output declines following financial distress". They explain this variation mainly by differences in fiscal space across countries.
[14] Social spending in Sweden in relation to GDP was 26 percent in 2016 compared to the OECD average of 20 percent and 19 percent in the US (OECD, 2016).
[15] Swedish households have a relatively small amount of financial assets compared to households in other OECD countries. Most of Swedish household wealth is in housing (OECD, 2015).
[16] See chapter 2 in Jonung et al (2009).
[17] See for example Eichengreen (2018).

to -40 during the fiscal consolidation in the mid1990s (Martinsson and Andersson, 2018). It took many years before trust was restored in Sweden.

To derive a proper level for the debt anchor, we adopt a two-step approach. First, we rely on recent economic history to decide when the cost of servicing government debt begins to increase significantly due to a rising debt level. Here, we want to identify the size of the debt limit or debt threshold where the negative effects of additional debt outweigh the positive effects. Second, we examine the fiscal cost of recent economic crises. Based on these results, we arrive at an estimate of the fiscal space required *before* a crisis such that the government can handle the debt *after* the crisis without drastic austerity measures.

4.2 When does Swedish public debt become unsustainable?

One potential cost of high debt is that it may be a drag on economic growth. We find it difficult to establish exactly when public debt becomes too large in the sense that it hampers economic growth. Figure 3 shows the contemporaneous relationship for Sweden between the public debt ratio and GDP growth in the post-war era (1951-2016). There is no clear relationship between debt and growth. Economic growth has been high and low irrespective of the debt level. Average growth was slightly higher during the years when the debt ratio was between 10 and 20 percent. However, these observations are from the 1960s when growth was high in the entire developed world and thus likely not related to the Swedish debt level. Lagging the debt ratio does not change the results. We find no statistically significant correlation between the debt ratio and economic growth for Sweden. Having a high debt is not directly associated with lower economic growth, at least not at the debt levels observed historically in Sweden.

[FIGURE 3]

Another potential cost of high debt is the cost of servicing government debt. This is possibly a large cost for a small open economy with its own currency such as Sweden with limited domestic financial markets. A larger domestic debt is likely to require external funding, where the government needs to pay higher rates to attract investors, including taking an exchange rate risk. The relationship between the debt ratio and the real rate of interest is plotted in Figure 4 for Sweden 1985-2017, starting with the liberalization of financial markets in the mid-1980s.

Figure 4 displays a clear positive correlation between the debt ratio and the real rate of interest, a relationship that we should expect. Rapidly increasing real rates during the mid-1990s was a key factor driving the government to balance the budget from a deficit from 15 percent of GDP in 1993 within five years. According to Figure 4, an increase in the debt ratio from 40 percent to 70 percent increased the real interest rate from 1.5 percent to 7 percent.

Real interest rates have declined globally since the 1990s as part of the process of secular stagnation. The relationship in Figure 4 is thus potentially a spurious one as a falling debt ratio and falling interest rates may coincide without being causally related. To control for globally falling interest rates, we plot the relationship between the Swedish debt ratio and the real interest rate difference between Sweden and the United States (Figure 5), and Sweden and Germany (Figure 6).

[FIGURE 4]
[FIGURE 5]
[FIGURE 6]

Figures 5 and 6 confirm the positive relationship between the debt ratio and interest rates. The result is especially strong when Swedish government bond rates are compared to German bond rates: an increase in the debt ratio from 40 percent to 70 percent implies two percentage points higher interest rates compared to German rates. In relation to the United States, the difference in interest rates between 40 and 70 percent debt ratio is approximately three percentage points.

The increases in interest rates impose a relatively large effect on government finances. The rise in debt raises the cost of debt financing as well bringing about a larger debt to service. The real interest rate in relation to Germany increases by two percentage points at a debt ratio of 70 percent. The additional cost due to the higher interest rate is 1.4 percent of GDP. Simply to balance the budget, the government would have to increase the primary budget surplus by 1.4 percent of GDP. The average Swedish primary budget balance between 2000 and 2017 was 1.1 percent. The interest rate cost, only due to higher interest rates, would require a twice as high primary balance to finance. The cost is not impossible to cover but sufficiently large to be avoided unless in case of a major economic crisis forcing the government to rely heavily on debt financing.

Extrapolating the results suggests that the interest rate difference compared to Germany would increase to 4 percentage points if the debt ratio surges to 90 percent of GDP. The additional debt service cost would be 3.6 percent of GDP.

We conclude from the above calculations that the central government debt-to-GDP should be kept at least below 40 percent in normal times and preferable never exceeding 70-75 percent. We suggest from the historical evidence that a 70 percent debt level is a reasonable debt limit or debt threshold for Sweden.[18]

4.3 Economic crises and the public debt ratio

Debt levels fluctuate with the business cycle and with economic crises. To establish an appropriate debt anchor, our second and final step is to estimate the fiscal cost of major economic crises. Sweden has experienced seven major economic crises since 1870, see the listing in Chapter 6 in Jonung et al (2009): the crisis of 1877/78, the international financial crisis of 1907, the depression of the early 1920s, the Great Depression in the 1930s, OPEC I and II, and the financial crisis in the early 1990s. The international crisis of 2008/09, the Great Recession, should be added to this list although Sweden was only indirectly affected by the crisis and did not suffer from a domestic financial crisis as many EU member states. Still, the decline in the growth rate of GDP was sharp and sizeable.

These eight major crises are highlighted in Figure 2, which plots the Swedish public debt-to-GDP ratio. The effect of these crises on the debt ratio was modest before the Second World War. The welfare state had not yet been created; the public sector was fairly limited. Consequently, the automatic stabilizers were small. In addition, a balanced budget was the aim of the government before the 1930s. The debt ratio shows only modest correlation with the cyclical stance of the economy. Between 1930 and 1935, during the Great Depression, the debt ratio increased by only 6.2 percentage points. Although Sweden was an early adopter of expansionary fiscal policy in the early 1930s, the actual size of the fiscal measures was limited.

Following the Second World War and the rise of the welfare state and the adoption of a Keynesian approach to fiscal policy, the correlation between the business cycle and the volume of government debt is stronger, in particular during economic crises. The largest debt increase took place following OPEC I and OPEC II when the government opted for an expansionary

[18] This level is consistent with the view of Fall et al (2015) proposing a debt threshold for high income countries in the range of 70-90 percent, close to our threshold of 70 percent. It is also roughly consistent with the finding of Barrett (2018) of a debt limit for the UK of 90 percent, although calculated by a methodology different from ours.

fiscal response. The debt increased by 50 percentage points. The financial crisis 1991-92 made its mark by an increase of 33 percentage points.

We are aware that these episodes of rising debt are time-specific. Today, the idea of a policy of bridging over, like the policy in the wake of OPEC I, would hardly find political support. Policy-makers have learnt from the policy mistakes of the past. The policy experiments in the 1970s and 1980s do not serve as convincing evidence for our estimates of the appropriate debt anchor today.

Instead, we are of the opinion that financial crises constitute the most severe threat facing the global economy presently. The rapid growth of the financial system following the financial deregulation of the 1980s and 1990s has increased financial imbalances. The Great Recession of 2008 has not arrested this build-up. Most of the recent crises are primarily caused by financial developments. In the case of Sweden, financial imbalances have grown significantly since the mid-1990s, raising the risk of future corrections (Andersson and Jonung, 2016).

As we deem a financial crisis the most likely future menace to the fiscal stance of Sweden, we consider the fiscal cost of financial crises internationally in the post-1990 period. Table 2 illustrates these costs post-1990 among EU15, Japan and the United States according to Laeven and Valencia (2018). The first column of Table 2 shows the total increase of the debt level (in relation to GDP), the second column the fiscal cost of supporting the banking system, and the third column the income loss generated by the crises.

Each crisis is different as illustrated by the large variation in the estimates of the costs of crises. The least costly crisis was the Italian crisis in 2008-09 with a fiscal cost of 8.6 percent of GDP. The most expensive one was the Irish 2008-12 crisis with a fiscal cost of 76.5 percent of GDP. Approximately half of the cost is due to the refinancing of the banking system. The cost of the average crisis is 29.5 percent of GDP and of the median crisis 24.9 percent of GDP. The five most expensive crises have an average cost of 48.8 percent, the ten most costly crises a cost of 38.7 percent of GDP on average. In general, the larger the cost for the support of the banks, the larger the total fiscal cost.

Recent changes in EU-legislation have shifted the responsibility of re-financing failing banks from the taxpayers to the owners of banks. Whether this will be the case in the future remains to be seen. However, even if we exclude the re-financing costs, still we find that the fiscal cost of financial crises is high. The average re-financing costs is 9.5 percent of GDP and for the median crisis 6.2 percent. Most of the increase in debt is due to lower economic growth resulting in lower tax revenues and increased costs for inter alia higher unemployment.

Which conclusions should we draw from these numbers? We are of the opinion that it is reasonable that a country like Sweden should be able to meet an average crisis without running into debt problems, that is the government should be able to sustain an increase in the debt level of between 30 and 50 percent of GDP without facing rapidly increasing interest rates and/or having to seek support from the EU or the IMF. Given that Sweden should avoid debt ratios in excess of 70 to 75 percent of GDP, the debt ratio should be between 20 and 40 percent of GDP *before* the crisis. If we are to err on the side of caution, we should put the debt target in the lower part of this range.

Consequently, we view the present debt anchor of 35 percent of GDP as too high. Instead, Sweden should aim for a central point of no more than 25 percent with a tolerance band of +/-5 percentage points around the central point to account for normal business cycle fluctuations.

Our proposed size of the new debt anchor prepares Sweden for the consequences of a future major economic crisis. We arrive at this recommendation based on a precautionary or prudent line of reasoning. We want to have a sufficient fiscal space as an insurance against future shocks. We do not claim that we have derived the optimal debt level for Sweden. Rather, we have doubts about the concept of an optimal debt level. The large empirical and theoretical literature on the optimal debt level and on optimal fiscal policy reaches no firm policy recommendations on the size of the public debt-to-GDP ratio.[19] One part of the literature studies the optimal size in relation to public investments and their growth enhancing effects, arriving at no clear recommendation concerning the debt ratio. Another part of the literature focuses on finding a threshold level when the debt becomes a drag on economic growth (see for example Reinhart and Rogoff, 2010), without any firm conclusions. Research on optimal government debt suggests that there is not one optimal level fixed over time and across countries. Instead, the results appear to be time and country specific, as well as depending on the methodological approach adopted. For this reason, we discuss the proper, prudent or "safe" debt level from a

[19] See for example the survey by Alesina and Passalacqua (2015).

crisis insurance perspective that would allow sufficient consumption and tax smoothing over time – ignoring any attempt of defining an optimal debt ratio for Sweden.

4.4 The new debt anchor

Our proposed new debt anchor has several advantages. It is a simple rule, easy to communicate with the public and the adherence to the rule is can be monitored successfully by the fiscal policy council and thus by the public. Once the debt ratio has reached the 25 percent, the surplus target becomes superfluous and should be abolished. A major disadvantage with the present surplus target is that it is relatively demanding to evaluate. Measuring the phase and size of the business cycle is notoriously difficult in real time. The task of estimating the structural budget deficit to quantify the surplus target involves measurement errors. Our debt anchor does not suffer from similar difficulties. It is easy to estimate in real time. We want to distinguish between a flow concept (the budget surplus) and a stock concept (the volume of debt). Of course, they are related but it is much easier to monitor the volume of debt than the structural stance of the budget.

The other building blocks of the fiscal framework should be kept in place: the expenditure ceiling, the Fiscal Policy Council and the debt anchor. The expenditure ceiling is an important element to keep government expenditures in line during good times under a debt anchor. In addition, once the surplus target has been abolished the monitoring of the finances of local authorities should be a prime task of the Fiscal Policy Council.

5. Can Sweden serve as an example for the rest of the EU?

Compared to many EU countries, Sweden is in an envious position with low public debt. However, as Swedish history shows this has not always been the case. Fiscal discipline over a generation has gradually reduced the debt level. The adoption in other countries of a Swedish type of a fiscal framework with expenditure ceilings, a surplus target, a fiscal policy council and a debt anchor may reduce deficit bias. However, it is not enough to adopt new rules, politicians must also adhere to them and the public has to support them.

We want to stress that the fiscal framework of Sweden is embedded in a unique institutional setting, likely to be difficult to establish in other EU member states. In Sweden, the collective memory of the fiscal crisis of the 1990s helped to form a political consensus across the political spectrum concerning the importance of fiscal stability. Market signals through higher interest rates during the 1990s contributed to strengthening this consensus. Falling interest rates, once government debt began to decline, provided further incentives to continue to reduce the debt level. In the euro area, following the crisis of the late 2000s, the policy of the ECB reduced interest rates on public debt, in this way weakening political incentives to stabilize public finances. In Sweden, interest rates fell due to fiscal consolidation after the financial crisis of 1992, not due to the lack of fiscal consolidation as in the euro area after the crisis of 2008.

Countries that are struggling to get their fiscal house in order should view a fiscal framework that relies on a debt anchor as a useful instrument. The original fiscal framework for EU as set out in the Maastricht treaty of 1992 and the Stability and Growth Pact of 1997 has proven insufficient. The Maastricht rules of a maximum debt level of 60 percent and a budget deficit of no more than 3 percent has not served as ceilings. Instead, in the best cases, they have become fiscal targets that too many governments have been aiming for. In the worst cases, the debt ceiling has become a floor rather than a ceiling – thus turning counterproductive. The Maastricht framework has clearly proven insufficient and given rise to a number of additional fiscal rules, pasted more or less ad hoc onto the initial treaty.[20]

By now, EU fiscal governance has turned into a very complicated affair with a wide set of rules and regulations that make the system difficult to monitor, to evaluate and to communicate to the public. In addition, the system is a constant source of tension between "Brussels" (the Commission) and the member states. Another concern is that equal treatment across member states does not seem to be a firm principle.

As Debrun and Jonung (2019) argue, the present EU system of fiscal governance lacks credibility and efficiency. According to Debrun and Jonung (2019, p 155): *In practice, the focus on enforceable rules appears to have resulted in intractable complexity, to the point of putting rules-based fiscal policy at risk. The evolution of the EU fiscal framework illustrates this outcome and the related risk of de-anchoring fiscal expectations."* As an alternative they recommend in their conclusions *"simple, flexible but non-enforceable rules"* that work through *"reputational effects"* In fact, they are proposing a system of fiscal governance similar to the

[20] See Larch et al (2010).

Swedish one. Here the fiscal policy council has an important role to play due to its solid reputation. It serves as a guardian of the collective memory of the high cost of fiscal imbalances.

In our view, the Swedish fiscal framework could serve as a model for the rest of Europe. It is true that it has a weak legal foundation and that the government can break the rules without any legal consequences. However, the framework has evolved through a dialogue across the political spectrum. The political parties accept and stick to the rules because breaking them has negative political consequences. The Swedish experience clearly demonstrates that a legally weak but politically accepted and endorsed framework can work through reputational effects.

We propose some changes to the Swedish framework: a shift from a surplus target to a debt anchor is the major one. We believe that a debt anchor should be a target for the long run for other EU member states as well. We arrive at this conclusion with the same logic as we do for Sweden. Such a system is simple to understand and easy to monitor. It provides fiscal space to meet major economic crises and to avoid future sovereign bankruptcies as well as reducing the risk of rising populism during a crisis.[21]

Of course, we are aware that it is a far step for many member states like Italy, Greece and France to move to a prudent or "safe" debt level today as low as 25 per cent, in particular as these countries have not yet recovered fully from the recent financial crisis. However, achieving fiscal discipline in Sweden was once regarded as a difficult challenge. But it proved possible to reduce debt in due time. For this reason, we believe it should be possible to do so across Europe as well.[22]

6. Conclusions

The Swedish fiscal policy framework has been a success so far. In fact, it has been too successful in the sense that it will likely lead to a too low a level of government debt in the future. From a debt level of 75 percent of GDP in 1995, the debt ratio is expected to fall to 30

[21] The recent crisis in the euro area has reduced public support for the euro and trust in the ECB and in national governments. The decline in support and in trust is closely associated with the rise in unemployment across the euro area. This pattern is especially strong in countries where fiscal austerity measures have been adopted. See Roth et al (2018).

[22] The Swedish experience shows that a country is not guaranteed a free fiscal lunch as suggested by Blanchard (2019). He assumes that the government can consistently borrow at low rates – a view that is clearly inconsistent with the historical evidence. This time is not different.

percent by 2022. Recent recessions and the international financial crisis of 2008 have not affected the trend of the debt level. It has continued to fall.

Several factors have contributed to the decline of debt. Widespread public support for the policy first to reduce debt and then to maintain stable public finances has forced the political parties to compete in terms of fiscal responsibility. The experience of the crisis of the early 1990s of a rapid expansion of government debt and of ensuing large reductions in public spending is still in vivid memory. In addition, debt consolidation has rewarded governments with falling interest rates on government debt, giving the political system strong incentives to continue to reduce debt even in good times.

Although the fiscal framework has been a success until now, it is nevertheless unsustainable in the long run in the sense that public debt may turn too low. We must therefore ask the question "what should be the next step?". We argue that the key ingredients in the present fiscal framework should remain, but the pension system should be excluded from the framework and that the surplus target should be removed and greater emphasis should be given to the debt anchor. The surplus target was once vital to reduce the level of debt. However, given that the debt is reaching a low level, reducing it further is unnecessary and comes at a welfare cost to society.

As the history of government debt shows, economic crises are the most dangerous threat to fiscal balance and to political stability. Thus, it is recommendable to design the fiscal framework so it gives protection today against future crises in the form sufficient fiscal space during the crisis. To derive the appropriate level for the fiscal space and thus for the debt anchor for Sweden, we use a two-step approach. First, we estimate at which debt level the cost of servicing public debt begins to rise sharply. Second, starting from this debt threshold and using data from the fiscal costs of financial crises, we calculate that a debt-to-GDP ratio in the range of 20 to 30 percent would be a prudent level.

References

Alesina A. and A. Passalacqua. (2015), "The political economy of government debt", working paper, department of economics, Harvard.
https://scholar.harvard.edu/files/alesina/files/political_economy_of_gov_debt_dec_2015.pdf

Andersson, F. N. G. (2016), "A blessing in disguise? Banking crises and institutional reforms", *World Development,* 83, 135-147.

Andersson, F.N.G. (2017). “Sekulär stagnation. Vad är det och hur påverkar det penningpolitiken? *Ekonomisk Debatt*, 45(7), 13-25. https://www.nationalekonomi.se/sites/default/files/NEFfiler/45-4-fnga.pdf

Andersson, F.N.G. and L. Jonung. (2016). “The credit and housing boom in Sweden, 1995-2015: Forewarned is forearmed”, VoxEU.org. https://voxeu.org/article/credit-and-housing-boom-sweden-1995-2015

Barrett, P. (2018), “Interest-growth differentials and debt limits in advanced economies”, IMF working paper 18/82, IMF.

Blanchard, O. (2019), “Public debt and low interest rates”. *American Economic Review*, 109(4), 1197-1229.

Calmfors, L. (2013), “Sweden: Watchdog with a broad remit”, chapter 10 in G. Kopits, ed., *Restoring public debt sustainability. The role of independent fiscal institutions*, Oxford, Oxford University Press.

Debrun, X. and L. Jonung. (2018), “Under threat: Rules-based fiscal policy and how to preserve it”, pp 142-157, *European Journal of Political Economy*.

Fall, F., D. Bloch, J.M. Fournier and P. Hoeller. (2015), “Prudent debt targets and fiscal frameworks”, *OECD Economic policy paper series,* 15, July, OECD, Paris.

Fregert, K. and R. Gustavsson. (2013), ”Financial statistics for Sweden 1670–2011”, in R. Edvinsson, T. Jacobson and D. Waldenström, eds., *House prices, stock prices, national accounts and the Riksbank's balance sheet, 1620–2012*, Ekerlids förlag, Stockholm, https://www.riksbank.se/sv/om-riksbanken/riksbankens-uppdrag/forskning/historisk-monetar-statistik-for-sverige/volume-i-exchange-rates-prices-and-wages-1277-2008/

Eichengreen, B. (2018), *The populist temptation. Economic grievance and political reaction in the modern era*, Oxford, Oxford University Press.

Eichengreen, B., A. El-Ganainy, R. P. Esteves and K. Mitchener. (2019), “Public debt through the ages”, IMF working paper 19/6, Washington.

Jonung, L. (1999), *Med backspegeln som kompass - om stabiliseringspolitiken som läroprocess*, rapport till ESO, Ds 1999:9, Finansdepartementet, Stockholm, mars, 1999. http://eso.expertgrupp.se/wp-content/uploads/1999/10/Ds-1999_9-Med-backspegeln.pdf

Jonung, L. (2015), ”Reforming the fiscal framework: The case of Sweden 1973-2013”, chapter 8 in T. Andersen, M. Bergman and S. Hougaard Jensen, eds., *Reform capacity and macroeconomic performance in the Nordic countries*, Oxford, Oxford University Press.

Jonung, L. (2018), “Homegrown: The Swedish fiscal policy framework”, chapter 12 in R. Beetsma and X. Debrun, eds., *Independent fiscal councils: Watchdogs or lapdogs?,* VoxEU.org eBook. CEPR Press. https://voxeu.org/content/independent-fiscal-councils-watchdogs-or-lapdogs, January.

Jonung, L., J. Kiander and P. Vartia, eds., *The Great Financial Crisis in Finland and Sweden*, Edward Elgar, Cheltenham.

Jordà, O., M. Schularick and A. Taylor. (2016), "Sovereigns versus banks: Credit, crises, and consequences," p. 45-79, vol.14, *Journal of the European Economic Association.*

Kommuninvest (2017), *Den kommunala låneskulden*. Stockholm: Kommuninvest. https://kommuninvest.se/wp-content/uploads/2017/10/Den-kommunala-l%C3%A5neskulden-2017-171016.pdf

Larch, M., P. van den Noord and L. Jonung. (2010), "The Stability and Growth Pact. Lessons from the Great Recession", European Economy. Economic Papers, no. 429, December, Brussels. ISBN: 9978-92-79-14915-3 ISSN: 1725-3187. http://ec.europa.eu/economy_finance/publications/economic_paper/2010/pdf/ecp429_en.pdf.

Laeven, L., and F. Valencia. (2018), "Systemic banking crises revisited", IMF working paper 18/206. https://www.imf.org/en/Publications/WP/Issues/2018/09/14/Systemic-Banking-Crises-Revisited-46232

Manasse, P. and D. Katsikas, eds., (2018), *Economic crisis and structural reforms in Southern Europe. Policy lessons*, Routledge.

Martinsson, J. and U. Andersson, eds., (2018), *Svenska trender 1986-2017*, SOM Institute, Gothenburg University. https://som.gu.se/aktuellt/Nyheter/Nyheter_detalj//svenska-trender-1986-2017.cid1569129

OECD (2015), *National accounts at a glance*, Paris: OECD. https://www.oecd-ilibrary.org/economics/national-accounts-at-a-glance_22200444

OECD (2016), *Society at a glance*, Paris: OECD. https://www.oecd-ilibrary.org/social-issues-migration-health/society-at-a-glance_19991290

Persson, M. (1996), "Swedish government debts and deficits, 1970-1995", *Swedish Economic Policy Review*, vol. 3, no 1.

Reinhart, C. and K. Rogoff. (2009), *This time is different. Eight centuries of financially folly*, Princeton University press, Princeton and Oxford.

Romer C. and D. Romer. (2019), "Fiscal space and the aftermath of financial crises: How it matters and why", BPEA conference drafts, March 7-8, Brookings Papers on Economic Activity. https://www.brookings.edu/bpea-articles/fiscal-space-and-the-aftermath-of-financial-crises-how-it-matters-and-why/

Riksbank (1984), *Statistical yearbook 1983*. Stockholm: Riksbanken.

Roth, F., E. Baake, L. Jonung and F. Nowak-Lehmann. (2018), "Revisiting public support for the euro, 1999-2017: Accounting for the crisis and the recovery", Department of economics, Lund university, working paper 2018:9, https://ideas.repec.org/p/hhs/lunewp/2018_009.html, forthcoming *Journal of Common Market Studies*.

SOU 2016:67, *En översyn av överskottsmålet*, (A review of the surplus target), Department of finance, Stockholm.

Swedish National Financial Management Authority (2018), *Prognos. Statens budget och de offentliga finanserna*, (Forecast. The budget of the government and public finances), April 2018.
https://www.esv.se/contentassets/903a877bc36745caa65f15044771ffb0/prognos-april-2018.pdf

Von Hagen, J. (1992), "Budgeting procedures and fiscal performance in the European Communities", *Economic Papers* 96, DGII, European Commission, Brussels.

Wyplosz, C. (2002), "Fiscal policy: Institutions vs. rules", chapter 5 in *Stabiliseringspolitik i valutaunionen*, (Stabilization policy in the monetary union), SOU 2002:16, Fritzes, Stockholm.

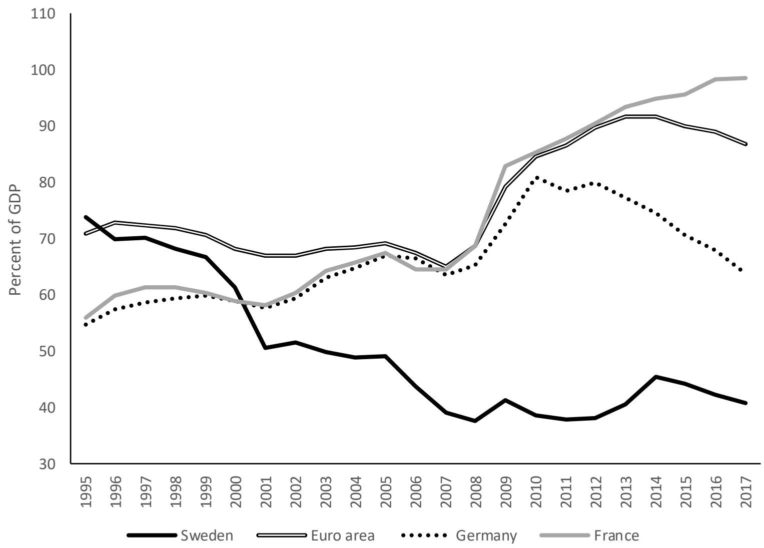

Figure 1: The Maastricht debt-to-GDP ratio for Sweden, the euro area, Germany and France, 1995-2017.
Data source: Eurostat and the Swedish National Debt Office.

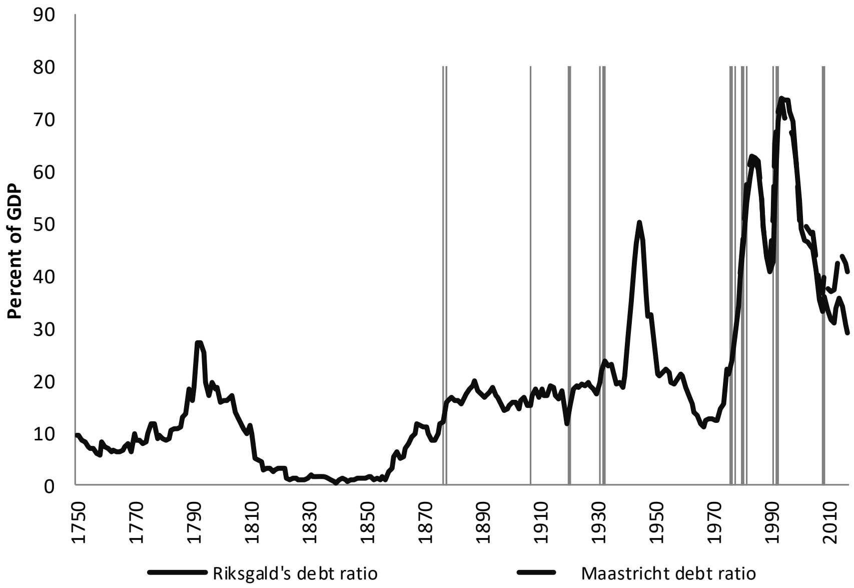

Figure 2: Swedish central government debt (*Riksgäldsskulden*) in relation to GDP 1750-2017 (solid black line) and Swedish Maastricht debt in relation to GDP 1980-2017 (dotted black line).

Data source: Swedish National Debt Office, Statistics Sweden, Fregert och Gustavsson (2013), and Thompson Reuters Financial Datastream.

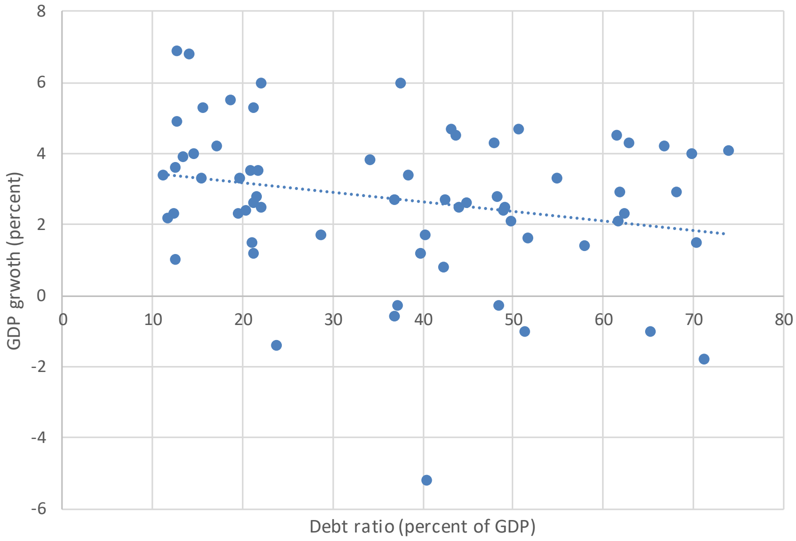

Figure 3: Economic growth and the public debt ratio in Sweden, 1951-2016.
Data source: Thompson Reuters Financial Datastream.

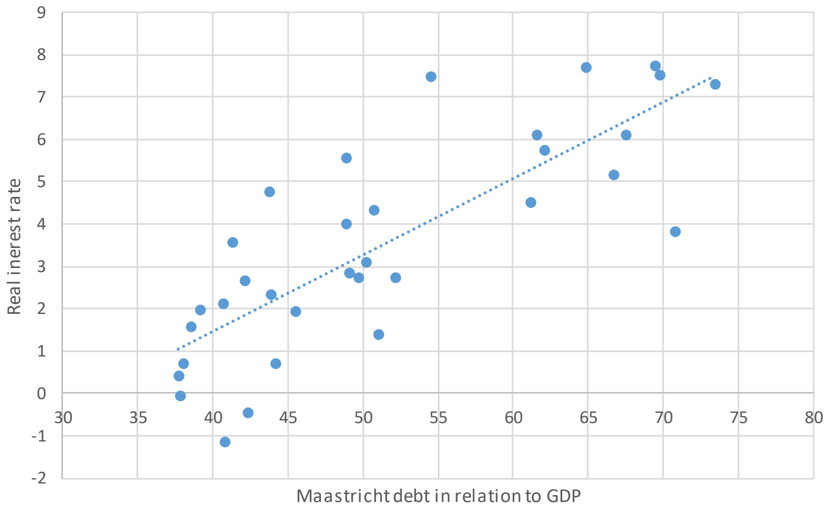

Figure 4: Real interest rates and the public debt ratio in Sweden, 1985-2017.
Data source: Thompson Reuters Financial Datastream.

Figure 5: The interest rate difference between Sweden and the United States, and the Swedish public debt ratio, 1985-2017.
Data source: Thompson Reuters Financial Datastream.

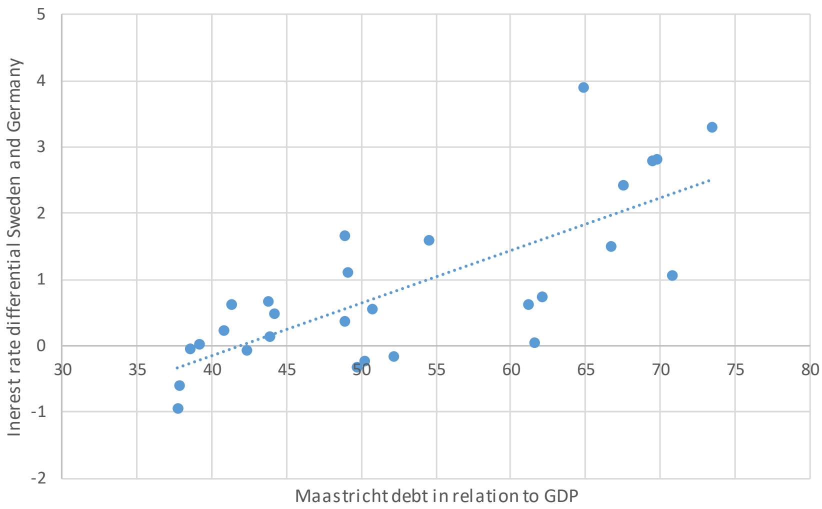

Figure 6: The interest rate difference between Sweden and Germany, and the Swedish public debt ratio, 1985-2017.
Data source: Thompson Reuters Financial Datastream.

	Crisis phase 1991-94	Consolidation of public finances 1995-99
Prime ministers		
Göran Persson (1996-2006)	Opposition, shadow finance minister (1993-94).	Minister of finance, (1994-96). Prime minister (1996-2006)
Fredrik Reinfeldt (2006-14)	Member of parliament for ruling Moderate party.	Member of parliament for the opposition. Member of the Finance Committee.
Stefan Löfven (2014-)	Board member *Metall* (labour union).	Board member *Metall* (labour union). International secretary Metall.
Minister of finance		
Bosse Ringholm (1999-2004)	Chairman Country Council Executive Committee (1994-97)	Chairman National Labour Board (1997-99) Minister of finance (1999-2004)
Per Nuder (2004-06)	Member of parliament (1994)	State Secretary Prime Minister's office (1997-2002)
Anders Borg (2006-14)	Political Advisor to Prime minister (1991-94)	Private sector
Magdalena Andersson (2014-)	Part-time lecturer Stockholm School of Economics	Political advisor Prime minister's office (1996-98). Director of Planning Prime minister's office (1998-2004)

Table 1: Career positions of prime ministers and ministers of finance from 2000 to 2018 during the financial crisis of 1991-94, and the fiscal consolidation period 1995-99 in Sweden.

		Fiscal cost		Macroeconomic cost
Country	Crisis years	Increase in public debt (% GDP)	Public support to banks (% GDP)	GDP-loss (% GDP)
Sweden	1991–95	36.2	3.6	32.9
Austria	2008-12	19.8	5.2	19.2
Belgium	2008-12	22.2	6.2	15.7
Denmark	2008-09	32.8	5.9	35.0
Finland	1991-95	43.6	12.8	69.6
France	2008-09	15.9	1.3	23.3
Germany	2008-09	16.2	2.7	12.3
Greece	2008-12	43.9	28.7	64.9
Ireland	2008-12	76.5	37.6	107.7
Italy	2008-09	8.6	0.7	32.2
Japan	1997-2001	41.7	8.6	45.0
Luxembourg	2008-12	12.7	7.2	43.3
Netherlands	2008-09	24.9	14.3	26.1
Norway	1991-93	19.2	2.7	5.1
Portugal	2008-12	38.5	11.1	35.0
United Kingdom	2007-11	27.0	8.8	25.3
United States	2007-11	21.9	4.5	30.0
Average		29.5	9.5	36.6
Median		24.9	6.2	32.2
Top 5 most costly crises		48.8	19.8	64.4
Top 10 most costly crises		38.7	13.8	45.7

Table 2: Fiscal costs of major financial crises in EU15, Japan and the United States.
Data source: Laeven and Valencia (2018).